



# MANONMANIAM SUNDARANAR UNIVERSITY

DIRECTORATE OF DISTANCE AND CONTINUING EDUCATION  
TIRUNELVELI-627012, TAMILNADU

**MCom – II<sup>nd</sup> SEMSTER**  
**( Academic Year 2022-2023 )**

## ADVANCED FINANCIAL MANAGEMENT



**Most student friendly University-Strive to Study and Learn to Excel**

For More Information Visit: <https://www.msuniv.ac.in>



## SYLLABUS

**UNIT I Foundation of Finance:** Financial management - Objectives, Scope, Uses and Functions of Financial management – Profit maximization vs Wealth maximization -Finance Function - Role of Finance Manager – Liquidity vs Profitability- Risk and return trade off – Financial management and other functional areas – Method and tools of financial Management Time value of Money – Financial Forecasting – Changing scenario of financial management in India (Theory)

**UNIT II Sources of Finance & Financial Planning:** Sources of Finance: short term finance & long-term finance – purpose- Sources- Security Financing, Internal Financing, Loan Financing and other Innovative sources of Financing – Factors determining the source of finance. Working capital - Concepts of working capital –Types-Significance-adequacy- Dangers of redundant working capital – Factors –Determinants of working capital- issues and methods of estimating working capital- operating cycle method- regulation of bank credit-Tandon committee-working capital ratios(Theory)

**UNIT III Management of Assets:** Receivables Management: Objectives – Costs – Benefits – Credit policies – Credit Terms – Credit analysis - Collection policies –Decision tree Analysis of credit granting – monitoring & control of receivables - Inventory management: Objectives of inventory management – RISK & Cost of holding inventory- Techniques of Inventory management – EOQ – ABC analysis – Inventory turnover ratios – Just in Time inventory system – VED analysis – FSN analysis – Min-Max Method – Perpetual Inventory system- Automatic order system-input-output ratio analysis( Theory)

**UNIT IV Leverages and Dividend Decision:** Leverage- Types - Operating leverage – degree of Operating leverage – Financial leverage – Degree of financial leverage- Combined leverage – EBIT/EPS Analysis - Cost of capital: Equity, Debt, Retained Earnings – Weighted Average Cost of Capital – Capital structure: designing capital structure – - Factors determining capital structure - Capital structure Theories – Net income, Net operating Income, MM and Traditional theories – Dividend policy and practices – Dividend policies – Factors determining Dividend policy – Dividend Theories – Graham, Walter, Gordon and Modigliani -Miller theories (Theory & Problems)

**UNIT V Investment Decisions:** Capital Budgeting – Nature of capital budgeting- Objectives – Process- factors influencing capital budgeting decisions - Identifying relevant cash flows – Evaluation Techniques: Payback, Net Present Value, Profitability Index, Internal Rate of Return, Accounting rate of return- Comparison of DCF techniques- Project selection under capital rationing- inflation in Capital Budgeting- Risk analysis in capital budgeting ( Theory & Problems)

### References:

1. Khan M Y and Jain P K, (2014), Financial management, Text, Problems and cases, Tata McGraw Hill, New Delhi
2. Murthy A, (2016), Financial Management, Margam Publications, Chennai
3. Maheswari S N, (2016), Financial Management, Sultan Chand & Sons, New Delhi
4. Pandey I M, (2014), Financial Management, Vikas Publishing House, Mumbai
5. Periyasamy, (2015), Financial Management, Vijay Nicole Imprints, Chennai
6. Prasanna Chandra, (2014), Financial Management, 7th edition, Tata McGraw Hill, New Delhi
7. Tulsian P C, (2016), Financial Management, S.Chand& Company, New Delhi



## INDEX

<b>UNIT</b>	<b>TITLE</b>	<b>PAGE NUMBER</b>
<b>I</b>	<b>FOUNDATION OF FINANCE</b>	<b>4 - 44</b>
<b>II</b>	<b>SOURCES OF FINANCE AND FINACIAL PLANNING</b>	<b>45 - 73</b>
<b>III</b>	<b>MANAGEMENT OF ASSETS</b>	<b>74 - 104</b>
<b>IV</b>	<b>LEVERAGES AND DIVIDEND DECISION</b>	<b>105 - 103</b>
<b>V</b>	<b>INVESTMENT DECISION</b>	<b>164 - 192</b>





## UNIT 1

### FOUNDATION OF FINANCE

Finance is the Life Blood of business organization. It needs to meet the requirement of the business concern. Each and every business concern must maintain adequate amount of finance for their smooth running of the business concern and also maintain the business carefully to achieve the goals of the business concern. The business goal can be achieved only with the help of effective management of finance. In the modern world, all the activities are concerned with the economic activities and very particular to earning profit through any venture or activities. The entire business activities are directly related with making profit. According to the economics concept of factors of production, rent given to landlord, wage given to labour, interest given to capital and profit given to shareholders or proprietors, a business concern needs finance to meet all the requirements. Hence finance may be called as capital, investment, fund etc., but each term is having different meanings and unique characters. Increasing the profit is the main aim of any kind of economic activity.

According to the **Guthumann and Dougall**, —Business finance can broadly be defined as the activity concerned with planning, raising, controlling, administering of the funds used in the business.

Corporate finance is concerned with budgeting, financial forecasting, cash management, credit administration, investment analysis and fund procurement of the business concern and the business concern needs to adopt modern technology and application suitable to the global environment.

#### **Types of Finance**

Finance is one of the important and integral part of business concerns, hence, it plays a major role in every part of the business activities. It is used in all the area of the activities under the different names.



- Private Finance
- Public Finance

Private Finance, which includes the Individual, Firms, Business or Corporate Financial activities to meet the requirements.

Public Finance which concerns with revenue and disbursement of Government such as Central Government, State Government and Semi-Government Financial matters.

### **Financial Management - Meaning**

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise. Financial Management is broadly concerned with the acquisition and use of funds by a business firm.

#### **Definition**

According to **I M Pandey** “Financial management is the managerial activity which is concerned with planning and controlling of firms financial resources”.

According to **S.C. Kuchal** is that —Financial Management deals with procurement of funds and their effective utilization in the business

### **Objectives of Financial Management**

1. Profit Maximisation
2. Wealth Maximisation



- 1. Profit Maximisation:** According to this view point, the objective of an enterprise is to maximize profits. When a finance manager considers investment, financing and other related decisions, he should select that alternative which may maximize project or reduce cost.

A firm can maximize its profits by maximizing output for a given input or uses minimum inputs for producing a given output. Thus, it relates to optimizing the input-output relationships of resources to minimise the wasteful cost.

### **Features of Profit Maximisation**

1. Firms choose investment proposals which suits profit maximisation criteria and reject proposals which bring less project.
2. Firms set the products price and output in such a way that they bring maximum returns.
3. Firms tends to lower their cost of capital in order to achieve maximum profit.
4. It is related to maximisation of EPS of a firm.

### **Justification of Profit maximisation goal**

The profit maximisation goal is justified by financial managers on the following ground.

- a. Rationality:** When a person performs an economic activity in a rational way, he tries to maximize its utility. Here utility is measured in terms of benefits or profits. Thus, profit maximisation is justified on the ground of rationality.
- b. Efficient allocation of resources:** To maximize profits financial managers may shift funds from less profitable projects to more profitable projects. It enables efficient allocation and use of resources.



- c. **Maximising social welfare:** Maximising profits enables a firm to make it healthier to meet its social responsibilities. It cannot maximize profit at the cost of social goods.
- d. **Measurement of efficiency:** Profit is the test of economic performance and its efficiency. A firm can earn profit only through efficient production, sales and performance. In order to decide whether the managerial decisions are successful or not, profit can be used as a criterion.
- e. **Profit acts as a source of incentive:** It is the profit which create competition and without competition business becomes stagnant. Enterprises try to be more efficient to maximize profit.

**Criticism against profit maximization goal:** Profit maximization goal is considered to be a narrow objective, because it has a number of drawbacks as follows.

- a. **Ambiguity:** The term profit is not clearly defined. It may be gross profit before tax or after tax. Again, it may be, in terms of profitability as return on capital employed, return on share holders equity or return on sales. Which of these variances of profits should be maximized remain vague.
- b. **Ignores time value of money:** The goal ignores the time value of money. It is an accepted principle that the value of one rupee tomorrow is lower than the value of one rupee today or earlier is better.
- c. **Fails to recognize risk or quality of benefits:** The profits from a riskless profit and risky project are given equal weight in profit maximization goal. The ignorance of risk factor in business renders profit maximization unsuitable and unreliable as an operational criterion.
- d. **Social consideration:** Profit maximization fails to consider social considerations. According to this concept, those activities which maximize projects can be adopted by the firm. It may give the misinterpretation that the profit can be maximized even by adopting anti-social activities like black marketing, hoarding, adulteration, tax evasion etc.



**2. Wealth Maximization:** The term wealth means shareholders wealth or the wealth of the person who are involved in the business concern. This is also known as value maximization or Net Present Value (NPV) maximization. The financial manager of a firm makes decisions for the shareholders of the firm. Thus from the shareholders point of view, a good decision increases the value of their shares and a bad decision reduces it. Value maximization goal is based on the cash inflows and outflows. Thus, according to wealth maximization objective, business operations should be conducted in such a way as to ensure maximum net present value to the shareholders.

**Justification of Wealth Maximisation Goal:** Wealth maximization goal is widely accepted because of the following reasons.

- a. The concept of wealth is clearly defined. It represents present value of benefits minus cost of investment.
- b. It considers time value of money and risks of the business concern.
- c. The wealth maximization goal can be applied in taking appropriate investment decision, financing decision and dividend decision.
- d. It considers the quantity and quality of benefits received by the firm.
- e. It considers that the shareholders wealth is maximized when the market value of shares is maximized. Accordingly, a decision detrimental to the interest of shareholders may not be taken by the financial manager.
- f. It promotes and improves optimum and efficient utilization of resources.
- g. It ensures economic interest of its shareholders



### **Criticism against wealth maximization goal**

- a. It ignores short term economic benefits
- b. It suffers from drastic changes and fluctuations in the financial market.
- c. It is indirect profit maximization.
- d. Created a conflict of interest between management when the management is separated from ownership.

On the basis of the above discussions, wealth maximization goal is considered superior to profit maximization goal.

### **3. Proper estimation of total financial requirements**

Proper estimation of total financial requirements is a very important objective of financial management. The finance manager must estimate the total financial requirements of the company. He must find out how much finance is required to start and run the company. He must find out the fixed capital and working capital requirements of the company

### **4. Proper mobilization**

Mobilization (collection) of finance is an important objective of financial management. After estimating the financial requirements, the finance manager must decide about the sources of finance. He can collect finance from many sources such as shares, debentures, bank loans, etc. There must be a proper balance between owned finance and borrowed finance. The company must borrow money at a low rate of interest.



---

## **5. Proper utilization of finance**

Proper utilization of finance is an important objective of financial management. The finance manager must make optimum utilization of finance. He must use the finance profitably. He must not waste the finance of the company..

## **6. Maintaining proper cash flow**

Maintaining proper cash flow is a short-term objective of financial management. The company must have a proper cash flow to pay the day-to-day expenses such as purchase of raw materials, payment of wages and salaries, rent, electricity bills, etc.

## **7. Survival of company**

Survival is the most important objective of financial management. The company must survive in this competitive business world. The finance manager must be very careful while making financial decisions. One wrong decision can make the company sick, and it will close down.

## **8. Creating reserves**

One of the objectives of financial management is to create reserves. The company must not distribute the full profit as a dividend to the shareholders. It must keep a part of its profit as reserves. Reserves can be used for future growth and expansion. It can also be used to face contingencies in the future.



## **9. Proper coordination**

Financial management must try to have proper coordination between the finance department and other departments of the company.

## **10. Creation of goodwill**

Financial management must try to create goodwill for the company. It must improve the image and reputation of the company. Goodwill helps the company to survive in the short-term and succeed in the long-term. It also helps the company during bad times.

### **Financial Management and other Functional Areas**

#### **1. Financial Management and Economics**

Economic concepts like micro and macroeconomics are directly applied with the financial management approaches. Investment decisions, micro and macro environmental factors are closely associated with the functions of financial manager. Financial management also uses the economic equations like money value discount factor, economic order quantity etc. Financial economics is one of the emerging area, which provides immense opportunities to finance, and economical areas.

#### **2. Financial Management and Accounting**

Accounting records includes the financial information of the business concern. Hence, we can easily understand the relationship between the financial management and accounting. In the olden periods, both financial management and accounting are treated as a same discipline and then it has been merged as Management Accounting because this part is very much helpful to finance manager to take decisions. But nowadays financial management and accounting discipline are separate and interrelated.



### **3. Financial Management and Mathematics**

Modern approaches of the financial management applied large number of mathematical and statistical tools and techniques. They are also called as econometrics. Economic order quantity, discount factor, time value of money, present value of money, cost of capital, capital structure theories, dividend theories, ratio analysis and working capital analysis are used as mathematical and statistical tools and techniques in the field of financial management.

### **4. Financial Management and Production Management**

Production management is the operational part of the business concern, which helps to multiple the money into profit. Profit of the concern depends upon the production performance. Production performance needs finance, because production department requires raw material, machinery, wages, operating expenses etc. These expenditures are decided and estimated by the financial department and the finance manager allocates the appropriate finance to production department. The financial manager must be aware of the operational process and finance required for each process of production activities.

### **5. Financial Management and Marketing**

Produced goods are sold in the market with innovative and modern approaches. For this, the marketing department needs finance to meet their requirements. The financial manager or finance department is responsible to allocate the adequate finance to the marketing department. Hence, marketing and financial management are interrelated and depends on each other.



## **6. Financial Management and Human Resource**

Financial management is also related with human resource department, which provides manpower to all the functional areas of the management. Financial manager should carefully evaluate the requirement of manpower to each department and allocate the finance to the human resource department as wages, salary, remuneration, commission, bonus, pension and other monetary benefits to the human resource department. Hence, financial management is directly related with human resource management.

### **Functions of Financial Management**

The functions of financial management involve organising, planning, controlling and directing an organisation's financial activities. It includes applying different management principles to financial assets. These efforts focus on allocating capital, monitoring foreign currency, raising capital, budgeting and following product lifecycles. An organisation's finance manager oversees these activities. Efficient management of a company's finances allows a business to comply with regulations and succeed in its industry. The management process requires meticulous planning and execution. Some common functions of financial management are:

#### **➤ Estimation of the capital required**

The primary function of managing business finances is estimating the amount of capital required. Estimating the capital is essential to determine how much capital a firm requires to purchase fixed assets, modernise and expand the business and meet the working capital requirement. A financial manager estimates funds required for long-term and short-term purposes during this process. Accurately estimating the capital required can help in increasing the company's revenue capacity.



### ➤ **Determination of the capital structure**

After estimating the capital required, financial managers decide on the capital composition and structure. This might involve short-term and long-term debt-equity analysis. Through this analysis, they determine the accurate proportion of debt and equity. Determination of capital structure helps maximise shareholders' wealth and minimise capital costs.

### ➤ **Choice of the source of funds**

The next step is to choose the source of funds. Apart from using equity capital, a financial manager can choose other funding options like preferred shareholders, banks and financial institutions, debentures, public deposits and other third-party sources. Usually, financial managers consider the advantages and disadvantages of each source and period of financing.

### ➤ **Procurement of financial resources**

The acquisition of funds by financial managers is not solely dependent on the cost of raising funds but also on other factors, such as the choice of investors, market conditions and government policy. After choosing a funding option, managers take various steps to procure it. Procurement of funds might require some additional steps, such as issuing a prospectus and negotiating terms with creditors and financial institutions.

### ➤ **Utilisation of funds**

Upon procuring the funds, financial managers invest in various tangible and intangible assets to maximise return on investment. These managers can allocate funds into various ventures to ensure safety on investment. They invest capital in a way that is profitable. When taking such allocation and investment decisions, the manager focuses on three principles, including liquidity, safety and profitability.



### ➤ **Disposal of surplus funds or profits**

The next step of financial management is deciding how much funds a company retains and how much they distribute as dividends to shareholders from its overall profit. These managers decide the proportion of profits that a company ploughs back into the business. Often, companies distribute surplus funds as a bonus to employees for performing well.

### ➤ **Management of cash**

A company requires cash to maintain enough stock, purchase raw materials and pay current liabilities. After distributing the surplus funds, a finance manager decides on cash management. It involves forecasting cash inflows or outflows to ensure the company never faces a shortage or surplus of funds. They also ensure that the company has adequate cash for different purposes like paying salaries, utility bills and creditors.

### ➤ **Financial control**

The last function of financial management is ensuring financial control of the company's finances. Usually, the return on investment (ROI) provides a holistic overview of a company's financial performance. Using techniques like financial forecasting, budgetary control, ratio analysis, cost and profit control and internal audits, managers determine the financial performance. Also, the financial control tells how much money a company has, what is the source of that money and what expenses the company incurred during a financial year or specific accounting period.

When a financial manager controls the company's financial performance and data, they can make investing and financing decisions, distribute profits and sell new shares to shareholders.



---

## Scope of Financial Management

- 1. Aids in financial planning:** FM helps to determine the financial requirement of the business concern and leads to take financial planning of the concern. Financial planning is an important part of the business concern, which helps to promotion of an enterprise.
- 2. Facilitates financial decision making:** FM helps to take sound financial decision in the business concern. Any financial decision makes an immediate and direct effect on the business which in turn will affect the profitability.
- 3. Helps in acquiring financial resources:** FM involves the acquisition of required finance to the business concern. Acquiring needed funds play a major part of the FM, which involves possible source of finance at minimum cost.
- 4. Assists in optimal allocation of funds:** There should be optimum allocation and deployment of funds to various assets in order to achieve maximum return. When the finance manager uses the funds properly, they can reduce the cost of capital and increase the value of the firm.
- 5. Improve Profitability:** Profitability of the concern purely depends on the objectives and proper utilization of funds by the business concern.
- 6. Helps to analyse financial performance:** In order to get maximum return on investment, the cost and benefit of each financial decision must be analysed. If any variations are found, necessary guidance should be given by the financial manager to overcome such situations.



7. **Helps in accounting and reporting:** The financial manager of an organisation should supply information about the financial performance to the top management. Also, he has to provide information to the accounting department in order to maintain up to date records regarding the activities and performance of the organisation.
8. **Helps in Cost Control:** Application of various tools of financial management enables the financial manager to bring costs under control.
9. **Aids in estimation of profit:** profit levels have to be forecasted from time to time to strengthen the organisation. Fm helps in determination and evaluation of expected profits.

### Profit Maximisation vs Wealth Maximisation

<b>Definition</b>	It is defined as the management of financial resources aimed at increasing the value of the stakeholders of the company.	It is defined as the management of financial resources aimed at increasing the profit of the company.
<b>Focus</b>	Focuses on increasing the value of the stakeholders of the company in the long term.	Focuses on increasing the profit of the company in the short term.
<b>Risk</b>	It considers the risks and uncertainty inherent in the business model of the company.	It does not consider the risks and uncertainty inherent in the business model of the company.
<b>Usage</b>	It helps in achieving a larger value of a company's worth, which may reflect in the increased market share of the company.	It helps in achieving efficiency in the company's day-to-day operations to make the business profitable.



---

## **Basic Principles of Financial Decisions/Management**

- 1. Maximisation of wealth:** This principle indicates that all the financial decisions should be taken in such a way to maximize the wealth of the shareholders.
- 2. Time value of money:** The principle indicates that as money has time value, every financial decision should be taken on the basis of the discounted cash flow of investment proposal.
- 3. Risk return trade off:** This principle indicates that in any financial decision risk must commensurate with expected return.
- 4. Balance between liquidity and profitability:** According to these principles the organisation has to maintain sufficient funds for meeting its obligation and at the same time maximize its profitability.
- 5. Suitability:** This principle indicates that short term assets should be financed by short term funds and vice versa.
- 6. Diversification:** In order to minimise risk and maximize profit, the organisation has to invest its funds on different investment proposals.

## **Finance Function**

Finance Function is a task of providing funds required by an enterprise. However, experts have different approaches regarding finance functions. They are-

- 1. Traditional approach**
- 2. Modern approach**



**1. Traditional Approach:** According to traditional concept, financial function is related only to arrangement of funds for the business. Obtaining the funds in the most suitable way and on the best possible terms is the central part of finance function. Financial executive has to take decisions as to the sources of capital and the amount of funds to be raised.

Traditional concept of finance function is related left hand side of Balance sheet. It considers only the procurement of funds and fully ignores the internal decisions making. Again, this approach focuses on long-term financing. As a result, the issues involved in working capital management are not considered in the purview of finance function.

**2. Modern approach:** According to modern approach the meaning of business finance is confined not only to acquisition of funds but also making effective use of such funds.

In the modern approach the following matters should be decided.

- a. The total volume of funds an enterprise should arrange.
- b. The specific assets an enterprise should acquire.
- c. The method of raising the required funds.
- d. The composition of capital.
- e. The allocation of profit.

Three types of decisions are to be taken by the financial managers in order to arrive at a correct decision for the above said matters.

- Investment decisions
- Financing decisions
- Dividend decisions.



**I. Investment decisions:** The investment decision is concerned with how the firm's funds are to be invested in different assets. 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 2 Categories.

**a. Long term Assets**

**b. 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.

These decisions are very crucial for any business. Since they affect its earning capacity in the long run. Moreover, these decisions normally involve huge amounts of investment and are irreversible except at a huge cost.

The decision making process involves measurement of benefits, cost and risks of all alternative proposals. Various tools like Pay Back Period Method, Average rate of Return (ARR) method, Net Present Value method (NPV), Profitability Index Method, Internal Rate of Return method (IRR) etc. are applied for evaluating the projects.

The investment made in the current assets or short term assets is termed as working capital management. This short term investment decisions affect the day-to-day working, liquidity as well as profitability of a business. One significant aspect of current assets investment decision is the trade off between profitability and liquidity.

There is always a conflict between profitability and liquidity. If there is no adequate investment in liquid assets it may have to face liquidity crisis. On the other, if current assets investments are too large, the profitability is adversely affected. Therefore, strategies and considerations in ensuring trade-off between liquidity and profitability is the major dimension of current assets management.



**II. Financing Decision:** Financing decision is concerned with how much finance to be raised and identifying the various available sources for it. The main sources of funds for a firm are owners funds or equity and borrowed funds or debt. Owners funds consist of equity share capital, preference share capital and retained earnings. Borrowed funds refer to the finance raise through debentures, loans, public deposits etc.

The objective of financing decision is to maintain an optimum Capital Structure ie; a proper mix of debt and equity, to ensure the trade-off between the risk and return to the shareholders.

While taking the financial decisions, the finance manager has to take the following points in to consideration.

- The risk involved in raising the funds. The risk is higher in the case of debt as compared to the equity.
- The cost involved in raising the funds. The manager chose the source with minimum cost.
- The level of control, the shareholders, want in the organization also determines the composition of capital structure. They usually prefer the borrowed funds since it does not dilute the ownership.
- The Cash flow from the operations of the business also determines the source from where the funds shall be raised. High cash flow enables to borrow debt as interest can be easily paid.

Thus, a company should make judicious decisions regarding from where, when, how the funds shall be raised, since, more use of equity will result in the dilution of ownership and whereas, higher debt results in higher risk, as fixed cost in the form of interest is to be paid on the borrowed funds.



**III. Dividend Decisions:** Another major area of finance decision is the decision relating to declaration and payment of dividend. Dividend decision relates to how much of the profit earned by the company is to be distributed to the shareholders and how much of it should be retained in the business.

- Dividend provides current income to shareholders
- Retained earnings increase future earning capacity of the company.

The decision regarding dividend should be taken keeping in view the overall objective of maximizing shareholders wealth.

The dividend pay-out ratio is determined on the basis of available investment opportunities and a number of other factors. If adequate profitable investment opportunities are available within the enterprise, profits are to be retained. This is because shareholders would get maximum returns and at the same time price of share would rise. If the enterprise doesn't have investment opportunities the projects should be distributed as dividends to the shareholders.

### **Responsibility of Finance Manager**

- **Estimation of capital requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programmes and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.
- **Determination of capital composition:** Once the estimation have been made, the capital structure have to be decided. This involves short- term and long-term debt equity analysis. This will depend upon the proportion of equity



capital a company is possessing and additional funds which have to be raised from outside parties.

➤ **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-

- Issue of shares and debentures
- Loans to be taken from banks and financial institutions
- Public deposits to be drawn like in form of bonds.

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

➤ **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.

➤ **Disposal of surplus:** The net profits decision has to be made by the finance manager. This can be done in two ways:

- **Dividend declaration** - It includes identifying the rate of dividends and other benefits like bonus.
- **Retained profits** - The volume has to be decided which will depend upon expansion, innovation, diversification plans of the company.

➤ **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintenance of enough stock, purchase of raw materials, etc.

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



## ➤ **Understanding Capital Markets**

Shares of a company are traded on stock exchange and there is a continuous sale and purchase of securities. Hence a clear understanding of capital market is an important function of a financial manager. When securities are traded on stock market there involves a huge amount of risk involved. Therefore a financial manager understands and calculates the risk involved in this trading of shares and debentures.

## **PROFITABILITY VS LIQUIDITY**

Profitability refers to the company's improvement in margins; margins refer to revenue – cost the more the margins are increasing; it reflects enhanced profitability in the company for that financial year. Profitability enhances the equity reserves and growth prospects of the company. On the other hand, liquidity refers to the ability of the firm to meet short-term and long-term obligations which the business needs to pay in the long run and the short-run the current portion of liabilities.

One of the key differences is that it is not necessary always that the profitable company is also liquid in nature that is because the company has invested heavily in the future projects of the company from which the receivables are due after a considerable period of time. This is a major difference that needs to be understood when making financial projections for any company. A company that is not liquid in nature can also go bankrupt in the short run because it does not have enough liquidity in its hands that is why the company needs working capital to meet short-term obligations

Profitability is a measure of business success; that is how well the company is performing over a period of time; it is not an indication of how cash-rich the company is. It cannot tell the analyst the cash position of the company. Liquidity, on the other hand, tells us the cash position of the company, too much cash on the balance sheet



also indicates poor working capital management of the company as the company is bearing the opportunity cost of cash which is lying idle on the balance sheet

Profitability is the financial performance measure of the company, which is indicated in the income statement and is reported as Net profit in the profit and loss account. If the net profit is negative, it indicates that the company is bearing losses in that period. Liquidity is present in the balance sheet on the current assets section of any balance sheet of the company which includes marketable securities, prepaid expenses, and inventories apart from cash

Both Profitability and Liquidity is important for a business as it is a vital aspect for a company. If the company does not have enough cash on its hands, the working capital management will go for a toss, and the company needs to look for a working capital loan which in turn will increase the interest cost of any business. Profitability is also a vital aspect as the company needs to analyze the reason for low-profit growth and also focus on cost reduction.

### **Profitability and Liquidity Comparison Chart**

<b>Profitability</b>	<b>Liquidity</b>
Profitability is for a period and it not a position for a particular time	Liquidity is for a particular time, and it is as on date position and not for a particular time period
Profitability is an income statement item and not a balance sheet item	Profitability is a balance sheet item and notan income statement item



<p>The Key ratios to determine the profitability of the company is:-</p> <ul style="list-style-type: none"> <li>• Gross Profit Margin</li> <li>• Net Profit Margin</li> <li>• EBIDTA Margin</li> <li>• EBIT Margin</li> <li>• CAGR</li> </ul>	<p>The Key ratios to determine the Liquidity of the company is:-</p> <ul style="list-style-type: none"> <li>• Current Ratio</li> <li>• Acid Test Ratio</li> <li>• Quick Ratio</li> <li>• Interest Coverage Ratio</li> <li>• Fixed Coverage Ratio</li> </ul>
<p>Profitability is more important in the long run of the business</p>	<p>Liquidity is more important in the short run of the business</p>
<p>Profitability is a measure of financial performance</p>	<p>Liquidity is a measure of a cash position in the company and how the liquid is the company is to meet its short-term obligations</p>
<p>Profitability is also a degree of how well the company is generating margins from its business</p>	<p>Liquidity is the degree to how well the company can convert its sales into cash</p>

## **RISK-RETURN TRADEOFF**

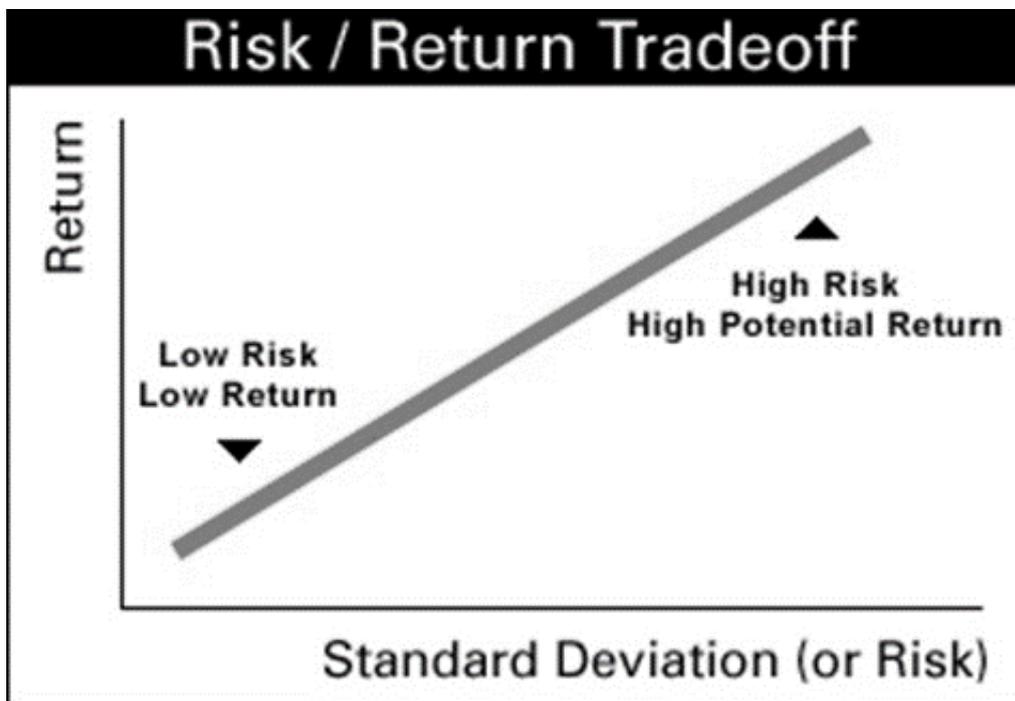
‘Risk’ is inherent in every investment, though its scale varies depending on the instrument. On the other hand, return is the most sought after yet elusive phenomenon in the financial markets. In order to increase the possibility of higher returns, investors need to increase the risk taken. On the other hand, if they are content with low returns, the risk profile of their investment also needs to be low.



Risk-Return Trade-off is the relationship between the risks of investing in a financial market instrument vis-à-vis the expected or potential return from the same. While making investment decisions, one important aspect among the various attributes to consider is what one is getting in return for the investment being made. Though this is one of the first things, investors think of. Another aspect though comparatively less discussed but equally as important, is the quantum of risk being taken while investing.

### **The dynamics of Risk-Return Tradeoff**

The graph below is a Risk-Return Tradeoff the graph. It shows the relationship between these two variables while investing.





## **Low Risk**

The bottom-left corner of the graph shows a low return for low-risk financial instruments. Government-issued bonds, for instance, US Treasuries, are considered to be the lowest risk financial instruments. Because they are backed up by the federal government. But due to the relatively non-speculative nature of the bonds, they have low returns than bonds issued by corporations. In fact, while assessing the expected return of instruments, the return on government bonds is considered to be the risk-free rate.

## **High Risk**

As we move along the upward sloping line in the graph, the risk rises, and so does the potential return. This is understandable as investors parting with their money for riskier assets would demand better returns than risk-free security; else, they have no reason to take that risk. This is the reason why the bonds issued by governments and corporations for the same duration have different yields as corporate bonds. There is also a default risk priced into them, which is not the case with federal bonds.

## **Methods and Tools of Financial Management**

Financial management is frequently the deciding factor between a successful and a failing business. Excellent financial management is the key to running your business processes like a well-oiled machine, regardless of the size of your company or the industry in which it operates.

Also, Business process management can help you to improve your business efficiency and productivity, and can also help you to improve your customer service and communication. Take your business to the next level with a comprehensive business process management course. Learn how to streamline your operations, improve efficiency, and boost productivity.



## Significance of Financial Management Tools

How well an organization's finances are managed determines its financial health. Manual financial systems have various drawbacks, including low accuracy, inability to scale up, laborious tasks, and limited visibility. The following indicators support the need for financial management tools:

**Time-consuming:** When existing financial processes are inefficient and consume employees' productive time, it's time to implement corporate finance software tools. The business's productivity suffers because of inefficient finance processes.

**Complex processes:** Traditional finance operations make it necessary for a great deal of attention and employee participation.

**Scalability:** As a company grows, the volume of financial transactions grows in lockstep. Manual financial tools can't keep up with the demands of a growing organisation.

**Manual Errors:** Human errors are bound to occur in financial records produced by manual processes. Finance procedures must be automated to improve the accuracy of financial systems.

**Less visibility:** Manual finance processes provide you with a limited view of your finances. Finance software allows you to see the status of all your financial transactions in real time and comprehensively.

**Budget** – How much money are you willing to set aside for these financial systems? You may need to implement more integrated platforms and solutions depending on the size of your business, and expenses vary so you need to budget accordingly.



**Security** – Companies must regulate access to sensitive financial information on digital records as financial matters move away from paper to online platforms and become more prone to getting in the wrong hands. Financial management software with granular roles for access control should be the ones used by businesses of all sizes.

There are different types of financial tools available. The financial tools listed here are essential for running your business, and they cover everything from accounting to spending management to budgeting.

## **Top Financial Management Tools**

### **Accounting Systems**

While certain accounting software platforms have long been considered the best, newer software solutions are also becoming more popular. Look for characteristics that are vital to your firm before selecting accounting software. Cloud-based entries, interaction with your POS software, and the ability to email information to your tax preparer quickly are just a few things that you should look out for.

### **Expense Tracking**

During the time when my employees are on the road, they often have various expenses that must be paid, such as meals and mileage. Some accounting software includes these features, but not all, so look for a tool that interfaces with your accounting software if it isn't already included. Also, make certain you aren't paying for more than you require. Some expense management software is more powerful than what a typical small-to-medium-sized organisation needs.



---

## **Budgeting Tools**

Maintaining meticulous budgeting is one of the most important strategies for a firm to succeed. It's easier to manage your cash flow and prepare for the months ahead when you know how much money is coming in and going out. In general, I check inflows using reports from my company's accounting software.

## **Payroll Management**

There's a lot that goes into running a company's payroll and making mistakes here may be costly. The best payroll systems for small-to-mid-size enterprises are those that scale with your company's growth and interface with your accounting software. If you operate with both freelancers and W2 workers, you'll want to make sure your solution is user-friendly for both.

## **Easy Billing**

Your business may suffer if you wait for your vendors to pay their bills. Paying late might be a common business practice for some large organisations, and you may have little choice but to work with a different company altogether. However, for other firms, having quick and simple billing and payment choices may be more convenient.

## **Inventory Tracking**

Sales are tracked by POS software, and profits and losses are tracked by accounting software, but how do you keep track of your inventory? It may be easier to keep track of goods in only one location. When you're looking at things in numerous locations, on the other hand, you'll need more robust tools to keep everything organised. Inventory monitoring and tracking software can save your time and money while also giving you a competitive advantage.



## **Tax Preparation**

It can be difficult to choose the correct tax preparation software application with so many options available in the market. A company's tax preparation software must integrate with all the other platforms used in the company.

## **Xero (Accounting Software)**

Xero, a well-known accounting software firm, provides a platform for employees and consumers to streamline monetary transactions. Report generation, computerised recordkeeping, expense computation, and invoicing are just a few of the features. Xero can also be used to handle inventory and sales orders, eliminating the need for human data entry.

## **Time Value of Money**

Under this concept the value of money received today is more than the value of same amount of money received after a certain period. In other words, time value of money refers to the fact that the value of one rupee tomorrow is lower than the value of one rupee today.

This is due to 2 reasons,

1. One rupee today will grow to more than a rupee later, due to interest factor.
2. Secondly the receipt of one rupee in future is riskier than receiving it at present.

## **Techniques of Time value of money**

The following are employed for determining time value of money.

- a. Compounding or Future Value Technique
- b. Discounting or Present Value Technique.



**a. Compounding or Future Value Technique:** According to the compounding technique, the interest earned on the principal amount becomes a part of the principal at the end of compounding period. The interest received is re-invested. It is also giving the time preference for money. If a person is waiting for money he will be rewarded by more money in future. Future value refers to the amount of money an investment will grow over some period of time at a given interest rate. Computation of future value is otherwise called compounding.

**c. Discounting or Present Value Technique:** Present value technique is directly opposite to compound or future value method. It is an important technique for making financial decisions. Under discounting or present value technique money to be received in future date will be less because the opportunity cost is lost in the form of interest. The current value of future of future cash flows discounted at the appropriate discount rate is called present value. Computation of present value is otherwise called discounting.

**Reasons for time preferences for money:** Normally people prefer to receive money at the earliest because of the following reasons.

- 1. Uncertainty and loss:** Anything may happen in future. Future is always uncertain and involves huge risk. There may be a chance of not getting the cash inflow for the organization and hence they will like to receive money immediately.
- 2. To Satisfy present needs:** Most of the people prefer to use the money for satisfying present needs than future needs. They feel present needs are more urgent as compared to future needs.
- 3. Investment Opportunities:** Money has time value. As more and more investment opportunities are available, people prefer to invest money immediately for exchanging their earnings.



## **Financial Information System**

A Financial Information System is a computer-based information system, that gathers, stores, and analyses the financial information which is further useful for the decision making. Financial is also useful for the financial planning. It helps in the decision making and it is also work in conjunction with the decision support system. It also reduces the paperwork and maintains all the records up to date.

**There are various activities under the financial management are:**

- Cash management
- Investment Management
- Financial Planning
- Capital budgeting

All these activities require decisions which are taken with the help of financial information systems. FIS analyses whole finance related activities in the business and takes optimum decision which is helpful in achieving the goals of the organization.

A financial information system provides information to all the parties of the firm either internal or external in the form of reports and any other documents. It is useful system in the organization. As we all know finance plays most important role in the organization without finance no firm can survive for a long run. Finance is like a blood. If finance is the significant element then the information also plays most important role. It not only provides information to the executives but also useful for the public.



## **Principles of Financial Information System**

**Following are the principles of Financial Information System**

### **1. Cost effectiveness:**

This system must be cost effective. It must outweigh information cost. It can provide desired output and flexible structure

### **2. Useful output:**

Financial information system must be able to provide necessary result The information must be understandable, relevant, reliable, timely and accurate.

### **3. Flexible:**

In accounting information system there must be provision of inclusion of changed information needed by different users. It must be able to meet the changed demand.

## **Functions of Financial Information System**

The various functions of the financial information system are explained as under:

### **1. Collection of Data:**

Under the financial information system, the first main element is the collection of data On the basis of data, the best decision is to be taken Under this various activities are performed like collection, analyzing, maintaining the information.



## **2. Monitoring and controlling the funds:**

Financial information system helps in controlling the funds. It tracks the revenue and expenditure in the organization. As FIS is a computer-based system which keeps record of the whole activities in it.

## **3. Analyze Past and Current Activities:**

Financial information system analyzes whole activities. It checks the current as well as past activities so that future decisions can be easily taken. The main aim of the FIS is to maintain record of all the finance-related operations in the organization.

## **4. Helps in Decision Making:**

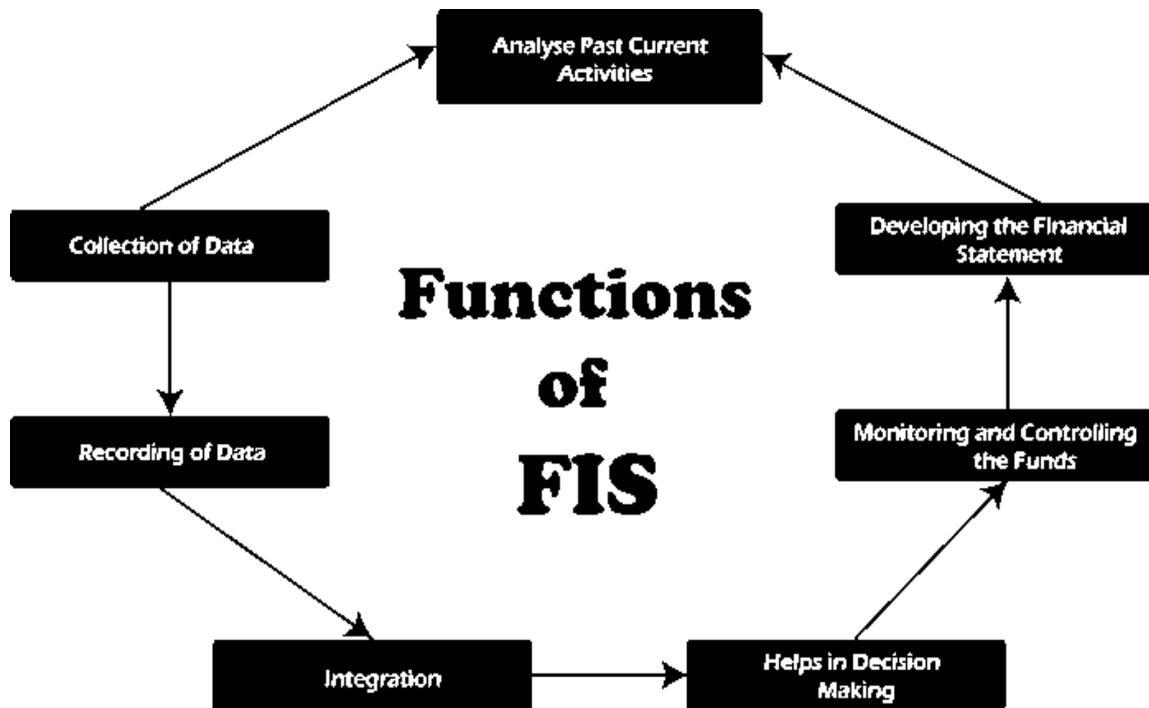
As we know, the DSS supports FIS with the help of financial information the optimal decision is to be taken. All the financial-related decisions, budgeting, investment is taken with the help of financial information system.

## **5. Generating Financial Statement:**

Financial information system collects whole finance-related information and after proper analysis the financial statement is to be generated so that which is useful for the management for decision making.

## **6. Recording of Data:**

Financial information system records whole data in the system which can be retrieved at any time when required. So whole data is saved or maintained under it which can be used at any time.



## Components of Financial Information System

The various Components of Financial Information System are:

### 1. Financial Accounting:

Financial accounting records all the financial transactions in accounts. It records all assets, liabilities, revenue and expenditure. Financial accounting is useful for the maintenance of the statements.



---

## **2. Fund Management:**

Under the financial information system, fund management plays an active role in the organization. It is a crucial aspect of financial management, the main aim of fund management is to maximize the profits from its investment.

## **3. Controlling:**

Controlling component is useful for the maintenance of whole activities in the organization. It records the revenue and expenditure of all the departments and lead desirable change by controlling the activities.

## **Financial Forecasting**

Financial forecasting is predicting a company's financial future by examining historical performance data, such as revenue, cash flow, expenses, or sales. This involves guesswork and assumptions, as many unforeseen factors can influence business performance. Financial forecasting is important because it informs business decision-making regarding hiring, budgeting, predicting revenue, and strategic planning. It also helps you maintain a forward-focused mindset.

Each financial forecast plays a major role in determining how much attention is given to individual expense items. For example, if you forecast high-level trends for general planning purposes, you can rely more on broad assumptions than specific details. However, if your forecast is concerned with a business's future, such as a pending merger or acquisition, it's important to be thorough and detailed.

## **Financial Forecasting Methods**

Pro forma statements are incredibly valuable when forecasting revenue, expenses, and sales. These findings are often further supported by one of seven financial forecasting methods that determine future income and growth rates.



There are two primary categories of forecasting: quantitative and qualitative.

## **Quantitative Methods**

When producing accurate forecasts, business leaders typically turn to quantitative forecasts, or assumptions about the future based on historical data.

### **1. Percent of Sales**

Internal pro forma statements are often created using percent of sales forecasting. This method calculates future metrics of financial line items as a percentage of sales. For example, the cost of goods sold is likely to increase proportionally with sales; therefore, it's logical to apply the same growth rate estimate to each.

To forecast the percent of sales, examine the percentage of each account's historical profits related to sales. To calculate this, divide each account by its sales, assuming the numbers will remain steady. For example, if the cost of goods sold has historically been 30 percent of sales, assume that trend will continue.

### **2. Straight Line**

The straight-line method assumes a company's historical growth rate will remain constant. Forecasting future revenue involves multiplying a company's previous year's revenue by its growth rate. For example, if the previous year's growth rate was 12 percent, straight-line forecasting assumes it'll continue to grow by 12 percent next year. Although straight-line forecasting is an excellent starting point, it doesn't account for market fluctuations or supply chain issues.



### **3. Moving Average**

Moving average involves taking the average—or weighted average—of previous periods to forecast the future. This method involves more closely examining a business's high or low demands, so it's often beneficial for short-term forecasting. For example, you can use it to forecast next month's sales by averaging the previous quarter.

Moving average forecasting can help estimate several metrics. While it's most commonly applied to future stock prices, it's also used to estimate future revenue.

To calculate a moving average, use the following formula:

$$A1 + A2 + A3 \dots / N$$

A = Average for a period

N = Total number of periods

Using weighted averages to emphasize recent periods can increase the accuracy of moving average forecasts.

### **4. Simple Linear Regression**

Simple linear regression forecasts metrics based on a relationship between two variables: dependent and independent. The dependent variable represents the forecasted amount, while the independent variable is the factor that influences the dependent variable.



The equation for simple linear regression is:

$$Y = BX + A$$

Y = Dependent variable (the forecasted number)

B = Regression line's slope

X = Independent variable

A = Y-intercept

## **5. Multiple Linear Regression**

If two or more variables directly impact a company's performance, business leaders might turn to multiple linear regression. This allows for a more accurate forecast, as it accounts for several variables that ultimately influence performance.

To forecast using multiple linear regression, a linear relationship must exist between the dependent and independent variables. Additionally, the independent variables can't be so closely correlated that it's impossible to tell which impacts the dependent variable.

## **6. Proforma Financial Statements:**

Proforma statements use sales figures and costs from the previous two to three years after excluding certain one-time costs. This method is mainly used in mergers and acquisitions, as well as in cases where a new company is forming and statements are needed to request capital from investors.

## **Qualitative Methods**

When it comes to forecasting, numbers don't always tell the whole story. There are additional factors that influence performance and can't be quantified. Qualitative forecasting relies on experts' knowledge and experience to predict performance rather than historical numerical data. These forecasting methods are often called into question, as they're more subjective than quantitative methods.



### **1. Executive Opinions:**

In this method, the expert opinions of key personnel of various departments, such as production, sales, purchasing and operations, are gathered to arrive at future predictions. The management team makes revisions in the resulting forecast, based on their expectations.

### **2. Reference Class Forecasting:**

This method involves predicting the outcome of a planned action based on similar scenarios in other times or places. This is used to defy predictions that are arrived at based only on human judgment.

### **3. Delphi Technique:**

Here, a series of questionnaires are prepared and answered by a group of experts, who are kept separate from each other. Once the results of the first questionnaire are compiled, a second questionnaire is prepared based on the results of the first. This second document is again presented to the experts, who are then asked to reevaluate their responses to the first questionnaire. This process continues until the researchers have a narrow shortlist of opinions.

### **4. Sales Force Polling:**

Some companies believe that salespersons have close contact with the consumers and could provide significant insights regarding customer behavior. In this method of forecasting, the estimates are derived based on the average of sales force polling.

### **5. Consumer Surveys:**

Businesses often conduct market surveys of consumers. The data is collected via telephonic conversations, personal interviews or survey questionnaires, and extensive statistical analysis is conducted to generate forecasts.



## **6. Scenario Writing:**

In this method, the forecaster generates different outcomes based on diverse starting criteria. The management team decides on the most likely outcome from the numerous scenarios presented.

### **Changing Scenario of Financial Management in India**

A good finance manager should see all updates, changes in the fields of financial management. He should be interested to know what new sources of funds are developed at international level.

#### **1st Changing Scenario of Financial Management in India : Interest Rates**

Interest rates are control by RBI and other commercial bank's rates are affected from RBI's action. If you have to ascertain cost of debt, you should know this.

#### **2nd Changing Scenario of Financial Management in India : Value of Shares**

Value of shares can be determined at premium or discount freely. Financial manager should determine shares value at optimum level because under and over subscription both will decrease the EPS.

#### **3rd Changing Scenario in Merge**

A good finance manager, should keep an eye on who is takeover which company. To merge other company may be sometime most profitable deal. Like other type of investment, finance manager should take of its benefit.



## **Role of a Financial Manager**

A financial manager is a person who is responsible for taking care of all the essential financial functions of an organization. Nowadays, Finance Managers spend less time producing financial reports and prefer to invest more time in conducting data analysis, planning and strategizing, or advising senior managers or top executives. The role of a financial manager is rapidly increasing due to advance technology which has significantly reduced the amount of time that was occupied to produce financial reports.

- They analyze market trends to find opportunities for expansion or for acquiring companies.
- They have to do some tasks that are specific to their organization or industry
- They manage company credit
- Make some dividend pay-out decisions
- Keep in touch with the stock market if the company is listed
- Appreciate the financial performance concerning return investments
- They maximize the wealth for company shareholders
- To handle financial negotiations with banks and financial institutions



## UNIT - II

### SOURCES OF FINANCE AND FINANCIAL PLANNING

#### FINANCIAL PLANNING

Financial planning is the practice of putting together a plan for your future, specifically around how you will manage your finances and prepare for all of the potential costs and issues that may arise. The process involves evaluating your current financial situation, identifying your goals and then developing and implementing relevant recommendations. Financial Planning includes all the activities that apply general management standards to the financial resources of a firm such as planning, directing, organizing, and procurement of funds, investment, and return of the funds. In this article, students will learn about the meaning, objectives, and features of financial planning. Financial Planning is one of the major planning that is required to be conducted by the management. Financial Planning includes all the activities which are related to the procurement of funds, investing those funds, and the return expected from the investment done.

A financial plan is an overall evaluation of an individual's current pay and future financial state by using the current known variables to predict the future income, asset values, and withdrawal plans. Financial Planning includes the budget which organizes the business and the individual finances and at times includes a series of steps or specific goals for spending and saving for the future. This plan distributes the future income to various types of expenses such as rent or utilities and also reserves some income for the short-term and long-term savings as well. A financial plan is sometimes referred to as an investment plan, while personal financing focuses on specific areas like risk management, estates, colleges, or retirement.

#### Objectives

There two main objectives of financial planning which are given below:

- **Ensuring Availability of Funds When Required:** The foremost and most important objective of financial planning is to keep in check that funds are



available in cases of emergency or whenever it is required for use. Sufficient funds should be available with the firms for various purposes.

- **Check Unnecessary Fundraising by the Firms:** Insufficient funds are just as bad as surplus funds. Idle money will only result in a loss for a firm as against investment. Therefore, proper allocation of funds is a very important part of financial planning.

### Features

There are a number of features of financial planning that are important for firms and individuals. These are listed below:

- **Foresight:** A plan made without foresight will only result in a disaster. Foresight is needed in planning for estimating risks and the need for liquid and other assets. It may not be 100% accurate but it should be able to give an estimate of the future risks.
- **Flexibility:** A plan made should be flexible as it will help in the future to make adjustments according to the needs.
- **Optimal Usage of Funds:** A financial plan should be able to utilize idle money and assets so that they can prove to be fruitful in the future. It does not involve funds kept aside for unforeseen circumstances but the assets that could be otherwise utilized.
- **Simplicity:** Financial planning should be simple in terms of structure and should be able to provide a sound allocation of resources that can be easily understood even by a layman.
- **Liquidity:** It is also a very important aspect of financial planning which involves keeping current assets in the form of money. This will help in easy allocation and payment of various kinds like salary, fees, and other kinds.



## **Business Finance**

Business finance is the funds required to establish, operate business activities, and expand in the future. Funds are specifically required various purchase type of tangible assets such as furniture, machinery, buildings, offices, factories, or intangible assets like patents, technical expertise, and trademarks, etc. For carrying out various activities, business requires money. Finance, therefore, is called the life blood of any business. The requirements of funds by business to carry out its various activities are called business finance.

### **Significance of Business Finance / Importance:**

- i. To purchase fixed assets such as land and building, plant and machinery, furniture etc.
- ii. For meeting the cost of current assets such as stock, bills receivable etc.
- iii. For meeting the running expense/day to day expense of business.
- iv. Meeting the cost of raising finance.
- v. Meeting the expense in connection with the formation of a company.
- vi. Providing for the growth and expansion of business.

### **Factors determining the Source of Funds:**

Different sorts of enterprises have various financial requirements. As a result, businesses turn to a variety of funding sources. Companies choose to employ a variety of sources instead of depending on a single one since no source of funding is risk-free and without certain restrictions. We'll go over each one as it influences the decision to choose this combination:

### **Cost:**

When choosing the type of finances that will be utilised by an organisation, both the cost of obtaining the funds and the cost of using them are taken into account.



---

### **Financial Strength and Stability of Operations:**

The company's financial status and stability should be taken into consideration. A firm has to be financially secure since money must be returned to the source from which it was borrowed. Preference shares and debentures should not be purchased when the company's financial status is unstable.

### **Form of Organisation and Legal Status:**

A business's legal structure either permits or forbids the use of various funding alternatives. For example, only a public corporation, not a partnership firm or even a private company, can offer equity stock to raise capital from the market.

### **Purpose & Period:**

The choice is greatly influenced by the objectives and time. In contrast to long-term use of money, which has a variety of sources from which a corporation can pick, short-term use of finances also has a variety of sources.

### **Risk Profile:**

Distinct types of financial sources have different risk factors linked with them. For instance, there is the least risk of stock since dividends are not required to be paid when there is no profit, and shareholding must only be reimbursed at the point of winding up, but with debentures, the interest payment conditions are the complete opposite.

### **Control:**

A firm must give up some ownership and control to the investor in order to raise money by offering equity shares, but it need not do so when raising money by borrowing money or issuing debt securities like debentures.



## Classification of sources of funds

The various sources of funds can be broadly classified on the basis of the following three categories.

### 1. Period Basis                      2. Ownership Basis                      3. Generation Basis

**1. PERIOD BASIS :** On the basis of period, the different sources of funds can be categorized into three parts. These are long - term sources, medium – term sources and short – term sources.

- a. Long Term finance:-** The long- term sources fulfill the financial requirements of an enterprise for a period exceeding 5 years and include sources such as shares and debentures, long- term borrowings and loans from financial institutions. Such financing is generally required for the acquisition of fixed assets such as land and buildings, plant and machinery, furniture, equipment, etc.
- b. Medium Term finance:-** Where the funds are required for a period of more than one year but less than five years, medium- term sources of finance are used. A manufacturing concern needs this type of finance when it undertakes programs of modernizing plant and machinery, introducing new products or adopting new methods of production. These sources include borrowings from commercial banks, public deposits, debentures and loans from financial institutions.
- c. Short Term finance:-** Short- term funds are those which are required for a period not exceeding one year. In other words finance required for meeting day – to – day operations of a business is called short term finance. Trade credit, loans from commercial banks, public deposits, customer advances etc are the main sources of short term finance.

Short term finance is often called working capital as it is needed for making investments in current assets. Funds invested in current assets keep



revolving fast and constantly converted into cash and from cash to current assets. Thus it is also called circulating capital.

**2. OWNERSHIP BASIS:-** On the basis of ownership, the sources can be classified into 'owner's fund' and 'borrowed funds'.

**(a) Owner's Funds or Owned Capital:-** Owner's funds means funds that are provided by the owners of an enterprise, which may be a sole trader or partners or shareholders of a company.

It is a source of permanent capital, i.e. owner's capital remains invested in the business for a longer duration. It is not required to be refunded during the life period of the business. Issue of equity shares and retained earnings are the two important sources from where owner's funds can be obtained.

### **Features**

- a. It is permanently available in the business
- b. It provides risk capital
- c. It acts as basis for the control and management of the concern
- d. It does not carry any charge against the assets of the company.

### **b. Borrower's Funds or Borrowed Capital**

Borrowed funds on the other hand, refer to the funds raised through loans or borrowings from outside the business. The sources for raising borrowed funds include loans from commercial banks, loans from financial institutions, issue of debentures, public deposits and trade credit etc...

### **Features**

- a. It is available for a fixed period.
- b. The lenders does not have any control over the company
- c. It is backed by the security of tangible assets of the company.
- d. It involves the payment of fixed rate of interest at regular intervals.

**3. Generation Basis :** On the basis sources of generation, the sources can be classified into :

- a. Internal sources
- b. External sources



- a. **Internal sources** : Internal sources of funds refer to funds that are generated from within the business.
- b. **External sources** : External sources of funds are those sources that exist outside the business.

**ISSUE OF SHARES** :- Share means a share in the share capital of a company. It is the smallest unit in the share capital of a company.

**(a) Equity Shares or Ordinary Shares** :- Equity shares are the most important source of raising long term capital by a company. Equity shares represent the ownership of a company and thus the capital raised by issue of such shares is known as ownership capital or owner's funds. Equity shares are those shares which do not carry any special rights in respect of payment of annual dividend and repayment of capital.

### **Merits / Advantages**

The important merits of raising funds through issuing equity shares are given below.

1. Equity shares are suitable for investors who are willing to assume risk for higher returns.
2. Payment of dividend to the equity shareholders is not compulsory. Therefore, there is no burden on the company in this respect.
3. Equity capital serves as permanent capital as it is to be repaid only at the time of liquidation or winding up of a company.
4. Funds can be raised without creating any charge on the assets of the company.
5. Democratic control over management of the company is assured due to voting rights of equity shareholders.
6. It enjoys free transferability

### **Limitations/ Demerits / Disadvantages**

The major limitations of raising funds through issue of equity shares are as follows.

1. Investors who want steady income may not prefer equity shares as equity shares get fluctuating returns.



2. The cost of equity shares is generally more as compared to the cost of raising funds through other sources.
3. Issue of additional equity shares dilutes the voting power, and earnings of existing equity shareholders.
4. More formalities and delays are involved while raising funds through issue of equity shares

**b. Preference shares** – preference shares are those shares which carry preferential rights in respect of dividend and repayment of capital in the event of winding up of the company. The capital raised by issue of preference shares is called ‘preference share capital’.

### **Merits / Advantages**

The merits of preference shares are given as follows

1. Preference shares provide reasonably steady income in the form of fixed rate of return and safety of investment
2. It does not affect the control of equity shareholders over the management as preference shareholders don't have voting rights
3. Payment of fixed rate of dividend to preference shares may enable a company to declare higher rates of dividend for the equity shareholders in good times.
4. Preference shareholders have a right of repayment of capital over equity shareholders in the event of liquidation of a company.
5. Preference capital does not create any sort of charge against the assets of a company.

### **Limitations / Demerits / Disadvantages**

The major limitations of preference shares as source of business finance are as follows.

1. Preference shares are not suitable for those investors who are willing to take risk and are interested in higher return



2. The rate of dividend on preference shares is generally higher than the rate of interest on debentures;
3. The dividend paid is not deductible from profits as expense. Thus, there is no tax saving as in the case of interest on loans.
4. Preference shareholders enjoy limited voting rights.

### **RETAINED EARNINGS / PLOUGHING BACK OF PROFITS**

A company generally does not distribute all its earnings amongst the shareholders as dividends. A portion of the net earnings may be retained in the business for use in the future. This is known as retained earnings. It is a source of internal financing or self financing or 'ploughing back of profit'. They are re-invested into the business year after year for further expansion and modernization.

#### **Merits / Advantages**

The merits of retained earnings are as follows

1. Retained earnings are permanent source of funds available to an organization
2. As the funds are generated internally, there is a greater degree of operational freedom and flexibility;
3. It makes the company financially strong
4. It does not involve any cost for raising finance
5. It enhances business reputation

#### **Limitations / Demerits / Disadvantages**

1. Excessive ploughing back may cause dissatisfaction amongst the shareholders as they would get lower dividends
2. It is an uncertain source of funds as the profits of business are fluctuating
3. It results in reduction of the current rate of dividend to shareholders.

### **DEBENTURES**

1. Debentures are an important instrument for raising long term debt capital. A debenture is a document or certificate issued by a company under the common seal acknowledging its debt to the holder at given terms and conditions. Debenture holders are paid a fixed stated amount of interest at specified intervals say six months or one year.



### **Merits / Advantages**

The merits of raising funds through debentures are given as follows:

1. It is preferred by investors who want fixed income at lesser risk
2. The issue of debentures is suitable in the situation when the sales and earnings are relatively stable
3. As debentures do not carry voting rights, financing through debentures does not dilute control of equity shareholders on management.
4. Financing through debentures is less costly as compared to cost preference or equity shares.

### **Limitations / Demerits / Disadvantages**

1. Debentures put a permanent burden on the earnings of a company.
2. The company has to repay the money on the specified date, even during periods of financial difficulty
3. Each company has certain borrowing capacity. With the issue of debentures, the capacity of a company to further borrow funds reduces.

<b>SHARES</b>	<b>V/S</b>	<b>DEBENTURES</b>
It is the part of the ownership capital of the company		It is the part of the creditor ship capital of company
A share holder is an owner		A debenture holder is a creditor
A share holder has a right to vote		A debenture holder has no right to vote
A share holder gets dividend		A debenture holder gets interest
No dividend unless the company has earned profit		Interest is always payable whether there is profit or not



Share holders have no charge on the asset of the company	Debenture holders have charge on the assets of the company
In case of winding up, share holders have no prior claim over the debenture holder	In case of winding up, debenture holders have prior claim over the share holders

### **Loans from financial institutions**

Financial institutions are institutions established by the central as well as state governments to meet both long and medium term financial requirements of business organizations. These institutions are also known as 'Development Banks'. Following are some of the major specialized financial institution functioning in India:

- a. Industrial Finance Corporation of India (IFCI)
- b. Industrial Development Bank of India (IDBI)
- c. State Financial Corporation (SFC)
- d. Industrial Credit and Investment Corporation of India (ICICI)
- e. Unit Trust of India (UTI)

**Factoring** : A factor is a financial institution which offers services relating to management and financing of debts arising out of credit sales. Factoring is a financial service under which the 'factor' renders various services which includes.

- a. Discounting of bills and collection of the client's debt.
- b. Providing necessary information.

**COMMERCIAL BANKS** : Commercial banks occupy a vital position as they provide funds for different purposes as well as for different time periods. Banks extend loans to firms of all sizes and in many ways, like, cash credits, overdrafts, term loans, purchase / discounting of bills, and issue of letter of credit.

**Trade Credit** : Trade credit is the credit extended by one trader to another for the purchase of goods and services. Trade credit facilitates the purchase of goods without immediate payment.



### **Merits**

- (i) Trade credit is a convenient and continuous source of funds;
- (ii) Trade credit may be readily available in case the credit worthiness of the customers is known to the seller;
- (iii) It does not create any charge on the assets of the firm while providing funds.

### **Limitations**

- (i) Availability of easy and flexible trade credit facilities may induce a firm to indulge in overtrading, which may add to the risks of the firm;
- (ii) It is generally a costly source of funds as compared to most other sources of raising money
- (iii) It can generate only limited amount of funds for short period.

### **Lease Financing**

A lease is contractual agreement whereby one party i.e., the owner of an asset grants the other party the right to use the asset in return for a periodic payment. In other words it is a renting of an asset for some specified period. The owner of the assets is called the 'lessor' while the party that uses the assets is known as the 'lessee'.

### **Merits**

- (i) It enables the lessee to acquire the asset with a lower investment;
- (ii) Simple documentation makes it easier to finance assets;
- (iii) Lease rentals paid by the lessee are deductible for computing taxable profits;
- (iv) It provides finance without diluting the ownership or control of business;

### **Limitations**

- (i) A lease arrangement may impose certain restrictions on the use of assets.
- (ii) The normal business operations may be affected in case the lease is not renewed.
- (iii) It may result in higher payout obligation in case the equipment is not found useful and the lessee opts for premature termination of the lease agreement;



## **Public Deposits**

The deposits that are raised by organisations directly from the public are known as public deposits.

### **Merits**

- (i) The procedure of obtaining deposits is simple and does not contain restrictive conditions as are generally there in a loan agreement;
- (ii) Cost of public deposits is generally lower than the cost of borrowings from banks and financial institutions;
- (iii) As the depositors do not have voting rights, the control of the company is not diluted.

### **Demerits**

- (i) New companies generally find it difficult to raise funds through public deposits;
- (ii) It is an unreliable source of finance as the public may not respond when the company needs money;
- (iii) Collection of public deposits may prove difficult, particularly when the size of deposits required is large.

## **Commercial Paper (CP)**

Commercial paper is an unsecured promissory note issued by a firm to raise funds for a short period, varying from 15 days to 364 days. It is issued by large and creditworthy companies to raise short term funds at lower rates of interest than market rates.

### **Merits**

- (i) A commercial paper is sold on an unsecured basis and does not contain any restrictive conditions;
- (ii) As it is a freely transferable instrument, it has high liquidity;
- (iii) A commercial paper provides a continuous source of funds.
- (iv) It provides more funds compared to other sources.



## Limitations

- (i) Only financially sound and highly rated firms can raise money through commercial papers.
- (ii) The maturity of a commercial paper cannot be extended.

## INTERNATIONAL FINANCING / INTERNATIONAL SOURCES OF FINANCE

- 1. Commercial Banks:** Commercial Banks all over the world extend foreign currency loans for business purposes. They are an important source of financing non-trade international operations. The types of loans and services provided by banks vary from country to country.
- 2. International Agencies and Development Banks :** International agencies and development bank provide long and medium term loans and grants to promote the development of economically backward areas in the world. The most important among them include International Finance Corporation (IFC), EXport IMport Bank (EXIM) ban and Asian Development Bank (ADB).
- 3. International Capital Markets :** Many organizations including Global enterprises depend upon international capital markets for sizeable borrowings. The most prominent financial instruments are :
  - (a) **Global Depository Receipts (GDR's):-** The local shares of a company are derived to the depository bank. The depository bank issues depository receipts against these shares. Such depository receipts denominated in US dollars are known as Global Depository Receipts (GDR). GDR is a negotiable instrument and can be traded freely like any other security.
  - (b) **American Depository Receipts (ADR's):-** The depository receipts issued by a company in the USA are known as American Depository Receipts. ADR are bought and sold in American markets like regular stock. It is similar to a GDR



except that it can be issued only to American citizens and can be listed and traded on a stock exchange of USA.

(c) **Indian Depository Receipt (IDRs)** : It is a financial instrument denominated in Indian Rupee in the form of a Depository Receipt. It is created by an Indian Depository to enable a foreign company to raise funds from the Indian Securities Market.

## **MANAGEMENT OF WORKING CAPITAL**

Working capital is the money available to a company for its day to day activities. It is that part of a firm's capital which employed for short term business operations. Adequate amount of working capital is very essential for the success of a business, and therefore it is regarded as the life blood of business. Working capital is defined as the excess of current assets over current liabilities.

### **CONCEPTS OF WORKING CAPITAL**

Working capital may be expressed as;

1. Gross Working Capital
2. Net Working Capital, and
3. Zero Working Capital

#### **Gross Working Capital**

Gross working capital is the sum total of company's investments in current assets. Current assets are those assets which can be converted in to cash within a period of one year. Current assets include;

- a. Cash in hand and at bank
- b. Short term investments
- c. Trade debtors
- d. Bills receivables



- e. Stock of raw materials, work-in-progress and finished goods
- f. Pre paid expenses
- g. Consumable stores

### **Net Working Capital**

Net working capital is the excess of current assets over current liabilities.

Working capital = Current assets – Current liabilities

Current liabilities are those claims of outsiders which are expected to mature for payment within a period of one year. Current liabilities include;

- a. Short term borrowing
- b. Sundry creditors
- c. Bills payable
- d. Bank over draft
- e. Outstanding expenses
- f. Advance received from customers.

The net working capital may be positive or negative. A positive working capital is one where the current asset exceeds current liabilities. A negative working capital is one where current assets are less than current liabilities.

### **Zero Working Capital**

It is a modern concept developed in working capital management.

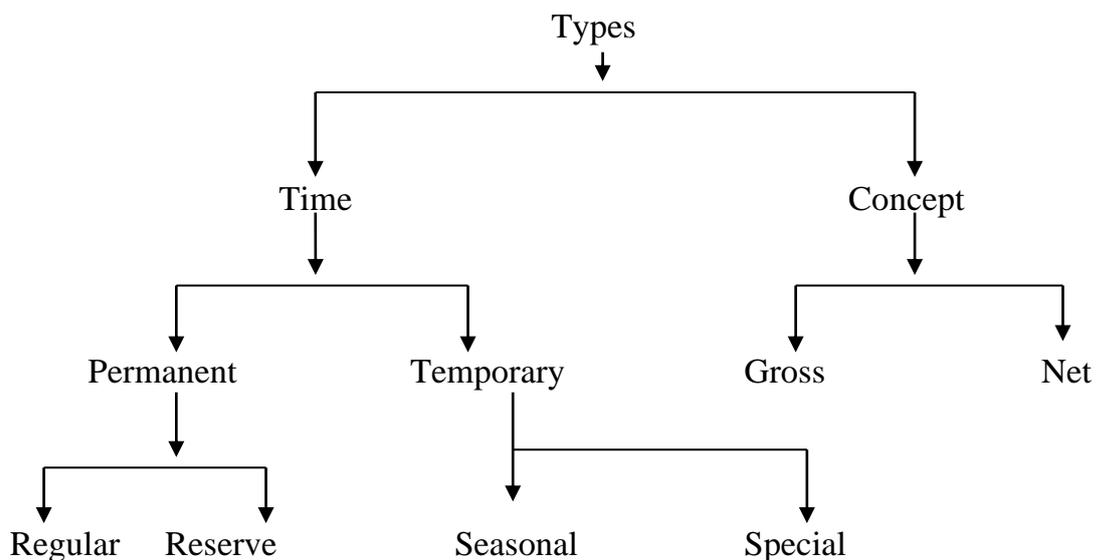
Zero working capital = Inventories + Receivables - Payables.



### Difference between gross and net working capital

Gross working capital	Net working capital
It means total current assets	It mean current assets – current liabilities
It is the total amount available for financing current assets	It is the firm’s ability to meet current liabilities
It is suitable for companies	It is suitable for sole traders and firms
Never become negative	When current liability exceeds current assets, it become negative
It indicate the quantitative aspects	It indicate the qualitative aspects
It does not reveal true financial position	It reveal true financial position

### Types of Working Capital





## **Permanent Working Capital**

Permanent working capital is the minimum amount of investment in all current assets which must be kept in order to carry on the business. It is the investment in current assets which is permanently locked up in the business. It is also known as fixed working capital. It is always a minimum level of current assets.

It can be further classified as regular working capital and reserve working capital.

Regular working capital is the minimum amount of liquid working capital that is in the form of cash to inventories, cash to receivables and so on. Reserve working capital is the amount of working capital which may be used for meeting contingencies like strike, raising price etc.

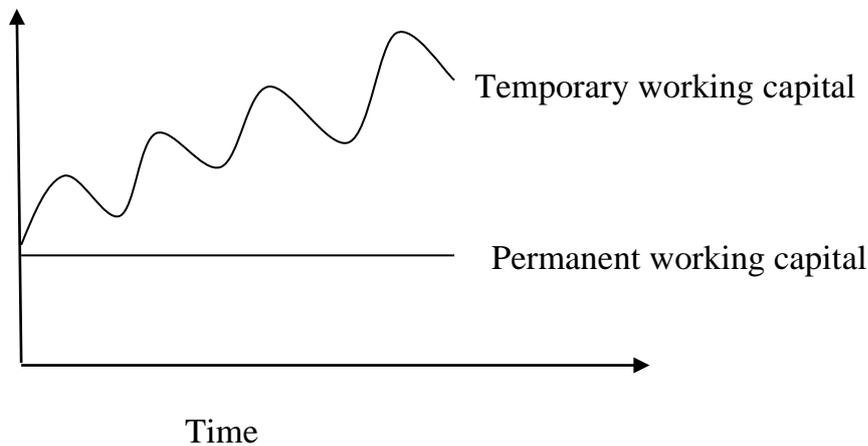
## **Temporary Working Capital (Variable Working Capital)**

Variable working capital is the working capital which is needed over and above the fixed working capital. It is the extra working capital needed to support the changing production and sales activities. It is also known as fluctuating working capital.

Working capital needed for seasonal demands are called seasonal working capital. Special working capital is required to meet special operations such as launching of extensive marketing campaign requirements.



The following figure displays permanent and variable working capital.



### **Need and significance of working capital management (Operating Cycle)**

If production sales and collection of cash are instantaneous there is no need for maintaining working capital. However, there is time gap between;

- a. Investment in business and production
- b. Production and sales, and
- c. Sales and collection of cash.

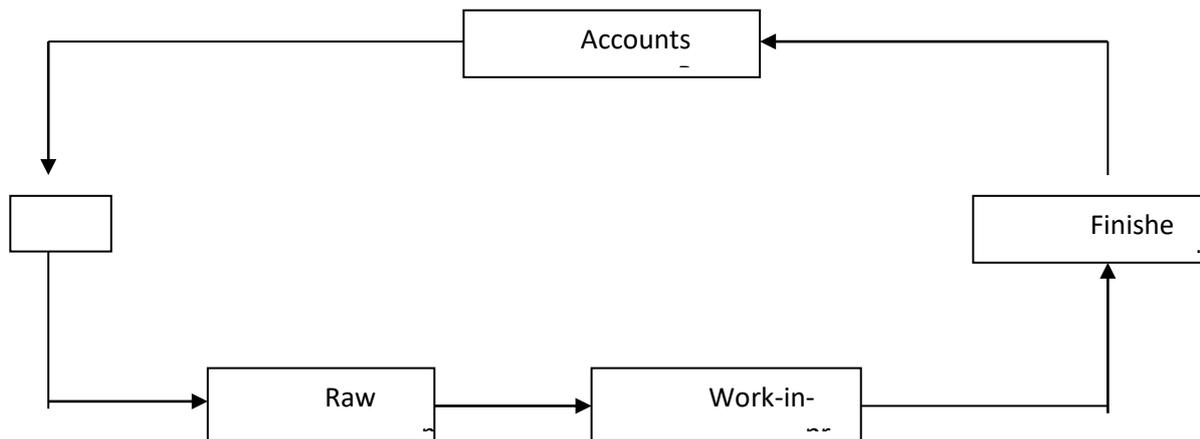
This time gap is technically known as operating cycle. In a manufacturing concern the operating cycle is the length of time necessary to complete the following cycle of events.

1. Conversion of cash in to raw materials
2. Conversion of raw material in to work-in-progress
3. Conversion of work-in-progress in to finished goods
4. Conversion of finished goods in to accounts receivable, and
5. Conversion of accounts receivable in to cash.



This cycle will be repeated again and again.

The operating cycle is shown in the following chart.



### **Importance or significance of Working Capital**

The following are the importance of working capital,

1. It helps a firm to pay its current obligations promptly and take advantage of cash discounts.
2. It protects the firm from the adverse effect of shrinkage in the value of current assets.
3. It ensures the maintenance of a company's credit standing and reputation.
4. It helps maintaining inventory at the optimum level to serve the needs of customers.
5. It helps a company to extend favorable credit terms to customers.
6. It provides a firm with adequate funds to sustain the depression period.
7. It also provides funds for meeting unforeseen contingencies in the future.
8. It helps to utilize the maximum available resources.
9. It helps the maximization of wealth of a firm.
10. It helps a firm to follow stable dividend policy.



## **Determinants of working capital (Factors affecting working capital)**

The important factors affecting working capital requirements of a firm are;

1. **Nature of business:** Nature and size of business influence the magnitude of working capital. Small organization needs lesser amount of working capital and vice versa. Public utility concerns need limited amount of working capital, because they have to invest heavily in fixed asset.
2. **Time:** Time is another factor which affects working capital. If the time required to manufacture goods is longer, the size of working capital is greater.
3. **Volume of sales:** Higher the volume of sales larger will be the size of working capital and vice versa.
4. **Terms of purchase and sales:** If the firm allowed very liberal credit terms to its customers, working capital needs will be high. Where suppliers have granted liberal credit terms to the firm, there will be less need of working capital.
5. **Inventory turnover:** If the inventory turnover is high, the working capital requirement will be low.
6. **Receivables turnover:** A prompt collection of receivables results in to low working capital requirements.
7. **Business cycle:** In boom period, when the business is in prosperous, there is a need for larger amount of working capital due to increase in sales. On the contrary, in depression period business requires lesser amount of working capital.
8. **Value of current assets:** A decrease in the real value of current assets reduces the working capital.
9. **Production cycle:** The time taken to convert raw materials in to finished goods is referred to as production cycle. Longer the production cycle, greater the working capital requirement.
10. **Credit control:** A firm can improve its cash position with a sound credit policy.



11. **Seasonal fluctuations:** For seasonal firms the size of working capital fluctuates with seasonal variation. Size of working capital is large during busy season and low in slack season.

12. **Inflation:** As a result of inflation there may be a better inflow of cash and consequently working capital is increased.

### **Adequacy of Working Capital:**

#### **(i) Goodwill**

Adequate working capital enables a business to pay its liabilities, whenever it becomes due which ultimately enhances goodwill of the firm.

#### **(ii) Cash discount**

Adequate working capital helps an organisation to avail cash discounts on the purchase of merchandise and raw materials. Timely payment of the cost of merchandise reduces the cost of production.

#### **(iii) Easy loans from banks**

Adequate working capital helps an organisation to avail banks loans on easy and favourable terms. A business having good credit standing and trade reputation avails loans easily.

#### **(iv) Distribution of dividends**

Adequate working capital helps a business to distribute dividends to its shareholders in the right time.

#### **(v) High morale**

Adequate working capital improves the morale of the executives. It brings an environment for certainty, security and confidence which are physiological factors for the improvement of efficiency.

#### **(vi) Sense of security and confidence**

Adequate working capital can build up a sense of security, confidence and loyalty among the stakeholders.



---

### **Danger of redundant working capital:**

#### **(i) Loss of goodwill**

Excess of working capital brings an opportunity to invest in low rate of interest bearing securities, which ultimately affect the return on investment of the shareholders. Their shareholders lose confidence in the company which ultimately reduces the good will.

#### **(ii) Misuse of funds**

Excess of working capital diverts the attention of the company to invest wisely in the most profitable investments. Due to the excess working capital it will be very much difficult to put control on the various purchases.

#### **(iii) Inefficient management**

Excessive working capital leads to the inefficiency of the business because the management is not interested in investing the funds in expanding the business.

#### **(iv) Low rate of return on capital**

Excess of working capital indicates the presence of idle funds available in the business. The idle funds do not carry any interest which ultimately leads to low rate of interest on the capital employed. The low rate of return on capital ultimately affects the earnings of the shareholders in terms of reduction of dividends.

### **Disadvantages of Inadequate Working Capital:**

**Following are few disadvantages of inadequate working capital:**

#### **(i) Loss of goodwill**

A business facing inadequate working capital cannot pay its current liabilities in time. This will affect the reputation of the business and fails to avail good credit facilities.



### **(ii) Losing favourable opportunities**

inadequate working capital fails to provide favourable opportunities to invest in profitable projects. It indicates a stagnant position because of the inadequate working capital.

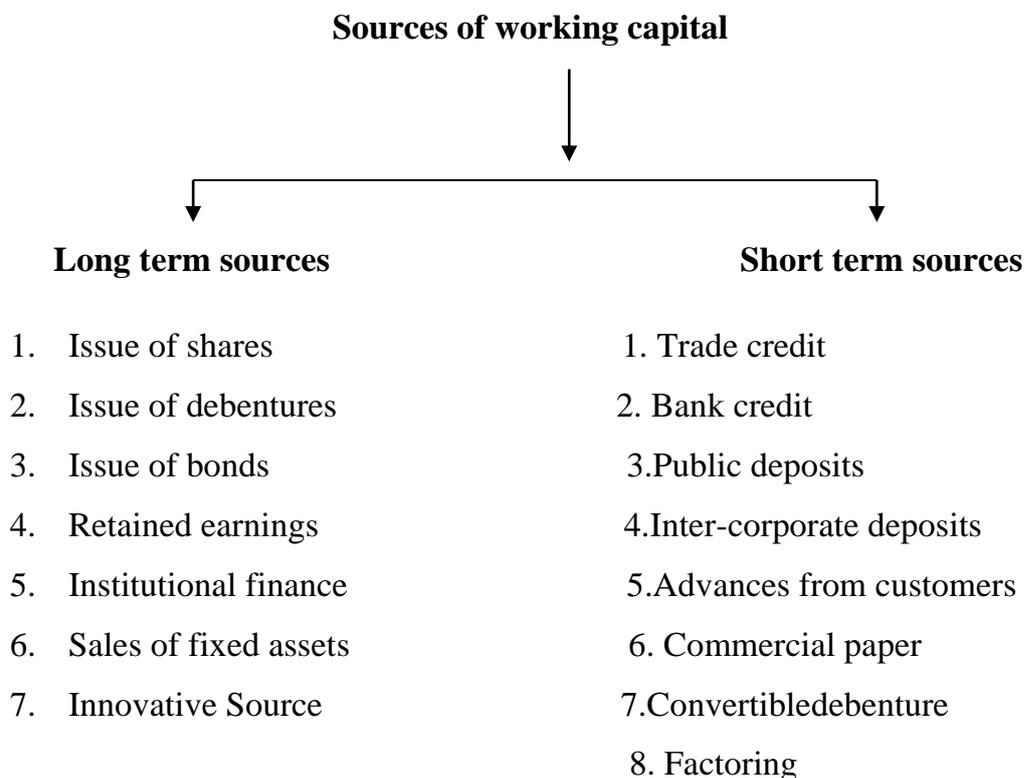
### **(iii) Increase in business risks**

Inadequate working capital leads to increased business risks because of the irregular payment of the business liabilities. It possesses a serious threat to the survival of the business.

### **(iv) Adverse effect on morale**

Inadequate working capital discourages the morale of the business executives. It brings an environment for uncertainty and insecurity which losses the confidence of the executives and ultimately loses the morale of the stakeholders.

## **SOURCES OF WORKING CAPITAL**





## Short term sources

Short term sources of working capital include:

1. **Trade Credit:** The credit offered by the seller or supplier is known as trade credit or bills payable. It is a very important source of short term finance.
2. **Bank Credit:** Banks provides short term finance in the form of over draft, cash credit, discounting of trading bills and letters of credit to its customers.
3. **Public deposit:** Firms may mobilize savings from the general public and it is termed as public deposit. It is a very old system of financing.
4. **Inter corporate deposits:** Deposits made by one company in another company is known as inter corporate deposits.
5. **Advances from customers:** Usually, sellers or producers receive whole or part of the amount of goods in advance and such advances remains with them till the supply of goods. Normally no interest is paid on this amount.
6. **Commercial paper:** Commercial paper is a short term money market instrument. It is a promissory note which is negotiable by endorsement and fit for delivery with a fixed maturity period between one month to one year.
7. **Factoring:** Factoring is a business activity in which a financial intermediary called factor takes the responsibility of collecting the debtors or receivables of a manufacturing or trading concern. In other words, instead of discounting the bills from bankers, the debtors and bills are sold to a special financial institution engaged in factoring. The factor collects the amount on due dates, effects payments to the concerns on these dates irrespective of whether customers have paid or not and also assumes credit risks associated with collection of accounts. The main advantages of factoring are:
  1. Reduces the operating cycle by providing liquidity
  2. Credit risk is transferred from seller of goods to factor
  3. Cash flow from credit sales is assured
  4. Sales administration is taken over by factors.



## **Estimating Working Capital Requirement Method**

### **1. Percentage of Sales Method:**

This method of estimating working capital requirements is based on the assumption that the level of working capital for any firm is directly related to its sales value. If past experience indicates a stable relationship between the amount of sales and working capital, then this basis may be used to determine the requirements of working capital for future period.

### **2. Regression Analysis Method (Average Relationship between Sales and Working Capital):**

This method of forecasting working capital requirements is based upon the statistical technique of estimating or predicting the unknown value of a dependent variable from the known value of an independent variable. It is the measure of the average relationship between two or more variables, i.e.; sales and working capital, in terms of the original units of the data.

### **3. Cash Forecasting Method:**

This method of estimating working capital requirements involves forecasting of cash receipts and disbursements during a future period of time. Cash forecast will include all possible sources from which cash will be received and the channels in which payments are to be made so that a consolidated cash position is determined. This method is similar to the preparation of a cash budget. The excess of receipts over payments represents surplus of cash and the excess of payments over receipts causes deficit of cash or the amount of working capital required.

### **4. Operating Cycle Method:**

This method of estimating working capital requirements is based upon the operating cycle concept of working capital. The cycle starts with the purchase of raw material and other resources and ends with the realization of cash from the sale of finished goods. It involves purchase of raw materials and stores, its conversion into stock of finished goods through work-in-process with progressive increment of labour and



service costs, conversion of finished stock into sales, debtors and receivables, realization of cash and this cycle continues again from cash to purchase of raw material and so on. The speed/time duration required to complete one cycle determines the requirement of working capital – longer the period of cycle, larger is the requirement of working capital and vice-versa.

### **5. Projected Balance Sheet Method:**

Under this method, projected balance sheet for future date is prepared by forecasting of assets and liabilities by following any of the methods stated above. The excess of estimated total current assets over estimated current liabilities, as shown in the projected balance sheet, is computed to indicate the estimated amount of working capital required.

### **TANDON COMMITTEE RECOMMENDATIONS:**

Banks in India have evolved their own method of lending as they have been given free hand by the Central Bank (that is RBI) to decide their own lending methods. Normally banks use the turnover method (which is also called as Nayak Committee norms) for assessment of working capital limits up to Rs.2 crore (Rs.7.50 Crore for SME). The other two traditional methods of assessment of working capital limits are MPBF (Maximum Permissible Bank Finance) or Cash Budget Method depending upon requirements of the customers. The level of limit for each type of facilities under MPBF method will depend upon on the nature of current assets less suitable margin, within the overall permissible bank finance. RBI, from time to time, prescribes norms for working capital to be financed by banks. In July 1974, the study group headed by Shri. P.L.Tandon, has framed guidelines for working capital finance by banks. The recommendations made by above study group are known as Tandon Committee recommendations. Out of three methods for assessment of working capital limits proposed by Tandon Committee, RBI has accepted method I and method II, which are explained below.



**Tandon's-I method** (also called as 'first method') of lending the borrower has to arrange 25% of Working Capital Gap (WCG) as margin.

**Tandon's-II method** (also called as 'second method'): In this method of lending the borrower has to arrange 25% of Total Current Assets (TCA) as margin.

### **Working capital ratio**

The working capital ratio is a measure of liquidity, revealing whether a business can pay its obligations. The ratio is the relative proportion of an entity's current assets to its current liabilities, and shows the ability of a business to pay for its current liabilities with its current assets. A working capital ratio of less than 1.0 is a strong indicator that there will be liquidity problems in the future, while a ratio in the vicinity of 2.0 is considered to represent good short-term liquidity. The ratio is used by lenders and creditors when deciding whether to extend credit to a borrower. The working capital ratio reflects a company's operational efficiency and the health of its short-term finances. The working capital ratio is calculated by dividing the company's current assets by its current liabilities

**WORKING CAPITAL RATIO = CURRENT ASSETS ÷ CURRENT LIABILITIES**

A high working capital ratio means that the company's assets are keeping well ahead of its short-term debts. A low value for the working capital ratio, near one or lower, can indicate that the company might not have enough short-term assets to pay off its short-term debt.

#### ➤ **Low Working Capital**

If a company's working capital ratio falls below one, it has a negative cash flow, meaning its current assets are less than its liabilities. The company cannot cover its debts with its current working capital. In this situation, a company is likely to have difficulty paying back its creditors. If a company continues to have low working capital, or if cash flow continues to decline, it may have serious financial trouble. The cause of the decrease in working capital could be a result of several different factors,



---

including decreasing sales revenues, mismanagement of inventory, or problems with accounts receivable.

➤ **High Working Capital**

An excessively high working capital is not necessarily a good thing either, since it can indicate the company is allowing excess cash flow to sit idle rather than effectively reinvesting it in company growth. Most analysts consider the ideal working capital ratio to be between 1.5 and 2.12 as with other performance metrics, it is important to compare a company's ratio to those of similar companies within its industry.



## UNIT - III

### MANAGEMENT OF ASSETS

#### Receivables Management (Debtors Management)

Receivables represents amount owed to the firm as a result of sale of goods or services in the ordinary course of business. These are claims of the firm against its customers and form part of its current assets. It is also known as account receivables, trade receivables, customer receivables or book debt. Account receivables refer to the outstanding invoices or money which is yet to be paid by your customers. Until it is paid, such invoices or money is accounted as accounts receivables. Business need cash all the time for running smoothly and ensuring the accounts receivables are paid on time is essential to manage cash flow efficiently. Basically, the entire process of defining the credit policy, setting payment terms, sending payment follow ups and timely collection of the due payments can be defined as receivables management. Management of Receivables is also known as:

- Payment Collection
- Collection Management
- Accounts Receivables

#### Objectives of Receivables Management

1. To increase the volume of sales
2. To ensure adequate flow of cash from trade debtors to meet current obligations
3. To facilitate liberal credit transaction
4. To settle trade debts without loss
5. To achieve the target return on investment
6. To minimize the cost and risk involved in trade credit
7. To maintain adequate liquid capital of the firm
8. To ensure credit worthiness of the concerns
9. To take the maximum advantage of trade discount and cash discount facilities
10. To achieve target return on investment



## Factors influencing the size of receivables

1. **Size of credit sales:** The volume of credit sales is the first factor which increases or decreases the size of receivables. Higher part of credit sales out of total sales, figures of receivables will be more or vice-versa.
2. **Credit policy:** A firm with conservative credit policy will have a low size of receivables which a firm with liberal credit policy will be increasing this figure
3. **Terms of trade:** The period of credit allowed and rate of discount given are linked with receivables. Credit period allowed is more then receivables will also be more
4. **Expansion plan:** When a concern wants to expend its activities, it will have to enter new markets. To attract customers it will give incentives in the form of credit facilities.
5. **Relation with profit:** The credit policy is followed with a view to increase sales when sales increases profit also increases. The increase in profit will be followed by an increase in the size of receivables and vice versa
6. **Credit collection effort:**An efficient credit collection machinery will reduce the size of receivables. If these efforts are slower then outstanding amount will be more
7. **Habits of customers:** The paying habits of customers also have a bearing on the size of receivables. The customers may be in the habit of delaying payments even though they are financially sound the concern should remain in touch with customers and should make them realize the urgency of their needs.

## Benefits of Receivable Management

Managing the outstanding receivables can be critical to your business because it not only helps to understand how much your parties owe you, but also helps you to recover the dues on time and use it for your business, as needed.

- Record and track dues
- Use credit period
- Keep a close eye on long-pending bills



- Payment performance of your customer

Managing accounts receivables efficiently will benefit the business in several ways. The most important is the increased cash inflow by a faster realization of sales to cash. It also helps you to build a better relationship with your customer by not having discrepancies in pending bills and mitigates the risk of bad debts.

### **Techniques or aspects of receivable management**

1. **Credit analysis:** No enterprise can sell goods on credit blindly to every customer. It has to evaluate and examine the ability of customer whether he can make the payment at right time. There for an analysis of those risks, which may arise on accounts of non- payment or late payment must be under taken before granting credit facilities to customers. After making detailed analysis a decision is taken whether to grant credit to customer or not.
2. **Credit standards:** A credit standards provide a basis for deciding whether he grant credit to a customer or not. Customers whose financial position is doubtful or weak are refrained from getting credit.
3. **Credit terms:** The firms has to determine the terms and condition on which trade credit will be made available to customers. Credit terms has three variables namely:
  - a. Credit period
  - b. Cash discount and
  - c. Cash discount period
4. **Collection policies:** Collection policies is basically concerned with the procedure to be followed in collecting the accounts not realized within the credit period allowed.
5. **Control and monitoring:** After setting the credit standers credit terms and collection policies the financial manager has to control and monitoring the effectiveness of collections.
6. **Ageing schedule technique:** The technique classifies the debtors at a given point of time into different age groups. Many concerns prepare this schedule at



periodic intervals for the purpose of controlling quality of individual accounts receivables. An example is given below.

Age class (in days)	% of account receivables
0 – 30	30%
31 – 60	50%
61 – 90	15%
91 and above	5%

7. **Control of average collection period:** For computing average collection period the firms compute two ratios namely:

(1) Debtors Turnover Ratio and

(2) Debt Collection Period

$$\text{Debtor Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average accounts receivables}}$$

$$\text{Average debt collection period} = \frac{\text{Months or weeks or days in a year}}{\text{Debtors Turnover Ratio}}$$

8. **Factoring:** Factoring is a business activity in which a financial intermediary called factor takes the responsibility of collecting the debtors or receivables of a manufacturing or trading concern. In other words, instead of discounting the bills from bankers, the debtors and bills are sold to a special financial institution engaged in factoring. The factor collects the amount on due dates, effects payments to the concerns on these dates irrespective of whether customers have paid or not and also assumes credit risks associated with collection of accounts.



---

## Decision Tree Analysis of credit granting

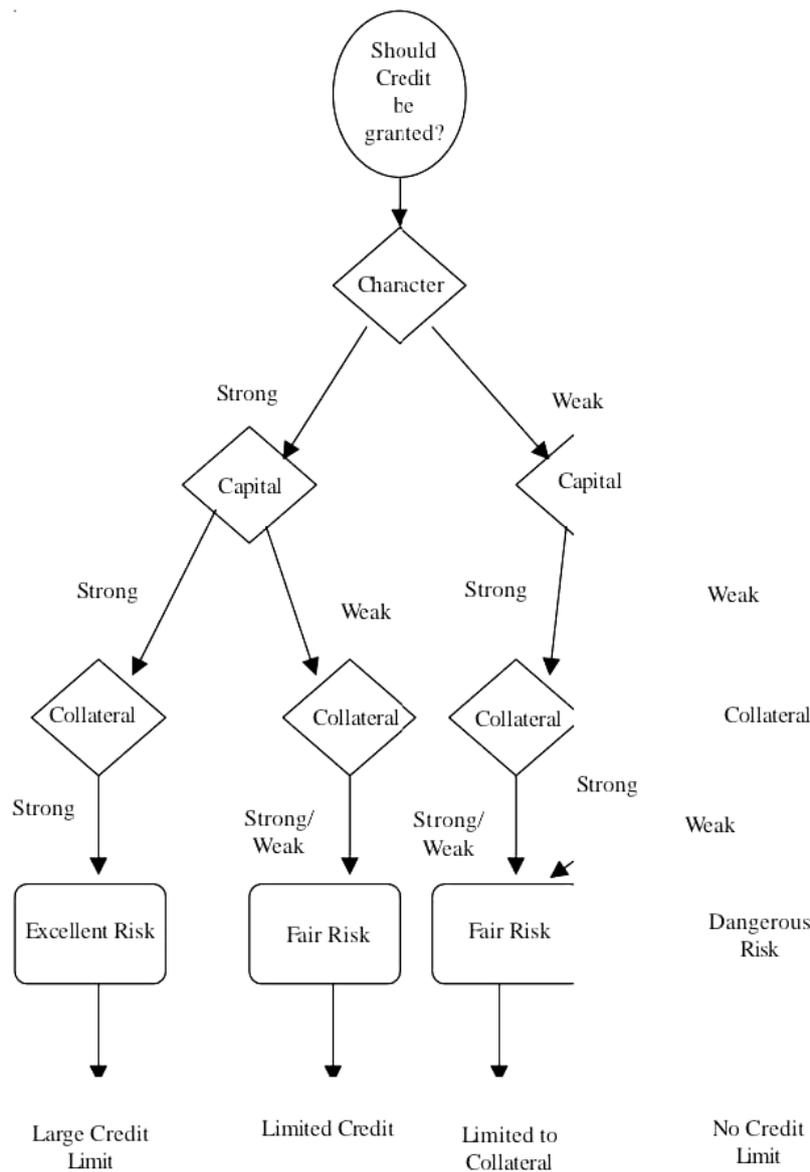
**Decision trees are flowchart graphs or diagrams that explore all of the decision alternatives and their possible outcomes.**

- A decision tree is a tool that can help businesses project possible outcomes to make educated and well-thought-out choices.
- Use decision trees with other decision-making methods to sort through possible outcomes.
- Creating a decision tree is a straightforward process, unlike some other decision-making techniques.

Under decision-tree model, credit applications are rated under different parameters. For instance, if a company uses five Cs factors, the analysts rate the credit applicant under each of the five Cs. Decision-tree is initially created for all possible routes and decisions at the end of each route are indicated. Following Figure illustrates decision-tree model using three credit information namely capital, character and collateral. If a character, capital and collateral are strong, then the applicant firm is granted large amount of credit. On the other hand, if the first two are strong but the collateral is weak, a limited credit could Management of Inventory be granted. If character is weak but capital and collateral are strong, then credit is limited to collateral value. On the other hand, if all the three are weak, it is a dangerous credit proposal and hence to be rejected. In Figure there are two broad ratings, which can be further divided into three or five scale rating. Increasing the credit variable and rating scale will lead to more branches and credit limit can be prescribed for each branch separately. It is also possible to use the above decision-tree to decide whether a detailed credit evaluation has to be conducted. For example, if character, capacity and conditions are good but capacity and collateral are weak, it may require a detailed credit evaluation. That means, the information collected is inadequate and a rigorous analysis is required.



### Decision Tree Credit Evaluation Model



### MONITORING AND CONTROL OF RECEIVABLES

Managing receivables does not end with granting of credit as dictated by the credit policy. It is necessary to ensure that customers make payment as per the credit term and in the event of any deviation, corrective actions are required. Thus, monitoring the payment behaviour of the customers assumes importance. There are several possible reasons for customers to deviate from the payment terms.



Proper management of accounts receivables of a business is a process consisting of the following elements:

- Determining the customer's credit rating in advance
- Frequently scanning and monitoring customers for credit risks
- Maintaining a good customer relation
- Detecting late payments in due time
- Detecting complaints in due time
- Reducing the total balance outstanding (DSO)
- Preventing any bad debt in receivables outstanding

### **Monitoring of Accounts Receivables- techniques**

For effective management and control of receivables, the following techniques are used by the Credit Manager in monitoring the status and composition of accounts receivables

#### **i. Ratio Analysis for Control of Receivables:**

**The analysis of receivables can be done with the help of ratios given below for efficient management of debtors balances:**

**(a) Debtors Turnover Ratio:**

$$= \frac{\text{Credit Sales}}{\text{Average debtors}}$$

**(b) Average Credit Period (in days):**

$$= \frac{\text{Average Debtors}}{\text{Credit Sales}} \times 365$$

**(c) Debtors to Current Assets Debtors:**

$$= \frac{\text{Debtors}}{\text{Current Assets}} \times 100$$

**(d) Debtors to Total Assets Debtors:**

$$= \frac{\text{Debtors}}{\text{Total Assets}} \times 100$$

**(e) Bad Debts to Sales:**

$$= \frac{\text{Bad Debts}}{\text{Sales}} \times 100$$

**(f) Bad Debts to Debtors:**

$$= \frac{\text{Bad debts}}{\text{Debtors}} \times 100$$



The above formulae can be used to analyze the efficiency in management of receivables and to analyze the trend over a period of time.

### **ii. Ageing Schedule:**

The ageing schedule of debtors is prepared basing on the collection pattern. The total debtors balances are classified according to their age i.e. the outstanding period for which the amount is uncollected. The ageing schedule provides useful information for assessing the company's liquidity position, efficiency of credit control department, efficiency in collection of receivables, comparison with previous ageing schedules etc. The age analysis of debtors may be used to help decide what action to take about older debts. For better control on collection of receivables, ageing schedule is prepared and analyzed for identifying the overdue amounts. Ageing schedule of receivables is prepared according their period of outstanding, for example, less than 30 days, 31-45 days, 46 – 60 days, 61-75 days, 76-90 days, above 90 days etc.

### **iii ABC Analysis of Receivables:**

The ABC analysis technique mainly framed for effective control of inventory. The application of the same technique to manage the debtor's balances will also give good results for the firm with huge number of accounts.

### **iv Discriminate Analysis and Credit Scoring:**

#### **Discriminate Analysis:**

It is an important tool used for discriminating between good and bad accounts taking into account the readily available information from financial data relating to size of firm, acid test ratio, creditors payment period etc.

#### **Credit Scoring:**

It is a technique used in discriminating between good and bad accounts based on past repayment and default experience relating a particular customer. The credit scoring is given for each such customer and credit facility is extend if he exceeds the cut-off score.



### **v Credit Utilization Report:**

The total limit of credit offered to each customer and the extent to which it is utilized will be reviewed on periodical basis to observe the extent to which total limits being utilized. All this information is presented in a report form called ‘credit utilization report’.

## **INVENTORY MANAGEMENT**

Inventory management is a method of organising, storing, and utilising inventories. Raw materials, components, and completed goods are stockpiled in your business, together with the storage and processing of these things. Inventory is an important element of working capital. The main objective of inventory management is to assure adequate supply of materials required by the production department and also minimize the investment in inventories.

Inventory consists of;

- a. Raw materials – It is the inventories purchases by a firm converted in to finished goods through manufacturing process.
- b. Work – in – progress – Work in progress are semi finished goods.
- c. Consumables and spares – these are materials which are needed to smoothen the process of production. These materials do not directly enter in to production. Eg; fuel, oil etc.
- d. Finished goods – These are the final or completed products which are available for sale.

Inventory management is defined as ***“planning and devising procedures to maintain an optimum level of inventories, so that, smooth flow of activities is assured and cost control and cost reduction is made possible”***.



---

## **Objectives of Inventory Management System**

Operational and financial goals may be examined in regards to inventory management. The operational goal is to have an adequate supply of inventory, so that we can fulfil customer demand and the financial objective is to minimise unnecessary inventory and its associated expenses. For these operational tasks, inventory management is done to help streamline operations. Some of the most important purposes for which it is used are:

### **1. Material Availability**

The primary goal of inventory management is to ensure that all kinds of materials are accessible whenever the production department needs them, ensuring that production is not stopped or slowed down due to a lack of resources. It is thus prudent to maintain a buffer stock of all critical goods in order to keep production on track.

### **2. Better Level of Customer Service**

It is impossible to fulfil a received order if you do not have an accurate count of the items in your possession. In order to meet requests, you must have accessible the appropriate goods at the right time. Otherwise, you may end yourself in a state of confusion. To fulfill the needs for quality products, the concern must maintain an adequate supply of completed items to guarantee that customers' orders are fulfilled. It will increase the company's brand image.

### **3. Keeping Wastage and Losses to a Minimum**

Inventory management is very successful in mitigating losses. When there is no monitoring system in place, it is very normal for an item to be squandered or misplaced. Furthermore, theft is always a danger worth addressing regardless of the kind of job performed. Keeping track of the goods reduces the likelihood of loss, if not completely eliminates it. Having a document in hand helps avoid waste and protects your business from theft. Such dangers are magnified even more when large quantities of goods must be handled. Inventory management attempts to minimise



inventory waste at all stages, such as during storage in godowns or during production in the plant. Normal or uncontrolled waste should not be allowed to exceed a permissible level, whereas abnormal and unmanageable wastage should be carefully regulated.

#### **4. Maintaining Sufficient Stock**

Supplies should be easily available for all stages of production, from raw materials to completed goods. You need to make sure you have enough of the necessary material on hand to meet client demand without having to cut corners. The manufacturing department no longer has to be concerned about running out of raw materials or products because of the steady supply.

#### **5. Cost-Effective Storage**

It eliminates the possibility of keeping extra stock, since the needs are predetermined, thus eliminating needless storage expenses.

#### **6. Cost Value of Inventories Can Be Reduced**

When purchasing products or stock on a regular basis, an organisation may negotiate discounts and other incentives to lower the overall cost.

#### **7. Optimizing Product Sales**

Additionally, inventory management may be used to determine the volume of product sales. Sales is one of the most essential and crucial phases of the whole process. Understanding the present condition as well as making future assumptions from the analysis are two key elements in making a successful prediction. You can identify things that move at a slower rate, and remove them.



---

## **Types of Inventory Management**

While installing an inventory management system, the organization has to consider the various aspects like cost, budget, utility and accessibility. However, it can be classified into the following types:

### **Bar-code Inventory Management**

The barcode system is its automated and simplified version. The management can find out the stock remaining with just one click on a computer device. The scanned barcodes enable the software to maintain a track of all the purchases and the flow of inventory.

### **Continuous Inventory Management**

It links the barcode and radio frequency identification with the accounting inventory system, inventory received, and point of sales systems along with the production system, to trace the path of inventory movement. It is mostly beneficial for accounting purpose. This is also termed as perpetual inventory management.

### **Periodic Inventory Management**

It is a manual process, which is used for determining the closing inventory value, for putting it up in the ledger at the end of a financial year. Depending on the organizational need, it can also be analyzed quarterly. However, it is a time-consuming way, since the inventory has to be physically counted.

Inventory Management Process

#### **Step 1: Determining the Loopholes**

The foremost step is to evaluate the inventory requirement and the actual stock of the goods. Also, the reasons for this gap between the **demand** and inventory should be ascertained.



---

## **Step 2: Analyzing Consumer Demand and Spending Patterns**

The market **demand forecasting** holds equal importance. This is because it helps the organization to estimate the production quantity, which ultimately leads to the maintenance of adequate inventory.

## **Step 3: Evaluating the Cost Involved**

Its implementation involves different types of expenses such as warehousing, maintenance, transport, bulk discounts and supply chain costs. Each of these should be well analyzed.

## **Step 4: Identifying the Extent of Process Automation**

It is not possible for every organization to completely automate the inventory management process. However, the management can recognize those particular areas where there are possibilities of automation.

## **Step 5: Inspecting Supplier's Practices and Performance**

The next step is to find out the suppliers' inventory management practices since this strategy cannot be implemented solely. If the supplier is resistant to change and tends to proceed with the traditional means, the organization needs to look for alternative vendors.

## **Step 6: Classifying Inventories into Different Categories**

The goods have to be segregated into various categories depending upon the product type, customer class, maintenance cost or profit margin.

## **Step 7: Setting Objectives for Each Inventory Category**

To efficiently manage and track the performance of the applied technique for each category, it is essential to set individual goals. It not only provides a base



for benchmarking but also identifies the problems and issues faced in each of these categories.

### **Step 8: Prioritizing the Areas of Improvement**

Now, that we are aware of the problems, the next step is about finding out the density of each issue and its impact. The concerns which can be resolved immediately needs to be addressed first. And then, the ones which are complex and requires restoration should be considered.

### **Step 9: Taking Advice or Opinion from Experts**

Designing an appropriate inventory management system is the task of the personnel who specialize in the field. Thus, at this stage, the organization needs to hire consultants or experts for advice and opinion on current technology and problem fixation within the desired budget.

### **Step 10: Framing Suitable Inventory Management Policy**

The last step is to implement a satisfactory inventory management strategy for the desired change. This improvement should be incorporated as an inventory management policy to deal with the changes in demand and add value to customer experience.

## **IMPORTANCE OF INVENTORY MANAGEMENT**

The evolving technology and changing consumer preference have significantly brought forward the need for a robust inventory management system. Given below are some of the most prominent reason for which it is considered beneficial for every business entity:



---

## **Enables Enterprise Resource Planning (ERP)**

The ERP software accommodates and links the different business operations. These are inventory procurement, warehousing, production, human resource, finance, marketing and sales to one another. In this process, inventory management contributes its part of providing the necessary data.

## **Proper Warehouse Management**

The barcode system, LIFO and FIFO techniques provide a clear picture of the past and present inventory available with the company to optimize the warehousing functions.

## **Efficient Inventory Valuation**

It provides for proper evaluation of the different types of inventory, i.e., stock in hand, opening and closing stocks, raw material, finished goods, etc. This data is also used to prepare the cost sheet.

## **Supports Supply Chain Management**

Being a segment of supply chain management, it is responsible for streamlining all the warehousing operations and flow of raw material or stock.

## **Manages Sales Operations**

Sales are continuous process which depends upon the production of goods or services. If there is inefficient inventory management in the organization, the chances of unavailability of raw material for manufacturing may arise.

## **Challenges Faced in Inventory Management**

Inventory management has become an inevitable part of significant business entities. Also, many small organizations have adopted the concept to keep track of their stock and raw material. But while practically implementing it, the companies have to deal with the following limitations:



- **Lack of Knowledge:** The personnel at the receiving and warehousing departments may lack the required expertise and adequate knowledge of segregating the regular and seasonal goods out of the whole stock.
- **Expanding Product Portfolios:** The customers' demand and requirements for a wide range of products have tremendously increased the inventory size, making it difficult to manage, manually.
- **Supply Chain Complexity:** The organizations, at times, fail to track the stock or goods during the supply chain process. Moreover, it is not necessary that the business partners also maintain an inventory management system, creating hurdles.

### **Risk and Cost of Holding Inventory in a Firm**

Holding of inventory exposes the manufacturing and merchandising firms to a number of risks and costs. The various risks and costs of maintaining higher levels of inventory have been highlighted as follows:

#### **1. Risk of price decline**

Holding Inventory may increase the risk of decline in price. This may be due to increase in the supply of products in market by competitors, introduction of a new competitive product, competitive pricing policy of competitors etc.

#### **2. Risk of obsolescence**

The inventory may become obsolete/outdated due to improved technology, improvements in product design, changes in customers' taste etc.

#### **3. Purchase cost**

A firm has to pay high price for managing inventory. Inventory management has to take into account of the price paid to the suppliers and the expense of transport for bringing the material to stores, insurance and transportation cost.



#### **4. Ordering cost**

Cost of ordering is one another factor that a firm has to consider in Inventory management. Ordering costs includes cost of requisitioning, preparation of purchase order, transportation of inventory, receiving the supplies at the warehouse etc.

#### **5. Carrying cost**

Carrying cost includes the cost of storing the inventory in warehouse, handling expenses, insurance and rent paid for managing the inventory, opportunity cost locked up in stocks etc. Opportunity cost here refers to the alternative use of funds that the firm would have used to invest in stocks.

#### **6. Stock out (shortage) cost**

Stocks results in higher costs when they fall short of demand. Shortage of stocks also results in higher cost, dissatisfaction among customers, decrease in sales and increase of loss to firm.

### **TOOLS AND TECHNIQUES OF INVENTORY MANAGEMENT**

#### **ABC Analysis**

Always Better Control technique is a system of inventory control based on the relative economic importance of materials. It is based on the principle that more care and control are necessary for costly items of materials. ABC analysis is an approach for classifying inventory items based on the items' consumption values. Consumption value is the total value of an item consumed over a specified time period. Under this system stores are classified in to three categories, namely A, B and C.

- A items are goods where annual consumption value is the highest. Applying the Pareto principle (also referred to as the 80/20 rule where 80 percent of the output is determined by 20 percent of the input), they comprise a relatively small number of items but have a relatively high consumption value. So it's logical that analysis and control of this class is relatively intense, since there is the greatest potential to reduce costs or losses.



- B items are interclass items. Their consumption values are lower than A items but higher than C items. A key point of having this interclass group is to watch items close to A item and C item classes that would alter their stock management policies if they drift closer to class A or class C. Stock management is itself a cost. So there needs to be a balance between controls to protect the asset class and the value at risk of loss, or the cost of analysis and the potential value returned by reducing class costs. So, the scope of this class and the inventory management policies are determined by the estimated cost-benefit of class cost reduction, and loss control systems and processes.
- C items have the lowest consumption value. This class has a relatively high proportion of the total number of lines but with relatively low consumption values. Logically, it's not usually cost-effective to deploy tight inventory controls, as the value at risk of significant loss is relatively low and the cost of analysis would typically yield relatively low returns.

A model classification is as follows

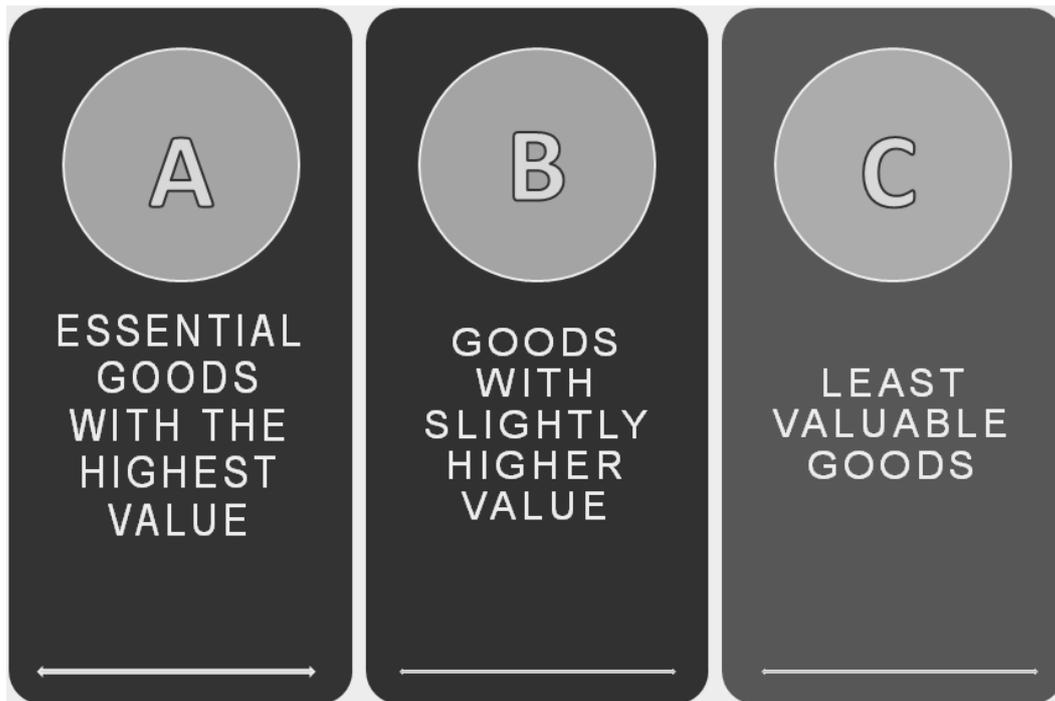
Category of material	% of quantity of material	% of value of material
A	10%	70%
B	20%	20%
C	70%	10%
Total	100%	100%

### **Benefits of ABC analysis**

- Better control over high-value inventory improves availability, and reduces losses and costs.
- More efficient use of stock management resources. For example, during stock count more resources are dedicated to A class than B or C class holdings, or fewer counts are made of B or C class holdings – which saves time and money.



- Relatively low value of B or C class holdings can allow a business to hold bigger buffer stocks to reduce stock outs.
- Fewer stock outs resulting in improved production efficiency.
- Fewer stock outs and improved production efficiency resulting in more reliable cycle time and, therefore, improved customer satisfaction.



### **VED Analysis**

Vital Essential and Desirable analysis is a device intended for control of spare parts. On the basis of the relative importance, spare parts may be classified in to 3 categories, namely Vital, Essential and Desirable.

**Vital** – Vital spare parts are those items whose non availability may leads to stoppage of production. There for every effort should be made to ensure the availability of these spare parts at any time.

**Essential** – Production may not be interrupted due to the non availability of essential spares for some hours beyond which production will be stopped and thus these items are essential.



**Desirable** – Desirable spare parts are those which are needed but their absence for a week or so may not leads to stoppage of production.

**Advantages:**

- It helps in classifying items into three category and stocked accordingly, for eg. Vital items are stocked maximum. them essentials and least amount of desirable item is stocked.
- It brings economy in stock maintenance as each item need not to be stocked in abundance.

**Disadvantages:**

- This method is not suitable when thousands of items are used in production.
- Vital items are purchased in bulk and hence get piled-up sometime and increases cost.

**FSN Analysis**

It is the method of categorizing items of stores of materials on the basis of their speed of movement. The inventories are classified into;

- **Fast moving** – some materials which are very rapidly consumed either in actual production or in maintenance, so that stocks are to be replenished very frequently
- **Slow moving** – These are materials which are not frequently required for consumption and these stocks are not to be replenished so frequently
- **Non moving** – These are also called dormant stock. These are the items which are not moving temporarily.

**Just- In- Time Inventory System (JIT)**

It is the purchase of materials or goods in such a way that delivery of purchased items is assured at the time of their requirements or immediately before their requirements. JIT avoids enormous carrying cost of inventory



---

## **Importance of Just In Time**

### **Reduces inventory waste**

A just-in-time strategy eliminates overproduction, which happens when the supply of an item in the market exceeds the demand and leads to an accumulation of unsalable inventories. These unsalable products turn into inventory dead stock, which increases waste and consumes inventory space. In a just-in-time system you order only what you need, so there's no risk of accumulating unusable inventory.

### **Decreases warehouse holding cost**

Warehousing is expensive, and excess inventory can double your holding costs. In a just-in-time system, the warehouse holding costs are kept to a minimum. Because you order only when your customer places an order, your item is already sold before it reaches you, so there is no need to store your items for long. Companies that follow the just-in-time inventory model will be able to reduce the number of items in their warehouses or eliminate warehouses altogether.

### **Gives the manufacturer more control**

In a JIT model, the manufacturer has complete control over the manufacturing process, which works on a demand-pull basis. They can respond to customers' needs by quickly increasing the production for an in-demand product and reducing the production for slow-moving items. This makes the JIT model flexible and able to cater to ever-changing market needs.

### **Local sourcing**

Since just-in-time requires you to start manufacturing only when an order is placed, you need to source your raw materials locally as it will be delivered to your unit much earlier. Also, local sourcing reduces the transportation time and cost which is involved. This in turn provides the need for many complementary businesses to run in parallel thereby improving the employment rates in that particular demographic.

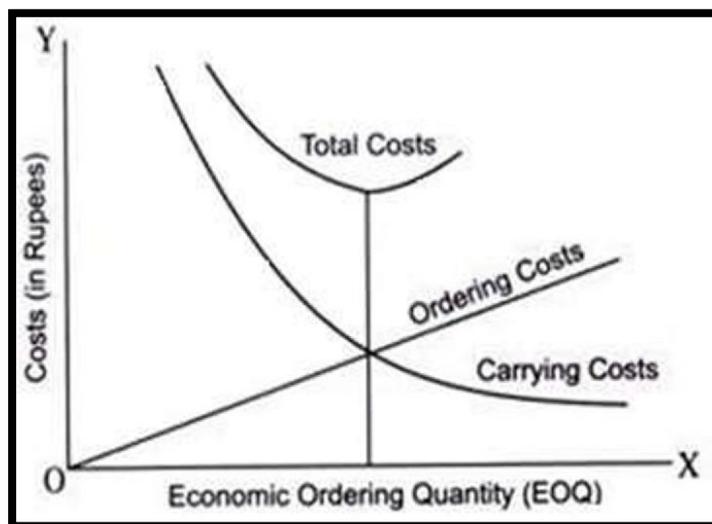


## Smaller investments

In a JIT model, only essential stocks are obtained and therefore less working capital is needed for finance procurement. Therefore, because of the less amount of stock held in the inventory, the organization's return on investment would be high. The Just-in-time models uses the "right first time" concept whose meaning is to carry out the activities right the first time when it's done, thereby reducing inspection and rework costs. This requires less amount of investment for the company, less money reinvested for rectifying errors and more profit generated out of selling an item.

## Economic Ordering Quantity (EOQ)

EOQ refers to that quantity of materials to be purchased at one time to optimize the cost thereon. At the purchase of EOQ, The total of ordering cost and carrying cost will be the lowest. It is also known as Optimum quantity, Economic lot quantity, Ideal quantity, Ordering quantity etc.





*Ordering cost:* It is a cost incurred for placing an order.

*Carrying cost:* It is also known as holding cost. It is the cost incurred on carrying or storing or maintaining inventory.

Both ordering cost and carrying cost move in opposite direction. But a particular quantity of purchase the total of carrying cost and ordering cost will be the lowest. This level is known as EOQ.

$$EOQ = \sqrt{\frac{2CO}{I}}$$

**C** = Annual consumption of material

**O** = Ordering cost per order

**I** = Inventory carrying cost per unit per annum.

### **Advantages of Economic Order Quantity (EOQ)**

There are a few advantages of Economic Order Quantity (EOQ) and they include;

#### **1. Reduce Holding Costs**

One of the biggest advantages of EOQ is that it helps the company in reducing the holding cost of inventory because when the company has an EOQ system in place, it does not need to have a big warehouse to store goods as the company orders goods in limited quantity so that current production of goods does not stop abruptly.

If a company fails to follow this method then it needs a warehouse. Besides it will need staff for that warehouse which again involves expenses, but due to this system, the company is able to save all the holding costs related to inventory.



## **2. Reduce Ordering Costs**

In terms of EOQ while ordering good, companies order goods on fixed date which may be fortnightly or monthly which results in reduction in ordering costs, because if a company orders 10 times in one month, then company is expected to pay transportation costs, packing costs and other costs 10 times but if the company orders goods only once in a month, then all costs will incur one time only.

## **3. Better Inventory Management**

Another benefit of EOQ is that it is necessary for better inventory management and when the company can manage its inventory in an effective way than it can reduce substantial operational costs which in turn will lead to more profits for the company. Simply put, EOQ indirectly helps the company in earning profits through a reduction in operational costs associated with inventory management.

## **4. Business Specific**

Note that maintaining sufficient inventory levels to match customer demand is a balancing act for many small businesses. Another advantage pertaining to the EOQ model is that it is able to provide specific numbers particular to the business regarding how much inventory needs to be held, when to re-order it, and how many items are needed to be ordered. This can smooth out the re-stocking process and ultimately result in enhanced customer service.

## **The Disadvantages of Economic Order Quantity (EOQ)**

The disadvantages of economic order quantity (EOQ) consist of the following:

### **1. Complicated Math Calculations**

The EOQ model requires a good understanding of algebra, a disadvantage for small business owners lacking math skills. In addition, effective EOQ models require detailed data to calculate several figures.



The benefit to resolving the math is the ability to determine how much inventory should be attached to each order at the lowest possible costs. Keeping costs low will inflate margins and ultimately drive more revenue. EOQ software is one solution that may be worth the investment for small business owners lacking the time and capital to hire a consultant or employee for regular calculations.

## **2. Forecast of Accurate Demand not Possible**

One of the biggest disadvantages of economic order quantity is that it is based on the assumption that demand for company's products can be forecasted accurately which in real life is not possible because demand for a company's product never remain static rather it keeps changing and if demand for goods produced by the company rises or decreases substantially, then having EOQ system in company is of no use.

## **3. Immediate Availability of Products with Suppliers**

Another issue with EOQ is that it may be possible that the supplier does not have raw materials and if the company requires immediate raw material for meeting unexpected demand, then it can lead to problems.

But if the company has good relationship with multiple suppliers, then it is not much of a problem. However, if the company is dependent on only 1 or 2 suppliers for its raw material then the company may face trouble following the EOQ method.

## **4. Requires Continuous Monitoring**

Companies in case of economic order quantity, are expected to constantly monitor reorder levels. As the level of raw materials reaches reorder level, the company has to order goods from suppliers. This is where the company needs to employ staff so as to monitor stock levels, which again is a time consuming as well as an expensive process.



## Stock Levels of Materials

The objective of material control is to maintain stock of raw materials as low as possible and to ensure availability of material as and when required. Over stocking leads to unnecessary blocking up of working capital and under stocking may interrupt production. The different stock levels are;

1. **Minimum stock level:** It is the minimum quantity or minimum number of units of materials to be available in the store at any time. Material should not be allowed to fall below this level, if it goes below production may be held up for want of material.

$$\text{ML} = \text{Reorder level} - (\text{Normal consumption} \times \text{Normal reorder period})$$

$$\text{Normal consumption} = \frac{\text{mini: consumption} + \text{maxi: consumption}}{2}$$

2

2. **Maximum stock level:** It is the largest quantity of material which may be held in the store at any time.

$$\text{Max. Stock level} = \text{Reorder level} + \text{Reorder quantity} - (\text{minimum consumption} \times \text{minimum reorder period})$$

3. **Reorder level:** It is the level at which the purchasing department places order for fresh supply of materials.

$$\text{ROL} = \text{Maximum consumption} \times \text{Maximum reorder period}$$

OR

$$\text{Minimum stock level} + \text{Consumption during reorder period.}$$

4. **Average stock level:** It shows average quantity of material kept in the store

$$\text{ASL} = \frac{\text{Minimum level} + \text{Maximum level}}{2}$$

2

OR

$$\text{Minimum level} + \frac{1}{2} \text{Reorder quantity}$$



5. **Danger level:** It is the level at which normal issue of material is stopped.

$$\text{Danger level} = \text{Average consumption} \times \text{Emergency supply time}$$

### **Inventory Turnover ratio**

The inventory turnover ratio measures how fast the company replaces a current batch of inventories and transforms them into sales. A higher ratio indicates that the company's product is in high demand and sells quickly, resulting in lower inventory management costs and more earnings. Inventory turnover ratio is a financial ratio that indicates how many times a company's inventory has been sold and replaced in a given period. The number of days it takes to sell the inventory on hand may then be determined using the inventory turnover formula and the number of days in the period.

- Inventory includes all goods, raw or finished, that a company has in stock with the intent to sell.
- Inventory turnover is the rate that inventory stock is sold, or used, and replaced.
- The inventory turnover ratio is calculated by dividing the cost of goods by average inventory for the same period.
- A higher ratio tends to point to strong sales and a lower one to weak sales. Conversely, a higher ratio can indicate insufficient inventory on hand, and a lower one can indicate too much inventory in stock.

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Cost of goods sold} = \text{Opening stock} + \text{Purchase} - \text{Closing stock}$$

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$



## **Perpetual Inventory System**

A perpetual inventory system is an inventory management method that records each sale or purchase of inventory in real-time, through automated software. With a perpetual inventory system, each sale or purchase of merchandise is updated on a real-time basis automatically, thus providing you with a full financial picture of your inventory levels.

- The inventory count is updated in real-time using inventory management software and procedures.
- It entails that staff members utilize barcode scanners to capture sales, purchases, or returns as they happen.
- Employees input this data into a dynamic database that keeps track of every update.
- The system is distinguished from the periodic approach by the automatic or perpetual updating of the inventory. This is what gives the technique its name.
- Perpetual inventory has become a more robust and viable choice for many firms in recent years. It is due to advancements in inventory management software and its ability to be integrated with other business systems.
- The flexibility of perpetual inventory software to interact with other corporate systems gives it its true worth.

## **Advantages of Perpetual Inventory System**

The following are advantage of the perpetual inventory system.

1. It helps in avoiding the long and costly work of physical checking stocks at the end of the year.
2. It also avoids dislocation in production which arises in the case of periodic stock-taking at the end of the year.
3. As stock figures are readily available at all times, the Profit and Account and Balance Sheet can be easily prepared at interim periods.



4. The system acts as moral check on the staff of the stores department to work honestly and to keep-up-to-date records.
5. A system of internal check remains in operation all the time.
6. Discrepancies are readily discovered and rectified. This gives an opportunity for preventing a recurrence in future.
7. The system helps in keeping the stocks within the limits decided upon by the management so that excessive working capital is not sunk in the stock.
8. A detailed and reliable check on stores is obtained.
9. It makes available correct figures for claim to be ledged with the Insurance Company for loss on account of stock destroyed by fire.

#### **Disadvantages Perpetual Inventory System**

- (i) The system is expensive and a small concern cannot afford to implement this system.
- (ii) The information about actual stock of a particular item on a particular day may not be available, only figures above are available.



### Perpetual inventory system v/s periodic inventory system

BASIS FOR COMPARISON	PERPETUAL INVENTORY SYSTEM	PERIODIC INVENTORY SYSTEM
Meaning	The inventory system which traces every single movement of inventory, as and when they arise is known as Perpetual Inventory System.	The Periodic Inventory System is an inventory record method whereby, the inventory records are updated at periodic intervals.
Basis	Book Records	Physical Verification
Information about	Inventory and Cost of sales	Inventory and Cost of goods sold
Possibility of Inventory Control	Yes	No
Affect on business operation	This method does not influence the business operation.	Under this system, the business operations need to be stopped during valuation.

### Automatic order system

An automated inventory management system allows retailers and wholesalers to manage their inventory in real-time. The systems simplify workflows and save time. By configuring your retail automation with pre-built conditions, you'll be free to get on with other essential tasks safe in the knowledge that inventory is taken care of. An automated inventory management system contributes greatly to business digitalization, leading to increased system accuracy, the tuning of real-time tracking, early problem detection, and increased efficiency.



---

## **Benefits of Automated Inventory Management:**

### **1. Save tons of time**

Think of all those hours spent manually updating your inventory on Excel spreadsheets. With an automated system, all your stock counts will be updated automatically and with precision across all your channels. Every time an item is sold, returned, or received, your automation engine will register the action and update the system without manual instruction—leaving you with time to focus on what really matters.

### **2. Gain real-time visibility**

Retail operating systems like Bright pearl help you to track your inventory levels in real-time. You'll be able to track how much inventory you have available in your warehouse(s), stock which needs to be picked for current orders & stock on order from your suppliers.

### **3. Stop miscalculating stock-levels**

Stock miscalculations are the bane of every retailer's life. Luckily, an automated inventory management solution makes this particular task so much easier. Inventory analytics monitor your customer data to forecast your ideal inventory levels and carry out inventory stock replenishment as and when necessary.

### **4. Scale-up with ease**

Finally, automation can bring with it great scalability and opportunities for growth. Automated inventory management software frees up time, is more accurate, and can deal with thousands of transactions each day without risk of error.



## UNIT IV

### LEVERAGE AND DIVIDEND DECISION

The word 'leverage', borrowed from physics, is frequently used in financial management. The object of application of which is made to gain higher financial benefits compared to the fixed charges payable, as it happens in physics i.e., gaining larger benefits by using lesser amount of force.

In the area of finance, the term leverage is used to describe the ability of a firm to use fixed cost asset or fund to magnify the return to its owners. Leverage is basically an investment where borrowed money or debt is used to maximise the returns of an investment, acquire additional assets or raise funds for the company. Individuals or businesses create debt by borrowing money or capital from lenders and promising to pay this debt off with the added interest. Thus, leverage can also mean trading equities. a company can use leverage for various reasons like increasing the value of their assets, acquiring new equipment to increase the shareholder value, and many more. Whereas an individual investor usually uses leverage to increase the return of their investments. If a firm is not required to pay fixed cost or fixed return there will be no leverage.

#### **Concept of Leverage**

The term Leverage in general refers to a relationship between two interrelated variables. In financial analysis it represents the influence of one financial variable over some other related financial variable. These financial variables may be costs, output, sales revenue, earnings before interest and tax, earnings before tax, earning per share, etc.

#### **According to Ezra Solomon:**

“Leverage is the ratio of net returns on shareholders equity and the net rate of return on capitalisation”.

#### **According to J. C. Van Home:**

“Leverage is the employment of an asset or funds for which the firm pays a fixed cost of fixed return.”



## **Advantages**

- Companies or individual businesses that borrow loans through leverage investments can make a relatively small investment.
- Through this leveraged investment, these companies and businesses can buy more assets and funds for their organisation.
- Suppose the asset value increases and the conditions are favourable. In that case, it benefits the borrowers greatly as they can get higher returns for their investments which will help them to stay within the profit margin.

## **Disadvantages:**

- The one risk that runs while using leverage is the loss that the companies might face if the asset value declines and goes lower than the interest that the companies have to pay on their debts.
- This financial risk is especially high in certain businesses like construction, oil production, and automobile construction, which may face the highest losses if the asset value falls.
- If not used properly, the leverage investment can prove fatal for businesses and can even cause companies to go out of business. This especially affects companies with less predictable income and are less profitable. This is also why many first-time investors are advised against using leverage until they have gained enough experience to avoid such a great loss to their business.

## **Importance of leverage:**

1. Leverage is an important technique in deciding the optimum capital structure of a firm. With the help of this technique, it is easy to determine the ratio of various securities comprising the capital structure of a firm at which the average cost of capital is minimum. If financial leverage is present in a firm, it is possible to increase EPS by increasing the EBIT in a firm.



2. Leverage is also very helpful in taking a capital budgeting decision. If contribution in a firm is not able to meet the fixed operating costs, then business will suffer loss. In other words, the degree of operating leverage must be greater than 1 to make the project operationally profitable.

3. Leverage is most important in assessing the risk involved in a firm. Operating leverage measures the business risk of a firm. Financial leverage measures the financial risk in a firm. The combined leverage measures the total risk involved in a firm.

### **Types of leverages**

#### **(i) Operating leverage**

#### **(ii) Financial leverage**

#### **(iii) Combined leverage**

#### **(i) Operating Leverage:**

Operating Leverage is defined as “the firm’s ability to use fixed operating costs to magnify effects of changes in sales on its earnings before interest and taxes”. In other words, operating leverage is the tendency of the operating profit to vary disproportionately with sales. It is said to exist when a firm has to pay fixed cost regardless of volume of output or sales.

The operating leverage shows the relationship between the changes in sales and the changes in fixed operating income. Thus, the operating leverage has an impact mainly on fixed costs and also on variable costs and contribution. Of course, there will be no operating leverage if there are no fixed operating costs.

**The operating leverage can be calculated by adopting the following formula:**

$$\text{Operating Leverage} = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}} \quad \text{OR} \quad \frac{\text{Contribution}}{\text{EBIT}}$$

Where,

EBIT = Earnings Before Interest and Tax.



### Importance of Operating leverage

1. Useful for financing planning
2. Useful for planning capital structure
3. Useful for risk analysis.

### Illustration No. 4.1

The following are the details

Selling price per unit	Rs. 20	Variable
cost per unit	Rs. 12	Actual
sales	200 units	
Installed capacity	300 units	

Calculated operating leverage in each of the following two situations.

1. when fixed costs are Rs. 1000
2. when fixed costs are Rs. 800

### Solution

#### Statement showing computation of operating leverage

Sales	Rs. 4,000	Rs. 4,000
Less Variables Costs	Rs. 2,400	Rs. 2,400
	-----	-----
Contribution	Rs. 1,600	Rs. 1,600
Less – Fixed Costs	Rs. 1,000	Rs. 800
	-----	-----
Earning Before Tax	Rs. 600	Rs. 800
Operating Leverage	Rs. 1,600	Rs. 1,600
	-----	-----
	Rs. 600	Rs. 800
	= 2.67	2.0



### Illustration No. 4.2

<b>Sales Revenue (10,000 × 500)</b>	<b>50,00,000</b>
<b>Less: Variable Cost (10,000 × 200)</b>	<b>20,00,000</b>
<b>Contribution</b>	<b>30,00,000</b>
<b>Less: Fixed Cost</b>	<b>25,00,000</b>
<b>EBIT</b>	<b>5,00,000</b>

A Company produces and sells 10,000 shirts. The selling price per shirt is Rs 500. Variable cost is Rs 200 per shirt and fixed operating cost is Rs 25,00,000.

- (a) Calculate operating leverage.
- (b) If sales are up by 10%, then compute the impact on EBIT?



**Solution**

**Statement of Profitability**

$$OL = \frac{\text{Contribution}}{\text{EBIT}} = \frac{30,00,000}{5,00,000}$$

$$OL = 6 \text{ times}$$

$$\text{Degree of Operating Leverage} = \frac{\text{Percentage change in EBIT}}{\text{Percentage change in Sales}}$$

$$6 = \frac{X / 5,00,000}{5,00,000 / 50,00,000}$$

$$X = 3,00,000$$

$$\text{EBIT} = 3,00,000 / 5,00,000 = 60\%$$

**Illustration No. 4.3**

Calculated operating leverage from the following data and advise which company is riskier:

	Company x	Company y
Sales	25,00,000	30,00,000
Variable cost	25% of sales	25% of sales
Fixed cost	8,00,000	2,50,000



## Solution

	Company x	Company y
Sales	25,00,000	30,00,000
Less: Variable cost	6,25,000	7,50,000
Contribution	18,75,000	22,50,000
Less: Fixed cost	8,00,000	2,50,000
EBIT	10,75,000	20,00,000
<b>Operating Leverage</b>	<b>1.74</b>	<b>1.125</b>

$$\text{OL} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{18,75,000}{10,75,000} = 1.74$$

$$\text{OL} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{22,50,000}{20,00,000} = 1.125$$

### (ii) Financial Leverage:

The financial leverage is defined as the ability of a firm to use fixed financial charges to magnify the effects of changes in operating profits, on the firm's earning per share. In other words, the financial leverage is the tendency of a residual net income to vary disproportionately with operating profit. It indicates the change that takes place in the taxable income as a result of change in the operating income.



**The financial leverage can be computed by adopting the following formula:**

$$FL = \frac{EBIT}{EBT}$$

FL = Financial Leverage  
EBIT = Earnings Before Interest and Tax  
EBT = Earnings Before Tax

### **Degree of Financial Leverage**

Degree of FL indicate the relationship between EBIT and EPS.

### **Degree of FL**

$$= \frac{\text{Percentage of change in EPS}}{\text{Percentage of change in EBIT}}$$

### **Importance of Financial leverage**

1. Helps in Profit Planning
2. Helps in Capital Structure Planning
3. Helps in Profit Maximization.

### **Illustration No. 4.4**

A Ltd. has the following capital structure:

	Rs.
Equity share capital (of Rs. 100 each)	1,00,000
10% Preference share capital (of Rs. 100 each)	2,00,000
10% debentures (of Rs. 100 each)	2,00,000

If EBIT is (i) Rs. 1,00,000 (ii) Rs. 80,000 and (iii) Rs. 1,20,000,

Calculate financial leverage under three situations. Assume 50% tax rate.



## Solution

### Computation of Financial Leverage

Items	(i)	(ii)	(iii)
EBIT	Rs. 1,00,000	Rs. 80,000	Rs. 1,20,000
Less Interest on Debentures	Rs. 20,000	Rs. 20,000	Rs. 20,000
	-----	-----	-----
EBT	Rs. 80,000	Rs. 60,000	Rs. 1,00,000
Less Income Tax	Rs. 40,000	Rs. 30,000	Rs. 50,000
	-----	-----	-----
PAT	Rs. 40,000	Rs. 30,000	Rs. 50,000
Less Preference Dividend	Rs. 20,000	Rs. 20,000	Rs. 20,000
	-----	-----	-----
Earnings for Equity Shareholders	Rs. 20,000	Rs. 10,000	Rs. 30,000
No. of Shares	Rs. 10,000	Rs. 10,000	Rs. 10,000
EPS	2	1	3

	EBIT	Rs. 1,00,000	Rs. 80,000	Rs. 1,20,000
Financial Leverage	-----	-----	-----	-----
	EBT	Rs. 20,000	Rs. 10,000	Rs. 30,000
		5	8	4

### (iii) Combined Leverage:

The operating leverage explains the operating risk and financial leverage explains the financial risk of the firm. However, a firm has to look into overall risk or total risk of the firm i.e., operating risk as well as financial risk. Hence, if we combine the operating risk and financial risk, the result is combined leverage. Combined leverage thus expresses the relationship between revenue on account of sales and the taxable income.



The combined leverage can be computed by adopting following formula:

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBT}} \text{ OR } \frac{\% \text{ age Change in Taxable Income}}{\% \text{ age Change in Sales}}$$

OR

$$\text{Combined leverage} = \text{Operating Leverage} \times \text{Financial Leverage}$$

### Illustration No. 4.5

A firm's details are as under:

Sales (@100 per unit)	24,00,000
Variable Cost	50%
Fixed Cost	10,00,000

It has borrowed 10,00,000 @ 10% p.a. and its equity share capital is 10,00,000 (₹ 100 each)

CALCULATE:

- (a) Operating Leverage
- (b) Financial Leverage
- (c) Combined Leverage
- (d) Return on Investment



## Solution

### Statement of Profitability

Sales	24,00,000
<i>Less: Variable cost</i>	12,00,000
Contribution	12,00,000
<i>Less: Fixed cost</i>	10,00,000
EBIT	2,00,000
<i>Less: Interest</i>	1,00,000
EBT	1,00,000
<i>Less: Tax (50%)</i>	50,000
EAT	50,000
No. of equity shares	10,000
EPS	5

$$(a) \text{ Operating Leverage} = \frac{12,00,000}{2,00,000} = 6 \text{ times}$$

$$(b) \text{ Financial Leverage} = \frac{2,00,000}{1,00,000} = 2 \text{ times}$$

$$(c) \text{ Combined Leverage} = \text{OL} \times \text{FL} = 6 \times 2 = 12 \text{ times.}$$

$$(d) \text{ R.O. I} = \frac{50,000}{10,00,000} \times 100 = 5\%$$

$$\text{Here ROI} = \frac{\text{EAT-Pref.Dividend}}{\text{Equity shareholders 'fund}}$$

$$(e) \quad 6 = \frac{\text{EBIT}}{0.25} \quad \text{EBIT} = 1.5$$

$$\text{Increase in EBIT} = 2,00,000 \times 1.5 = 3,00,000$$

$$\text{New EBIT} = 5,00,000$$



### Illustration No. 4.6

Calculate Operating leverage, Financial leverage, Combined leverage from the following data

	A Ltd	G Ltd
Sales	25,00,000	30,00,000
Variable cost	40% of sales	40% of sales
Fixed cost	5,50,000	3,50,000
Interest	1,25,000	1,60,000

### Solution

	A Ltd	G Ltd
Sales	25,00,000	3,00,0000
<i>Less: Variable cost</i>	10,00,000	12,00,000
Contribution	15,00,000	18,00,000
<i>Less: Fixed cost</i>	5,50,000	3,50,000
EBIT	9,50,000	14,50,000
<i>Less: Interest</i>	1,25,000	1,60,000
EBT	8,25,000	12,90,000
Operating leverage	1.57	1.24
Financial leverage	1.15	1.12
Combined leverage	1.81	1.39



## **EBIT - EPS ANALYSIS**

EBIT-EPS analysis gives a scientific basis for comparison among various financial plans and shows ways to maximize EPS. Hence EBIT-EPS analysis may be defined as ‘a tool of financial planning that evaluates various alternatives of financing a project under varying levels of EBIT and suggests the best alternative having highest EPS and determines the most profitable level of EBIT’. This is a method to study the effect of leverage. It involves the comparisons of alternative methods of financing under various alternative financing proposals. A firm may raise funds in either of the following alternatives:

- (i) Exclusive use of equity capital
- (ii) Exclusive use of debt
- (iii) Various combinations of debt and equity
- (iv) Various combinations of debt, equity and preferences capital

### **Concept of EBIT-EPS Analysis:**

The EBIT-EPS analysis is the method that studies the leverage, i.e. comparing alternative methods of financing at different levels of EBIT. Simply put, EBIT- EPS analysis examines the effect of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans. It examines the effect of financial leverage on the behavior of EPS under different financing alternatives and with varying levels of EBIT. EBIT-EPS analysis is used for making the choice of the combination and of the various sources. It helps select the alternative that yields the highest EPS. We know that a firm can finance its investment from various sources such as borrowed capital or equity capital. The proportion of various sources may also be different under various financial plans. In every financing plan the firm’s objectives lie in maximizing EPS.



### **Advantages of EBIT-EPS Analysis:**

- **Financial Planning:** Use of EBIT-EPS analysis is indispensable for determining sources of funds. In case of financial planning the objective of the firm lies in maximizing EPS. EBIT- EPS analysis evaluates the alternatives and finds the level of EBIT that maximizes EPS.
- **Comparative Analysis:** EBIT-EPS analysis is useful in evaluating the relative efficiency of departments, product lines and markets. It identifies the EBIT earned by these different departments, product lines and from various markets, which helps financial planners rank them according to profitability and also assess the risk associated with each.
- **Performance Evaluation:** This analysis is useful in comparative evaluation of performances of various sources of funds. It evaluates whether a fund obtained from a source is used in a project that produces a rate of return higher than its cost.
- **Determining Optimum Mix:** EBIT-EPS analysis is advantageous in selecting the optimum mix of debt and equity. By emphasizing on the relative value of EPS, this analysis determines the optimum mix of debt and equity in the capital structure. It helps determine the alternative that gives the highest value of EPS as the most profitable financing plan or the most profitable level of EBIT as the case may be.

### **Limitations of EBIT-EPS Analysis:**

Finance managers are very much interested in knowing the sensitivity of the earnings per share with the changes in EBIT; this is clearly available with the help of EBIT-EPS analysis but this technique also suffers from certain limitations, as described below

- **No Consideration for Risk:** Leverage increases the level of risk, but this technique ignores the risk factor. When a corporation, on its borrowed capital, earns more than the interest it has to pay on debt, any financial planning can be accepted irrespective of risk.



But in times of poor business the reverse of this situation arises—which attracts high degree of risk. This aspect is not dealt in EBIT-EPS analysis.

- **Contradictory Results:** It gives a contradictory result where under different alternative financing plans new equity shares are not taken into consideration. Even the comparison becomes difficult if the number of alternatives increase and sometimes it also gives erroneous result under such situation.
- **Over-capitalization:** This analysis cannot determine the state of over-capitalization of a firm. Beyond a certain point, additional capital cannot be employed to produce a return in excess of the payments that must be made for its use. But this aspect is ignored in EBIT-EPS analysis.

#### Illustration No. 4.7

A company is contemplating to raise additional fund of Rs. 20,00,000 for setting up a project. The company expects, EBIT of Rs. 8,00,000 from the project. Following alternative plans are available :

- (a) To raise Rs. 20,00,000 by way of equity share of Rs. 10 each
- (b) To raise Rs. 10,00,000 by way of equity shares and Rs. 10,00,000 by way of debt @ 10%.
- (c) To raise Rs. 6,00,000 by way of equity and rest Rs. 14,00,000 by way of preference shares @ 14%.
- (d) To raise Rs. 6,00,000 by equity shares
  - Rs. 6,00,000 by 10% equity
  - Rs. 8,00,000 by 14% Preference shares

The company is in 60% tax bracket which option is best ?



## Solution

### EBIT - EPS Analysis

Particulars	Options			
	A	B	C	D
EBIT	8,00,000	8,00,000	8,00,000	8,00,000
Less Interest	-	1,00,000	-	60,000
EBT	8,00,000	7,00,000	8,00,000	7,40,000
Less Tax	4,80,000	4,20,000	4,80,000	4,44,000
EAT	3,20,000	2,80,000	3,20,000	2,96,000
Less Dividend for Preference shares	-	-	1,96,000	1,12,000
Earnings for equity Shareholders	3,20,000	2,80,000	1,24,000	1,84,000
Number of Equity shares	2,00,000	1,00,000	60,000	60,000
EPS	1.6	2.8	2.07	3.07

**Option D is the best as EPS is the maximum in this case.**

### Illustration No. 4.8

Achuth Ltd. Has a share capital of Rs .1,00,000 divided into share of Rs. 10 each. It has a major expansion program requiring an investment of another Rs. 50,000.

The Management is considering the following alternatives for raising this amount:

Issue of 5,000 equity shares of Rs. 10 each

Issue of 5000, 12% preference shares of Rs. 10 each Issue of 10%

debentures of Rs. 50,000



The company's present Earning Before Interest and Tax (EBIT) are Rs. 40,000 per annum subject to tax @ 50%. You are required to calculate the effect of the above financial plan on the earnings per share presuming:

- (a) EBIT continues to be the same even after expansion
- (b) EBIT increases by Rs. 10,000

### Solution

#### (A) When EBIT is Rs. 40,000 Per Annum

EBIT	Rs. 40000	Rs. 40,000	Rs. 40,000
-Interest	-----	-----	5,000
Profit before Tax	40,000	40,000	35,000
-Tax @ 50%	20,000	20,000	17,000
Profit for Tax	20,000	20,000	17,000
-Pref. Dividend	-----	6,000	-----
Profit for Equity	20,000	14,000	17,000
Number of Equity shares	15,000	10,000	10,000
EPS (Rs)	1.33	1.40	1.75



**(b) When EBIT is expected to increase by Rs. 10,000**

	Rs. 50,000	Rs. 50,000	Rs. 50,000
<b>EBIT</b>	Rs. 50,000	Rs. 50,000	<b>Rs. 50,000</b>
<b>-Interest</b>	-----	-----	<b>5,000</b>
<b>Profit before Tax</b>	50,000	50,000	<b>45,000</b>
<b>-Tax @ 50%</b>	25,000	25,000	<b>22,000</b>
<b>Profit for Tax</b>	25,000	25,000	<b>22,000</b>
<b>-Pref. Dividend</b>	-----	6,000	-----
<b>Profit for Equity</b>	25,000	19,000	<b>22,000</b>
<b>Number of Equity shares</b>	15,000	10,000	<b>10,000</b>
<b>EPS (Rs)</b>	<b>1.67</b>	<b>1.90</b>	<b>2.25</b>

So, under both assumptions of EBIT, the EPS would be highest in Plan III.

**Illustration No. 4.9**

Suppose, ABC Ltd. which is expecting the EBIT of Rs.1,50,000 per annum on an investment Rs.5,00,000, is considering the finalization of the capital structure or the financial plan. The company has access to raise funds of varying amounts by issuing equity share capital, 12% preference share and 10% debenture or any combination thereof. Suppose, it analyzes the following four options to raise the required funds of Rs.5,00,000. 1. By issuing equity share



capital at par. 2. 50% funds by equity share capital and 50% funds by preference shares. 3.5% funds by equity share capital, 25% by preference shares and 25% by issue of 10% debentures. 4.25% funds by equity share capital, 25% as preference share and 50% by the issue of 10% debentures. Assuming that ABC Ltd. belongs to 50% tax bracket.

### Solution

	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>
<b>Equity share capital</b>	<b>Rs.5,00,0000</b>	<b>Rs.2,50,000</b>	<b>Rs.2,50,000</b>	<b>Rs.1,25,000</b>
<b>Preference share capital</b>	---	<b>2,50,000</b>	<b>1,25,000</b>	<b>1,25,000</b>
<b>10% Debentures</b>	---	---	<b>1,25,000</b>	<b>2,50,000</b>
<b>Total Funds</b>	<b>5,00,000</b>	<b>5,00,000</b>	<b>5,00,000</b>	<b>5,00,000</b>
<b>EBIT</b>	<b>1,50,000</b>	<b>1,50,000</b>	<b>1,50,000</b>	<b>1,50,000</b>
<b>- Interest</b>	---	---	<b>12,500</b>	<b>25,000</b>
<b>Profit before Tax</b>	<b>1,50,000</b>	<b>1,50,000</b>	<b>1,37,500</b>	<b>1,25,000</b>
<b>- Tax @ 50%</b>	<b>75,000</b>	<b>75,000</b>	<b>68,750</b>	<b>62,500</b>
<b>Profit after Tax</b>	<b>75,000</b>	<b>75,000</b>	<b>68,750</b>	<b>62,500</b>
<b>- Preference Dividend</b>	---	<b>30,000</b>	<b>15,000</b>	<b>15,000</b>
<b>Profit for Equity shares</b>	<b>75,000</b>	<b>45,000</b>	<b>53,750</b>	<b>47,500</b>
<b>No. of Equity shares (ofRs.100 each)</b>	<b>5000</b>	<b>2500</b>	<b>2500</b>	<b>1250</b>
<b>EPS (Rs.)</b>	<b>15</b>	<b>18</b>	<b>21.5</b>	<b>38</b>

The financial plan under option 4 seems to be the best as it is giving the highest EPS of Rs.38.



## Cost of Capital

Cost of Capital for a firm may be defined as the cost of obtaining fund, ie, the average rate of return that the investors in a firm would expect for supplying fund to the firm. It is the rate of return which one may receive for lending the funds. Cost of capital is an important factor that influences a firm's capital structure. It is one of the cornerstones of the theory of financial management. When formulating a company's capital structure, it is necessary to consider and compare the cost of each source of capital to decide on which sources of capital are in the interest of the owners and shareholders. The cost of capital of a firm is the minimum rate of return expected by its investors. In fact, the cost of capital is the minimum rate of return expected by its owner.

According Soloman Ezra “Cost of Capital is the minimum required rate of earnings or the cut off rate of capital expenditure”.

According Halley and Schall “The cost of capital is the minimum discount rate used to value each stream.”

According Hunt, William, and Donaldson “The cost of capital may be defined as the rate of that which must be earned on the net proceeds to provide the cost elements of the burden at the time they are due.”

## Importance of Cost of Capital

The concept of cost of capital is highly relevant when it comes to making managerial decisions. Key areas of utility include:

**1. Useful in investment decisions:** The cost of capital is useful in capital budgeting decisions. Firms choose projects that give a satisfactory return on investment, which would in no case be



less than the cost of capital incurred for financing. In various methods of capital budgeting, the cost of capital is the key factor used to select projects.

**2. Useful in designing capital structure:** The cost of capital is a useful factor when designing a firm's capital structure. A capable financial manager always considers capital market fluctuations and tries to achieve a sound and economical capital structure for the firm.

**3. Useful in determining financing method:** A capable financial executive must understand fluctuations in the capital market. They should also analyze the rate of interest on loans and the normal dividend rate in the market from time to time. Whenever the company requires additional funding, the financial executive in the firm may be able to find a suitable choice in terms of a source of finance that bears the minimum cost of capital.

**4. Performance of top management:** Companies can use the cost of capital to evaluate the financial performance of top management. Evaluation of financial performance usually involves a comparison of the actual profitability of projects undertaken to the projected overall cost of capital, along with an appraisal of the actual cost incurred in raising the required funds.

**5. Optimal resource mobilization:** The cost of capital can also be used as a medium for optimal resources mobilization. It can also help government departments establish reasonable financial priorities. Both the private and public sectors can use this technique to identify projects that are taken irrespective of profitability.

**6. Useful in evaluating expansion projects:** The cost of capital is a useful technique to study the financial implications of potential expansion plans. In these cases, a comparison is made between the marginal return on investment and the cost of financing the expansion, and the excess return is used as one of the criteria for project selection.

### **Measurement of Cost of Capital**

The measurement of cost of capital refers to the process of determining the cost of funds to the firm. Once the cost has been determined, it is in the light of this cost that the capital budgeting proposal will be evaluated. Just as the firm should carefully estimate



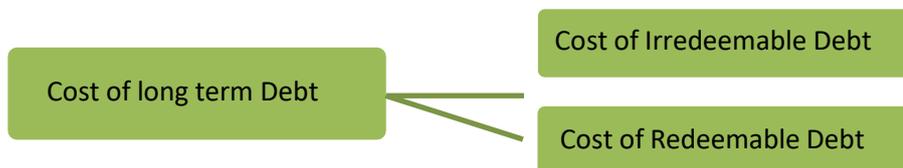
the relevant cash flows associated with a proposal, it should also carefully estimate the cost of capital. If there is a mistake in the determination of the cost of capital, then the investment decision as well as other decisions may be taken wrongly and thus ultimately affecting the profitability and survival of the firm.

### Cost Of Long Term Debt

External borrowings or debt instruments do not confer ownership to the providers of finance. The providers of the debt fund do not participate in the affairs of the company but enjoy the charge on the profit before taxes. Long term debt includes long term loans from the financial institutions, capital from issuing debentures or bonds etc.

As discussed above the external borrowing or debt includes long term loan from financial institutions, issuance of debt instruments like debentures or bonds etc. The calculation of cost of loan from a financial institution is similar to that of redeemable debentures. Here we confine our discussion of cost debt to Debentures or Bonds only.

Based on redemption (repayment of principal) on maturity the debts can be categorised into two types (i) Irredeemable debts and (ii) Redeemable debts.



### Cost of Irredeemable Debentures

The cost of debentures which are not redeemed by the issuer of the debenture is known as irredeemable debentures. Cost of debentures not redeemable during the life time of the company is calculated as below:

$$K_d \text{ (after tax)} = \frac{I}{NP} (1-t)$$

Where,

$K_d$  = Cost of debt after tax

$I$  = Annual interest payment



NP = Net proceeds of debentures or current market price

t = Tax rate

Net proceeds mean issue price less issue expenses. If issue price is not given then students can assume it to be equal to current market price. If issue expenses are not given simply assume it equal to zero.

### Illustration No. 4.10

Five years ago, Sona Limited issued 12 per cent irredeemable debentures at 103, at 3 premium to their par value of ₹ 100. The current market price of these debentures is ₹ 94. If the company pays corporate tax at a rate of 35 per cent calculate its current cost of debenture capital?

### Solution

$$K_d (\text{after tax}) = \frac{I}{NP} (1-t)$$

$$K_d (\text{after tax}) = \frac{12}{94} (1-.35)$$

### Cost of Redeemable Debentures (using approximation method)

The cost of redeemable debentures will be calculated as below:

### Redeemable Debt

$K_d =$

$$I (1-t) + \frac{\frac{RV - NP}{n}}{\frac{RV + NP}{n}}$$

I = Interest

n = number of years in which debt is redeemed

RV = Redeemable value of debt

NP = Net proceeds of debentures



### Illustration No. 4.11

A company issued 10,000, 10% debentures of ₹ 100 each at a premium of 10% on 1.4.2017 to be matured on 1.4.2022. The debentures will be redeemed on maturity. compute the cost of debentures assuming 35% as tax rate.

### Solution

$K_d =$

$$I(1-t) + \frac{RV - NP}{n} \\ \frac{RV + NP}{2}$$

I = Interest on debenture = 10% of ₹ 100 = ₹ 10

NP = Net Proceeds = 110% of ₹ 100 = ₹ 110

RV = Redemption value = ₹ 100

n = Period of debenture = 5 years

t = Tax rate = 35% or 0.35

$$10(1-0.35) + \frac{100 - 110}{5} \\ \frac{100 + 110}{2}$$

**$K_d = 0.0428$  or 4.28%**

### Illustration No. 4.12

A company issued 10,000, 10% debentures of ₹ 100 each at par on 1.4.2012 to be matured on 1.4.2022. The company wants to know the cost of its existing debt on 1.4.2017 when the market price of the debentures is ₹ 80. Compute the cost of existing debentures assuming 35% tax rate.



## Solution

$$K_d =$$

$$I(1-t) + \frac{\frac{RV - NP}{n}}{\frac{RV + NP}{2}}$$

$$I = \text{Interest on debenture} = 10\% \text{ of } \text{₹}100 = \text{₹}10$$

$$NP = \text{Net Proceeds} = \text{₹}80$$

$$RV = \text{Redemption value} = \text{₹}100$$

$$n = \text{Period of debenture} = 5 \text{ years}$$

$$t = \text{Tax rate} = 35\% \text{ or } 0.35$$

$$10(1-0.35) + \frac{\frac{100 - 80}{5}}{\frac{100 + 80}{2}}$$

$$K_d = 0.1166 \text{ or } 11.67\%$$

### COST OF PREFERENCE SHARE CAPITAL

The preference share capital is paid dividend at a specified rate on face value of preference shares. Payment of dividend to the preference shareholders are not mandatory but are given priority over the equity shareholder. The payment of dividend to the preference shareholders are not charged as expenses but treated as appropriation of after-tax profit. Hence, dividend paid to preference shareholders does not reduce the tax liability to the company. Like the debentures, Preference share capital can be categorised as redeemable and irredeemable.

### COST OF REDEEMABLE PREFERENCE SHARE CAPITAL

Preference shares issued by a company which are redeemed on its maturity is called redeemable preference shares. Cost of redeemable preference share is similar to the cost of redeemable debentures with the exception that the dividends paid to the preference shareholders are not tax deductible.



$$K_p = \frac{PD + \left( \frac{RV - NP}{n} \right)}{\left( \frac{RV + NP}{2} \right)}$$

Where,

PD = Annual preference dividend

RV = Redemption value of preference shares

NP = Net proceeds on issue of preference shares

n = Remaining life of preference shares.

Net proceeds mean issue price less issue expenses. If issue price is not given then students can assume it to be equal to current market price. If issue expenses are not given simply assume it equal to zero.

#### Illustration No. 4.13

XYZ Ltd. issues 2,000 10% preference shares of 100 each at 95 each. The company proposes to redeem the preference shares at the end of 10th year from the date of issue. calculate the cost of preference share?

#### Solution

$$K_p = \frac{PD + \frac{RV - NP}{n}}{\frac{RV + NP}{2}}$$
$$10 + \frac{100 - 95}{10}$$
$$\frac{100 + 95}{2}$$

$$K_p = 10.77\%$$



### Cost of irredeemable preference

The cost of irredeemable preference shares is similar to calculation of perpetuity. The cost is calculated by dividing the preference dividend with the current market price or net proceeds from the issue. The cost of irredeemable preference share is as below:

$$K_p = \frac{PD}{NP}$$

PD = Preference Dividend  
NP = Net proceeds

#### Illustration No. 4.14

XYZ & Co. issues 2,000 10% preference shares of 100 each at 95 each. Calculate the cost of preference shares.

#### Solution

$$K_p = \frac{PD}{NP}$$

$$K_p = \frac{100 \times 2000}{95 \times 2000} = 0.1053 = 10.53\%$$

If R Energy is issuing preferred stock at `100 per share, with a stated dividend of 12, and a floatation cost of 3% then, Calculate the cost of preference share?

$$K_p = \frac{\text{Preferred stock dividend}}{\text{Market price of preferred stock (1- floatation cost)}}$$

$$\frac{12}{100 \times 1 - 0.03}$$

$$K_p = 0.1237 \text{ or } 12.37\%$$



## **COST OF EQUITY SHARE CAPITAL**

Just like any other source of finance, cost of equity is expectation of equity shareholders. We know that value is performance divided by expectations. If we know value and performance, then we can calculate expectation as a balancing figure.

Here performance means the amount paid by the company to investors, like interest, dividend, redemption price etc. In case of debentures and preference shares amount of interest or dividend is fixed but in case of equity shares it is uncertain.

Therefore there is no single method for calculation of cost of equity.

- 1) If dividend is expected to be constant then dividend price approach should be used.
- 2) If earning per share is expected to be constant then earning price approach should be used.
- 3) If dividend and earning are expected to grow at a constant rate then growth approach, which is also named as Gordon's model should be used.

### **Dividend Price Approach**

This is also known as Dividend Valuation Model. This model makes an assumption that the dividend per share is expected to remain constant forever. Here, cost of equity capital is computed by dividing the expected dividend by market price per share as follows

$$\text{Cost of Equity (K}_e\text{)} = \frac{D}{P_0}$$

Where,

$K_e$  = Cost of equity

$D$  = Expected dividend

$P_0$  = Market price of equity (ex- dividend)



### **Earning/ Price Approach**

The advocates of this approach co-relate the earnings of the company with the market price of its share. Accordingly, the cost of equity share capital would be based upon the expected rate of earnings of a company. The argument is that each investor expects a certain amount of earnings, whether distributed or not from the company in whose shares he invests.

$$\text{Cost of Equity (K}_e\text{)} = \frac{E}{P}$$

Where,

E = Current earnings per share

P = Market share price

### **Growth Approach or Gordon's Model**

As per this approach the rate of dividend growth remains constant. Where earnings, dividends and equity share price all grow at the same rate, the cost of equity capital may be computed as follows:

$$\text{Cost of Equity (K}_e\text{)} = \frac{D_1}{P_0} + g$$

Where,

$D_1 = [D_0 (1+ g)]$  i.e., next expected dividend

$P_0$  = Current Market price per share

$g$  = Constant Growth Rate of Dividend.

### **Cost of retained earnings**

The cost of retained earnings is often used interchangeably with the cost of equity, as cost of retained earnings is nothing but the expected return of the shareholders from the investment in shares of the company. However, normally cost of equity remains higher than the cost of retained earnings, due to issue of shares at a price lower than current market price and floatation cost.



## **WEIGHTED AVERAGE COST OF CAPITAL(WACC)**

To balance financial risk, control over the company and cost of capital, a company usually does not procure entire fund from a single source. Rather than it makes a mix of various sources of finance. Hence cost of total capital will be equal to weighted average of cost of individual sources of finance.

WACC is also known as the overall cost of capital of having capitals from the different sources as explained above. WACC of a company depends on the capital structure of a company. It weighs the cost of capital of a particular source of capital with its proportion to the total capital. Thus, weighted average cost of capital is the weighted average after tax costs of the individual components of firm's capital structure. That is, the after-tax cost of each debt and equity is calculated separately and added together to a single overall cost of capital

### **Capital Structure**

Capital Structure refers to the kinds of securities and proportionate amounts that make up capitalization. It refers to the proportion or mix of owners' fund or equity and borrowers fund or debt in the total capitalization. It is the proper or optional mix of debt and equity.

According to Gerestenberg 'capital structure of a company refers to the composition or make up of its capitalization and includes all term capital resources, viz, loans, reserves, shares and bonds'.

Capitalization—Refers to the total amount of securities issued by a company

### **Forms/patterns of Capital Structure**

The Capital Structure of a new company may consist of any of the following forms;

- (a) Equity shares only
- (b) Equity and preference shares
- (c) Equity shares and debentures
- (d) Equity shares, preference shares and debentures.



## Factors Determining Capital Structure

The Capital Structure of a company depends on a number of factors and this factor varies from one organization to another;

- 1. Size of the firm:-** The size of a firm influences the capital structure decisions. If the firm is small it prefers to raise funds through the issue of equity shares and also depends on retained earnings. Big and growing firms depend on debt capital as they can borrow loans from various sources at lower rate of interest.
- 2. State of the firm:-** The life cycle stage is also an important factor for capital structure decisions. If the firm is on growth or maturity stage it will rely on debt but, if it is in declining stage, it will depend more on equity.
- 3. Nature of Business:-** The Capital Structure decision differs according to the operational characteristics of the firm. Merchandising firms operate on a small margin and so relies more on equity. Public Utility Concerns prefer to issue debentures and preference shares because they may earn adequate earnings to meet the recurring cost of interest or fixed dividend.
- 4. Trading on Equity or Financial Leverage:-** The use of long term fixed interest bearing debt and preference capital along with equity share capital is called financial Leverage or trading on equity. The use of long term debt increases the earnings per share if the firm Yields a return higher than the cost of debt.
- 5. Control :-**Equity shareholders are the real owners of a company as they have complete control over the company. At the time of designing capital structure it should be ensured that the control of existing shareholders over the affairs of the company is not adversely affected.



6. **Cost of Capital** :-Overall cost of capital of the firm is an important factor that influences the capital structure decision.
7. **Flexibility**:- The desire to keep flexibility in the capital structure influences the financing decision. Flexibility means that, if need arises amount of capital in the business could be increased or decreased easily.
8. **Corporate Tax Rate**:- High the rate of corporate tax on profit compel the companies to prefer debt financing because interest is allowed to be deducted while computing taxable profit.
9. **Period of Finance** :-The period for which the finance is required is an important factor to be kept in mind while selecting an appropriate capital mix. If the finance are required for a limited period, debentures should be preferred to shares.
10. **Legal Requirements** :-The legal restrictions are very significant as these laydown a framework within which capital structure decisions has to be made.

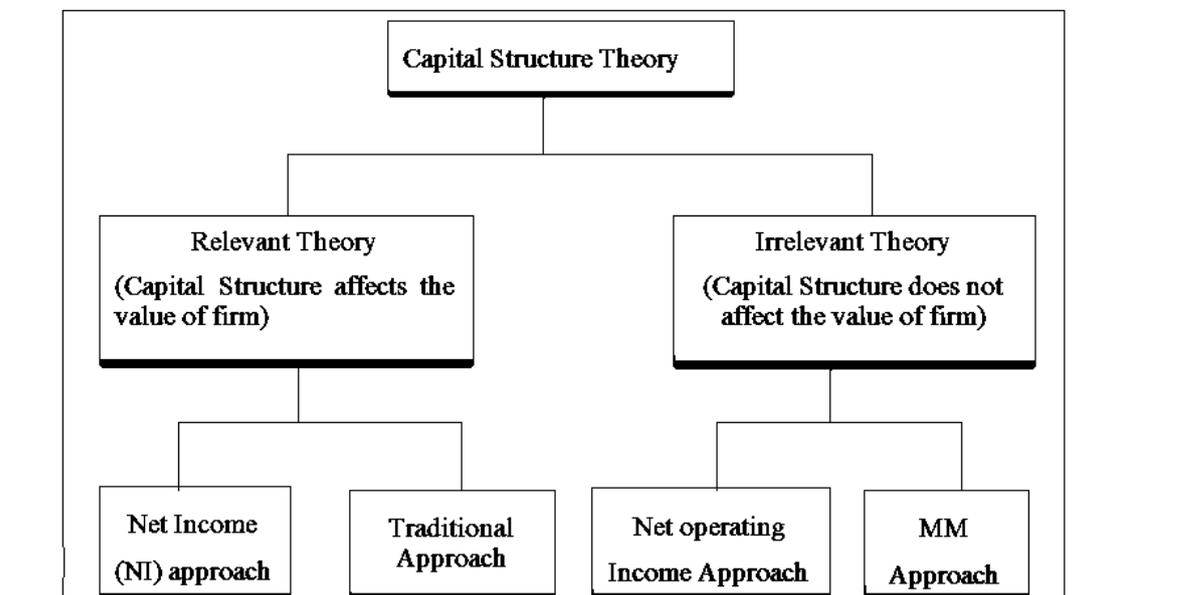
**Optimal Capital Structure** - The optimal capital structure may be defined as that capital structure or combination of debt and equity that leads to the maximum value of the firm. That is maximizes the values of the company, maximises the wealth of its owners and minimizes the company's cost of capital.

#### **Features of a Sound Capital Mix**

1. Maximum possible use of leverage
2. Flexible
3. Minimizes the risk
4. Maximizes the value of firm
5. Overall cost of capital is the minimum
6. Maximizes EPS



## Capital Structure Theories



### Net Income Approach

Durand presented the Net Income Approach. According to this approach, a firm can minimize the weighted average cost of capital and increase the value of the firm as well as market price of equity shares by using debt financing to the maximum possible extent. A company can increase the value and decrease the overall cost of capital by increasing the proportion of debt in its capital structure. As per Net Income Approach, there is a relationship between capital structure and value of the firm and therefore firm can affect its value by increasing or decreasing the debt proportion in the overall financing mix. This approach shows that capital structure has relevance in determining the value of firm. The Net Income Approach makes the following main assumptions:

1. The total capital requirement of the firm is given and remains constant.
2. Perpetual Debt and equity capital.
3. Cost of debt ( $K_d$ ) is less than the cost of equity ( $K_e$ ) and both these costs are constant irrespective of the amount of debt capital used .
4. There are no taxes and no transaction costs.



- $K_d$  and  $K_e$  will remain constant.
- $K_o$  will decrease with the help of use of Debt.
- MV of Equity and Firm will increase with the help of use of Debt.



Value of Firm = Value of Equity + Value of Debt

$$V = E + D$$

$$E = \frac{\text{Net Income available to equity shareholders}}{\text{Cost of equity}}$$

$$E = \frac{\text{Net Income after interest}}{\text{Cost of equity}}$$

Further we can calculate the Weighted average cost of capital (WACC) denoted by  $K_o$ . It is also termed as overall cost of capital.

$$K_o = W_e \times K_d + W_d \times K_d$$

Where:

$W_e$  = proportion of funds invested in equity or weight of equity capital

$W_d$  = proportion of funds invested in debt or weight of debt capital



### Illustration No. 4.15

The expected Earnings before interest and taxes (EBIT) of a firm is 4,00,000. It has issued equity share capital and the cost of equity is assumed to be 10%. It has also issued 8% debt of 5,00,000. Find out the value of firm and overall cost of capital (WACC) as per Net Income Approach.

### Solution

EBIT = 4,00,000.  $K_e = 10\%$ ,  $K_d = 8\%$  and Value of Debt = 5,00,000

EBIT	4,00,000
Less: Interest (8% of ` 5,00,000)	40,000
Net Profit available for equity shareholders (EBT)	3,60,000
Cost of Equity ( $K_e$ )	10%
Value of Equity ( $3,60,000/0.10$ )	36,00,000
Value of Debt	5,00,000
Total Value of Firm	41,00,000

$$\text{Weighted Average Cost of Capital (WACC)} = K_o = \frac{4,00,000}{41,00,000} = 0.097 \text{ or } 9.7\% (\text{apprx})$$

WACC can also be calculated as follows:

$$\begin{aligned} \text{WACC} &= \text{Cost of Equity} \times \text{Weight of Equity} + \text{Cost of Debt} \times \text{Weight of Debt} \\ &= 0.10 \times \frac{36,00,000}{41,00,000} + 0.08 \times \frac{5,00,000}{41,00,000} = 0.097 \text{ or } 9.7\% \end{aligned}$$



### Illustration No. 4.16

Ajas Ltd issued 8% debt of 10,00,000 instead of 5,00,000. Calculate the value of the firm and WACC as per Net Income approach?

### Solution

In this case, the position would have been as follows:

EBIT	4,00,000
Less: Interest (8% of ` 10,00,000)	80,000
Net Profit available for equity shareholders (EBT)	3,20,000
Cost of Equity (Ke)	10%
Value of Equity (3,20,000/0.10)	32,00,000
Value of Debt	10,00,000
Total Value of Firm	42,00,000

$$\text{Weighted Average Cost of Capital (WACC)} = \frac{4,00,000}{42,00,000} = 0.095 \text{ or } 9.5\%$$

**So, if 8% debt is increased from 5,00,000 to 10,00,000 the value of firm increases from 41,00,000 to 42,00,000 and WACC decreases from 9.7% to 9.5%.**

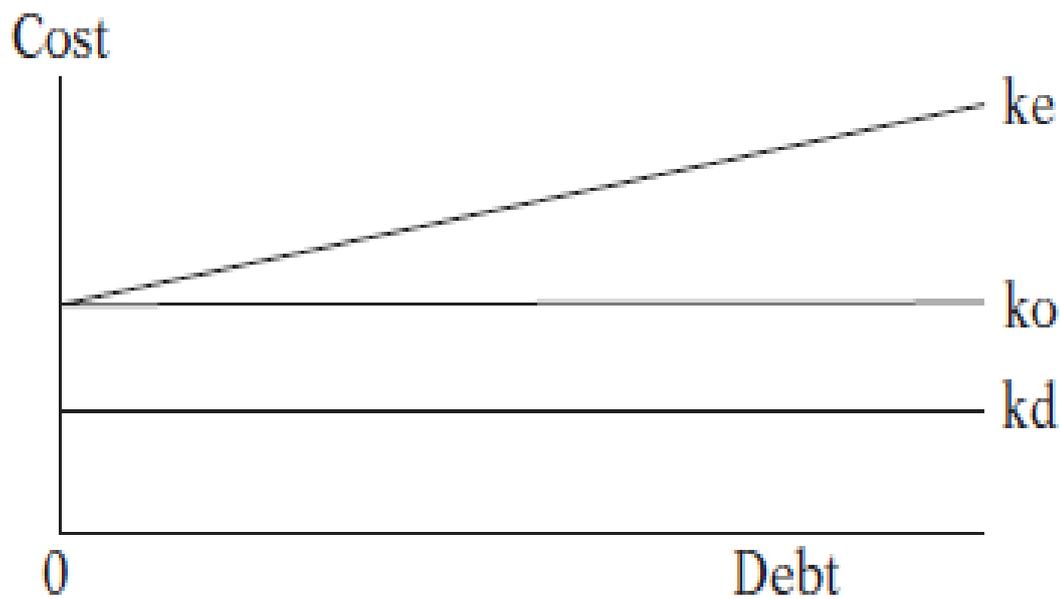


---

## Net Operating Income Approach

This approach was put forth by Durand and totally differs from the Net Income Approach. Also famous as the traditional approach, The Net Operating Income Approach is in complete contrast to the Net Income Approach. According to Net Operating Income Approach, the market value of the firm is not affected by its capital structure. The value of the firm and its overall cost of capital remains same irrespective of the proportion of debt (or financial leverage) in capital structure. In other words, According to this approach, change in the capital structure of a company does not affect the market value of the firm. The overall cost of capital remains constant irrespective of method of financing. There is nothing as an optimal capital structure and every capital structure is optimum capital structure. The Net Operating Income Approach is based on the following assumptions.

1. The overall cost of capital,  $K_o$ , of the firm is known and constant.  
It depends upon the business risk, which is assumed to be unchanged.
2. The cost of debt,  $K_d$ , is known and constant.
3. Using more and more debt in the capital structure, increases financial risk to equity shareholders and results in the increase in the cost of equity capital,  $K_e$ . The increase in  $K_e$  is such that it completely off sets the benefits of employing cheaper debt.
4. There are no taxes.
5. Firm has perpetual life
6. Debt capital is perpetual.



$$\text{Value of firm} = \frac{\text{Net Operating Income}}{\text{WACC}}$$

Or

$$\text{Value of firm} = \frac{\text{EBIT}}{K_0}$$

Alternatively, Value of the Firm = Value of Equity + Value of Debt

$$K_e = \frac{\text{Net Income after interest}}{\text{Value of equity}}$$

Cost of equity can also be calculated as follows:

$$K_e = K_0 + (K_0 - K_d) D/E$$



### Illustration No. 4.17

A firm has an EBIT of 4,00,000 and belongs to a risk class of 10% i.e. its overall cost of capital is 10%. What is the value of equity capital if its employees 5% debt to the extent of 30%, 40% or 50% of the total capital of 20,00,000? Assume that Net Operating Income approach applies.

### Solution

	30% Debt	40% Debt	50% Debt
EBIT(A)	4,00,000	4,00,000	4,00,000
Overall cost of capital (K <sub>o</sub> )	10%	10%	10%
Value of the firm (V = EBIT/ K <sub>o</sub> )	40,00,000	40,00,000	40,00,000
Value of debt (D) 30%, 40%, 50% of 20 lacs	6,00,000	8,00,000	10,00,000
Value of Equity (E = V-D)	34,00,000	32,00,000	30,00,000
Interest on debt @5% (B)	30,000	40,000	50,000
Net profit available for equity shareholders (A-B)	3,70,000	3,60,000	3,50,000
Ke (Net profit for equity shareholders / Value of Equity)	10.88%	11.25%	11.67%



The cost of equity capital increases with the increase in the proportion of debt capital.

Cost of Equity can also be calculated using the following formula

$$K_e = K_0 + (K_0 - K_d) D/E$$

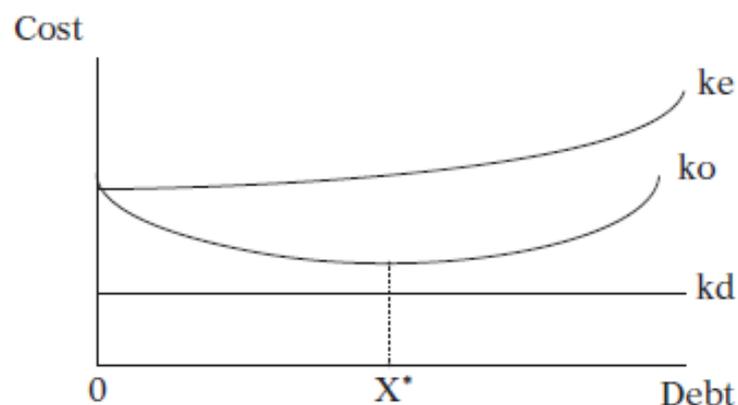
$$K_e = 10 + (10 - 5) 6,00,000/34,00,000 = 10.88\%$$

$$K_e = 10 + (10 - 5) 8,00,000/32,00,000 = 11.25\%$$

$$K_e = 10 + (10 - 5) 10,00,000/30,00,000 = 11.67\%$$

### Traditional Approach

This is a compromise between net income approach and net operating income approach. According to this theory, the value of the firm can be increased initially or the cost of capital can be decreased by using more debt as the debt is a cheaper source of fund than equity. Beyond a particular point, the cost of equity increases because increased debt increases the financial risk of the equity shareholders. As per the traditional approach, there exists an optimal capital structure at which firms cost of capital is minimum and firm's value is maximum. Traditional approach suggests that a firm should make judicious use of both the debt and the equity so as to achieve a capital structure which may be called the optimum capital structure. The traditional view point states that there are three stages in which one can view the relationship between capital structure ( or proportion of debt) and firm's overall cost of capital (  $K_o$ ).





### Illustration No. 4.18

A firm has an EBIT of ₹ 4,00,000. The company is planning to employ debt to the extent of 30%, 40% or 80% of the total capital of ₹ 20,00,000. Cost of debt is 5%. Cost of equity at 30% debt capital is 10%, at 40% debt it is 12% and at 80% debt cost of equity is 20%. What is the value of the firm and its overall cost of capital as per Traditional approach?

### Solution

	30% Debt	40% Debt	50% Debt
EBIT (A)	4,00,000	4,00,000	4,00,000
$K_d$	5%	5%	5%
Value of Debt capital (D)	6,00,000	8,00,000	16,00,000
Interest on Debt capital @5% (B)	30,000	40,000	80,000
Net profit for Equity shareholders (C= A-B)	3,70,000	3,60,000	3,20,000
Cost of Equity (P)	10%	12%	20%
Value of Equity (E= C/P)	37,00,000	30,00,000	16,00,000
Value of firm (V= D+E)	43,00,000	38,00,000	32,00,000
Overall Cost Capital (A/V)	0.093 or 9.3 %	0.105 or 10.5 %	0.125 or 12.5 %



## Modigliani and Millar Approach

Modigliani and Miller devised this approach during the 1950s. Modigliani and Millar (MM) hypothesis states that capital structure is irrelevant for the valuation of a firm. It implies that by changing the proportion of debt and equity, the value of a firm does not change. Firm's value depends on its earnings and risk of its assets rather than financial leverage (debt-equity ratio).

There are two main propositions under MM Hypothesis-

***Proposition 1: Cost of capital is independent of the capital structure of a firm. Hence capital structure is irrelevant for firm's valuation.***

***Proposition II : Cost of equity increases proportionately with increase in the proportion of debt so as to nullify the benefit of cheaper debt. Cost of equity is calculated as follows***

$$K_e = K_0 + (K_0 - K_d) D/E$$

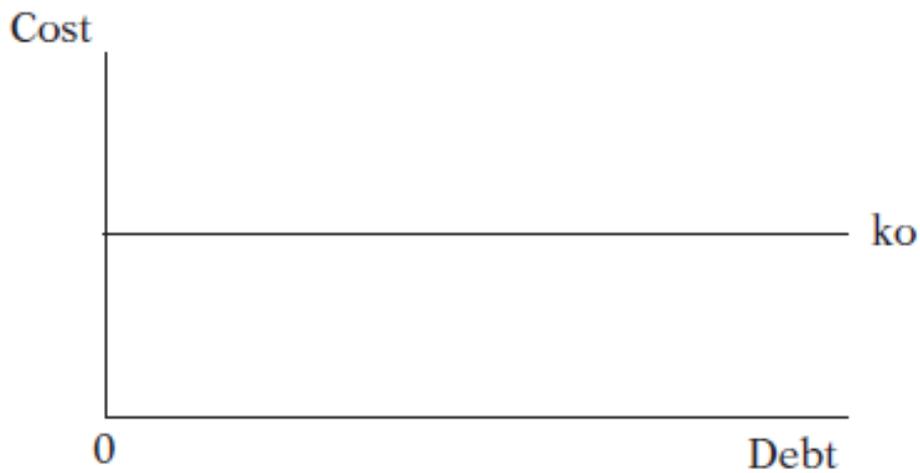
MM Hypothesis is based on the following assumptions:

- (1) Perfect Capital Markets:** Capital markets are perfect. All investors are rational. Investors can freely buy or sell securities. There are no transaction costs and securities are infinitely divisible.
- (2) Homemade Leverage ( or personal leverage) is a perfect substitute for corporate leverage:** It implies that investors can borrow unlimited amount at the same interest rate as the companies can.
- (3) No Taxes:** There are no corporate taxes. Thus, there is no tax saving for firms on interest payment of debt.
- (4) Full Payout:** Firms distribute all their earnings after interest as dividends. Thus, the dividend payout ratio is 100%.

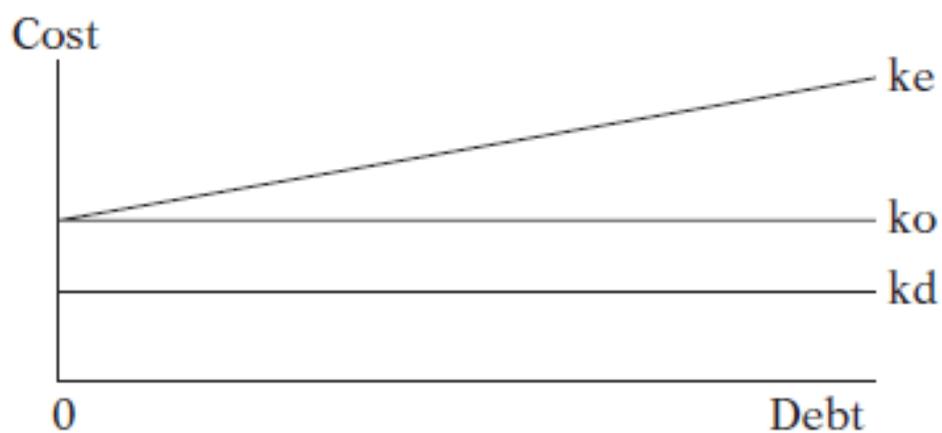


$$\text{Value of firm} = \frac{\text{Net operating income}}{\text{Cost of capital}}$$

i.e. Value of Unlevered Firm = Value of Levered Firm



**MM Hypothesis (Proposition I)**



**MM Hypothesis Proposition II**



### Illustration No. 4.19

There are two firms, U and L. Firm U is the Unlevered Firm and Firm L is the Levered Firm. Firm U has 10000 shares @ 15 per share. Firm L has 5000 shares @ 15 per share and 6% debentures worth 75,000. Operating income of both the firms is 20,000. Compute cost of equity of both the firms as per MM Hypothesis. Also calculate EPS of both the firms.

### Solution

**Cost of equity of Firm U:-**

$$K_e = \frac{\text{Net Operating Income}}{\text{Market value of equity}} = \frac{20000}{150000}$$
$$= 0.1333 \text{ or } 13.33\%$$

In case of Firm U, the cost of equity will be same as cost of capital because of zero debts.

$$\text{Earnings Per Share (EPS)} = \frac{\text{Dividend Income}}{\text{Number of shares}} = \frac{20000}{10000} = ₹ 2 \text{ per share}$$

**Cost of equity of Firm L:-**

Based on proposition 1, the average cost of capital does not depend on capital structure. Thus, WACC will be 13.33%. We know that,

$$K_e = k_o + (k_o - k_d) D/E = 0.1333 + (0.1333 - 0.06) 75000/75000 = 0.2066 \text{ or } 20.66\%$$

Thus, cost of equity will be higher than WACC i.e. 13.33%. The extra 7.33% becomes the financial risk premium.

$$\text{Earnings Per Share (EPS)} = \frac{\text{Net Operating Income} - \text{Interest}}{\text{Number of shares}}$$
$$= \frac{20000 - 4500}{5000} = ₹ 3.1 \text{ per share}$$



---

## **Criticism of MM Approach**

MM Hypothesis, although sounds theoretically correct but has many practical limitations. The propositions given by MM mainly holds true because of the arbitrage process of investors. But this arbitrage process may take place only when the underlying assumptions hold true. However in reality these assumptions are hardly valid. Therefore MM Hypothesis is severely criticised due to its unrealistic assumptions. In reality-

1. Capital markets are not perfect. Investors are not fully rational.
2. Securities are not infinitely divisible.
3. There are transactions costs for buying and selling shares
4. Personal leverage is not a perfect substitute for corporate leverage. Individual investors cannot borrow at the same rate of interest as companies.
5. There exist corporate and personal taxes.

## **DIVIDEND**

According to the Institute of Chartered Accountants of India, dividend is "a distribution to shareholders out of profits or reserves available for this purpose."

"The term dividend refers to that portion of profit (after tax) which is distributed among the owners / shareholders of the firm". In other words, dividend is that part of the net earnings of a corporation that is distributed to its stockholders. It is a payment made to the equity shareholders for their investment in the company.



## **TYPES OF DIVIDEND**

### **Cash Dividend**

The cash dividend is by far the most common of the dividend types used. On the date of declaration, the board of directors resolves to pay a certain dividend amount in cash to those investors holding the company's stock on a specific date. The date of record is the date on which dividends are assigned to the holders of the company's stock. On the *date of payment*, the company issues dividend payments.

### **Stock Dividend**

A stock dividend is the issuance by a company of its common stock to its common shareholders without any consideration. If the company issues less than 25 percent of the total number of previously outstanding shares, then treat the transaction as a stock dividend. If the transaction is for a greater proportion of the previously outstanding shares, then treat the transaction as a stock split.

### **Property Dividend**

A company may issue a non-monetary dividend to investors, rather than making a cash or stock payment. Record this distribution at the fair market value of the assets distributed. Since the fair market value is likely to vary somewhat from the book value of the assets, the company will likely record the variance as a gain or loss. This accounting rule can sometimes lead a business to deliberately issue property dividends in order to alter their taxable and/or reported income.



## **Scrip Dividend**

A company may not have sufficient funds to issue dividends in the near future, so instead it issues a scrip dividend, which is essentially a promissory note (which may or may not include interest) to pay shareholders at a later date. This dividend creates a note payable.

## **Liquidating Dividend**

When the board of directors wishes to return the capital originally contributed by shareholders as a dividend, it is called a liquidating dividend, and may be a precursor to shutting down the business. The accounting for a liquidating dividend is similar to the entries for a cash dividend, except that the funds are considered to come from the additional paid-in capital account.

## **DIVIDEND POLICY**

"Dividend policy determines the ultimate distribution of the firm's earnings between retention (that is reinvestment) and cash dividend payments of shareholders." "Dividend policy means the practice that management follows in making dividend payout decisions, or in other words, the size and pattern of cash distributions over the time to shareholders." In other words, dividend policy is the firm's plan of action to be followed when dividend decisions are made. It is the decision about how much of earnings to pay out as dividends versus retaining and reinvesting earnings in the firm. Dividend policy must be evaluated in light of the objective of the firm namely, to choose a policy that will maximize the value of the firm to its shareholders. The dividend policy of a company reflects how prudent its financial management is. The future prospects, expansion, diversification mergers are affected by dividing policies and for a healthy and buoyant capital market, both dividends and retained earnings are important factors.



## **Types of Dividend Policies**

An organization considers many factors before deciding its dividend policy. The explanation of various types of dividend policy is as follows:

### **Stable Dividend Policy:**

Refers to the policy in which an organization pays regular dividends to its shareholders.

The stable dividend policy is also known as constant-payout-ratio

### **Long-Term Dividend Policy:**

Refers to the policy in which dividend is paid to the shareholders in the long run. If an organization follows long-term dividend policy, then it would not distribute dividend among its shareholders regularly and consistently, even in case of huge profit. The organization retains the earnings to be used in future for its growth and expansion programs. Investors looking for short-term gains do not favor the long-term dividend policy. This policy is preferred by those shareholders who have interest in long-term capital gains.

### **Regular and Extra Dividend Policy:**

Refers to the dividend policy, which pays a fixed amount of dividend on a regular basis, and an additional amount of dividend, if the organization earns abnormal profit.

This policy encourages the prospective investors to invest in the organization and helps in raising capital in the future.

### **Irregular Dividend Policy:**

Refers to the policy in which the dividend payout ratio keeps on fluctuating. In the irregular dividend policy, dividend per share depends on profit of the organization.

If the profit is high, the organization would pay a high dividend per share.

### **Regular Stock Dividend Policy:**

Refers to the policy in which an organization gives dividend in the form of stock instead of cash. If an organization needs liquidity, then it may adopt regular stock dividend policy and issue bonus shares to its shareholders.



## Dividend Theories

### 1. Modigliani and Miller (MM) Theory:

According to MM approach, the dividend policy of a firm has no effect on the value of the firm. This approach is based on certain assumptions which are as follows:

Assumptions:

- (a) There are perfect capital markets and investors are rational.
- (b) Information is freely available and there are numerous transactions.
- (c) An investor cannot influence prices.
- (d) Flotation costs are nil.
- (e) There are no taxes.
- (f) The firm has a fixed investment policy.
- (g) Risk of uncertainty does not exist.

MM hypothesis discusses how the value of the firm remains same whether the firm pays dividend or not.

$$P_0 = \frac{P_1 + D_1}{1 + K_e}$$

$P_1$  = Price at the end of the period.

$D_1$  = Dividend at the end of the period.

$K_e$  = Cost of equity/ rate of capitalization/ discount rate.



### Illustration No. 4.20

Ghajini Ltd. Currently has 10,00,000 equity shares outstanding. Current market price per share is Rs 100. The net income for the current year is Rs 3,00,00,000 and investment budget is Rs 4,00,00,000. Cost of equity is 10%. The company is contemplating declaration of dividends @ Rs 5 per share. Assuming MM approach.

- i) Calculate market price per share if dividend is declared and if it is not declared.
- ii) How many equity shares are to be issued under both the options.

### Solution

$$P_0 = \frac{(D_1 + P_1)}{(1 + k_e)}$$

Current market price of the share = Rs 100

$D_1$  = Expected dividend at the end of year one = Rs 5

$k_e$  = Cost of equity = 10%

$P_1$  = Expected price of the share at the end of year one = ?

a) When dividend is Declared:

$$P_1 = 100 \times (1 + 0.10) - 5 = 110 - 5 = \text{Rs } 105$$

b) When dividend is not declared:

$$P_1 = 100 \times (1 + 0.10) - 0 = 110 - 0 = \text{Rs } 110$$



(ii) Calculation of No. of additional equity shares to be issued

$$s = \frac{\text{Amount to be raised}}{\text{Expected price of equity share}}$$

Where, s = No. of additional equity shares to be issued.

I = Total investment required = 4,00,00,000

E = Earnings of a company. = 3,00,00,000

r = No. of existing shares outstanding. = 10,00,000

$P_1$  = Expected price.

$D_1$  = Expected dividend

$$S = \frac{I - (E - rD_1)}{P_1}$$

a) When dividend is declared:

$$s = \frac{4,00,00,000 - (3,00,00,000 - 1,00,000 \times 5)}{105} = \mathbf{1,42,857 \text{ shares}}$$

(b) When dividend is not declared:

$$s = \frac{4,00,00,000 - (3,00,00,000 - 1,00,000 \times 0)}{110} = \mathbf{90,909 \text{ shares}}$$



## 2. Walter's Model:

Walter's Dividend model measures the effect of dividend on common stock value by making a comparison of the actual and normal capitalisation rates i.e.

$$P = \frac{D + (E - D) r/k}{K}$$

where,

- p = price per equity share
- D = Dividend per share
- E = earnings per share
- (E-D) = retinted earnings per shares
- r = internal rate of return on investment
- k = Cost of capital

As per Walter's model the rate of return on investment and cost of capital determine the price of share. If  $r > k$ , the price per share increases as dividend payout ratio decreases. If  $r < k$  the price per share increases as dividend payout ratio increases. The dividend pay-out ratio has no effect on the price of the share if  $r = k$ .

### Illustration No. 4.21

<b>X Ltd.</b>	<b>Y Ltd.</b>	<b>Z Ltd.</b>
$r = 20\%$ $k_e = 15\%$ $E = \text{Rs } 8$	$r = 15\%$ $k_e = 15\%$ $E = \text{Rs } 8$	$r = 10\%$ $k_e = 15\%$ $E = \text{Rs } 8$

Following are the details of three companies X Ltd., Y Ltd. and Z Ltd.

Calculate the value of an equity share of each of these companies applying Walter's Model when D/P ratio is (a) 40% (b) 70% (c) 90%.



## Solution

$$P = \frac{D}{K_e} + \frac{r(E - D)/K_e}{K_e}$$

where; P = Market Price per share

D = Dividend per share

r = Internal rate of return

E = Earnings per share

K<sub>e</sub> = Cost of equity capital or capitalization rate.

	X Ltd.	Y Ltd.	Z Ltd.
	r = 20% k <sub>e</sub> = 15% E = Rs 8	r = 15% k <sub>e</sub> = 15% E = Rs 8	r = 10% k <sub>e</sub> = 15% E = Rs 8
D/P Ratio	Market Price of the Share (P)		
40%, D = Rs 3.20	$P = \frac{3.20 + \frac{0.20}{0.15}(8 - 3.20)}{0.15}$ P = 64.00	$P = \frac{3.20 + \frac{0.15}{0.15}(8 - 3.20)}{0.15}$ P = 53.33	$P = \frac{3.20 + \frac{0.10}{0.15}(8 - 3.20)}{0.15}$ P = 42.67
70%, D = Rs 5.60	$P = \frac{5.60 + \frac{0.20}{0.15}(8 - 5.60)}{0.15}$ P = 58.67	$P = \frac{5.60 + \frac{0.15}{0.15}(8 - 5.60)}{0.15}$ P = 53.33	$P = \frac{5.60 + \frac{0.10}{0.15}(8 - 5.60)}{0.15}$ P = 48.00
90%, D = Rs 7.20	$P = \frac{7.20 + \frac{0.20}{0.15}(8 - 7.20)}{0.15}$ P = 55.11	$P = \frac{7.20 + \frac{0.15}{0.15}(8 - 7.20)}{0.15}$ P = 53.33	$P = \frac{7.20 + \frac{0.10}{0.15}(8 - 7.20)}{0.15}$ P = 51.55

X Ltd. is a “growth firm”, Where  $r > k_e$ . Therefore, to maximize the market price, the company needs to retain all its earnings, otherwise its price will decline.

Y Ltd. is a “normal firm”, where  $r = k_e$ . In this case D/P ratio does not have any impact on the value of the firm and its share price.

Z Ltd. is a “declining firm”. The rate of return is less than the cost of capital i.e.,  $r < k_e$ . Therefore, to maximize the market price of the share, the company should distribute all its earnings as dividend. The value of the share is increasing when we increase the pay-out ratio from 40% to 90%.



## **Assumptions in Walter's Dividend Model**

- All the financial domains like return or cost used will be savings. No external earning or investment will be used.
- The value of rate ( $r$ ) of return and the value of the cost of capital ( $k$ ) will never change. It will remain constant, even if investment value changes.
- The entire return will be distributed among the shareholders through dividends. The organisation does not keep a single percentage of the return value.
- Every share's earnings will remain equal to the dividend on every share.
- The organisation's standard must be standard and perpetual, so the organisation fulfils the needs of the model.

## **Limitations of Walter's Model**

- It is assumed that no external earning or investment is used in this model. In this case, the value of investment policy and dividend policy comes below standard.
- The scope of Walter's Model is limited to equity-based organisations. In this model, it is assumed that the rate of return never changes, but its value decreases as investment increases.

In Walter's Model, the value of the cost of capital never changes, which is an unrealistic approach. This assumption ignores the risk on the organisation and the impacts of risk on the organisation's value.

### **3. Gordon's Model**

According to Gordon's model dividend is relevant and dividend policy of a company affects its value.



## Assumptions of Gordon's Model

This model is based on the following assumptions:

- Firm is an all equity firm i.e. **no debt**.
- **IRR will remain constant**, because change in IRR will change the growth rate and consequently the value will be affected. Hence this assumption is necessary.
- **Ke will remain constant**, because change in discount rate will affect the present value.
- **Retention ratio (b)**, once decided upon, is **constant** i.e. constant dividend payout ratio will be followed.
- **Growth rate (g = br)** is also **constant**, since retention ratio and IRR will remain unchanged and growth, which is the function of these two variables will remain unaffected.

The following formula is used by Gordon to find out price per share:

$$P = \frac{E_1(1-b)}{K_e - br}$$

Where,

**P = Price per share**

**E<sub>1</sub> = Earnings per share**

**b = Retention ratio; (1 - b = Payout ratio)**

**K<sub>e</sub> = Cost of capital**

**r = IRR**

**br = Growth rate (g)**



### Illustration No. 4.22

Assuming that cost of equity is 11%; rate of return on investment is 12%; and earning per share is Rs 15. Calculate price per share by 'Gordon Model' if dividend payout ratio is 10% and 30%.

### Solution

$$P = \frac{E_1(1-b)}{K_e - br}$$

Where,

**P = Price per share**

**E<sub>1</sub> = Earnings per share**

**b = Retention ratio; (1 - b = Payout ratio)**

**K<sub>e</sub> = Cost of capital**

**r = IRR**

**br = Growth rate (g)**

**When D/P Ratio is 10%**

$$p = \frac{15 (1 - 0.90)}{0.11 - (0.90 \times 0.12)}$$

$$P = \frac{1.5}{0.002} = \text{Rs } 750$$

**When D/P Ratio is 30%**

$$p = \frac{15 (1 - 0.70)}{0.11 - (0.70 \times 0.12)}$$

$$P = \frac{4.5}{0.026} = \text{Rs } 173.08$$



## **Factors Determining Dividend Policy**

The major factors affecting the dividend policy of a firm are listed below:

### **1. Company's Own Policy:**

The Company's own dividend policy regarding the stability of dividend affects the dividend decisions. Where the earnings are more stable the company may decide to pay a constant dividend. Where the earnings are not stable i.e., fluctuating, then, the company may decide to pay a huge amount of dividend when earnings are more or no dividend in case of less earnings.

### **2. Availability of Divisible Profits:**

The dividend policy of a concern depends upon the divisible profits available. If there are no divisible profits, there is no question of declaration of dividend. If there are large divisible profits, there can be more dividend distribution and more retention of funds.

### **3. Liquidity of the Company:**

Liquidity of the company also affects the dividend decisions. Liquidity indicates the cash available to make the payment of dividend. If a company has sufficient liquidity to pay a dividend, it can declare a higher dividend.

### **4. Effect of Current Market Prices:**

Dividend decisions affect the market price of the shares. As per Walter's model, dividend is relevant while determining the market price of a share.

### **5. Past Dividend Rates:**

Every company takes past dividends as a base and takes decisions to enhance the dividend in the future. If a company pays 60% dividend in the last year, should maintain the same rate or enhance the rate during the current year.



## **6. Contractual Restrictions:**

The term lending financial institutions impose restrictions on dividend decisions. They fix the maximum ceiling on the rate of dividend or the amount of dividend and also on the retained earnings.

## **7. Legal Restrictions:**

The Companies Act specifies that every company is required to transfer a certain amount to general reserve based on the rate of dividend declared. If any shortage after declaration of dividend will impose restriction on their companies for declaration of dividend.

## **8. Equity Capitalisation Rate:**

Cost of capital is an important factor to decide the dividend payment. If a company is raising capital at a cheaper rate of interest, then the company can declare a higher rate of dividend.

## **9. Composition of Shareholders:**

The composition of shareholders also determines dividend policy. The shareholders of closely held company may be interested in capital gains rather than on dividends. Hence, a low dividend should be paid. But shareholders of widely held companies may be interested in higher dividends. Such companies may decide to pay a higher rate of dividend.

## **10. Availability of External Sources of Fund:**

The availability of external sources of funds are needed for capitalisation purposes. The companies with greater accessibility to external sources may decide to pay higher dividends because they can retain less earnings for reinvestment. In case of new companies having less access to the external market may declare and pay lesser dividends and to retain more earnings.



### **11. Re-Investment Opportunities of the Company:**

Availability of profitable investment opportunities to the company also decides the payment of dividend, if a company has more profitable reinvesting opportunity, then it can declare a lower rate of dividend. In other words, if a company cannot reinvest its earnings, then it can declare a higher rate of dividend.

### **12. Taxation:**

The dividend tax has a greater impact on the dividend policy. If the dividend is taxable in the hands of individual shareholders, then the companies declare bonus issues, rather than cash dividend. At present the dividend distribution tax on a dividend is taxable in the hands of the company.

### **13. Bonus Issue:**

The bonus issue in the past years increases the capital base in the current year, hence dividend policy determined on the basis of bonus issue. A company has to pay a dividend compulsorily in the year of bonus issue because a bonus issue cannot be in lieu of cash dividend.

### **14. Future Plan for Growth and Expansion:**

A Company which will plan for future growth and expansion requires a huge fund. As merger and acquisition need a huge outflow of cash, a moderate dividend can be expected from such a company.

### **15. Effect of Inflation:**

Inflation affects dividend decisions. During inflation the value of closing stock and the figures of net profits are overstated. During inflation, it is necessary to retain earnings so as to enable the company to have sufficient funds to replace capital assets. Hence, the companies pay lower cash dividends.



---

## UNIT V

### INVESTMENT DECISION

The major role of financial management is the selection of the most gainful mixture of capital investment and it is the vital area of decision making for the financial managers because, any action taken by the manager in this area affects the working and success of the firm. The investment decisions of a firm are generally known as capital budgeting or capital expenditure decisions. It is defined as the firm's decision to invest its current funds mostly in long term assets in anticipation of an expected flow of benefits over a series of years. The firm's investment decisions would generally include expansion, acquisition, modernization and replacement of long term assets.

#### **Meaning and definition of capital budgeting**

Capital budgeting is the process of project proposal evaluation for long term investment decisions. It is the planned allocation of available resources to achieve maximum return on investments. It is the process of deciding whether or not to invest in a particular project. It needs an estimation of the worth of various investment proposals in relation to their costs and benefits. So capital budgeting involves planning and control of capital expenditure.

According to Charles.T.Horngren, “ capital budgeting is long – term planning for making and financing proposed capital outlays”.

According to Richards and Greenlaw, “ capital budgeting generally refers to acquiring inputs and long-run returns”.



## Nature of Capital Budgeting

The future profitability of a project depends upon the investment decision taken today. So an effective system of capital budgeting is very important due to the following reasons:

1. **Large investments-** Capital investment decisions usually involve huge investments of funds. It should be arranged well in advance so that it is available in right time.
2. **Irreversible nature-** Large investment decision once taken cannot be reversed easily. If subsequently a project is found useless, it can be disposed only at heavy losses.
3. **Long term effect on profitability-** An investment decision taken today affects not only the present profits but also the future growth and profitability. An effective method of capital budgeting method helps to avoid over or under investment.
4. **Risk of obsolescence** – There is a risk of fixed assets becoming obsolete before the expiry of its normal working life. The products manufactured with the help of such assets may also become out of fashion. So it must be taken into account well in advance.
5. **Impact on cost structure-** if investment decisions are not taken with care and caution, the fixed expenses associated with it may prove to be a burden in future
6. **Impacts on competitive position** - Fixed assets are the true earning assets of a firm. So the investment decision has a bearing on the profitability and competitive position of the firm.
7. **National importance** – Even though investment decisions are taken by individual firms, they have an impact in the economic development of a country.



## **Steps / Process of capital budgeting**

**1. Planning :-** The planning phase encompasses investment strategy and a preliminary screening of project proposals. The investment strategy offers framework that shapes, guides and demarcates the identification of individual project opportunities.

**2. Analysis :-** if the preliminary screening proposes the project is worth investing, a detailed analysis of the marketing, technical, financial, economic and ecological aspects is conducted.

**3. Selection:-**the selection process addresses whether the project is worth investing. Several appraisal criteria have been advised to judge the value of a project.

i) Non- discounting criteria which includes Pay back period method and Accounting rate of return

ii) Discounting criteria which includes Net present value, Present value index, Internal rate of return.

**4. Financing:-** After choosing a project, proper financing must be made. Equity and debt are two sources of finance for a project. Flexibility, risk, income and taxes are the vital business considerations that influence the capital structure decision and the choice of specific instruments of financing.

**5. Implementation:-** the implementation phase has the following stages.

- Project and engineering designs
- Negotiations and contracting
- Construction
- Training
- Plant commissioning



**6. Review:** - Once the project is implemented, review has to be done. Performance review has to be done occasionally to compare the actual performance with the projected performance.

## **Factors Affecting Capital Budgeting Decisions**

Factors affecting capital budgeting decisions are;

### **1. Funding Availability:**

Each project will require a different degree of expenditure. Certain initiatives demand a large sum of money and have a high profit margin. If the corporation lacks sufficient cash, such initiatives may be abandoned.

### **2. Requirement for a minimum rate of return on investment**

Each management team anticipates a minimal rate of return or break-even point on capital investments. It refers to the point at which a project is deemed unacceptable.

### **3. Prospective Earnings**

Earnings in the future may be consistent or variable. Even so, the corporation anticipates assured future revenues in aggregate, which influences the project selection process.

### **4. Inflows of cash**

Cash inflows is a word that refers to earnings after taxes but before depreciation. The reason for this is that depreciation is recorded as a book item and there is no associated cash outflow. As a result, the amount of depreciation is included in the cash inflow.

### **5. Legal Obligations**

While selecting a project, management should keep legal requirements in mind. In the leather and chemical sectors, several legislative restrictions have been enacted to safeguard the environment from pollution. Now, management places a higher premium on legal provisions than on cost and profit.

### **6. Projects of Research and Development**

For technology-based enterprises, research and development projects are critical. The reason for this is because technology undergoes rapid development in a short period of time. In the long term, the research and development effort yield greater advantages. Thus, profitability takes a back seat to corporate survival in the case of research and development projects.



## **7. Capital Investment Proposal Ranking**

Occasionally, a business will have two or more profitable initiatives in the works. If there is just one lucrative project among several others and a large sum of money is available to management, there is no need to rate capital investment proposals. Ranking is important when management has a large number of profitable initiatives on the go and only a limited amount of funding accessible.

## **8. Profitability Quantum Expected**

It is required to determine the anticipated profit from the implementation of the chosen project. Profit refers to the money realised on projects as recorded in accounting records.

## **9. Risk and Uncertainty**

Each plan has some risk and uncertainty as a result of economic conditions, competition, demand and supply situations, and customer preferences, among other factors. The degree of risk and uncertainty in a project has an effect on its profitability. As a result, the degree of risk and uncertainty associated with the project is considered throughout the selection process.

## **10. Importance**

A project may be chosen instantly in response to an emergency or a sense of urgency. The rationale for this is that such rapid selection saves the company's life, implying that the survival of the business takes precedence above all other considerations.

## **11. Oblivion**

Replacement of existing fixed assets is required due to plant and machinery obsolescence.

## **12. Activities of Competitors**

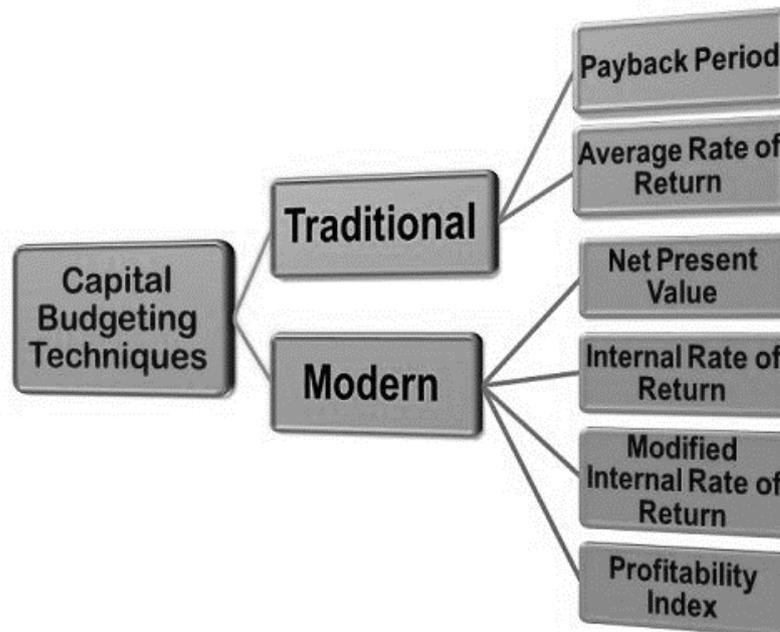
Every business should keep an eye on its rivals' activity. The corporation should make a judgement in light of its rivals' activity. If this is the case, the business can compete successfully by adopting new projects.

## **13. Intangibles**

Instead of focusing just on profit, the company's reputation, industry relationships, employee safety, and welfare are considered while picking a project. These criteria also play a significant role in the selection of any project.



## METHODS OF CAPITAL BUDGETING



### **1. Traditional Methods**

- Pay Back Period method
- Post Pay Back Period method
- Average Rate of Return method

### **Pay Back Period Method**

Pay back period is the period with in which the original investment on a project can be recovered. It is also called payout or payoff period. This period is calculated by dividing the original cost of a project by annual inflow. Annual inflow means annual profit after tax but before depreciation. The project with shortest pay back period will be given the highest rank. This method is more suitable in industries where risk of obsolescence is high.



### Advantages

1. This method is simple to understand and easy to calculate.
2. It reduces the chance of risk by obsolescence since the original investment is recovered at an early date.
3. A firm with shortage of funds finds this method is very useful
4. As there is early realisation of original investments, it enhances the liquidity position of the firm

### Disadvantages

1. This method does not consider the cash flow beyond payback period.
2. It does not consider time value of money
3. It gives over emphasis for liquidity
4. Cost of capital investment is ignored under this method
5. There is no minimum acceptable payback period

### Illustration 5.1

Original investment of a project is Rs. 450000. Expected annual inflow is Rs.150000. Calculate Pay Back Period.

### Solution

Original Investment	= 4,50,000
Annual Inflow	= 1,50,000

$$\begin{aligned}\text{Pay Back Period (PBP)} &= \frac{\text{Original Investment}}{\text{Annual Inflow}} \\ &= \frac{4,50,000}{1,50,000} = \mathbf{3 \text{ years}}\end{aligned}$$





## Solution

### Project A

Original Investment = 5,00,000

Annual profit before Depreciation & tax	1,25,000
(-) Depreciation (5,00,000 x 12 %)	<u>60,000</u>
	65,000
(-) Tax (65,000 x 50 %)	<u>32,500</u>
	32,500
(+) Depreciation	<u>60,000</u>
	<u><b>92,500</b></u>
	Annual Inflow

$$\text{PBP} = \frac{\text{Original Investment}}{\text{Annual Inflow}} = \frac{5,00,000}{92,500} = \mathbf{5.41 \text{ years}}$$

### Project B

Original Investment = 6,00,000

Annual profit before Depreciation & after tax = 1,50,000

$$\text{PBP} = \frac{\text{Original Investment}}{\text{Annual Inflow}} = \frac{6,00,000}{1,50,000} = \mathbf{4 \text{ years}}$$

It is advised the management to select project B as it has shortest PBP of **4 years**.



### Illustration 5.4

Calculate payback period – Project cost Rs. 500000. Cash inflows I year – Rs. 150000, II year – Rs. 200000, III year – Rs. 125000, IV year Rs. 100000, V year – Rs. 80000, VI year – Rs. 50000. Salvage value Rs. 50000.

### Solution

Year	Inflows	Cumulative Inflows
I	1,50,000	1,50,000
II	2,00,000	3,50,000
III	1,25,000	4,75,000
IV	1,00,000	5,75,000
V	80,000	6,55,000
VI	100000	7,55,000

$$\text{PBP} = 3 \text{ years} + \frac{25,000}{1,00,000}$$

$$= 3 \text{ years} + 0.25$$

$$= \mathbf{3.25 \text{ years}}$$



### Illustration 5.5

1. Rank the following investment proposals on the basis of Pay Back Period and give recommendations.

	Project P	Project Q	Project R
Cost of Investment	600000	800000	700000
Inflows			
I year	60000	70000	65000
II year	80000	60000	90000
III year	135000	175000	195000
IV year	105000	135000	210000
V Year	210000	170000	130000
VI year	97000	140000	125000

### Solution

#### Project P

Original Investment = 6,00,000

<u>Year</u>	<u>Inflows</u>	<u>Cumulative Inflows</u>
1	60,000	60,000
2	80,000	1,40,000
3	1,35,000	2,75,000
4	1,05,000	3,80,000
5	2,10,000	5,90,000
6	97,000	6,87,000

$$\text{PBP} = 5 \text{ years} + \frac{10,000}{97,000}$$

$$= 5 \text{ years} + 0.10$$

$$= \mathbf{5.10 \text{ years}}$$



### Project Q

Original Investment = 8,00,000

<u>Year</u>	<u>Inflows</u>	<u>Cumulative Inflows</u>
1	70,000	70,000
2	60,000	1,30,000
3	1,75,000	3,05,000
4	1,35,000	4,45,000
5	1,70,000	6,05,000
6	1,40,000	7,50,000

This project is rejected because Original Investment cannot be recovered in 6 years.

### Project R

Original Investment = 7,00,000

<u>Year</u>	<u>Inflows</u>	<u>Cumulative Inflows</u>
1	65,000	65,000
2	90,000	1,55,000
3	1,95,000	3,50,000
4	2,10,000	5,60,000
5	1,30,000	6,90,000
6	1,25,000	8,15,000

$$\text{PBP} = 5 \text{ years} + \frac{10,000}{1,25,000}$$

$$= 5 + 0.08$$

$$= \mathbf{5.08 \text{ years}}$$

Project R is accepted because it has lower PBP of **5.08 years**.

Project R is given first rank and project P is given Second rank.



### Illustration 5.6

A company intends to replace its almost outdated machinery by a new machine. From the information, prepare a statement of profitability of the two machinery options X and Y under payback period method.

	Machine X	Machine Y
Estimated life of machine	5 years	7 years
Cost of machine	Rs. 25000	Rs. 40000
Estimated savings in direct wages	Rs. 11000	Rs. 17000
Estimated saving in scrap	Rs. 1500	Rs. 4000
Additional cost of maintenance	Rs. 1200	Rs. 2500

Ignore taxation.

### Solution

#### Machine X

Life = 5 years,      Original Investment = 25000

#### Statement of Profitability

Estimated Savings in Direct wages	11,000
Add : Est. Savings in Scrap	<u>1,500</u>
	<b>12,500</b>
Less : Additional cost of maintenance	<u>1,200</u>
	<b><u>11,300</u></b>
	Annual Inflow
	<b><u>11,300</u></b>

$$\text{PBP} = \frac{\text{Original Investment}}{\text{Annual Inflow}} = \frac{25,000}{11,300} = \mathbf{2.21 \text{ years}}$$



### Machine Y

Life = 7 years,      Original investment = 40,000

#### **Statement of Profitability**

Estimated Savings in Direct wages	17,000
Add :Estd. Savings in Scrap	<u>4,000</u>
	<b>21,000</b>
Less : Additional cost of maintenance	<u>2,500</u>
Annual Inflow	<u><b>18,500</b></u>

$$\text{PBP} = \frac{\text{Original Investment}}{\text{Annual Inflow}} = \frac{40,000}{18,500} = \mathbf{2.16 \text{ years}}$$

Machine Y is acceptable because it has lower PBP.

### **Average Rate of Return Method**

Under this method, expected earning from the investment over the whole life of the asset is taken into account. This is also known as accounting rate of return method because it considers accounting profit ie, profit after depreciation and tax. If there is only one project, decision is taken on the basis of the cut off rate. If there are two or more projects, the project with highest ARR will be selected. ARR is the percentage of average earning to average investment.



$$\text{ARR} = \frac{\text{Avg.earning}}{\text{Avg.Invt.}} \times 100$$

$$\text{Avg. earnings} = \frac{\text{Total earnings}}{\text{No.of years}}$$

$$\text{Avg. Investment} = \left( \frac{\text{Original Invt.} - \text{Scrap Value}}{2} \right) + \text{Scrap Value} + \text{Additional working capital.}$$

### Advantages

1. ARR is easy to understand and simple to calculate
2. It takes into account the earnings of the whole life of the project
3. This is based on the accounting concept
4. This method gives importance to profitability rather than liquidity

### Disadvantages

1. This method ignores time value of money
2. It is not suitable when investment in project is made at different points of time
3. It ignores life span of various projects
4. It does not consider cash inflow

### Illustration 5.7

A project cost Rs. 25000 and has a scrap value of Rs. 5000 after 5 years. The net profit before depreciation and taxes for the 5 years are expected to be Rs. 5000, Rs. 6000, Rs. 7000, Rs. 8000 and Rs. 10000. You are required to calculate the Accounting Rate of Return assuming 50% rate of tax and depreciation on straight line method.





### Illustration 5.8

Determine the ARR from the following.

	Machine A	Machine B
Cost	56125	56125
Annual estimated income after depreciation and tax:		
1 Year	3375	11375
2 Year	5375	9375
3 Year	7375	7375
4 Year	9375	5375
5 Year	11375	3375
Estimated life in years	5	5
Estimated salvage value	3000	3000
Average income tax	50%	50%
Estimated Additional working capital	10000	15000

Depreciation has been charged on the straight line method.

### Solution

#### Machine A

Original Investment = 56,125

Average Earning after Dep. & tax

$$= \left( \frac{3375+5375+7375+9375+11375}{5} \right) = 7375$$

$$\text{Avg. Invst} = \left( \frac{\text{original investment} - \text{Scrap Value}}{2} \right) + \text{Scrap Value} + \text{Working Capital}$$



$$= \left( \frac{56125 - 3000}{2} \right) + 3000 + 1000$$

$$= 25562.5 + 13,000$$

$$= \mathbf{39,562.5}$$

$$\text{ARR} = \frac{\text{Average Earning}}{\text{Average Investment}} \times 100$$

$$= \frac{7375}{39562.5} \times 100$$

$$= \mathbf{18.64\%}$$

### **Machine B**

Average Earnings after Dep. & tax

$$= \left( \frac{11375 + 9375 + 7375 + 5375 + 3375}{5} \right) = 7375$$

Avg. Invst =  $\left( \frac{\text{original investment} - \text{Scrap Value}}{2} \right) + \text{Scrap Value} + \text{Working Capital}$

$$\left( \frac{56125 - 3000}{2} \right) + 3000 + 15000$$

$$= \mathbf{44,562.5}$$

$$\text{ARR} = \frac{\text{Average Earning}}{\text{Average Investment}} \times 100$$

$$= \frac{7375}{44562.5} \times 100$$

$$= \mathbf{16.54\%}$$



## **2. DISCOUNTED CASH FLOW METHODS OR MODERN METHODS**

These are modern methods of capital budgeting which take into account the time value of money. Discounting is the process of finding out the present value of money receivable at future dates. It is based on the concept that a rupee earned today is more valuable than a rupee earned tomorrow.

### **NET PRESENT VALUE METHOD**

This method of capital budgeting considers time value of money. The present value of future cash inflows are calculated with a prescribed rate of discount. Then the present value of inflows over present value of outflows is called Net Present Value. A project will be accepted if the NPV is positive and rejected if NPV is negative.

#### **Advantages**

1. It considers inflow during the whole life of the project.
2. It gives importance to profitability than liquidity.
3. It Considers time value of money.

#### **Profitability Index Method**

This is a variant of net Present Value Method. Profitability Index is the ratio of present value of cash inflows to present value of cash outflows. If the index is unity or greater than unity, the project can be accepted.

#### **Cut off rate (Hurdle rate)**

For evaluation of investment proposals, a cut off rate or hurdle rate is fixed. Cut off rate is the minimum rate of return expected on an investment.



## Illustration 5.9

From the following details calculate the net present value of project A and B suggest which of the projects should be accepted. Discount rate is 10%.

	Project A	Project B
Initial investment	₹25,000	₹30,000
Estimated life	4 Years	5 years
Scrap Value	₹2,000	Nil

An additional amount of Rs.10,000 was spent at the beginning of the second year for project B. The cash inflows (ie, profit before depreciation and after tax) are as follows.

	Year 1(₹)	Year 2 (₹)	Year 3 (₹)	Year 4(₹)	Year 5(₹)
Project A	5,000	8,000	12,000	7,000	
Project B	20,000	15,000	12,000	5,000	2,000

Present value (PV) factor at 10%:0.909, 0.826,0.751,0.683, and 0.621

## Solution

### Project A

Original investment = 25,000      Life = 4 years      Scrap value = 2000

Year	Inflows	PV Factor	PV Inflows
1	5,000	0.909	4545
2	8,000	0.826	6608
3	12,000	0.751	9012
4	9000	0.683	<u>6147</u>
		Present Value of Inflows	<u><b>26,312</b></u>



Present Value of Outflows = 25,000

Net Present Value = Present Value of Inflows – Present Value of Outflows

= 26,312 – 25,000

= **1312**

Profitability Index =  $\frac{\text{Present Value of Inflows}}{\text{Present Value of Outflows}}$

=  $\frac{26,312}{25,000}$  = **1.05248**

### **Project B**

Original Investment = 30,000

Life = 5 years

Scrap Value = Nil

<b>Year</b>	<b>Inflows</b>	<b>PV Factor</b>	<b>PV Inflows</b>
1	20,000	0.909	18180
2	15,000	0.826	12390
3	12,000	0.751	9012
4	5,000	0.683	3415
5	2,000	0.621	<u>1242</u>
		PV of Inflows	<b><u>44239</u></b>

Additional amount of ` 10,000 spend at the beginning of 2<sup>nd</sup> year.

∴ Present Value of additional outflows = 10,000 x 0.909

= **9090**



$$\begin{aligned} \text{PV of outflows} &= 30,000 + 9090 \\ &= \underline{\underline{39,090}} \end{aligned}$$

$$\begin{aligned} \text{NPV} &= \text{PV of Inflows} - \text{PV of outflows} \\ &= 44239 - 39090 \\ &= \underline{\underline{5149}} \end{aligned}$$

$$\text{Profitability Index} = \frac{\text{PV of Inflows}}{\text{PV of Outflows}} = \frac{44239}{39090} = \underline{\underline{1.13}}$$

Project B is acceptable because it has highest NPV and Profitability Index.

### Illustration 5.10

Evaluate the project under NPV method and benefit Cost ratio.

		Project 1	Project 2
Capital Outlay		1,00,000	1,00,000
Cash inflows end of the year	1	48,000	20,000
	2	32,000	24,000
	3	20,000	36,000
	4	Nil	48,000
	5	24,000	16,000
	6	12,000	8,000

The cost of capital; is 10% and P.V factors for various years are 0.909,0.826, 0.751,0.683,0.621 and 0.564.

### Solution

#### Project 1

Original investment = 100000

Year	Inflows	PV Factor	PV Inflows
1	48,000	0.909	43632
2	32,000	0.826	26432



3	20,000	0.751	15020
4	Nil	0.683	0
5	24000	0.621	14904
6	12000	0.564	6768
	(7000 + SV) (2000)	P.V. of Inflows	<b><u>106756</u></b>

P.V. of Out flows = 1,00,000

NPV = PV of Inflows – PV of Outflows

$$= 106756 - 100000 = \underline{\underline{6756}}$$

$$\text{Profitability Index} = \frac{\text{PV of Inflows}}{\text{PV of Outflows}}$$

$$= \frac{106756}{100000} = \underline{\underline{1.067}}$$

## Project 2

Original Investment = 100,000

Year	Inflows	PV Factor	PV Inflows
1	20,000	0.909	18180
2	24,000	0.826	19824
3	36,000	0.751	27036
4	48,000	0.683	32784
5	16,000	0.621	9936
6	8000	0.564	4512
		PV of Inflows	<b><u>112272</u></b>

PV of outflows = 100000

NPV = PV of Inflows – PV of outflows



$$= 112272 - 100000$$

$$= \underline{\underline{12272}}$$

$$\text{Profitability Index} = \frac{\text{PV of Inflows}}{\text{PV of Outflows}} = \frac{112272}{100000} = \underline{\underline{1.122}}$$

Project 2 is acceptable because it has highest NPV and Profitability Index.

### Internal Rate of Return

Internal rate of Return is that rate of discount which equates the present value of cash inflows with present value of cash outflow. If IRR is Equal to or more than the cut off rate the project will be accepted. So, the cost of capital is considered in decision making under this method.

$$\text{IRR} = L + \left[ \frac{P_1 - Q}{P_1 - P_2} \right] \times D$$

Where,

L = lower rate of interest

P<sub>1</sub> = Present value of inflows at lower rate

P<sub>2</sub> = Present value of inflows at higher rate

Q = Original investment

D = Difference in rates

### Illustration 5.11

1. Calculate internal rate of return for Project A. The details of the project areas under:

Initial Cost	` 10,500			
Cash in flows (Years wise)				
Year:	1	2	3	4
(RS):	2000	3000	4000	5000
P.V.F at 10%	0.909	0.826	0.751	0.683
P.V.F at 12%	0.893	0.797	0.712	0.636



## Solution

Year	Inflows	P V Factor @10%	PV factor @12%	Present value of inflows@10%	Present value of inflows @ 12%
1	2000	0.909	0.893	1818	1786
2	3000	0.826	0.797	2478	2391
3	4000	0.751	0.712	3004	2848
4	5000	0.683	0.636	3415	3180
				<b>10715</b>	<b>10205</b>

$$\begin{aligned}
 & \frac{P_1 - Q}{P_1 - P_2} \times D \\
 \text{IRR} &= L + \frac{P_1 - Q}{P_1 - P_2} \times D \\
 &= 10 + \frac{10715 - 10500}{10715 - 10205} \times 2 \\
 &= 10 + 0.843 \\
 &= \mathbf{10.84\%}
 \end{aligned}$$

## Illustration 5.12

Shyama Ltd. is contemplating to purchase a machine for ₹ 1,20,000; the expected cash inflows from this machine in the next three years are:

Year	1	2	3
C.I (₹)	50,000	40,000	60,000



Calculate. IRR of the proposal at the required rate of return of 10% and 12%. If the cost of capital of the company is 10%, advise using I.R.R method, whether the machine should be purchased or not.

### Solution

Year	Inflows	P V Factor @10%	PV factor @12%	Present value of inflows@10%	Present value of inflows @ 12%
1	50000	0.909	0.893	45450	44650
2	40000	0.826	0.797	33040	31880
3	60000	0.751	0.712	45060	42720
				<b>123550</b>	<b>119250</b>

$$\text{IRR} = L + \frac{P_1 - Q}{P_1 - P_2} \times D$$

$$\begin{aligned} &= 10 + \frac{123550 - 120000}{123350 - 119250} \times 2 \\ &= 10 + 1.73 \\ &= \mathbf{11.73\%} \end{aligned}$$

It is advised that the company can accept the proposal as IRR is more than the cut off rate.

### Capital rationing

The resources are scarce in relation to demand. A firm may not be in a position to take up all investment proposals, even though all of them are profitable. It has to select the combination of most profitable proposals and distribute the available capital among them. It is called capital rationing.



## Types of Capital Rationing

There are two primary types of capital rationing, referred to as hard and soft:

1. **Hard capital rationing.** This type of capital rationing occurs based on external factors. For example, the company may be finding it difficult to raise additional capital, either through equity or debt. Or, its lenders may impose rules on how it can use its capital. These situations will limit the company's ability to invest in future projects and may even mean it must reduce spending on current ones.
2. **Soft capital rationing.** This second type of rationing is also known as internal rationing. It is based on the internal policies of the company. A fiscally conservative company, for example, may require a particularly high projected return on its capital before it will get involved in a project—in effect, self-imposing capital rationing.

## Benefits

The use of capital rationing does come with its shares of advantages and benefits for the users. Some of the benefits are as follows.

- Any restriction on the use of available resources, in our case money, will utilize the resource in the best optimal manner.
- The company's management or investors would not invest in any project coming their way without getting into detailed analysis. This ensures there is no wastage or unnecessary use of free funds available.
- The investors would receive the highest or maximum returns on their investments by following the optimal utilization process.
- It may entail investing in only a few projects, which would help the management put in lesser efforts in managing the affairs of the projects and yield better results.
- The company or the investor will have funds available even after investing in the projects, thus ensuring there is no cash crunch.



## **Limitations of Capital Rationing**

Some of the limitations are as follows.

- It focuses on investing in fewer projects, which keeps the balance shareholder funds idle.
- The concept of capital rationing is based on the assumption that the project will yield a particular return. Any miscalculation of the same would result in the project generating lesser profits.
- Projects that are selected may be of smaller duration, which would lead to discarding certain long-term projects, which may be healthy for the company's stability.
- The evaluation process ignores any intermediate cash flows that the project may have and the time value associated with such cash flows.

## **Capital Budgeting and Inflation**

The preparation of a capital budget gives business users an estimate of the potential rates of return from investments they make in long-term assets. Performing financial analysis provides justification for a business project or acquisition with a high-dollar investment requirement. If the company could gain more appreciation on its capital by investing in stocks or other financial instruments rather than taking on a capital project, it would probably choose to do so.

Inflation affects capital budgeting analyses since the market cost of capital is not completely representative of the real cost of borrowing funds. However, performing the analysis in a manner that compensates for inflation removes its impact from the results of the capital budget.



Inflation impacts can be removed from a capital budgeting analysis by calculating the real rate of return and using it in the capital budgeting cash flow calculations. When formulating a capital budgeting scenario with the real rate of return, the answer has been adjusted for inflation. Conversely, if the rate of return is not adjusted, the cash flows can be adjusted for inflation to match the inflation that is "built in" to the market rate of return. In either scenario, it is important to make sure the cash flows and rate of return are on the same basis, either with or without inflation.

The accuracy of capital budgeting decisions depends on the accuracy of the data regarding cash inflows and outflows. For example, failure to incorporate price-level changes due to inflation in capital budgeting situations can result in errors in the prediction of cash flows and thus in incorrect decisions.

Typically, the nonfinancial manager has two options in dealing with a capital budgeting situation with inflation.

1. Restate the cash flows in nominal terms and discount them at a nominal cost of capital (minimum required rate of return).
2. Restate both the cash flows and cost of capital in constant terms and discount the constant cash flows at a constant cost of capital.

### **What are the limitations of Capital Budgeting?**

1. Capital budgeting needs estimation of future inflows and outflows. But future is uncertain.
2. There are certain factors like employee morale, political set up, Govt.policies etc. which cannot be quantified.
3. Emergency may set a limitation to capital budgeting.
4. Risk of uncertainty is the biggest limitation.



---

*Prepared by*

**Dr.VISHNU. S MCom, MBA, MPhil, PhD**

**Assistant Professor, Department of Commerce**

**Manonmaniam Sundaranar University**

**Tirunelveli-12, Tamilnadu**

***Mail: vishnusreekumar697@gmail.com***