

SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES  
(AUTONOMOUS)

## 22MBA121 : FINANCIAL MANAGEMENT

### Lecture Notes

I MBA / II - SEMESTER

REGULATION: R22



BY

FACULTY INCHARGE : DR.K.SUDARSAN , PROFESSOR

DEPARTMENT : MASTER OF BUSINESS ADMINISTRATION

I MBA – Semester - II					
Course Code	FINANCIAL MANAGEMENT	L	T	P	C
22MBA121		3	1	0	4
<b>Course Educational Objectives (CEO):</b>					
<p><b>CEO1:</b> To provide basic knowledge on importance and applications of financial management in business, the role and functions of chief financial officer.</p> <p><b>CEO2:</b> To give an elaborate view about EBIT-EPS Analysis, Leverage Analysis and cost of capital - its calculation and how it is useful in decision making.</p> <p><b>CEO3:</b> To provide knowledge about various capital budgeting techniques.</p> <p><b>CEO4:</b> To make comprehend of dividend decisions and dividend theories (Walter's model, Gordon's model and M-M's Approach).</p> <p><b>CEO5:</b> To elucidate working capital management.</p>					
<b>UNIT - I</b>	<b>The Finance Functions</b>	Lecture Hrs: 8			
Nature and Scope of Finance - Goals of Finance Function - Profit Maximization Vs Wealth Maximization - Risk-Return Trade off.					
<b>UNIT - II</b>	<b>The Capital Structure Decision and Cost of Capital</b>	Lecture Hrs: 12			
<p><b>Capital structure decision:</b> Meaning- Factors influencing capital structure - Capital Structure Decision in Practice: EBIT-EPS Analysis – Leverage Analysis.</p> <p><b>Cost of Capital:</b> Concept, Components, Determinants and Measurement of Cost of Capital -Cost of Equity, Preference Shares, Retained Earnings and Debt - Weighted Average Cost of Capital (WACC).</p>					
<b>UNIT - III</b>	<b>The Investment Decision</b>	Lecture Hrs:12			
Investment Decision Process - Evaluation Techniques: Traditional and Discounted Cash Flow Methods: Pay-back Period (PBP), Discounted Payback Period, Average Rate of Return (ARR), Net Present Value (NPV), Profitability Index (PI) and Internal Rate of Return (IRR) Methods.					
<b>UNIT - IV</b>	<b>The Dividend Decision</b>	Lecture Hrs:12			
Meaning and determinants of dividend decision - Forms of Dividend – Theories of dividend policy: Walter's model, Gordon's model and M-M's Approach.					
<b>UNIT - V</b>	<b>Working Capital Management</b>	Lecture Hrs:12			
Concept, Components and Determinants of Working Capital - Operating Cycle Approach - Estimation of Working Capital. <b>Management of Cash:</b> Introduction, Basic Strategies for Cash Management - Cash Budget.					
<b>Course Outcomes:</b>					
<b>On successful completion of the course the student will be able to,</b>					<b>POs related to COs</b>
CO1	<b>Understand</b> the importance, role and functions of financial management.				PO1,PO8

CO2	<b>Understand</b> the importance of cost of capital in decision making and its calculation.	PO1, PO2, PO8
CO3	<b>Evaluate</b> investment decisions using capital budgeting techniques.	PO1, PO2, PO8
CO4	<b>Demonstrate</b> the knowledge on factors influencing capital structure and dividend decisions and Theories of dividend policy.	PO1, PO2, PO8
CO5	<b>Understand</b> the importance of working capital and its management.	PO1, PO2, PO8
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. Financial Management, I.M. Pandey, Vikas Publishers, 2015.</li> <li>2. Financial Management, P.V.Kulakarni and B.G.Satya Prasad, Himalaya Publishing House Pvt. Ltd. India, 2011.</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1. Financial Management, Tulsian P. C. &amp; Tulsian Bharat, S Chand and Company Limited, New Delhi, 2016.</li> <li>2. Financial Management-Management and Polic R.M.Srivastava, Himalaya Publishing House Pvt. Ltd., India, 2010.</li> <li>3. Financial Management-Text and Problems, MY Khan and PK Jain, Tata McGraw-Hill, New Delhi, 2007.</li> <li>4. Fundamentals of Financial Management, Chandra Bose D, PHI, 2006.</li> <li>5. Corporate Finance: Theory and Practice, 2/e, Vishwanath.S.R., Sage Publications, 2007.</li> <li>6. Case Studies in Finance, 5/e, Bruner.R.F. Tata McGraw Hill, New Delhi, 2007.</li> <li>7. Financial Management, Prasanna Chandra, Tata McGraw Hill, New Delhi, 2009.</li> </ol>		
<b>Online Learning Resources:</b>		
<a href="https://nptel.ac.in/courses/110107144">https://nptel.ac.in/courses/110107144</a> <a href="https://onlinecourses.nptel.ac.in/noc20_mg31/preview">https://onlinecourses.nptel.ac.in/noc20_mg31/preview</a>		

## UNIT - I

### INTRODUCTION TO FINANCIAL MANAGEMENT

#### Financial Management

Finance is the lifeline of any business. However, finances, like most other resources, are always limited. On the other hand, wants are always unlimited. Therefore, it is important for a business to manage its finances efficiently. As an introduction to financial management, in this article, we will look at the nature, scope, and significance of financial management, along with financial decisions and planning.

#### Introduction to Financial Management

Let's define financial management as the first part of the introduction to financial management. For any business, it is important that the finance it procures is invested in a manner that the returns from the investment are higher than the cost of finance. In a nutshell, financial management –

- Endeavours to reduce the cost of finance
- Ensures sufficient availability of funds
- Deals with the planning, organizing, and controlling of financial activities like the procurement and utilization of funds

#### Some Definitions

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

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

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

## **Meaning of Financial Management**

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.

## **Scope/Elements**

1. Investment decisions includes investment in fixed assets (called as capital budgeting). Investment in current assets are also a part of investment decisions called as working capital decisions.
2. Financial decisions - They relate to the raising of finance from various resources which will depend upon decision on type of source, period of financing, cost of financing and the returns thereby.
3. Dividend decision - The finance manager has to take decision with regards to the net profit distribution. Net profits are generally divided into two:
  - a. Dividend for shareholders- Dividend and the rate of it has to be decided.
  - b. Retained profits- Amount of retained profits has to be finalized which will depend upon expansion and diversification plans of the enterprise.

## **Objectives of Financial Management**

The financial management is generally concerned with procurement, allocation and control of financial resources of a concern. The objectives can be-

1. To ensure regular and adequate supply of funds to the concern.
2. To ensure adequate returns to the shareholders which will depend upon the earning capacity, market price of the share, expectations of the shareholders.
3. To ensure optimum funds utilization. Once the funds are procured, they should be utilized in maximum possible way at least cost.
4. To ensure safety on investment, i.e, funds should be invested in safe ventures so that adequate rate of return can be achieved.
5. To plan a sound capital structure-There should be sound and fair composition of capital so that a balance is maintained between debt and equity capital.

## Functions of Financial Management

1. **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.
2. **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.
3. **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-
  - a. Issue of shares and debentures
  - b. Loans to be taken from banks and financial institutions
  - c. Public deposits to be drawn like in form of bonds.

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

4. **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.
5. **Disposal of surplus:** The net profits decision have to be made by the finance manager. This can be done in two ways:
  - a. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.
  - b. Retained profits - The volume has to be decided which will depend upon expansion, innovation, diversification plans of the company.
6. **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintenance of enough stock, purchase of raw materials, etc.
7. **Financial controls:** The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

## **Role of a Financial Manager**

Financial activities of a firm is one of the most important and complex activities of a firm. Therefore in order to take care of these activities a financial manager performs all the requisite financial activities.

A financial manger is a person who takes care of all the important financial functions of an organization. The person in charge should maintain a far sightedness in order to ensure that the funds are utilized in the most efficient manner. His actions directly affect the Profitability, growth and goodwill of the firm.

### **Following are the main functions of a Financial Manager:**

#### **1. Raising of Funds**

In order to meet the obligation of the business it is important to have enough cash and liquidity. A firm can raise funds by the way of equity and debt. It is the responsibility of a financial manager to decide the ratio between debt and equity. It is important to maintain a good balance between equity and debt.

#### **2. Allocation of Funds**

Once the funds are raised through different channels the next important function is to allocate the funds. The funds should be allocated in such a manner that they are optimally used. In order to allocate funds in the best possible manner the following point must be considered

- The size of the firm and its growth capability
- Status of assets whether they are long-term or short-term
- Mode by which the funds are raised

These financial decisions directly and indirectly influence other managerial activities. Hence formation of a good asset mix and proper allocation of funds is one of the most important activity

#### **3. Profit Planning**

Profit earning is one of the prime functions of any business organization. Profit earning is important for survival and sustenance of any organization. Profit planning refers to proper usage of the profit generated by the firm.

Profit arises due to many factors such as pricing, industry competition, state of the economy, mechanism of demand and supply, cost and output. A healthy mix of variable and fixed factors of production can lead to an increase in the profitability of the firm.

Fixed costs are incurred by the use of fixed factors of production such as land and machinery. In order to maintain a tandem it is important to continuously value the depreciation cost of fixed cost of production. An opportunity cost must be calculated in order to replace those factors of production which has gone through wear and tear. If this is not noted then these fixed cost can cause huge fluctuations in profit.

#### **4. 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.

It is on the discretion of a financial manager as to how to distribute the profits. Many investors do not like the firm to distribute the profits amongst share holders as dividend instead invest in the business itself to enhance growth. The practices of a financial manager directly impact the operation in capital market.

#### **Goal of the Firm**

Typically, the primary goal of financial management is profit maximization. Profit maximization is the process of assessing and utilizing available resources to their fullest potential to maximize profits.

Before knowing the difference between profit maximization and wealth maximization, we must understand what are the concepts of profit and wealth. These two terms might seem the same, but they are very different business concepts.

Profit refers to the amount of money you make on an investment or business venture, while wealth refers to and describes your overall financial situation and net worth. So, it may seem that making more profit is always good. But, there are some situations where increasing and solely relying on profits could prove to be detrimental to the health of the company and negatively affect the overall wealth in the long run.

Thus, if you are trying to make your first million or just make it to the end of the month, you would benefit from knowing what profit and wealth mean. Once you know what each term means and what significant aspects each holds, you can also start to compare their relative value in your life and business.



## **Profit Maximization**

The profit maximization principle is an important concept to understand, especially for any company that wants to maximise its profits. In financial management, profit maximization refers to finding the most profitable way to produce goods or provide any services. It simply means to maximise the profits of the company.

Profit maximization, in economics, is one of the most common objectives of every company. Generally, profit in accounting and business terms means that part of the amount which arrived after revenue exceeds the cost of production involved.

### *A simple illustration of profit maximization*

Here, revenue is the money a business receives from selling its goods and services, and the cost is the money invested into production. In other words, this profit can be looked at as the net benefit earned for the shareholders by a company in the long run

## **Wealth Maximization**

Wealth maximization is a goal that all individuals and businesses should aim to achieve. Not only will it improve one's quality of life, but such wealth maximisation will help sustain the company's business in the long run. While wealth maximization is the company's objective, profit maximization is the objective of every company owner.

In other words, wealth maximization is the maximization of the owner's wealth, and its value is calculated by the computation of stock value. Hence, maximizing wealth is comparatively different from maximizing profit.

### **Basic reasons why profit/eps maximisation fails to be consistent with wealth maximisation**

Profit maximization is inconsistent with wealth maximization because profit maximization ignores the timing of returns, cash flow that is available to stockholders, and risk. Therefore, **time, cash flow, and risk** are the basic reasons for the inconsistency with profit maximization and wealth maximization.

### **Profit Maximisation vs Wealth Maximization: The Differences**

The prime consideration in managing every business is profitability. But only looking for profits would not make the business thrive in the long run. Therefore, this necessitates the combination of both profit maximization and wealth maximization in the company.

Profit maximization is the management of financial resources through a range of activities to increase the profits of the company. Wealth Maximization manages financial

resources in such a way that there is increase in the value of shares of a company's shareholders.

Now let's look into the differences between profit maximization and wealth maximization:

1. Profit maximization is done by increasing the earning capacity of the company. Whereas, if the company's ability is focused on increasing the value of stocks for the shareholders and stakeholders, this is known as Wealth Maximization.
2. While profit maximization is a short-term goal of any business, Wealth Maximisation is a long-term goal.
3. Risks and uncertainties do not form part of the entire process of profit maximization. While as Wealth Maximization considers and recognises the need to assess all possible risks and uncertainties.
4. Profit maximization ensures the survival and growth of the business. In contrast, Wealth Maximization focuses on a company's long-term growth rate by increasing its share in the market.
5. The **time value of money is not accounted for in the profit maximization**, whereas **wealth maximisation acknowledges it**. According to the concept of time value of money, a certain amount of money is worth more now than it will be in the future. This is so because investment is the only way to make money grow. An opportunity is lost when an investment is postponed.
6. Companies with profit maximization as their main goal focus on efficiency improvement with less cost and maximum profitable output. While in the case of the companies whose focus is wealth maximization, they heavily concentrate on increasing and improving the share market price of the company so that the value of the shareholders is increased.
7. The benefits of **profit maximization limit the company's growth to the current financial year**, whereas the benefits of **wealth maximization extend beyond the current year with a huge market share and higher share price**, which ultimately benefits every stakeholder related to the company.
8. In the case of profit maximization, a company prefers to maximise its profits. It solely relies on the profits made from the difference between the total revenue and cost plus tax expenses of the current financial year. In contrast, a company with a wealth maximization goal aims to increase the value of the shareholders' wealth as they are the real owners of

the company. It does so by investing its capital in the market with uncertain risks but with higher returns.

### **Risk-Return Trade - off**

The risk-return trade-off is the concept that the level of return to be earned from an investment should increase as the level of risk increases. Conversely, this means that investors will be less likely to pay a high price for investments that have a low risk level, such as high-grade corporate or government bonds. Different investors will have different tolerances for the level of risk they are willing to accept, so that some will readily invest in low-return investments because there is a low risk of losing the investment. Others have a higher risk tolerance and so will buy riskier investments in pursuit of a higher return, despite the risk of losing their investments. Some investors develop a portfolio of low-risk, low-return investments and higher-risk, higher-return investments in hopes of achieving a more balanced risk-return trade-off.

The risk-return trade off states that the potential return rises with an increase in risk. Using this principle, individuals associate low levels of uncertainty with low potential returns, and high levels of uncertainty or risk with high potential returns. According to the risk-return trade off, invested money can render higher profits only if the investor will accept a higher possibility of losses.

## UNIT - II

### THE CAPITAL STRUCTURE AND COST OF CAPITAL

#### Meaning of Capital Structure

Capital Structure is referred to as the ratio of different kinds of securities raised by a firm as long-term finance. The capital structure involves two decisions-

- a. Type of securities to be issued are equity shares, preference shares and long term borrowings (Debentures).
- b. Relative ratio of securities can be determined by process of capital gearing. On this basis, the companies are divided into two-
  - i. Highly geared companies - Those companies whose proportion of equity capitalization is small.
  - ii. Low geared companies - Those companies whose equity capital dominates total capitalization.

For instance - There are two companies A and B. Total capitalization amounts to be USD 200,000 in each case. The ratio of equity capital to total capitalization in company A is USD 50,000, while in company B, ratio of equity capital is USD 150,000 to total capitalization, i.e, in Company A, proportion is 25% and in company B, proportion is 75%. In such cases, company A is considered to be a highly geared company and company B is low geared company.

#### Factors Determining Capital Structure

1. **Trading on Equity-** The word “equity” denotes the ownership of the company. Trading on equity means taking advantage of equity share capital to borrowed funds on reasonable basis. It refers to additional profits that equity shareholders earn because of issuance of debentures and preference shares. It is based on the thought that if the rate of dividend on preference capital and the rate of interest on borrowed capital is lower than the general rate of company’s earnings, equity shareholders are at advantage which means a company should go for a judicious blend of preference shares, equity shares as well as debentures. Trading on equity becomes more important when expectations of shareholders are high.

2. **Degree of control-** In a company, it is the directors who are so called elected representatives of equity shareholders. These members have got maximum voting rights in a concern as compared to the preference shareholders and debenture holders. Preference shareholders have reasonably less voting rights while debenture holders have no voting rights. If the company's management policies are such that they want to retain their voting rights in their hands, the capital structure consists of debenture holders and loans rather than equity shares.
3. **Flexibility of financial plan-** In an enterprise, the capital structure should be such that there is both contractions as well as relaxation in plans. Debentures and loans can be refunded back as the time requires. While equity capital cannot be refunded at any point which provides rigidity to plans. Therefore, in order to make the capital structure possible, the company should go for issue of debentures and other loans.
4. **Choice of investors-** The company's policy generally is to have different categories of investors for securities. Therefore, a capital structure should give enough choice to all kind of investors to invest. Bold and adventurous investors generally go for equity shares and loans and debentures are generally raised keeping into mind conscious investors.
5. **Capital market condition-** In the lifetime of the company, the market price of the shares has got an important influence. During the depression period, the company's capital structure generally consists of debentures and loans. While in period of boons and inflation, the company's capital should consist of share capital generally equity shares.
6. **Period of financing-** When company wants to raise finance for short period, it goes for loans from banks and other institutions; while for long period it goes for issue of shares and debentures.
7. **Cost of financing-** In a capital structure, the company has to look to the factor of cost when securities are raised. It is seen that debentures at the time of profit earning of company prove to be a cheaper source of finance as compared to equity shares where equity shareholders demand an extra share in profits.
8. **Stability of sales-** An established business which has a growing market and high sales turnover, the company is in position to meet fixed commitments. Interest on debentures has to be paid regardless of profit. Therefore, when sales are high, thereby the profits are high and company is in better position to meet such fixed commitments like interest on debentures and dividends on preference shares. If company is having

unstable sales, then the company is not in position to meet fixed obligations. So, equity capital proves to be safe in such cases.

9. **Sizes of a company-** Small size business firms capital structure generally consists of loans from banks and retained profits. While on the other hand, big companies having goodwill, stability and an established profit can easily go for issuance of shares and debentures as well as loans and borrowings from financial institutions. The bigger the size, the wider is total capitalization.

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

The EBIT-EBT 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:**

1. Financial planning. Applying EBIT-EPS analysis allows earnings per share to be maximized for any given value of earnings before interest and taxes. It helps to choose the best financing plan.
2. Comparative analysis. Such analysis is possible not only for a company as a whole but also for a specific product, project, department, or market.
3. Determination of target capital structure. Depending on the expected EBIT, management of a company is able to determine the target capital structure for maximizing EPS.

### **Disadvantages of EBIT-EPS analysis**

1. Risk is not taken into account. EBIT-EPS analysis does not take into account the risks associated with debt financing. In other words, a higher EPS associated with using financial leverage implies a higher risk that has to be taken into account by management.
2. Complexity. The more alternative financing plans are considered, the higher the complexity of the calculations.
3. Limitations. The technique does not account for limitations in raising various sources of financing.

### **Meaning of Leverage:**

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 short, the term 'leverage' is used to describe the ability of a firm to use fixed cost assets or funds to increase the return to its equity shareholders. In other words, leverage is the employment of fixed assets or funds for which a firm has to meet fixed costs or fixed rate of interest obligation—irrespective of the level of activities attained, or the level of operating profit earned.

Leverage occurs in varying degrees. The higher the degree of leverage, the higher is the risk involved in meeting fixed payment obligations i.e., operating fixed costs and cost of debt capital. But, at the same time, higher risk profile increases the possibility of higher rate of return to the shareholders.

### **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.”

## **Types of Leverage:**

- (i) Operating leverage
  
- (ii) Financial leverage and
  
- (iii) Combined leverage

### ***1. Operating Leverage:***

Operating leverage refers to the use of fixed operating costs such as depreciation, insurance of assets, repairs and maintenance, property taxes etc. in the operations of a firm. But it does not include interest on debt capital. Higher the proportion of fixed operating cost as compared to variable cost, higher is the operating leverage, and vice versa.

Operating leverage may be defined as the “firm’s ability to use fixed operating cost to magnify effects of changes in sales on its earnings before interest and taxes.”

### **In practice, a firm will have three types of cost viz:**

- (i) Variable cost that tends to vary in direct proportion to the change in the volume of activity,
  
- (ii) Fixed costs which tend to remain fixed irrespective of variations in the volume of activity within a relevant range and during a defined period of time,
  
- (iii) Semi-variable or Semi-fixed costs which are partly fixed and partly variable. They can be segregated into variable and fixed elements and included in the respective group of costs.

Operating leverage occurs when a firm incurs fixed costs which are to be recovered out of sales revenue irrespective of the volume of business in a period. In a firm having fixed costs in the total cost structure, a given change in sales will result in a disproportionate change in the operating profit or EBIT of the firm.

If there is no fixed cost in the total cost structure, then the firm will not have an operating leverage. In that case, the operating profit or EBIT varies in direct proportion to the changes in sales volume.

Operating leverage is associated with operating risk or business risk. The higher the fixed operating costs, the higher the firm’s operating leverage and its operating risk. Operating risk



is the degree of uncertainty that the firm has faced in meeting its fixed operating cost where there is variability of EBIT.

It arises when there is volatility in earnings of a firm due to changes in demand, supply, economic environment, business conditions etc. The larger the magnitude of operating leverage, the larger is the volume of sales required to cover all fixed costs.

**Illustration 1:**

A firm sells its product for Rs. 5 per unit, has variable operating cost of Rs. 3 per unit and fixed operating costs of Rs. 10,000 per year. Its current level of sales is 20,000 units. What will be the impact on profit if (a) Sales increase by 25% and (b) decrease by 25%?

**Solution :**

Particulars	Present	Expected	
		(+ 25%)	(-25%)
<b>Sales (in units)</b>	<b>20,000</b>	<b>25,000</b>	<b>15,000</b>
	Rs.	Rs.	Rs.
Sales revenues	1,00,000	1,25,000	75,000
Less : Variable operating cost	60,000	75,000	45,000
Contribution	40,000	50,000	30,000
Less : Fixed operating cost	10,000	10,000	10,000
Operating profit (EBIT)	30,000	40,000	20,000
Changes in sales	—	(+) 25,000	(-) 25,000
Changes in operating profit		(+) 10,000	(-) 10,000
Percentage changes in operating profit		$(+) \frac{10,000}{30,000} \times 100$	$(-) \frac{10,000}{30,000} \times 100$
		$= (+) 33\frac{1}{3}\%$	$= (-) 33\frac{1}{3}\%$

(a) A 25% increase in sales (from 20,000 units to 25,000 units) results in a 33 1/3% increase in EBIT (from Rs. 30,000 to Rs. 40,000).

(b) A 25% decrease in sales (from 20,000 units to 15,000 units) results in a 33 1/3% decrease in EBIT (from Rs. 30,000 to Rs. 20,000).

The above illustration clearly shows that when a firm has fixed operating costs an increase in sales volume results in a more than proportionate increase in EBIT. Similarly, a decrease in the level of sales has an exactly opposite effect. The former operating leverage is known as favourable leverage, while the latter is known as unfavourable.

### **Degree of Operating Leverage:**

The earnings before interest and taxes (i.e., EBIT) changes with increase or decrease in the sales volume. Operating leverage is used to measure the effect of variation in sales volume on the level of EBIT.

**The formula used to compute operating leverage is:**

$$\text{Operating Leverage} = \frac{\% \text{ change in EBIT}}{\% \text{ change in sales}} = \frac{\frac{\text{Increase in EBIT}}{\text{EBIT}}}{\frac{\text{Increase in sales}}{\text{Sales}}}$$

The operating leverage at any volume of sales is defined as its degree. The degree of operating leverage is computed by dividing contribution by EBIT.

$$\text{Degree of operating leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

Here, contribution = Sales – Variable cost  
EBIT = Sales – Variable cost – Fixed cost

A high degree of operating leverage is welcome when sales are rising i.e., favourable market conditions, and it is undesirable when sales are falling. Because, higher degree of operating leverage means a relatively high operating fixed cost for recovering which a larger volume of sales is required.

**The degree of operating leverage is also obtained by using the following formula:**

Degree of operating leverage (DOL) = Percentage change in EBIT / Percentage Change in Units Sold

The value of degree of operating leverage must be greater than 1. If the value is equal to 1 then there is no operating leverage.

### **Importance of Operating Leverage:**

**The importance of operating leverage:**

1. It gives an idea about the impact of changes in sales on the operating income of the firm.
2. High degree of operating leverage magnifies the effect on EBIT for a small change in the sales volume.
3. High degree of operating leverage indicates increase in operating profit or EBIT.

4. High operating leverage results from the existence of a higher amount of fixed costs in the total cost structure of a firm which makes the margin of safety low.
5. High operating leverage indicates higher amount of sales required to reach break-even point.
6. Higher fixed operating cost in the total cost structure of a firm promotes higher operating leverage and its operating risk.
7. A lower operating leverage gives enough cushion to the firm by providing a high margin of safety against variation in sales.
8. Proper analysis of operating leverage of a firm is useful to the finance manager.

## ***2. Financial Leverage:***

Financial leverage is primarily concerned with the financial activities which involve raising of funds from the sources for which a firm has to bear fixed charges such as interest expenses, loan fees etc. These sources include long-term debt (i.e., debentures, bonds etc.) and preference share capital.

Long term debt capital carries a contractual fixed rate of interest and its payment is obligatory irrespective of the fact whether the firm earns a profit or not.

As debt providers have prior claim on income and assets of a firm over equity shareholders, their rate of interest is generally lower than the expected return in equity shareholders. Further, interest on debt capital is a tax deductible expense.

These two facts lead to the magnification of the rate of return on equity share capital and hence earnings per share. Thus, the effect of changes in operating profits or EBIT on the earnings per share is shown by the financial leverage.

According to Gitman financial leverage is “the ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on firm’s earnings per share”. In other words, financial leverage involves the use of funds obtained at a fixed cost in the hope of increasing the return to the equity shareholders.

Favourable or positive financial leverage occurs when a firm earns more on the assets/ investment purchased with the funds, than the fixed cost of their use. Unfavorable or negative leverage occurs when the firm does not earn as much as the funds cost.

Thus shareholders gain where the firm earns a higher rate of return and pays a lower rate of return to the supplier of long-term funds. The difference between the earnings from the assets and the fixed cost on the use of funds goes to the equity shareholders. Financial leverage is also, therefore, called as 'trading on equity'.

Financial leverage is associated with financial risk. Financial risk refers to risk of the firm not being able to cover its fixed financial costs due to variation in EBIT. With the increase in financial charges, the firm is also required to raise the level of EBIT necessary to meet financial charges. If the firm cannot cover these financial payments it can be technically forced into liquidation.

**Illustration 2:**

One-up Ltd. has Equity Share Capital of Rs. 5,00,000 divided into shares of Rs. 100 each. It wishes to raise further Rs. 3,00,000 for expansion-cum-modernisation scheme.

**The company plans the following financing alternatives:**

- (i) By issuing Equity Shares only.
- (ii) Rs. 1,00,000 by issuing Equity Shares and Rs. 2,00,000 through Debentures @ 10% per annum.
- (iii) By issuing Debentures only at 10% per annum.
- (iv) Rs. 1,00,000 by issuing Equity Shares and Rs. 2,00,000 by issuing 8% Preference Shares.

You are required to suggest the best alternative giving your comment assuming that the estimated earnings before interest and taxes (EBIT) after expansion is Rs. 1,50,000 and corporate rate of tax is 35%.

**Solution :**

**Computation of Earnings per share  
under alternative Financing Plans**

Particulars	Plan I	Plan II	Plan III	Plan IV
	Rs.	Rs.	Rs.	Rs.
Existing Equity Shares of Rs. 100 each	5,00,000	5,00,000	5,00,000	5,00,000
New Equity Shares of Rs. 100 each	3,00,000	1,00,000	—	1,00,000
8% Preference shares	—	—	—	2,00,000
10% Debentures	—	2,00,000	3,00,000	—
<b>Capital Structure</b>	<u>8,00,000</u>	<u>8,00,000</u>	<u>8,00,000</u>	<u>8,00,000</u>
Earnings before Interest & Taxes (EBIT)	1,50,000	1,50,000	1,50,000	1,50,000
Less : Interest on Debenture	—	20,000	30,000	—
Earning before tax (EBT)	1,50,000	1,30,000	1,20,000	1,50,000
Less : Income tax @ 35%	52,500	45,500	42,000	52,500
Earning after tax (EAT)	97,500	84,500	78,000	97,500
Less : Preference dividend @ 8%	—	—	—	16,000
Earning available to Equity Shareholders	97,500	84,500	78,000	81,500
Number of Equity Shares	8,000	6,000	5,000	6,000
Earnings per share (EPS)	<u>97,500</u> <u>8,000</u>	<u>84,500</u> <u>6,000</u>	<u>78,000</u> <u>5,000</u>	<u>81,500</u> <u>6,000</u>
	= Rs. 12.19	= Rs. 14.08	= Rs. 15.60	Rs.=13.58

In the above example, we have taken operating profit (EBIT = Rs. 1,50,000) constant for alternative financing plans. It shows that earnings per share (EPS) increases with the increase in the proportion of debt capital (debenture) to total capital employed by the firm, the firm's EBIT level taken as constant.

Financing Plan I does not use debt capital and, hence, Earning per share is low. Financing Plan III, which involves 62.5% ordinary shares and 37.5% debenture, is the most favourable with respect to EPS (Rs. 15.60). The difference in Financing Plans II and IV is due to the fact that the interest on debt is tax-deductible while the dividend on preference shares is not.

Hence, financing alternative III should be accepted as the most profitable mix of debt and equity by One-up Ltd. Company.

**Degree of Financing Leverage:**

Financing leverage is a measure of changes in operating profit or EBIT on the levels of earning per share.

**It is computed as:**

Financial leverage = Percentage change in EPS / Percentage change in EBIT = Increase in EPS / EPS / Increase in EBIT/EBIT

The financial leverage at any level of EBIT is called its degree. It is computed as ratio of EBIT to the profit before tax (EBT).

Degree of Financial leverage (DFL) = EBIT / EBT

The value of degree of financial leverage must be greater than 1. If the value of degree of financial leverage is 1, then there will be no financial leverage. The higher the proportion of debt capital to the total capital employed by a firm, the higher is the degree of financial leverage and vice versa.

Again, the higher the degree of financial leverage, the greater is the financial risk associated, and vice versa. Under favourable market conditions (when EBIT may increase) a firm having high degree of financial leverage will be in a better position to increase the return on equity or earning per share.

#### **Importance of Financial Leverage:**

The financial leverage shows the effect of changes in EBIT on the earnings per share. So it plays a vital role in financing decision of a firm with the objective of maximising the owner's wealth.

#### **The importance of financial leverage:**

1. It helps the financial manager to design an optimum capital structure. The optimum capital structure implies that combination of debt and equity at which overall cost of capital is minimum and value of the firm is maximum.
2. It increases earning per share (EPS) as well as financial risk.
3. A high financial leverage indicates existence of high financial fixed costs and high financial risk.
4. It helps to bring balance between financial risk and return in the capital structure.
5. It shows the excess on return on investment over the fixed cost on the use of the funds.

6. It is an important tool in the hands of the finance manager while determining the amount of debt in the capital structure of the firm.

### **3. Combined Leverage:**

Operating leverage shows the operating risk and is measured by the percentage change in EBIT due to percentage change in sales. The financial leverage shows the financial risk and is measured by the percentage change in EPS due to percentage change in EBIT.

Both operating and financial leverages are closely concerned with ascertaining the firm's ability to cover fixed costs or fixed rate of interest obligation, if we combine them, the result is total leverage and the risk associated with combined leverage is known as total risk. It measures the effect of a percentage change in sales on percentage change in EPS.

#### **Degree of Combined Leverage:**

**The combined leverage can be measured with the help of the following formula:**

Combined Leverage = Operating leverage x Financial leverage

$$= \frac{\% \text{ Change in EBIT}}{\% \text{ Change in sales}} \times \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in sales}}$$

The degree of combined leverage is measured by using the following formula :

Degree of Combined Leverage (DCL) = DOL x DFL

$$= \frac{\% \text{ Change in EBIT}}{\% \text{ Change in sales}} \times \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in sales}}$$

Or, alternatively, at any given level

$$\begin{aligned} \text{DCL} &= \text{DOL} \times \text{DFL} \\ &= \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{Contribution}}{\text{EBT}} \end{aligned}$$

The combined leverage may be favourable or unfavourable. It will be favourable if sales increase and unfavourable when sales decrease. This is because changes in sales will result in more than proportional returns in the form of EPS. As a general rule, a firm having a high degree of operating leverage should have low financial leverage by preferring equity financing, and vice versa by preferring debt financing.

If a firm has both the leverages at a high level, it will be very risky proposition. Therefore, if a firm has a high degree of operating leverage the financial leverage should be kept low as proper balancing between the two leverages is essential in order to keep the risk profile within a reasonable limit and maximum return to shareholders.

### **Importance of Combined Leverage:**

#### **The importance of combined leverage are:**

It indicates the effect that changes in sales will have on EPS.

2. It shows the combined effect of operating leverage and financial leverage.
3. A combination of high operating leverage and a high financial leverage is very risky situation because the combined effect of the two leverages is a multiple of these two leverages.
4. A combination of high operating leverage and a low financial leverage indicates that the management should be careful as the high risk involved in the former is balanced by the later.
5. A combination of low operating leverage and a high financial leverage gives a better situation for maximising return and minimising risk factor, because keeping the operating leverage at low rate full advantage of debt financing can be taken to maximise return. In this situation the firm reaches its BEP at a low level of sales with minimum business risk.
6. A combination of low operating leverage and low financial leverage indicates that the firm losses profitable opportunities.



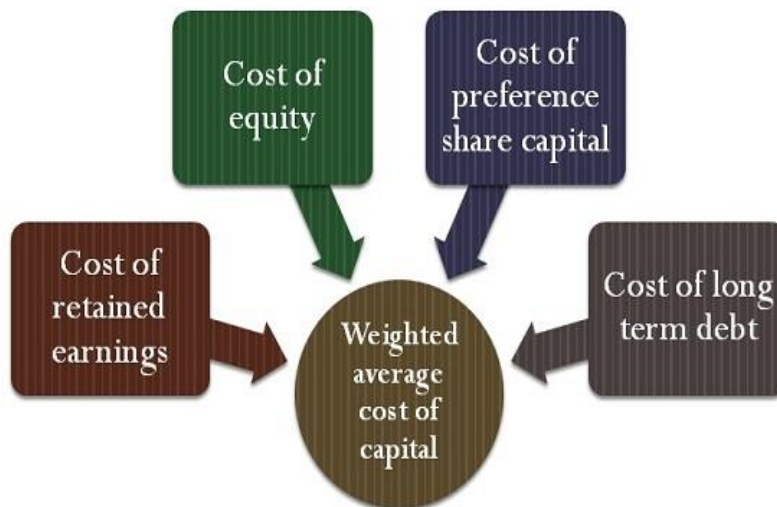
## COST OF CAPITAL

**Definition:** As it is evident from the name, cost of capital refers to the **weighted average cost of various capital components**, i.e. sources of finance, employed by the firm such as equity, preference or debt. In finer terms, it is the **rate of return**, that must be received by the firm on its investment projects, to attract investors for investing capital in the firm and to maintain its market value.

The factors which determine the cost of capital are:

- Source of finance
- Corresponding payment for using finance.

On raising funds from the market, from various sources, the firm has to pay some additional amount, apart from the principal itself. The additional amount is nothing but the cost of using the capital, i.e. **cost of capital** which is either paid in lump sum or at periodic intervals.



### Importance of Cost of Capital

- It helps in **evaluating the investment options**, by converting the future cash flows of the investment avenues into present value by discounting it.
- It is helpful in **capital budgeting decisions** regarding the sources of finance used by the company.

- It is vital in **designing the optimal capital structure** of the firm, wherein the firm's value is maximum, and the cost of capital is minimum.
- It can also be used to **appraise the performance of specific projects** by comparing the performance against the cost of capital.
- It is useful in **framing optimum credit policy**, i.e. at the time of deciding credit period to be allowed to the customers or debtors, it should be compared with the cost of allowing credit period.

Cost of capital is also termed as **cut-off rate, the minimum rate of return, or hurdle rate.**

**Cost of capital is a composite cost of the individual sources of funds including equity shares, preference shares, debt and retained earnings.**

The overall cost of capital depends on the cost of each source and the proportion of each source used by the firm. It is also referred to as weighted average cost of capital. It can be examined from the viewpoint of an enterprise as well as that of an investor.

### ***1. Cost of Debt Capital:***

Generally, cost of debt capital refers to the total cost or the rate of interest paid by an organization in raising debt capital. However, in a real situation, total interest paid for raising debt capital is not considered as cost of debt because the total interest is treated as an expense and deducted from tax. This reduces the tax liability of an organization.

**Formulae to calculate cost of debt are as follows:**

#### **1. When the debt is issued at par –**

$$K_D = [(1 - T) \times R] \times 100$$

Where,

$K_D$  = Cost of debt

T = Tax rate

R = Rate of interest on debt capital

$K_D$  = Cost of debt capital

## 2. Debt issued at premium or discount when debt is irredeemable –

$$K_D = [I / NP \times (1 - T) \times 100]$$

Where,

NP = Net proceeds of debt

## 3. Cost of redeemable debt –

$$K_D = \left[ \frac{I(1-T) + (P - NP/N) \times (1-T)}{P + NP/2} \right] \times 100$$

where,

N = Numbers of years of maturity

P = Redeemable value of debt

## 2. Cost of Preference Capital:

Cost of preference capital is the sum of amount of dividend paid and expenses incurred for raising preference shares. The dividend paid on preference shares is not deducted from tax, as dividend is an appropriation of profit and not considered as an expense.

**Cost of preference share can be calculated by using the following formulae:**

### 1. Cost of redeemable preference shares –

$$K_p = \left[ \frac{D + F/N(1-T) + RP/N}{P + NP/2} \right] \times 100$$

Where,

$K_p$  = Cost of preference share

D = Annual preference dividend

F = Expenses including underwriting commission, brokerage, and discount

N = Number of years to maturity

RP = Redemption premium

P = Redeemable value of preference share

NP = Net proceeds of preference shares

### 2. Cost of irredeemable preference shares –

$$K_P = (D / NP) \times 100$$

### **3. Cost of Equity Capital:**

It is very difficult to calculate the cost of equity capital as compared to debt capital and preference capital. The main reason is that the equity shareholders do not receive fixed interest or dividend. The dividend on equity shares varies depending upon the profit earned by an organization. Risk factor also plays an important role in deciding rate of dividend to be paid on equity capital. Therefore, there are various approaches to calculate cost of equity capital.

**The explanation of these approaches are as follows:**

#### **i. Dividend Price Approach:**

The dividend price approach describes the investors' view before investing in equity shares. According to this approach, investors have certain minimum expectations of receiving dividend even before purchasing equity shares. An investor calculates present market price of the equity shares and their rate of dividend.

**The dividend price approach can be mathematically calculated by using the following formula:**

$$K_E = (\text{Dividend per share} / \text{Market price per share}) \times 100$$

$$K_E = \text{Cost of equity capital}$$

#### **ii. Earnings Price Ratio Approach:**

The earnings price ratio approach suggests that cost of equity capital depends upon amount of fixed earnings of an organization. According to the earnings price ratio approach, an investor expects that a certain amount of profit must be generated by an organization. Investors do not always expect that the organization distribute dividend on a regular basis.

**The formula to calculate cost of capital through the earnings price ratio approach is as follows:**

$$K_E = E / MP$$

where,

E = Earnings per share

MP = Market price

### **iii. Dividend Price Plus Growth Approach:**

The dividend price plus growth approach refers to an approach in which the rate of dividend grows with the passage of time. In the dividend price plus growth approach, investors not only expect dividend but regular growth in the rate of dividend. The growth rate of dividend is assumed to be equal to the growth rate in EPS and market price per share.

**In the dividend price plus growth approach, cost of capital can be calculated mathematically by using the following formula:**

$$K_E = [(D / MP) + G] \times 100$$

Where,

D = Expected dividend per share, at the end of period

G = Growth rate in expected dividends

This approach is considered as the best approach to evaluate the expectations of investors and calculate the cost of equity capital.

### **iv. Realized Yield Approach:**

In the realized yield approach, an investor expects to earn the same amount of dividend, which the organization has paid in past few years. In this approach, the growth in dividend is not considered as major factors for deciding the cost of capital.

$$K_E = [ \{ (D - P) / p \} - 1 ] \times 100$$

Where,

P = Price at the end of the period,

p = Price per share to day

#### **v. Capital Asset Price Model (CAPM):**

CAPM helps in calculating the expected rate of return from a share of equivalent risk in the capital market. The cost of shares that carry risk would be equal to cost of lost opportunity. For example- an investor has two investment options- to buy the shares of either X Ltd. or Y Ltd. If the investor decides to buy the shares of X Ltd. then the cost of shares of Y Ltd. would be the cost of lost opportunity.

**According to CAPM, cost of capital can be calculated mathematically by using the following formulae:**

$$E = R_1 + \beta \{E(R_2) - R_1\}$$

Where,

E = Expected rate of return on asset

$\beta$  = Beta coefficient of assets

R<sub>1</sub> = Risk free rate of return

E(R<sub>2</sub>) = Expected return from market portfolio

#### **vi. Bond Yield Plus Risk Premium Approach:**

The bond yield plus risk premium approach states that the cost on equity capital should be equal to the sum of returns on long-term bonds of an organization and risk premium given one equity shares. The risk premium is paid on equity shares because they carry high risk.

**Mathematically, the cost of capital is calculated as:**

$$\text{Cost of equity capital} = \text{Returns on long-term bonds} + \text{Risk premium}$$

#### ***Cost of Retained Earnings:***

Retained earnings are organizations' own profit reserves, which are not distributed as dividend. These are kept to finance long-term as well as short-term projects of the organization. It is argued that the retained earnings do not cost anything to the organization. It is debated that there is no obligation either formal or implied, to earn any profit by investing retained earnings.

### ***Weighted Average Cost of Capital:***

Weighted average cost of capital is determined by multiplying the cost of each source of capital with its respective proportion in the total capital. Let us understand the concept of weighted average cost of capital with the help of an example. Suppose, an organization raises capital by issuing debentures and equity shares. It pays interest on debt capital and dividend on equity capital.

**Weighted average cost of capital can be calculated mathematically by using the following formula:**

$$\text{Weighted Average Cost of Capital} = (K_E \times E) + (K_P \times P) + (K_D \times D) + (K_r \times R)$$

Where,

E = Proportion of equity capital in capital structure

P = Proportion of preference capital in capital structure

D = Proportion of debt capital in capital structure

$K_R$  = Cost of proportion of retained earnings in capital structure

R = Proportion of retained earnings in capital structure

## UNIT - III

### THE INVESTMENT DECISION

#### Investment Decision

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

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

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



#### Capital Budgeting

The **Capital Budgeting** is one of the crucial decisions of the financial management that relates to the selection of investments and course of actions that will yield returns in the future over the lifetime of the project.

#### Capital Budgeting Process

1. **Identification of Potential Investment Opportunities:** The first step in the capital budgeting process is to explore the investment opportunities. There is generally a committee that identifies the expected sales from a certain course of action, and then the investment opportunities are identified keeping these targets as a basis. Before initiating the search for



the potential investments, there are certain points that need to be taken care of: monitor the external environment on a regular basis to know about the new investment opportunities, define the corporate strategy based on the analysis of the firm's strengths, weaknesses, opportunities and threats, share the corporate strategy and objectives with the members of capital budgeting process and seek suggestions from the employees.

2. **Assembling of Investment Proposals:** Once the investment opportunities are identified, several proposals are submitted by different departments. Before reaching the capital budgeting process committee, the proposals are routed through several persons who ensures that the proposals are in line with the requirements and then classify these according to their categories Viz, Replacement, Expansion, New product and Obligatory & welfare investments. This categorization is done to simplify the task of committee members and facilitate quick decision making, budgeting, and control.
3. **Decision Making:** At this stage, the executives decide on the investment opportunity on the basis of the monetary power, each has with respect to the sanction of an investment proposal. For example, in a company, a plant superintendent, work manager, and the managing director may okay the investment outlays up to the limit of 15,00,000, and if the outlay exceeds beyond the limits of the lower level management, then the approval of the board of directors is required.
4. **Preparation of Capital Budget and Appropriations:** The next step in the capital budgeting process is to classify the investment outlays into the smaller value and the higher value. The smaller value investments okayed by, the lower level management, are covered by the blanket appropriations for the speedy actions. And if the value of an investment outlay is higher then it is included in the capital budget after the necessary approvals. The purpose of these appropriations is to evaluate the performance of the investments at the time of the implementation.
5. **Implementation:** Finally, the investment proposal is put into a concrete project. This may be time-consuming and may encounter several problems at the time of implementation. For expeditious processing, the capital budgeting process committee must ensure that the project has been formulated and the homework in terms of preliminary studies and comprehensive formulation of the project is done beforehand.
6. **Performance Review:** Once the project has been implemented the next step is to compare the actual performance against the projected performance. The ideal time to compare the performance of the project is when its operations are stabilized. Through a review, the committee comes to know about the following: how realistic were the

assumptions, was the decision making efficient, what were the judgmental biases and were the desires of the project sponsors fulfilled.

Thus, the Capital Budgeting, due to its complex behaviour comprises a series of steps that should be strictly followed before finalizing the investments.



### Capital Budgeting Techniques

The **Capital Budgeting Techniques** are employed to evaluate the viability of long-term investments. The capital budgeting decisions are one of the critical financial decisions that relate to the selection of investment proposal or the course of action that will yield benefits in the future over the lifetime of the project.

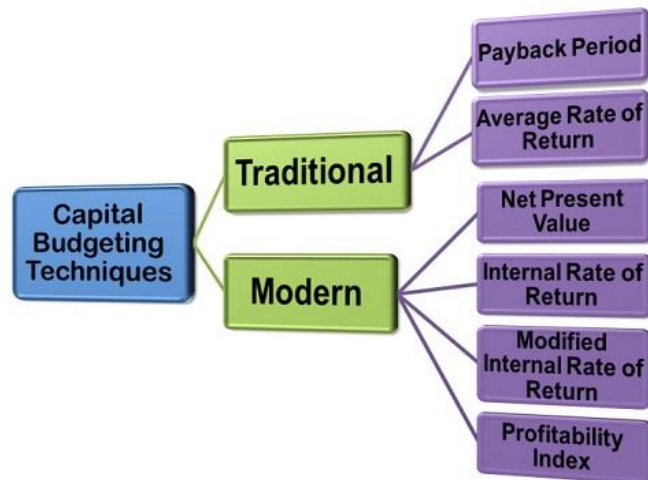
Since the capital budgeting is related to the long-term investments whose returns will be fetched in the future, certain **traditional and modern** capital budgeting techniques are employed by the firm to judge the feasibility of these projects.

The traditional method relies on the non-discounting criteria that do not consider the time value of money, whereas the modern method includes the discounting criteria where the time value of money is taken into the consideration.

### Traditional methods

1. Payback Period Method
2. Average Rate of Return or Accounting Rate of Return Method

## Capital Budgeting Techniques



### Modern Methods

The modern methods comprise of the following evaluation techniques:

1. Net Present Value Method
2. Internal Rate of Return
3. Modified Internal Rate of Return
4. Profitability Index

The common thing about both these methods (Traditional and Modern) is that these are based on the cash inflows and the outflows of the project.

### Payback Period

The **Payback Period** helps to determine the length of time required to recover the initial cash outlay in the project. Simply, it is the method used to calculate the time required to earn back the cost incurred in the investments through the successive cash inflows.

**Payback Period = Initial Outlay/Cash Inflows**

**Accept-Reject Criteria:** The projects with the lesser payback are preferred.

### Merits of Payback Period

1. It is very simple to calculate and easy to understand.

2. This method is helpful to analyze risk, i.e. to determine how long the investments will be at risk.
3. It is beneficial for the industries where the investments become obsolete very quickly.
4. It measures the liquidity of the projects.

### **Demerits of Payback Period**

1. The major drawback of this method is that it ignores the **Time Value of Money**.
2. It does not take into consideration the cash flows that occur after the payback period.
3. It does not show the liquidity position of the company, but only tells the ability of a project to return the initial outlay.
4. It does not measure the profitability of the entire project since it only focuses on the time required to recover the initial investment cost.

### **Average Rate of Return**

The **Average Rate of Return or ARR**, measures the profitability of the investments on the basis of the information taken from the financial statements rather than the cash flows. It is also called as **Accounting Rate of Return**

**Average Rate of Return = Average Income / Average Investment over the life of the project**

Where, Average Income = Average of post-tax operating profit  
 Average Investment = (Book value of investment in the beginning + book value of investments at the end) / 2

**Accept-Reject Criteria:** The projects having the rate of return higher than the minimum desired returns are accepted.

### **Merits of Average Rate of Return**

1. It is very simple to calculate and easy to understand
2. The measures the profitability of the entire project since it considers the cash flows throughout the life of the project.

3. It is based on the accounting information which is readily available and easily understood by the businessmen.

### **Demerits of Average Rate of Return**

1. It is based on the accounting information and not on the actual cash flows since the cash flow approach is considered superior to the accounting approach.
2. It does not take into consideration, the **Time Value of Money**.
3. It is inadequate to differentiate between the projects on the basis of amounts required for the investment, in case the proposals have the same rate of return.

### **Net Present Value**

The **Net Present Value or NPV** is a discounting technique of capital budgeting wherein the profitability of investment is measured through the difference between the cash inflows generated out of the cash outflows or the investments made in the project.

$$\text{Net present value} = \sum_{t=1}^n C_t / (1+r)^t - C_0$$

Where,  $C_t$  = cash inflow at the end of year t

n = life of the project

r = discount rate or the cost of capital

$C_0$  = cash outflow

**Accept – Reject Criteria:** If the NPV is positive, the project is accepted.

### **Merits of Net Present Value**

1. It takes into consideration the **Time Value of Money**.
2. It measures the profitability of the entire project by considering the profits throughout its life.
3. It is easy to alter the discount rate, by just changing the value of the denominator.
4. This method is particularly suitable for the mutually exclusive projects.
5. It is consistent with the objective of maximizing the net wealth of the company.

## Demerits of Net Present Value

1. The forecasting of cash flows is difficult because of several uncertainties involved in the operations of the firm.
2. It is difficult to compute the discount rate precisely. And this is one of the crucial factors in the computation of net present value as with the change in the discount factor the NPV results also changes.
3. Another problem is that it is an absolute measure, it accepts or rejects the projects only on the basis of its higher value **irrespective of the cost of initial outlay**.

## Profitability Index

The **Profitability Index** measures the present value of returns derived from per rupee invested. It shows the relationship between the benefits and cost of the project and therefore, it is also called as, **Benefit-Cost Ratio**.

The profitability Index helps in giving ranks to the projects on the basis of its value, the higher the value the top rank the project gets. Therefore, this method helps in the **Capital Rationing**.

The formula to calculate the Profitability Index is:

$$\text{PI} = \text{Present value of future cash inflows} / \text{Present value of cash outflows}$$

**Accept-Reject Criteria:** The project is accepted when the value of PI exceeds 1. If the value is equal to 1, then the firm is indifferent towards the project and in case the value is less than 1 the proposal is rejected.

## Merits of Profitability Index

1. It takes into consideration, the **Time Value of Money**.
2. The profits are considered throughout the life of the project.
3. This method helps in giving the ranks to the projects.
4. It helps in assessing the risk involved in cash inflows through the cost of capital.
5. It also helps in assessing the increase or decrease in the firm's value due to the investments.

## Demerits of profitability Index

1. Unlike the NPV, the Profitability Index may sometimes do not offer the correct decision with respect to the mutually exclusive projects.
2. The cost of capital is must to compute this ratio.

## Internal Rate of Return

The **Internal Rate of Return or IRR** is a rate that makes the net present value of any project equal to zero. In other words, the interest rate that equates the present value of cash inflow with the present value of cash outflow of any project is called as Internal Rate of Return.

Unlike the Net present value method where we assume that the discount rate is known, in the case of Internal rate of return method, we put the value of NPV zero and then find out the discount rate that satisfies this condition.

The formula to calculate IRR is:

$$CF_0 = \sum_{t=1}^n C_t / (1+r)^t$$

Where,  $CF_0$  = Investment

$C_t$  = Cash flow at the end of year t

r = internal rate of return

n= life of the project

**Accept- Reject criteria:** If the project's internal rate of return is greater than the firm's cost of capital, accept the proposal.

## Merits of Internal Rate of Return

1. IRR takes into account the **Time Value of Money**.
2. It considers the cash flows over the entire life of the project.
3. IRR is consistent with the goal of wealth maximization.

4. While computing the NPV the discount rate taken is normally the cost of capital, but in the case of IRR, there is no need for the cost of capital because the rate of return generated by the project itself is used to evaluate the efficiency of the project. Thus, the rate is internal to the project.

#### **Demerits of Internal Rate of Return**

1. It is quite difficult and involves tedious calculations.
2. IRR produces multiple discount rates, which might be confusing.
3. While evaluating the mutually exclusive proposals, the project having the highest value is chosen over the other that may not be necessarily the most profitable or be in line with the objectives of the firm of wealth maximization.
4. It is assumed that the cash flows are reinvested at an internal rate of return.



## UNIT - IV

### THE DIVIDEND DECISION

#### Dividend Decision

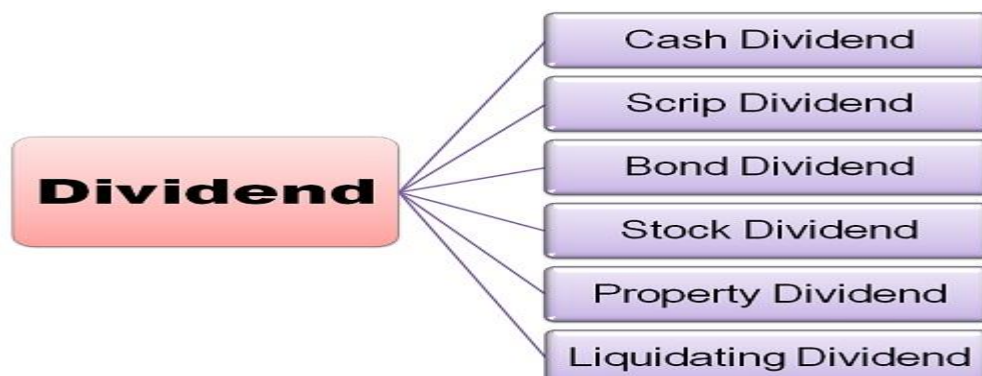
The **Dividend Decision** is one of the crucial decisions made by the finance manager relating to the payouts to the shareholders. The payout is the proportion of **Earning Per Share** given to the shareholders in the form of dividends.

The companies can pay either dividend to the shareholders or retain the earnings within the firm. The amount to be disbursed depends on the preference of the shareholders and the investment opportunities prevailing within the firm.



#### Types of Dividend

The **Dividends** are the proportion of revenues paid to the shareholders. The amount to be distributed among the shareholders depends on the earnings of the firm and is decided by the board of directors.



1. **Cash Dividend:** It is one of the most common types of dividend paid in cash. The shareholders announce the amount to be disbursed among the shareholder on the “date of declaration.” Then on the “date of record”, the amount is assigned to the shareholders and finally, the payments are made on the “date of payment”. The companies should have an adequate retained earnings and enough cash balance to pay the shareholders in cash.
2. **Scrip Dividend:** Under this form, a company issues the transferable promissory note to the shareholders, wherein it confirms the payment of dividend on the future date. A scrip dividend has shorter maturity periods and may or may not bear any interest. These types of dividend are issued when a company does not have enough liquidity and require some time to convert its current assets into cash.
3. **Bond Dividend:** The Bond Dividends are similar to the scrip dividends, but the only difference is that they carry longer maturity period and bears interest.
4. **Stock Dividend/ Bonus Shares:** These types of dividend are issued when a company lacks operating cash, but still issues, the common stock to the shareholders to keep them happy. The shareholders get the additional shares in proportion to the shares already held by them and don't have to pay extra for these bonus shares. Despite an increase in the number of outstanding shares of the firm, the issue of bonus shares has a favorable psychological effect on the investors.
5. **Property Dividend:** These dividends are paid in the form of a property rather than in cash. In case, a company lacks the operating cash; then non-monetary dividends are paid to the investors. The property dividends can be in any form: inventory, asset, vehicle, real estate, etc. The companies record the property given as a dividend at a fair market value, as it may vary from the book value and then record the difference as a gain or loss.
6. **Liquidating Dividend:** When the board of directors decides to pay back the original capital contributed by the equity shareholders as dividends, is called as a liquidating dividend. These are usually paid at the time of winding up of the operations of the firm or at the time of final closure.

### **Dividend Decision**

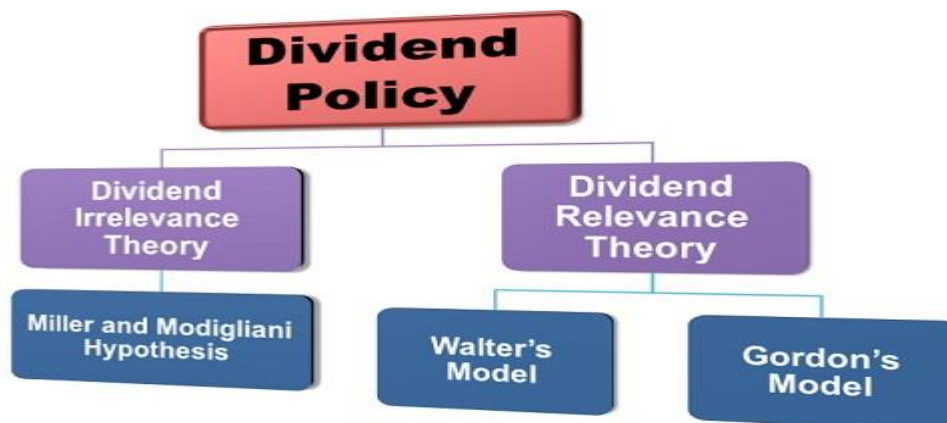
The **Dividend Decision** is one of the crucial decisions made by the finance manager relating to the payouts to the shareholders. The payout is the proportion of **Earning Per Share** given to the shareholders in the form of dividends.

## Dividend Policy

The **Dividend Policy** is a financial decision that refers to the proportion of the firm's earnings to be paid out to the shareholders. Here, a firm decides on the portion of revenue that is to be distributed to the shareholders as dividends or to be ploughed back into the firm

The amount of earnings to be retained back within the firm depends upon the availability of investment opportunities. To evaluate the efficiency of an opportunity, the firm assesses a relationship between the rate of return on investments "r" and the cost of capital "K."

As per the dividend models, some practitioners believe that the shareholders are not concerned with the firm's dividend policy and can realize cash by selling their shares if required. While the others believed that, dividends are relevant and have a bearing on the share prices of the firm. This gave rise to the following models:



Miller and Modigliani theory on Dividend Policy

**Definition:** According to **Miller and Modigliani Hypothesis or MM Approach**, dividend policy has no effect on the price of the shares of the firm and believes that it is the investment policy that increases the firm's share value.

*Miller and Modigliani have given the proof of their argument, that dividends have no effect on the firm's share price, in the form of a set of equations, which are explained in the content below:*

### **Assumptions of Miller and Modigliani Hypothesis**

1. There is a **perfect capital market**, i.e. investors are rational and have access to all the information free of cost. There are no floatation or transaction costs, no investor is large enough to influence the market price, and the securities are infinitely divisible.
2. There are **no taxes**. Both the dividends and the capital gains are taxed at the similar rate.
3. It is assumed that a company follows a **constant investment policy**. This implies that there is no change in the business risk position and the rate of return on the investments in new projects.
4. There is **no uncertainty about the future profits**, all the investors are certain about the future investments, dividends and the profits of the firm, as there is no risk involved.

### **Criticism of Miller and Modigliani Hypothesis**

1. It is assumed that a perfect capital market exists, which implies no taxes, no flotation, and the transaction costs are there, but, however, these are untenable in the real life situations.
2. The Floatation cost is incurred when the capital is raised from the market and thus cannot be ignored since the underwriting commission, brokerage and other costs have to be paid.
3. The transaction cost is incurred when the investors sell their securities. It is believed that in case no dividends are paid; the investors can sell their securities to realize cash. But however, there is a cost involved in making the sale of securities, i.e. the investors in the desire of current income has to sell a higher number of shares.
4. There are taxes imposed on the dividend and the capital gains. However, the tax paid on the dividend is high as compared to the tax paid on capital gains. The tax on capital gains is a deferred tax, paid only when the shares are sold.
5. The assumption of certain future profits is uncertain. The future is full of uncertainties, and the dividend policy does get affected by the economic conditions.

Thus, the MM Approach posits that the shareholders are indifferent between the dividends and the capital gains, i.e., the increased value of capital assets.

### **Proof of Miller and Modigliani Hypothesis**

**Step 1:** The market price of a share, in the beginning, is equal to the present value of dividends received at the end of the period plus the market price of a share at the end, is represented as:

$$P_0 = [1/(1+K_e)] * (D_1 + P_1)$$

Where,  $P_0$  = market price of a share in the beginning of the period

$K_e$  = cost of equity capital

$D_1$  = Dividends received at the end of the period

$P_1$  = market price of a share at the end of the period

**Step 2:** It is assumed that no external financing is raised, thus the total capitalized value of the firm would be the number of shares (n) times the price of the share  $P_0$ .

$$nP_0 = [1/(1+K_e)] * (nD_1 + nP_1)$$

**Step 3:** If the retained earnings fall short to finance the investment opportunity then,  $\Delta n$  is the number of new shares issued at the end of year 1 at price  $P_1$ .

$$nP_0 = [1/(1+K_e)] * [(nD_1 + (n + \Delta n) P_1 - \Delta P_1)]$$

Where, n = no of shares outstanding at the beginning

$\Delta n$  = additional shares issued

**Step 4:** If the firm finances all its investments, the total amount raised through new shares is given as:

$$\Delta n P_1 = I - (E - nD_1)$$

Where,  $\Delta n P_1$  = amount received from the sale of new shares to finance capital budget

I = requirement of capital budget

E= earnings

nD1 = Dividends

E-nD1 = Retained Earnings

**Step 5:** If we substitute the equation of step 4 in step 3, we get the following equation:

$$nP_0 = [1/(1+K_e)] * [(nD1 + (n + \Delta n) P1 - \Delta P1) - (I - E + nD1)]$$

OR

$$nP_0 = [nD1 + (n + \Delta n) P1 - I + E - nD1] / (1+K_e)$$

The negative nD1 and the positive nD1 get cancelled and then, we get the final equation:

$$nP_0 = [(n + \Delta n) P1 - I + E] / (1+K_e)$$

*Thus, we found out that there is no dividend in the equation above, and hence it is proved from the Miller and Modigliani Hypothesis that dividends are irrelevant and has no effect on the firm's share price.*

## **GORDON'S MODEL**

The **Gordon's Model**, given by Myron Gordon, also supports the doctrine that dividends are relevant to the share prices of a firm. Here the **Dividend Capitalization Model** is used to study the effects of dividend policy on a stock price of the firm.

Gordon's Model assumes that the investors are risk averse i.e. not willing to take risks and prefers certain returns to uncertain returns. Therefore, they put a premium on a certain return and a discount on the uncertain returns. The investors prefer current dividends to avoid risk; here the risk is the possibility of not getting the returns from the investments.

But in case, the company retains the earnings; then the investors can expect a dividend in future. But the future dividends are uncertain with respect to the amount as well as the time, i.e. how much and when the dividends will be received. Thus, an investor would discount the future dividends, i.e. puts less importance on it as compared to the current dividends.

According to the Gordon's Model, the market value of the share is equal to the present value of future dividends. It is represented as:

$$P = [E (1-b)] / Ke-br$$

Where, P = price of a share

E = Earnings per share

b = retention ratio

1-b = proportion of earnings distributed as dividends

Ke = capitalization rate

Br = growth rate

#### **Assumptions of Gordon's Model**

1. The firm is an all-equity firm; only the retained earnings are used to finance the investments, no external source of financing is used.
2. The rate of return (r) and cost of capital (K) are constant.
3. The life of a firm is indefinite.
4. Retention ratio once decided remains constant.
5. Growth rate is constant ( $g = br$ )
6. Cost of Capital is greater than br

#### **Criticism of Gordon's Model**

1. It is assumed that firm's investment opportunities are financed only through the retained earnings and no external financing viz. Debt or equity is raised. Thus, the investment policy or the dividend policy or both can be sub-optimal.
2. The Gordon's Model is only applicable to all equity firms. It is assumed that the rate of returns is constant, but, however, it decreases with more and more investments.
3. It is assumed that the cost of capital (K) remains constant but, however, it is not realistic in the real life situations, as it ignores the business risk, which has a direct impact on the firm's value.

Thus, Gordon model posits that the dividend plays an important role in determining the share price of the firm.

### **WALTER'S MODEL**

According to the **Walter's Model**, given by prof. James E. Walter, the dividends are relevant and have a bearing on the firm's share prices. Also, the investment policy cannot be separated from the dividend policy since both are interlinked.

Walter's Model shows the clear relationship between the return on investments or internal rate of return ( $r$ ) and the cost of capital ( $K$ ). The choice of an appropriate dividend policy affects the overall value of the firm. The efficiency of dividend policy can be shown through a relationship between returns and the cost.

- If  $r > K$ , the firm should retain the earnings because it possesses better investment opportunities and can gain more than what the shareholder can by re-investing. The firms with more returns than a cost are called the "Growth firms" and have a zero payout ratio.
- If  $r < K$ , the firm should pay all its earnings to the shareholders in the form of dividends, because they have better investment opportunities than a firm. Here the payout ratio is 100%.
- If  $r = K$ , the firm's dividend policy has no effect on the firm's value. Here the firm is indifferent towards how much is to be retained and how much is to be distributed among the shareholders. The payout ratio can vary from zero to 100%.

### **Assumptions of Walter's Model**

1. All the financing is done through the retained earnings; no external financing is used.
2. The rate of return ( $r$ ) and the cost of capital ( $K$ ) remain constant irrespective of any changes in the investments.
3. All the earnings are either retained or distributed completely among the shareholders.
4. The earnings per share (EPS) and Dividend per share (DPS) remains constant.
5. The firm has a perpetual life.



### **Criticism of Walter's Model**

1. It is assumed that the investment opportunities of the firm are financed through the retained earnings and no external financing such as debt, or equity is used. In such a case either the investment policy or the dividend policy or both will be below the standards.
2. The Walter's Model is only applicable to all equity firms. Also, it is assumed that the rate of return (r) is constant, but, however, it decreases with more investments.
3. It is assumed that the cost of capital (K) remains constant, but, however, it is not realistic since it ignores the business risk of the firm, that has a direct impact on the firm's value.

**Note: Here, the cost of capital (K) = Cost of equity (Ke), because no external source of financing is used.**

### **GORDON MODEL:**

The Gordon model was proposed by Myron Gordon to calculate cost of equity capital. As per this model, an investor always prefers less risky investment as compared to more risky investment. Therefore, an organization should pay risk premium only on risky investment. The Gordon model also suggests that an investor would always prefer more of those investments, which would provide them current income.

#### **The Gordon model is based on the following assumptions:**

- a. The rate of return on the investments of an organization is constant
- b. The cost of equity capital is more than the growth rate
- c. The corporation tax does not exist in the economy
- d. The organization has perpetual existence
- e. The growth rate of the organization is a part of retention ratio and its rate of return

**According to the Gordon model, cost of capital can be calculated mathematically by using the following formula:**

$$P = E (1 - b) / K - br$$

Where,

P = Price per share at the beginning of the year

E = Earnings per share at the end of the year

b = Fraction of retained earnings

K = Rate of return required by shareholders

r = Rate of return earned on investments made by the organization

## UNIT - V

### WORKING CAPITAL MANAGEMENT

#### WORKING CAPITAL MANAGEMENT

The term 'working capital management' primarily refers to the efforts of the management towards effective management of current assets and current liabilities. Working capital is nothing but the difference between the current assets and current liabilities. In other words, an efficient working capital management means ensuring sufficient liquidity in the business to be able to satisfy short-term expenses and debts.

In a broader view, 'working capital management' includes working capital financing apart from managing the current assets and liabilities. That adds the responsibility for arranging the working capital at the lowest possible cost and utilizing the capital cost-effectively.

#### OBJECTIVES OF WORKING CAPITAL MANAGEMENT

The primary objectives of working capital management include the following:

- **Smooth Operating Cycle:** The key objective of working capital management is to ensure a smooth operating cycle. It means the cycle should never stop for the lack of liquidity whether it is for buying raw material, salaries, tax payments etc.
- **Lowest Working Capital:** For achieving the smooth operating cycle, it is also important to keep the requirement of working capital at the lowest. This may be achieved by favorable credit terms with accounts payable and receivables both, faster production cycle, effective inventory management etc.
- **Minimize Rate of Interest or Cost of Capital:** It is important to understand that the interest cost of capital is one of the major costs in any firm. The management of the firm should negotiate well with the financial institutions, select the right mode of finance, maintain optimal capital structure etc.
- **Optimal Return on Current Asset Investment:** In many businesses, you have a liquidity crunch at one point of time and excess liquidity at another. This happens mostly with seasonal industries. At the time of excess liquidity, the management should have good short-term investment avenues to take benefit of the idle funds.

#### Importance Of Effective Working Capital Management

Although the importance of working capital is unquestionable in any type of business. Working capital management is a day to day activity, unlike capital budgeting decisions. Most importantly, inefficiencies at any levels of management have an impact on the working

capital and its management. Following are the main points that signify why it is important to take the management of working capital seriously.

- Ensures Higher Return on Capital
- Improvement in Credit Profile & Solvency
- Increased Profitability
- Better Liquidity
- Business Value Appreciation
- Most Suitable Financing Terms
- Interruption Free Production
- Readiness for Shocks and Peak Demand
- Advantage over Competitors

**Meaning and Concept of Working Capital:**

In ordinary parlance, working capital denotes a ready amount of fund available for carrying out the day-to-day activities of a business enterprise.

It is considered to be the life-blood of the business and its effective and efficient management is necessary for the very survival of the business.

**There are two concepts of working capital:**

- (i) Gross concept, and
- (ii) Net concept.

***(i) Gross Concept of Working Capital:***

The gross working capital refers to the total fund invested in current assets. Current assets are those assets which are easily converted into cash within a time period of one year. It includes cash in hand and at bank, short term securities, debtors, bills receivable, prepaid expenses, accrued expenses and inventories like raw materials, work-in-progress, stores and spare parts, finished goods.

The gross concept of working capital refers to the firm's investment in above current assets.

**It is useful for the following purposes:**

- (a) It is the total investment in current assets which earns profit.

(b) Management can give attention to manage very efficiently and carefully each item of the current assets in order to minimise bad debt, slow-moving and non-moving items, idle cash etc.

(c) It takes into consideration of the fact that, if other things remain constant, infusion of fund in the business increases its working capital.

(d) It enables management to compute the rate of return on total investment in current assets.

***(ii) Net Concept of Working Capital:***

The term net working capital refers to the excess of current assets over current liabilities. In other words, the amount of current assets that would remain in a firm after all its current liabilities are paid.

Current liabilities are those claims of outsiders to the business enterprise which are payable within a period of one year, and include sundry creditors, bills payable, outstanding expenses, short-term loans, advances and deposits, bank overdraft, proposed dividend, provision for taxation etc.

**The needs for working capital are as given below:**

i. Adequate working capital is needed to maintain a regular supply of raw materials, which in turn facilitates smoother running of production process.

ii. Working capital ensures the regular and timely payment of wages and salaries, thereby improving the morale and efficiency of employees.

iii. Working capital is needed for the efficient use of fixed assets.

iv. In order to enhance goodwill a healthy level of working capital is needed. It is necessary to build a good reputation and to make payments to creditors in time.

v. Working capital helps avoid the possibility of under-capitalization.

vi. It is needed to pick up stock of raw materials even during economic depression.

vii. Working capital is needed in order to pay fair rate of dividend and interest in time, which increases the confidence of the investors in the firm.

**The net concept of working is useful for the following reasons:**

- (a) It indicates the liquidity position of the firm i.e., ability of the firm to meet its short- term obligations.
- (b) It helps creditors and other potential investors to judge the financial health of the firm.
- (c) Gross concept of working capital may lead to incorrect conclusion regarding financial stability of firms having the same amount of current assets.
- (d) It indicates the extent of long-term sources of fund used in financing current assets of a business enterprise.

So both gross concept of working capital and net concept of working capital are useful for working capital management. However, while preparing a vertical form of balance sheet, the Institute of Chartered Accountants of India has defined and shown working capital as the difference between current assets and current liabilities.

There is yet another view, according to which the net working capital may be referred to as the qualitative—and the gross working capital as the quantitative—aspects of the idea. These two concepts of working capital are generally known as the balance sheet concepts as they depend upon the contents of balance sheet items.

**Types of Net Working Capital:**

If gross concept of working capital is used, there will always be positive working capital as it represents only current assets. On the other hand, if net concept of working capital is used, there may be positive, negative or zero (nil) working capital.

***(i) Positive Working Capital:***

Positive working capital refers to excess of current assets over current liabilities. It indicates the extent of long-term sources of funds such as equity share, preference share, retained earnings, long-term loans and debentures etc. used to finance the current assets of a business concern.

**(ii) Negative Working Capital:**

If current liabilities of a firm exceed current assets it is called negative working capital. In other words, working capital is said to be negative when the current assets fall short of the current liabilities. The excess of current liabilities over current assets is supposed to have been used in procuring fixed assets of the firm.

So, it indicates the extent of short-term sources of fund used to finance the fixed assets of the firm. A negative working capital means a negative liquidity and is disastrous for the firm.

**(iii) Zero Working Capital:**

If the current assets are equal to current liabilities, it is called zero or nil working capital.

**Illustration 1**

**Balance Sheet**  
as on 31.12.2008

Liabilities	A Ltd. Rs.	B Ltd. Rs.	Assets	A Ltd. Rs.	B Ltd. Rs.
Share capital	10,000	6,000	Fixed Assets	12,000	12,000
Long-term debt	4,000	4,000	Current Assets	8,000	8,000
Current liabilities	6,000	10,000			
	20,000	20,000		20,000	20,000

Working Capital = Current Assets – Current Liabilities

A Ltd : Rs. 8,000 – Rs. 6,000 = (+) Rs. 2,000

B Ltd : Rs. 8,000 – Rs. 10,000 = (-) Rs. 2,000

In the case of A Ltd., a part of long-term funds (i.e., Rs. 14,000 – 12,000) or Rs. 2,000 is invested for financing current assets while Rs. 6,000 is available from short-term funds. As a result, working capital is positive. In the case of B Ltd. long-term funds (i.e., Rs. 6,000 + Rs. 4,000 = Rs. 10,000) is not sufficient to finance fixed assets.

As a result, a part of short-term sources (i.e., Rs. 10,000 – Rs. 8,000) or Rs. 2,000 is used for financing fixed assets. Hence, working capital is negative.

**Importance of Working Capital:**

The importance of sufficient working capital in any business concern can never be overemphasized. A concern requires adequate working capital to carry on its day-to-day

operations smoothly and efficiently. Lack of adequate working capital not only impairs firm's profitability but also results in stoppage in production and efficiency in payment of its current obligations. Thus working capital is considered the life-blood of the business.

**The advantages of having adequate working capital may be summarised:**

***1. Smooth Flow of Production:***

To maintain a smooth flow of production, it is necessary that adequate working capital is available for paying trade suppliers, hiring labour and incurring other operating expenses.

***2. Increase in Liquidity and Solvency Position:***

It enhances the liquidity and solvency position of the business concern.

***3. Goodwill:***

A firm with sound working capital position can make timely payment of its outstanding bills. This enhances the reputation of the firm.

***4. Advantages of Cash Discount:***

It enables the firm to avail itself of the facilities like cash discount by making prompt payments.

***5. Easy Loan:***

Adequate amount of working capital builds a sound credit-worthiness of the firm. As a result it becomes easier for the firm to obtain additional loans in favourable terms and conditions in order to meet seasonal increase in demand or to finance the increased working capital resulting from expansion.

***6. Regular Payment of Wages and Salaries:***

The firm can make regular and timely payment of wages and salaries to its employees. This increases the morale and efficiency of employees.

***7. Security and Confidence:***

It creates a sense of security and confidence in the mind of management or officials of the firm.



**8. Efficient Use of Fixed Assets:**

Adequate amount of working capital enables the firm to use its fixed assets more efficiently and extensively. If the fixed assets remain idle due to paucity of working capital, depreciation of fixed assets and interest on borrowed capital invested in fixed assets will have to be incurred unnecessarily.

**9. Meeting of Contingencies:**

It can meet unforeseen contingencies of the firm. Unforeseen contingencies like business depression, financial crisis due to huge losses etc. can easily be overcome, if adequate working capital is maintained by a firm.

**10. Completing operating cycle:**

A sound management of working capital helps in completing the operating cycle quickly. This enables a firm to increase its profitability.

**11. Timely Payment of Dividend:**

Adequate working capital ensures regular payment of dividends to the shareholders.

**Components or Composition of Working Capital:**

There are two components of working capital viz., current assets and current liabilities.

**Current Assets:**

Current assets generally mean those assets which, in the normal and ordinary course of business, will be or are likely to be converted into cash within a year.

**Examples of current assets are:**

1. Inventories like raw materials, work-in-progress, stores and spare parts, finished goods
2. Sundry Debtors (net of provision)
3. Short-term investment or marketable securities
4. Short-term loans and advances
5. Bills receivable or accounts receivable
6. Pre-paid expenses
7. Accrued Income
8. Cash in hand and bank balances.

***Current Liabilities:***

Current liabilities means those liabilities repayable within the same period, i.e., a year. In other words, current liabilities are those which are to be repaid in the ordinary course of the business within a year.

**Examples of current liabilities are:**

1. Sundry creditors
2. Bills payable
3. Outstanding expenses
4. Short-term loans, advances and deposits
5. Provision for tax
6. Proposed dividend
7. Bank overdraft.

**Different Sources of Working Capital:**

**A firm can use two types of sources to finance its working capital, namely:**

- (i) Long-term source, and
- (ii) Short-term source.

***(i) Long-Term Sources:***

Every business organisation is required to maintain a minimum balance of cash and other current assets at all the times—irrespective of the ups and downs in the level of activity. The portion of working capital which is continuously maintained by the business at all times to carry on its minimum level of activities is called permanent working capital.

This type of working capital should be arranged from long-term sources of fund.

**The following are the long-term sources of financing permanent working capital:**

- (a) Issue of Equity shares
- (b) Issue of Preference shares
- (c) Retained earnings (ploughed-back profits)

- (d) Issue of Debentures and other long-term bonds
- (e) Long-term loans taken from financial institutions etc.

***(ii) Short-Term Sources:***

The short-term financing of working capital is generally used to support the temporary working capital which is usually needed to meet the seasonal increase or sudden spurt in demand.

**Various short-term sources of financing of temporary working capital are:**

- (a) Bank credit (e.g., cash credit, letter of credit, bills finance, working capital demand loan, overdraft facility etc.)
- (b) Public deposits
- (c) Trade credit
- (d) Outstanding expenses
- (e) Provision for depreciation
- (f) Provision for taxation
- (g) Advances from customers
- (h) Loans from directors
- (i) Security money received from employees
- (j) Receipts from factoring.

**Determinants of Working Capital:**

A firm should always maintain a requisite amount of working capital for smooth and efficient functioning of its operations. The total working capital requirement is determined by a wide variety of factors. These factors affect different enterprises differently. They also vary from time to time.

**In general, the following factors are to be considered in determining the working capital requirement of a firm:**

***1. Nature of Business:***

The working capital requirements of a firm are widely influenced by the nature of business. Public utilities like bus service, railways, water supply etc. have the lowest requirements for

working capital—partly because of the cash nature of their business and partly because of their rendering service rather than manufacturing product and there is no need of maintaining any inventory or book debt except capital assets.

On the contrary, trading concerns are required to maintain more working capital because they have to carry stock-in-trade, receivables and liquid cash. Manufacturing concerns also require large amount of working capital because of the time lag involved in the conversion of raw materials into finished products and, finally, into cash.

### ***2. Size of the Business:***

The amount of working capital requirement also depends upon the size of the business. The size can be measured in terms of the scale of operations. A large firm with a high scale of operation will require to maintain a large amount of working capital than a firm with a small scale of operation.

### ***3. Production Cycle:***

Production cycle is the time involved in manufacturing or processing a product. It starts when raw materials are put in the production process and ends with the completion of manufacturing of the product. Longer the production cycle, higher is the need of working capital.

This is because funds remain blocked in work-in-progress for long periods of time. For example, the working capital needs of a ship-building industry will be much longer than those of a bakery.

### ***4. Business Cycle:***

The working capital requirements are also determined by the nature of the business cycle. During the boom period, the need for working capital will increase to meet the requirements of increased production and sales. On the other hand, in a slack period, the reduced volume of operation will require relatively lower amount of working capital.

### ***5. Credit terms of Purchase and Sale:***

The period of credit given by the suppliers and the period of credit granted to the customers will affect the working capital needs of a firm. If a firm allows a very short credit period, cash will be realised very soon from debtors. So the need for the working capital will be less.

On the other hand, a liberal credit policy will result in higher amount of book debts. Higher book debts will mean more working capital requirement. If the firm has to purchase raw materials in cash or gets credit for shorter period, it has to arrange for relatively higher amount of working capital.

#### ***6. Seasonal Variations:***

There are industries like cold drinks, ice-cream and woolen where the goods are either produced or sold seasonally. So, in such industries, working capital requirements during production or sale seasons will be large and these will start decreasing when the season starts coming-to end.

However, much depends on the policy of management with regard to production or sale of goods. For example, the management of a woolen industry wants to carry on production evenly throughout the year rather than concentrating on its production only in the busy season. In that case the working capital requirements will be low.

#### ***7. Operating Efficiency:***

If the operating efficiency of a firm is very high, the resources will be properly utilised. As a result, it improves the profitability of the firm which ultimately, helps in releasing the pressure of working capital. On other hand, inefficiency compels the firm to maintain relatively a high level of working capital.

#### ***8. Price level changes:***

If prices of input rise, the firm requires additional working capital to maintain the same level of production.

#### ***9. Growth and Expansion of the Business:***

Every concern wants to grow over a period of time and with the increase in its size, so the working capital requirements are bound to increase. A growing firm would require greater working capital than a static one.

#### ***10. Profitability and Retention Money:***

The net profit earned by the firm goes to increase the working capital to the extent it has been earned in cash. The cash profit can be found by adjusting non-cash items such as depreciation, outstanding expenses and losses or intangible assets written-off in the net profit.

But what portion of this profit will be reinvested as working capital will depend upon the retention policy of a firm which is, again influenced by corporate tax structure and dividend policy. So, if the amount of retained profit is not immediately invested outside the business, it would increase the amount of working capital.

***11. Relationship of Material Cost to Total Cost:***

In manufacturing concerns, where raw material costs bear a large proportion to the total cost of production, a greater amount of working capital will have to be maintained. For example, in industries like textile and electronics, large sums are required to maintain the inventory of such raw materials.

***12. Turnover of Current Assets:***

The speed with which the current assets revolve around also affects working capital requirements of a firm. In few cases like vegetables or fruit shops, stocks get sold very quickly and, for this reason, a little or no working capital is required in carrying over the stock.

On the other hand, there are some businesses, like jewellery, having very slow turnover of the stocks—leading to the need for a larger amount of working capital.

# 1. MANUFACTURING CONCERN

STATEMENT OF WORKING CAPITAL REQUIREMENTS	
	Amount (Rs.)
<b>Current Assets</b>	
(i) Stock of R M( for ....month's consumption)	----
(ii)Work-in-progress (for...months)	
(a) Raw Materials	----
(b) Direct Labour	----
(c) Overheads	----
(iii) Stock of Finished Goods ( for ...month's sales)	
(a) Raw Materials	----
(b) Direct Labour	----
(c) Overheads	----
(iv) Sundry Debtors ( for ...month's sales)	
(a) Raw Materials	----
(b) Direct Labour	----
(c) Overheads	----
(v) Payments in Advance (if any)	----
(iv) Balance of Cash for daily expenses	----
(vii)Any other item	----
<i>Less : Current Liabilities</i>	
(i) Creditors (For..... Month's Purchases)	----
(ii) Lag in payment of expenses	----
(iii) Any other	----
<b>WORKING CAPITAL ( CA – CL )xxxx</b>	
<i>Add : Provision / Margin for Contingencies</i>	----
<b>NET WORKING CAPITAL REQUIRED</b>	<b>XXX</b>

## Operating Cycle



## CASH MANAGEMENT

Cash Management refers to the collection, handling, control and investment of the organizational cash and cash equivalents, to ensure optimum utilization of the firm's liquid resources. Money is the lifeline of the business, and therefore it is essential to maintain a sound cash flow position in the organization.

### Objectives of Cash Management

Why do we need to manage cash flow in the organization? What is the use of cash management in the business?

Following purposes of cash management will resolve the above queries:



- **Fulfil Working Capital Requirement:** The organization needs to maintain ample liquid cash to meet its routine expenses which possible only through effective cash management.
- **Planning Capital Expenditure:** It helps in planning the capital expenditure and determining the ratio of debt and equity to acquire finance for this purpose.
- **Handling Unorganized Costs:** There are times when the company encounters unexpected circumstances like the breakdown of machinery. These are unforeseen expenses to cope up with; cash surplus is a lifesaver in such conditions.
- **Initiates Investment:** The other aim of cash management is to invest the idle funds in the right opportunity and the correct proportion.
- **Better Utilization of Funds:** It ensures the optimum utilization of the available funds by creating a proper balance between the cash in hand and investment.



- **Avoiding Insolvency:** If the business does not plan for efficient cash management, the situation of insolvency may arise. It is either due to lack of liquid cash or not making a profit out of the money available.

### Functions of Cash Management

Cash management is required by all kinds of organizations irrespective of their size, type and location. Following are the multiple managerial functions related to cash management:



- **Investing Idle Cash:** The company needs to look for various short term investment alternatives to utilize surplus funds.
- **Controlling Cash Flows:** Restricting the cash outflow and accelerating the cash inflow is an essential function of the business.
- **Planning of Cash:** Cash management is all about planning and decision making in terms of maintaining sufficient cash in hand and making wise investments.
- **Managing Cash Flows:** Maintaining the proper flow of cash in the organization through cost-cutting and profit generation from investments is necessary to attain a positive cash flow.
- **Optimizing Cash Level:** The organization should continuously function to maintain the required level of liquidity and cash for business operations.

## Cash Management Strategies

Cash management involves decision making at every step. It is not an immediate solution but a strategically approach to financial problems. Following are the strategies of cash management:



**Business Line of Credit:** The organization should opt for a business line of credit at an initial stage to meet the urgent cash requirements and unexpected expenses.

**Money Market Fund:** While carrying on a business, the surplus fund should be invested in the money market funds. These are readily convertible into cash whenever required and yield a considerable profit over the period.

**Lockbox Account:** This facility provided by the banks enable the companies to get their payments mailed to its post office box. This lockbox is managed by the banks to avoid manual deposit of cash regularly.

**Sweep Account:** The organizations should avail the facility of sweep accounts which is a mix of savings and fixed deposit account. Thus, the minimum balance of the savings account is automatically maintained, and the excess sum is transferred to the fixed deposit account.

**Cash Deposits (CDs):** If the company has a sound financial position and can predict the expenses well along with availing of a lengthy period, it can invest the surplus cash in the cash deposits. These CDs yield good interest, but early withdrawals are liable to penalties.

## Cash Flow Management Techniques

Managing cash flow is a contemplative process and requires a lot of analytical thinking. The various techniques or tools used by the managers to practice cash flow management are as follows:



- **Accelerating Collection of Accounts Receivable:** One of the best ways to improve cash inflow and increase liquid cash by collecting the debts and dues from the debtors readily.
- **Stretching of Accounts Payable:** On the other hand, the company should try to extend the payment of dues by acquiring an extended credit period from the creditors.
- **Cost Cutting:** The company must look for the ways of reducing its operating cost to maintain a good cash flow in the business and improve profitability.
- **Regular Cash Flow Monitoring:** Keeping an eye on the cash inflow and outflow, prioritizing the expenses and reducing the debts to be recovered, makes the organization's financial position sound.
- **Wisely Using Banking Services:** The services such as a business line of credit, cash deposits, lockbox account and sweep account should be used efficiently and intelligently.
- **Upgrading with Technology:** Digitalization makes it convenient for the organizations to maintain the financial database and spreadsheets to be assessed from anywhere anytime.

## Cash Budget

A cash budget is a budget or plan of expected cash receipts and disbursements during the period. These cash inflows and outflows include revenues collected, expenses paid, and loans receipts and payments. In other words, a cash budget is an estimated projection of the company's cash position in the future.

Harvard ManageMentor — BUDGETING TOOLS					
<i>Cash Budget Worksheet</i>					
<i>Use this worksheet to calculate your cash requirements by quarter. Enter your detailed estimates of cash receipts and disbursements in the spaces provided, or add new lines. Type over number examples in the table.</i>					
Cash Budget for Fiscal Year					
	QUARTERS				Year Totals
	1	2	3	4	
Cash balance, beginning					
<i>Add receipts</i>					
Cash Sales					
Collections from accounts receivable					
Investment income					
<b>Total cash available for needs (a)</b>					
<i>Deduct disbursements</i>					
Direct materials					
Payroll					
Income taxes					
Other costs					
Machinery purchase					
<b>Total disbursements (cash needed) (b)</b>					
<i>Cash excess (deficiency) (a) – (b)</i>					
<i>Financing</i>					
Borrowing (at beginning)					
Repayment (at end)					
Interest on borrowing					
<b>Total effects of financing (d)</b>					
<i>Cash balance, ending (a) – (b) + (d)</i>					

© 2004 by Harvard Business School Publishing. All rights reserved.

## **Cash Management**

Cash management is the process of managing and optimising the cash flow of a company. It involves monitoring, analysing, and controlling the inflow and outflow of funds within an organisation to ensure that it has enough funds to meet its financial obligations and make necessary investments. Cash management aims to maximise the availability and usability of cash while minimising the associated costs and risks.

### **Miller-Orr Model**

This model deals with cash inflows/outflows that change on a daily basis

The model works in terms of upper and lower control limits, and a target cash balance.

As long as the cash balance remains within the control limits the firm will make no transaction.

#### ***To use the Miller-Orr model, the manager must do 4 things***

1. Set the lower control limits for the cash balance.

This lower limit can be related to a minimum safety margin decided by management

2. Estimate Standard deviation of daily cash flows
3. Determine Interest Rate
4. Estimate the trading costs of buying and selling marketable securities.

When the firm's cash fluctuates at random and touches the upper limit, the firm buys sufficient marketable securities to come back to a normal level of cash balance i.e. the return point

Similarly, when the firm's cash flows wander and touch the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level i.e. the return point

**The lower limit is set by the firm based on its desired minimum "safety stock" of cash in hand**

#### ***Spread***

Then the spread is calculated upper and then the upper limit and return point comes from this.

- $\text{Spread} = \sqrt[3]{\frac{3}{4} \times \text{Transaction cost} \times \text{Cashflow variance} / \text{interest rate}}$

#### ***The return point***

- $\text{Lower Limit} + \frac{1}{3} \times \text{spread}$

