## FINANCIAL MANAGEMENT equipping with excellence

## Third Semester BBA

Submitted By;

Contraction of the contraction o Abdul Latheef C (Assistant Professor, Dept. of Management and Commerce)

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BBA3B05FINANCIAL MANAGEMENT

Hours per week: 5 Internal: 20; Objective:

This course aims to enable students to understand the basic concepts of financial Management and make them aware of major decisional areasof financial management. Learning Outcome : On completing the course students will be able to:

1. Understand and develop insights and knowledge base of various concepts of finance

2. Develop skills for effective Financial, Investment and Dividend decisions making, Module I : Introduction to Finance: Meaning of Finance – Business Finance – Finance Function –

Organization Structure of Finance - Financial Management – Goals of Financial Management –

Financial Decisions – Role of a Financial Manager.

10 Hours

Module II : Financing Decision: Meaning, Importance and Classification of Capital Structure;

Finance Structure and Capital Structure; Factors Influencing Capital Structure – Optimum Capital

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Structure; EBIT- EPS Analysis. Leverages: Operating, Financial and Combined Leverages. Cost of

Capital: Concept and Importance; Types of Cost of Capital: Computation of Component and

Composite Cost of Capital.

20 Hours

Module III: Investment Decision: Meaning and Importance of Capital Budgeting – Features – Process – Techniques of Capital Budgeting: Concept and Computation of Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index. 20 Hours

Module IV : Working Capital Management-Concepts and Significance of Working Capital – Evils of Excess and Inadequate Working Capital – Determinants of Working Capital – Estimation of Working Capital - Sources of

Credit4 External: 80 Working Capital -A Brief Overview of Cash Management – Receivables Management and Inventory Management. 20 Hours

Module V : Dividend Decision: Dividend - Meaning and Types; Dividend policy : Meaning and

Objectives- Issues Involved in Dividend Policy-Determinants of Dividend Policy – Types of

Dividend Policy –Dividend Policy and Value of Firm.10Hours(Theory and problems may be in the ratio of 50% and 50% respectively)10Hours

References Books:

1. Prasanna Chandra, Financial Management, Tata McGraw Hill.

2. I. M Pandey, Financial Management, Vikas Publication.

3. Khan and Jain, Financial Management, Tata McGraw Hill.

- 4. Sharma and Sashi Gupta, Financial Management, Kalyani.
- 5. S. N Maheshwari, Financial Management.Sultan Chand.

6. R. M.Srivastava : Financial Management , Himalaya Publishers.

#### Module 1

#### SCOPE AND OBJECTIVES OF FINANCIAL MANAGEMENT

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Finance is called "The science of money". It studies the principles and the methods of obtaining, control of money from those who have saved it, and of administering it by those into whose control it passes. It is the process of conversion of accumulated funds to productive use. Financial management is the science of money management .It is that managerial activity which is concerned with planning and controlling of the firm's financial resources. In other words it is concerned with acquiring, financing and managing assets to accomplish the overall goal of a business enterprise.

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Finance is a broad term that describes activities associated with banking, leverage or debt, credit, capital markets, money, and investments. Basically, finance represents money management and the process of acquiring needed funds. ... The time value of money is one of the most fundamental theories in finance.

#### MEANING, DEFINITION AND NATURE OF FINANCIAL MANAGEMENT:

"Financial management is concerned with the efficient use of an important economic resource, namely capital funds"-Solomon Ezra & J. John Pringle.

#### **OBJECTIVES OF FINANCIAL MANAGEMENT;**

'Financial Engineering'

Financial engineers can serve as solutions to problems or as ways to maximize returns from

Potential investment opportunities

- The management of the finances of a business / organisation in order to achieve financial objectives
- 1. Create wealth for the business

#### 2. Generate cash, and

3.Provide an adequate return on investment - bearing in mind the risks that the business is taking and the resources invested.

#### There are 3 key ELEMENTS to the process of financial management:

(1) Financial Planning

Management need to ensure that enough funding is available at the right time to meet the needs of the business

- (2) Financial Control
  - Are assets being used efficiently?
  - Are the businesses assets secure?

• Do management act in the best interest of shareholders and in accordance with business rules?

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(3) Financial Decision-making

#### SCOPE AND FUNCTIONS OF FINANCIAL MANAGEMENT:

- I estimating the total requirements of funds for a given period.
- □ Raising funds through various sources, both national and international, keeping in mind

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the cost effectiveness:

investing the funds in both long term as well as short term capital needs;

funding day\_to\_day working capital requirements of business;

collecting on time from debtors and paying to creditors on time;

Managing funds and treasury operations;

ensuring a satisfactory return to all the stake holders;

D Paying interest on borrowings:

D Repaying lenders on due dates;

I maximizing the wealth of the shareholders over the long term; lence

Interfacing with the capital markets;

Awareness to all the latest developments in the financial markets;

Increasing the firm's competitive financial strength in the market; and

adhering to the requirements of corporate governance. The above scope of activities can

be grouped in to three functions

#### Nature of finance or finance functions

- 1. Finance function is related to overall management of an organization
- 2. Related to other functions of management.
- 3. It is necessary for all types of business organizations.
- 4. It is important for the survival and growth of a firm.
- 5. It is organized differently in different organization.
- 6. It is different from accounting function.
- al managem 7. It is influenced both by external need and management consideration.

#### **Functions of finance**

- 1. Investment decision
- 2. Financing decisions.
- 3. Dividend decisions.
- 4. Liquidity decision.

#### Characteristics of financial management

1. Management of money 2.

Financial planning and control

- 3. Determination of business success.
- 4. Focus on decision making.
- 5. Centralized in nature.
- Continuous administrative functions 6
- Multidisciplinary 7.

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#### Importance of financial manager

- 1. successful promotion
- smooth running of the business. 2.
- Co-ordination of functional activities. 3.
- **Decision** making 4.
- Determinant of business success. 5.
- Solution to financial problems. 6.

#### **Objectives f financial management**

- l **Financial Objective**
- Maximization of profit 1.
- Maximization of wealth. 2.
- Value maximization. 3.
- Non-financial objectives
- GLOBALSHUDIE Enhance employees satisfaction and welfare 1
- Enhance management satisfaction 2.
- Promote well-being of society 3.
- Provide quality services to customers. 4.

#### **5As Financial Management**

- 1. Anticipation
- 2. Acquisition

- 3. Allocation
- 4. Appropriation
- 5. Assessment

Functions of Finance Manager/Financial Management

- Executive or managerial functions
  - 1. Financial forecasting and planning
  - 2. Procurement of funds Q With excellence
  - 3. Investment decision
  - 4. Management of income
  - 5. Management of Cash
  - 6. Deciding upon borrowing policy
  - 7. Negotiation for new financing
  - 8. Analysis and appraisal of financial performance
  - 9. Advising the top management
  - **10**. Co-ordination and control
  - 11. Helping in valuation decisions
  - 12. Tax administration
  - 13. Risk management 14. Miscellaneous functions
  - Routine Functions:
    - 1. Record keeping and reporting
    - 2. Preparation of financial statement
    - 3. Managing cash balance
    - 4. Cash planning and credit management
    - 5. Safeguarding the valuable papers, securities, insurance policies etc...

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6. Providing to management with information on current and prospective financial conditions of the business.



#### 3<sup>rd</sup> Semester BBA financial Management – CLF

#### Chapter 2

#### **Financial Decisions**

#### Meaning of Financing Decisions

Financing decisions refer to decisions regarding funding of the business enterprise. It involves identifying the various sources of finance, evaluating the sources, selecting the sources and deciding on the amount of funds to be mobilized from each source. In short, financing decisions are concerned with deciding capital structure and procuring funds.

#### Process of Financing Decisions

The process of financing decisions involves the following steps:

- 1. Estimating the requirement of funds
- 2. Identifying the various sources of funds
- 3. Evaluating the various sources of funds
- 4. Determining the capital structure
- 5. Selecting the best sources of funds according
- 6. Procuring or obtaining funds

#### Meaning and Definition of Capital Structure

Capital structure is the mix of debt and equity which a company uses to finance its long term operations. Debt capital is the company's long term borrowings. Equitycapital is the long term funds provided by the shareholders or owners of the company (ie. capital collected through the issue of shares). Thus, capital structure refers to the combination of different sources of capital used by an organization to finance its activities.

R.H. Wessel says, "The term capital structure is frequently used to indicate the long term sources of funds employed in a business".

In the words of C.W. Greenberg, "Capital structure refers to the kind of securities that make up capitalization.

#### **Importance of Capital Structure**

1. A Good capital structure minimises the financial risk assumed by the company. structure avoids over or under capitalisation.

2. A sound capital structure avoid over or under capitalisation.

- 3. A good capital structure maximises the value of the firm.
- 4. A sound capital structure minimises the cost of capital.
- 5. Capital structure helps to determine the required rate of return from the investment in projects.

6. In the absence of capital structure, the firm may fa ce the problem of raising funds and financing projects in the long run.

#### Classification of Capital Structure

- A. Classification according to the nature and type of the firm:
  - 1. Simple capital structure: When the capital structure is composed of equity share capital only or with retained earnings, it is known as simple capital structure.
  - 2. Complex capital structure: When the capital structure comprises of more than one source, it is known as complex capital structure. In other words, if the capital structure comprises of equity share capital, preference share capital, retained earnings, debentures, long loans, current liabilities etc. Term it is known as complex capital structure.

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- B. Classification according to the ownership:
  - 1. Ownership capital structure.
  - 2. Borrowed capital structure.
- C. Classification according to source of capital:
  - 1. Internal capital structure.
  - 2. External capital structure.
- D. Classification according to cost:
  - 1. Fixed cost capital structure.
  - 2. Variable cost capital structure.

# LOBALS Capital structure can also be classified in the following ways:

- 1. Horizontal capital structure.
- 2. Vertical capital structure.
- 3. Pyramid shaped capital structure.
- 4. Inverted pyramid capital structure.

#### **Finance Structure**

Finance structure refers to the way the company's assets are financed. This represents all the long term sources of capital and short term sources of capital. In other words, finance structure is equal to capital structure plus current liabilities. It measures the extent to which total funds are available to finance the total asse ts of the business. Thus, finance structure refers to the various ways and means of raising funds. In short, finance structure shows the pattern of total financing. xcellence

#### Factors Determining or Influencing Capital Structure

#### A. Internal Factors:

- 1. Profitability
- 2. Liquidity.
- 3. Flexibility.
- 4. Size of the business.
- 5. Nature of the business.
- 6. Regularity and certainty of income.
- 7. Period and purpose of financing.
- 8. Trading on equity.
- 9. Desire to retain control.
- 10. Asset structure.

#### **B.** External Factors:

- 1. Contribution in the capital market.
- 2. Attitudes of investors.
- 3. Cost of financing
- 4. Legal Requirement.
- 5. Taxation Policy.
- 6. Attitude of management.

#### Meaning of Optimum (Optimal) Capital Structure.

In the words of Ezra, "Optimum leverage is that mix of debt and equity which will maximize the market value of the company and minimize the company's overall cost of capital". In short, optimum capital structure is the capital structure at which the weighted average cost of capital is minimum and the value of the firm is maximum When a company uses more debt, theoverall cost of capital will be less. This leads to higher return (higher EPS) to equity share holders. This will in turn lead to higher market value of shares. But equity share holders will have to bear higher risk. On the other hand, when a company uses less debt, the overall cost of capital will be high. This leads to lower return (lower EPS) to equity share holders. This will in turn lead to lower market value of shares. But equity shareholders will have to bear lower risk. Therefore, there should be a trade-off between risk and return. The optimum capital structure is one which strikes a balance between risk and return and thus enhances the price of the shares.

#### LEVERAGES

There are two major components of capital structure of a company. They are debt and equity. Whenever there is a change in debt equity mix, there is an impact on the shareholders' return and risk. The effect on the shareholders' return and risk as a result of change in the debt-equity mix is known as leverage.

#### Meaning and Definition of Leverage:

The term 'leverage' comes from physics. In physics the term 'leverage' means 'to lever or 'to raise'. Leverage is the action of a lever and mechanical advantage gained by it, i.e., lift a given tool with less amount of power. Greek Philosopher, Archimedes once said, "Give me a lever long enough and a place to stand and I can move the world". The American investment entrepreneur and one of the richest person in the world, Warren Buffet, once remarked, "When you combine ignorance and leverage, you get some pretty interesting results" <u>Types of Leverage</u>

There are three types of leverage. They are: (a) Financial Leverage, (b) Operating Leverage, and (c) Combined Leverage. These may be explained in the following pages.

#### <u>Financial Leverage</u>

#### Meanin<mark>g of Financial Lever</mark>age

Thus financial leverage is defined as "the firm's ability to use fixed financial charges to magnify the effect of changes in earnings before interest and tax on firm's earning per share. The financial leverage analyses the effects of changes in EBIT (Earnings before Interest and Tax) on firm's EPS (Earning Per Share) due to the use of fixed cost bearing sources in its capital structure. Thus financial leverage arises when a firm employs a combination of equity capital and fixed charge securities (debt and preference shares) in its capital structure. In short, using fixed cost capital with the equity share capital is known as financial leverage. It is also known as capital leverage.

#### Computation of Financial Leverage

Financial leverage is calculated by using the following formula:

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

EBIT = Earnings before Interest and Tax

EBT = Earning Before Tax.

#### **Degree of Financial Leverage**

 $DFL = \frac{\% Changes in EPS}{\% Changes in EBIT}$ 

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If degree of financial leverage is greater than one, then it will mean that the firm enjoys high financial leverage. However, high financial leverage indicates higher risk and vice versa.

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#### **Importance or Utility of Financial Leverage:**

- 1. Planning of capital structure.
- 2. Profit Planning.
- 3. Increase in shareholders'.
- 4. Measurement of risks.

#### **Limitations of Financial Leverage:**

- 1. **Double-edged sword:** As already stated, financial leverage is a double-edged sword. It can successfully be used to increase the EPS. This will happen only when the rate of earning is higher than the fixed charges of debt and preference shares. If the rate of earning is less than fixed interest and dividend, it will work adversely.
- 2. Increases risk: The increase in debt increases the financial risk also. In order to obtain further debts, the company has to offer extra securities and higher rate of interest.
- 3. Beneficial only to companies having stable earnings: Financial leverage is beneficial only to the companies having stable and regular earnings. This is so because interest on debt is a charge item. This means, interest has to be paid even if the company incurs loss. Hence a company which has irregular income cannot pay interest on debt during bad years.
- 4. Restrictions from financial institutions: The financial institutions may impose restrictions on companies which have high degree of financial leverage. The reason for such restrictions is the risk factor.

#### **EBIT-EPS** Analysis

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

In simple words, EBIT-EPS analysis examines the effect of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans. EBIT-EPS analysis basically involves the comparative study at different levels of EBIT of various alternative financial plans. ysis

#### **Advantages of EBI-EPS Analysis**

- 1. **Financial planning:** EBIT-EPS analysis helps a firm in determining optimum financial planning having highest EPS. In other words, it helps to maximize EPS for any given value of EBIT. In short, it helps to choose the best financing plan.
- 2. **Comparative analysis:** EBIT-EPS analysis is useful in evaluating the relative efficiency of departments, product lines and markets. equipping with excellence

- 3. **Performance evaluation:** This analysis is useful in comparative evaluation of performances of various sources of funds.
- 4. **Determining optimum Mix:** EBIT-EPS analysis helps in selecting the optimum mix of debt and equity.
- 5. **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.

#### Limitations of EBIT-EPS Analysis

- 1. **Risk is not taken into account:** EBIT-EPS analysis does not take into account the associated with debt financing.
- 2. **Complexity:** The more alternative financing plans are considered, the higher the complexity of the calculations.
- 3. **Contradictory results:** It gives contradictory results where under different alternative financing plans new equity shares are not taken into consideration.
- 4. **Over-capitalization:** This analysis cannot determine the state of over-capitalisation of a firm.
- 5. Not the best and correct tool: The EBIT-EPS approach may not be the best and correct tool for making decisions about capital structure.
- 6. **Does not control cost and limit risks:** The EBIT-EPS approach focuses on maximizing EPS rather than controlling costs and limiting risk.

#### **Operating** Leverage

A Firm's operating profit (EBIT) changes over time for a variety of reasons. Important reasons are changes in sales, changes in cost, effectiveness of management etc. Generally, most of the variations in EBIT comes about as a result of changes in sales. Another reason for change in EBIT is changes in the cost structure. All costs can be classified into two-fixed and variable. Variable costs are those costs which vary (change) according to the changes in sales. Direct materials, direct wages, sales commission etc. are examples. Fixed costs are those costs which do not change when sales changes. Rent, salaries, depreciation, utilities etc. are examples. Whether the volume of production is increased or decreased the fixed amount of fixed costs will have to be incurred. Thus a firm's cost structure is the mix of fixed and variable cost used in its operating processes.

#### Meaning of Operating Leverage:

In simple words, presence of fixed cost is known as operating leverage. It measures the extent to which fixed cost is used in operating the firm. If the fixed costs are more as compared to variable costs, the operating leverage will be high.

Example, if the sales increase by, say 25%, and the EBIT increases by 100%, it is a case of high operating leverage. The fixed costs remaining the same, the proportionate change in EBIT is more than the proportionate

change in sales. In other words, a smaller percentage change in sales brings about a larger percentage change in EBIT (operating profit). This happens due to operating leverage. To be more clearly, this happens due to the fact that the amount of Fixed cost remains fixed regardless of volume of production. If there are no fixed costs, there will be no operating leverage. This means leverage will be equal to one. In this case the rate of change in operating profit will be exactly equal to the rate of change in sales. Thus, operating leverage may be defined as a firm's ability to use fixed operating costs to magnify the effect of changes in sales on operating profit. **Computation of Operating Leverage** 

> $OL = \frac{Contribution}{EBIT}$ Contribution = Sales- Variable Cost.

EBIT = Contribution – Fixed Cost.

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

Degree of operating leverage measures how much is the effect of change in sales on operating profit. It measures the change in EBIT for a given change in sales. The degree of operating leverage (DOL) may be defined as percentage change in the operating profit (EBIT) resulting from a percentage change in sales. It is calculated by using the following formula:

## $DOL = \frac{\% Change in EBIT}{\% Change in Sales}$

#### **Combined or Composite Leverage:**

As already stated, OL affects business risk. It measures the change in EBIT due to change in sales. On the other hand, FL affects financial risk. It measures the change in EPS due to change in EBIT. Both these leverage are closely concerned with the firm's capacity to meet its fixed costs (both fixed operating costs and fixed financial cost). Their combined effect will measure the firm's financial strength. This is done through combined leverage.

#### Meaning of Combined Leverage

Combined leverage refers to the combination of Land Fl. It is the relationship between contribution and the taxable ON GLOBA income. It is also known as total or overall leverage.

#### **Computation of Combined Leverage**

Combined Leverage =  $OL \times FL$ 

$$CL = \frac{C}{EBIT} * \frac{EBIT}{EBT} = \frac{C}{EBT}$$

**Degree of Combined Leverage** 

 $DCL = DOL \times DFL$ 

 $DCL = \frac{\% Changes in EPS}{\% Changes in Sales}$ 

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

A proper combination of OL and FL is a blessing for the company's growth. A company should try to have a balance of OL and FL. Combined leverage enables to know the overall risk assumed by a firm. It reflects a combined effect of operating risk and financial risk on the EPS. It can work in both directions. If sales increase EPS will also increase. This is a favorable situation. If sales decrease, EPS also will decrease. This is an unfavorable situation.



3<sup>rd</sup> Semester BBA – Financial Management (CLF)

#### **CHAPTER 3**

## COST OF CAPITAL

In order to undertake any business activity, capital is required. Capital is always available at a cost. This cost is called cost of capital.

#### Meaning and Definition (Concept) of Cost of Capital

Cost of capital simply refers to cost of obtaining funds. Cost of capital is the rate a firm pays to its investors for the use of their money.

In the words of John J. Hampton, "The cost of capital is the rate of return, the firm requires from investment in order to increase the value of the firm in the market place". Solomon Ezra has defined it as the minimum required rate of return or the cut-off rate for capital expenditure. According to Milton H. Spencer, "Cost of capital is the minimum rate of return which a firm requires as a condition for undertaking an investment".

#### **Features of Cost of Capital**

- 1. It is not a cost. It is a rate of return required on the projects. Hence, it is a 'hurdle rate'.
- 2. It is the minimum rate of return a firm requires to earn in order to maintain the marketalue of its equity shares.
- 3. It is the reward for business risk and financial risk.
- 4. It consists of three elements - (a) riskless cost of the particular source, (b) business risk premium, and (c) financial risk premium. OBALS

#### **Assumptions of Cost of Capital**

- The cost can be either explicit or implicit. 1.
- 2. The firm's capital structure does not change.
- 3. Cost of each source of capital is determined on an after tax basis.
- The financial and business risks are unaffected by the acceptance and financing of 4.

Projects.

#### **Importance of the Concept of Cost of Capital**

- 1. **Useful in investment decisions:** The cost of capital is very useful in capital budgeting decisions. It helps in calculating profitability of various investment proposals.
- 2. **Useful in designing capital structure:** The cost of capital is a very useful factor in designing the firm's capital structure.
- 3. Useful in deciding the method of finance: A company usually prefers a method of financing which bears the least cost of capital.
- 4. Useful in evaluation of performance of management: The cost of capital can be used to evaluate the financial performance of top management.
- 5. **Useful in evaluation of expansion projects:** It is on the basis of comparison of cost of capital with marginal return on investment, the decision is taken whether to accept or reject the expansion projects.
- 6. **Optimum mobilization of resources:** It enables an organization to mobilize its funds from nonprofitable to profitable areas. Resource mobilization helps in reducing the risk factor.
- 7. **Other uses:** The cost of capital is important in many areas of decision making such as payment of dividend, retained earnings, capital structure, working capital management etc.

#### Types of Cost of Capital

1. Historical Cost and Future Cost Historical cost refers to the cost which has already been incurred for financing a project. It is calculated on the basis of past data.

Future cost refers to the expected cost of funds to be raised for financing a project.

- 2. Specific Cost and Composite Cost Specific cost refers to the cost of a specific source of capital such as equity share, preference share, debenture etc.
- Average Cost and Marginal Cost
   Average cost of capital refers to the weighted average cost of capital calculated on the basis of cost of each
   source of capital and weights assigned to them in the ratio of their share to total capital funds.

   Marginal cost of capital refers to the cost of obtaining extra 1 of finance.
- 4. Explicit Cost and Implicit Cost Explicit cost of capital refers to the discount rate which equates the present value of cash inflows with the present value of cash outflows. Thus it is the internal rate of return which a firm pays for procuring the finance. Implicit cost of capital refers to the rate of return which can be earned by investing the funds in alternative investments. In other words, it is the opportunity cost of capital. Explicit cost of capital arises only when funds are raised, but implicit cost arises when they are used.

#### **Computation of Cost of Capital**

Before calculating the overall cost of capital, an attempt may be made to calculate the cost of each component of capital such as: (a) Cost of debt, (b) Cost of preference capital, (c) Cost of equity capital, and (d) Cost of retained earnings.

#### **Cost of Debt**

equipping with excellen If capital is the foundation of business, debt is the superstructure. Debts are liabilities of a firm. Debt capital comprises of debentures, bonds and long term loans. Cost of debt means the payment of interest on debentures or bonds or loans from financial institutions.

The cost of debt is the rate of interest payable on debt. For example, a company issues 500,000 6 % debentures, the before tax cost of this debt is also 6%.

Since interest is a tax-deductible expense, we have to consider the after tax cost of debt, especially if we want to judge its impact on the firm's after-tax profitability or compare it to the cost of other types of securities such as preference and equity shares.

#### **Cost of Irredeemable Debt**

Irredeemable debt is also known as perpetual debt. Perpetual or irredeemable debts are the debts which are not repayable during the life of the company. These are repayable only on the liquidation of the company. In this case the time of maturity is not specified. Cost of irredeemable debt is calculated by the following formula:

#### **Before tax cost of debt** = $K_d = \frac{I}{NP} * 100$ (i)

I = Interest

NP = Principal or Net Proceeds of Debt Capital

After tax cost of debt =  $K_d = \frac{I(1-T)}{NP} * 100$ **(ii)** 

T = Tax rate

Or

Before tax cost of debt x(1-

#### Mentioned facts may be summarized as below:

When debt is issued at par: NP = Face value - Floatation cost or issue expenses II) D When debt is issued at premium: NP = Face value +Premium- issue expenses

III) When debt is issued at discount : NP = Face value - Discount - issue expenses

#### Cost of Redeemable Debt

Usually the debt is issued to be redeemed after a certain period during the life time of a firm. In the calculation of cost of such debt, the time period of redemption is very important. The cost of redeemable debt is calculated as follows:

(1) Before tax cost of redeemable debt

$$K_{d} = \frac{I + \frac{1}{N}(RV - NP)}{\frac{1}{2}(RV + NP)} * 100$$

I = Interest.

N= Number of years in which debt is to be redeemed.

RV= Redeemable value of debt (i.e., the amount payable on redemption).

NP= Net proceeds of debentures.

(2) After tax cost of redeemable debt

$$K_{d} = \frac{I(1-T) + \frac{1}{N}(RV - NP)}{\frac{1}{2}(RV + NP)} * 100$$

T = Tax rate

The denominator is the simple average of redeemable value and net proceeds.

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4<sup>th</sup> week of Sep 2020

**Cost of Preference Share Capital** 

Preference shares carry a fixed rate of dividend. It is paid before equity dividend is paid. The rate of dividend is determined at the time of issue. The cost of preference capital is the dividend expected by the preference shareholders. It is found by dividing annual preference dividend by the net proceeds from the issue of preference shares. The formula to compute the cost of preference capital is given below: (i) Cost of irredeemable preference share capital

$$K_p = \frac{D_p}{NP} * 100$$

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 $K_p$  = Cost of preference share capital  $D_p$  = Preference share dividend

NP = Net Proceeds from the issue of preference shares. Floatation cost, if any, should be deducted.

(ii) Cost of redeemable preference share capital

$$K_{p} = \frac{D_{p} + \frac{1}{N}(RV - NP)}{\frac{1}{2}(RV + NP)} * 100$$

#### **Cost of Equity Share Capital**

The cost of equity capital is the minimum rate of return that the company must earn on its equity share capital. It is the return which the shareholder expects on his investment. Thus, the cost of equity capital may be defined as the minimum rate of return that a firm must earn on the equity investment so that the market value of shares remains unchanged.

There are various approaches to calculate cost of equity capital. They are: (1) Dividend yield method; (2) Dividend yield plus growth method; (3) Earning price method; (4) Realized yield method. These may be briefly discussed as follows:

#### A. Dividend yield method:

This method is based on the assumption that each shareholder, while investing his savings in the company, expects to receive dividend at the current rate of return. Therefore, dividend received (expected) is capitalized by the market value of shares to ascertain the cost of shares. This method is also known as dividend price ratio method. The formula is:

$$K_e = \frac{D}{MP} * 100$$

 $K_e$ = Cost of equity capital  $K_e$ = Cost of equity capital D= Dividend per share (expected) *MP*= Market Price per share

In the case of newly issued equity shares, it is not possible to know the market price per share. To ascertain the cost of capital, D is divided by NP (Net Proceeds per share). NP is calculated after deducting expenses on new issue. The formula is: ellence

#### **Dividend yield plus growth method:**

When the dividends are expected to grow at a constant rate and dividend payout ratio is constant, this method may be used to compute the cost of equity capital. Under this method the cost of equity capital is based on the present rate of dividend and expected growth rate of dividend. In the case of existing equity shares, the following formula is used:

$$K_e = \frac{D_1}{MP} * 100 + G$$

 $D_1$  Expected dividend per share at the end of the year.

 $\frac{D}{NP} * 100$ 

In case of new equity shares the formula is;

$$K_e = \frac{D_1}{NP} * 100 + G$$

NP= Net Proceeds per share.

MP or NP = 
$$\frac{D_1}{K_e - G}$$

#### Dividends Grow at Different Rates (Stepped up growth in dividend)

If dividends of a company are expected to grow at different rates, cost of equity cannot be calculated according to the above method. In such situations the cost of equity is calculated in a different manner. Here an important point to be noted is that the current market price of an equity share is equal to the present value of future dividends plus the present value of the market price of shares at the end of the period when these are sold. It may be expressed as follows:

$$P_0 = \frac{D_1}{1+K_e} + \frac{D_2}{(1+K_e)^2} \dots \dots \frac{D_n}{(1+K_e)^n} + \frac{P_n}{(1+K_e)^n}$$

**Po**= Current market price of share.

 $D_1, D_2 \dots D_n$  = The expected dividends at the end of the first year, at the end of the second year and up to the end of the n" year ing with excelle

 $P_n$  = The market price of the share in the nth year (i.e., the market price in the future year in which the shares are sold).

#### **Earning price method:**

According to this method, the cost of equity capital is the discount rate that equates the present value of expected future earnings per share with the current market price or net proceeds per share. The formula is:

$$K_e = \frac{EPS}{MP \text{ or } NP} * 100$$

EPS = Earnings per share

#### **Realized Yield Method:**

When future dividend and market price are uncertain, it is very difficult to estimate the rate of return on investment. In order to overcome this difficulty, the average rate of return actually realized in the past few years by the investor is used to determine the cost of capital. Under this method, the realized yield is discounted at the present value factor and then compared with the value of investment.

#### **Capital Asset Pricing Model or Approach (CAPM):**

This approach was developed by William F Sharpe (Nobel Prize winner). According to this approach the return on equity shares depends on the amount of risk associated with it. If more risk is associated with it, it will provide more return. If it is associated with less risk, it will provide less return. Thus, this model states that as the level of risk increases, the investors would expect higher returns to compensate for the risk that they have taken. There are two types of risks associated with an equity share. They are: Systematic risk and Unsystematic risk. The GLOBA systematic risk is measured by  $\beta$  (beta).

Under CAPM approach, cost of equity capital is calculated by using the following formula:

OR

 $K_e = R_f + \beta_i (R_m - R_n)$ 

 $R_f$  = Risk free rate of return

 $\beta_i$  = The beta coefficient of the investment

 $R_m$  = Average market return

#### Merits of CAPM Approach

- 1. It is theoretically sound.
- 2. It directly considers the risk as reflected in beta in order to determine the cost.

#### **Demerits of CAPM of equity**

- 1. It does not include the market price.
- 2. Some problems are involved in the practical application of CAPM model in collecting data.
- **3.** Beta measure of risk considers only the systematic risk only. Some investors may be more interested in total risk.

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#### Gordon's Dividend Growth Model:

This method was developed by M. Gordon to calculate the cost of equity. As per this model, an investor always prefers less risky investment. Therefore, a company should pay risk premium only on risky investment. Gordon model also suggests that an investor would always prefer those investments which provide him current income. Under this method the cost of equity capital is calculated as follows:

$$K_e = \frac{D(1+G)}{D_e} + G$$

D = Current Dividend per share

- G = Annual growth rate of dividend
- $D_e =$  Ex-dividend market price per share.

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

Generally, it is thought that retained earnings do not involve any cost and it is a cost free source of finance. It is true that there is no explicit cost of retained earnings. If a company does not retain any part of its profit and distributes the whole amount of profit as dividend, the income of the equity shareholders would have been increased and they could earn a certain income by investing this amount. Further, the market price would have been increased. Thus the retained earnings involve opportunity cost. The cost of retained earnings may be defined as the opportunity cost of the dividends foregone by the equity shareholders. It is the rate at which the shareholder is not receiving the dividend. It refers

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to the rate of return which shareholder can obtain by investing the after tax dividend in other securities. The cost of retained earnings is calculated as follows:

 $K_r = \frac{D \text{ or } EPS}{MP} * 100$ 

 $K_r$  = Cost of retained earnings.

#### **Composite Cost of Capital (Weighted Average Cost of Capital):**

After ascertaining the specific cost of capital of each source (i.e., the cost of debt, cost of preference share, cost of equity and cost of retained earnings), the next step is to calculate the overall or composite cost of capital of the firm.

For calculating the average cost of capital, we use not simple average but weighted average.

#### Meaning of Weighted Average Cost of Capital

WACC summarizes the after tax cost of the entire capital structure. It simply refers to the average cost of the various sources of finance. It is an average of the costs of all sources of funds in the capital structure, properly weighted by the proportion of each source in the total capital structure. It is also known as composite cost of capital or overall cost of capital.

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CHAPTER

#### INVESTMENT DECISIONS (CAPITAL BUDGETING)

#### Meaning:

It is the process of allocating the resources of the organization in the long term investment projects to generate profits.

According to Charles T Horngren, capital budgeting is long term planning for making and financing proposed capital outlays.

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Features of capital budgeting:

- 1. Funds are invested in long tern activities
- 2. It involves larger outlays.
- 3. Current funds are exchanged for future benefits, thus yield future benefits.
- 4. The benefits are expected over a number of years in future.
- 5. It involves high degree of risk.
- 6. It is irreversible.
- 7. Gestation period is long.
- 8. Long run consequences of the firm because of the high initial cost.

#### Role and importance of capital budgeting.

- 1. Huge investment.
- 2. Long term implications.
- 3. Irreversible decisions.
- 4. Risk.
- 5. Growth.
- 6. Impact on firm's competitive strength.
- 7. Most difficult decision.
- 8. Cost control
- 9. Wealth maximization.
- 10. Economic and social consequences of larger size.

#### Steps in capital budgeting;

- 1. Project generation.
- 2. Project screening.
- 3. Project evaluation.
- 4. Project selection.
- 5. Project execution and implementation
- 6. Performance review.

#### Factors affecting capital decision;

- 1. Availability of funds.
- 2. Utilization of funds.
- 3. Urgency of the project.
- 4. Expectation of future earnings.
- 5. Intangible factors.
- 6. Risk and uncertainty
- 7. Minimum of rate of return on investment.

#### Approaches to capital budgeting decisions;

- 1. Disaster approach.
- 2. Passive approach
- 3. Dynamic approach.

## Information required for capital budgeting decision.

- 1. Cash flows
  - a) Initial cash flow
  - b) Net annual cash inflows or operating cash flows.
  - c) Terminal cash inflows
- 2. Required rate of return
- 3. Other information.

#### **Investment appraisal methods**

- 1. Non- discounting techniques or traditional methods
  - a) Urgency method
  - b) Pay back method
  - c) Average rate of return method
- 2. Discounting criteria or modern methods.
  - a) Discounted pay back method
  - b) Net present value method
  - c) Benefit cost ratio
  - d) Internal rate of return
  - e) Net terminal value method

#### Traditional method;

Urgency method;

On the basis emergency requirements or under crisis conditions.

#### Merits;

- 1. It is very simple technique.
- 2. It is useful in case of short term projects requiring lesser investment.

#### Demerits;

- 1. It is not based on scientific analysis.
- 2. Selection is not made on the basis of economic consideration but just on the basis of situation.
- 3. A project, even though it is profitable, will not be accepted for the very simple reason that it can be postponed.

#### Pay back method:

required to recover the initial cost (investment) of the project.it is the It is the length of time or period breakeven point of the project where cash inflow equals cash out flow.

1. When annual cash inflows are equal:

 $pay \ back \ period = \frac{original \ cost \ of project}{annual \ cash \ inflow}$ 

2. When annual cash inflows are unequal:

$$E = \frac{B}{C}$$

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- E= No. of years immediately preceding the year of final recovery
- B= Balance amount still to be recovered
- C = Cash inflow during the year of final recovery.

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#### **Decision** rule:

The shorter the pay back, the better the project.

Advantages of pay back method:

- 1. It is simple to understand and easy to apply
- 2. It is very important for cash forecasting, budgeting and cash flow analysis.
- 3. The method can be used profitably for short term capital project which start yielding returns in the initial years.
- 4. It minimizes the possibility of losses through obsolescence.
- 5. It takes into account liquidity.
- 6. This method can also be used for projects with high uncertainty.

Disadvantages:

- 1. It ignores the time value of money
- 2. It completely ignores cash inflows after the payback period.
- 3. Sometimes a project having higher pay back period may be better than lower pay back period owing to higher return after payback period. this is true in the case of long term projects.
- 4. It does not measure profitability of projects. It insists only on recovery of the cost of the project.
- 5. It does not measure the rate of return.

#### Modern payback period methods

a) Post payback profitability method Under this method, the entire cash inflows generated from a project during its working life are taken into account.



b) Post payback period method :

Under this method, project with longer post pay back periods with significant cash flows are preferred.

#### c) Payback reciprocal

Payback reciprocal =  $\frac{1}{payback \ period} * 100$ 

d) Modified payback period method.
 If salvage value is considered during the payback period, it is called modified payback period method.

#### Average rate of return method/ Rate of Return Method (ARR)

It is simple technique of averaging returns over investments. It is based on accounting profits and not cash flows. Under this method average annual profit (after Tax) is expressed as percentage of investment.



Decision: the higher the average of return, the better the project

#### Discounted cash flow techniques (time adjusted cash flow techniques)

The value of money received in future not equivalent to the value of money invested today. If we have to know present sum from the future sum, we have to discount the future sum. Discounting involves finding the present values of future cash flows.

The discount factor of any year can be found by the following formula :



Where 'r' is discount rate and 'n' is number of years.

Discounted payback period.

#### Net present value method (NPV)

- ✓ NPV method involves discounting future cash flows to present values.
- ✓ The difference between the present value of cash inflows and present value of cash outflow is called the net present value.

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✓ NPV is either positive or negative. Computation of procedures of NPV

$$PV = \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \dots + \frac{C_n}{(1+r)^n}$$

Where, C1, C2, C3 = Cash flows for 'n' years. r= Discount factor or interest rate. n= Number of years.

Alternative method:

Annual net cash flow x Annuity factor

#### **Benefit Cost Ratio (Profitability Index Method)**

Benefit Cost Ratio = <u>
Present value of cashin flows</u> value of cash outflows Present

 $Profitability Index methode = \frac{NPV}{PVof \ cash \ outflows}$ 

Decision Rule: Accept the project if its PI more than one and reject the PI is less than one.

# Internal Rate of Return

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Internal rate of return is the rate of return at which total present value of future cash inflow is equal to initial investment. It is the rate at which NPV is zero.

Calculation of IRR

#### a) When cash flows are equal

$$PV Factor = \frac{Initial Investment}{Annual cash inflow}$$

$$Interpolation formula = L + \frac{P_1 - Q}{P_1 - P_2} * (H - L)$$
L=Lower discount rate.
H=Higher discount rate.
P1=Present value at lower rate.
P2=Present value at higher rate.
Q= Net cash outlay.
b) When cash flows are unequal
$$\frac{average \ earning \ per \ annum}{investment} * 100$$

$$PV \ Factor = \frac{Initial Investment}{Average \ Annual \ cash \ inflow}$$

$$Interpolation \ formula = L + \frac{P_1 - Q}{P_1 - P_2} * (H - L)$$

#### **Risk Analysis**

The acceptability of projects mainly depends upon their return and risk. Firm should c onsider risk while estimating the required rate of return on a project. Generally, there is a positive correlation between risk and return. If the return is high, the risk is also high and vice versa.

#### Methods or Techniques of Risk Analysis

Traditional Techniques:

a) Risk adjusted discount rate:

Generally a firm is ready to accept a lower rate of return from a project if the risk involved is less if there is more risk in an investment proposal, a higher rate of return shall be expected. Risk adjusted discount rate is equal to risk -free rate of return +risk premium for investing in a risky

project. Risk free rate is the rate at which the future cash inflows should be discounted if there had been no risk. Risk premium rate is the extra return expected by investors over the normal rate on account of project being risky.

b) Certainty equivalent method:

Some financial experts opine that it is not the discount rate but cash flows are subject to risk and as such adjustment may be made in cash flow estimates. It is in this way certainty equivalent method is developed. Under this method the risk involved in the project is taken into consideration by adjusting the expected cash flows and not the discount rate.



#### 1. Sensitivity Analysis:

Technique of measuring the change in the profitability (NPV or IRR) of project due to change in the factors affecting a project's cash inflows. Sensitivity analysis is also known as 'what if' analysis.

#### 2. Probability Assignment Method:

Probability refers to the likelihood of happening of an event in future. It is the relative frequency with which an event may occur in future. The value of probability lies in between 0 and 1. If the value is 0 it means the event will not happen. If the value is 1, it indicates that the event will definitely happen.

#### **3.** Standard Deviation Method:

Standard deviation is the square root of the squared deviations calculated from the mean. It measures deviation of possible cash flows of different projects from their respective mean or expected values. S.D method measures the degree of risk involved in the capital expenditure decision. A project having a larger standard deviation will be more risky when compared to a project having lower standard deviation.

Steps: The various steps involved in calculating the standard deviation of the possible cash flows of a project are as follows:

- 1. Compute the mean values (.e. the arithmetic average) of the possible cash flows.
- 2. Calculate deviations between the mean value and the possible cash flows.
- 3. Square the deviations and obtain the total.
- 4. Apply the following formula:  $SD = \sqrt{\sum d^2} \frac{Advantages of Standard Deviation Approach:}{d^2 Advantages of Standard Deviation Approach}$

Standard deviation approach is an improvement over the probability assignment approach. The main advantage of standard deviation approach is that it is a precise measure of risk associated with a project. It indicates that a project having *higher standard deviation is more risky as compared to a project having a lower standard deviation*.

#### **Disadvantages of Standard Deviation Approach:**

Standard deviation is only an absolute measure of dispersion or variation and not a relative measure of variation. As a result, when the values of mean or expected value show wide variations in the case of two or more projects, the results shown by the standard deviation method may not be precise

#### 4. Coefficient of Variation Method:

The standard deviation provides an absolute measure of risk. It is not suitable for comparison particularly when cost of the projects are different. In such a case it is better to calculate the relative measure of dispersion. Co-efficient of variation is one of such measures. It is computed as follows:

 $Coefficient of variation = \frac{Standard Deviation}{Mean} * 100$ 

The higher the coefficient of variation, higher is the risk involved in the project.

#### Advantages of Coefficient of Variation Approach:

The co-efficient of variation is a relative measure. It is quite useful for comparison where the projects involve different cash outlay or different expected values of cash inflows.

#### 5. Simulation Technique:

Monte Carlo simulation is a risk analysis technique. in this technique, probable future events are simulated in order to generate estimated rates of return and risk indices. In this process, random values for each variables such as number of units to be sold, selling price, fixed and variable costs etc.., are identified. These values are processed to compute the NPV.

**Steps:** Monte Carlo simulations use random observations from a probability distribution to duplicate the variability pattern in the system under study. Thus, for an assembly activity, the

I. Collect actual data on the distribution of assembly times.

- 2. Develop a probability distribution and a cumulative probability distribution.
- 3. Again an interval of random numbers to each class of the distribution
- 4. Using Random Numbers, derive simulated assembly times.
- 5. Interpret the results.

#### 6. Decision Tree Analysis:

It is a graphical representation of alternative courses of action and the possible outcomes and risks associated with each action. It is a *branching diagram*, which represents the relationship of the present decision with future events and decisions. The final shape of the inter relationship of all possible outcomes resembles to a tree with branches. That is why it is called decision tree method. When a series of decisions chronologically are involved, decision tree method is most suitable.

#### **Construction of a Decision Tree in Capital Budgeting:**

1. Identifying of the investment proposal

2 Ascertaining the different alternative courses of action. For example, if a company is considering setting up a plant, it has the option of getting up a large plant, a medium size plant or a small plant.

- 3. Drawing the decision tree showing the decision points (the cost of the investment) decision branches (alternatives) and other data. Expected values of future cash flows are calculated and the total expected value for the decision is determined.
- 4. Entering on the branches relevant data such as the expected cash flows, probabilities and the expected outcomes.
- 5. Evaluating results, avoiding weak alternatives and identifying profitable alternatives:



(a) It shows a bird's eye view of all the possibilities associated with a proposed project.

(b) It tells the management about the future adverse possibilities in advance (when the NPV is negative) (c) It brings into light the degree of risk and uncertainty involved in the investment decision.

(d) It introduces precession in decision-making by expressing all outcomes or events in quantitative terms.

#### **Demerits of Decision Tree Analysis (Limitations):**

(a) When there are too many alternative, the construction of decision tree becomes difficult will be just like a bush with many branch forks.

(b) It is difficult to make assumptions and assign probabilities to various events at various levels in a decision tree. There may be inconsistency in assigning probabilities to various events.

(c) It is a time consuming technique lt should be applied only in case of major investment decisions.

#### 7. Game Theory:

Game theory was developed by John Von Neumann and Oskar Morgenstern. Game theory is used to determine the optimum strategy in a competitive situation. It provides a basis for determining, under certain specific conditions, the particular strategy that will result in maximum gain or minimum loss no matter what opponents do or do not do. It is a systematic investigation of rational decision making in the context of uncertainty concerning the move of competitors. Thus game theory can be applied in making investment decisions under the conditions of uncertainty for maximizing the returns from investments.

#### Capital Rationing.

The situation in which the firm is not able to finance all the profitable investment opportunities due to limits on available funds is called capital rationing. It is the process of allocating or rationing the limited capital to various projects ranked according to profitability. In a capital rationing situation a firm has more investment proposals than the funds available. Therefore, the firm will select combination of investment proposals that provide highest return or wealth.

Western and Brigham defined capital rationing as "a situation where a constraint is placed on the total size of capital investment during a particular period." If the total funds required by the profitable projects at any particular point of time exceed the available funds, then the firm is said to be operating under the conditions of capital rationing. In short, capital rationing refers to a situation in which firm does not have necessary funds to invest in all profitable investment proposals. A firm has to drop some proposals even though they are profitable due to lack of funds.

#### **Selection Process under Capital Rationing:**

1. Rank projects according to profitability or rate of return by using NPV or Plot IRR methods. The project with the highest rate of return is ranked first and the project with the lowest rate of return is ranked last.
2. Select projects in the descending order of profitability until the available funds are exhausted keeping in view the objective of maximizing the value or wealth of the firm.

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#### Causes for Capital Rationing:

#### **External causes:**

- (a) Lack of control on capital market.
- (b) High or low interest rates.
- (c) Investors' attitudes.
- (d) Investors.

#### **Internal causes:**

Internal causes refer to investment restrictions imposed by the firm itself. Various types of restrictions can be imposed by t he management. Examples include limits on external borrowing, decision to use internal sources alone impose the maximum limit up to which investment can be made etc.

#### **Types of Capital Rationing:**

1. Soft capital rationing:

This refers to situations where the firm internally imposes a budget ceiling on the amount of capital expenditure. This is done due to several reasons. Important reasons are: (a) financing investment only out of internal sources, (b) fixing a ceiling for the divisional managers arbitrarily, (c) requirement of a minimum rate of return higher than the firm's cost of capital, etc.

2. Hard capital rationing:

This refers to situations where the amount of capital investment is restricted because of external or market constraints such as deficiencies in market information, difference between borrowing and lending rates lack of control on the market beyond a specified budget ceiling, etc. ILEGE OF

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### Chapter 5

## WORKING CAPITAL MANAGEMENT



Meaning and Definition of Working Capital



Working capital is the capital required for the day-to-day working of an enterprise. It is required for the purchase of raw materials and for meeting the day-to-day expenditure on salaries, wages, rents, advertising etc. It is needed for holding some convertible assets (current assets) such as stock, book debts, bills receivable and cash. The firm operates its business through these assets. These assets are convertible in the sense that these change from one form of asset to another. Cash is converted into raw materials, raw materials into work in progress, work in progress into finished goods, finished goods into book debts and bills receivable and then book debts and bills receivable into cash. Thus, the amount goes on circulating or revolving from cash to current assets and current assets to cash. That is why working capital is also called circulating capital or revolving capital or floating capital or liquid capital. It is also known as operating capital.

#### Nature of Working Capital

1 Working capital is that part of total capital which is required for the day to day working of an enterprise.

2 Working capital is the amount invested in current assets. Current assets are short lived.

3. The level of investment in each of the current assets varies from day to day. Therefore managing current assets require more attention than managing fixed assets.

4. The level of working capital in a firm determines its liquidity position. However, the working capital should be neither too large nor too less.

5. Generally, the working capital requirements are financed through short term sources However, a part of it may be financed through long term sources

6. Working capital management involves cash management, receivables management payables management, and inventory management.

7. Current assets are inter-related to each other. That is, the decision related to one current asset will also affect other current assets.

#### **Components of Working Capital**

<u>Current assets</u>: Current assets are those assets which can be converted into cash in the Normal course of activity of a firm usually one year. Examples of current assets include cash, short term investment,

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bank balance B/R. stock of raw material, stock of work-in-progress, stock of finished goods, sundry debtors, prepaid expenses, advance payment of tax etc.

Current liabilities: Current liabilities are those liabilities which are payable during short period usually within a year. Examples of current liabilities include short term borrowings, sundry creditors, B/P, advance payments from customers, outstanding expenses, provision for taxation, dividends payable etc. auipping with excellence

#### **Concepts of Working Capital**

- 1. Gross Concept: According to gross concept working capital refers to the amount of funds invested in current assets. Thus working capital is equal to total current assets. The working capital as per gross concept is called gross working capital. This concept is used by the management to evaluate the current working capital position and to ensure the optimum investment in individual current assets. Gross concept is a quantitative concept.
- 2. Net Concept: According to net concept, working capital refers to excess of current assets over current liabilities. To be more clearly, working capital is equal to total current assets minus total current liabilities. Thus working capital refers to net current asset. The working capital as per net concept is called net working capital. The net concept is a qualitative concept because it establishes a relationship between current assets and current liabilities.

#### **Types of Working Capital**

- 1. Permanent Working Capital
  - a) Initial Working Capital.
  - atal. On GLOBAL STUD b) Reserve Margin or Cushion Working Capital.
- 2. Variable Working Capital.
  - a) Seasonal working capital.
  - b) Special working capital.

#### **Dangers of inadequate Working Capital**

#### **1.** Lack of Solvency



Inadequate working capital creates problem for making payment of salary, wages and short-term

liabilities of a firm. It weakens the solvency position of the company.

#### 2. Liquidity Problem

A firm cannot maintain proper liquidity because of the shortage of working capital.

#### **3. Opportunity Loss**

A business firm may lose new opportunities due to insufficient amount of working capital. Business expansion is also impossible.

# 4. Damage Goodwill

A firm fails to meet its financial obligations due to inadequate working capital. It affects or damages the goodwill of the firm.

#### 5. Inefficiency

A firm cannot utilize its fixed assets and other production facilities effectively because of the shortage of fund. So, production process will be disturbed and leads to inefficiency.

#### 6. No Discount

It is impossible to purchase raw materials and other requirements in bulk quantity because of poor liquidity. So, opportunity of trade discount and cash discount cannot be availed.

#### 7. No Attraction of Investors

A firm cannot attract investors and lenders due to poor liquidity and solvency position.

#### 8. Low Rate of Return

Due to inadequate amount of working capital, a firm cannot function properly. It leads to low rate of return on investment.

#### Dangers of Excessive Working Capital

1. Excessive working capital means idle funds which gives no profit. Thus the rate of return falls.

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- 2. The value of shares may fall due to lower rate of return on investment.
- 3. Efficiency of management may deteriorate.
- 4. It may encourage speculation.
- 5. Liberal dividend policy may be encouraged
- 6. Inefficiency may be encouraged. There may be increased waste and loss due to bad debts.

#### The Operating Cycle Concept

According to Hunt, William and Donaldson, "The working capital is required because of the time gap between the sale and their actual realisation in cash. This time gap is technically termed as "Operating Cycle' of the business". The operating cycle is the length of time between the company's outlay on raw materials, wages and other expenses and inflow of cash from sale of goods. Operating cycle is an important concept in management of cash and management of working capital.



#### **Determinants of Working Capital**

- 1. Nature of business.
- 2. Length of period of manufacture.
- 3. Volume of business.
- 4. The proportion of the cost of raw materials to total cost.
- 5. Use of Manual Labour or Mechanization.
- ... or tinished goods 6. Need to keep large stocks of raw materials of finished goods
- 7. Turnover of working capital
- 8. Terms of Credit
- 9. Seasonal Variations
- 10. Requirements of Cash
- 11. Other Factors.

#### Hard Core Working Capital (Core Current Assets)





The term Hard Core Current Assets in Working Capital Management is defined as the minimum

amount of capital required to invest in stores, raw materials etc. in order to keep the firm running. This term was first used by Tandon Committee. Core assets include all assets including essential, important, or valuable property without which a company cannot carry on with its normal operations and remain profitable. ... Core current assets may also be referred to as hardcore working capital.

#### **Estimation of Working Capital (Determination of Working Capital Requirement)**

Working capital is the life blood and the controlling nerve Centre of a business. No business can be successfully run without adequate amount of working capital. Hence it becomes essential to forecast the required amount of working capital in the future so that there is no difficulty in procuring the working capital. But it is not easy to estimate the working capital requirement. A large number of factors will have to be considered while estimating the working capital required. In case of a manufacturing company, the following\_factors should be taken into consideration:

- (a) Total cost incurred on material, wages and overheads.
- (b) The length of time for which raw materials are to remain in stores before they are issued for production
- (c) The length of the production cycle or work in progress (ie, the time taken for the conversion of raw materials into finished goods).
- (d) The length of the sales cycle during which finished goods are to be kept waiting for sale.
- (e) The average period of credit allowed to customers.
- (f) The amount of cash required to meet the day-to-day expenses.
- (g) The average amount of cash required to make advance payments, if any.
- (h) Time lag in payment of wages and other expenses.

#### (i) The average period of credit allowed by suppliers. Methods of Estimating Working Capital Requirement

- 1. Net current asset forecasting method
- 2. Operating cycle method



- 4. Adjusted Profit and Loss Account method
- 5. Cash Flow Forecast method

#### Net Current Asset Forecast Method:

This is the most practical and widely used method of estimating working capital requirements. Under this method first of all value of each current asset is estimated. After this an estimate of current liabilities is made Difference between the total estimated amount of current assets and current liabilities gives the net working capital requirement of the firm. To this amount some extra amount (or safety margin) by way of provision for contingency is added. This is generally calculated as a fixed percentage of working capital.

#### Working capital = Current Asset - Current Liabilities

#### **Operating** Cycle Method

Operating cycle is the duration of time within which one cycle of business operation is completed. Business operations involve a number of stages. The first stage begins with a cash outflow (when purchase of raw material is made). Subsequently, it passes through various stages such as work in progress, finished goods, credit sales, book debts or B/R etc. Finally it ends with cash inflow as a result of recovery from debtors or realization of B/R. A series of such operating cycles recur one after another and chain continues till the end of the operating period. In this way the entire operating period has a number of operating cycles. Shorter the operating cycle period, lower will be the requirement of working capital and vice versa. GLOBALSTUD

# A COLLEGE OF Jej (a) Calculation of duration of operating cycle:

The duration is computed in days by adding together the average storage period of raw

materials, work-in-progress, finished goods and the average collection period. Then from this total, average payment period is deducted. This can be calculated by the following formula:

o=R+W+F+D-C

Where, O = Duration of operating cycle

R = Raw material average storage period

F = Finished goods average storage

W= Work in progress average period

D= Debtors collection period

C = Creditors payment period

Raw material storage period =  $\frac{\text{Average stock of raw materials}}{\text{Average daily consumption}}$ 

Average stock =  $\frac{\text{Op Stock} + \text{Cl. Stock}}{2}$ 

Average daily consumption =  $\frac{\text{Material Consumed during the year}}{365}$ 

In Short,

Raw material storage period =  $\frac{\text{Average stock of raw material}}{\text{Annual cost of raw mat.consumed}}*365$ 

If cost of raw material consumed is not given, it is found out in the following manner:

Cost of material consumed = Opening stock of material + purchase of material + carriage on purchase - closing stock of material



Average period of W. I. P =  $\frac{\text{Average Work In Progress}}{\text{Average daily production cost}}$ 

Average Work In Progress =  $\frac{\text{Opening W. I. P. + Closing W. I. P.}}{2}$ 

Average daily production  $cost = \frac{Total production cost}{365}$ 

#### In Short,

2.

Average period of W. I. P =  $\frac{\text{Average stock of work in progress}}{\text{Annual cost of production}} * 365$ 

If annual cost of production is not given, it is found out in the following manner:

Cost of production = Cost of raw material consumed + Wages + Manufacturing expenses + Op. work in progress - Cl. work in progress

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3.  
Finished goods av. storage period = 
$$\frac{\text{Average stock of Finished goods}}{\text{Daily average cost of goods sold}}$$
  
Average stock of Finished goods =  $\frac{Op.FG + Cl.FG}{2}$   
Daily average cost of goods sold =  $\frac{\text{Cost of goods sold}}{365}$   
In short,

Finished goods av. storage period =  $\frac{\text{Average stock of Finished goods}}{\text{Anual Cost of goods sold}} * 365$ 

If annual cost of goods sold is not given, it is found out in the following manner:

Cost of goods sold = Cost of production + Opening stock of finished goods -Closing stock of finished goods

4.







 $Creditors payment period = \frac{Average Creditors}{Annual credit purchase} * 365$ 

(b) Calculation of number of operating cycles in operating period:

Number of operating cycles =  $\frac{365}{Period \ of \ operating \ cycle}$ 

#### Projected Balance Sheet Method

Under this method, estimates of different assets (excluding cash) and liabilities are made taking into consideration the transactions in the ensuing period. Thereafter, a balance sheet is prepared on the basis of these forecasted assets and liabilities. It is called 'Projected Balance Sheet'. The difference between the total assets and total liabilities of projected balance sheet is treated as shortage or surplus of cash of that period. If the total liability side is more than the total asset side, it represents excess cash which is not required by the firm. The management may plan for its investment. If, on the other hand, the total asset side is more than the total liability side, it indicates deficiency of working capital which is to be arranged either by way of bank overdraft or from other sources.

#### **Adjusted Profit and Loss Method**

Under this method, estimated profit is calculated on the basis of transactions of the ensuing period.



Thereafter, increase or decrease in working capital is computed adjusting the estimated profit by cash inflows and cash outflows. It is like cash flow statement.

#### **Cash Forecasting Method**

upping with excellence In this method, estimate is made of cash receipts and payments in the ensuing period. The difference of these receipts and payments indicates surplus or deficiency of cash. It is like cash budget.

#### Sources of Working Capital

Long term sources: These provide funds for a relatively long period. The main long sources are share capital, debentures, long term borrowings, retained earnings etc.

Short term sources: These usually provide funds for a short period say upto one year or so. The main short term sources are bank credit (commercial banks and indigenous banks), public deposit, commercial papers, factoring etc.

Transactionary sources: These provide funds to a business through the normal business operation. These are automatic sources of short term funds. These are also called spontaneous sources of finance. These are cost free. Trade credit (credit allowed) by suppliers, outstanding expenses, tax liabilities, depreciation etc. fall in this category PA COLLEGE OF GLOD E OF GLOD

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#### **MANAGEMENT OF CASH**

#### Meaning of Cash;



Cash is the most liquid asset that a business owns. It is the life blood of working capital. According to S.E. Bolten, "Cash is the oil to lubricate the ever turning wheels of business; without it the ning with excellence process grinds to a stop".

#### Motives for Holding Cash (Reasons)

- Transaction motive. 1.
- Precautionary motive. 2.
- 3. Speculative motive.
- 4. Compensating motive.
- 5. Strategic motive.

#### Meaning of Cash Management

Cash management simply refers to management of cash. it refers to systematic way of handling cash inflows and cash outflows. It is the process of forecasting, collecting, disbursing, investing and planning for the cash a company needs to operate its business smoothly. Good cash management can improve financial results. But it cannot make a weak business strong.

#### Functions of Cash Management

- 1. Planning cash inflows and outflows.
- 2. Controlling cash inflows and outflows.
- Investing surplus cash.
- Improving investment image.
- CE OF GLOBE Maintaining relationship with banks.

<u>Techniques of Cash Management</u> A. Synchronize cash flows.



B. Accelerate cash collection.

C. Delay cash disbursements as much as possible without damaging the firm's credit rating or angering equipping with excellence its suppliers.

#### Other Techniques of Cash Management

- 1. Effective inventory management.
- 2. Minimum operational cost.
- 3. Reducing the time span of production cycle.
- 4. Investment in marketable securities.

#### **Optimum Cash Balance**

Every firm needs an optimum level of cash to ensure smooth operations. Therefore the aim of efficient cash management is to maintain an optimum level of cash. The optimum level of cash is that level of cash at which there is a tradeoff between cost of maintaining the cash surplus and cost of deficit financing. The optimum level of cash should be adequate enough to manage the contingencies and basic cash requirements of the firm.

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#### **INVENTORY MANAGEMENT**

The term inventory is derived from the French word "inventaire" and the Latin word "inventariom".



Both mean a list of things found. The dictionary meaning of inventory is stock of goods or list of goods. The term inventory simply refers to stock. In accounting language, inventory means stock of finished goods. In a manufacturing firm, inventory includes raw materials, work in progress, finished goods and stores. Thus, inventories are the stocks of the product a company is manufacturing for sale and the components that make up the product.

#### Types or Forms of Inventory

- 1. Raw materials inventory.
- 2. Work in progress inventory.
- 3. Finished goods inventory.
- 4. Stores and spares.

#### **Objectives of Inventory Management**

- 1. To ensure that adequate inventories are available for smooth operation.
- 2. To minimise investment of funds in the inventories.
- 3. To minimise the costs of ordering and carrying inventories.
- 4. To maximise the wealth of the shareholders (i.e. to maximise profitability).
- 5. To avoid both over-stocking and under-stocking of inventories.
- 6. To minimise losses on account of obsolescence, pilferage, wastage etc.

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7. To ensure right quality products at reasonable prices.

#### Motives for Holding Inventory

- (a) Transaction motive.
- (b) Precautionary motive.
- (c) Speculative motive.

#### **Techniques of Inventory Management**

1. Economic order quantity.

- 2. Classification and codification of inventories.
- 3. Stock levels.
- 4. Safety stock.
- Inventory turnover ratio.
   ABC analysis. equipping with excellence
- 7. VED analysis.

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

The EOQ enables the firm to determine the optimum level of inventory. Economic order quantity can be defined as the quantity which is most economical to order at a time. In other words, it is the ordering quantity which minimises the total cost of inventory. The total cost of inventory comprises ordering costs and carrying costs. Ordering costs are those costs which are relating to acquisition of materials. These include the cost of placing a purchase order.

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#### **Determination of EOQ**

There are four methods or approaches to determine EOQ. They are as follows:

- 1. Algebraic method
- 2. Graphical method
- 3. Tabular method

# Algebraic or formula method: $EOQ = \sqrt{\frac{2CO}{I}}$

Where, C = Annual consumption or usage of material

O = Cost of placing an order

I = Annual carrying or storage cost per unit. It is usually calculated as a given percentage of value of material per unit.

#### Stock Levels

Carrying too much or too less of inventories is harmful for an enterprise. In order to avoid overstocking and understocking of materials or to minimise the total cost of inventory, management may fix certain stock levels like maximum level, minimum level, reorder level, average level and danger level.

#### Maximum level:

Maximum level = Reorder level + Reorder quantity-(Minimum consumption x Minimum reorder period)

#### Minimum Level:

Minimum level = Reorder level - (Normal consumption x Normal reorder period)

Normal consumption means average consumption of material. Normal or average reorder period is computed as follows:

# Minimum reorder period + Maximum reorder period

#### 2

#### Reorder Level (Ordering Level):

This is the level at which order is placed for further supply of materials. When the stock of material reaches this level, the storekeeper should initiate action for the purchase of material. Reorder level is fixed somewhere between minimum level and maximum level. It must be fixed in such a way that the stock representing the difference between reorder level and minimum level should be sufficient to meet demands of production till new materials arrive. Reorder level is computed as follows:

Reorder level = Maximum consumption x Maximum reorder period

#### Average stock level:

Average stock level = Minimum level + 1/2 Reorder quantity

#### **Reorder Period:**

In connection with stock levels, the term reorder period refers to the time required to obtain new materials. It is the time gap required between placing an order and the actual receipt of the materials. In short, it is the time lag in procurement of materials. Sometimes reorder period is called lead time or delivery period.

#### **Inventory Turnover Ratio**

Material turnover ratio is the ratio of cost of material consumed during a given period to the average stock during that period. It indicates the speed with which the raw materials have been consumed in production It gives the number of times in a year stock is used up and replenished. In short, it shows the rate of consumption of materials. Stock turnover ratio is called stock velocity. It is computed as follows:

Cost of material consumed = Opening stock + Purchases - Closing stock

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

#### Material turnover ratio (days)

 $Material turnover ratio (days) = \frac{365}{Material turnover ratio in times}$ 

#### Interpretation of the Ratio:

A high turnover ratio (lesser days) indicates that materials are fast moving, lower obsolescence, lower average carrying cost and material losses etc. A lower turnover ratio on the other hand, indicates that materials are slow moving, higher obsolescence, larger average carrying cost and material losses, excess stock etc...

#### **ABC Analysis**



In the case of large concerns large number of items are kept in the stores. Therefore, it is practically



impossible to concentrate on each and every item. In such situations, ABC analysis is used with a view to exercise better control over materials. It is one of the best and popular techniques of inventory control. Under ABC analysis all materials are classified into three categories - A, B and Q According to value. Category A includes high value materials (costlier materials). Category Includes medium or moderate value of materials (less costly materials). Category includes lower value materials (least costly materials). According to this technique a greater or strict control is exercised over category A materials, a moderate control is exercised over category B materials and relatively lesser degree of control over category C materials. Thus ABC analysis is an analytical technique of material control that divides materials into three categories and uses different degrees of control over each category. It aims at concentrating efforts in those items where attention is needed most. Thus it is the 'management by exception' system of inventory management.

#### <u>VED Analysis</u>

This technique of material control is applicable to spare parts, oils, lubricants and such like. Spare parts are classified into Vital, Essential and Desirable. Vital spares are those which are very critical for production. If these are out of stock, it will lead to immediate production stoppage and heavy production loss. Essential spares are those which are very important. Without these, production can be done only for few hours or a day. If they are out of stock for a long period, production will stop. Desirable spares are those which are required for production, but factory can manage without them for some time, say, a week or even more because they have some substitutes. While exercising control greater attention should be paid on vital spares.

Thus, VED analysis segregates inventories into three categories in the decreasing order of their criticality. VED analysis is a suitable method for automobile industry.

#### Aging Schedule of Inventories

A schedule in which inventories are classified according to the period (age) of their holding in the stores is called aging schedule of inventory. It shows the age of inventories or the period for which inventories are lying in stock together with the percentage of each inventory of total inventory. It helps to identify the rate at which various inventories are consumed. This will help in identifying slow moving inventories. This will further help in effective control and management of inventories.

#### MANAGEMENT OF RECEIVABLES

#### **Meaning of Receivables**

Receivables = Debtors + Bills Receivable With excellence

#### Meaning of Receivables Management

The basic goal of receivables management is to achieve a trade-off between liquidity and profitability. When the firm sells goods on credit, its receivables will increase. Then sales tend to go up. This increases profit. But selling on credit is expensive. It requires more paper work, more staff and more cash to service accounts receivables. Further, there is always the risk of bad debts. Thus selling on credit has advantages as well as disadvantages. When the firm does not sell goods on credit, there will be no receivables. But sales will fall. Profits also fall. At the same time there are no additional expenses and losses on account of bad debts.

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#### Costs of Receivables

- 1. Administrative cost.
- 2. Capital cost.
- 3. Delinquency cost.
- 4. Default cost.

#### Techniques of Receivables Management (Scope of Receivables Management)

- 1. Determining optimum credit policy.
- 2. Determining credit terms.
- 3. Evaluating the credit applicants.
- 4. Determining collection policies and methods.
- 5. Control and analysis of receivables.

#### a) Debtors turnover ratio:



#### **3<sup>rd</sup> SEMESTER BBA**

#### FINANCIAL MANAGEMENT

#### **Chapter 6**

#### **DIVIDEND DECISION**

Meaning of Dividend

The word 'Dividend' is derived from the word 'Dividendum'. It means total divisible sum. Thus , dividends are a sum of money distributed by a company to its shareholders. It is the share of profit (after-tax profit) distributed among the shareholders of the company. It is the reward paid to the shareholders for investments made by them in the shares of the company. In short, dividend is the part of profits distributed among the shareholders.

#### **Types / Forms of Dividend**

- 1. Cash dividend:
  - a) Regular or final dividend
  - b) Interim dividend
- 2. Stock dividend.
- 3. Scrip Dividend.
- 4. Bond Dividend.
- 5. Property Dividend

#### Mechanics and Practices of Dividend Payment (Procedure of Dividend Payment)

- 1. Declaration date.
- 2. Amount.
- 3. Holder of record date.
- 4. Ex-dividend date
- 5. Payment date.

#### **Meaning of Dividend Policy**

EGEOF In the words of Weston and Brighem, "Dividend policy determines the division of earnings between payments to shareholders and retained earnings". According to Gitman, "The firm's dividend policy represents a plan of action to be followed whenever the dividend decision must be made".

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# **Objectives of Dividend Policy**

- 1. Wealth maximization.
- 2. Provide sufficient finance.



3. Achieve a trade-off among the financial decisions.



- 4. Avoid undesirable variations in dividend.
- 5. Communicate to shareholders.

## **Basis Issues Involved in Dividend Policy**

- 1. <u>Division of earnings:</u> One of the basic issues in the dividend policy is to bifurcate earnings (after payment of interest, tax and preference dividend) into two parts. One part is paid to the shareholders in proportion to the equity shares held by them. This is the dividend. The second is retained within the firm to finance new investment opportunities. This is the retained earnings.
- 2. <u>Cost of capital</u>: One of the considerations for taking a decision whether to distribute dividend or not is cost of capital. The Board of Directors will calculate the ratio of profits the business expects to earn to the profits that the shareholders can expect to earn outside. If the ratio is less than one, it is a signal to distribute dividend. If it is more than one, it is a signal to discontinue dividend.
- 3. <u>Realisation of objectives</u>: In formulating the dividend policy the main objective of maximization of wealth of shareholders should be considered. The current rate of dividend also should be considered.
- 4. <u>Shareholders group:</u> Dividend policy affects the shareholders group. Some shareholders are interested in capital gains rather than in current income. A company which pays low dividend attracts such shareholders. On the contrary, a company which pays high dividend attracts those who are interested in current income.
- 5. <u>Release of corporate earnings:</u> Dividend distribution is a means of distributing unused funds. By varying its dividend payout ratio, dividend policy affects the shareholders wealth. The finance manager decides in dividend policy, whether to release corporate earnings or not.
- Form of dividend: Another issue in dividend policy is the decisions regarding the form of dividend. If the company has adequate cash balance, it can pay dividend in cash. If it has no sufficient cash, it can pay dividend in shares (bonus shares).
- 7. Impact of dividend on the value of firm: An important issue in dividend policy is to assess the impact of dividend on the value of firm. Before formulating the dividend policy it is necessary to analyse the impact of alternative dividend policies on the value of firm. After that

the company must select the best dividend policy.

## Factors or Determinants of Dividend Policy (Considerations of Dividend Policy)

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- A. Internal Factors
  - 1. Stability and size of earnings.
  - 2. Liquidity of funds.
  - 3. Investment opportunities and shareholders' preference.
  - 4. Attitude of management towards control.
  - 5. Past dividend rates.
  - 6. Ability to borrow.
  - 7. Need to repay debt.
- B. External factors
  - 1. Trade cycle.
  - 2. Legal requirements.
  - 3. Corporate tax.
  - 4. General state of economy.
  - 5. Conditions in the capital market.
  - 6. Government Policy.

# **Types of Dividend Policies**

- 1. Stable Dividend Policy
  - a) Stable Dividend Policy
  - b) Constant percentage of earnings.
  - OBALS c) Constant dividend per share plus extra dividend.

# Advantages of Stable Dividend Policy

- A. Advantages to shareholders
  - It increases the confidence of the shareholders. i.
  - ii. It attracts income conscious investors.
  - iii. It encourages institutional investors. iv.

It stabilises the market value of shares.

- It helps in giving regular income to the shareholders. v.
- B. Advantages to company

It increases the goodwill and credit worthiness of the i. company.



ii. It helps in preparing financial planning easily. iii. It is a

sign of continued normal operations of the company.

## **Dangers of Stable Dividend Policy**

- i. Once a stable dividend is followed by a company, it is not easy to change it.
- ii. If the company cannot pay stable dividend in one year, the investors may lose confidence in the company and they may dispose off their holdings.
- iii. If the company pays stable dividend in spite of its incapacity, it will be suicidal in the long run.
  - 2. Regular and Extra Dividend Policy
  - 3. Regular Stock Dividend Policy
  - 4. Regular Dividends Plus Stock Dividend Policy
  - 5. Irregular Dividend Policy
  - 6. Residual Dividend Policy

## **Optimal Dividend Policy**

As regards optimal dividend policy a controversy exists. Some people say that there is no optimal dividend policy. Others say that there is an optimal dividend policy. Let us accept that there is an optimal dividend policy. An optimal dividend policy is one that maximizes the firm's value or its share price.

## **Dividend** Payout Ratio

Dividend payout ratio is one of the important factors determining the dividend policy. Out of the earnings, a company pays only a certain percentage or proportion as dividend to the shareholders. The balance of profit will be retained. Dividend payout ratio is the percentage or ratio of dividend to the earnings. In other words, it is the percentage share of net earning distributed to the shareholders as dividends. In short, it is the ratio between dividend and earnings.

Dividend Payout Ratio =  $\frac{Dividend per share}{Earning per share} ie, \frac{DPS}{EPS}$ Retention Ratio =  $\frac{EPS - DPS}{EPS}$ 

Payout Ratio + Retention Ratio = 1 **Dividend Policy and Value of Firms**  The value of firm can be maximised if the shareholders' wealth is maximised. There are two schools



of thought on the relationship between dividend policy and value of firm. According to one school of thought, dividend decision (policy) does not affect the shareholders' wealth. It implies that dividends are irrelevant (irrelevance of dividends). According to the other school of thought, dividend decision affects shareholders' wealth and also the value of firm. It implies that dividends are relevant (relevance of dividends).

## Irrelevance Concept of Dividend (Irrelevance Theories)

This school of thought is associated with Soloman, Modegliani and Miller. According to them dividend policy has no effect on the market price of the share (shareholders' wealth) and value of firm and hence dividend policy is irrelevant. In their opinion investors do not differentiate between dividend and the capital gains (capital gains as a result of increase in the market price of shares). Their basic desire is to earn higher return on their investment either in the form of dividend or capital gain.

## 1. Modigliani and Miller-Irrelevancy Theory

Assumptions of MM Theory of Dividend

- a) There are perfect capital markets.
- b) Investors behave rationally.
- c) There are either no taxes or there are no differences in the tax rates applicable to capital gains and dividend.

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- d) There are no floatation and transaction costs.
- e) The firm has a fixed investment policy.
- f) No investor is large enough to affect the market price of shares.

# Mathematical Proof of MM Approach

$$P_0 = \frac{D_1 + P_1}{1 + k_e}$$

 $P_0$  =Market price at the beginning of the period (i.e., current market price).

 $D_1$  = Dividend to be received at the end of the year.

 $P_1$ = Market price at the end of the period.

 $k_e$ = Cost of equity capital (or capitalization rate). From the above equation, we can find  $P_1$  as follows:

$$P_0=P_0(1+k_e)-D_1$$

Market value of firm or simply value of firm can be ascertained with the help of theollowing formula:

 $V = (n+m) * P_1$ 

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Where, V = Value of firm

n = Number of shares outstanding at the beginning of the period (i.e., number of existing shares).

 $P_1$  = Market price at the end of the period.

m = Number of shares to be issued (i.e., new or additional shares to be issued).

The number of shares to be issued can be determined as follows:

$$m = \frac{I - (E - nD_1)}{P_1}$$

Where, m =Number of shares to be issued.

I = Investment required.

E = Earnings (expected)

n = Number of shares outstanding at the beginning of the period (i.e., number of existing shares).

 $D_1$  = Dividend to be paid at the end of the year.

 $P_1$  = Market price at the end of the period.

# **Criticisms of the Theory**

1. Perfect capital market does not exist in reality.

2. While issuing shares the company will have to incur floatation cost.

3. Taxes do exist. Usually capital gains are taxed at a lower rate than dividend income.

4. While selling shares investors have to pay brokerage, fees etc. (transaction cost).

5. Most of the shareholders prefer current income rather than future capital gains.

6. Firms need not follow a fixed investment policy.

## **Relevance Concept of Dividend (Relevance Theories)**





them dividend decisions considerably affect the value of the firm. Hence dividend decision or policy is relevant. Those firms which pay higher dividends, will have greater value as compared to those which do not pay dividends or have a lower dividend payout ratio. Thus dividend policy has a positive impact on the firm's position in the stock market. More and more dividend is an indication of more and more profitability. There are two theories explaining relevance concept of dividend. They are Walter's theory and Gordon's theory.

# (a) <u>Walter's Dividend Model (Walter's Dividend Theory)</u>

Prof. Jame E. Walter has developed a dividend model. In this theory Walter argues that dividend decision (dividend policy) of a firm is relevant. Hence this is a theory of relevance. This means that dividend policy has an impact on market price of the share. Thus dividend policy affects the value of the firm. According to Walter, the investment policy (investment decision) of a firm cannot be separated from its dividend policy. That is, the investment decision and dividend decision of a firm are interrelated. The company will pay dividend or not depends upon whether it has suitable investment opportunities to invest the retained earnings or not. This means that if the company has investment opportunities to invest its earnings, it does not pay dividend. That is, it will invest earnings. If the company has no investment opportunities, it will pay dividend. Thus the dividend decision (i.e., to pay dividend or not) affects the market price of the shares and this in return affects value of the firm or shareholders' wealth.

## Assumptions of Walter's Model

- 1. The firm does not use external sources of fund (only retained earnings). It does not use debt or fresh equity shares.
- 2. The IRR (i.e., firm's rate of earning) and cost of capital (i.e., shareholders' expected rate of return) are constant.
- 3. Earnings and dividend remain constant.
- 4. The firm has a very long life.
- 5. All earnings are either distributed as dividend or invested internally immediately.

## **Mathematical Formula**

$$P = \frac{D}{k_e - g}$$

Where, P = Price of equity share.

D = Initial dividend per share.

 $k_e = \text{Cost of equity capital.}$ 

g = Expected growth rate of dividend.

## Criticisms of Walter's Model

1. The assumption that investments are financed through retained earnings is not trueExternal sources are also used.

2. The IRR and cost of capital do not remain constant.

3. We cannot predict that the firm has a very long life.

4. Risk factor is not considered (because it assumes that EPS is constant).

## (b) Gordon's Model

M. Gordon has also given a model on the line of Walter. He suggested that dividends are relevant and it will affect the value of the firm. He argued that the value of a rupee of dividend income is more than the value of a rupee of capital gain. This is on account of uncertainty of future and discounting future dividends by shareholders at a higher rate. According to Gordon the market value of a share is equal to the present value of future infinite stream of dividends.

## **Assumptions**

1. The firm is an all equity firm.

2. Retained earnings are the only source of financing the investment program.

3. The rate of return on the firm's investment (r) is constant.

4. The growth rate of the firm 'g' is the product of its retention ratio 'b' and its rat e of return 'r', i.e., g=b\*r

5. Cost of capital is constant and it is more than the growth rate.

6. The firm has long-term life.

7. Corporate taxes do not exist.

## Mathematical Formula

$$P_0 = \frac{E(1-b)}{k_e - br}$$

Where,  $P_0$ . = Current market price

E= Earnings per share

b = Retention ratio

 $k_e = \text{Cost}$  of equity capital (or expected rate of return).

br = Growth rate = rate of return (i.e., b x r or retention ratio x rate of return on investment of an all equity firm)

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1-b = D/P ratio, I.e., percentage of earnings distributed as dividends