



## SYLLABUS

### Class - B.Com (Hons) II Year Subject - Financial Management

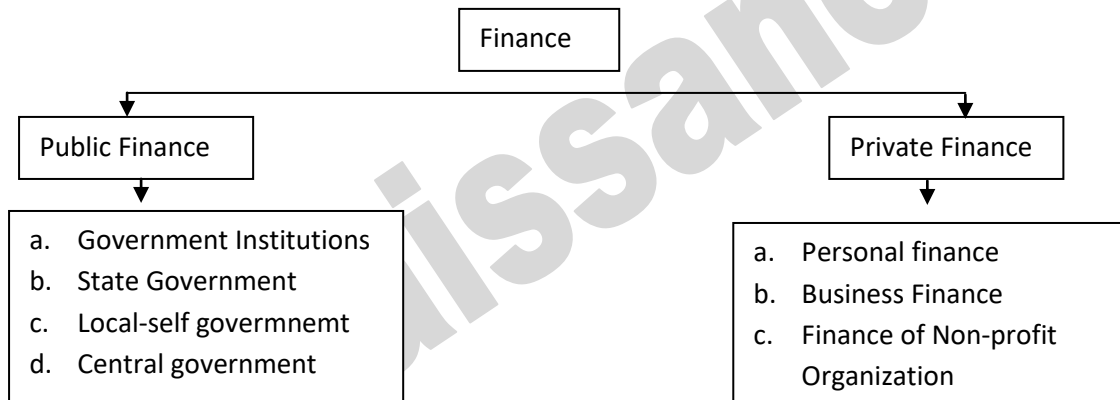
UNIT - I	Financial Management- Meaning and definition, nature, scope and importance of Finance, Financial Goal- Profit vs, wealth maximization; Financial function Traditional and modern concepts- Investment, Financing and Dividend Decisions, Responsibility of Financial Manager.
UNIT - II	Investment Decision- Concept, Types of Investment, Methods of Evaluation- PBP, MPV, IRR, ARR & PI Method.
UNIT- III	Cost of capital: Meaning and Significance of cost of capital; Calculation cost of debt, Preference Capital, Equity capital, and Retained earnings; Combined Cost of Capital (Weighted); Cost of Equity and CAPM
UNIT - IV	<b>Capital Structure:</b> Theories: meaning and definitions, capital structure theories (net income approach theory, net operating income theory, Modigliani and miler theory and traditional theory) optimum capital structure, determination of capital structure.
UNIT - V	Operating and Financial Leverage: Measurement of leavrage: Effects of operating and financial leverage on profit ; Analyzing alternate financial plans; Calculating of operating financial and combine leverage. Degree of Operating and Financial Leverage.



## Unit - I

### Introduction

In our present day economy, Finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium or small, needs finance to carry on its operations and to achieve its targets, in fact finance is so indispensable today that it is rightly said to be the lifeblood of an enterprise without which finance no enterprise can possibly accomplish its objectives.



However, there are three main approaches to finance

1. The first approach views finance as to providing to funds needed by a business on most suitable terms, this approach confines finance to the raising of funds and to the study of financial institutions and instruments from where funds come to be procured.
2. The second approach relates finance to cash.
3. The third approach views finance as being concerned with raising of funds and their effective utilization.

### Definition of Financial Management -

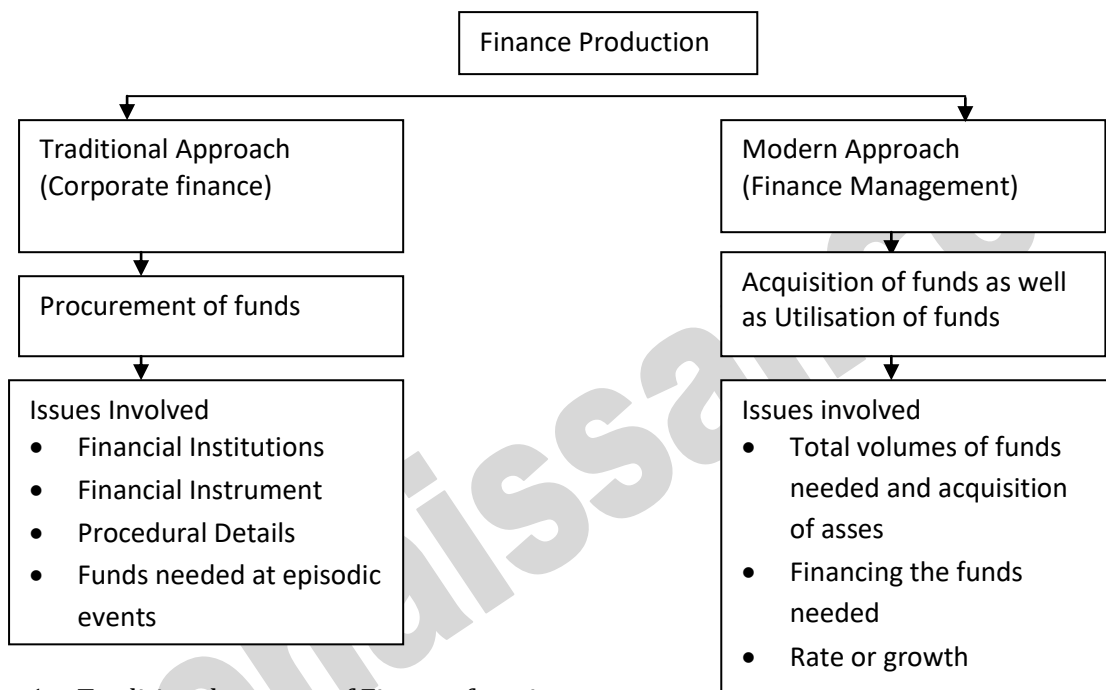
“Financial Management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.” – Prof. J.L. Marsie

“Financial Management is an area of financial decision making, harmonizing individual motives and enterprise goals.” – Weston and Brigham

### Finance Functions

Experts differ significantly as to what are finance functions. Such difference in approach may be put under categories:

1. Traditional concept of Finance function
2. Modern Concept of Finance functions



1. Traditional concept of Finance function

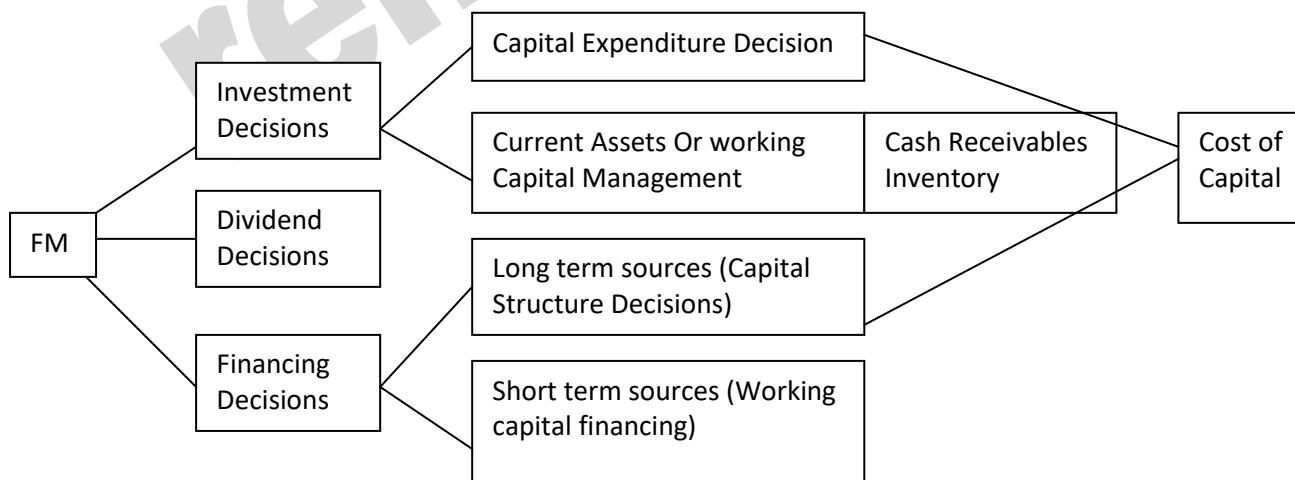
According to traditional concept of finance function is related only to the arrangement of funds for the business. In other word, procuring necessary capital for the business is the function of financial executive. Financial executive has to take decisions as to what are the sources of capital and how much funds should be raised, what is the proper time of acquiring such funds, on what conditions such funds should be raised etc.

According to Soloman Ezro, The traditional approach thus focused more on sources of funds and was too often largely concerned with specific procedural details.

2. Modern Approach of Finance function.

This approach attempts to answer the question like -

- a. What is the total volume of funds and enterprise should arrange?
- b. What specific assets should an enterprise acquire?
- c. How should the funds required be raised?
- d. What should be the composition of liabilities?
- e. How should profit be allocated?



Investment Decisions

Investment decisions are concerned with selecting the right type of assets in which funds will be invested by the firm. The assets which can e acquired fall into two groups: (i) Long-term assets (fixed assets), which would yield a return over a period of time to future, and (ii) short-term assets (also



known as current assets), which are in normal course of business operations convertible into cash usually within a year. As such, investment decisions of the firm are of two types – long term investment decisions popularly known in the financial literature as ‘Capital budgeting’ and short term investment decisions i.e., financial decisions making with reference to current assets popularly designed as ‘current Assets Management’.

### **Financing Decisions**

Financial manager has to make a decision regarding raising of finances (funds) i.e. he has to decide the source-mix or capital structure or leverage. The two important sources of financing are debt and equity. Debt is fixed interest source of financing and equity is variable dividend source of financing.

A proper balance between debt and equity of ensure a tradeoff between risk and return is necessary. Financing decision involves capital structure decision along with its theory.

### **Dividend Decisions**

The third major decision of financial management is the decision relating to declaration and payment of dividend. Financial manager has to advise the top management (Board of directors) as what portion of profits should be distributed as dividend to the shareholders and what portion should be retained in the business as well as part of investment decision.

All these three financial decisions as finance function are inter-related because these have the same objective, i.e. maximization of wealth. As such, these should be jointly taken, so that financial decisions-making is optimal with reference to objectives of financial management.

### **Nature and Characteristics of financial Management**

1. More analytical than descriptive
2. A continuous & Dynamic process;
3. An integral part of General Management
4. strikes coordination in all functions
5. centralized functions
6. Scientific art.

### **LIMITATIONS OF TRADITIONAL APPROACH**

1. One-sided approach
2. Ignores the internal decision-making
3. Applicable to company form of organization
4. More emphasis on episodic events.
5. Focus on the long term financing only
6. Ignores the central issue of financial management.

### **Modern Approach**

The central issues of Financial Management are ignored by the traditional approach.

Experts like Walker, Hawrd and Lipton, soloman Ezra etc. have explained the finance function as a financial decision-making.

According to these experts, the meaning of finance function is confined not only to acquisition of funds but also to making effective use of such funds.

Modern approach gives analytical frame work for financial problems. Under this Approach, three types of decisions have to be taken- investment decisions, financing decisions and dividend-decisions.

According to Soloman Ezra, "The newer broader approach aims at formulating rational policies, for optimum use; procurement and allocation of funds."

### **NATURE OF FINANCIAL MANAGEMENT**

1. More Analytical the descriptive
2. A continuous & dynamic process.
3. An integral part of General Management
4. Strikes Coordination in all functions
5. Centralized function.
6. Scientific Art.



## SCOPE

1. Estimating Financial Requirements- The first task is to estimate short term and long requirements of his business. For this prepare a financial plan for present as well as future
2. Deciding Capital Structure- The mixture of debt and 'equity maintaining by the firm.
3. Selecting a source of finance- Various sources from which finance may be raised include: debentures, financial institutions, qpiri4Orcial banks, public deposits etc.
4. Selecting a pattern of investments- It means the uses of funds.
5. Proper Cash Management- Management of assets and liabilities. Cash Flow statement and Liquidity must be maintained in it.

## FUNCTIONS OF FINANCIAL MANAGEMENT

There are two types, of functions:

A. Executive Functions

B. Routine functions

A. **Executive functions-** Making reasonable forecast of Financial requirements and arranging the sources for the supply of funds, making effective and maximum use of funds provided by the investors etc are the objectives of financial management for which the following functions are carried out:

1. Financial Forecasting- It is the Primary function of financial management because it is the foundation of financial planning. Forecasting about- new enterprises are made by promoters or investors while going concern financial requirements are being forecast by financial executives. Such forecasting needs the applications of various statistical mathematical and accounting techniques.
2. Financial planning- It is done under three distinct sub-activities-
  - a. Formulation of financial objectives
  - b. Framing the financial Policies College of Commerce & Management
  - c. Developing financial procedures.Both short term & long term plans are prepared with respect to each of above sub activities.
3. Financial Decisions- It involves determination of financial sources, comparative study of their cost of capital, examining the impact on share holder's equity etc.
4. Financial Negotiations: It means contact all the possible suppliers of funds and to finalize the contract through negotiations / talks. In this process statutory provision, rules and assumptions are to be executed.
5. Investment Decisions- Decisions about the investments' of funds Volume of fund/investments in fixed assets (long term investment) and volume of investments in current assets (short-term investments)
6. Management of income- Correct distribution of income in correct proportion and following the appropriate dividend policy.
7. Management of cash flows- Proper flow of cash is essential for every business Therefore adopt a fair policy regarding the cash flow (both in flows & out flows) and also mange cash surplus! Deficiencies.
8. Appraisal of Financial performing- It is necessary to evaluate & analyse the financial Performance of the business concern in a definite interval and to communicate the results to top management.
9. To make efforts for increasing the productivity of the capital- By the new opportunities of investments.
10. To Advise the top Management- Whenever top management has to advise the best solution by diagnosis the problem, alternative solution to the problem. Selection of the best solutions.

B. **Routine Functions-** These functions are being performed by lower-level employee on daily basis. All the top authorities take financial decisions with the help of these functions.

1. Record keeping
2. Preparation of various financial statements
3. Arranging the cash balance as per requirements



4. Managing the credit
5. Safety of significant financial documents.

### OBJECTIVE OF FINANCIAL MANAGEMENT

It can be explained from two points of view- Macro level & Micro Level

Macro-level theory says the whole society is benefited. On the contrary, according to micro-level theory, the financial objective is determined as per the individual view point of a company, firm or enterprise.

There are two mutually opposite thought regarding objective of financial management at Micro -level.

- A. Profit Maximization (P.M.O.) objectives
- B. Wealth Maximization (W.M.O) objectives

### PROFIT MAXIMIZATION OBJECTIVES

The objective of financial management of an enterprise is to maximize the profit. Financial Manager should select that alternative which may maximize the profit. In other words, all such actions which increase the profit should be undertaken and those which reduce the profit should be avoided.

For maximizing the profit either production is to be maximized from limited resources or cost should be minimized for a particular level of production volume.

### JUSTIFICATION OF PMO

1. Rationality
2. Maximization of Social benefits
3. Efficient Allocation and uses of resources
4. Measurement Of success of decisions
5. Source of incentives.

### LIMITATION OF PMO

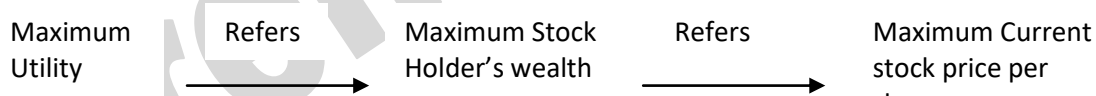
Profit maximization objective (PMO) is considered to be a very limited (narrow) objective, because it has a no. of drawbacks.

1. Ambiguity/ Loose Expression of the Term profit
2. Profit Maximization objective ignores timings of benefit
3. Fails to recognise the quality of benefits.

### Wealth Maximization Objectives (W.M.O)

Wealth Maximization is the appropriate objective of an Enterprise Financial theory asserts that wealth Maximization is the single substitute for a stockholder's utility.

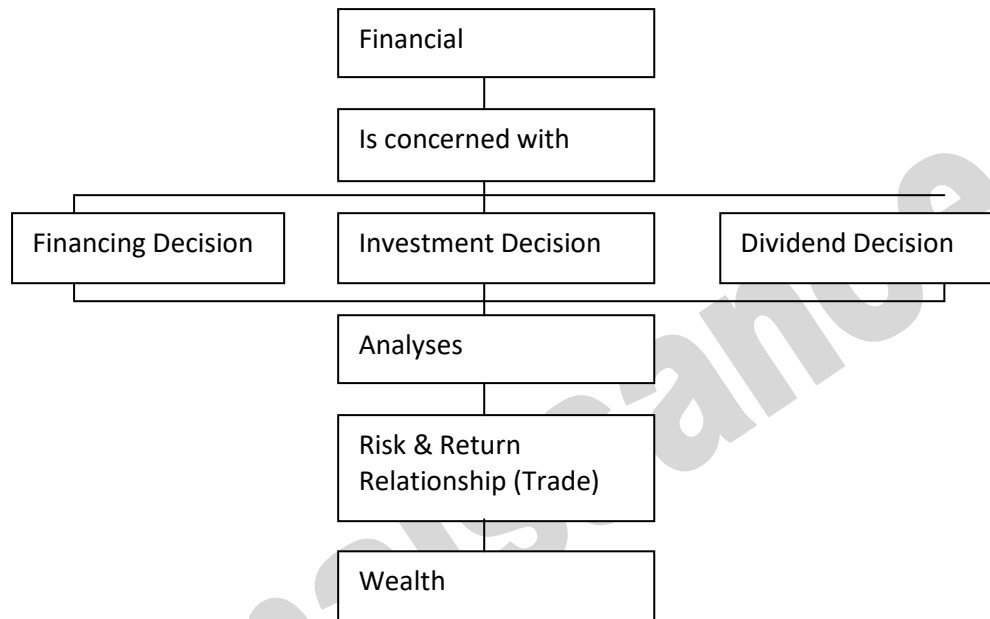
When the firm maximizes the stock holder's wealth, the individual stock holder can us wealth to maximize his individual utility.



*Stock Holder's wealth = Number of share owned x current stock price per share*

### Merits of WMO

1. Precise and unambiguous
2. Considers the timing of benefits
3. Takes case of quality of benefits



## BASIC FINANCIAL DECISIONS

1. Investment Decisions- Investment decisions are concerned with selecting the right type of assets in which funds will be invested by the firm. There are two types of assets.

- Long term assets (Fixed assets)
- Short-term assets (Current assets)

Long, term assets which would yield a return over a period of time in future. Long term investment decisions popularly known in financial literature as "Capital Budgeting".

Capital Budgeting- The process of planning and managing a firm's long term investment.

It is the planning process used to determine whether a firm's long term investments such as new machinery, replacements machinery, new plants, new products and research development projects are worth pursuing. It is budget for major capital, or investment expenditure.

Short term Assets which are in normal course of business operations convertible into cash usually within a year.

Short term investment decisions known as 'Current Assets Management' or 'Working capital Management'

Working Capital Management- A management firms short terms assets and liabilities

These are decisions involving managing the relationship between a firms' short term-assets and its short-term liabilities.

The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. It means the short term investment decision is the trade off between profitability and liquidity (risk)

Financing; Decisions- Financing Decisions are concerned with the proper mix of debt & equity. Therefore, financing decisions are involves "capital structure decision."

Capital structure: - The mix of debt and equity maintained by the firm. The two important sources of financing are debt and equity.

Debt is fixed interest source: of financing is variable dividend source of financing. Decide the appropriate mix of debt and equity in such a way as to maximize the share holder% Wealth. A proper balance between debt and equity to ensure a tradeoff between risk & return is necessary.

2. Dividend Decisions- The third major decision of financial Management is the decision relating to declaration and Payment of dividend.

Financial manager has to advice the top management (Board of directors) as what portion of profits should be distribute as dividend to the share holders and what portion should be retained in the business for further investment.

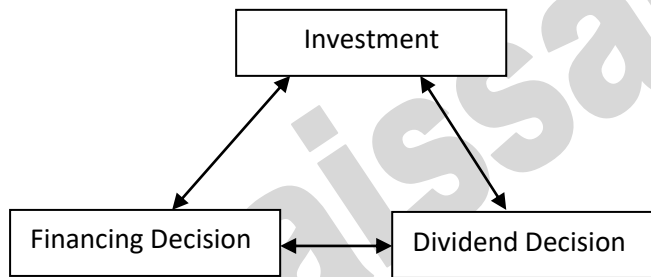


If adequate profitable within the enterprise; profits are to be retained because return to shareholders would be maximum and price of share would- also rise.

If the enterprise does not have investment opportunities the profit should be distributed as dividends to shareholders.

All these three financial decision as finance function are inter-related because these have the same objective, i.e., maximization of Wealth. (Share holder's wealth)

Inter-Relation of Financial Decision







UNIT- II

Meaning of Capital Budgeting

Capital budgeting means planning for capital assets. It is to be decided whether money should be invested in long-term projects like setting up a new factory or installing machinery, etc.

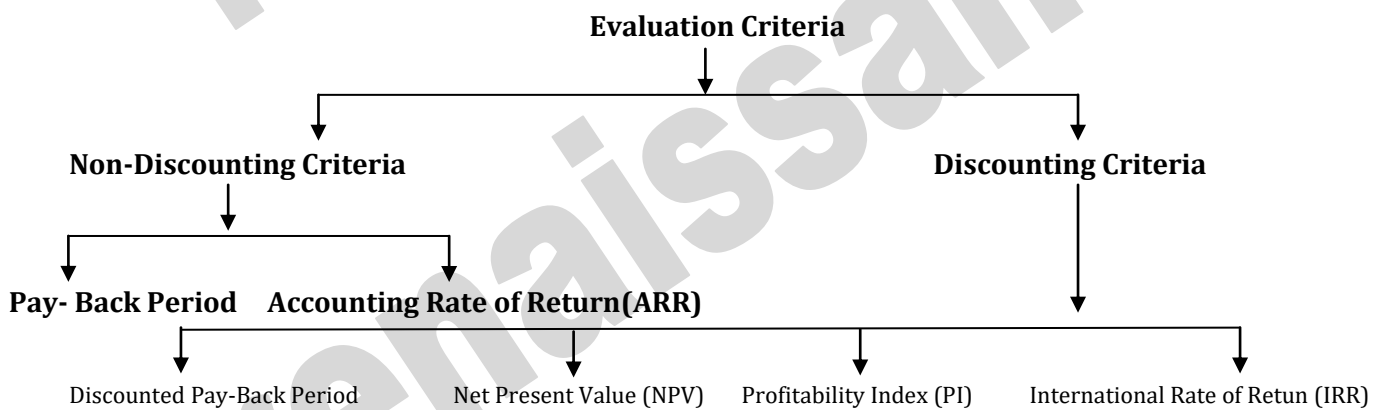
Features of Capital Budgeting

Following are the basic features of capital budgeting:

- (i) Investment of funds n long-term assets.
- (ii) Potentially large anticipated benefits.
- (iii) Relatively high degree of risk.
- (iv) Relatively long time period between the initial outlay and the anticipated returns.

Importance of Capital Budgeting Decisions

1. Growth
2. Lagrge Amount
3. Irreversibility
4. Complexity
5. Risk
6. Long-term Implications



NON DISCOUNTING CRITERIA

Pay-Back Period Method

The Pay-Back (PB) is one of the most popular and widely recognized traditional methods of evaluating investment proposals. It is defined as the number of years required to recover the original cost outlay invested in a project. If the project generates constant annual cash inflows, the pay-back period can be computed by dividing cash outlay by the annual cash flow,i.e.,

$$\text{Pay-back Period} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}} \quad \frac{I}{C}$$



**Average Rate of Return (ARR) OR Accounting Rate of Return OR Unadjusted Rate of Return**

Average rate of return or Accounting rate of return means the average annual earning on the project. Under this method, Profit after tax and depreciation as percentage of total investment is considered. In other words, the annual returns of a project are expressed as a percentage of the net investment in the project.

**Calculation or ARR**

The average rate of return can be calculated in the following two ways:

$$i. \quad \text{ARR on Initial Investment} = \frac{\text{Average Profit After Tax}}{\text{Initial Investment}} \times 100$$

In this case, the original cost of investment and the installation expenses, if any, is taken as the amount invested in the project. To calculate average profit after tax, total profit after tax is divided by the number of years of the project.

Theoretically, this approach seems to be good but taking the initial investment as the base of calculating average rate of return is not correct on logical ground.

$$ii. \quad \text{ARR on Initial Investment} = \frac{\text{Average Profit After Tax}}{\text{Average Investment}} \times 100$$

**Method to find out the Average Investment**

**a. When there is no scrap value and working capital:**

$$\text{Average Investment} = \frac{\text{Initial Investment} + \text{Installation Charges}}{2}$$

**b. When there is scrap value:**

$$\text{Average Investment} = \frac{\text{Initial Investment} + \text{Installation Charges} - \text{Scrap Value}}{2}$$

**c. When there is scrap value and working capital**

$$\text{Average Investment} = \frac{\text{Initial Investment} + \text{Installation Charges} - \text{Scrap Value} + \text{Scrap Value} + \text{Working Capital}}{2}$$

**Net Present Value (NPV) Method**

NPV= PV of CI- Out flow

PVCI= CFAT X PVF

Present Value of Cash In flow = Cash flow after tax X Present Value

**PROFITABILITY INDEX (PI)**

$$\text{Profitability Index (Gross)} = \frac{\text{P/V of Cash Inflows}}{\text{Initial Cash Outflows}}$$

$$\text{Net Profitability Index} = \frac{\text{NPV}}{\text{Initial Cash Outlay}}$$

$$\text{IRR} = L + \frac{A}{(A-B)} (H-L)$$



## UNIT - III COST OF CAPITAL

The concept of Cost of Capital (and its fair estimation) is very important from several points of view:

- a. **Capital Expenditure Decisions:** - Cost of capital is basic input information in capital expenditure decisions. In the case of Discounted Cash Flows methods (N.P.V. & T.V.D.P.B.P. etc.), the cost of capital is used to discount the future cash inflows. In the case of I.R.R., the ascertained I.R.R. is compared with the cost of capital. Even in the case of traditional method like Accounting Rate of Return, the Cost of Capital is used for comparing A.R.R. and deciding the profitability of the project. The decision in respect of a capital expenditure would be irrational and wrong, if the cost of capital is not correctly determined.
- b. **Capital Structure Decisions:** - The cost of capital also plays an important role in designing the balanced and appropriate capital structure. Each source of capital involves different cost and different risk. The objective should be to raise the capital from different sources in such a way that it optimizes the risk and cost factors. For this purpose, the cost of each source of capital should carefully be considered and compared with the involved in it. This importance of cost of capital can also be viewed in the context of country's economy as well.

### Assumptions of the Cost of capital

The cost of capital and its determination as discussed in this chapter are based on certain assumptions, which are:

1. Business Risk is Unaffected. It has been assumed that business risk complexion of the concern would remain the same by accepting a new investment proposal. The term 'business risk' refers to the variability in annual earnings due to change in sales.
2. Financial risk is also unaffected. It is also our assumption that financial risk complexion would also remain unchanged. Financial risk refers to the risk on account of pattern of capital structure.

The Cost of Capital discussed here does not consider the business risk and financial risk. It is something like rate of return with zero-risk level.

### TYPES OF COST OF CAPITAL

- A. **Explicit Cost and Implicit Cost** It can easily be ascertained that raising of capital from any source would involve a series of cash flows-starting with cash inflows (proceeds from the issue of securities) and followed by annual cash outflows in form of interest payments, repayment of principal, dividends, etc. the explicit cost of capital is the internal rate of return, which a company pays for procuring the finances. It can easily be seen that explicit cost of capital will be only in the case of interest bearing loan. If the loan is interest-free, its explicit cost will be zero percent, as no cash outflows of interest are involved, of course, the principal will be returned but its discounting rate will be zero.  
The concept of opportunity cost gives rise to 'implicit cost'. The implicit cost of capital arises, when a company considers alternative uses of capital. The rate of return, which can be earned by investing the capital in alternative investment (popularly known as opportunity cost) by the company or shareholders is known as implicit cost.
- B. **Historical Cost and Future Cost.** Historical cost refers to the cost which has already been incurred for financing a project. It is, thus, calculated on the basis of past data. Future cost refers to the expected cost funds to be raised for financing a project. Historical cost is significant to the extent that it helps in projecting the future cost and providing an appraisal of the past performance, when compared with standard cost or predetermined costs.
- C. **Average Cost and Marginal Cost.** Average cost of capital is the weighted average cost calculated on the basis of cost of each source of capital structure. (Detailed procedure has been discussed later on). Marginal cost of capital is also weighted average but it is weighted average cost of new capital raised by the company. Marginal cost of capital is considered as more important for capital budgeting purposes and financing decisions.



- D. Specific Cost and Composite Cost. Capital can be raised from various sources and each source may have different cost. The cost of each source (i.e., specific source) is known as specific cost.

### CONTROVERSIAL VIEWS REGARDING THE COST OF CAPITAL

The concept of cost of capital is very useful and has considerable practical utility in the theory of finance. But it is also subjected to a lot of dispute. One point of dispute is related to the fact whether method and level of financing affect the cost of capital or not. There are two important approaches in this regard:

- a. **Traditional Approach.** According to this approach, a company's cost of capital depends upon the method and level of financing or its capital structure. It means that a company can change its overall cost of capital by changing its capital structure, i.e. increasing or decreasing debt-equity ratio. Since the cost of debt is cheaper due to lower coupon rate and also tax saving (interest on debenture is allowed as expenses) as compared to equity shares, the traditional theorists argue that the overall cost of capital (i.e., weighted average cost) will decrease with every increase in debt component in the total capital structure. However, debt component in the total capital employed should be maintained at proper level because cost of debt is a fixed burden on profit of the company. If the company has low profit, the increase in debt component might have adverse impact upon the company's risk. The shareholders may raise their expected rate of return due to increased risk in the business.
- b. **Modigliani and Miller Approach (M.M. Approach).** According to this approach, a change in capital structure (i.e., debt-equity ratio) does not affect the cost of capital. In other words, the method and level of financing will not affect the cost of capital; this will remain constant. The 'Cost of Capital, Corporation Finance and Theory of Investment' published in American Economic Review, 48 June 1958, Modigliani and Miller have observed:
  1. The total market value of the firm and its cost of capital are independent of its capital structure.
  2. The cut-off rate for investment purposes is completely independent of the way in which investment is financed.

### MEASUREMENT OF COST OF CAPITAL

1. Determination of Specific Costs. The first stage in the measurement of cost of capital is the computation of the cost of individual source of capital. These sources are:
  - a. Debt (borrowed) Capital
  - b. Preference Share capital
  - c. Equity share capital
  - d. Retained earnings.
- a. Cost of Debt Capital. Such capital is generally obtained through the issue of debentures. These flotation costs and modes of issue have important bearing upon the cost of debt capital.

The cost of debt capital is very simple to calculate. The usual formula will be:

$$K_d = \frac{I}{SV} \times 100 \text{ (without tax factor)}$$

Here,  $K_d$  = Cost of debt capital

$I$  = Interest payable.

$SV$  = Capital received (proceeds from issue)

According to nature, debentures (debt) may be (i) perpetual, and (ii) redeemable.

### WEIGHTED AVERAGE COST OF CAPITAL

As mentioned earlier, the second stage in the calculation of cost of capital is to find out the composite; or combined cost on the basis of cost of individual sources and this is done using weighted average method. The various steps involved in the calculation of weighted average cost of Capital are:

- a. Cost of each specific source of capital is first calculated on the lines discussed earlier.
- b. Each specific cost is assigned weight. (It is done on the lines mentioned later on).
- c. Each specific cost is multiplied by the corresponding weight. (This is weighted cost of each source).



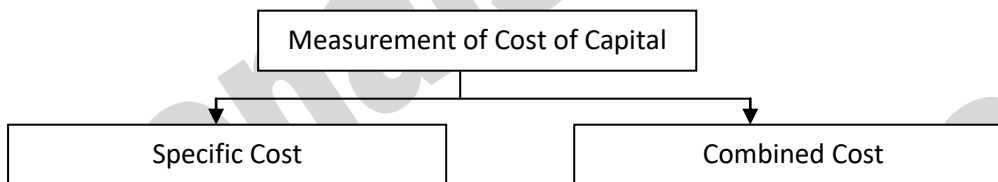
- d. Weighted cost of all sources of capital as arrived in Step (iii) are added together to get an overall weighted average cost of capital

### Assignment of weights

Assignment of weights actually involves the determination of share of each source of capital in the total capital structure of company. This is done in any of the following two ways:

- a. Historical Weights Method. According to this method, the relative proportions of various source of capital to the existing capital structure are used to assign weights. In other words, the basis of assigning weights is the funds already employed by the company. In the case a historical weights method, one problem arises relating to the choice of book value or market value weights.
- b. Marginal weights Method: According to this method specific costs are assigned weights in the proportion of funds to be raised from each source to the total funds to be raised. In other words, how much of proposed total capital will be raised through the issue of each and every type of securities would be the basis of weight under Marginal

### Cost of Capital



#### A. Specified Cost

##### 1. Debt capital

###### a. Cost of Irredeemable Debt

$$kd = \frac{P}{c} \times 100$$

P = contractual Rate (Interest Rate)

C = Capital Received

###### 1. Issued at par -

$$c = \text{Par value} - \text{Floatation Charges}$$

###### 2. Issued at Discount -

$$c = \text{par value} - \text{Discount} - \text{Floatation charges}$$

###### 3. When issued at premium

$$c = \text{par value} + \text{Premium} - \text{Floatation charges}$$

###### b. Cost of Redeemable debts

###### 1. Issued at Par -

$$C = \text{par value} - \frac{\text{Floatation}}{2}$$

###### 2. Issued at Discount -

$$C = \text{par value} - \frac{\text{Floatation charges} + \text{Discount}}{2}$$

###### 3. Issued at premium -

$$C = \text{par value} - \frac{\text{Floatation charges}}{2} + \frac{\text{Premium}}{2}$$

Note- Irredeemable Debt is that capital which does not have specific date.

##### 2. Preference share capital

$$kd = \frac{P}{c} \times 100$$

###### a. Issued at par -

$$c = \text{par value} - \text{Expenses of Issue}$$

###### b. Issued at Discount -

$$c = \text{par value} - \text{Discount} - \text{Expenses of Issue}$$



c. Issued at Premium –

$$c = \text{par value} + \text{Premium} - \text{Expenses of Issue}$$

Tax Implications –

$$\text{Cost of capital before tax} = \frac{K_{pt}}{1-T}$$

$K_{pt}$  = Cost of preference share capital after tax

T = Tax rate applicable to companies

3. Equity share capital

$$k_e = \frac{D}{P} \times 100$$

$K_e$  = Cost of equity

D = Dividend per share

P = Market price per share

Rowing Dividend

$$k_e = \frac{D \times 100}{P} + G$$

$K_e$  = Cost of equity capital

D = Dividend per share

P = Market price per share

G = Growth Rate in Dividend

4. Cost of Retained Earning

$$k_r = \frac{AD}{AE} \times 100$$

$K_r$  = Cost of Retained earnings

AD = Earning from alternative investment of retained earnings

AE = Retained earnings for such share holder

Tax Implications

A. When Brokerage and tax on dividend are taken into account

$$k_r = \frac{(1 - TD)AD}{RE} \times 100$$

OR

$K_r = K_e (1-T) (1-B)$

$k_e$  = shareholders required rate of return

T = Share holders tax rate

B = Brokerage Cost

B. When Brokerage, dividend tax and capital gains tax are taken into account

$$k_r = \frac{(1 - TD)AD}{(1 - T_c)RE} \times 100$$

Td = Tax on dividend in the hand of individual share holders

Tc = Capital gains tax rate applicable to individual share holders'

### Combined Cost

Weighted Average Cost of capital

1. Source of Capital	2. Amount (Book Value or Market Value)	3. Weights	4. Cost of Capital	5. W.A. cost of Capital % (3x4 = 5)



## UNIT - V

### Leverage

In finance, leverage (also known as gearing or levering) refers to the use of debit to supplement investment. Companies usually leverage to increase returns to stock, as this practice can maximize gains (and losses). Leverage is the degree to which an investor or business is utilizing borrowed money.

### Types of leverage -

1. **Operating leverage** - The operating leverage is a measure of how revenue growth translates into growth in operating income. It is a measure of leverage and how risky (volatile) a company's operating income is. Operating leverage can also be measured in terms of change in operating income for a given change in sales (revenue). Operating leverage reflects the extent to which fixed assets and associated fixed costs are utilized in the business. Degree of operating leverage (DOL) may be defined as the percentage to levering. DOL the Degree of operating leverage (DOL) can be computed in a number of equivalent ways; one way it is defined as the ratio of the percentage change in Operating Income for a given percentage change in Sales.
2. **Financial leverage** -
  - Financial leverage is the ability of the firm to use fixed financial charges to magnify the effects of changes in EBIT on the firm's earnings per share.
  - In other words, financial leverage may be defined as the payments of fixed rate of interest for the use of fixed interest bearing securities to magnify the rate of return as equity shares.
  - The use of the fixed-charges sources of funds, such as debt and preference capital along with the owner's equity in the capital structure, is described as financial leverage or gearing or trading on equity.

Degree of financial leverage - Degree of financial leverage (DFL) may be defined as the percentage change in earnings (earnings per share) that occurs as a result of a percentage in earnings before interest and taxes.

3. **Combined leverage** - If both operating and financial leverage allow us to magnify our returns, and then we will get maximum leverage through their combined use in the form of combined leverage. Degree of combined leverage (DTL) uses the entire income statement and shows the impact of a change in sales or volume on bottom-line earnings per share.

### FORMAT OF LEVERAGE

Particular	Amount
Sales (In Rs.)	*
(-) Variable Cost	*
= Contribution	*
(-) Fixed Cost	*
= EBIT	*
(-) Interest	*
= EBT	*
(-) Tax	*
= EAT	*
(-) Preference Dividend	*
= Earning after Preference dividend	*
(-) Equity Divided	*
= Net Profit (Retained Earning)	*

EBIT = Earnings before Income & Tax - EBT = Earnings Before Tax - EAT = Earnings after Tax

### Formulae



1. **Operating Leverage** =  $\frac{\text{Contribution}}{\text{EBIT}}$  or  $\frac{\text{Percentage changes in EBIT}}{\text{Percentage change in sales}}$
2. **Financial leverage** =  $\frac{\text{EBIT}}{\text{EBT}}$  or  $\frac{\text{Percentage changes in EPS}}{\text{Percentage change in EBIT}}$
3. **Combined leverage** =  $\frac{\text{Contribution}}{\text{EBT}}$  or  $\frac{\text{Percentage changes in EPS}}{\text{Percentage change in sales}}$  or OL x FL

### Other Formulae

1. Earnings per share (EPS) =  $\frac{\text{Net Profit or Retained Earnings}}{\text{No. of Equity shares}}$
2. Break even Analysis =  $\frac{\text{fixed Cost} \times \text{Sales}}{\text{Contribution}}$
3. P/V ratio =  $\frac{\text{Contribution}}{\text{sales}} \times 100$
4. ROI =  $\frac{\text{EBIT}}{\text{Capital Employed}} \times 100$
5. Assets turnover =  $\frac{\text{Net Sales}}{\text{Total Sales}}$

### Some major points taken into consideration

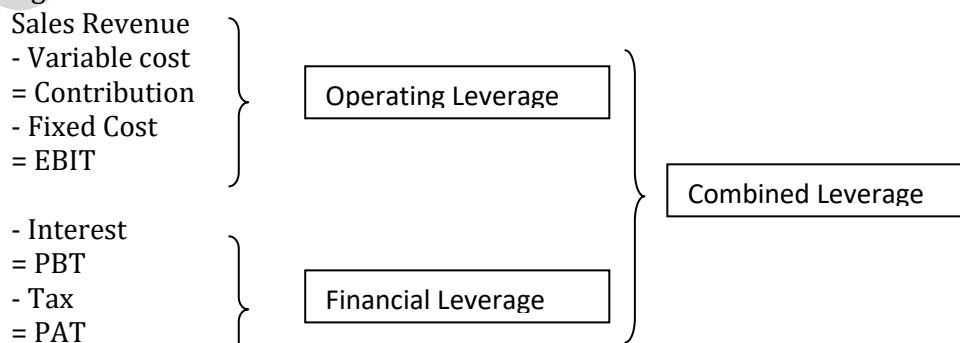
1. Interest is chargeable on debts only
2. Total assets = Debts Assets + Equity Capital

### Operating and Financial Leverage

Leverage refers to relationship between two interrelated variables. In financial analysis, leverage reflects the response of one financial variable over some other financial variable.

Leverage are of three types

- a. Operating leverage
- b. Financial leverage
- c. Combined leverage



Operating leverage is the tendency of the operating profits to vary disproportionately with sales.

$$\text{Operating leverage} = \frac{C}{\text{EBIT}} \text{ OR } \frac{\% \nabla \text{ in EBIT}}{\% \nabla \text{ in sales / contr}}$$

Financial leverage is related to the changes in operating profit available to equity shareholders on account of changes in EBIT





$$FL = \frac{EBIT}{EBT} \text{ OR } \frac{\% \nabla \text{ in } EBT}{\% \nabla \text{ in } EBIT} \text{ OR } \frac{EBIT}{PBT - PD / (1-t)}$$

Combined leverage – clarifies the combined effect of OL & FL

$$CL = OL \times FL = \frac{C}{EBIT} \text{ OR } \frac{\% \nabla \text{ in } EBIT / EPS}{\% \nabla \text{ in } \text{sales} / \text{contr}}$$

OL explains the business risk while Fl deals with the financial risk. The more is leverage the higher is the risk associated.

### Other formulae -

$$\text{Assets turnover ratio} = \frac{\text{sales}}{\text{Total Assets}}$$

$$\text{Debt assets ratio} = \frac{\text{Debt} \times 100}{\text{Total Assets}}$$

$$\text{Debt Equity Ratio} = \frac{\text{Debt} \times 100}{\text{Total Equity}}$$

### Financial Leverage

Financial leverage is synonym of trading n equity

Of course, Financial leverage may e called as refund form of trading on equity financial leverage is related to the change in EBIT. A business concern may increase the profit to equally share holders by increasing the EBIT.

In other words we can say, “When the rate of return available to equally share holders in caused to rise by the use of best and performance share capital, it is termed as FL.

$$\text{Financial Leverage (FL)} = \frac{EBIT}{EBT}$$

EBT – It is equal to the amount left after deducting interest on.

$$DFL = \frac{\% \text{ change in } EBT}{\% \text{ change in } EBIT}$$

Combined leverage – “Who have observed that operating leverage affects the business risk and it is measured in terms of changes in EBIT due to changes in sales. Similarly financial leverage affects financial risk and is measured in terms of percentage change in EBT or EPS relative to percentage change in EBIT. Since both the leverage are closely reputed in ascertaining the ability of the firms to cover fixed charges. The mixture of the two would give combined or total leverage.

Formula -

$$CL = OL \times FL$$

OR

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

### Degree of combined leverage

$$DCL = DOL \times DFL$$

OR

$$DCL = \frac{\% \text{ change in } EBIT}{\% \text{ change in } \text{sales}} \times \frac{\% \text{ change in } EBT}{\% \text{ change in } EBIT}$$

OR

$$DCL = \frac{\% \text{ change in } EBT \text{ or } EPS}{\% \text{ change in } \text{sales}}$$