Idhaya College for Women
Kumbakonam

PG & Research Department of Commerce

III BCom

Financial Management - 16CCCCM13

Unit – V

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UNIT- I

Introduction:

Financial Management is concerned with the efficient use of an important economic resource, namely Capital Funds. It is mainly concerned with the management decisions that result in the acquisition and financing of long-term and short term credits for the firm. It is mainly concerned with proper management of funds.

Objectives of Financial Management

The objectives of financial management can be divided into two categories,

*Basic objectives

*Other objectives

1. Basic objectives:

Traditionally the basic objectives of Financial Management have been (i) maintenance of liquid assets (ii) maximization of profitability of the firm and iii) shareholders' wealth maximization.

***Maintenance of liquid assets:**

Financial management aims at maintenance of adequate liquid assets with the firm to meet its obligations at all times. The finance manager has to maintain a balance between liquidity and profitability. There is an inverse relationship between the two. The more the assets are liquid, less they are profitable and vice versa.

***Profit Maximization:**

A business firm is a profit seeking organization. Hence profit maximization is an important objective of financial management. The earned profits of a concern are the yardstick of its production, sales and managerial efficiency. Following the rule of profit maximization, the duty of the managers is to achieve the higher possible flow of returns will belong to the owners after all other obligations have been met.

***Shareholders' Wealth Maximization (SWM)** in making financial decisions, the financial manager should aim at increasing the value of the shareholders'stake in the firm. This is referred to as the principle of **Shareholders'Wealth Maximization (SWM).**

Maximization of Wealth: Steps for Wealth Maximization

*Avoid High Levels of /risks

*Pay Dividends

*Maintain Growth in Sales

*Maintain Price of firm's Equity Shares

*Social responsibility

*Government constraints

*Ensuring a fair return to shareholders

*Building up reserves for growth and expansion

*Ensuring maximum operational efficiency by efficient and effective utilization of finances

*Ensuring financial discipline in the organization.

Scope of Financial Management

i) **Traditional Approach**

It broadly covered the following three aspects:

*Arrangement of funds from financial institutions.

*Arrangement of funds through financial instruments.

*Looking after the legal and accounting relationship between a corporation and its sources of funds.

In the later fifties it started to be severely **criticized** on account of the following reasons:

Outsiders-looking –in Approach:

The approach equated finance function with the raising and administering of funds. It thus treated the subject of finance from the viewpoint of suppliers of funds. I.e. outsiders, viz, bankers, investors, etc.

Ignored Routine Problems;

The subject of financial management was mainly confined to the financial problems arising during the course of incorporation, mergers, consolidation and reorganization of corporate enterprises. As a result the subject did not give any importance to day-to-day financial problems of business undertaking.

Ignored Non-corporate Enterprises

The approach focused attention only on the financial problems of corporate enterprises. Non-corporate industrial organizations remained outside its scope.

Ignored Working Capital Financing

The approach laid overemphasis on the problems of long term financing. The problems relating to financing short-term or working capital were ignored.

ii) Modern Approach:

According to modern concept financial management is concerned with both acquisitions of funds as well as their allocation. The modern approach is an analytical way of looking at the financial problems of a firm. It is related to four broad decision areas of financial management, viz., and funds requirement decision, financing decision, investment decision and dividend decision.

The following are some of the important areas and scope of financial management.

1. Estimating the requirements of funds.

A careful estimate of all requirement-long-term as well as short-term funds must be made. The investments in fixed assets and those in various current assets etc., have to be estimated through the techniques of budgetary control and long range planning.

2. Financing or capital structure decisions

After on estimate of the requirement of funds has been made, a decision regarding the various sources from which these funds would be raised has to be taken. The finance manager has to ensure that the overall capitalization of his company is such that the funds are procured at optimum costs with the least risk and the least dilution of control of the present owners. All these decisions may be grouped under the broad term ‘the financing decision.

3. Investment decisions.

Long-term funds should be invested in various projects only after an in-depth analysis has been carried out through capital budgeting techniques and uncertainty analysis. Asset management policies are to be laid down regarding various items of current assets also these includes policies relating to management of inventories, book debts, cash, trade creditors, etc.

4. Dividend decision.

The decision to declare a dividend involves a number of considerations. From the economic point of view the amount to be retained or to be paid to the shareholders would depend on whether the company or the shareholders can make a more profitable use of the funds.

The finance function also involves the following subsidiary functions:

*Supply of funds to all parts of the organization.

*Evaluation of financial performance.

*Financial negotiations with bankers, financial institutions and other suppliers of credit.

*Keeping track of stock exchange, quotation and behavior of stock market prices.

*Financial control

*Keeping the records of all assets.

LIQUIDITY VS. PROFITABILITY

Liquidity means that:

The firm has adequate cash to pay for its bills.

The firm has sufficient cash to make unexpected large purchases and, above all,

The firm has cash reserve to meet emergencies, at all times.

Profitability goal, on the other hand, requires that the funds of the firm are so used as to yield the highest return.

Liquidity and profitability are very closely related, when one increased, the other decreases. Apparently, liquidity and profitability goals conflict in most of the decisions which the finance manager rakes. For example if higher inventories are kept in anticipation of increase in prices of raw materials, profitability goal is approached but the liquidity of the firm is endangered. Similarly the firm be following liberal credit policy may be in a position to push up its sales but its liquidity will decrease.

There is also a direct relationship between higher risk and higher return. Higher risk, on the one hand, increases its profitability. A company may increase its profitability by having a very high debt-equity ratio.

Organization of the Finance Function

Organization of the finance function differs from company to company depending on their respective needs and the financial philosophy. The titles used to designate the key finance official are also different, viz., Vice-President (finance), Chief Executive (Finance), General Manager (Finance) etc., However in most companies, the Vice-President (Finance) has under him two officers carrying out the two important functions – the accounting and the finance functions. The former is designated as Controller and the latter as Treasurer.

Financial Manager The financial manager raises capital from the capitalmarkets. He or she should therefore know-how the capital markets function toallocate capital to the competing firms and how security prices are determinedin the capital markets.

Chief Financial Officer A number of companies in India either have afinance director or a vice-president of finance as the **Chief Financial Officer(CFO)**. Most companies have only one CFO. But a large company may haveboth a treasurer and a controller, who may or may not operate under the CFO.

Treasurer and Controller The **treasurer's** function is to raise and managecompany funds while the **controller** oversees whether funds are correctlyapplied.

Functions of controller

Planning and Control, Reporting and Interpreting, Tax administration, Government reporting, Protection of assets, Economic appraisal, Functions of treasure, Provision of finance, Investor relations, Short-term financing, Banking and custody, Credit and collections, Investments , and Provide Insurance coverage.

Importance of Financial Management

*** Success of promotion**

If the plan adopted fails to provide sufficient finance to meet the fined and fluctuating capital requirement the business cannot be carried on successfully. Hence sound financial plan is very essential for success of business enterprise.

***Smooth running**

In an enterprise finance is required at every stage namely promotion, incorporation, developments and expansion etc. The proper administration of finance is necessary for the smooth running of an enterprise.

***Co-ordinates functional activities**

Financial administration provides coal co-ordination between various functional areas such as marketing, production etc. to achieve the organization goals, if it is defective, the efficiency of all other departments can be affected.

Decision making

Financial administration provides different financial statements and budgets etc., which help in evaluation profitability of the plan.

Determinant of business success

The financial managers play a very important role in the success of business organization by advising top management, the solutions of the various financial problems as experts.

Measures of performance

The performance of the business can be measured by its financial results namely the size of the earnings of the firm. Riskiness and profitability are two major factors which jointly determine the value of the firm. Financial decisions which increase the profitability will increase the value of the firm or which increase risks will decrease the value of the firm. Hence it is very; essential for the progress of the enterprise.

Time Value of Money

The time value of money concept is simple. According to the concept, the same amount of cash, receivable during different time period has different values. The value of money received today is greater than the value of the same amount receivable after 10 years. The sooner the money is received the better it is.

T**ime Value for Money** Individual investors generally prefers possession of agiven amount of cash now, rather than the same amount at some future time.This *time preference for money* may arise because of (a) uncertainty of cash flows,(b) Subjective preference for consumption, and (c) availability of investmentopportunities. The last reason is the most sensible justification for the *time valueof money*.

Risk Premium *Interest rate* demanded, over and above the *risk-free rate* ascompensation for time, to account for the uncertainty of cash flows.

Interest Rate or Time Preference Rate which gives money its value, and facilitates the comparison of cash flows occurring at different time periods.

Required Interest Rate A risk-premium rate is added to the risk- free timepreference rate to derive *required interest rate* from risky investments.

Compounding means calculating future values of cash flows ata given interest rate at the end of a given period of time.

Future Value (*F*) of a Lump Sum Today (*P*) for *n* periods at *i* rate of interestis given by the following formula:

Future Value of an Annuity (that is, the same amount of cash each year) for *n*periods at *i* rate of interest is given by the following equation

The compound value of an annuity factor (CVAF*n,i*) can be found out from TableB given in Annexure at the end of the book.

Sinking Fund An annuity to be deposited for *n* periods at *i* rate of interest toaccumulate to a given sum. The following equation can be used:

Discounting means calculating the present value of cash flows at agiven interest rate at the beginning of a given period of time.

Present Value (*P*) of a Lump Sum (*F*) occurring at the end of *n* period at *I* rate of interest is given by the following equation:

Present Value of an Annuity (*A*) occurring for *n* periods at *r* rate of interestcan be found out as follows:

Wealth or Net Present Value It is defined as the difference between thepresent value of cash inflows (benefits) and the present value of cash outflows(costs). Wealth maximization principle uses interest rate to find out the presentvalue of benefits and costs, and as such, it considers their timing and risk. Thefollowing formula can be used to calculate NPV or wealth of any pattern of cashflows:

Multi-period Compounding When interest compounds for more than once in agiven period of time, it is called *multi-period compounding*. If *r* is the *nominalinterest rate* for a period, the *effective interest rate* (EIR) will be more than thenominal rate *r* in multi-period compounding since interest on interest within ayear will also be earned, EIR is given as follows:

COST OF CAPITAL

The term cost of capital refers to the minimum rate of return a firm must earn on its investments so that the market value of the company's equity shares does not fall.

A firm's cost of capital may be defined as "the rate of return the firm requires from investment in order to increase the value of the firm in the market place."

Average cost of capital

It is the weighted average cost based on cost of each component of funds employed by a firm.

Combined cost

It is the composite cost of capital from all sources

Cost of capital

The minimum rate of return a firm must earn on its investments to maintain the market value of its equity shares.

Explicit cost of capital

The discount rate that equated the present value of the funds received by the firm net of underwriting costs, with the present value of expected cash outflows.

Future cost of capital

It refers to the expected cost of funds to be raised to finance a project.

Historical cost of capital

It the cost of funds which has already been incurred for financing a particular project.

Implicit cost of capital

The rate of return associated with the best investment opportunity for the firm and its shareholders that will be forgone if the project presently under consideration was accepted.

Specific cost

It is cost of a specific source of finance.

Importance of Cost of Capital

The determination of the firm's cost of capital is important from the point of view of both capitals budgeting as well as capital structure planning decisions.

Capital budgeting decisions

In capital budgeting decision, the cost of capital is often used as a discount rate on the basis of which the firm's future cash flows are discounted to find out their present values. Thus, the cost of capital is the very basis for financial appraisal of new capital expenditure proposals.

Capital structure decisions.

The cost of capital is also an important consideration in capital structure decisions. The finance manager must raise capital from different sources in a way that it optimizes the risk and cost factors.

Preference shares have a preference over ordinary shareholders with regard to dividends. The preference dividend is specified and known. Similarly, in thecase of redeemable preference share the redemption or maturity value is alsoknown. Preference share

value can be determined in the same way as the bondvalue. Here the discount rate will be the rate expected by the preferenceshareholders given their risk. This risk is more than the risk of bondholders and
less than the equity shareholders.

Debenture or Bond is a long-term promissory note. The debenture trust deedor indenture defines the legal relationship between the issuing company and thedebenture trustee who represents the debenture holders. Debenture holdershave a prior claim on the company's income and assets. They will be paid beforeshareholders are paid anything. Debentures could be secured and unsecured andconvertible and non-convertible. Debentures are issued with a maturity date. InIndia, they are generally retired after 7 to 10 years by installments.

Preference Share is a hybrid security as it includes some features of both anordinary share and a debenture. In regard to claims on income and assets, itstands before an ordinary share but after a debenture. Most preference shares inIndia have a cumulative feature, requiring that all past outstanding preferencedividends be paid before any dividend to ordinary shareholders is announced.

Preference shares could be redeemable, i.e., with a maturity date orirredeemable, i.e., perpetual, without maturity date. Like debentures, a firm canissue convertible or non-convertible preference shares.

Term Loans are loans for more than a year maturity. Generally, in India, theyare available for a period of 6 to 10 years. In some cases, the maturity could beas long as 25 years. Interest on term loans is tax deductible. Mostly, term loansare secured through an equitable mortgage on immovable assets. To protecttheir interest, lending institutions impose a number of restrictions on theborrowing firm.

Cost of Capital to a firm is the minimum return, which the suppliers of capitalrequire. In other words, it is a price of obtaining capital; it is a compensation fortime and risk.

The cost of capital concept is of vital significance in the financial decision making.It is used: (a) as a discount, or cut-off, rate for evaluating investmentprojects, (b) for designing the firm's debt-equity mix and (c) for appraising thetop management's financial performance.Firms obtain capital for financing investments in the form of equity or debt orboth. Also, in practice, they maintain a target debt-equity mix. Therefore, thefirm's cost of capital means the weighted average cost of debt and equity.

Cost of Debt includes all interest-bearing borrowings. Its cost is the yield(return), which lenders expect from their investment. In most cases, return isequal to annual contractual rate

of interest (also called coupon rate). Interestcharges are tax deductible. Therefore, cost of debt to the firm should becalculated after adjusting for interest tax shield:

kd (1 - *T*), where *kd* is before-tax cost of debt and *T* is the corporate tax rate.

Cost of Equity Equity has no explicit cost, as payment of dividends is notobligatory. However, it involves an opportunity cost.The opportunity cost of equity is the rate of return required by shareholders onsecurities of comparable risk. Thus, it is a price, which the company must pay to

attract capital from shareholders.In practice, shareholders expect to receive dividends and capital gains.Therefore, the cost of equity can be thought to include *expected* dividend yield and percentage capital gain:

Cost of Retained Earnings When a company issues new share capital, it hasto offer shares at a price, which is much less than the prevailing market price.Therefore, the cost of retained earnings will be less than the cost of new issue ofequity.

Weighted Average Cost of Capital Three steps are involved in calculating thefirm's weighted average cost of capital (WACC). First, the component costs ofdebt and equity are calculated. Second, weights to the each component of capitalare assigned according to the target capital structure. Third, the product ofcomponent costs and weights is summed up to determine WACC.

Computation of cost of capital

i) Cost of debt

Debt may be issued at par, at premium or discount. It may be perpetual or redeemable.

Debt issued at par.

Kd = (1-T) R, Where, Kd = Cost of debt,T = marginal tax rate, R = Debenture interest rate.

Debt issued at Premium or Discount.

Kd = I / NP (1-T), where Kd = cost of debt after tax, I = Annual interest payment NP = net proceeds of loans or debentures and T = tax rate.

Cost of redeemable debt.

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

I = Annual interest payment, P = par value of debentures,Np= net proceeds of debentures,n = Number of years to maturity.

ii) Cost of preference capital

Preference shares are the fixed cost bearing securities. Their rate of dividend is fixed well in advance at the time of their issue. So the cost of preferred capital is equal to the ratio of annual dividend income per share to the current market price of the preference shares. This ratio is often called a current dividend yield.

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

Kp = Cost of preference share capital, Dp = fixed preference dividend, andNP = Net proceeds of preference shares.

Cost of Redeemable preference shares

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

Kp = Cost of preference share capital, Dp = fixed preference dividend, andNP = Net proceeds of preference shares, P = principal amount

iii) Cost of equity capital

Cost of equity capital indicates the minimum rate which must be obtained on the projects before their acceptance and the raising of equity capital to finance them.

There are four approaches for estimating cost of equity shares:

*Dividend price (D/P) Approach.

According to t his approach the investor arrives at the market price of an equity share by capitalizing the set of expected dividend payments.

$$Ke = D/NP$$

Ke = Cost of equity capital, D = dividend per equity share, NP = Net proceeds of an equity share.

*Dividend Price Plus growth (D/P + g) Approach.

According to this approach the cost of equity capital is determined on the basis of the expected dividend rate plus the rate of growth in dividend.

$$Ke = D/NP + g$$

Ke = Cost of equity capital, D = dividend per equity share, NP = Net proceeds of an equity share and G = growth in expected dividend.

* Earning price (E/P) approach.

It is the earning per share which determines the market price of the shares.

$$Ke = E/NP$$

Ke = Cost of equity capital and NP = Net proceeds of an equity share

*Realized yield approach.

According to this approach, the cost of equity capital should be determined on the basis of return actually realized by the investors in a company on the basis of return actually realized by the investors in a company on their equity shares.

iv) Cost of retained earnings

The companies do not generally distribute the entire profits earned by them by way of dividend among their shareholders. Some profits are retained by them for future expansion of the business. Many people feel that such retained earnings are absolutely cost free. This is not the correct approach because the amount retained by company, if it had been distributed among the shareholders by way of dividend, would have given them some earning.

$$Kr = Ke (1-T) (1 –B)$$

Kr = Required rate of return on retained earnings,Ke = Shareholders' required rate of return, T = Shareholders' marginal tax rate andB = Brokerage cost.

Weighted Average Cost of Capital

The average cost of capital is exactly what its name implies an average of the costs of each of the sources of funds employed by the firm, properly weighted by the proportion they hold in the firm's capital structure. Thus the weighted average cost of capital is the composite or overall cost of various sources of funds, weight being the proportion of each source of funds in the capital structure.

Unit II

Financial planning

Financial planning includes,

*Estimating the amount of capital to be raised

*Determining the Form and proportionate amount of securities

*Laying down the policies as to the administration of the financial plan.

Financial plan

Financial planning results in the formulation of financial plan. It is primarily a statement estimating the amount of capital and determining its composition.

Steps in Financial Planning:

· Past performance Analysis of the firm's past performance to ascertain therelationships between financial variables, and the firm's financial strengthsand weaknesses.

· Operating characteristics Analysis of the firm's operatingcharacteristics—product, market, competition, production and marketingpolicies, control systems, operating risk etc. to decide about its growthobjective.

· Corporate strategy and investment needs determining the firm'sinvestment needs and choices, given its growth objective and overall strategy.

· Cash flow from operations Forecasting the firm's revenues and expensesand need for funds based on its investment and dividend policies.

· Financing alternatives Analyzing financial alternatives within itsfinancial policy and deciding the appropriate means of raising funds.

· Consequences of financial plans Analyzing the consequences of itsfinancial plans for the long-term health and survival to firm.

· Consistency Evaluating the consistency of financial policies with each other and with the corporate strategy.

Financial Forecasting is an integral part of financial planning. Forecastinguses past data to estimate the future financial requirements. A simple approachto financial forecasting is to relate the items of profit and loss account andbalance sheet to sales.

Financial Modeling facilitates financial forecasting. It makes forecastingeasy. A financial model has three components: input — current financialstatement and growth forecasts; model — a system of equations based on therelations between financial variables; output — projected financial statements.

Financial models a large company can be very complicated when more detailsare considered. In practice, companies focus on the most crucial decisions andvariables and keep the model simple.

Sustainable Growth Sometimes companies will like to achieve growth thattheir current financial policies could sustain. Sustainable growth is the annualpercentage growth in sales that is consistent with the firm's financial policies(assuming no issue of fresh equity).

Strategic Planning Company's strategy establishes an effective and efficientmatch between its resources, opportunities and risks. It provides a mechanism ofintegrating goals of multiple stakeholders.

Financial Planning of a company has close links with strategic planning.Financial plan should be developed within the overall context of the strategicplanning. It is a process of identifying a firm's investments and financing needs,given its growth objectives. It involves trade-off between various investment andfinancing options. A financial plan may be prepared for a period of three or fiveyears.

Capitalisation

The quantum of long-term funds that an enterprise would require to run its business.

Fixed capital

The capital meant for meeting the permanent or long-term needs of the business.

Overcapitalization

A situation where the earnings of an organization are not adequate enough to yield a fair return on the amount of capital employed in the business.

Undercapitalization

A situation when actual capitalization is lower than proper capitalization as warranted by the earning capacity of the firm.

Financial Distress

There is another factor which reduces the tax advantage of borrowing. It is financial distress, which is costly. It includes cost of inflexibility, inconvenience and insolvency. Thus the value of a levered firm is:

$Vl = Vu$ + TD - PV of financial distress

The value will reach optimum value where marginal advantage of corporate borrowing, TD, equals marginal present value of costs of financial distress (PVFD).

Capital Structure Decision The advantage of debt is that it saves taxes since interest is a deductible expense. On the other hand, its disadvantage is that it can cause financial distress. Therefore, the capital structure decision of the firm in practice should be governed by the trade-off between tax advantage and costs of financial distress. Financial distress becomes costly when the firm finds it difficult to pay interest and principal. From this point of view, both debt ratio

and EBIT–EPS analysts have their limitations. They do not reflect the debt servicing ability of the firm.

Debt Capacity means the amount of debt which a firm should use given its cash flows. Cash flow analysis indicates how much debt a firm can service without any difficulty. A firm does not exhaust its debt capacity at once. It keeps reserve debt capacity to meet financial emergencies. The actual amount of debt also depends on flexibility, control and size of the firm in terms of its assets.

Other factors, which are important when capital is actually raised, include timing (marketability) and flotation costs.

Strategic Investments Decisions are large-scale expansion or diversification projects, and they involve either by their nature or by managerial actions valuable options. Such options include right to expand, right to abandon, right to delay, right to build new businesses, or right to disinvest or harvest.

Capital structure

It refers to the mix of different sources of long-term funds. i.e. debt and equity.

Financial structure

It refers to the way in which the firm's assets are financed. It includes long-term as well as short-term sources of funds.

Optimum capital structure

It refers to that relationship of debt and equity securities which maximize the value of a company's shares on the stock exchange. At optimum capital structure the composite cost of the capital is the least.

Trading on equity

In generally it refers to a situation in which a company earns a higher rate of return on the total capital employed in the business as compared to the cost it has to pay on funds carrying a fixed interest or dividend.

Patterns of capital structure

In case of a new company the capital structure may be of any of the following four patterns,

*Capital structure with equity shares only.

*Capital structure with both equity and preference shares

*Capital structure with equity shares, and debentures

*Capital structure with equity shares, preference shares and debentures.

Point of Indifference

It refers to that EBIT level at which EPS remains the same irrespective of the debt-equity mix. In other words, at this point, rate of return on capital employed is equal to the rate of interest on debt. This is also known as break-even level of EBIT for alternative financial plans.

The point of indifference can be calculated with the help of the following formula,

Point of indifference =

X = EBIT Indifference or Break –even Point, I = Interest under alternative 1
I = interest under alternative 2, T = Tax Rate, PD = Preference Dividend
S1 = Number of equity shares or amount of equity share capital under alternative 1
S2 = Number of equity shares or amount of equity share capital under alternative 2

Capital Structure Theories

There are four major theories/approaches explaining the relationship between capital structure, cost of capital and value of the firm,

Net incomes approach (NI)

Net operating income approach (NOI)

Modigliani-miller approach (MM) and

Traditional approach

i) Net incomes approach (NI)

A change in the capital structure causes a corresponding change in the overall cost of capital as well as the total value of the firm. Net income approach is based on the following 3 assumptions,

There are no corporate taxes

The cost of debt is less than cost of equity or equity capitalization rate

The debt content does not change the risk perception of the investors.

The value of the firm on the basis of NI approach can be ascertained as follows,

$$V = S + B$$

Where, V = value of the firm, S = market value of the equity and B = market value of debt
Market value of equity can be ascertained as follows,

$$S = NI/Ke$$

Where, S = market value of equity, NI = earnings available for equity shareholders, Ke = equity capitalization rate.

ii) Net operating income approach (NOI)

This is just opposite of Net Income approach. According to this approach the market value of the firm is not at all affected by the capital structure changes. The market value of the firm is ascertained by capitalizing the net operating income at the overall cost of capital (K), which is considered to be constant. The market value of equity is ascertained by detecting the market value of the debt from the market value of the firm.

Value of the firm

According to NOI approach, the value of a firm can be determined by the following equation,

V = EBIT /K, Where, V = value of the firm, K= overall cost of capital

EBIT = earnings before interest and tax.

Value of equity

The value of equity (S) is a residual value, which is determined by detecting the total value of debt (B) from the total value of the firm (V). Thus, the value of equity (S) can be determined by the following equation,

S =V – B

S= value of equity V = value of the firm, B= value of debt.

iii) Modigliani-miller approach (MM)

Structure Decision of the firm can be characterized as a choice of thatcombination of debt and equity, which maximizes the market value of the firm.**Modigliani and Miller's Theory** According to *MM*'s *proposition I*, the firm'smarket value is not affected by capital structure; that is, and any combination of debtand equity is as good as any other. Firms borrow by offering investors varioustypes of securities. In *M-M*'s world of perfect capital market, because of sameborrowing and lending rates for all investors and no taxes, investors can borrowat their own. Why should they pay a premium for a firm's borrowing? *M-M*accept that borrowing increases shareholders return, but, they argue, it alsoincreases risk. They show that increased risk exactly offsets the increasedreturn, thus leaving the position of shareholders unchanged. This is *M–M*'s

Proposition II.

The Modigiliani-Miller approach is similar to the Net Operating Income approach. In other words, according to this approach the value of a firm is independent of its capital structure. However, there is a basic difference between the two. MM approach supports the NOI approach providing behavioral justification for the independence of the total valuation and the cost of capital of the firm from its capital structure. In other words, MM approach

maintains that the weighted average cost of capital does not change with change in the debt-equity mix or capital structure of the firm. And

The traditional approach is similar to NI approach to the extent that it accepts that the capital structure or leverage of the firm affects the cost of capital and its valuation. However it does not subscribe to the NI approach that the value of the firm will necessarily increase with the all degree of leverage.

It subscribes to the NOI approach that beyond a certain degree of leverage, the overall cost of capital increases resulting in decrease in the total value of the firm. However, it differs from NOI approach in the sense that the overall cost of capital will not remain constant for all degrees of leverage.

Features of an Appropriate Capital Structure

Profitability:

The capital structure of the company should be most profitable. The most profitable capital structure is one that tends to minimize the cost of financing and maximize earning per equity share.

Solvency:

The pattern of capital structure should be so devised as to ensure that the firm does not run the risk of becoming insolvent. Excess use of debt threatens the solvency of the company. The debt content should not, therefore, be such that it increases risk beyond manageable limits

Flexibility:

The capital structure should be such that it can be easily maneuvered to meet the requirements of changing conditions.

Conservatism:

The capital structure should be conservative in the sense that the debt content in the total capital structure does not exceed the limit which the company can bear.

Control:

The capital structure should be so devised that it involves minimum risk of loss of control of the company.

Factors Determining Capital Structure

The capital structure OF A company is to be determined initially at the time the company is floated. Following are the factors which should be kept in view while determining the capital structure of a company.

Nature of business:

The first determinant of capital structure of a company is the nature of the business itself. Businesses having more risks and unstable income should prefer equity shares. But firms engaged in public utility services for producing the commodity of basic necessity may resort to debentures and preference shares.

Stability of earning:

The volume, stability and predictability of earnings determine whether the company can undertake the fixed obligations of interest on debts and dividend on preference shares, etc. with greater stability in sales and earnings, a firm can incur the fixed charges of debt with less risk.

Initial funds requirements:

A new company of large size will have to tap all possible sources of capital to secure requisite quantity of funds. The use of a variety of securities makes it possible to raise larger sums.

Rapidity of growth

The more rapid the expansions, the greater the need to seek all possible sources of capital. Ordinarily rate of expansion of business is the greatest at the beginning of the firm's life, gradually decreasing as the market's saturation point is reached.

Nature of investors

Modest investors like debentures or preference shares while investors interested in speculation like equity shares. So a firm will have to use a variety of securities in order to appeal to various types of investors.

Leverage:

In planning the capital structure of a company, leverage is one of the important considerations at it affects EPS considerably, the companies with high level of stable earnings (EBIT) can make profitable use of high degree of leverage. So EBIT analysis at different levels of activity under alternative methods of financing should be made before taking any final decision.

Distribution of control:

The desire to retain the voting control of the company in the hands of a particular group may also influence the pattern of capital structure. In a closely-held company, efforts are made to use debenture and non-voting shares to avoid the sharing of control with others.

Trends in capital market:

Capital market conditions determine not only the types of securities to be issued, but also the rate of interest on debentures, fixed rates of dividends on preference shares and the prices of equity shares. When investment funds decline better yields and protection for preference shares are demanded. When such funds increase, preference shares may be sold on terms more favorable to the issuing company.

Cost of capital;

The exact form of financing is, at times, the result of the study of comparative costs of various types of financing in relation to the risk involved and the availability of various alternative forms of financing. In a certain cheapness and availability despite the danger of fixed obligation.

Financial regulations:

Government may also influence the scheme of company finance in more ways than one. for example, through regulation and taxation policies, etc. This factor is of special significance in India. High rates of corporation taxes put a premium on debt financing as compared with equity or preference shares, because while interest on debentures is allowed as a deduction from taxable income, the payment of dividend is not.

Assets structure:

Firms with long-lived fixed assets, especially when demand for their output is relatively assured can use long-term debts. Firms whose assets are mostly receivables and inventory whose value is dependent on the continued profitability of the individual firm can rely less long-term debt financing and more on short-term funds.

Management attitude:

Management varies in skill, judgment, experience, temperament and motivation. It evaluated the same risk differently and its willingness to employ debt finance also differs. The capital structure therefore, is to a large extent, equally influenced by the age, experience, ambition, confidence and conservativeness of the managements.

Lender's attitude:

The firm's management discusses its capital structure with lenders and gives much weight to their advice.

Tax concession:

Other factors tax concession and advice of financing agencies etc. also affect the capital structure.

UNIT III

LEVERAGES

Capital Structure

The debt-equity mix of a firm is called its capital structure. The capital structure decision is a significant financial decision since it affects the shareholders' return and risk, and consequently, the market value of shares.

Financial Structure

The term financial structure, on the other hand, is used in a broader sense, and it includes equity and all liabilities of the firm.

Leverage:

It refers to the employment of an asset or funds for which the firm pays a fixed cost or fixed return.

Leverages are of three types: i) Operating Leverage, ii) Financial leverage, and iii) Combined leverage.

i)**Financial Leverage or Trading on Equity**

The tendency of the residual net income to vary disproportionately with operating profit. It indicates the change that takes place in the taxable income as a result of change in the operating income. The use of the fixed-charges capital like debt with equity capital in the capital structure is described as financial leverage or trading on equity.

The main reason for using financial leverage is to increase the shareholders' return

$$\text{Financial leverage} = \frac{\text{operating profit}}{\text{Profit before tax}} \text{ or } \frac{OP}{PBT}$$

Degree of Financial Leverage (DFL)

The percentage change in EPS occurring due to a given percentage change in EBIT is referred to as the degree of financial leverage (DFL):

= % Change in EBIT

% Change in EPS

An alternative formula to calculate the degree of financial leverage is as follows:

DFL = % Change in Taxable Income

% Change in Operating Income

Earnings per Share (EPS)

A firm determines the advantage of financial leverage by calculating its impact on earnings per share (EPS) or return on equity (ROE). For a 100 per cent equity-financed company, EPS is calculated as follows:

where EBIT is earnings before interest and taxes, INT is interest charge which is given by the product of interest rate (i) and the amount of debt (*D*), *T* is corporate tax rate and *N* is number of shares. If the firm's overall profitability is more than interest rate, EPS increases with debt. With increasing EBIT, EPS increases faster with more debt.

ii) Operating Leverage:

It may be defined as the tendency of the operating profit to vary disproportionately with sales.

Operating leverage = Contribution or C

Operating Profit OP

Degree of Operating Leverage (DOL)

EBIT depends on sales. A change in sales will affect EBIT. The variability in EBIT due to a change in sales is affected by the composition of fixed and variable costs. You may recall that the percentage change in EBIT occurring due to a given percentage change in sales is referred to as the degree of operating leverage (DOL):

= % Change in sales

% Change in EBIT

An alternative formula is as follows:

iii) Combined Leverage or composite leverage:

It is a combination of both operating and financial leverages. It expresses the effect of change in sales over change in taxable profit.

Composite leverage = operating leverage X financial leverage

OR = C X OP = C

OP PBT PBT

Degree of Combined Leverage (DCL)

DOL and DFL can be combined to see the effect of total leverage on EPS. The degree of combined leverage (DCL) is given as follows:

$$= \frac{\text{percentage change in taxable income}}{\text{Percentage change in sales}}$$

Dividend Policy

Dividend:

The term dividend refers to that part of the profits of a company which is distributed among its shareholders.

Forms of Dividends

Dividends may take two forms: cash dividend, bond dividend, property dividend, and stock dividend (bonus Shares).

Cash dividend:

The usual practice is to pay dividends in cash. Payment of dividends in cash results in outflow of funds from the firm. The firm should, therefore, save adequate cash resources at its disposal or provide for such resources.

Bond dividend:

In case the company does not have sufficient funds to pay dividend in cash it may issue bonds for the amount due to the shareholders by way of dividends.

Property dividend:

In case of such dividend the company pays dividend in the form of assets other than cash. This type of dividend is not popular in India.

Stock dividend:

Stock dividend is next to cash dividend in respect of its popularity. In case of this form of dividend, the company issues its own shares to the existing shareholders in lieu of or in addition to cash dividend. Payment of stock dividend is popularly termed as “issue of bonus shares” in India.

Bonus Shares:

Bonus means an extra dividend to the shareholders in a joint stock company from surplus profits. This extra dividend may be paid in the form of cash or shares. When it is paid in the form of shares, the shares so issued are termed as bonus shares.

In India, bonus shares cannot be issued in lieu of cash dividends. They are paid with cash dividends. Bonus shares have a psychological appeal. They do not increase the value of shares.

Dividend policy:

The term dividend policy refers to the policy concerning quantum of profits to be distributed as dividend.

Target Payout Ratio

Companies generally prefer to pay cash dividends. They finance their expansion and growth by issuing new shares or borrowing. This behavior is based on the belief thatshareholders are entitled to some return on their investment. Most companies have long-term payment ratio targets. But they do not apply target payout ratios to each year's earnings. They try to stabilize dividend payments by moving slowly towards the target payout each year. Also, they consider past dividends and current as well as future earnings in determining dividend payment. Investors recognize this. Any extreme changes are read as signals of management's expectations about the company's performance in future. Thus dividends have information contents.

Stable Dividend Policy

Companies like to follow a stable dividend policy since investors generally prefer such a policy for the reason of certainty. A stable dividend policy does not mean constant dividend per share. It means reasonably predictable dividend policy. Companies determine dividend per share or dividend rate keeping in mind their long-term payout ratio.

Firm's Ability to Pay Dividend depends on its funds requirements for growth, shareholders' desire and liquidity. A growth firm should set its dividend rate at a low level (because of its high needs for funds) and move towards its target slowly.

Practical consideration Financial Need of company, Shareholders Expectations, Closely/Widely Held Company, Constraints on Paying Dividends, Legal Restrictions, Liquidity, borrowing Capacity, Access to the Capital Market, Restrictions in Loan Agreements.

Factors Affecting Dividend Policy:

The factors affecting the dividend policy are both external as well as internal,

External factors:

*General state of economy:

The general state of economy affects to a great extent the management's decision to retain or distribute earnings of the firm. In case of uncertain economic and business conditions, the management may like to retain the whole or a part of the firm's earnings to build up reserves to absorb shock in the future. Similarly in periods of depression, Management may also withhold dividend payments to retain a large part of its earning to preserve the firm's liquidity position.

*State of capital market:

If the firm has no easy access to capital market because either of weak financial position or because of unfavorable conditions in the capital market, it is likely to adopt a more conservative dividend policy.

*Legal restrictions:

A firm may also be legally restricted from declaring and paying dividends. For example in India the Companies Act, 1956 has put several restrictions regarding payment and declaration of dividends. For example the Indian Income Tax Act lays down certain restrictions on payment of dividends.

*Contractual restrictions:

Lenders of the firm generally put restrictions on dividend payments to protect their interests in periods when the firm is experiencing liquidity or profitability problems.

*Tax policy:

The tax policy followed by the government may give tax incentives to companies retaining larger share of their earnings. In such a case, the management may be inclined to retain a larger amount of the firm's earnings.

Internal factors:

*Desire of the shareholders:

The shareholders are technically the owners of the company and, therefore, their desire cannot be overlooked by the directors while deciding about the dividend policy.

*Financial needs of the company:

The financial needs of the company are to be considered by the management while taking the dividend decision. The financial needs of the company may be in direct conflict with the desire of the shareholders to receive large dividends.

*Nature of earnings:

A firm having stable income can afford to have a higher dividend payout ratio as compared to a firm which does not have such stability in its earnings.

*Desire of control:

Dividend policy is also influenced by the desire of shareholders or the management to retain control over the company. In case of a strong desire for control, the management may be reluctant to pay substantial dividends and prefer a smaller dividend pay-out ratio.

Where the management is strongly in control of the company either because of substantial shareholdings or because of the shares being widely held, the firm can afford to have a high dividend payout ratio.

*Liquidity position:

The payment of dividends results in cash outflow from the firm. A firm may have adequate earnings but it may not have sufficient cash to pay dividends. It is, therefore, important for the management to take into account the cash position and the overall liquidity position of the firm before and after payment of dividends while taking the dividend decision.

Stock Split

Stock split signifies a reduction in the par value of a share and a proportionate increase in the number of shares. For example, one share of Rs.100 may be split into 10 shares of Rs.10 each. Reasons for stock split:

1. Attractive share prices
2. Signal of higher profits
3. Satisfaction of shareholders.

UNIT IV

WORKING CAPITAL MANAGEMENT

Working capital

Working capital or circulating capital indicates circular flow of funds in the routine activities of business. In the broad sense, the term working capital is used to denote the total current assets. The sum of the current assets is the working capital of a business. In the narrow sense, the working capital is regarded as the excess of current assets over current liabilities.

Types of Working Capital:

*On the basis of concept:

On the basis of its concept, it may be either gross working capital or net working capital.

i) **Gross Working Capital** refers to the firm's investment in current assets.

ii) Net Working Capital means the difference between current assets and current liabilities, and therefore, represents that position of current assets which the firm has to finance either from long-term funds or bank borrowings.

*On the basis of requirement:

The working capital can be classified into permanent or regular working capital and variable working capital.

i) Permanent working capitals

This refers to that minimum amount of investment in all current assets which required at all times to carry out minimum level of business activities. It represents the current assets required on a continuing basis over the entire year. Permanent working capital is permanently needed for the business and, therefore it should be financed out of long-term funds.

ii) Temporary or variable working capital

The amount of such working capital keeps on fluctuating from time to time on the basis of business activities. In other words, it represents additional current assets required at different times during the operating year.

Estimating working capital requirement/ factors determining working capital:

Production policies pursued by the management have a significant effect on the requirements of working capital of the business. The production schedule has a great influence on the level of inventories. In case of a highly automatic plant, the requirements of long-term funds will be more.

*Nature of the business:

Working capital also depends upon the nature of the business. The public utility like railways, electricity, etc., has very little need for working capital is less.

*Length of the manufacturing process:

Longer the manufacturing process, the higher would be the requirements of working capital and vice versa. This is because of the reason that highly capital- intensive

industries require a large amount of working capital to run their sophisticated and long production process.

Operating Cycle is defined as the time duration which the firm requires to manufacture and sell the product and collect cash. Thus operating cycle refers to the acquisition of resources, conversion of raw materials into work-in-process into finished goods, conversion of finished goods into sales and collection of sales. Larger is the operating cycle, larger will be the investment in current assets. In practice, firms are acquiring resources on credit. To that extent, firm's need to raise working finance is reduced.

Net Operating Cycle is used for the difference between operating cycle (or gross operating cycle) and the payment deferral period (or the period for which creditors remain outstanding).

The Manufacturing Cycle is conversion of raw material into work-in-process into finished goods, is a component of operating cycle, and therefore, it is a major determinant of working capital requirement. Manufacturing cycle depends on the firm's choice of technology and production policy.

Credit Policy of the firm is another factor which influences the working capital requirement. It depends on the nature and norms of business, competition and the firm's desire to use it as a marketing tool.

Investment in Current Assets involves a trade-off between risk and return. When the firm invests more in current assets it reduces the risk of illiquidity, but loses in terms of profitability since the opportunity of earning from the excess investment in current assets is lost. The firm therefore is required to strike a right balance.

Financing of Current Assets also involves a trade-off between risk and return. A firm can choose from short- or long-term sources of finance. If the firm uses more of short-term funds for financing both current and fixed assets, its financing policy is considered aggressive and risky. Its financing policy will be considered conservative if it makes relatively more use long term funds in financing its assets. A balanced approach is to finance permanent current assets by long-term sources and 'temporary' current assets by short-term sources of finance. Theoretically, short-term debt is considered to be risky and costly to finance permanent current assets.

Other factors; In addition to the above considerations there are a number of other factors affecting the requirement of working capital, for example, lack of co ordination in production and distribution policies, the fiscal and tariff policies of the government, etc.

Sources of Working Capital

i) Financing of long term working capital:

The long-term working capital requirements include the initial working capital and the regular working capital. This capital can be conveniently financed by the following sources,

Share capital;

A part of long term working capital can be financed with the share capital.

Sale of debentures:

Debentures are also an important source of long-term working capital because they are fixed cost source.

Ploughing back of profits:

A part of the earned profits may be ploughed back by the firm in meeting their working capital requirements. It is a regular and cheapest source of working capital as it does not involve any explicit cost of capital.

Sale of fixed assets.

Any idle fixed asset can be sold out and sale proceeds can be utilized for financing the working capital requirements.

Term loans:

The loans raised for a period varying from 3 to 5-7 years are also important sources for working capital. This type of finance is ordinarily repayable capital of enterprise.

ii) Financing of short-term working capital;

This category of funds covers the need of working capital for financing day-to-day business requirements. The sources of short-term working capital may be internal as well as external.

Internal sources:

*Depreciation funds:

The depreciation funds constitute important source of working capital. Some authors of business finance do not accept them as a source of funds, but it is not reasonable.

*Provision for taxation:

The provisions for taxation can also be used by the companies as a source of working capital during the intermittent period.

*Accrued expenses:

The firm can postpone the payment of expenses for short periods. Hence these accrued expenses also constitute an important source of working capital

External sources:

*Trade credit:

One of the most important forms of short-term finance is the trade credit extended by one business enterprise to another on the purchase and sale of goods and equipments.

*Bank credit:

Commercial banks are also principal source of working capital. They provide working capital in number of ways such as overdrafts, cash credit, line of credit, term loans etc.

*Credit papers:

In the category of credit papers, bills of exchange and promissory notes of shorter duration varying between a month and six months are used. These papers are discounted with a bank and capital can be arranged.

*Public deposits;

Public deposits are also important source short-term and medium term finance. Due to shortage of bank credit in recent past, the importance of public deposits has increased.

*Customer's credit;

Advances may be obtained on contracts entered into by the enterprise. The customers are often asked to make some advance payments in cash in lieu of a contract to purchases. Such advance can be utilized in purchasing raw material paying wages and so on.

*Governmental assistance:

Sometimes central and state governments also provide short-term finance on easy terms.

*Loans from Directors, etc.

An enterprise can also obtain loans from its officers, directors, managing directors, etc. These loans are often obtained at almost negligible rates of interest.

*Security of employees;

If employees are required to make deposits with their employer companies, such companies can utilize those amounts in meeting their working capital needs.

*Factoring

Factoring involves raising funds on the security of the company's debts, so that cash is received earlier than of the company waited of the debtors to pay. Thus the factors help in improving the company's liquidity position.

CASH MANAGEMENT

Cash:

The term cash in cash management is generally used for both cash and near-cash assets (marketable securities and time deposits with banks)

Cash management is concerned with the managing of i) cash flows into and out of the firm, ii) cash flows within the firm and iii) cash balances held by the firm at a point of time.

Basic problems in cash management:

Cash management involves the following four basic problems,

1. Controlling levels of cash,
2. Controlling inflows of cash,
3. Controlling outflows of cash, and
4. Optimum investment of surplus cash.

Cash budget:

Cash budget or forecast is the most significant device for planning and controlling the use of cash. It involves a projection of future cash receipts and cash disbursements of the firm over various intervals of time.

Objectives of cash management:

There are two basic objectives of cash management:

*To meet the cash disbursement need as per the payment schedule.

*To minimize the amount locked up as cash balances.

Concentration Banking: Concentration banking is a system of decentralizing collections of accounts receivable in case of large firms having their business spread over large areas. According to this system, a large number of collection centres are established by; the firm in different areas selected on geographical basis. The firm opens its bank accounts in local banks of different areas where it has its collection centres. The collection centres are required to collect cheques from their customers and deposit them in the local bank accounts.

Lock –Box System

Lock box system is a further step in speeding up collection of cash. Lock-box system has been devised to eliminate delay on account of this time gap. According to this system, the firm hires a post-office box and instructs its customers to mail their remittances to the box.

The firm's local bank is given the authority to pick the remittances directly from the local box. The bank picks up the mail several times a day and deposits the cheques in the firm's account. Standing instructions are given to the local banks to transfer funds to the Head-office Bank when they exceed a particular limit.

The lock box system offers the following advantages:

*All remittances are handles by the bankers even prior to their deposit with them at a very low cost.

*The cheques are deposited immediately upon receipt of remittances and the collecting process starts much earlier than under the system of concentration banking.

Unit - V

RECEIVABLES MANAGEMENT:

Receivables are asset accounts representing amounts owed to the firm as a result of sale of goods/services in the ordinary course of business.

Accounts receivable management may be defined as the process of making decisions relating to the investment of funds in the assets which will result in maximizing the overall return on the investment of the firm.

Meaning of Receivables Management

Receivable management is the process of making decisions relating to investment in trade debtors. Certain investment in receivables is necessary to increase the sales and the profits of the firm. To give credit or not.

Purpose /Objectives of Receivables Management

The main objective in Accounts Receivable management is to minimize the Days Sales Outstanding (DSO) and processing costs while maintaining good customer relations. Account receivable management determines the charges before sending bill of product and services they provide.

1. To optimize the amount of sales
2. To minimize cost of credit

3. To optimize investment in receivables.

4. To increase credit sales.

*Achieving growth in sales:

If a firm sells goods on credit, it will generally be in a position to sell more goods

than if it insisted on immediate cash payment. This is because many customers are either not prepared or not in position to pay cash when they purchase the goods. The firm can sell goods to such customers, in case it resorts to credit sales.

*Increasing profits:

Increase in sales results in higher profits for the firm not only because of increase in the volume of sales but also because of the firm charging a higher margin of profit on credit sales as compared to cash sales.

*Meeting competition:

A firm may have to resort to granting of credit facilities to its customers because of similar facilities being granted by the competing firms to avoid the loss of sales fromcustomers who would buy elsewhere if they did not receive the expected credit.

Factors affecting the size of receivables:

*Levels of sales:

This is the most important factor in determining the size of accounts receivable. A firm having a large volume of sales will be having a larger level of receivables as compared to a firm with a small volume of sales.

*Credit policies:

The term credit policy refers to those decision variables that influence the amount of trade i.e. the investment in receivables. A firm's credit policy determines the amount of risk the firm is willing to undertake in its sales activities.

*Terms of trade:

The size of the receivables is also affected by terms of trade offered by the firm. The two important components of the creditors are i) credit period, and ii) cash discount.

The term credit period refers to the time duration for which credit is extended to the customers.

*Credit period:

The term credit period refers to the time duration for which credit is extended to the customers. Credit period is generally governed by the norms prevailing in the industry. However, a firm may extend credit period to a longer duration for pushing up its sales.

*Cash discount:

Most firms offer cash discount to their customers for encouraging them to pay their dues before the expiry of the credit period. The terms of cash discount indicate the rate of discount as well as the period for which the discount has been offered.

Allowing cash discount results in a loss to the firm because of recovery of fewer amounts than what is due from the customer but it reduces the volume of receivables and puts extra funds at the disposal of the firm for alternative profitable investment. The amount of loss thus suffered is therefore, compensated by the income otherwise earned by the firm.

INVENTORIES MANAGEMENT

INVENTORIES: it means goods meant for eventual sale by a firm. Companies hold inventories in the form of raw materials, work-in process and finished goods. Inventories represent investment of a firm's funds. The objective of the inventory management should be the maximization of the value of the firm. The firm should therefore consider: (*a*) costs, (*b*) return, and (*c*) risk factors in establishing its inventory policy.

Benefits of holding inventory: Avoiding losses of sales, avaiting quantity discount, reducing ordering cost and achieving efficient production runs.

* **Transaction Motive to Hold Inventory** for facilitating smooth production and sales operation.

***Precautionary Motive to Hold Inventory** to guard against the risk of unpredictable changes in usage rate and delivery time.

* **Speculative Motive to Hold Inventory** to take advantage of price fluctuations.

Management of Inventory

Management of inventories involves two basic problems;

* maintaining a sufficiently large size of inventory for efficient and smooth production and sales operations.

*maintain a minimum investment in inventories to minimize the direct and indirect costs associated with holding inventories to maximize the profitability.

Techniques of Inventory Management:

i) Determination of economic ordering cost:

*__Ordering Costs__ requisition, placing of order, transportation, receiving, inspecting and storing and clerical and staff services. Ordering costs are fixed per order. Therefore, they decline as the order size increases.

* **Carrying Costs** warehousing, handling, clerical and staff services, insurance and taxes. Carrying costs vary with inventory holding. As order size increases, average inventory holding increases and therefore, the carrying costs increase.

* **Economic Order Quantity (EOQ)**

It means the size of the order which yields maximum economy in purchasing any item of inventory. The firm should minimize the total cost (ordering plus carrying). The economic order quantity (EOQ) of inventory will occur at a point where the total cost is minimum. The following formula can be used to determine EOQ:

EOQ = Root of 2AB divided by CS

Where *A* is the annual requirement, *O* is the order per cost, and *c* is the per unit carrying cost. The economic order level of inventory, *Q**, represents maximum operating profit, but it is not optimum inventory policy.

ii) Determination of Optimum **Inventory Policy** The value of the firm will be maximized when the marginal rate of return of investment in inventory is equal to the marginal cost of funds. The marginal rate of return (*r*) is calculated by dividing the incremental operating profit by the incremental investment in inventories, and the cost of funds is the required rate of return of suppliers of funds.

iii) Determination of **Reorder level** the inventory level at which the firm places order to replenish inventory is called the reorder point. It depends on (*a*) the lead time and (*b*) the usage rate. Under perfect certainty about the usage rate, and instantaneous delivery (i.e., zero lead time), the reorder point will be equal to: Lead time ´ Usage rate.

* **Safety Stock** In practice, there is uncertainty about the lead time and/or usage rate. Therefore, firms maintain safety stock which serves as a buffer or cushion to meet

contingencies. In that case, the reorder point will be equal to: Lead time ´ Usage rate + Safety stock. The firm should strike a trade-off between the marginal rate of return and marginal cost of funds to determine the level of safety stock.

* **Selective Control System – A-B-C Analysis**

It means the technique of exercising selective control over the inventory systems.

A firm, which carries a number of items in inventory that differ in value, can follow a selective control system. A selective control system, such as the A-B-C analysis, classifies inventories into three categories according to the value of items: A-category consists of highest value items, B-category consists of high value items and C-category consists of lowest value items. More categories of inventories can also be created. Tight control may be applied for high-value items and relatively lose control for low value items.

Inventory Turnover Ratios:

Inventory turnover ratios are calculated to minimize the investment in inventories. Inventory turnover ratio is equal to cost of goods consumed/sold during the period divided by average inventory held during the period.

Total Quality Management (TQM) System Large numbers of companies these days follow the total quality management (TQM) system which requires companies to adopt JIT and computerized system of inventory management.

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