B.Com(H)

Bachelor of Commerce

Guru Gobind Singh Indraprastha University

BCOM-302: Financial Management

L-5 T/P-0 **Credits-5**

Objectives: The course is aimed at building an understanding of concepts, vital tools and techniques applicable for financial decision making by a business firm.
Course Contents:

Unit – I **Lectures: 25**

Nature and Scope of Financial Management: Financial objectives, financial decisions, importance, Impact of financial and economic environment on financial management; Time Value of Money, computation of EMI, annuity, annuity due; risk and return analysis, valuation of securities (equity and bonds).Approaches and tools of financial analysis, trend analysis, common size financial statements and comparative financial statements, ratio analysis - meaning, objectives, types of ratios.

Funds Flow Statement: Meaning, objectives, limitations and accounting procedure; Cash Flow Statement: meaning, objectives, limitations and accounting procedure

Unit – II **Lectures: 15**

Sources of Finance: Planning for sources of finance; Capital Structure Theories: net income approach, net operating income approach, traditional approach and MM approach, determinants of capital structure; : calculation, EBIT – EPS Analysis; Leverage.

Unit – III **Lectures: 15**

Capital Budgeting: Conventional and DCF Methods; Inflation and Capital Budgeting; Risk Analysis and Capital Budgeting-Certainty Equivalent Factor; Risk Adjusted Discounting Rate; Decision Tree; Independent and Dependent Risk Analysis; Replacement Decisions, Sensitivity Analysis.

Unit – IV Lectures: 15

Dividend Decision: Retained Earning Vs. Dividend Decision, Gordon Model, Walter Model, MM Approach, Lintner Model, dividend policies in practice; Working Capital Management, working capital estimation, Management of Cash (Various Theoretical Models), Inventory management and Receivables, Operating Cycle.

(Unit – I)

FINANCIAL MANAGEMENT

Meaning

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise.

According to **Dr. S. N. Maheshwari**,

"Financial management is concerned with raising financial resources and their effective utilization towards achieving the organizational goals."

Thus, financial management means:

- To collect finance for the company at a low cost and
- To use this collected finance for earning maximum profits.

It is clear that financial management is that specialized activity which is responsible for obtaining and affectively utilizing the funds for the efficient functioning of the business and, therefore, it includes financial planning, financial administration and financial control.

Nature of Financial Management

1. **Estimation of Financial requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programmes and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.
2. **Determination of capital composition:** Once the estimation have been made, the capital structure have to be decided. This involves short- term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.
3. **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-

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

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

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

a) Capital Budgeting Decision – It is related to selection of long-term assets in which investments will be made by the company. Investment decisions are related to future and involve risk, that's

why these should be evaluated in terms of expected risk and return.

b) Working Capital decision – It is concerned with management of current assets. It is an important function of financial manager since short –term survival of the firm is a pre-requisite for long term success.

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

a. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.

b. Retained profits - The volume has to be decided which will depend upon expansion, innovational, diversification plans of the company.

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

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

Scope of Financial Management

1. **Traditional Approach**

The traditional approach to the scope of financial management refers to its subject matter in the academic literature in the initial stages of its evolution as a separate branch of study. According to this approach, the scope of financial management is confined to *raising of funds*. Hence, the scope of finance was treated by traditional approach in narrow sense of *procurement of funds by corporate enterprise* to meet their financial needs. Since the main emphasis of finance function at that period was on procurement of funds, the subject was called corporation finance till mid-1950's and covered discussion on financial instruments, institutions and practices through which funds are obtained. Further, as the problem of raising funds is more intensely felt at certain episodic events such as merger, liquidation, consolidation, reorganization and so on. These are the broad features of subject matter of corporation finance, which has no concern with the decisions of allocating firm's funds.

But the scope of finance function in the traditional approach has now been discarded as it suffers from serious **criticisms** -

- ***Outsider-looking*** - The emphasis in the traditional approach is on procurement of funds by the corporate enterprises, which was woven around the viewpoint of suppliers of funds such as investors, financial institutions, investment bankers, etc, i.e. outsiders. It implies that the traditional approach was the outsider-looking-in approach.
- ***Confined to Episodic events*** - The second criticism leveled against this traditional approach was that the scope of financial management was confined only to the episodic events such as mergers, acquisition, reorganizations, consolation, etc.

- ***Focus on Long-term problems*** - Another serious lacuna in the traditional approach was that the focus was on the long-term financial problems thus ignoring the importance of the working capital management. Thus, this approach has failed to consider the routine managerial problems relating to finance of the firm.

During the initial stages of development, financial management was dominated by the traditional approach as is evident from the finance books of early days. It over emphasized long-term financing lacked in analytical content and placed heavy emphasis on descriptive material. Thus, the traditional approach omits the discussion on the important aspects like cost of the capital, optimum capital structure, valuation of firm, etc. In the absence of these crucial aspects in the finance function, the traditional approach implied a very narrow scope of financial management. The modern or new approach provides a solution to all these aspects of financial management.

2. **Modern Approach**

After the 1950's, a number of economic and environmental factors, such as the technological innovations, industrialization, intense competition, interference of government, growth of population, necessitated efficient and *effective utilization* of financial resources. The emphasis shifted from episodic financing to the managerial financial problems, from raising of funds to efficient and effective use of funds. Thus, the broader view of the modern approach of the finance function is the *wise use of funds*. Since the financial decisions have a great impact on all other business activities, the financial manager should be concerned about determining the size and nature of the technology, setting the direction and growth of the business, shaping the profitability, amount of risk taking, selecting the asset mix, determination of optimum capital structure, etc. The new approach is thus an analytical way of viewing the financial problems of a firm.

According to the new approach, the financial management is concerned with the solution of the major areas relating to the financial operations of a firm, viz., investment, and financing and dividend decisions. The modern financial manager has to take financial decisions in the most rational way. These decisions have to be made in such a way that the funds of the firm are used optimally.

Financial Objectives

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

1. To ensure regular and adequate supply of funds to the concern.
2. To ensure adequate returns to the shareholders which will depend upon the earning capacity, market price of the share, expectations of the shareholders?
3. To ensure optimum funds utilization. Once the funds are procured, they should be utilized in maximum possible way at least cost.

4. To ensure safety on investment, i.e., funds should be invested in safe ventures so that adequate rate of return can be achieved.
5. To plan a sound capital structure-There should be sound and fair composition of capital so that a balance is maintained between debt and equity capital.

Financial Decisions

Finance Functions

Finance functions can be divided into three major decisions, which the firm must make, namely investment decision, finance decision, and dividend decision. Each of these decisions must be considered in relation to the objective of the firm: an optimal combination of the three decisions will maximize the value of the share to its shareholders -

Investment Decision

One of the most important finance functions is to intelligently allocate capital to long term assets. This activity is also known as *capital budgeting*. It is important to allocate capital in those long term assets so as to get maximum yield in future. Following are the two aspects of investment decision -

a. Evaluation of new investment in terms of profitability.
b. Comparison of cut off rate against new investment and prevailing investment.

Since the future is uncertain therefore there are difficulties in calculation of expected return. Along with uncertainty comes the risk factor which has to be taken into consideration. This risk factor plays a very significant role in calculating expected return of the prospective investment. Therefore while considering investment proposal it is important to take into consideration both expected return and the risk involved.

Investment decision not only involves allocating capital to long term assets but also involves decisions of using funds which are obtained by selling those assets which become less profitable and less productive.

Financial Decision

Financial decision is yet another important function which a financial manger must perform. It is important to make wise decisions about when, where and how should a business acquire funds. Funds can be acquired through many ways and channels. *Broadly speaking a correct ratio of an equity and debt has to be maintained.* This mix of equity capital and debt is known as a firm's *capital structure.*

A firm tends to benefit most when the market value of a company's share maximizes this not only is a sign of growth for the firm but also maximizes shareholders wealth. On the other hand the use of debt affects the risk and return of a shareholder. It is more risky though it may increase the return on equity funds. A sound financial structure is said to be one which aims at maximizing shareholders return with minimum risk. In such a scenario the market value of the

firm will maximize and hence an optimum capital structure would be achieved.

Dividend Decision

Earning profit or a positive return is a common aim of all the businesses. But the key function a financial manger performs in case of profitability is to decide whether to distribute all the profits to the shareholder or retain all the profits or distribute part of the profits to the shareholder and retain the other half in the business. It's the financial manager's responsibility to decide an optimum dividend policy which maximizes the market value of the firm. Hence an optimum dividend payout ratio is calculated

Impact of Financial And Economic Environment on Financial Management

The relevance of economics. to financial management can be described in the light of the

twobroad areas of economics: macroeconomics and microeconomics.

Macroeconomics is concerned with the overall institutional environment in which the firm operates. It looks at the economy as a whole. Macroeconomics is concerned with the institutional structure of the banking system, money and capital markets, financial intermediaries, monetary, credit and fiscal policies and economic policies dealing with, and controlling level of, activity within an economy. Since business firms operate in the macroeconomic environment, it is important for financial managers to understand the broad economic environment.

Specifically, they should

(1) Recognize and understand how monetary policy affects the cost and the availability of funds

(2) Be versed in fiscal policy and its effects on the economy

(3) beware of the various financial institutions/financing outlets

(4) Understand the consequences of various levels of economic activity and changes in economic policy for their decision environment and so on.

Microeconomics deals with the economic decisions of individuals and organizations. It concerns itself with the determination of optimal operating strategies. In other words, the theories of microeconomics provide for effective operations of business firms. They are concerned with defining actions that will permit the firms to achieve success. The concepts and theories of microeconomics relevant to financial management are, for instance, those involving

(1) Supply and demand relationships and profit maximization strategies

(2) Issues related to the mix of productive factors, 'optimal' sales level and product pricing strategies

(3) Measurement of utility preference, risk and the determination of value

(4) The rationale of depreciating assets.

In addition, the primary principle that applies in financial management is marginal analysis; it suggests that financial decisions should be made on the basis of comparison of marginal revenue and marginal cost. Such decisions will lead to an increase in profits of the firm. It is, therefore, important that financial managers must be familiar with basic microeconomics.

Financial Environment Impact

Study of financial environment in financial management, understand the business realities of their environment and trends, seize the favorable conditions to carry out financial activities and unfavorable conditions for corporate financial decision-making to provide adequate and reliable basis, and suggest measures to improve financial work ability to adapt the environment and the use of capacity, to achieve the fiscal objectives of business has a very important role.

Time Value of Money

Money has time value. Money that you hold today is worth more because you can invest it and earn interest. *A rupee today is more valuable than a year hence*. It is on this concept "the time value of money" is based. The recognition of the time value of money and risk is extremely vital in financial decision making.

Most financial decisions such as the purchase of assets or procurement of funds, affect the firm's cash flows in different time periods. For example, if a fixed asset is purchased, it will require an immediate cash outlay and will generate cash flows during many future periods. Cash flows become logically comparable when they are appropriately adjusted for their differences in timing and risk. The recognition of the time value of money and risk is extremely vital in financial decision- making. If the timing and risk of cash flows is not considered, the firm may make decisions which may allow it to miss its objective of maximizing the owner's welfare. The welfare of owners would be maximized when ***Net Present Value*** is created from making a financial decision. It is thus, time value concept which is important for financial decisions. It can be used to compare investment alternatives and to solve problems involving loans, mortgages, leases, savings, and annuities.

For instance, you can invest your dollar for one year at a 6% annual interest rate and accumulate $1.06 at the end of the year. You can say that the **future value** of the dollar is $1.06 given a 6% **interest rate** and a one-year **period**. It follows that the **present value** of the $1.06 you expect to receive in one year is only $1.

Reasons for Time Value of Money

Money has time value because of the following reasons:

1. **Risk and Uncertainty:** Future is always uncertain and risky. Outflow of cash is in our control as payments to parties are made by us. There is no certainty for future cash inflows. Cash inflows are dependent out on our Creditor, Bank etc. As an individual or firm is not certain about future cash receipts, it prefers receiving cash now.

2. **Inflation:** In an inflationary economy, the money received today, has more purchasing power than the money to be received in future. In other words, a rupee today represents a greater real purchasing power than a rupee a year hence.

3. **Consumption:** Individuals generally prefer current consumption to future consumption.

4. **Investment opportunities:** An investor can profitably employ a rupee received today, to give him a higher value to be received tomorrow or after a certain period of time.

Thus, the fundamental principle behind the concept of time value of money is that, a sum of money received today, is worth more than if the same is received after a certain period of time. For example, if an individual is given an alternative either to receive 10,000 now or after one year, he will prefer 10,000 now.

Techniques of Time Value of Money/

There are two techniques for adjusting time value of money. They are:

1. Compounding Techniques/Future Value Techniques

2. Discounting/Present Value Techniques

The value of money at a future date with a given interest rate is called future value. Similarly, the worth of money today that is receivable or payable at a future date is called Present Value.

1. Compounding Techniques/Future Value Technique/Computation of EMI

In this concept, the interest earned on the initial principal amount becomes a part of the principal at the end of the compounding period.

For example: Suppose you invest 1000 for three years in a saving account that pays 10 per cent interest per year. If you reinvest your interest income, your investment will grow as follows -

First year:	Principal at the beginning	1,000
	Interest for the year (1,000 × 0.10)	100
	Principal at the end	1,100
Second year:	Principal at the end (1100 + 10%)	1210
Third year:	Principal at the end (1210 + 10%)	1331

This process of compounding will continue for an indefinite time period.

- **Compound/ Future Value of a Single Amount (Lump sum) -**

A generalized procedure for calculating the future value of a single amount compounded annually is as follows:

Formula: $FVn = PV (1 + r)^n$

Where, FVn = Future value of the initial flow n year hence

PV = Initial cash flow

r = Annual rate of Interest

n = number of years

By taking into consideration, the above example, we get the same result.

$FVn = PV (1 + r)^n$

$= 1,000 (1.10)^3 = 1331/-$

To solve future value problems, compound value interest factor (CVIF) table i.e. Table A-1 can be used. The table shows the future value factor for certain combinations of periods and interest rates. To simplify calculations, this expression has been evaluated for various combinations of 'r' and 'n'.

Illustration 1: If you deposit 55,650 in a bank which is paying a 12 per cent rate of interest on a ten-year time deposit, how much would the deposit grow at the end of ten years?

Solution: $FV^n = PV (1 + r)^n$ or $FV^n = PV$ (CVIF 12%, 10 yrs)

$FV^n = 55650 (1.12)^{10}$ (Using Table A-1)

$= 55650 \times 3.106 = 172848.90$

- **Multiple Compounding Periods -**

Interest can be compounded monthly, quarterly and half-yearly. If compounding is quarterly,

annual interest rate is to be divided by 4 and the number of years is to be multiplied by 4. Similarly, if monthly compounding is to be made, annual interest rate is to be divided by 12 and number of years is to be multiplied by 12.

Formula: $FV^n = PV\ (1+ r/m)^{m*n}$

Where, FVn = Future value after 'n' years

PV = Cash flow today

r = Interest rate per annum

m = Number of times compounding is done during a year

- **Computation of Annuity**

Compound Value of an Annuity –

Sometimes, a person may desire to deposit annually a sum of money that is known as annuity. The compound value of an annuity can be calculated through compound value Table A-2.

Compound Value = Annuity amount * Compound Value Annuity Factor (CVAF)

Illustration 2: A person invests Rs. 5000 every year at the same time at an interest rate of 10% Calculate the sum of money he will receive after 5 years?

Solution: Annuity amount = 5000/-

Compound Value = 5000 * (FVAF 10%, 5 years)

CVAF (10%, 5 ye ars)= 6.105

Compound Value = 5000 * 6.105 = Rs 30525/-

2. Present Value Technique

Present Value describes t he process of determining what a cash flow to be received in the future is worth in today's dolla rs. Therefore, the Present Value of a future cash flow represents the amount of money today which, if invested at a particular interest rate, will grow to the amount of the future cash flow at that time in the future. The process of finding present values is called discounting and the inter est rate used to calculate present valuees is called the discount rate.

For Example, The Pres ent Value of $100 to be received one year from now is $90.91 if the discount rate is 10% compounded annually.

The following equation can be used to find the Present Value o f a Cash Flow stream.

$$PV = \sum_{t=0}^{n} \frac{CF_t}{(1+r)^t}$$

Where, PV = the Present Value of the Cash Flow Stream,

CF_t = the cash flow w hich occurs at the end of year t,

r = the discount rate,

t = the year, which ranges from zero to n, and

n = the last year i n which a cash flow occurs.

Or, It can be calculated by using present value of Rs.1 table i.e. Table A-3.

- **Present Value of Semi A nnual/ Quarterly/ Monthly Cash F lows -**

A person may select monthly, quarterly and half-yearly di scounting. If discounting is done quarterly, annual interest rate is to be divided by 4 and the num ber of years is to be multiplied by 4. Similarly, if monthly d iscounting is to be made, annual inte rest rate is to be divided by 12 and

number of years is to be multiplied by 12.

Formula: $PV = FV / (1+ r/m)^{m*n}$

Where, FV = Fut ure value after 'n' years

PV = Present Value

r = Interest rate p er annum

m = Number of times discounting is done per year

- **Present Value of an Annuity**

The Present Value of an Annuity is equal to the sum of the present values of the annuity payments. This can be found in one step through the use of the following equation:

$$PVA = PMT\left[\frac{1-(1+r)^{-t}}{r}\right]$$

Where, PVA = Present Value of the Annuity PMT = Annuity P ayment

r = Interest or Discount Rate

t = Number of Years (also the Number of Annuity Pay ments)

OR

It can be calculated by using present value of an annuity ta ble i.e. Table A-4. It is similar to compound value of an annuity the only difference is Table A-4 is used instead of Table A-2.

PV = Annuity Amount * PVAF (Rate, No. of years)

Illustration 3: Using sam e data given in Illustration 2, Calculate the Present value of annuity.

Solution: Annuity amount = 5000/-

Present value = 5000 * PVAF (10%, 5 years) PVAF (10%, 5 years) = 3.791

Present value = 5000 * 3.791 = Rs. 18955/-

Valuation of Securities(Bonds/Debentures)

i. Debentures/Bonds -

Debentures are financial instruments usually issued by companies and government to raise their capital to finance their business without forfeiting control of company ownership. In other words, debentures are simply loans taken by the companies t o raise short to medium term loan needed for expenses or for expansions and do not provide the ownership in the company. A debenture is a debt instrument, just like a fixed deposit (FD), usually issued by a company. You invest a sum, and the company pays you a fixed rate of interest for the pre-defined period. After the period gets over, you get back your principal amount. How ever,

these types of bonds are not secured by physical asset or collateral. These are unsecured loans as company is not bound to return the principal amount on the maturity and are backed on ly by the general credit worthiness and reputation of the issuer.

Valuation of Bonds/Debentures:

Basically, the value of a bond is the present value of all the future interest payments and the maturity value, discounted at the required return on bond commensurate with the prevailing interest rate and risk.

$$\text{Bond value} = \frac{\text{Interest}_1}{(1+r)^1} + \frac{\text{Interest}_2}{(1+r)^2} + \ldots\ldots\ldots + \frac{(\text{Interest}_n + \text{Maturity value})}{(1+r)^n}$$

Where, Interest 1 to n = Interests in periods 1 to n.

Unless otherwise mentioned, maturity value of the bond is face value.

When the required rate of return is equal to the coupon rate, the bond value equals the par value. When the required rate of return is more than the coupon rate, the bond value would be less than its par value. The bond in this case would sell at a discount.

When the required rate of return is less than the coupon rate, the bond value would be more than its par value. The bond in this case would sell at a premium.

Example: Let us assume the face value of the bond is $1,000 (maturity value $1,000). The bond has a 10% coupon rate payable semi-annually and the yield to maturity (return) is 9%. The bond matures in 5 years period from now. What is the value of the bond?

Solution: Interest 1 till 10 = $50 per semi-annual period. ($100 annually) n=10

because 5 years x 2 payments per period.

Yield to maturity = 9%, therefore, semi-annual YTM =9/2 = 4.5% or 0.045

$$\text{Bond value} = \frac{\$50}{(1+.045)^1} + \frac{\$50}{(1+.045)^2} + \ldots\ldots\ldots\ldots\ldots + \frac{(\$50+\$1000)}{(1+.045)^{10}}$$

i.e. Bond price = $1,040 (rounded)

ii. Preference Shares -

Preference Shares are issued by corporations or companies with the primary aim of generating funds. A preference share usually carries a fixed stated rate of dividend. The dividend is payable only upon availability of profits. In case of cumulative preference shares, arrears of dividends can be accumulated and in the year of profits common stock holders can be paid dividend only upon settlement of all the arrears of cumulative preference dividends.

Preference share holders have preference right over payment of dividend and settlement of principal amount upon liquidation, over common share holders. A preference share can be irredeemable or redeemable. Redeemable preference shares have a fixed maturity date and irredeemable preference shares have perpetual life with only dividend payments periodically upon profit availability. Preference shares can also be cumulative and non-cumulative.

Valuation of Preference Shares:

Basically, the value of a redeemable preference share is the present value of all the future expected dividend payments and the maturity value, discounted at the required return on preference shares.

Redeemable Preference share value =

$$= \frac{\text{Dividend}_1}{(1+r)^1} + \frac{\text{Dividend}_2}{(1+r)^2} + \ldots\ldots + \frac{(\text{Dividend}_n + \text{Maturity value})}{(1+r)^n}$$

Where, Dividend 1 to n = Dividends in periods 1 to n.

The value of an irredeemable preference share can be expressed as follows:

$$\text{Irredeemable Preference share value} = \frac{\text{Dividend}}{\text{Required return on Preference share}}$$

Example: Let us assume the face value of the preference share is $500 and the stated dividend rate is 12%. The shares are redeemable after 5 years period. Calculate the value of preference shares if the required rate of return is 13%.

Solution: Annual dividend = $500 x 12% = $60

Redeemable Preference share value =

$$= \frac{\$60_1}{(1+.13)^1} + \frac{\$60_2}{(1+.13)^2} + \ldots\ldots + \frac{(\$60_5 + \$500)}{(1+.13)^5}$$

Solving for the above equation, we get the value of the preference shares as $482 (rounded).

iii. Common Stock/Equity -

A share of common stock represents an ownership position in the firm. Typically, the owners are entitled to vote on important matters regarding the firm, to vote on the membership of the board of directors, and (often) to receive dividends. In the event of liquidation of the firm, the common shareholders will receive a pro-rata share of the assets remaining after the creditors and preferred stockholders have been paid off.

Valuation of Common Stock/Equity:

Just like with bonds, the first step in valuing common stocks is to determine the cash flows. For a stock, there are two types of cash flows -

- Dividend payments
- The future selling price

The value of an ordinary share is equal to the present value of all the expected future dividends over an infinite period. Symbolically, it can be expressed as:

$$P_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \ldots\ldots\ldots\ldots \frac{D_\infty}{(1+r)^\infty}$$

Where, P0 = Current value of common share D1 = Dividend expected at the end of Year 1

r = required rate of return on share

Again, finding present values of these cash flows & adding them together will give us the value.

Methods of Valuation of Share –

There are two method of valuation of shares –

1. **Net Assets Method:** Under this method, value of share is equal to net assets. So, we first calculate net assets.

   Net assets = Total tangible assets – total liabilities (Including pref. share capital) + Goodwill Value of Share = Net Assets / No. of Shares

   The following points should be considered while valuing of shares according to this method:

   * Goodwill must be properly valued

   * The fictitious assets such as preliminary expenses, discount on issue of shares and debentures, accumulated losses etc. should be eliminated.

   * The fixed assets should be taken at their realizable value.

   * Provision for bad debts, depreciation etc. must be considered.

   * All unrecorded assets and liabilities (if any) should be considered.

   * Floating assets should be taken at market value.

   * The external liabilities such as sundry creditors, bills payable, loan, debentures etc. should be deducted from the value of assets for the determination of net value.

   The net value of assets, determined so has to be divided by number of equity shares for finding out the value of share.

Example: Suppose total tangible assets are RS. 100000, Goodwill Rs. 10000, pref. share capital Rs. 20000, other liabilities = RS. 40000, Equity shares capital is Rs. 60000 of 10000 shares. Calculate the value of shares?

Solution: Net Asset = 100000 – 20000 - 40000 + 10000 = 50000

Value of Shares = 50000 / 10000 = Rs. 5

2. **Earning Capacity Method:** Under this method, value of share is equal to the proportion of expected earning and normal earning of paid up value of shares.

Value of Share = Expected earning rate / Normal earning rate X Paid up Value of Shares

Where, Expected Earning Rate = Expected profit / total equity share capital X 100

Expected profit = Average annual profit – taxation – reserve – pref. dividend

For example: Calculate the value of share with earning capacity method, if company has issued 10000 shares @ 10 each and fully paid up. Suppose average profit is Rs 20000 and taxation is 2000, reserve is Rs. 500 and pref. share dividend is Rs. 600. Normal rate of earning is 10 % of total profit before tax.

Solution: Expected profit = 20000 -2000-500-600 = 16900

Expected profit rate = 16900 / 100000 X 100 = 16.9 %

Value of Share = 16.9 / 10 X 10 = Rs. 16.90

3. **Dividend Growth Model:** The value of a company whose dividend is growing at a perpetual constant rate is shown by the following function, where g is the constant growth rate the company's dividends are expected to experience for the duration of the investment.

4. **Capital Asset Pricing Model:** It is used to take decisions in conditions of risk and uncertainty. The CAPM model provides a solution to this problem by finding out beta risk. The CAPM model is as follows –

$$K_e = R_f + \beta\ (R_m - R_f).$$

Approaches and Tools of Financial Analysis

Financial Analysis is defined as being the process of identifying financial strength and weakness of a business by establishing relationship between the elements of balance sheet and income statement. The information pertaining to the financial statements is of great importance through which interpretation and analysis is made. It is through the process of financial analysis that the key performance indicators, such as, ***liquidity solvency, profitability*** as well as the ***efficiency*** of

operations of a business entity may be ascertained, while short term and long term prospects of a business may be evaluated. Thus, identifying the weakness, the intent is to arrive at recommendations as well as forecasts for the future of a business entity.

Financial analysis focuses on the financial statements, as they are a disclosure of a financial performance of a business entity. ***"A Financial Statement is an organized collection of data according to logical and consistentaccounting procedures. Its purpose is to convey an understanding of some financial aspects of a business firm. It may show assets position at a moment of time as in the case of balance sheet, or may reveal a series of activities over a given period of times, as in the case of an income statement."***

Since there is recurring need to evaluate the past performance, present financial position, the position of liquidity and to assist in forecasting the future prospects of the organization, various financial statements are to be examined in order that the forecast on the earnings may be made and the progress of the company be ascertained.

The financial statements are: I*ncome statement, balance sheet, statement of earnings, statement of changes in financial position and the cash flow statement.*

The income statement, having been termed as profit and loss account is the most useful financial statement to enlighten what has happened to the business between the specified time intervals while showing, revenues, expenses gains and losses.

Balance sheet is a statement which shows the financial position of a business at certain point of time. The distinction between income statement and the balance sheet is that the former is for a period and the latter indicates the financial position on a particular date. However, on the basis of financial statements, the objective of financial analysis is to draw informationto facilitate decision making, to evaluate the strength and the weakness of a business, to determine the earning capacity, to provide insights on liquidity, solvency and profitability and to decide the future prospects of a business entity.

There are various types of Financial analysis. They are briefly mentioned herein:

External analysis: The external analysis is done on the basis of published financial statements by those who do not have access to the accountinginformation, such as, stock holders, banks, creditors, and the general public.

Internal Analysis: This type of analysis is done by finance and accountingdepartment. The objective of such analysis is to provide the information to the top management, while assisting in the decision making process.

Short term Analysis: It is concerned with the working capital analysis. It involves the analysis of both current assets and current liabilities, so that the cash position (liquidity) may be determined.

Horizontal Analysis: The comparative financial statements are an example of horizontal analysis, as it involves analysis of financial statements for a number of years. Horizontal analysis is also regarded as **Dynamic Analysis**.

Vertical Analysis: it is performed when financial ratios are to be calculated for one year only. It is also called as **static analysis**.

An assortment of techniques is employed in analyzing financial statements.

They are: **Comparative Financial Statements, statement of changes in working capital, common size balance sheets and income statements, trend analysis and ratio analysis.**

Comparative Financial Statements: It is an important method of analysis which is used to make comparison between two financial statements. Being a technique of horizontal analysis and applicable to both financial statements, income statement and balance sheet, it provides meaningful information when compared to the similar data of prior periods. The comparative statement of income statements enables to review the operational performance and to draw conclusions, whereas the balance sheets, presenting a change in the financial position during the period, show the effects of operations on the assets and liabilities. Thus, the absolute change from one period to another may be determined.

Statement of Changes in Working Capital: The objective of this analysis is to extract the information relating to working capital. The amount of net working capital is determined by deducting the total of current liabilities from the total of current assets. The statement of changes in working capital provides theinformation in relation to working capital between two financial periods.

Common Size Statements: The figures of financial statements are converted to percentages. It is performed by taking the total balance sheet as 100. The balance sheet items are expressed as the ratio of each asset to total assets and the ratio of each liability to total liabilities. Thus, it shows the relation of each component to the whole - Hence, the name common size.

Trend Analysis: It is an important tool of horizontal analysis. Under this analysis, ratios of different items of the financial statements for various periods are calculated and the comparison is made accordingly. The analysis over the prior years indicates the trend or direction. Trend analysis is a useful tool to know whether the financial health of a business entity is improving in the course of time or it is deteriorating.

Ratio Analysis: Meaning

The most popular way to analyze the financial statements is computing ratios. It is an important and widely used tool of analysis of financial statements. While developing a meaningful relationship between the individual items or group of items of balance sheets and income statements, it highlights the key performance indicators, such as, *liquidity, solvency and profitability* of a business entity. The tool of ratio analysis performs in a way that it makes the process of comprehension of financial statements simpler, at the same time, it reveals a lot about the changes in the financial condition of a business entity.

Ratio Analysis objectives:

(1) Measuring the profitability: Profitability is the profit earning capacity of the business. This can be measured by Gross Profit, Net Profit, Expenses and Other Ratios. If these ratios fall we can take corrective measures.

(2) Determining operational efficiency: Operational efficiency of the business can be determined by calculating operating / activity ratios.

(3) Measuring financial position: Short-term and long-term financial position of the business can be measured by calculating liquidity and solvency ratios. In case of unhealthy short or long-term position, corrective measures can be taken.

(4) Facilitating comparative analysis: Present performance can be compared with past performance to discover the plus and minus points. Comparison with the performance of other competitive firms can also be made.

(5) Indicating overall efficiency: Profit and Loss Account shows the amount of net profit and Balance Sheet shows the amount of various assets, liabilities and capital. But the profitability can be known by calculating the financial ratios.

(6) Budgeting and forecasting: Ratio analysis is of much help in financial forecasting and planning. Ratios calculated for a number of years work as a guide for the future. Meaningful conclusions can be drawn for future from these ratios.

Types of Ratios

Solvency Ratios

The term 'solvency' refers to the ability of a concern to meet its long term obligations. The long-term liability of a firm is towards debenture holders, financial institutions providing medium and long term loans and other creditors selling goods on credit. These ratios indicate firm's ability to meet the fixed interest and its costs and repayment schedules associated with its long term borrowings. The following ratios serve the purpose of determining the solvency of the business firm.

- Debt equity ratio
- Proprietary ratio

Debt-equity ratio

It is also otherwise known as external to internal equity ratio. It is calculated to know the relative claims of outsiders and the owners against the firm's assets. This ratio establishes the relationship between the outsiders funds and the shareholders fund. Thus, Debt-equity ratio = Outsiders' funds/Share holders' funds

The two basic components of the ratio are outsiders' funds and shareholders' funds. The outsiders' funds include all debts/liabilities to outsiders i.e. debentures, long term loans from financial institutions, etc.

Shareholders' funds mean preference share capital, equity share capital, reserves and surplus and fictitiousassets like preliminary expenses. This ratio indicates the proportion between shareholders' funds and the long-term borrowed funds. In India, this ratio may be taken as acceptable if it is 2 : 1. If the debt-equity ratio is more than that, it shows a rather risky financial position from the long term point of view.

Significance

The purpose of debt equity ratio is to derive an idea of the amount of capital supplied to the concern by the proprietors. This ratio is very useful to assess the soundness of long term financial position of the firm. It also indicates the extent to which the firm depends upon outsiders for its existence. A low debt equity ratio implies the use of more equity than debt.

It is also known as equity ratio. This ratio establishes the relationship between shareholders' funds to total assets of the firm. The shareholders' fund is the sum of equity share capital, preference share capital, reserves and surpluses. Out of this amount, accumulated losses should be deducted. On the other hand, the total assets mean total resources of the concern. The ratio can be calculated as under :

Proprietory ratio = Shareholders' funds/Total assets

Significance

Proprietary ratio throws light on the general financial position of the enterprise. This ratio is of particular importance to the creditors who can ascertain the proportion of shareholders' funds in the total assets employed in the firm. A high ratio shows that there is safety for creditors of all types. Higher the ratio, the better it is for concerned. A ratio below 50% may be alarming for the creditors since they may have to lose heavily in the event of company's liquidation on account of heavy losses.

PROFITABILITY RATIOS

The main aim of an enterprise is to earn profit which is necessary for the survival and growth of the business enterprise. It is earned with the help of amount invested in business. It is necessary to know how much profit has been earned with the help of the amount invested in the business. This is possible through profitability ratio.

These ratios examine the current operating performance and efficiency of the business concern. These ratios are helpful for the management to take remedial measures if there is a declining trend. The important profitability ratios are :

(i) Gross profit ratio

(ii) Net profit ratio

(iii) Operating profit ratio

(iv) Return on investment ratio

(i) Gross profit ratio

It expresses the relationship of gross profit to net sales. It is expressed in percentage. It is computed

as **Gross profit ratio = Gross profit/Net sales×100**

Significance

Gross profit ratio shows the margin of profit. A high gross profit ratio is a great satisfaction to the management. It represents the low cost of goods sold. Higher the rate of gross profit, lower the cost of goods sold.

(ii) Net profit ratio

A ratio of net profit to sales is called Net profit ratio. It indicates sales margin on sales. This is expressed as a percentage. The main objective of calculating this ratio is to determine the overall profitability. The ratio is calculated as

Net profit ratio =Net profit/Net sales×100

Significance

Net profit ratio determines overall efficiency of the business. It indicates the extent to which management has been effective in reducing the operational expenses. Higher the net profit ratio, better it is for the business.

(iii) Operating profit ratio

Operating profit is an indicator of operational efficiencies. It reveals only overall efficiency. It establishes relationship between operating profit and net sales. This ratio is expressed as a percentage. It is calculated as :

Operating profit =Operating profit /Net sales×100

Operationg Profit = Gross Profit – (Administration expenses + selling expenses)

Significance

It helps in examining the overall efficiency of the business. It measures profitability and soundness of the business. Higher the ratio, the better is the profitability of the business. This ratio is also helpful in controlling cash.

(iv) Return on investment ratio (ROI)

ROI is the basic profitability ratio. This ratio establishes relationship between net profit (before interest, tax and dividend) and capital employed. It is expressed as a percentage on investment. The term investment here refers to long-term funds invested in business. This investment is called capital employed.

Capital employed = Equity share capital + preference share capital+ Reserve and surplus + long term liabilities
– fictitious assets – Non trading investment

Capital employed = (Fixed asset – depreciation) + (Current Asset – Current liabilities)

Capital employed = (Fixed Assets – Depreciation) + (Working capital)

This ratio is also known as Return on capital employed ratio. It is calculated as under

ROI = Net profit before interest, tax and dividend /Capital employed×100

Note : If net profit after interest, tax and dividend is given, the amount of interest, tax and dividend should be added back to calculate the net profit before interest, tax and dividend.

Significance

ROI ratio judges the overall performance of the concern. It measures how efficiently the sources of the business are being used. In other words, it tells what is the earning capacity of the net assets of the business. Higher the ratio the more efficient is the management and utilisation of capital employed.

LEVERAGE RATIO

Leverage ratio is otherwise known as capital structure ratio. The term capital structure refers to the relationship between various long term forms of financing such as debentures (long term), preference share capital and equity share capital including reserves and surpluses. Financing the firm's assets is a very crucial problem in every business and as a rule there should be a proper mix of debt and equity capital in financing the firm's assets. Leverage or capital structure ratios are calculated to test the long term financial position of a firm.

Generally capital gearing ratio is mainly calculated to analyse the leverage or capital structure of the firm

Capital gearing ratio

The capital gearing ratio is described as the relationship between equity share capital including reserves and surpluses to preference share capital and other fixed interest bearing loans. If preference share capital and other fixed interest bearing loans exceed the equity share capital including reserves, the firm is said to be highly geared. The firm is said to be low geared if preference share capital and other fixed interest bearing loans are less than equity capital and reserves.

Capital gearing ratio = Equity share capital reserves and surpluses/Preference share capital + long term debt bearing fixed interest

Significance

Capital gearing ratio is very important ratio. Gearing should be kept in such a way that the company is able to maintain a steady rate of dividend. High gearing ratio is not good for a new company or a company of which future earnings are uncertain.

LIMITATION OF ACCOUNTING RATIOS

Accounting ratios are very significant in analysing the financial statements. Through accounting ratios, it will be easy to know the true financial position and financial soundness of a business concern. However, despite the advantages of ratio analysis, it suffers from a number of disadvantages. The following are the main limitations of accounting ratios.

Ignorance of qualitative aspect

The ratio analysis is based on quantitative aspect. It totally ignores qualitative aspect which is sometimes more important than quantitative aspect.

Ignorance of price level changes

Price level changes make the comparison of figures difficult over a period of time. Before any comparison is made, proper adjustments for price level changes must be made.

No single concept

In order to calculate any ratio, different firms may take different concepts for different purposes. Some firms take profit before charging interest and tax or profit before tax but after interest tax. This may lead to different results.

Misleading results if based on incorrect accounting data

Ratios are based on accounting data. They can be useful only when they are based on reliable data. If the data are not reliable, the ratio will be unreliable.

No single standard ratio for comparison

There is no single standard ratio which is universally accepted and against which a comparison can be made. Standards may differ from Industry to industry.

Difficulties in forecasting

Ratios are worked out on the basis of past results. As such they do not reflect the present and future position. It may not be desirable to use them for forecasting future events

Funds Flow Statement:

Meaning and Definition of Funds Flow Statement:

Funds Flow Statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. It is a statement showing sources and uses of funds for a period of time.

Foulke defines these statements as:

"A statement of sources and application of funds is a technical device designed to analyze the changes in the financial condition of a business enterprise between two dates."

In the words of Anthony "The funds flow statement describes the sources from which additional funds were derived and the use to which these sources were put."

I.C.W.A. in Glossary of Management Accounting terms defines Funds Flow Statement as "a Statement prospective or retrospective, setting out the sources and applications of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilization and application of the same." Thus, funds flow statement is a statement which indicates various means by which the funds have been obtained during a certain period and the ways to which these funds have been used during that period. The

term 'funds' used here means working capital, i.e., the excess of current assets over current liabilities.

Funds flow statement is called by various names such as Sources and Application of Funds; Statement of Changes in Financial Position; Sources and Uses of Funds; Summary of Financial Operations: Where came in and Where gone out Statement; Where got, Where gone Statement; Movement of Working Capital Statement; Movement of Funds Statement; Funds Received and Disbursed Statement; Funds Generated and Expended Statement; Sources of Increase and Application of Decrease; Funds Statement, etc.

Objectives / Importance of Funds Flow Statement:

A funds flow statement is an essential tool for the financial analysis and is of primary importance to the financial management. Now-a-days, it is being widely used by the financial analysts, credit granting institutions and financial managers.

The basic purpose of a funds flow statement is to reveal the changes in the working capital on the two balance sheet dates. It also describes the sources from which additional working capital has been financed and the uses to which working capital has been applied.

Such a statement is particularly useful in assessing the growth of the firm, its resulting financial needs and in determining the best way of financing these needs. By making use of projected funds flow statements, the management can come to know the adequacy or inadequacy of working capital even in advance. One can plan the intermediate and long-term financing of the firm, repayment of long-term debts, expansion of the business, allocation of resources, etc.

The significance or importance of funds flow statement can be well followed from its various uses given below:

1. It Helps in the Analysis of Financial Operations:

The financial statements reveal the net effect of various transactions on the operational and financial position of a concern. The balance sheet gives a static view of the resources of a business and the uses to which these resources have been put at a certain point of time. But it does not disclose the causes for changes in the assets and liabilities between two different points of time.

The funds flow statement explains causes for such changes and also the effect of these changes on the liquidity position of the company. Sometimes a concern may operate profitably and yet its cash

position may become more and more worse. The funds flow statement gives a clear answer to such a situation explaining what has happened to the profits of the firm.

2. It Throws Light on Many Perplexing Questions of General Interest which Otherwise may be Difficult to be Answered, such as:

(a) Why were the net current assets lesser in spite of higher profits and vice-versa?

(b) Why more dividends could not be declared in spite of available profits?

(c) How was it possible to distribute more dividends than the present earnings?

(d) What happened to the net profit? Where did they go?

(e) What happened to the proceeds of sale of fixed assets or issue of shares, debentures, etc.?

(f) What are the sources of the repayment of debt?

(g) How was the increase in working capital financed and how will it be financed in future?

3. It Helps in the Formation of a Realistic Dividend Policy:

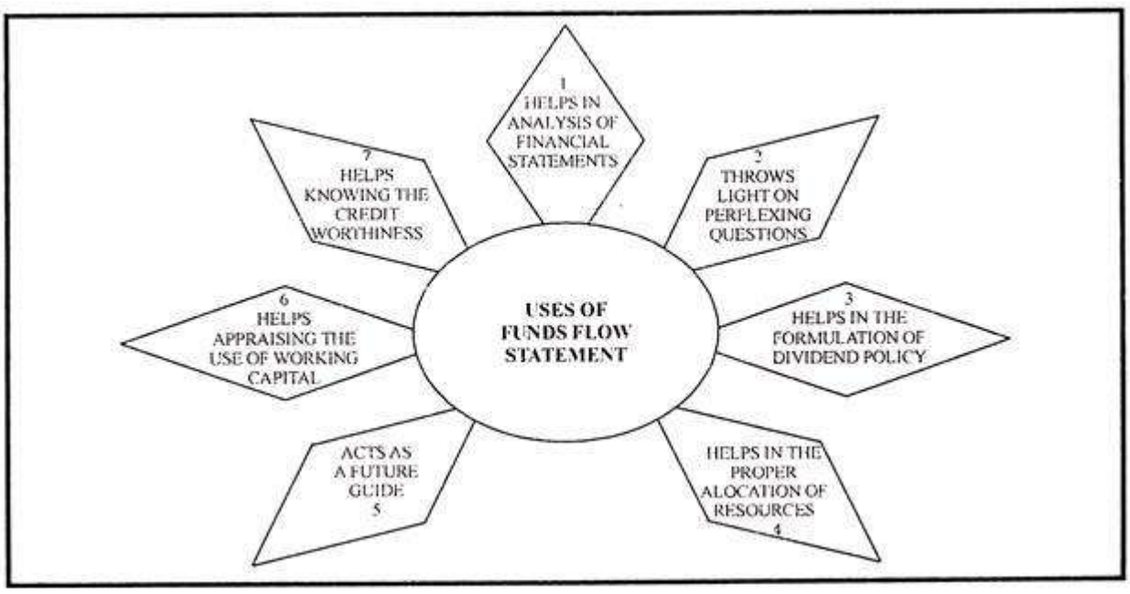
Sometimes a firm has sufficient profits available for distribution as dividend but yet it may not be advisable to distribute dividend for lack of liquid or cash resources. In such cases, a funds flow statement helps in the formation of a realistic dividend policy.

4. It Helps in the Proper Allocation of Resources:

The resources of a concern are always limited and it wants to make the best use of these resources. A projected funds flow statement constructed for the future helps in making managerial decisions. The firm can plan the deployment of its resources and allocate them among various applications.

5. It Acts as a Future Guide:

A projected funds flow statement also acts as a guide for future to the management. The management can come to know the various problems it is going to face in near future for want of funds. The firm's future needs of funds can be projected well in advance and also the timing of these needs. The firm can arrange to finance these needs more effectively and avoid future problems.



6. It Helps in Appraising the Use of Working Capital:

A funds flow statement helps in explaining how efficiently the management has used its working capital and also suggests ways to improve working capital position of the firm.

7. It Helps Knowing the Overall Creditworthiness of a Firm:

The financial institutions and banks such as State Financial Institutions. Industrial Development Corporation, Industrial Finance Corporation of India, Industrial Development Bank of India, etc. all ask for funds flow statement constructed for a number of years before granting loans to know the creditworthiness and paying capacity of the firm. Hence, a firm seeking financial assistance from these institutions has no alternative but to prepare funds flow statements.

Limitations of Funds Flow Statement:

The funds flow statement has a number of uses, however, it has certain limitations also, which are listed below:

1. It should be remembered that a funds flow statement is not a substitute of an income statement or a balance sheet. It provides only some additional information as regards changes in working capital.

2. It cannot reveal continuous changes.

3. It is not an original statement but simply are-arrangement of data given in the financial statements.

4. It is essentially historic in nature and projected funds flow statement cannot be prepared with much accuracy.

5. Changes-in .cash-are more important and relevant for financial management than the working capital.

Accounting Procedure of Funds Flow Statement

Funds flow statement is prepared mainly with the help of balance sheets of any two successive dates. Funds flow statement is prepared by comparing the balance sheets of the two dates and using the income statement of the year for which the funds flow statement is being prepared.The following steps are taken for the preparation of the funds flow statement.

Step -1:
Preparation of statement or schedule of changes in Net Working Capital
.
*Using only one current account
*Using both current and non-current accounts

Step -2
Statement of funds from operation

* Add Back Method
* Profit and loss Adjustment Account Method

Step -3
Funds Flow Statement

Cash Flow Statement Meaning

Cash Flow is the life blood of a business which plays a vital role in an entire economic life. As discussed in the previous unit the word 'fund' is used in a narrower sense refers to 'cash'. When cash is used as 'fund' the analysis relates to movement of cash. Cash flows refer to the actual movement of cash into and out of an organization. In other words, the movement of cash inclusive of inflow of cash and out flow of cash. When the cash flows into the organization, it represents 'Inflow of Cash.' Similarly when the cash flows out of the business concern, it called as "Cash Outflow."

In order to ensure cash flows are adequate to meet current liabilities such as tax payments, wages, amounts due to trade creditors, it is essential to prepare a statement of changes in the financial position of a firm on cash basis is called as "Cash Flow Statement." This statement depicting movement of cash position from one period to another.

Cash Flow Statement Objectives

The cash flow statement is intended to
1. Provide information on a firm's liquidity and solvency and its ability to change cash flows in future circumstances
2. Provide additional information for evaluating changes in assets, liabilities and equity
3. Improve the comparability of different firms' operating performance by eliminating the effects of different accounting methods
4. Indicate the amount, timing and probability of future cash flows
The cash flow statement has been adopted as a standard financial statement because it eliminates allocations, which might be derived from different accounting methods, such as various timeframes for depreciating fixed assets.

Cash Flow Statement Limitations

1) Cash Flow Statement has limited scope as it compares with Fund Flow statements. Because it discloses inflows and outflows of cash alone. It does not reveal the overall financial position of the concern.
2) Cash Flow Statement cannot provide a comprehensive picture of a financial position because non-cash items of expenses and incomes are excluded.
3) The balance as disclosed by the cash flow statement may not be treated as actual liquid position of a concern since it cannot be easily influenced by postponing purchases and other payments

Pro forma cash flow statement (Accounting Procedure)

The proforma of cash flows from operating activities using **direct method.**

Cash Flows from Operating Activities (Direct Method)

Cash flows from operating activities:	
Cash receipts from customers	xxx
(–) Cash paid to suppliers and employees	(xxx)
= Cash generated from operations	xxx
(–) Income tax paid	(xxx)
= Cash flow before extraordinary items	xxx
+/– Extraordinary items	xxx
= Net cash from operating activities	xxxx

Cash Flows from Operating Activities (Indirect Method)

Net Profit/Loss before Tax and Extraordinary Items	
+ Deductions already made in Statement of Profit and Loss on account of Non-cash items such as Depreciation, Goodwill to be Written-off.	xxx
+ Deductions already made in Statement of Profit and Loss on Account of Non-operating items such as Interest.	xxx
– Additions (incomes) made in Statement of Profit and Loss on Account of Non-operating items such as Dividend received, Profit on sale of Fixed Assets.	xxx
Operating Profit before Working Capital changes	

xxx
+ Increase in Current liabilities
xxx
+ Decrease in Current assets
xxx
– Increase in Current assets
xxx
– Decrease in Current Liabilities
xxx
Cash Flows from Operating Activities before Tax and Extraordinary Items
xxx
– Income Tax Paid
xxx
+/– Effects of Extraordinary Items
xxx
Net Cash from Operating Activities
xxx

Unit-II

Planning for Sources of Finance

There are various sources of finance such as equity, debt, debentures, retained earnings, term loans, working capital loans, letter of credit, euro issue, venture funding etc. These sources are useful under different situations. They are classified based on time period, ownership and control, and their source of generation.

Sources of finance are the most explored area especially for the entrepreneurs about to start a new business. It is perhaps the toughest part of all the efforts. There are various sources of finance classified based on time period, ownership and control, and source of generation of finance.

Having known that there are many alternatives of finance or capital, a company can choose from. Choosing right source and right mix of finance is a key challenge for every finance manager. The process of selecting right source of finance involves in-depth analysis of each and every source of finance. For analyzing and comparing the sources of finance, it is required to understand all characteristics of the financing sources. There are many characteristics on the basis of which sources of finance are classified.

On the basis of time period, sources are classified into long term, medium term, and short term. Ownership and control classifies sources of finance into owned capital and borrowed capital. Internal sources and external sources are the two sources of generation of capital. All the sources of capital have different characteristics to suit different types of requirements. Let's understand them in a little depth.

ACCORDING TO TIME-PERIOD:

Sources of financing a business are classified based on the time period for which the money is required. Time period are commonly classified into following three:

- **Long Term Sources of Finance:** Long term financing means capital requirements for a period of more than 5 years to 10, 15, 20 years or may be more depending on other factors. Capital expenditures in fixed assets like plant and machinery, land and building etc of a business are funded using long term sources of finance. Part of working capital which permanently stays with the business is also financed with long term sources of finance. Long term financing sources can be in form of any of them:
  - Share Capital or Equity Shares
  - Preference Capital or Preference Shares
  - Retained Earnings or Internal Accruals
  - Debenture / Bonds
  - Term Loans from Financial Institutes, Government, and Commercial Banks
  - Venture Funding
  - Asset Securitization
  - International Financing by way of Euro Issue, Foreign Currency Loans, ADR, GDR etc.
- **Medium Term Sources of Finance:** Medium term financing means financing for a period between 3 to 5 years. Medium term financing is used generally for two reasons. One, when long term capital is not available for the time being and second, when deferred revenue expenditures like advertisements are made which are to be written off over a period of 3 to 5 years. Medium term financing sources can in the form of one of them:
  - Preference Capital or Preference Shares
  - Debenture / Bonds
  - Medium Term Loans from
    - Financial Institutes
    - Government, and
    - Commercial Banks

  - Lease Finance
  - Hire Purchase Finance
- **Short Term Sources of Finance:** Short term financing means financing for period of less than 1 year. Need for short term finance arises to finance the current assets of a business like inventory of raw material and finished goods, debtors, minimum cash and bank balance etc. Short term financing is also named as working capital financing. Short term finances are available in the form of:
  - Trade Credit
  - Short Term Loans like Working Capital Loans from Commercial Banks
  - Fixed Deposits for a period of 1 year or less
  - Advances received from customers
  - Creditors
  - Payables
  - Factoring Services
  - Bill Discounting etc.

ACCORDING TO OWNERSHIP AND CONTROL:

Sources of finances are classified based on ownership and control over the business. These two parameters are an important consideration while selecting a source of finance for the business. Whenever we bring in capital, there are two types of costs – one is interest and another is sharing of ownership and control. Some entrepreneurs may not like to dilute their ownership rights in the business and others may believe in sharing the risk.

- **Owned Capital:** Owned capital is also referred as equity capital. It is sourced from promoters of the company or from general public by issuing new equity shares. Business is started by the promoters by bringing in the required capital for startup. Owners capital is sourced from following sources:
  - Equity Capital
  - Preference Capital
  - Retained Earnings
  - Convertible Debentures
  - Venture Fund or Private Equity

Further, when the business grows and internal accruals like profits of the company are not enough to satisfy financing requirements, the promoters have choice of selecting ownership capital or non-ownership capital. This decision is up to the promoters. Still, to discuss, certain advantages of equity capital are as follows:

  - It is a long term capital which means it stays permanently with the business.
  - There is no burden of paying interest or installments like borrowed capital. So, risk of bankruptcy also reduces. Businesses in infancy stages prefer equity capital for this reason.
- **Borrowed Capital:** Borrowed capital is the capital arranged from outside sources. These include the following:
  - Financial institutions,
  - Commercial banks or
  - General public in case of debentures.

In this type of capital, the borrower has a charge on the assets of the business which means the borrower would be paid by selling the assets in case of liquidation. Another feature of borrowed capital is regular payment of fixed interest and repayment of capital. Certain advantages of borrowing capital are as follows:

  - There is no dilution in ownership and control of business.
  - Cost of borrowed funds is low since it is a deductible expense for taxation purpose which ends up saving on taxes for the company.
  - It gives the business a leverage benefit.

ACCORDING TO SOURCE OF GENERATION:

- **Internal Sources:** Internal source of capital is the capital which is generated internally from the business. Internal sources are as follows:
  - Retained profits
  - Reduction or controlling of working capital
  - Sale of assets etc.

  The internal source has the same characteristics of owned capital. The best part of the internal sourcing of capital is that the business grows by itself and does not depend on outside parties. Disadvantages of both equity capital and debt capital are not present in this form of financing. Neither ownership is diluted nor fixed obligation / bankruptcy risk arises.

- **External Sources:** External source of finance is the capital which is generated from outside the business. Apart from the internal sources finance, all the sources are external sources of capital.

Deciding the right source of finance is a crucial business decision taken by top level finance managers. Wrong source of finance increase the cost of funds which in turn would have direct impact on the feasibility of project under concern. Improper match of type of capital with business requirements may go against smooth functioning of the business. For instance, if fixed assets, which derive benefits after 2 years, are financed through short term finances will create cash flow mismatch after one year and the manager will again have to look for finances and pay the fee for raising capital again.

Capital Structure

Capital structure means the pattern of capital employed in the firm. It is a financial plan of the firm in which the various sources of capital are mixed in such proportions that those provide a distinct capital structure most suitable for the requirement of the firm.

Capital structure represents the mutual proportion between long term sources of capital which includes equity shares, preference shares, reserve & surplus and long term debts.

According to Weston and Brigham:-
"Capital structure is the permanent financing of the firm, represented by long-term debt, preferred stock and net-worth."

Financial structure:- refers to the way, the company's assets are financed. It is the entire left hand side of balance sheet which includes all the long term and short-term sources of capital.

Asset Structure:- Asset structure refers to total assets and their components, It includes all types of assets of the company i.e. fixed assets and current assets.

Capitalization:- Capitalization is a quantitative concept indicating the total amount of long-term finance required to carry on the business capitalization comprises a corporation's ownership capital and its borrowed capital, as represented by its long - Term indebtedness

Theories of capital structure.

The theories of capital structure are as follows:-
1. Net Income theory.
2. Net Operating Income theory.
3. Traditional theory.
4. **Modigliani – Miller theory**.

Net Income (NI) theory:-

This theory was propounded by David Durand. According to this theory a firm can increase the value of the firm and reduce the overall cost of capital by increasing the proportion of debt in its capital structure to the maximum possible extent.

As debt is cheaper source of finance, it results in a decrease in overall cost of capital leading to an increase in the value of the firm as well as market value of equity shares.

Assumptions:

1.The cost of debt is cheaper than the cost of equity
2.Income tax has been igored
3.The cost of debt capital and cost of equity capital remains constant i.e. with the increase in debt capital the risk perception of creditors and equity investors does not change
4. Total value of firm = Market value of Equity + market value of debt. Or V = S +D

Market Value of share (S);

$$S = \frac{F}{Ke} \text{ Or } \frac{EBIT-I}{}$$

Where;

E = Earnings available for equity shareholders
EBIT = Earnings before interest and Tax
Ke = Cost of Equity Capital.

The overall cost of capital or capitalization ratio:

$$Ko = \frac{EBIT}{V}$$

Ko = Overall cost of capital
V = Value of the firm.

Net Operating Income (NOI) Theory

This theory has also been propounded by David Durand. This theory is just opposite that of Net Income Theory. According to this theory, the total market value of the firm (v) is not affected by the change in the capital structure and the overall cost of capital (Ko) remains fixed irrespective of the debt-equity mix. According to this theory there is nothing like optimum capital structure.

Assumptions:-

1. The split of total capitalization between debt and equity is not essential or irrelevant.

2. At every level of capital structure business risk is constant; therefore, the rate of capitalization also remains constant.

3. The rate of debt capitalization remains constant.

4. There are no corporate taxes.

5. With the use of debt funds which are cheaper, the risk of shareholders increases, which in turn results to increase in the equity capitalization rate. Hence debt capitalization rate remains constant.

Computation:-

1. Value of the firm $= \frac{EBIT}{Ko}$

Or V = S + D
Or S = V – D

2. Cost of Equity Capital:-

$$Ke = \frac{EBIT - I}{S}$$

I = Interest on debt

Modigliani – miller theory:-

This theory was propounded by Franco Modigliani and Merton Miller (generally referred to as M-M) who are Nobel Prize winners in financial economies.

They have discussed their theory in two situations:
(i) When there are no corporate taxes, and

(ii) When there are corporate taxes.

(i) **In the Absence of Corporate taxes:-**

As per Modigliani – Miller if there are no corporate taxes than the changes in the capital structure of any firm do not bring any chage in the overall cost of capital and total value of firm. The reason is that though the debt is cheaper to equity with increased use of debt as a source of finance, the cost of equity increases and the advantage of low-cost debt is offset equally by the increased cost of equity.

Assumptions:-

1. The capital market is perfect.
2. There is no transaction cost.
3. All the firms can be divided in hom0geneous risk classes.
4. There is no corporate tax.
5. All the profits of the firm are distributed.
6. Individual investors can easily get loans on the same terms and conditions on which any firm gets.

(ii) When Corporate Taxes Exist:-

The basic theory of Modigliani- Miller that the changes in the capital structure do not affect the total value of the firm and overall cost of capital is not true in the presence of corporate taxes. Corporate taxes are reality; therefore, they changed their basic theory in the year 1963.

They accepted this fact that for corporate tax determination of interest is a deductible expenditure than the cost of debt is low. Therefore if any firm uses debt in its capital structure it leads to reduction in the overall cost of capital and increase in the value of the firm. They accepted that

the total value of a leveraged firm is high than the non-leveraged firm.

Computation:-

1. Value of Unleveled firm (Vu)

Vu = Earning after tax but before Interest

After tax equity capitalization Rate

$$Vu = \frac{EBIT\ (1 - T)}{Ke}$$

2. Value of levered firm (Vt)

$$Vt = Vu + DT \text{ or } \frac{EBIT}{} (1\text{-}t) + DT\ Ke$$

Where D = Amount of Debt
T = Tax Rat

Traditional Approach:-

The traditional theory is a mid-path between Net Income theory and Net Operating Income theory. According to this theory the cost of debt capital is lower than the cost of equity capital, therefore a firm by increasing the proportion of debt capital in its capital structure to a certain limit can reduce its overall cost of capital and can raise the total value of the firm. But after a certain limit the increase in debt capital leads to rise in overall cost of capital and fall in the total value of the firm. A rational or appropriate mix of debt and equity minimizes overall cost of capital and manimises value of the firm. Thus this theory accepts the idea of existence of optimum capital structure. Ezra soloman has enplained the effects of changes in capital structure on the overall cost of capital (Ko) and the total value of firm (V) in the following stages :

First Stage : In the beginning the use of debt capital in the capital structure of the firm results in fall of over all cost of capital and increases the total value of the firm because in the first stage cost of equity remains fixed rises slightly and use of debt is favourably treated in capital market.

Second State : In this stage beyond a particular limit of debt in the capital structure , the additional of debt capital will have insignificant or negligible effect on the value of the firm and the overall cost of capita. It is because the increase in cost of equity capital, due to increase in financial risk, offsets the advantage of using low cost of debt. Therefore during this second stage the firm can reach to a point where overall cost of capital is minimum and the total value is maximum.

Third Stage: - If the proportion of debt capital in the capital structure of the firm increases beyond an accepted limit this dead to increase in the over all cost of capital and fall in the total value of the firm because the financial risk rises rapidly which results into higher cost of equity capital which cannot be offset led by low debt capital cost. Hence, the total value of the firm will decrease and the overall cost of capital will increase

Determinants of capital structure:

Capital structure should be designed very carefully. The management of the company should set a target capital structure and the subsequent financing decisions should be made with a view to achieve the target capital structure. Once a company has been formed and it has been in existence for some years, the financial manager then has to deal with the existing capital structure. The company may need funds to finance its activities continuously. Every time the funds have to be procured, the financial manager weighs the pros and cons of various sources of finance and selects most advantageous sources keeping in view the target capital structure: Thus the capital structure decision is a continuous one and has to be taken whenever a firm needs additional finance.

The factors to be considered whenever a capital structure decision is taken are:

(i) Financial Leverage or Trading on equity,
(ii) Cost of capital
(iii) Cash flow,
(iv) Control,
(v) Flexibility,
(vi) Size of the company,
(vii) Marketability,
(viii) Floatation costs

Cost of capital

MEANING

Cost of capital is the minimum required rate of return a project must earn in order to cover the cost of raising fund being used by the firm in financing of the proposal. It may be defined in two phase i.e. operational term and economic term. As per operational term, it refers to the discount rate that would be used in determining the present value of the estimated future cash proceeds and eventually deciding whether the project is worth undertaking or not.

FACTORS AFFECTING COST OF CAPITAL

The elements in the business environment that cause a company's cost of capital to be high or low determine the cost of capital of any firm. These factors are:

1. General Economic Conditions

The general economic conditions determine the demand for and supply of capital within the economy as well as the level of expected inflation. This economic variable is reflected in the risk less rate of return. This rate represents the rate of return on risk free investments such as the interest rate on short-term government securities.

2. Risk and Cost of Capital

High-risk investments only make the investors attractive to purchase the security. The risk elements are composed of five aspects that are closely intertwined. These are -

(a) ***Financial Risk***- refers to the proportion of debt and equity with which a firm is financed.

6. ***Business Risk***- refers to the variability in return of assets and is affected by the company's investment decision.
7. ***Purchasing Power Risk***- refers to the change in purchasing power of money measured by price level changes.
8. ***Money Rate Risk***- refers to the premium in the yield demanded by suppliers of capital to cover the risk of an increase in future interest rate.
9. ***Market/Liquidity Risk***- refers to the ability of a supplier of fund to sell his holding quickly.

3. Floating Cost

Floating cost is the cost of marketing new securities. It includes legal fees, printing expenses, underwriting commission etc. They are called floating because they incurred in floating new securities. It is also called underwriting cost or issuance cost. These costs directly influence the cost of capital. High floating cost leads to higher cost of capital.

COMPONENTS OF COST OF CAPITAL/CALCULATING COST OF CAPITAL

The overall cost of capital of a firm is comprised of the cost of the various components of financing, techniques to determine the specific cost of each of these sources such as debt, preference share, retained earning, and equity share. The measurement of cost of capital is the process of determines the cost of fund to the firm. The method of measuring cost of capital of different components is given as under:

COST OF DEBENTURES AND BONDS

The cost of capital for debenture/bond is the rate of return i.e. interest that potential investors or holders require on the firm's debt securities. The debenture holders receive a fixed rate of interest on their investment. The interest on debentures is tax deductible so, the after tax interest rate will be lower. For calculation we can divide the debenture into two categories i.e. Perpetual Debt and Redeemable Debt.

1. Perpetual Debt/ Irredeemable Debt

The debenture availed by the firm on a regular basis is called perpetual debt. The cost of capital of such type of debt may be ascertained as under: -

$$Ki = \frac{I}{Bo}$$

Where - Ki = Cost of debenture capital (Before Tax)

I = Annual interest

Bo = Net proceeds

Tax Adjustment

Interest on debenture is tax deductible. It works as a tax shield and the tax liability of a firm is reduced. Thus the effective cost of debenture is lower than the interest paid to investor but it depends on tax rate. The real cost of debt is determined after considering tax shield, as follows -

Kd = Ki (1-t)

Where - Kd = Cost of debenture capital (after tax) T = tax rate

The tax benefit is not available, to firms having loss or no tax-paying situation. In this condition Kd will be equal to Ki.

Redeemable Debenture

To calculate the cost of capital of redeemable debenture, it can be divided into two categories such as (a) If redemption is made after a certain period

(b) If redemption is made gradually in installment.

(a) If redemption is made after a certain period

$$K_d = \frac{I\,(1 - t) + (RV - NP) / N}{(RV + NP) / 2}$$

Where: RV = Redemption value of debenture

N = Life of Debenture

NP = Net Proceeds

(b) If redemption is made gradually in installment

$$B_o = \sum_{t=1}^{n} \frac{I_t(1-t)}{(1+K_d)^t} + \frac{COP}{(1+K_d)^t} + \frac{COP_n}{(1+K_d)^n}$$

Where: COP = Regular/ Periodical cash outflow in installments

Bo = Net proceeds

COST OF PREFERENCE SHARE

It represents the rate of return that must be earned on the preference shares financed investments to keep earning available to the residual stockholders unchanged. The rate of dividend is predetermined but the preference dividend is not entitled for tax benefit. It is of two types i.e. redeemable and irredeemable.

Irredeemable Preference Shares

The preference shares which cannot be redeemed in company's life time are known as irredeemable or perpetual preference shares. The firm has to pay dividend at a fixed rate on these shares, the calculation of cost is as under -

$$K_p = PD / P_O$$

Where: PD = Annual Preference dividend

Po = Net Proceeds

Redeemable Preference Shares

If the preference shares are redeemable at the end of a specific period than the cost of capital can be calculated through the following equation: -

$$Po = \sum_{i=1}^{n} \frac{PD_1}{(1+Kp)^i} + \frac{p_n}{(1+KP)^n}$$

Where: Pn = Amount payable at the time of redemption

n = Redemption period of preference shares i.e No. of years

Kp = cost of preference shares

COST OF EQUITY CAPITAL

It is generally argued that the equity capital is free of cost. But it is not true: The reason behind this argument is that there is no legal binding on company to pay dividend to the equity shareholders. The objective of management is to maximize shareholders wealth and maximization of market price of share is operational substitute of wealth maximization. Therefore the required rate of return, which equates the present value of expected dividends with the market value of shares, is cost of equity capital. The cost of equity may be defined as

"The minimum, rate of return that a firm must earn on the equity-finance portion of an investment project in order to leave unchanged the market price of the shares". Thus the expected rate of return in equity share is just equal to the required rate of return of investors. This can be calculated by various approaches which are as follows –

1. Dividend Approach

According to this approach cost of equity is the rate of dividend expected by equity shareholders from the firm.

$$K_e = \frac{DP}{MP}$$

Where: MP = Market Price per share (if not given, then net proceeds)

DP = Dividend per share

In case of Dividend Growth Rate, the cost of equity will be -

$$K_e = \frac{DP}{MP} + G$$

Where: G = Annual Growth Rate of dividend

2. Earning Price Approach

Earning price approach takes into consideration the earning available to equity shareholders rather than dividend distributed.

$$K_e = \frac{EPS}{MPS}$$

Where: EPS = Earning per share

3. Capital Asset Price Method (CAPM)

CAPM is an alternative method to measure the cost of equity share capital other than dividend method, which is directly based on risk consideration. Risk is the variability of returns inherent in the type of security while return defined as total economic return obtained from it. Under this method total risk associated with the security can be divided into unsystematic and systematic.

Calculation of cost of equity share capital under this method is given as under: -

$$Ke = Rf + B (Rm - Rf)$$

Where: Rf = Risk free interest rate

B = beta factor (measure of non-diversifiable risk)

Rm = expected cost of capital of the market portfolio

The cost of equity capital will be high if the beta factor is high. The B (beta factor) indicates the systematic risk of firm's securities. It shows the sensitivity of firm security to market portfolio.

COST OF RETAINED EARNING

If the entire earning is not distributed and the firm retains a part then these retained earnings are available within the firm. Companies are not required to pay any dividend on retained earnings, so it is generally observed that this source of finance is cost free, but it is not true. If earnings were not retained, they would have been paid out to the ordinary shareholders as dividend. This dividend forgone by the equity shareholders is opportunity cost. The firm has required to earn on retained earnings at least equal to the rate that would have been earned by the shareholders if they were distributed to them. So the cost of retained earning may be defined as opportunity cost in term of dividends forgone by withholding from the equity shareholders.

WEIGHTED AVERAGE COST OF CAPITAL

In order to evaluate a capital expenditure project, overall or average cost of capital is required. The overall cost of capital is the rate of return that must be earned by the firm in order to satisfy the requirements of different investors. It is the minimum rate of return on the asset of the firm, so it is preferably calculated as weighted average rather than the simple average.

Concept of EBIT-EPS Analysis:

The EBIT-EBT analysis is the method that studies the leverage, i.e. comparing alternative methods of financing at different levels of EBIT. Simply put, EBIT-EPS analysis examines the effect of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans.

It examines the effect of financial leverage on the behavior of EPS under different financing alternatives and with varying levels of EBIT. EBIT-EPS analysis is used for making the choice of the combination and of the various sources. It helps select the alternative that yields the highest EPS.

We know that a firm can finance its investment from various sources such as borrowed capital or equity capital. The proportion of various sources may also be different under various financial plans. In every financing plan the firm's objectives lie in maximizing EPS

Leverage

Leverage means the employment of assets or funds for which the firm pays a fixed cost or fixed return. The fixed cost or fixed return. The fixed cost or return may be thought of as the fulcrum of a lever. In mechanics the leverage concept is used for a technique by which more weight is raised with less power. In financial management the leverage is there an account of fixed cost. If any firm is using some part of fixed cost capital than the firm has leverage which can be used for raising profitability and financial strength of firm.

Operating leverage

It is defined as the ability to use fixed operating costs to magnify the effect of changes in sales on its operating profits. If the fixed operating costs are more as compared to variable operating costs, the operating leverage will be high and vice-versa. Thus, the term 'Operating leverage' refers to the sensivity of operating profit to changes in sales.

For example, if the sales increase by say 20% and the operating profit increases by 100% it is a case of high operating leverage.

Computation of Operating leverage:-

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profit}}$$

Or

$$\frac{\text{Sales} - \text{Variable cost}}{}$$

Contribution – Fixed Cost

Degree of Operating Leverage- (DOL)

The degree of operating leverage may be defined as the percentage change in operating profits resulting from a percentage change in sales

-On two levels of sales for comparison:-

Degree of operating leverage (DOL)

= percentage change in profits / Percentage change in sales

-On one level of sales:-

DOL = Contribution / EBIT

Favorable operating leverage and utility of operating leverage

When the profits increase with the increase in sales it is called favorable operating leverage.

Utility of operating leverage:

Operating leverage helps in capital structure decisions and play a vital role in formulation of an optimum capital structure. It is most helpful in long term profit planning as it is useful in taking decisions regarding capital expenditure. It is true to say that operating leverage is basically used in taking capital budgeting decisions.

Financial leverage

It arises from the presence of fixed financial costs in the income stream of the firm or due to presence of fixed return securities in the capital structure of the company. Fixed cost securities are debentures and preference share.

Thus financial leverage is defined as, 'the firm ability to use fixed financial cost to magnify the effect of changes in earnings before interest and tax (EBIT) on firm's earnings per share. (EPS)

Financial leverage may be favorable or unfavorable. If the earnings made by the use of fixed interest bearing securities is more than their fixed costs. The firm is considered to have 'favorable financial leverage' or trading on equity. If the firm earns less than the cost of borrowed funds, the firm is said to have an 'unfavorable financial leverage'.

Computation of Financial leverage:-

Financial leverage = Earnings before interest and tax / Earnings before tax but after interest

or

FL = EBIT / EBT

Degree of Financial leverage: (DFL)

(a) On one level of profit:

DFL = EBIT /Operating Profit(EBT)

(b) On two level of profit for comparison :

DFL = %Change in EPS / % Change is EBIT

Combined leverage

The combined leverage may be defined as the relationship between contribution and the taxable income; it is the combined effect of both the leverage.

Combined Leverage = Operating Leverage X Financial Leverage.

Or

Contribution / EBIT X EBIT / EBT

Degree of Combined Leverage : (DCL)

DCL = DOL X DFL

Or

DCL = (% Change in EBIT) / (% Change in Sales) X (% Change in EPS) / (% Change in EBIT)

Or

DCL = % change in EPS / Sale % change in

Unit-III

Capital Budgeting

A firm incurs two types of expenses i.e.

Revenue expenditure – The benefits of which are supposed to be exhausted within the year concerned and their planning and control is done through various functional departments

Capital expenditure – The benefits of which are expected to be received over long period a series of years in future like building, plant, machinery or to undertake a program on
Research and development of a product

Diversification in to a new product line

Replacement of a machine

Expansion in production capacity

Promotional campaign

Capital expenditure involves investment of substantial funds for longer period and the benefits of such investment are in the form of increasing revenues or decreasing costs. Wrong decision under this head may effect future earnings, employment capacity, quantity and quality of production.

Hence, long term planning and right decision to incur or not to incur such expenditure is a crucial responsibility of management. The techniques used by management to carry out this responsibility is known as capital budgeting. Hence planning and control of capital expenditure is termed as capital budgeting.

Definitions: According to Milton "Capital budgeting involves planning of expenditure for assets and return from them which will be realized in future time period". According to I.M pandey "Capital budgeting refers to the total process of generating, evaluating, selecting, and follow up of capital expenditure alternative"

(1) **Long term effect** - such decisions have long term effect on future profitability and influence pace of firms growth. A good decision may bring amazing/good returns and wrong decision may endanger very survival of firm. Hence capital budgeting decisions determine future destiny of firm.

(2) **High degree of risk** - decision is based on estimated return. Changes in taste, fashion, research and technological advancement leads to greater risk in such decisions.

(3)Huge funds – large amount/funds are required and sparing huge funds is problem and hence decision to be taken after proper care/analysis

(4) **Irreversible decision** – Reverting back from a decision is very difficult as sale of high value asset would be a problem.

(5) **Most difficult decision** – decision is based on future estimates/uncertainty. Future events are affected by economic, political and technological changes taking place.

(6) **Impact on firms future competitive strengths** – These decisions determine future profit/ cost and hence affect the competitive strengths of firm.

(7) **Impact on cost structure** – Due to this vital decision, firm commits itself to fixed costs

such as supervision, insurance, rent, interest etc. If investment does not generate anticipated profit, future profitability would be affected.

Objectives of capital Budgeting

(1) **Share holder's wealth maximization**. In tune with objectives of financial management, its aim is selecting those projects that maximize shareholders wealth. The decision should avoid over/under investment in fixed assets.

(2) **Evaluation of proposed capital expenditure** – Capital budgeting helps in evaluating expenditure to be incurred on various assets to measure validity of each expenditure

(3) **Controlling costs** - by evaluating expenditure costs can be controlled.

(4) **Determining priority** – arranging projects in order of their profitability enabling the management to select most profitable project.

Factors affecting capital Budgeting Decisions (CBD)

(1) **Technological changes** – Before taking CBD, management will have to undertake in-depth study of cost of new product /equipment as well productive efficiencies of new as well as old equipment.

(2) **Demand forecast** – Analysis of demand for a long period will have to be undertaken before CBD.

(3) **Competitive strategy** – If a competitor is going for new machinery /equipment of high capacity and cost effective, we may have to follow that.

(4) **Type of management** – If management is innovative, firm may go for new equipments/ investment as compared to conservative management.

(5) **Cash flow** – cash flow statement or cash budget helps a firm in identifying time when a firm can make investment in CBD.

(6) **Other factors**- Like fiscal policy (tax concessions, rebate on investments) political salability, global situation etc.

Methods used in Capital Budgeting

Conventional Method	**Discounted Cash flow**
Pay back period	**Net present value**
Average rate of return	**Profitability index**
	Internal rate of return.
	Terminal value
	Discounted Pay back Period

Capital budgeting decision may be thought of as a cost-benefit analysis. We are asking a very simple question: "If I purchase this fixed asset, will the benefits to the company be greater than the cost of the asset?" In essence, we are placing the cash inflows and outflows on a scale (similar to the one above) to see which is greater.

A complicating factor is that the inflows and outflows may not be comparable: cash outflows (costs) are typically concentrated at the time of the purchase, while cash inflows (benefits) may

be spread over many years. The *time value of money* principle states that dollars today are not the same as dollars in the future (because we would all prefer possessing dollars today to receiving the same amount of dollars in the future). Therefore, before we can place the costs and benefits on the scale, we must make sure that they are comparable. We do this by taking the present value of each, which restates all of the cash flows into "today's dollars." Once all of the cash flows are on a comparable basis, they may be placed onto the scale to see if the benefits exceed the costs.

The Major Capital Budgeting Techniques

Conventional Techniques

A variety of measures have evolved over time to analyze capital budgeting requests. The better methods use *time value of money* concepts. Older methods, like the payback period, have the deficiency of not using time value techniques and will eventually fall by the wayside and be replaced in companies by the newer, superior methods of evaluation.

1. Payback Period

It **is the length of time that it takes to recover your investment.** For example, to recover $30,000 at the rate of $10,000 per year would take 3.0 years. Companies that use this method will set some arbitrary payback period for all capital budgeting projects, such as a rule that only projects with a payback period of 2.5 years or less will be accepted. (At a payback period of 3 years in the example above, that project would be rejected.) The payback period method is decreasing in use every year and doesn't deserve extensive coverage here.

2. Profitability index (PI),
Also known as **profit investment ratio** (PIR) and **value** investment **ratio** (VIR), is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment. The ratio is calculated as follows:

Assuming that the cash flow calculated does not include the investment made in the project, a profitability index of 1 indicates breakeven. Any value lower than one would indicate that the project's PV is less than the initial investment. As the value of the profitability index increases, so does the financial attractiveness of the proposed project. Rules for selection or rejection of a project:

If PI > 1 then accept the project

If PI < 1 then reject the project

3. Accounting rate of return, also known as the **Average rate of return**

ARR is a financial ratio used in capital budgeting. The ratio does not take into account the concept of time value of money. ARR calculates the return, generated from net income of the proposed capital investment. The ARR is a percentage return. Say, if ARR = 7%, then it means that the project is expected to earn seven cents out of each dollar invested. If the ARR is equal to or greater than the required rate of return, the project is acceptable. If it is less than the desired rate, it should be rejected. When comparing investments, the higher the ARR, the more attractive the investment. Over one-half of large firms calculate ARR when appraising projects.

ARR=Profit / Investment

Disconted Cash Flow Techniques

1**. Net Present Value**

Net present value is the present value of net cash inflows generated by a project including salvage value, if any, less the initial investment on the project. It is one of the most reliable

measures used in capital budgeting because it accounts for time value of money by using discounted cash inflows.

Before calculating NPV, a target rate of return is set which is used to discount the net cash inflows from a project. Net cash inflow equals total cash inflow during a period less the expenses directly incurred on generating the cash inflow.

Calculation Methods and Formulas

The first step involved in the calculation of NPV is the determination of the present value of net cash inflows from a project or asset. The net cash flows may be even (i.e. equal cash inflows in different periods) or uneven (i.e. different cash flows in different periods). When they are even, present value can be easily calculated by using the present value formula of annuity. However, if they are uneven, we need to calculate the present value of each individual net cash inflow separately.

In the second step we subtract the initial investment on the project from the total present value of inflows to arrive at net present value.

Thus we have the following two formulas for the calculation of NPV:

When cash inflows are even:

$$NPV = R \times \frac{1 - (1 + i)^{-n}}{i} - \text{Initial Investment}$$

In the above formula,

R is the net cash inflow expected to be received each period; **i** is the required rate of return per period;

n are the number of periods during which the project is expected to operate and generate cash inflows.

When cash inflows are uneven:

$$NPV = \left[\frac{R_1}{(1 + i)^1} + \frac{R_2}{(1 + i)^2} + \frac{R_3}{(1 + i)^3} + \ldots \right] - \text{Initial Investment}$$

Where,

i is the target rate of return per period;

$\mathbf{R_1}$ is the net cash inflow during the first period; $\mathbf{R_2}$ is the net cash inflow during the second period;

$\mathbf{R_3}$ is the net cash inflow during the third period, and so on ...

2 INTERNAL RATE OF RETURN

The *Internal Rate of Return (IRR)* is the rate of return that an investor can expect to earn on the investment. Technically, it is the discount rate that causes the present value of the benefits to equal the present value of the costs. The IRR method is actually the most commonly used method for evaluating capital budgeting proposals. This is probably because the IRR is a very easy number to understand because it can be compared easily to the expected return on other types of investments (savings accounts, bonds, etc.).

If the internal rate of return is greater than the project's minimum rate of return, we would tend to accept the project. The calculation of the IRR, however, cannot be determined using a formula; it must be determined using a trial-and-error technique.

3. MODIFIED INTERNAL RATE OF RETURN

The *Modified Internal Rate of Return (MIRR)* is an attempt to overcome the above two deficiencies in the IRR method. The person conducting the analysis can choose whatever rate he or she wants for investing the cash inflows for the remainder of the project's life.

For example, if the analyst chooses to use the hurdle rate for reinvestment purposes, the MIRR technique calculates the present value of the cash outflows (i.e., the PVC), the future value of the cash inflows, and then solves for the discount rate that will equate the PVC and the future value of the benefits. In this way, the two problems mentioned previously are overcome:

8. The cash inflows are assumed to be reinvested at a reasonable rate chosen by the analyst, and

9. There is only one solution to the technique.

CONTRAST BETWEEN NPV AND IRR

The NPV is better than the IRR. It is superior to the IRR method for at least two reasons:

1. **Reinvestment of Cash Flows:** The NPV method assumes that the project's cash inflows are reinvested to earn the hurdle rate; the IRR assumes that the cash inflows are reinvested to earn the IRR. Of the two, the NPV's assumption is more realistic in most situations since the IRR can be very high on some projects.
2. **Multiple Solutions for the IRR:** It is possible for the IRR to have more than one solution. If cash flows experience a sign change (e.g., positive cash flow in one year, negative in the next), the IRR method will have more than one solution.

When this occurs, we simply don't use IRR method to evaluate the project, since no one value of IRR is theoretically superior to the others. The NPV method does not have this kind of problem.

PRACTICAL PROBLEMS

Q.1 Project has the following patterns of cash flows:

Year	Cash Flow (Rs. In Lacs)
0	(10)
1	5
2	5
3	3.08
4	1.20

What is the IRR of this project?

Solution:

To determine the IRR, we have to compare the NPV of the project for different rates of interest until we find that rate of interest at which the NPV of the project is equal to zero.

Step 1 Find the average annual net cash flow based on given future net cash inflows. = (5 + 5 + 3.08 + 1.20)/4 = 3.57

Step 2 Divide the initial outlay by the average annual net cash inflows i.e. 10/3.57 = 2.801

Step 3 From the PVIFA table, it is found that interest rate is nearly equal to 2.801 in 4 years i.e. the duration of the project. In this case the rate of interest will be equal to 15%.

We use 15% as the initial value for starting the hit and trial process and keep trying at successively higher rates of interest until we get an interest rate at which the NPV is zero.

NPV at r = 15% will be equal to: = -10 + (5*.0870) + (5*.756) + (3.08*.658) + (1.2*.572) = 0.84 NPV at r = 16 % will be equal to: = -10 + (5*.862) + (5*.743) + (3.08*.641) + (1.2*.552) = .66 NPV at r = 18% will be equal to: = -10 + (5*.848) + (5*.719) + (3.08*.0609) + (1.2*.516) = .33 NPV at r = 20% will be equal to: = -10 + (5*.833) + (5*.694) + (3.08*.609) + (1.20*.482) = 0 We find that at r= 20%, the NPV is zero and therefore the IRR of the project is 20%.

Inflation and Capital Budgeting

Capital budgeting or investment appraisal is a process which anticipates expenses pertaining to assets as well as cash flows in the future. Investment appraisal takes into account the various factors which impact expenditure in the long run. Inflation is one such factor, which impacts investments and returns.

Effects of Inflation and Capital Budgeting

Inflation affects discount rates and cash flows. There are two factors on which inflation acts. They are discount rate and cash flow.

I) Cash flows:

Mathematical representation,
Let us assume that r refers to the revenues; t refers to the tax rate; c is the cost and d is the depreciation. By arranging the above variables in a formula the following is obtained.

(r-c) (1-t) + d = (r-c) (1-t) + dt

Inflation affects (r-c) (1-t), which is on the right side of the equation. But Inflation does not impact dt. The reason can be attributed to the fact that historical costs determine depreciation costs. This implies that inflation has a tendency to decrease the value of real rate of return. Studies reveal that Net cash flow is more as compared to real cash flows provided we do not take inflation into account.

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II) Discount rates:

Discount rates refer to the rate of return, which is the required rate or the target rate. The project cost is inflation adjusted. This adjustment is usually done in the premiums. The required rate or the target rate of return for the investors ought to be the same as real inflation return together with the expected inflation rate.

Risk Analysis and Capital Budgeting

1) **Certainty Equivalent Method for Risk Analysis**

Yet another common procedure for dealing with risk in capital budgeting is to reduce the forecasts of cash flows to some conservative levels. For example, if an investor, according to his "best estimate" expects a cash flow of 60000$ next year, he will apply an intuitive correction factor and may work with 40000$ to be on safe side. There is a certainty-equivalent cash flow. In formal way, the certainty equivalent approach may be expressed as:

Net present value = (the risk adjusted factor X the forecasts of net cash flow) / (1 + Risk free rate)

The certainty equivalent coefficient, the risk adjustment factor assumes a value between zero and one, and varies inversely with risk. A lower risk adjustment rate will be used if lower risk is anticipated. The decision maker subjectively or objectively establishes the coefficients. These coefficients reflect the decision makers' confidence in obtaining a particular cash flow in period. For example, a cash flow of 20000$ may be estimated in the next year, but if the investor feels that only 80% of it is a certain amount, then the certainty-equivalent coefficient will be 0.8. That is, he consider only 16000$ as the certain cash flow. Thus, to obtain certain cash flows, we will multiply estimated cash flows by the certainty-equivalent coefficients.

The certainty-equivalent coefficient can be determined as a relationship between the certain cash flows and the risky cash flows. That is:

Risk adjustment factor = certain net cash flow / Risky net cash flow

For example, if one expected a risky cash flow of 80000$ in period and certain cash flow of 60000$ equally desirable, then risk adjustment factor will be 0.75 = 60000/80000.
If the internal rate of return method is used, we will calculate that rate of discount, which equates the present value of certainty equivalent cash outflows. The rate so found will be compared with the minimum required risk free rate. Project will be accepted if the internal rate is higher than the minimum rate; otherwise it will be unacceptable.

Evaluation of certainty equivalent

The certainty equivalent approach explicitly recognizes risk, but the procedure for reducing the forecasts of cash flows is implicit and is likely to be inconsistent from one investment to another. Further, this method suffers from many dangers in a large enterprise. First, the forecaster, expecting the reduction that will be made in his forecasts, may inflate them in anticipation. This will no longer give forecasts according to "best estimate". Second, if forecasts have to pass through several layers of management, the effect may be to greatly exaggerate the original forecast or to make it ultra conservative. Third, by focusing explicit attention only on the gloomy outcomes, chances are increased for passing by some good investments.

2) Risk Adjusted Discount Rate

For a long time, economic theorists have assumed that, to allow for risk, the businessman required a premium over and above an alternative, which was risk-free. Accordingly, the more uncertain the returns in the future, the grater the risk and grater the premium required. Based on this reasoning, it is proposed that the risk premium be incorporated into the capital budgeting analysis through the discount rate. That is, if the time preference for money is to be recognized by discounting estimated future cash flows, at some risk free rate, to their present value, then, to allow for the riskiness, of those future cash flows a risk premium rate may be added to risk-free discount rate. Such a composite discount rate, called the risk-adjusted discount rate, will allow for both time preference and risk preference and will be a sum of the risk-free rate and risk-premium rate reflecting the investors' attitude towards risk. The risk-adjusted discount rate method can be formally expressed as follows:

Risk-adjusted discount rate = Risk free rate + Risk premium

Under capital asset pricing model, the risk premium is the difference between the market rate of return and the risk free rate multiplied by the beta of the project.

The risk adjusted discount rate accounts for risk by varying the discount rate depending on the degree of risk of investment projects. A higher rate will be used for riskier projects and a lower rate for less risky projects. The net present value will decrease with increasing risk adjusted rate, indicating that the riskier a project is perceived, the less likely it will be accepted. If the risk free rate is assumed to be 10%, some rate would be added to it, say 5%, as compensation for the risk of the investment, and the composite 15% rate would be used to discount the cash flows.

Advantages of risk adjusted discount rate

It is simple and can be easily understood.

It has a great deal of intuitive appeal for risk-averse businessman.

It incorporates an attitude towards uncertainty.

Disadvantages

This approach, however, suffers from the following limitations:

There is no easy way deriving a risk adjusted discount rate. Capital asset pricing model provides a basis of calculating the risk adjusted discount rate. Its use has yet to pick up in practice.

It does not make any risk adjusted in the numerator for the cash flows that are forecast over the future years.

It is based on the assumption that investor are risk-averse. Through it is generally true, there exists a category of risk seekers who do not demand premium for assuming risks; they are willing to pay premium to take risks. Accordingly, the composite discount rate would be reduced, not increased, as the level of risk increases.

Decision Tree

A decision tree is a flowchart-like structure in which each internal node represents a "test" on an attribute (e.g. whether a coin flip comes up heads or tails), each branch represents the outcome of the test and each leaf node represents a class label (decision taken after computing all attributes). The paths from root to leaf represents classification rules.

In decision analysis a decision tree and the closely related influence diagram are used as a visual and analytical decision support tool, where the expected values (or expected utility) of competing alternatives are calculated.

A decision tree consists of 3 types of nodes:

1. Decision nodes - commonly represented by squares
2. Chance nodes - represented by circles

3. End nodes - represented by triangles

Decision trees are commonly used in operations research and operations management. If in practice decisions have to be taken online with no recall under incomplete knowledge, a decision tree should be paralleled by a probability model as a best choice model or online selection model algorithm. Another use of decision trees is as a descriptive means for calculating conditional probabilities.

Dependent and Independent variables in risk

A variable may be thought to alter the dependent or independent variables, but may not actually be the focus of the experiment. So that variable will be kept constant or monitored to try to minimise its effect on the experiment. Such variables may be designated as either a "controlled variable" "control variable", or "extraneous variable".

Extraneous variables, if included in a regression as independent variables, may aid a researcher with accurate response parameter estimation, prediction, and goodness of fit, but are not of substantive interest to the hypothesis under examination. For example, in a study examining the effect of post-secondary education on lifetime earnings, some extraneous variables might be gender, ethnicity, social class, genetics, intelligence, age, and so forth. A variable is extraneous only when it can be assumed (or shown) to influence the dependent variable. If included in a regression, it can improve the fit of the model. If it is excluded from the regression and if it has a non-zero covariance with one or more of the independent variables of interest, its omission will bias the regression's result for the effect of that independent variable of interest. This effect is called confounding or omitted variable bias; in these situations, design changes and/or statistical control is necessary.

Extraneous variables are often classified into three types:

1. Subject variables, which are the characteristics of the individuals being studied that might affect their actions. These variables include age, gender, health status, mood, background, etc.
2. Blocking variables or experimental variables are characteristics of the persons conducting the experiment which might influence how a person behaves. Gender, the presence of racial discrimination, language, or other factors may qualify as such variables.
3. Situational variables are features of the environment in which the study or research was conducted, which have a bearing on the outcome of the experiment in a negative way. Included are the air temperature, level of activity, lighting, and the time of day.

Project Classifications Capital budgeting projects usually are classified using the following terms:

Replacement decision—a decision concerning whether an existing asset should replaced by a newer version of the same machine or even a different type of machine that does the same thing as the existing machine. Such replacements are generally made to maintain existing levels of operations, although profitability might change due to changes in expenses (that is, the new machine might be either more expensive or cheaper to operate than the existing machine).

Expansion decision—a decision concerning whether the firm should increase operations by adding new products, additional machines, and so forth. Such decisions would expand operations.

Independent project—the acceptance of an independent project does not affect the acceptance of any other project—that is, the project does not affect other projects. For example, if you have a large sum of money in the bank that you would like to spend on yourself, say, $150,000. You decide you are going to buy a car that costs about $30,000 and a new stereo system for your house that costs less than $5,000. The decision to buy the car does not affect the decision to buy the stereo—they are independent decisions.

Sensitivity Analysis

In the evaluation of an investment project, we work with the forecasts of cash flows. Fore casted cash flows depend on the expected revenue and costs. Further, expected revenue is a function of sales volume and unit selling price. Similarly, sales volume will depend on the market size and firms' market share. Costs include variable costs, which depend on sales volume, and unit variable cost and fixed costs. The net present value or the internal rate of return of a project is determined by analyzing the after tax cash flows arrived at by combining forecasts of various variables. It is different to arrive at an accurate and unbiased forecast of each variable. We can't' be certain about the outcomes of any of these variables. The reliability of the net present value or internal rate of return of the project will depend on the reliability of the forecasts of each variable underlying the estimates of net cash flows. To determine the reliability of the projects' net present value or internal rate of return, we can work out how much difference it makes if any of these forecasts goes wrong. We can change each of the forecasts, one at a time, to at least three values, expected, and optimistic. The net present value of the project is recalculated under these different assumptions. This method of recalculating net present value or internal rate of return by changing each forecast is called sensitivity analysis.

Sensitivity analysis is a way of analyzing change in the projects' values for a given change in one of the variables. It indicates how sensitive a projects' value is to changes in particular variables. The more sensitivity of the value, the more critical is the variable. The following three steps are involved in the use of sensitivity analysis:

Identification of all those variables, which have an influence on the projects value

Definition of the underlying (mathematical) relationship between the variables

Analysis of the impact of the change in each of the variables on the projects value

The decision maker, while performing sensitivity analysis computes the projects net present value or internal rate of return for each forecast under three assumptions.

Pessimistic,

Expected,

Optimistic.

It all allows him to ask "what if". For example, what if volume increase or decreases? What if

variable cost or fixed cost increases or decreases? What if the selling price increase or decreases? What if the project is delayed or outlay escalates or the projects life is more or less than anticipated? A whole range of questions can be answered with the help of sensitivity analysis. It examines the sensitivity of the variables underlying the computation of net present value or internal rate of return, rater than attempting to quantify risk. It can be applied to any variable, which is an input for the after tax cash flows

UNIT-IV

Retained Earnings Vs Dividends

Retained earnings means: Not distributing profits to stake holders and keeping the profits of a company for the use of the business entity either for working capital or for new projects etc.

Dividends means: Distribution of profits earned by a company to the stakeholders (loosing funds earned as profits to stake holders)

Dividend Policy

Dividend is divisible profit distributed amongst members/shareholders of a company in proportion to shares in the manner as prescribed under law. A dividend cannot be declared unless:

1. Sufficient profit is there in a company.

2. It has been recommended by Board of Directors.

3. Its acceptance has been given by the shareholders in Annual General Meeting (AGM)

Kind of Dividend –

I. Type of Security – Preference Dividend, - Equity Dividend

II. Timings of Dividends – Interim Dividend – Regular Dividend

III. Mode of Payment–Cash–Stock dividend (Bonus)–Script or Bond.

Dividend Policy –

Policy followed by Board of Directors concerning quantum of profit to be distributed as dividend. It also includes principal rules and procedure for planning and distributing dividend after deciding rate of dividend.

- Stable: Long term policy without frequent changes i.e. long term policy which is not affected by changes or quantum of profit.

- Lenient: Most of the profit is distributed amongst share holders and a very small part is kept as retained earnings. Even 90% to 95% profit is distributed as dividend. This is generally done in initial years to gain confidence of share holders.

Factors affecting dividend policy or determinants of dividend policy

(i) Legal requirements: As per companies Act, dividend only out of earned profit.

(ii) Liquidity position: In tight liquidity position, instead cash dividend, bonus shares or scripts/bonds are issued.

(iii) Trade Cycle: In boom conditions, higher profits are there and hence high dividend.

(iv) Expectations of share holders

(v) Future needs: If future needs are high, low dividend and high retained earnings.

(vi) Debt repayment: If heavy debt liability, low dividend.

(vii) Stability of Income: If income is stable, high dividend.

(viii) Public Opinion: High dividend to gain public confidence.

(ix) Composition of Owners: If preference shareholders are large, less dividend to ordinary shareholders.

Models of Dividend (Theories)

1. **Walter's Model –**

As per this model, dividend policy of a firm is based on the relationship between internal rate of return (r) earned by it and the cost of capital or required rate of return (k). The optimum dividend policy will have to be determined by relationship of r & k under following assumptions.
- Internal rate of return ® and cost of capital (k) are constant.

- All new investment opportunities are to be financed through retained earnings and no external finance is available to the firm.

- A firm has perpetual or an infinite life

Hence, as per this Model, a firm should retain its earnings if the return on investment exceeds cost of capital.

2. **Gordon's Model –**

This model is like Walters Model but a few extra assumptions are:
- The firm operates its investment activity only through equity.

- The retention ratio once decided is constant for ever.

As per this Model, Market value of share is equal to present value of its expected future dividend.

3) **Modigliani & Miller (M M Model) –**

This model says that dividend decision and retained earnings decision do not influence market value of shares. As per this model, "Under conditions of Perfect Capital Market, rational investors, absence of tax, discrimination between dividend income and capital appreciation given the firms investment policy. Its dividend policy may have no influence on the Market price of shares.

LINTNER'S MODEL

A model stating that dividend policy has two parameters:

(1) the target payout ratio

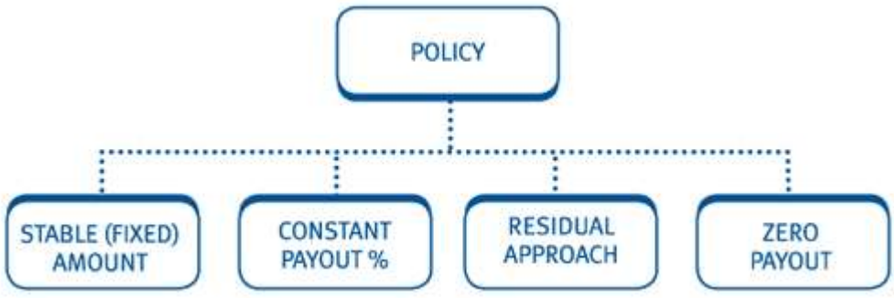
(2) the speed at which current dividends adjust to the target.

In 1956 John Lintner developed this theory based on two important things that he observed about dividend policy:

) Companies tend to set long-run target dividends-to-earnings ratios according to the amount of positive net-present-value (NPV) projects they have available.

2) Earnings increases are not always sustainable. As a result, dividend policy is not changed until managers can see that new earnings levels are sustainable.

Dividend Policies in Practices



In practice, there are a number of commonly adopted dividend policies:

- stable dividend policy
- constant payout ratio
- zero dividend policy
- residual approach to dividends.

Stable dividend policy

Paying a constant or constantly growing dividend each year:

- offers investors a predictable cash flow
- reduces management opportunities to divert funds to non-profitable activities
- works well for mature firms with stable cash flows.

However, there is a risk that reduced earnings would force a dividend cut with all the associated difficulties.

Constant payout ratio

Paying out a constant proportion of equity earnings:

- maintains a link between earnings, reinvestment rate and dividend flow but
- cash flow is unpredictable for the investor
- gives no indication of management intention or expectation.

Zero dividend policy

All surplus earnings are invested back into the business. Such a policy:

- is common during the growth phase
- should be reflected in increased share price.

When growth opportunities are exhausted (no further positive NPV projects are available):

- cash will start to accumulate
- a new distribution policy will be required.

Residual dividend policy

A dividend is paid only if no further positive NPV projects available. This may be popular for firms:

- in the growth phase
- without easy access to alternative sources of funds.

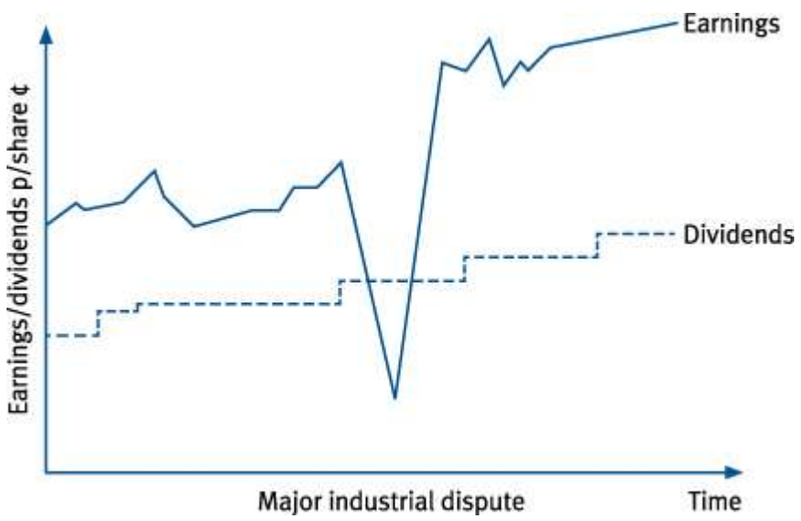
However:

- cash flow is unpredictable for the investor
- gives constantly changing signals regarding management expectations.

Ratchet patterns

Most firms adopt a variant on the stable dividend policy - a **ratchet pattern** of payments. This involves paying out a stable, but rising dividend per share:

- Dividends lag behind earnings, but can then be maintained even when earnings fall below the dividend level.
- Avoids 'bad news' signals.
- Does not disturb the tax position of investors.



Further complications relating to dividend policy include the following:

- If the company has insufficient cash, then it may choose to give shareholders shares instead of a conventional cash dividend. This is known as a "scrip dividend"
- If the company has an excess of cash , then it might choose to buy back shares, rather than pay a large one-off dividend. International companies
- face additional complications when setting their dividend policies

Working capital management

Working capital in that part of firms capital which is required for financing current assets such as cash, debtors, receivables inventories, marketable securities etc. Funds invested in such assets keep revolving with relative rapidity and are constantly converted in to cash..

Working capital is a financial metric which represents the amount of day-by-day operating liquidity available to a business. Along with fixed assets such as plant and equipment, working capital is considered a part of operating capital. It is calculated as current assets minus current liabilities. A company can be endowed with assets and profitability, but short of liquidity, if these assets cannot readily be converted into cash

Gross working capital – Refers to firms investments in current assets which are converted in to cash during an accounting year such as cash, bank balance, short term investments, debtors, bills receivable, inventory, short term loans and advances etc.

Net working capital – Refers to difference between current assets and current liabilities or excess of total current assets over total current liabilities.

Regular or permanent working capital – Refers to minimum amount which permanently remain blocked and can not be converted in to cash such as minimum amount blocked in raw material, finished product debtors etc.

Variable or temporary working capital – Refers to amount over and above permanent working capital i e difference between total working capital less permanent working capital.

Seasonal working capital - Refers to capital required to meet seasonal demand e.g. extra capital required for manufacturing coolers in summer, woolen garments in winter. It can be arranged through short term loans.

Specific working capital – Refers to part of capital required for meeting unforeseen contingencies such as strike, flood, war, slump etc.

Determinants of Working capital :-

The amount of working capital required depends upon a large number of factors and each factor has his own importance, They also wary from time to time in order to determine the proper amount of working capital of a firm, the following factors should be kept in mind :-

1. Nature of business
2. Size of business
3. Production process and policies
4. Changes in technologies
5. Requirement of cash
6. Availability of raw material
7. Length of operating Cycle
8. Seasonal Nature of Business
9. Firm's Credit Policy
10. Terms of Purchase and Sales
11. Business Cycle fluctuation
12. Turnover of Inventories
13. Banking relations
14. Rate of growth of
15. Dividend policies
16. Working capital
17. Taxation Policies

Factors or determinants of working capital are:

i. Nature of business: firms dealing in luxury goods, construction business, steel industry etc need more capital while those dealing in fast moving consumer goods (FMCG s) need less working capital.

ii. Size of business: large size firms need more working capital as compared to small size firms.

iii. Level of technology: use of high level technology leads to fastening the process and reduce wastage and in such case, less working capital would be required.

iv. Length of operating cycle: longer is the operating cycle; higher would be the need of working capital.

v. Seasonal nature: firms dealing in goods of seasonal nature, higher capital during peak season would be required.

vi. Credit policy: If credit policy followed is liberal more working capital would be required and if the same is strict less working capital would be required.

vii. Turnover of working capital: If rate of turnover is more, less working capital would be required and this rate is less, more working capital would be required.

viii. Dividend policy: If a firm retains more profit and distributes fewer amounts as dividend, less working capital would be required.

ix. Profit margin: If rate of margin of profit is more, less working capital would be required.

x. Rate of growth: If growth rate is high and firm is continuously expending/ diversifying its production & business, more working capital would be needed.

xi. Other factors like
- Means of transport
Availability of water, power nearly, Political stability, -Coordination of activities also effect estimation of requirements of working capital.

Significance/Importance of adequate working capital

- Prompt payment to supplies & benefit of cash/ trade discount.
- Increase in good will/ image
- Easy loans from banks
- Increase in the efficiency of employee's executives/ directors.
- Increase in the productivity as well as profitability

Inadequate Working Capital

-Stock out situation may arise
- Loosing customers
- Less profit
- Down fall of good will / image

Excess working capital

- Unnecessary piling of stock due to which loss of interest on amount blocked, theft, pilferage
- Lead to inefficiency of management
- Adversely effect production and profitability
- Dissatisfaction to share holders

Methods of estimating working capital requirements

Following methods are generally
(i) Operating Cycle Method
(ii) Net Current Assets Forecasting
(iii) Projected Balance Sheet Method
(iv) Adjusted Profit and Loss Method

Working Capital Estimation

Operating cycle method of working capital estimation is based on the duration of operating cycle. Longer the period of operating cycle bigger will be the working capital requirements. Operating cycle means the cycle of raw material to work in progress to finished goods to accounts payable and finally to cash. Operating cycle time is the time taken starting from raw material purchases to its conversion bank into cash.

How to calculate or estimate working capital using this method?
For calculating the working capital, we would need 3 important things and they are estimated cost of goods sold, operating cycle time, and desired cash levels.
Formula for calculating working capital requirement directly is as follows:
Working Capital = {Estimated Cost of Goods Sold * (Operating Cycle/ 365)} +Desired Cash and Bank Balance

Calculating the total working capital will not suffice the purpose. How this working capital is formed is also important. It means each components of working capital will have to be known. For that, we would first need the activity level of the company under review. Let us see how to calculate each item of working capital below:

Raw Material (RM) Stock: The formula for determining the RM stock is mentioned below. RM and many other calculations are based on estimated production units and therefore it should be calculated with utmost accuracy.

Estimated Production Units * Per Unit Cost of RM * (RM Holding Period / 365 Days)

Work In Progress (WIP): In calculating the WIP, special care has to be taken of the percentage of labor and overheads. These may vary depending on the stage of the product and completion percentage. We have taken the percentage for an example.

Estimated Production * {Per Unit Cost of — RM (100%) + Labor (50%) + Overheads (50%)} * (Work In Progress Period / 365 Days)

Finished Goods Stock: In Finished Goods workings, we have to know the cost of production with the help of the previous year cost sheets or budgeted cost sheets of the company's products.

Estimated Production * Per Unit Cost of Goods Produced * (Finished Goods Holding Period / 365 Days)

Accounts Receivables: This calculation is simple and we just need to put the estimates and average collection period right.

Estimated Production * Selling Price * (Collection Period / 365 Days)

Accounts Payables: The calculation of accounts payable is similar but the major difference is of raw material cost. We take finished goods selling price in accounts receivable calculation whereas raw material cost in case of accounts payable.

Estimated Production * Per Unit RM Cost * (Payment Period / 365 Days)

Management of Cash

Cash management is a broad area having to do with the collection, concentration, and disbursement of cash including measuring the level of liquidity, managing the cash balance, and short-term investments.

If at any time, because of a lack of cash, a corporation fails to pay an obligation when it is due, the corporation is insolvent. Insolvency is the primary reason firms go bankrupt. Obviously, the prospect of such dire consequence compels companies to manage their cash with care. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk the firm is exposed to.

COLLECTION AND DISBURSEMENT

Cash collection systems aim to reduce the time it takes to collect the cash that is owed to the firm (for example, from its customers). The time delays are categorized as mail float, processing float, and **bank** float. Obviously, an envelope mailed by a customer containing payment to a supplier firm does not arrive at its destination instantly. Likewise, the moment the firm receives payment it is not deposited in its bank account. And finally, when the payment is deposited in the bank

account oftentimes the bank does not give immediate availability to the funds. These three "floats" are time delays that add up quickly, requiring the firm in the meantime to find cash elsewhere to pay its bills. Cash management attempts to decrease the time delays in collection at the lowest cost. A collection receipt point closer to the customer, such as a lock box, with an outside third-party vendor to receive, process, and deposit the payment (check) will speed up the collection. For example, if a firm collects $10 million each day and can permanently speed up collections by five days, at 6 percent **interest rates,** then annual before-tax profits would increase by $3 million. The techniques to analyze this case would utilize data involving where the customers were; how much and how often they pay; the bank they remit checks from; the collection sites the firm has (their own or a third-party vendor); the costs of processing payments; the time delays involved for mail, processing, and banking; and the prevailing interest rate that can be earned on excess funds.

Once the money has been collected, most firms then proceed to concentrate the cash into one center. The rationale for such a move is to have complete control of the cash and to provide greater investment opportunities with larger sums of money available as surplus. There are numerous mechanisms that can be employed to concentrate the cash, such as wire transfers, automated clearinghouse transfers, and checks. The tradeoff is between cost and time.

Disbursement is the opposite of collection. Here, the firm strives to slow down payments. It wants to increase mail delays and bank delays, and it has no control over processing delay.

CASH MANAGEMENT MODELS

To help manage cash on a day-to-day basis in actual dollars and cents, there are a number of cash management models. These include the Baumol Model, Miller-Orr Model, and the Stone Model.

BAUMOL MODEL.

The Baumol Model is similar to the Economic Order Quantity (EOQ) Model.

The formula calculates the amount of funds to inject into the current account or to transfer into short-term investments at one time:

$$Q = \sqrt{\frac{2C_O D}{C_H}}$$

where:

C_O = transaction costs (brokerage,commission, etc.)

D = demand for cash over the period

C_H = cost of holding cash.

The model suggests that when interest rates are high, the cash balance held in non-interest-bearing current accounts should be low. However its weakness is the unrealistic nature of the assumptions on which it is based.

One shortcoming of this model is that it accommodates only a net cash outflow situation as opposed to both inflows and outflows. Also, the cash outflow is at a constant rate, with no variation.

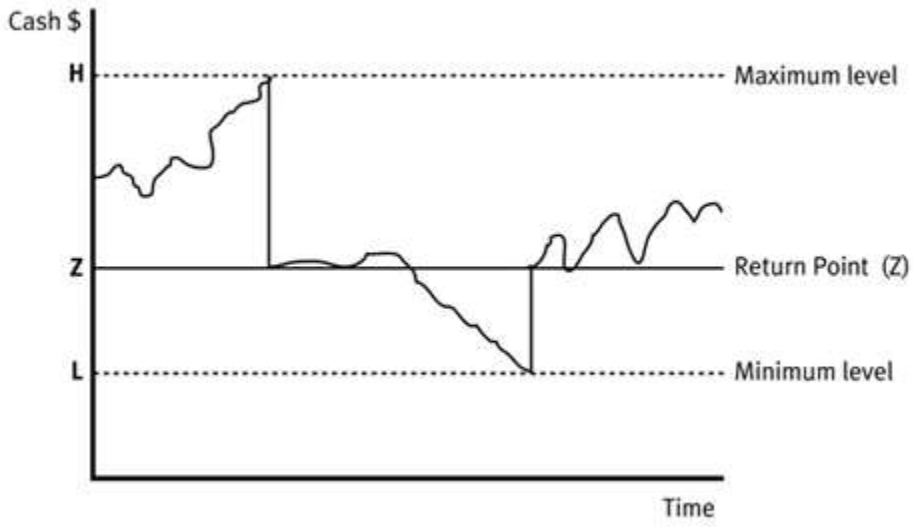
MILLER-ORR MODEL.

The **Miller-Orr** model is used for setting the target cash balance for a company.

The diagram below shows how the model works over time.

- The model sets higher and lower control limits, H and L, respectively, and a target cash balance, Z.
- When the cash balance reaches H, then (H-Z) dollars are transferred from cash to marketable securities, i.e. the firm buys (H-Z) dollars of securities.

- Similarly when the cash balance hits L, then (Z-L) dollars are transferred from marketable securities to cash.



The lower limit, L is set by management depending upon how much risk of a cash shortfall the firm is willing to accept, and this, in turn, depends both on access to borrowings and on the consequences of a cash shortfall.

The formulae for the **Miller-Orr** model are:

Return point = Lower limit + (1/3 × spread)

Spread = 3 [(3/4 × Transaction cost × Variance of cash flows) ÷ Interest rate] $^{1/3}$

Note: variance and interest rates should be expressed in daily terms. Variance = standard deviation squared.

Inventory management

Inventory means stock of goods in the form of raw material, stores or supplies, work in progress and finished product waiting for sale. Important features of inventory are.

- If accounts for large share of working capital

- Risk factor is high in holding inventory

- If involves many types of costs.

- It influences price and income of the firm as well as profitability.

- It involves almost all functional areas of management i.e. purchase, production, marketing & finance.

Various types of risks associated with inventory are.

- risk of price fluctuation

- risk of deterioration of quality of goods

- risk of obsolescence

- risk of pilferage & loss

Inventory management – means efficient management/ control of capital invested in inventory for obtaining maximum return by keeping inventory costs at minimum. Objectives of inventory control – are two i.e **.,**

Operating objectives

(i) Regular flow of material
(ii) Minimization of risks due to Stock out.
(iii) Avoid obsolescence of stored Goods due to change in demand, Technology

Financial objective
(i) Minimum investment or maximization Of returns on investments
(ii) Minimizing inventory costs.

Key functions of inventory control are:

- effective use of financial resources

- economy in purchasing

- uninterrupted production of goods & services

- protection against loss of material

- prompt delivery of goods to customers

- eliminating redundant inventory

- providing information to management for decision making

Dangers of over stocking of inventory

Blocking of funds – which may lead to reduction in profit due to interest cost or opportunity cost

Increase in holding cost – besides interest rent of space, insurance, loss on account of theft pilferage etc.

Loss of liquidity – as it is difficult to sell stores, woks in proposes as well as semi-finished goods.

Dangers of under stocking of inventory/stock out/ shortage of inventory items

Loss of profit due to loss of sales

Loss of future sales as customers may go else where

Loss of customers confidence resulting to loss of good will

Loss of machine and men hours as they may remain idle which lead to frustration in labour may force, unnecessary stoppage in production, extra costs in urgent replenishment of items.

Management of receivable

Receivables are created on account of credit sales. They are represented in the balance sheet in the form of sundry debtors, trade debtors, and book debts, accounts receivable, bills receivable etc. Receivables constitute around 15 to 20% of assets or around 1/3 of working capital in a big organization and substantial amount of working is blocked in this asset. Hence, their efficient management occupies great significance in financial management. Receivable Management means matching the cost of increasing sales with the benefits arising out of increased sales and maximizing return on investment of firm under this head. Hence, the prime objective of receivables management is to:

- Optimize return on investment

- By minimizing costs associated with receivables

Features of receivables

- They involve risk based on present economic value and seller expects the same value ot a later date

- Implies futurity

Benefits of receivables

- Growth in sales- If a firm does not sell on credit, sales cant grow

- Increase in profit– Growth in sales leads to increase in profit. At times, credit sales are at a price more than price of cash sales

- Enables to face competition in market

Costs associated with receivables are:

1. **Carrying cost** – cost of amount blocked in the form of Interest if amount is borrowed

- Opportunity cost if amount blocked is out of retained earnings.

2. **Administrative costs** – Cost incurred on maintaining staff, for keeping records and for process of collecting amount from debtor s e.g.

- Salary to staff

- Cost of collecting information about debtors

- Record keeping

- Cost of collecting cheques

- Cost on phone calls, reminders follow up

- Cost on office space, equipments etc and expenditure on staff assigned the duty of collection of amount from debtors.

3. **Delinquency cost** - cost on following up with delinquent debtors, reminders, legal charges etc.
4. **Default cost** – cost of debtors becoming bad debts

Factors effecting investments in receivables

(i) Level of sales – Higher the sales, high would be amount of credit sales & receivable would also be high

(ii) Nature and conditions of business – In competitive market, more credit sales in consumer durables like furniture, refrigerators etc.
(iii) Credit policy of firm – If credit policy is liberal, more would be amount of receivables

(iv) Terms of credit - Terms of cash & trade discount and period in which payment is expected from debtors.

(v) Capacity of credit department – With reference to .:-
- Scrutiny of orders placed by customers

- Assessing creditworthiness for which collecting information from various sources

- Timely collection of receivables from debtor

Operating objectives

(iv) Regular flow of material
(v) Minimization of risks due to Stock out.
(vi) Avoid obsolescence of stored Goods due to change in demand, Technology

Financial objective
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Different types of costs associated with inventory

Following are the key types of costs associated with inventory:

(i) **Material cost** – Which include cost of purchasing material/ Goods including transportation cost, sales tax, octroi, handling cost (loading unloading) etc.

(ii) **Ordering costs**: Clerical & administrative costs such as salary, postage, stationary telephone etc associated with purchasing, cost of requisition of material for order, follow up, receiving/evaluating quotations, checking of material when received (quality/quantity) accounting costs such as checking of supplies against orders, making payment, maintaining records of purchase etc. setup costs when items are manufactured internally.

(iii) **Carrying costs**- storage cost e.g. Rent, lighting heating, refrigeration, labour costs in handling material, store staff equipments, taxes, depreciation, insurance, product deterioration

obsolescence spoilage, breakage, pilferage, audit & accounting cost and lastly interest cost on capital or opportunity cost.

(iv) **Stock out costs or shortage of material** – Which include loss of profit due to loss of sale, loss of future sales, loss of loosing goodwill in the eyes of customers and loss of man and machine hours

TECHNIQUE OF INVENTORY MANAGEMENT

EOQ - Optimum size of an order for replenishment of an item of inventory is called EOQ

ROP - Re-ordering point is the level of inventory at which an order should be placed for replenishment of on item of inventory.

Stock levels - Fixing levels like minimum, maximum, re-order and danger level.

ABC analysis – Always Better control. All items of inventory are divided in to three categories i.e. „A , „B , & „C . Category „A value 70% to 80% Where quantity is 5% to 10% “ “ „B “ “ 20% “ “ “ 20% “ “ „C ““ 10% “ “ “ 70%

VED Analysis – Vital, Essential & Desirable (used for spare parts)

SDE Analysis

– Scarce (items in short supply)

– Difficult (items cant be procured easily)

– Easy (items which are easily available)

FSN Analysis
– Fast moving (stock to be maintained in large quantity)

– Slow moving (not frequently required by production dept.)

– Non-moving (items which are rarely required by production dept)

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Operating cycle

The operating cycle is the average period of time required for a business to make an initial outlay of cash to produce goods, sell the goods, and receive cash from customers in exchange for the goods. This is useful for estimating the amount of working capital that a company will need in order to maintain or grow its business.
A company with an extremely short operating cycle requires less cash to maintain its operations, and so can still grow while selling at relatively small margins. Conversely, a business may have fat margins and yet still require additional financing to grow at even a modest pace, if its operating cycle is unusually long. If a company is a reseller, then the operating cycle does not

include any time for production - it is simply the date from the initial cash outlay to the date of cash receipt from the customer.

The following are all factors that influence the duration of the operating cycle:

- The payment terms extended to the company by its suppliers. Longer payment terms shorten the operating cycle, since the company can delay paying out cash.
- The order fulfillment policy, since a higher assumed initial fulfillment rate increases the amount of inventory on hand, which increases the operating cycle.
- The credit policy and related payment terms, since looser credit equates to a longer interval before customers pay, which extends the operating cycle.

Thus, several management decisions (or negotiated issues with business partners) can impact the operating cycle of a business. Ideally, the cycle should be kept as short as possible, so that the cash requirements of the business are reduced.

Examining the operating cycle of a potential acquiree can be particularly useful, since doing so can reveal ways in which the acquirer can alter the operating cycle to reduce cash requirements, which may offset some or all of the cash outlay needed to buy the acquiree.

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