FINANCIAL MANAGEMENT

UNIT I

Aims and Objectives of Financial Management, DuPont Analysis, Economic Value Added, Cost Volume Profit Analysis.

What is Financial Management?
Meaning

- Financial Management means to plan and control the finance of the company. It is done to achieve the objectives of the company.
- Financial management is concerned with raising financial resources and their effective utilisation towards achieving the organisational goals.

Some Definitions

- “Financial management is the activity concerned with planning, raising, controlling and administering of funds used in the business.” – **Guthman and Dougal**
- “Financial management is that area of business management devoted to a judicious use of capital and a careful selection of the source of capital in order to enable a spending unit to move in the direction of reaching the goals.” – **J.F. Brandley**
- “Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.”- **Massie**

Objectives of Financial Management

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

- To ensure regular and adequate supply of funds to the concern.
- To ensure adequate returns to the shareholders which will depend upon the earning capacity, market price of the share, expectations of the shareholders.
- To ensure optimum funds utilization. Once the funds are procured, they should be utilized in maximum possible way at least cost.
- To ensure safety on investment, i.e, funds should be invested in safe ventures so that adequate rate of return can be achieved.
- 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.

Aims of Financial Management:

The aims of financial management should be useful to the firm's proprietors, managers, employees and consumers. For this purpose the only way is maximisation of firm's value.

- **The following aspects have place in maximising firm's value:**

1. Rise in profits:

- If the firm wants to maximise its value, it should' increase its profits and revenues. For this purpose increase of sales volume or other activities can be taken up. It is the general feature of any firm to increase profits by proper utilisation of all opportunities and plans. Theoretically, firm gets maximum profits if it is under equilibrium. At that stage the average cost is minimal and the marginal cost and the marginal revenues are equal. Here, we can't say the sales because there must be suitable market for the increased sales. Further, the above costs must also be controlled.

2. Reduction in cost:

- Capital and equity funds are utilised for production. So all types of steps should be taken to reduce firm's cost of capital.

3. Sources of funds:

- It should be decided by keeping in view the value of the firm to collect funds through issue of shares or debentures.

4. Reduce risks:

- There won't be profits without risk. But for this reason if more risk is taken, it may become danger to the existence of the firm. Hence risk should be reduced to minimum level.

5. Long run value:

- It should be the feature of financial management to increase the long-run value of the firm. To earn more profits in short time, some firms may do the activities like releasing of low quality goods, neglecting the interests of consumers and employees. These trials may give good results in the short run. But for increasing the value of the firm in the long run, avoiding; such activities are more essential.

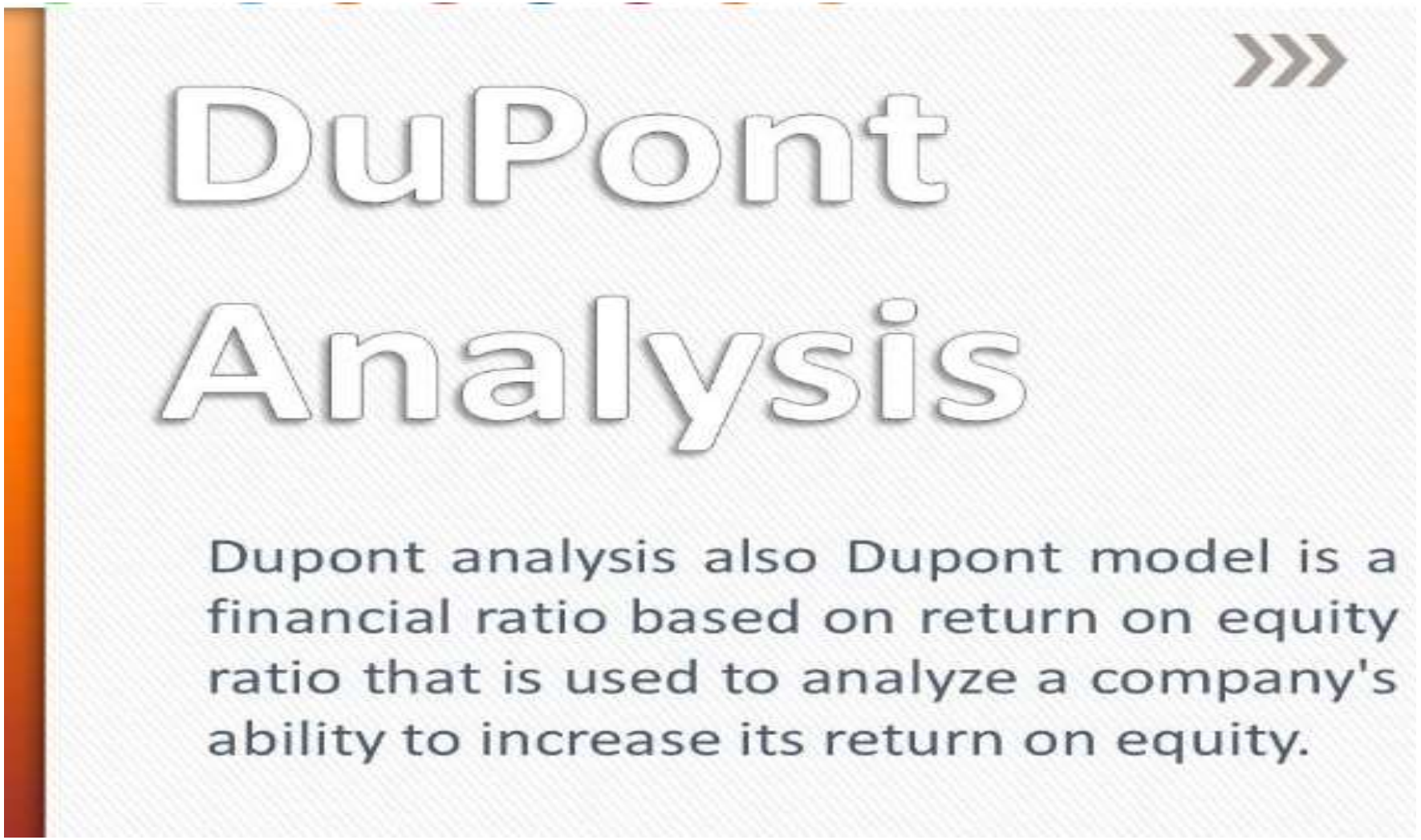
IMPORTANCE OF FINANCIAL MANAGEMENT

Some of the importance of the financial management is as follows:

- **Financial Planning:** Financial management helps to determine the financial requirement of the business concern and leads to take financial planning of the concern. Financial planning is an important part of the business concern, which helps to promotion of an enterprise
- **Acquisition of Funds:** Financial management involves the acquisition of required finance to the business concern. Acquiring needed funds play a major part of the financial management, which involve possible source of finance at minimum cost.
- **Proper Use of Funds:** Proper use and allocation of funds leads to improve the operational efficiency of the business concern. When the finance manager uses the funds properly, they can reduce the cost of capital and increase the value of the firm.
- **Financial Decision:** Financial management helps to take sound financial decision in the business concern. Financial decision will affect the entire business operation of the concern. Because there is a direct relationship with various department functions such as marketing, production personnel, etc.

- **Improve Profitability:** Profitability of the concern purely depends on the effectiveness and proper utilization of funds by the business concern. Financial management helps to improve the profitability position of the concern with the help of strong financial control devices such as budgetary control, ratio analysis and cost volume profit analysis.
- **Increase the Value of the Firm:** Financial management is very important in the field of increasing the wealth of the investors and the business concern. Ultimate aim of any business concern will achieve the maximum profit and higher profitability leads to maximize the wealth of the investors as well as the nation.
- **Promoting Savings:** Savings are possible only when the business concern earns higher profitability and maximizing wealth. Effective financial management helps to promoting and mobilizing individual and corporate savings.

DuPont Analysis



It breaks down the return on equity ratio to explain how companies can increase their return for investors.

The Dupont analysis looks at three main components of the ROE ratio.

» Profit Margin

» Total Asset Turnover

» Financial Leverage

A company can increase its return on equity by maintaining a high profit margin, increasing asset turnover, or leveraging assets more effectively.

The Dupont Model equates ROE to profit margin, asset turnover, and financial leverage.

DuPont Analysis

ROE = Profit Margin X Total Asset Turnover X Financial Leverage

$$\textbf{Profit Margin} = \frac{Net\ Income}{Net\ Sales}$$

$$\textbf{Total Asset Turnover} = \frac{Net\ Sales}{Average\ Total\ Assets}$$

$$\textbf{Financial Leverage} = \frac{Total\ Assets}{Total\ Equity}$$

Analysis

Dupont Analysis was developed to analyze the ROE and the effects that different business performance measures have on this ratio. The objective is to analyze the variable causing the current ROE. For instance, if investors are unsatisfied with a low ROE, the management can use this formula to pinpoint the problem area whether it is a lower profit margin, asset turnover, or poor financial leveraging.

Once the problem is determined, management can attempt to correct deviations.

Example

- We have two companies Bob Retailers and Joey Retailers
- Both of these companies operate in the same industry and have the same return on equity ratio of 45 percent.
- This model can be used to show the strengths and weaknesses of each company.
- Each company has the following ratios:

Ratio	Bob	Joey
Profit Margin	30%	[illegible] Dupont Analysis example
Total Asset Turnover	0.50	6.0
Financial Leverage	3.0	0 .50

BOB	45% = .30 x .50 x .30
JOEY	45% = .15 x 6.0 x .50

Both companies have the same overall ROE, but the companies' operations may be completely different from each other.

Bob Retailers is generating sales while maintaining a lower cost of goods as evidenced by its higher profit margin. But, the company is having a difficult time turning over large amounts of sales.

Joey Retailers business is selling products at a smaller margin, but it is turning over a lot of products. This is evident from its low profit margin and extremely high asset turnover.

example of dupont

This model helps investors to compare similar companies like these with similar ratios. Investors can then evaluate perceived risks with each company's business model.

ECONOMIC VALUE ADDED

EVA - Economic Value Added

- Economic Value Added is a measure of economic profit. It is calculated as the difference between the Net Operating Profit After Tax and the cost of financing the firm's Capital.

EVA = NoPAT – CAPITAL x COST OF CAPITAL

TO DERIVE THE NOPAT VALUE

	SALES
-	VARIABLE COST
	CONTRIBUTION
-	FIXED COST
	EBITAD
-	DEPRICIATION / AMORTIZATION
-	TAX
	NoPAT

Definition

In corporate finance, **Economic Value Added** or **EVA**, is an estimate of a firm's economic profit - being the value created in excess of the required return of the company's investors (being shareholders and debt holders).

Application

It is determined to pay **INCENTIVES & BONUS.**

Benefits of EVA

- **Measurement –** designing a measure of value creation that best reflects economic reality in a particular industry.
- **Management—**developing policies, procedures and tools which link decision-making to the measure of value-creation.
- **Motivation—**establishing incentive plans that simulate ownership by giving managers a share of value created. They understand that they should be rewarded only if they create shareholder value.

Why use EVA as a performance metric?

* What separates EVA® from other performance metrics is that it measures all of the costs of running a business-operating and financing. This makes EVA® the soundest performance metric, and the one most closely aligned with the creation of shareholder value.

Adjustments

- Key adjustments help translate financial statements from an **accounting framework into an economic framework**
- **EVA method was developed by Stern & Stewart Co**. and they have recommended around 164 adjustments.

- Common adjustments include capitalization of :
  - **Research and development**
  - **Operating leases**
  - **Brand advertising**
  - **Amortization of Goodwill etc.**

Ways to increase EVA

- First, the firm can grow the business by **investing where the returns exceed the WACC.**
- Second, the firm can **improve the operating efficiencies** on its existing Capital, thereby increasing the return on Capital.
- Third, a firm can **harvest Capital from its losing investments**, where the return is less than the WACC and has almost no hope for improving. The funds thus generated by harvesting is disgorged to the shareholders or it is used to make worthwhile investments elsewhere.

For the Sample Calculation of EVA and Adjustments please refer Excel sheet:

EVA Modified

Cost Volume Profit Analysis Definition

- The cost volume profit analysis, commonly referred to as CVP, is a planning process that management uses to predict the future volume of activity, costs incurred, sales made, and profits received. In other words, it's a mathematical equation that computes how changes in costs and sales will affect income in future periods.

What Does Cost Volume Profit Analysis Mean?

- The CVP analysis classifies all costs as either fixed or variable. Fixed costs are expenses that don't fluctuate directly with the volume of units produced. These costs effectively remain constant. An example of a fixed cost is rent. It doesn't matter how many units the assembly line produces. The rent expense will always be the same.

Cost-Volume-Profit Analysis Formula Is

Cost-Volume-Profit Analysis Formula Is

The CVP formula can be used to calculate the sales volume needed to cover costs and break even, in the CVP breakeven sales volume formula, as follows:

$$\text{Breakeven sales volume} = \frac{FC}{CM}$$

where:

$FC = \text{fixed costs}$

$CM = \text{contribution margin} = (\text{sales} - \text{variable costs})$

To use the above formula to find a company's target sales volume, simply add a target profit amount per unit to the fixed-cost component of the formula. This allows you to solve for the target volume based on the assumptions used in the model.

Example

- Variable costs, on the other hand, change with the levels of production. These costs include materials and labor that go into each unit produced. For example, a bike factory would classify bicycle tire costs as a variable cost. Every bike that is produced must have two tires. The more units produced, the more tire costs increase.

- The CVP analysis uses these two costs to plot out production levels and the income associated with each level. As production levels increase, the fixed costs become a smaller percentage of total income while variable costs remain a constant percentage. Cost accountants and management analyze these trends in an effort to predict what costs, sales, and profits the company will have in the future.
- They also use cost volume profit analysis to calculate the break-even point in production processes and sales. The break-even point is drawn on the CVP graph where the sales, fixed costs, and variable costs' lines all intersect. This is a key concept because it shows management that the revenue from a project will be able to cover all the costs associated with it. Using a variation of the CVP, management can calculate the break-even point in profits, units, and even dollars.

Cost Volume Profit Analysis Examples

- XYZ wishes to make an annual profit of $100000 from the sale of appliances. Details of manufacturing and annual capacity are as follows:

Production Capacity	10000 units
Fixed Cost	$30,000
Variable Cost per unit	$30

Based on the above information let's plug the numbers in CVP equation:

- 10000*p= (10000*30) +$30000+$100000
- 10000p = ($300000+$30000+$100000)
- 10000p=$430000
- Price per unit= ($430000/10000) = $43
- Thus price per unit comes out to $43 which implies that XYZ will have to price its product $43 and need to sell 10000 units to achieve its targeted profit of $100000.Further, we can see that the fixed cost remain constant ($30000) irrespective of the level of sales.
- = ($60000/$60)
- =10000 units
- Thus ABC limited need to sell 10000 units of electric fans to break even at the current cost structure.

Cost Volume Profit Analysis Examples

- ABC Limited has entered into the business of making Electrical fans. The management of the company is interested in knowing the breakeven point at which there will be no profit/loss. Below are the details pertaining to the cost incurred:

Total Sales Revenue of the company (@$300 per fan)	$300,000
Variable Cost	$240,000
Fixed Cost	$60,000
Maximum Capacity	14000 units

- No. of units sold by ABC limited: ($300000/$300) = 1000 units
- Variable cost per unit= ($240000/1000)=$240
- Contribution per unit= Selling price per unit-Variable Cost per unit
- = ($300-$240)
- = $60 per unit
- Break Even Point= (Fixed Cost/Variable Cost per unit)

Financial Management

Unit II

Instruments of Long term Finance, Hybrid Instruments, Venture capital, Time value of money, Leverage.

INSTRUMENTS OF LONG TERM FINANCE

LONG TERM SOURCES oF FINANCE

Long term financing involves long term debts and financial obligations on a business which last for a period of more than a year, usually 5 to 10 years.

Features of Long-term Sources of Finance-

- It involves financing for fixed capital required for investment in fixed Assets.
- It is obtained from Capital Market.
- Long term sources of finance have a long term impact on the business.
- Generally used for financing big projects, expansion plans, increasing production, funding operations.

- Sources of Finance-

Share Capital

Debentures

Bonds

SHARE CAPITAL

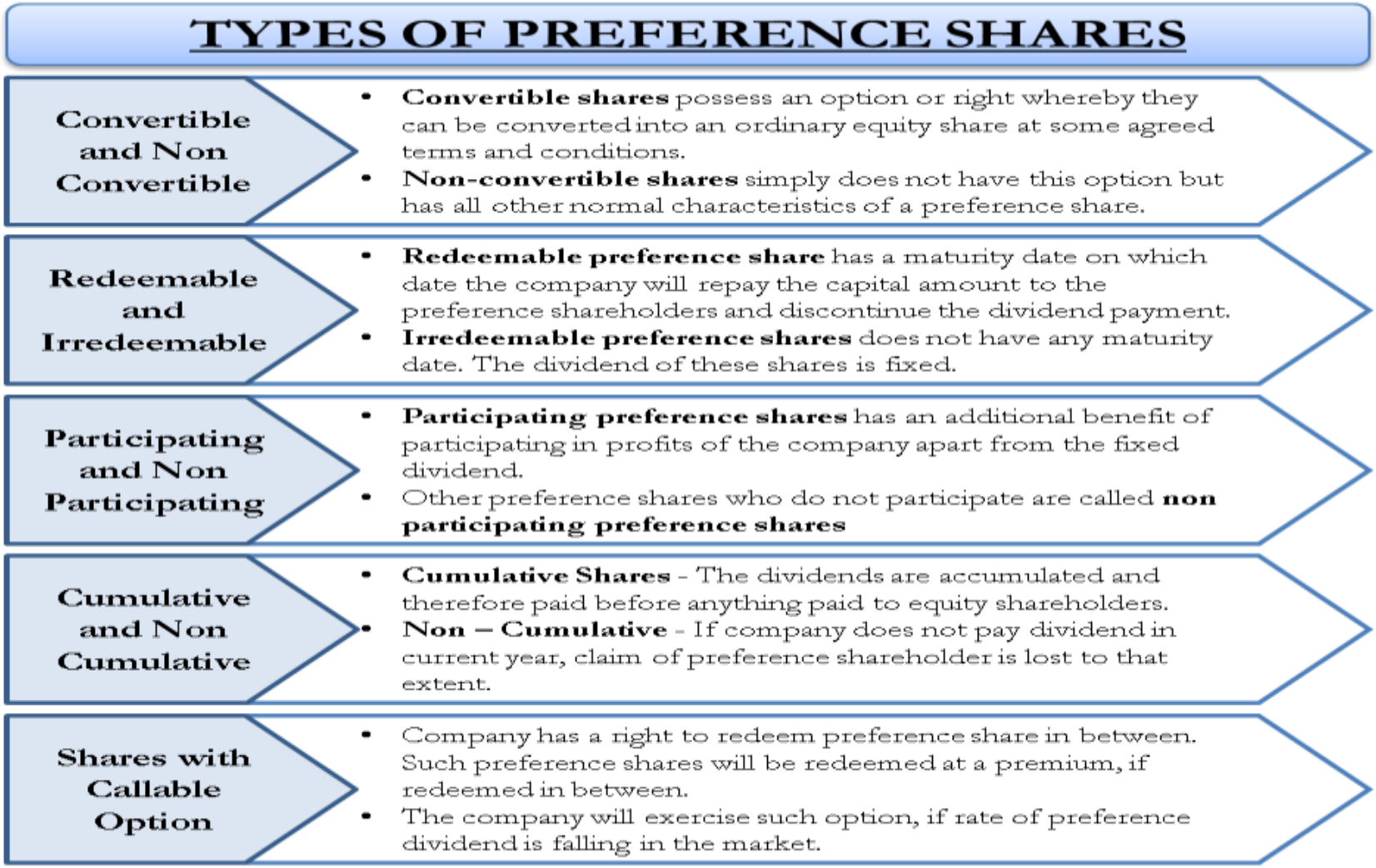
(a) Share capital – It is the capital raised by a company by issue of shares. It may take two forms –

Equity share capital – It represents the investment made by the owners of the business. They enjoy the rewards and bear the risks of ownership. They are paid dividend only after paying dividend to preference shareholders and after meeting the future investment needs of the organization.

Preference share capital – It represents the investment made by preference shareholders. Preference shareholders as the name suggests enjoy preference over payment of dividend. The dividend paid on these shares is generally at a fixed rate.

- Raising equity via share sales is also very flexible. The business has full control over how many shares to issue, what to initially charge for them and when it wishes to issue them. It can also issue further shares in the future if it wishes to raise more money. The company can also decide on the type of shares it issues and what rights these give the shareholders, and it can also repurchase issued shares if desired.
- Another advantage is that there is a much lower risk that the business will become bankrupt. Shareholders cannot force a company into bankruptcy if it fails to make payments (unlike creditors if the company fails to repay interest).
- Shareholders want the business to succeed and can bring in skills and experience and assist with business decisions.

TYPES OF PREFERENCE SHARES



Advantages of Share Capital

- One of the attractions of raising capital via the sale of shares is that the company does not have repayment requirements for the initial investment or for interest payments. This can make it more appealing than other forms, such as bank loans and bonds, that are debts of the company. Debts require the company to make payments at regular intervals in relation to interest, as well as eventually repaying the initial amount that was borrowed. Any shares sold can require a distribution of profits as a dividend but these can be halted if necessary. Therefore, the business is given more flexibility over its finances.
- Any money raised through the sale of shares can be used by the company however it wants. There are no stipulations or requirements attached to the funds. In comparison a creditor can limit the use of the funds they will lend to the company, which will restrict how the company can use them.

DEBENTURE

Debenture capital is a financial instrument for raising long term debt capital. A debenture holder is a creditor of the company. A fixed rate of interest is paid on debentures. It may be convertible or Non-convertible.

Non-convertible debentures are straight debt instrument carrying a fixed rate and have a maturity period of 5-9 years. If interest is accumulated it has to be paid by the company by liquidation of its assets. It is an economical method of raising funds. Debenture holders do not have any voting rights and there is no dilution of ownership. They cannot be converted into equity shares.

Convertible debentures are debentures which are convertible wholly or partly into equity shares after a fixed period of time.

Some of the advantages of using a debenture

- Debentures ensure a higher position in the ‘pecking order’ for repayment as a creditor. Otherwise, the loan is unsecured - the position of unsecured creditors near the bottom of the payment hierarchy means a significantly lower chance of recovering any money.
- Valuable financial protection and reassurance is provided for directors as regards their personal funds.
- The use of debentures can encourage long-term funding to grow a business. It is also cost-effective when compared with other forms of lending.
- Debentures usually provide a fixed rate of interest for the lender, and this has to be paid before any dividends are issued to shareholders.
- Control of the company by existing shareholders is not reduced, and profit-sharing remains in the same proportion.

BONDS

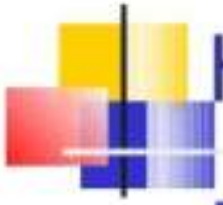
- A Bond is a financial instrument issued by public authorities, credit institutions, companies or government when it borrows money from public or banks at large. The bondholders are paid the principal amount and the interest (coupon rate) at a fixed rate after a stipulated period of time.

Advantages of Bonds

- Bonds have a clear advantage over other securities. The volatility of bonds (especially short and medium dated bonds) is lower than that of equities (stocks). Thus bonds are generally viewed as safer investments than stocks. In addition, bonds do suffer from less day-to-day volatility than stocks, and the interest payments of bonds are sometimes higher than the general level of dividend payments.
- Bonds are often liquid. It is often fairly easy for an institution to sell a large quantity of bonds without affecting the price much, which may be more difficult for equities. In effect, bonds are attractive because of the comparative certainty of a fixed interest payment twice a year and a fixed lump sum at maturity.

- Bondholders also enjoy a measure of legal protection: under the law of most countries, if a company goes bankrupt, its bondholders will often receive some money back (the recovery amount), whereas the company's equity stock often ends up valueless. Furthermore, bonds come with indentures (an indenture is a formal debt agreement that establishes the terms of a bond issue) and covenants (the clauses of such an agreement). Covenants specify the rights of bondholders and the duties of issuers, such as actions that the issuer is obligated to perform or is prohibited from performing.
- There are also a variety of bonds to fit different needs of investors, including fixed rated bonds, floating rate bonds, zero coupon bonds, convertible bonds, and inflation linked bonds.

Hybrid Instrument



Hybrid Instrument : Meaning

- A Hybrid Instrument is a financial instrument that has economic characteristics that are inconsistent, in whole or in part, with the classification implied by its legal form.
- Hybrid financial instruments, Hybrid legal instrument or a Hybrid Accounting Instrument.
- Hybrid is not a tax term.
- A Domestic Hybrid Instrument.
- Terminology –
  - A document containing some legal right or obligation as may be referred.
  - Derivative
  - Issuer, Holder, Debtor, Creditor

- Following are the types of hybrid financing:

1. Warrants
2. Convertibles

WARRANTS

A warrant entitles the purchase to buy a fixed number of ordinary shares, at a particular price, during a specified time period. Warrants are issued along with debentures as ‘sweeteners’. Warrants: gives its holder the right to subscribe to the equity shares’ of a company during a certain period at a specified price.

FEATURES OF WARRANT

- Exercise price: is the price at which its holder can purchase the issuing firm's ordinary shares
- Exercise ratio: states the number of ordinary shares that can be purchases, at the given exercise price per warrant.
- Expiration date: is the date when the option to buy ordinary shares in exchange for warrant expires.
- Detachability: if a warrant can be sold separately from the debenture to which it was originally attached, it is called a detachable warrant.
- Right: warrants entitle to purchase ordinary shares. Therefore, the holders of warrants are not the shareholders of the company until they exercise their options.

Reasons for issuing warrants

- Generally, three reasons are cited for issuing warrants:
- Sweetening debt: warrants help to make the issue of equity and debentures attractive.
- Deferred equity financing: warrants provide a company an opportunity for deferred equity financing where in shareholders can exercise price if market price in future does not rise.
- Cash inflow in future: company obtains cash when investors exercise their warrants. No cash inflow takes place when convertible debentures were offered.

CONVERTIBLE DEBENTURE

- Convertible debentures: is a debenture that is convertible, partially or fully, into equity shares.

- It is debenture that can be changed into a specified number of ordinary shares, at the option of the owner. The most notable feature of this debenture is that it promises a fixed income associated with debenture as well as change of capital gains associated with equity share. Because of this combination of fixed income and capital gains in the convertible debenture, it has been called a **hybrid security**.

CONVERTIBLE DEBENTURE CERTIFICATE

U.S.$5,000

SILICON GRAPHICS, INC.

U.S. $50,000,000

8¾ CONVERTIBLE SUBORDINATED DEBENTURE DUE 2004

SILICON GRAPHICS, INC., a corporation organized under the laws of the State of California (the "Company"), for value received, hereby promises to pay to the bearer upon surrender hereof the principal sum of

FIVE THOUSAND UNITED STATES DOLLARS (U.S. $5,000)

on June 28, 2004, and to pay interest, semiannually in arrears on June 28 and December 28 of each year, commencing December 28, 1989 on said principal sum at the rate of 8¾ per annum from and including the date hereof until payment of said principal sum has been made or duly provided for, but only, in case of such interest due on or before maturity, upon presentation and surrender of interest coupons attached hereto as they shall severally mature. Such payments shall be made in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts.

Unless the certificate of authentication hereon has been executed by the Trustee by the manual signature of one of its authorized officers, or by an authorized officer of an authenticating agent for the Trustee appointed in accordance with the Indenture, neither this Debenture nor the interest coupons attached hereto shall be entitled to any benefit under the Indenture or be valid or obligatory for any purpose.

Reference is made to the further provisions of the Indenture summarized on the reverse hereof. Such further provisions shall for all purposes have the same effect as though fully set forth at this place.

IN WITNESS WHEREOF, the Company has caused this instrument and the interest coupons attached hereto each to be duly executed.

Dated: June 28, 1989

SILICON GRAPHICS, INC.

Recap the differences between warrants and convertible Debenture

- Warrants bring in new capital, while convertibles do not.
- Most convertibles are callable, while warrants are not.
- Warrants typically have shorter maturities than convertibles, and expire before the accompanying debt.
- Warrants usually provide for fewer common shares than do convertibles.
- Bonds with warrants typically have much higher flotation costs than do convertible issues.
- Bonds with warrants are often used by small start-up firms. Why?

Venture Capital

- This form of finance is available only for limited companies. Venture capital is normally provided in such projects where there is relatively a higher degree of risk. For such projects, finance through the conventional sources may not be available. Many banks offer such finance through their merchant banking divisions, or specialist banks which offer advice and financial assistance. The financial assistance may take the form of loans and venture capital. In the case of viable or feasible projects, the merchant banks may participate in the equity also. In return, they expect one or two (depending up on the volume of funs pumped in) director positions on the board to exercise the control on the company matters. The funds, so provided by the venture capital, can be used for acquiring another company or launching a new product or financing expansion and growth.

Features of Venture Capital:

- **The main features of venture capital can be summarised as follows:**

(i) High Degrees of Risk: Venture capital represents financial investment in a highly risk project with the objective of earning a high rate of return.

(ii) Equity Participation: Venture capital financing is, invariably, an actual or potential equity participation wherein the objective of venture capitalist is to make capital gain by selling the shares once the firm becomes profitable.

(iii) Long Term Investment: Venture capital financing is a long term investment. It generally takes a long period to encash the investment in securities made by the venture capitalists.

(iv) Participation in Management: In addition to providing capital, venture capital funds take an active interest in the management of the assisted firms. Thus, the approach of venture capital firms is different from that of a traditional lender of banker.

- It is also different from that of a ordinary stock market investor who merely trades in the shares of a company without participating in their management. It has been rightly said, “venture capital combines the qualities of banker, stock market investor and entrepreneur in one.”

ADVANTAGES

- **Business expertise.** Aside from the financial backing, obtaining venture capital financing can provide a start-up or young business with a valuable source of guidance and consultation. This can help with a variety of business decisions, including financial management and human resource management. Making better decisions in these key areas can be vitally important as your business grows.
- **Additional resources.** In a number of critical areas, including legal, tax and personnel matters, a VC firm can provide active support, all the more important at a key stage in the growth of a young company. Faster growth and greater success are two potential key benefits.
- **Connections.** Venture capitalists are typically well connected in the business community. Tapping into these connections could have tremendous benefits.

DISADVANTAGES

- **Loss of control.** The drawbacks associated with equity financing in general can be compounded with venture capital financing. You could think of it as equity financing on steroids. With a large injection of cash and professional—and possibly aggressive—investors, it is likely that your VC partners will want to be involved. The size of their stake could determine how much say they have in shaping your company's direction.
- **Minority ownership status.** Depending on the size of the VC firm's stake in your company, which could be more than 50%, you could lose management control. Essentially, you could be giving up ownership of your own business.

TIME VALUE OF MONEY

Introduction.

- *The time value of money (TVM) is the idea that money available at the present time is worth more than the same amount in the future due to its potential earning capacity. This core principle of finance holds that, provided money can earn interest, any amount of money is worth more the sooner it is received.*

- *Time Value of Money (TVM) is an important concept in financial management. It can be used to compare investment alternatives and to solve problems involving loans, leases, savings.*

Cont..

- *TVM help us in knowing the value of money invested. As time changes value of money invested on any project/ firm also changes. And its present value is calculated by using "mathematical formula", which tell us the value of money with respect of time. i.e.*

$$PV = \frac{FV}{(1+i)^n}$$

PV = present value

FV = future value (money to be received in the future)

i = discount rate

n = number of periods until fv is received

Reasons Behind the Concept of Time Value of money

- There are four primary reasons why a rupee received in the future is worth less than a rupee received now:

- ✓ INFLATION
- ✓ INTEREST EARNINGS
- ✓ UNCERTAIN FUTURE
- ✓ HUMAN PREFERENCES

INFLATION

- Presence of positive rate of inflation reduce the PURCHASING POWER of rupees through time.
- FOR EXAMPLE:

✓ One year back ONE apple was available for Rupees 10 and a dozen of apple cost Rupees 120.

✓ Now one apple costs Rupees 15 and a dozen of apples cost rupees 180.

✓ Now with Rupees 120 we can buy only 8 apples instead of 12 apples.

INTEREST EARNINGS

- A rupee today is worth more today than in the future because of the opportunity cost of the lost earnings, i.e. , It could have been invested and earned a return between today and a point of time.

UNCERTAIN FUTURE

- Thirdly, all future values are in some sense only PROMISES and contain some uncertainty about their occurrence.
- As a result of the risk of default or non performance of an investment, a rupee in hand is worth more than an expected rupee in future.

HUMAN PREFERENCES

- Finally, human preferences typically involve impatience or the preference to consume goods and services now rather than in future.

Leverage

- **Meaning of Leverage**
- The term leverage refers to an increased means of accomplishing some purpose. Leverage is used to lifting heavy objects, which may not be otherwise possible. In the financial point of view, leverage refers to furnish the ability to use fixed cost assets or funds to increase the return to its shareholders.

Definition of Leverage

James Horne has defined leverage as, "the employment of an asset or fund for which the firm pays a fixed cost or fixed return.

Types of Leverage

- Operating Leverage
- Financial Leverage
- Combined Leverage

OPERATING LEVERAGE

- The leverage associated with investment activities is called as operating leverage. It is caused due to fixed operating expenses in the company. Operating leverage may be defined as the company's ability to use fixed operating costs to magnify the effects of changes in sales on its earnings before interest and taxes. Operating leverage consists of two important costs viz., fixed cost and variable cost. When the company is said to have a high degree of operating leverage if it employs a great amount of fixed cost and smaller amount of variable cost. Thus, the degree of operating leverage depends upon the amount of various cost structure. Operating leverage can be determined with the help of a break even analysis.

Operating leverage can be calculated with the help of the following formula:

- OL =C/OP
- Where,

OL = Operating Leverage

C = Contribution

OP = Operating Profits

Uses of Operating Leverage

Operating leverage is one of the procedures to measure the impact of changes in sales which lead for change in the profits of the company. If there is any change in the sales, it will lead to corresponding changes in profit.

Operating leverage assists to identify the position of fixed cost and variable cost.

Operating leverage measures the relationship between the sales and revenue of the company during a particular period.

Operating leverage helps to understand the level of fixed cost which is invested in the operating expenses of business activities.

Operating leverage defines the overall position of the fixed operating cost.

Illustration:

- **Following is the cost information of a firm:**

Fixed cost = Rs. 50,000

Variable cost = 70% of sales

Sales = Rs. 2,00,000 in previous year and Rs. 2,50,000 in current year.

- **Find out percentage change in sales and operating profits when:**

(i) Fixed costs are not there (no leverage)

(ii) Fixed cost are there (leveraged situation).

- SOLUTION

(i)	*Previous year*	*Current year*	*Percentage Change*
	₹	₹	₹
Sales	2,00,000	2,50,000	25%
Less : Variable cost (70% of sales)	1,40,000	1,75,000	25%
Profit from operations	60,000	75,000	25%
(ii)	*Previous year*	*Current year*	*Percentage Change*
	₹	₹	₹
Sales	2,00,000	2,50,000	25%
Less : Variable cost (70% of sales)	1,40,000	1,75,000	25%
Contribution	60,000	75,000	25%
Less : Fixed cost	50,000	50,000	
Profit from operations	10,000	25,000	150%

Comments:

(1) In situation (i) where there are no fixed costs (or absence of leverage) the percentage change in sales and percentage change in operating profit is the same i.e. 25%.

(2) In situation (ii) where there are fixed costs, the leverage being occurring, the percentage change in profits (150%) is much more than the percentage change is sales (25%).

(3) The fixed cost element has helped in magnifying the percentage increase in operating profits.

Risk Factor:

It is true hat a high leveraged situation will magnify the operating profits but it brings in the risk element too. The percentage change in profits will be more in a situation with higher fixed costs as comparted to that where fixed costs are lower. The higher degree of leverage brings in more decrease in operating profits. This situation can be illustrated with the help of the following illustration.

FINANCIAL LEVERAGE

- Leverage activities with financing activities is called financial leverage. Financial leverage represents the relationship between the company's earnings before interest and taxes (EBIT) or operating profit and the earning available to equity shareholders. Financial leverage is defined as "the ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on the earnings per share". It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders.

"The use of long-term fixed interest bearing debt and preference share capital along with share capital is called financial leverage or trading on equity". Financial leverage may be favourable or unfavourable depends upon the use of fixed cost funds. Favourable financial leverage occurs when the company earns more on the assets purchased with the funds, then the fixed cost of their use. Hence, it is also called as positive financial leverage. Unfavourable financial leverage occurs when the company does not earn as much as the funds cost. Hence, it is also called as negative financial leverage.

Financial leverage can be calculated with the help of the following formula:

FL =OP/PBT

- Where,

FL = Financial leverage

OP = Operating profit (EBIT)

PBT = Profit before tax.

EXAMPLE

- Given Sales Rs.100 million, Variable cost Rs.40 Million and Fixed Cost Rs.40 Million. Capital employed of the Company Rs.80 million with debt equity ratio 1:1. This means debts = Rs.40 million. Debt carries 10% interest. Find out the Degree of Financial Leverage?
- **Solution:**

Interest cost = Rs.4 million.

(Figures are in Rs. Million)

$$\mathrm{DFL} = \frac{100 - 40 - 40}{100 - 40 - 4} = 1.25$$

DFL explains change in net profit resulting from change in operating profit.

Importance of Financial Leverage

- Financial Leverage helps to access the financial risks. Financial risk of not being to pay the financial obligations by the firm to the debt holders.
- It also helps in attaining trading on equity. The trading on equity exists only when the return on the investment is greater than the cost of the debt.

COMBINED LEVERAGE

- When the company uses both financial and operating leverage to magnification of any change in sales into a larger relative changes in earning per share. Combined leverage is also called as composite leverage or total leverage. Combined leverage express the relationship between the revenue in the account of sales and the taxable income. Combined leverage can be calculated with the help of the following formulas:
- CL = OL × FL
- CL =C/OP × OP/PBT-C/PBT
- Where,

CL = Combined Leverage

OL = Operating Leverage

FL = Financial Leverage

C = Contribution

OP = Operating Profit (EBIT)

PBT= Profit Before Tax

Illustration

A company has sales of Rs. 5,00,000, variable costs of Rs. 3,00,000, fixed costs of Rs. 1,00,000 and long-term loans of Rs. 4,00,000 at 10% rate of interest. Calculate the composite leverage:

Solution:

(*i*) Operating Leverage $= \dfrac{\text{Contribution}}{\text{Earning before interest and tax}}$

$= \dfrac{\text{Rs. 2,00,000}}{\text{Rs. 1,00,000}} = 2$

(*ii*) Financial Leverage $= \dfrac{\text{Sales} - \text{Variable cost} - \text{Fixed cost}}{\text{Sales} - \text{Variable cost} - \text{Fixed cost} - \text{Interest}}$

$= \dfrac{\text{Rs. 5,00,000} - \text{Rs. 3,00,000} - \text{Rs. 1,00,000}}{\text{Rs. 5,00,000} - \text{Rs. 3,00,000} - \text{Rs. 1,00,000} - \text{Rs. 40,000}}$

$= \dfrac{1,00,000}{60,000} = \dfrac{5}{3}$

(*iii*) Composite Leverage = Operating Leverage × Financial Leverage $= \dfrac{2}{1} \times \dfrac{5}{3} = \dfrac{10}{3}$

FINANCIAL MANGEMENT

UNIT III

Cost of Capital, Weighted Average cost of capital, Measurement of cost of capital, Capital Structure, Theories and Optimum Capital Structure.

COST OF CAPITAL

- The cost of capital of a firm is the minimum rate of return expected by its investors. It is the weighted average cost of various sources of finance used by a firm. The capital used by a firm may be in the form of debt, preference capital, retained earnings and equity shares. The concept of cost of capital is very important in the financial management. A decision to invest in a particular project depends upon the cost of capital of the firm or the cut off rate which is the minimum rate of return expected by the investors.

DEFINITIONS

James C.Van Horne defines cost of capital as, ‘‘a cut-off rate for the allocation of capital to investments of projects. It is the rate of return on a project that will leave unchanged the market price of the stock”.

According to Solomon Ezra, “Cost of capital is the minimum required rate of earning or the cut-off rate of capital expenditures”.

Cost of Capital – Significance

- *(i)* ***Capital budgeting decisions.*** *In capital budgeting decisions, the cost of capital is often used as a discount rate on the basis of which the firm's future cash flows are discounted to find out their present values. Thus, the cost of capital is the very basis for financial appraisal of new capital expenditure proposals. The decision of the finance manager will be irrational and wrong in case the cost of capital is not correctly determined. This is because the business must earn at least a rate which* equals to its cost capital in order to make at least a break-even.

- *(ii)* ***Capital structure decisions.*** *The cost of capital is also an important consideration in capital structure decisions. The finance manager must raise capital from different sources in a way that it optimises the risk and cost factors. The sources of funds which have less cost involve high risk. Raising of loans may, therefore, be cheaper on account of income tax benefits, but it involves heavy risk because a slight fall in the earning capacity of the company may bring the firm near to cash insolvency. It is, therefore, absolutely necessary that cost of each source of funds is carefully considered and compared with the risk involved with it.*

COST OF DIFFERENT SOURCES OF RAISING CAPITAL

The term cost of capital is an overall cost. This is the combination cost of the specific cost associated with specific source of financing. The computation of cost capital therefore, involves two steps: The computation of the different elements of the cost in term of the cost of the different source of finance. The calculation of the overall cost by combining the specific cost into a composite cost. From the view point of capital budgeting decisions the long-term sources of fund are relevant as the constitute the major source of financing of fixed cost. In calculating the cost of capital, therefore, the focus is to be on the long-term funds. In other words the specific cost has to be calculated for:

1) Long term debt
2) Preference Shares
3) Equity Shares
4) Retained earnings

COST OF DEBT

The cost of debt is the rate of interest payable on debt. For example, a company issues Rs.1, 00,000 10%debentures at par; the before-tax cost of this debt issue will also be 10%. By way of a formula, before tax cost of debt may be calculated as:

$$\boldsymbol{Kdb=Kdb=I/P}$$

$\boldsymbol{where, Kdb=before\ tax\ cost\ of\ debt}$ I=Interest P=Principal

In case the debt is raised at premium or discount, we should consider P as the amount of net proceeds received from the issue and not the face value of securities. The formula may be changed to

$$\boldsymbol{Kdb=I/NP}\ (\boldsymbol{where, NP=Net\ Proceeds})$$

Further, when debt is used as a source of finance, the firm saves a considerable amount in payment of tax as interest is allowed as a deductible expense in computation of tax. Hence, the effective cost of debt is reduced. The After-tax cost of debt may be calculated with the help of following formula:

$$\boldsymbol{Kda=I/NP(1-t)}$$

$\boldsymbol{where, Kda=After\ tax\ cost\ of\ debt}$ t= Rate of Tax

COST OF PREFERENCE CAPITAL

A fixed rate of dividend is payable on preference shares. Though dividend is payable at the discretion of the Board of directors and there is no legal binding to pay dividend, yet it does not mean that preference capital is cost free. The cost of preference capital is a function of dividend expected by its investors, i.e., its stated dividend. In case dividend share not paid to preference shareholders, it will affect the fund raising capacity of the firm. Hence, dividends are usually paid regularly of preference shares expect when there are no profits to pay dividends. The cost of preference capital which is perpetual can be calculated as:

$$\boldsymbol{Kp = D/P}$$

Where, $\boldsymbol{Kp}$ = Cost of preference Capital D = Annual Preference Dividend P = Preference Share Capital (Proceeds.) Further, if preference shares are issued at Premium or Discount or when costs of floatation are incurred to issue preference shares, the nominal or par value or preference share capital has to be adjusted to find out the net proceeds from the issue of preference shares. In such a case, the cost of preference capital can be computed with the following formula:

$$\boldsymbol{Kp = D/NP}$$

COST OF EQUITY SHARE CAPITAL

- The cost of equity is the „maximum rate of return that the company must earn of equity financed portion of its investments in order to leave unchanged the market price of its stock". The cost of equity capital is a function of the expected return by its investors. The cost of equity is not the out-of-pocket cost of using equity capital as the equity shareholders are not paid dividend at a fixed rate every year. Moreover, payment of dividend is not a legal binding. It may or may not be paid. But is does not mean that equity share capital is a cost free capital. Share holders invest money in equity shares on the expectation of getting dividend and the company must earn this minimum rate so that the market price of the shares remains unchanged. Whenever a company wants to raise additional funds by the issue of new equity shares, the expectations of the shareholders have to evaluate. The cost of equity share capital can be computed in the following ways:

(a) Dividend Yield Method or Dividend/Price Ratio method: According to this method, the cost of equity capital is the „discount rate that equates the present value of expected future dividends per share with the new proceeds (or current market price) of a share". Symbolically.

$$Ke = D/NP \text{ or } D/MP$$

$$Where, Ke = Cost\ of\ Equity\ Capital\ D = Expected\ dividend\ per\ Share$$

$$NP = Net\ proceeds\ per\ Share\ MP = Market\ Price\ per\ Share$$

(b) Dividend Yield plus Growth in Dividend Method: When the dividends of the firm are expected to grow at a constant rate and the dividend-pay-out ratio is constant this method may be used to compute the cost of equity capital. According to this method the cost of equity capital is based on the dividends and the growth rate.

$$Ke = DI/NP + G$$

Further, in case cost of existing equity share capital is to be calculated, the NP should be changed with MP (market price per share) in the above equation.

$$Ke = DI/MP + G$$

WEIGHTED AVERAGE COST OF CAPITAL

COMPUTATION OF WEIGHTED AVERAGE COST OF CAPITAL

Weighted average cost of capital is the average cost of the costs of various sources of Financing. Weighted average cost of capital is also known as composite cost of capital, overall cost of capital or average cost of capital. Once the specific cost of individual sources of finance is determined, we can compute the weighted average cost of capital by putting weights to the specific costs of capital in proportion of the various sources of funds to the total. The weights may be given either by using the book value of the source or market value of the source. The market value weights suffer from the following limitations: It is very difficult to determine the market values because of frequent fluctuations. With the use of market value weights, equity capital gets greater importance. For the above limitations, it is better to use book value which is readily available. Weighted average cost of capital can be computed as follows:

$$Kw=\Sigma XW/\Sigma W$$

$Where, Kw=Weighted\ average\ cost\ of\ capital$

X = Cost of specific source of finance

W = Weight, proportion of specific source of finance

ADVANTAGES OF WEIGHTED AVERAGE COST OF CAPITAL

Following are the importance or significance of Weighted average cost of capital(WACC):

1. In case of determination of future project profitability, WACC is treated as cut off rate.
2. WACC is widely used to selection project among the option available.
3. WACC is useful in making Economic value added (EVA) calculation.

Example

- A company is considering raising of funds of about Rs. 100 lakhs by one of two alternative method,viz., 14% institutional term loan or 13% non-convertible debentures. The term loan option would attractno major incidental cost. The debentures would have to be issued at a discount of 2.5% and wouldinvolve cost of issue of Rs. 1,00,000.Advise the company as to the better option based on the effective cost of capital in each case. Assume atax rate of 50%

- ***Solution***

Effective cost of 14% loan: In this case, there is no other cost involved and the company has to pay interest at 14%. This interest after tax shield @ 50% comes to 7% only.

Effective cost of 13% NCD : In this case,

Annual Interest, I = Rs. 13

SV = 100 – 2.50 – 1.00

= 96.50

kd = 13 (1 – 5)/96.50%

= 6.74%

The effective cost of capital is lesser in case of 13% NCD.

CAPITAL STRUCTURE

Capital structure refers to the kinds of securities and the proportionate amounts that make up capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings. The term capital structure refers to the relationship between the various long-term sources financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm. Capital structure is the permanent financing of the company represented primarily by long-term debt and equity.

DEFINITION OF CAPITAL STRUCTURE

According to the definition of Gerestenbeg, “Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources”.

According to the definition of James C. Van Horne, “The mix of a firm’s permanent long-term financing represented by debt, preferred stock, and common stock equity”.

OPTIMUM CAPITAL STRUCTURE

Optimum capital structure is the capital structure at which the weighted average cost of capital is minimum and thereby the value of the firm is maximum. Optimum capital structure may be defined as the capital structure or combination of debt and equity that leads to the maximum value of the firm.

Objectives of Capital Structure Decision of capital structure aims at the following two important objectives:

1. Maximize the value of the firm.
2. Minimize the overall cost of capital.

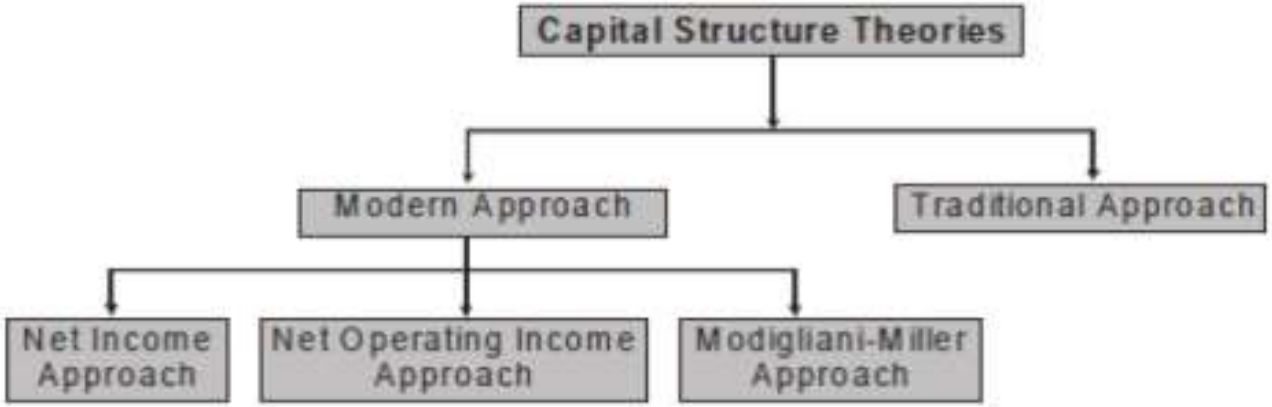
Forms of Capital Structure Capital structure pattern varies from company to company and the availability of finance.

- Equity shares only.
- Equity and preference shares only.

CAPITAL STRUCTURE THEORIES

- Capital structure is the major part of the firm's financial decision which affects the value of the firm and it leads to change EBIT and market value of the shares. There is a relationship among the capital structure, cost of capital and value of the firm. The aim of effective capital structure is to maximize the value of the firm and to reduce the cost of capital.

There are two major theories explaining the relationship between capital structure, cost of capital and value of the firm.


Capital Structure Theories
Modern Approach
Traditional Approach
Net Income Approach
Net Operating Income Approach
Modigliani-Miller Approach

NET INCOME (NI) APPROACH

- Net income approach suggested by the Durand. According to this approach, the capital structure decision is relevant to the valuation of the firm. In other words, a change in the capital structure leads to a corresponding change in the overall cost of capital as well as the total value of the firm. According to this approach, use more debt finance to reduce the overall cost of capital and increase the value of firm.

Net income approach is based on the following three important assumptions:

1. There are no corporate taxes.
2. The cost debt is less than the cost of equity.
3. The use of debt does not change the risk perception of the investor.

Where **V = S+B**

V = Value of firm S = Market value of equity B = Market value of debt Market value of the equity can be ascertained by the following formula:

S = NI/K e

NI = Earnings available to equity shareholder Ke = Cost of equity/equity capitalization rate

NET OPERATING INCOME (NOI) APPROACH

Another modern theory of capital structure, suggested by Durand. This is just the opposite of the Net Income approach. According to this approach, Capital Structure decision is irrelevant to the valuation of the firm. The market value of the firm is not at all affected by the capital structure changes. According to this approach, the change in capital structure will not lead to any change in the total value of the firm and market price of shares as well as the overall cost of capital. NI approach is based on the following important assumptions; The overall cost of capital remains constant; There are no corporate taxes; The market capitalizes the value of the firm as a whole; Value of the firm (V) can be calculated with the help of the following formula

V = EBIT/Ko

Where, V = Value of the firm EBIT = Earnings before interest and tax Ko = Overall cost of capital

TRADITIONAL APPROACH

It is the mix of Net Income approach and Net Operating Income approach. Hence, it is also called as intermediate approach. According to the traditional approach, mix of debt and equity capital can increase the value of the firm by reducing overall cost of capital up to certain level of debt. Traditional approach states that the Ko decreases only within the responsible limit of financial leverage and when reaching the minimum level, it starts increasing with financial leverage. Assumptions Capital structure theories are based on certain assumption to analysis in a single and convenient manner:

- There are only two sources of funds used by a firm; debt and shares.
- The firm pays 100% of its earning as dividend.
- The total assets are given and do not change.
- The total finance remains constant.
- The operating profits (EBIT) are not expected to grow.
- The business risk remains constant.
- The firm has a perpetual life.
- The investors behave rationally.

MODIGLIANI AND MILLER APPROACH

Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Modigliani and Miller approach is based on the following important assumptions:

- There is a perfect capital market.
- There are no retained earnings.
- There are no corporate taxes.
- The investors act rationally.
- The dividend payout ratio is 100%.
- The business consists of the same level of business risk.

Value of the firm can be calculated with the help of the following formula:

V=EBIT/ K (I-t)

UNIT IV

Capital Budgeting, Methods of Capital Budgeting- Traditional Methods, Pay back Period, ARR, Discounted Cash Flows, NPV, IRR, Profitability Index.

Meaning of capital budgeting

- *The word Capital refers to be the total investment of a company of firm in money, tangible and intangible assets. Whereas budgeting defined by the "**Rowland** and **William**" it may be said to be the art of building budgets. Budgets are a blue print of a plan and action expressed in quantities and manners. Investment decision is the process of making investment decisions in capital expenditure. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over period of time exceeding one year. The main characteristic of a capital expenditure is that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future.*
- ***DEFINITION***
- *Capital budgeting (investment decision) as, "Capital budgeting is long term planning for making and financing proposed capital outlays." ----- Charles T.Horngreen*

FEATURES OF CAPITAL BUDGETING

- 1) It involves high risk
- 2) Large profits are estimated
- 3) Long time period between the initial investments and estimated returns

CAPITAL BUDGETING PROCESS:

- A) Project identification and generation: The first step towards capital budgeting is to generate a proposal for investments. There could be various reasons for taking up investments in a business. It could be addition of a new product line or expanding the existing one. It could be a proposal to either increase the production or reduce the costs of outputs.
- B) Project Screening and Evaluation: This step mainly involves selecting all correct criteria's to judge the desirability of a proposal. This has to match the objective of the firm to maximize its market value. The tool of time value of money comes handy in this step.

Also the estimation of the benefits and the costs needs to be done. The total cash inflow and outflow along with the uncertainties and risks associated with the proposal has to be analyzed thoroughly and appropriate provisioning has to be done for the same.

C) Project Selection: There is no such defined method for the selection of a proposal for investments as different businesses have different requirements. That is why, the approval of an investment proposal is done based on the selection criteria and screening process which is defined for every firm keeping in mind the objectives of the investment being undertaken.

Once the proposal has been finalized, the different alternatives for raising or acquiring funds have to be explored by the finance team. This is called preparing the capital budget. The average cost of funds has to be reduced. A detailed procedure for periodical reports and tracking the project for the lifetime needs to be streamlined in the initial phase itself. The final approvals are based on profitability, Economic constituents, viability and market conditions.

D) Implementation: Money is spent and thus proposal is implemented. The different responsibilities like implementing the proposals, completion of the project within the requisite time period and reduction of cost are allotted. The management then takes up the task of monitoring and containing the implementation of the proposals.

E) Performance review: The final stage of capital budgeting involves comparison of actual results with the standard ones. The unfavorable results are identified and removing the various difficulties of the projects helps for future selection and execution of the proposals.

PROJECT EVALUATION TECHNIQUES (OR) CAPITAL BUDGETING TECHNIQUES

At each point of time a business firm has a number of proposals regarding various projects in which it can invest funds. But the funds available with the firm are always limited and it is not possible to invest funds in all the proposals at a time. Hence, it is very essential to select from amongst the various competing proposals, those which give the highest benefits. The crux of the capital budgeting is the allocation of available resources to various proposals.

There are many methods of evaluating profitability of capital investment proposals. The various commonly used methods are as follows:

(A) Traditional methods:

(1) Pay-back Period Method or Pay out or Pay off Method.

(2) Improvement of Traditional Approach to pay back Period Method.(post payback method)

(3) Accounting or Average Rate of Return Method.

(B) Time-adjusted method or discounted methods:

(4) Net Present Value Method.

(5) Internal Rate of Return Method.

(6) Profitability Index Method.

A) TRADITIONAL METHODS:

1. PAY-BACK PERIOD METHOD

The 'pay back' sometimes called as pay out or pay off period method represents the period in which the total investment in permanent assets pays back itself. This method is based on the principle that every capital expenditure pays itself back within a certain period out of the additional earnings generated from the capital assets.

Under this method, various investments are ranked according to the length of their payback period in such a manner that the investment within a shorter payback period is preferred to the one which has longer pay back period. (It is one of the non-discounted cash flow methods of capital budgeting).

$$\text{Pay-back period} = \frac{\text{Initial investment}}{\text{Annual cash inflows}}$$

2. POST PAY-BACK PROFITABILITY METHOD

- *One of the serious limitations of Pay-back period method is that it does not take into account the cash inflows earned after pay-back period and hence the true profitability of the project cannot be assessed. Hence, an, improvement over this method can be made by* taking into account the return receivable beyond the pay-back period. These returns are called post pay back profits.

Post pay-back profitability =Cash inflow (Estimated life – Pay-back period)

Post pay-back profitability index= Post pay-back profits/original investment x 100

3. AVERAGE RATE OF RETURN:

This method takes into account the earnings expected from the investment over their whole life. It is known as accounting rate of return method for the reason that under this method, the Accounting concept of profit (net profit after tax and depreciation) is used rather than cash inflows. According to this method, various projects are ranked in order of the rate of earnings or rate of return. The project with the higher rate of return is selected as compared to the one with lower rate of return. This method can also be used to make decision as to accepting or rejecting a proposal. Average rate of return means the average rate of return or profit taken for considering.

The return on investment method can be used in several ways as follows:

(a) Average Rate of Return Method (ARR):

Under this method average profit after tax and depreciation is calculated and then it is divided by the total capital outlay or total investment in the project. This method is one of the traditional methods for evaluating the project proposals

ARR = (Total profits (after dep & taxes))/ (Net Investment in the project X No. of years of profits) x 100

- OR

ARR = (Average Annual profits)/ (Net investment in the project) x 100

(**b) Average Return on Average Investment Method:**

This is the most appropriate method of rate of return on investment Under this method, average profit after depreciation and taxes is divided by the average amount of investment; thus:

Average Return on Average Investment = (Average Annual Profit after depreciation and taxes)/ (Average Investment) x 100

(B) TIME – ADJUSTED OR DISCOUNTED CASH FLOW METHODS: or MODERN METHOD

1. NET PRESENT VALUE

Net present value method is one of the modern methods for evaluating the project proposals. In this method cash inflows are considered with the time value of the money. Net present value describes as the summation of the present value of cash inflow and present value of cash outflow. Net present value is the difference between the total present values of future cash inflows and the total present value of future cash outflows.

NPV = Total Present value of cash inflows – Net Investment

If offered an investment that costs $5,000 today and promises to pay you $7,000 two years from today and if your opportunity cost for projects of similar risk is 10%, would you make this investment?

You Need to compare your $5,000 investment with the $7,000 cash flow you expect in two years. Because you feel that a discount rate of 10% reflects the degree of uncertainty associated with the $7,000 expected in two years, today it is worth:

Formula:

$PV=A_n/(1+r)^n$

Where, PV = Present Value

R = rate of interest

N = number of years

A_n = Future net cash flows

2. **PROFITABILITY INDEX METHOD**

The *profitability index* (PI) is the ratio of the present value of change in operating cash inflows to the present value of investment cash outflows:

$$\text{PI} = \frac{\text{Present value of the change in operating cash inflows}}{\text{Present value of the investment cash outflows}}$$

Instead of the *difference* between the two present values, as in equation PI is the *ratio* of the two present values. Hence, PI is a variation of NPV. By construction, if the NPV is zero, PI is one.

3. **INTERNAL RATE OF RETURN METHOD**

The internal rate of return method is also a modern technique of capital budgeting that takes into account the time value of money. It is also known as time adjusted rate of return , discounted cash flow , discounted rate of return , yield method and trial and error yield method. Under the internal rate of return method, the cash flows of project are discounted at a suitable rate by hit and trial method, which equates the net present value so calculated to the amount of investment. Under this method , since the discount rate is determined internally, this method is called as the internal rate of return method. The internal rate of return can be defined as that rate of discount at which the present value of cash inflow is equal to the present value of cash outflows.

$$\frac{\text{Cash inflow}}{\text{Investment initial}}$$

EXAMPLE

SOLVED PROBLEMS – CAPITAL BUDGETING

Problem 1

The cost of a plant is Rs. 5,00,000. It has an estimated life of 5 years after which it would be disposed off (scrap value nil). Profit before depreciation, interest and taxes (PBIT) is estimated to be Rs. 1,75,000 p.a. Find out the yearly cash flow from the plant. Tax rate 30%.

Solution

Annual depreciation charge (Rs. 5,00,000/5)		1,00,000
Profit before depreciation, interest and taxes		1,75,000
- Depreciation		1,00,000
Profit before tax		75,000
Tax @ 30%		22,500
Profit after Tax		52,500
+ depreciation (added back)		1,00,000
Therefore, cash flow	1,52,500	

Financial Management

Unit V

Working Capital Management, Cash Management, Receivables Management, Inventory Management, Internal Financing, Dividend Policy.

WORKING CAPITAL MANAGEMENT

Working Capital Management

- ***Working capital management*** involves the relationship between a firm'sshort-term assets and its short-term liabilities. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcomingoperational expenses. The management of working capital involves managing inventories, accounts receivable and payable, and cash

CONCEPT OF WORKING CAPITAL

- Concept of working capital includes meaning of working capital and its nature. Working capital is the **INVESTMENT** in current assets. Without this investment, we can not operate our fixed assets properly. For getting good profits from fixed assets, we need to buy some current assets or pay some expenses or **INVEST** our money in current assets. For example, we keep some of cash which is the one of major part of working capital. At any time, our machines may need repair. Repair is revenue expense but without cash, we can not repair our machines and without machines, our production may delay. Like this, we need inventory or to **INVEST** in debtors and other short term securities

WORKING CAPITAL IMPORTANCE

" Working capital importance

- *" Working capital is an excess of current assets over current liabilities. In other words, The amount of current assets which is more than current liabilities is known as Working Capital. If current liabilities are nil then, working capital will equal to current assets. Working capital shows strength of business in short period of time . If a company have some amount in the form of working capital , it means Company have liquid assets, with this money company can face every crises position in market.*
- **Working Capital = Current Assets - Current Liabilities**

Current assets

Current assets are those assets which can be converted into cash within One year or less then one year . In current assets, we includes cash, bank, debtors, bill receivables, prepaid expenses, outstanding incomes .

Current Liabilities

Current Liabilities are those liabilities which can be paid to respective parties within one year or less than one year at their maturity. In current liabilities, we includes creditors, outstanding bills, bank overdraft, bills payable and short term loans, outstanding expenses, advance incomes

EXAMPLE

- Let's walk through an example where we can calculate a company's working capital by looking at Company XYZ's simplified balance sheet:

Balance Sheet for Company XYZ				
Cash	$60,000		Accounts Payable	$30,000
Marketable Securities	$10,000		Accrued Expenses	$20,000
Accounts Receivable	$40,000		Notes Payable	$5,000
Inventory	$50,000		Current Portion Long-Term Debt	$10,000
Total Current Assets	$160,000		Total Current Liabilities	$65,000

Figure 1

- Using the working capital formula and the information above from the table above, we can calculate that Company XYZ's working capital is:

  Working Capital = $160,000 - $65,000 = $95,000
- In this example, we see that the company's working capital is $95,000 -- a positive working capital.
- Positive working capital generally indicates that a company is able to pay off its short-term liabilities almost immediately. Negative working capital generally indicates a company is unable to do so.
- This is why analysts are sensitive to decreases in working capital; they suggest a company is becoming overleveraged, is struggling to maintain or grow sales, is paying bills too quickly, or is collecting receivables too slowly. Increases in working capital, on the other hand, suggest the opposite.

DETERMINANTS OF WORKING CAPITAL

Determinants of Working Capital

- in working capital. The following is the description of factors which generally influence the working capital requirements of firms.
- **1. Small or Large Business**

  It is the first determinant of working capital that it is affected with the nature of business. Business may be small or large. In small business, company need high working capital because, small business is relating to **TRADING** of goods, for starting small business, you need very small fixed capital but need high working capital for paying day to day expenses. But in large business, we require more fixed capital than working capital for purchasing fixed asset.

- **2. Small or Large Demand**

  Nature of demand also absolutely affects the working capital need. Some product can be easily sold by businessman, in that business; you need small amount of working capital because your **EARNED MONEY FROM** sale can easy fulfill the shortage of working capital. But, if demand is very less, it is required that you have to **INVEST**large amount of working capital because your all fixed expenses must be paid by you.
  For paying fixed capital you need working capital.

- **3. Business Cycle**

  There are two main part of business cycle, one is boom and other is recession. In boom, we need high money or working capital for development of business but in recession, we need only low amount of working capital.

- **4. Production Policy**

  Production policy is also main determinant of working capital requirement. Different company may different production policy. Some companies stop or decrease the production level in off seasons, in that time, company may also reduce the number of employees or decrease the purchasing of new raw material, so, it will certainly decrease the amount of working capital but on the side, some company may continue their productions in off season, in that case, they need definitely large amount of working capital.

- **5. Credit Policy**

  Credit policy is relating to purchasing and selling of goods on credit basis. If companypurchases all goods on credit and sells on cash basis or advance basis, then it is certainly company need very low amount of working capital. But if in company, goods are purchased on cash basis, and sold on credit basis, it means, our **EARNED MONEY** will receive after sometime and we require large amount of working capital for continuing our business.

- **6. Price Level Changes**

  If there is increasing trend of products prices, we need to store high amount of working capital, because next time, it is precisely that we have to pay more for purchasing raw material or other service expenses. Inflation and deflation are two major factors which decide the next level of working capital in business.

  7. Effect of External Business Environmental Factors

  There are many external business environmental factors which affect the need of working capital like fiscal policy, monetary policy and bank policies and facilities.

WORKING CAPITAL CYCLE

The working capital cycle

- The working capital cycle measures the time between paying for goods supplied to you and the final receipt of cash to you from their sale. It is desirable to keep the cycle as short as possible as it increases the effectiveness of working

The working capital cycle

- The working capital cycle is the time that elapses between **INVESTING** in a product or service and receiving payment for that product or service. The starting point of the working capital cycle is usually when the business purchase raw materials or hires people for the service. The ending point of the working capital cycle is when the customer makes the payment, regardless of whether such payment comes pre-paid for the service or purchase, payment takes place at time of purchase or obtaining the service, or the payment comes later owing to sale on credit.
- For instance, if a company purchase raw material on day 1, manufactures the product on day 7, and sells it on day 15, receiving payment on day 23, the working capital cycle is 23 days. If the company sells the same product on cash basis, the working capital cycle is 15 days.

- A Negative Working Capital cycle basically means that the company is having higher Current Liabilities when compared with its Current Assets. Negative Working Capital essentially means that the company is able to **pre-sell its products** and gets a **decent Credit from its Suppliers** which help it to grow its Business without any **Capital requirements**.
-
- A Negative Working Capital cycle where the company is able to pre-sell its products (or) get advances from its customers is a **huge positive** for the Company's shareholders. This indicates the Huge Customer demand for its products or a very Strong Brand. Only a few companies have this favorable situation and all these Shares have been Huge Multi bagger in the past. (Eg: Colgate, VST Industries, HUL etc)

CASH MANAGEMENT

Cash

- Cash is the most liquid asset. Cash is common denominator to which all other current assets can be reduced because receivables and inventories get converted into cash. Cash is lifeblood of any firm needed to acquire supply resources, equipment and other assets used in generating the products and services. Marketable securities also come under near cash, serve as back pool of liquidity which provide quick cash when needed.

Cash management

- Cash management is concerned with management of cash in such a way as to achieve the generally accepted objectives of the firm- maximum profitability with maximum liquidity of the firm. It is the management's ability to recognize cash problems before they arise, to solve them when they arise and having made solution available to delegate someone carry them out.

Importance Of Cash Management

- 1. Cash management ensures that the firm has sufficient cash during peak times for purchase and for other purposes.
- 2. Cash management helps to meet obligatory cash out flows when they fall due.
- 3. Cash management assists in planning capital expenditure projects.
- 4. Cash management helps to arrange for outside financing at favorable terms and conditions, if necessary
- 5. Cash management helps to allow the firm to take advantage of discount, special purchases and business opportunities.
- 6. Cash management helps to invest surplus cash for short or long-term periods to keep the idle funds fully employed.

INVENTORY MANAGEMENT

INVENTORY MANAGEMENT

- Scientific method of finding out how much stock should be maintained in order to meet the production demands and be able to provide right type of material at right time, in right quantities and at competitive prices
- inventory is actually **money, which is available in the shape of materials (raw** materials, in-process and finished products), equipment, storage space, work-time etc

OBJECTIVES

- Utilizing of scare resources (capital) and investment judiciously.
- b) Keeping the production on as on-going basis.
- c) Preventing idleness of men, machine and morale. 21
- d) Avoiding risk of loss of life (moral & social).
- e) Reducing administrative workload.
- f) Giving satisfaction to customers in terms of quality-care, competitive price and prompt delivery
- . g) Inducing confidence in customers and to create trust and faith.

Motives for holding inventories

- **Transaction motive-** to facilitate smooth production and sales operations.
- **Precautionary motive** – to guard against the risk of unpredictable changes in demand and supply / other forces.
- **Speculative motive** – influences the decision to increase or reduce inventory level to take advantage of price fluctuations.

Need of holding Inventories

- Improve customer service.
- Reduce certain costs such as –
  - ordering costs –
  - stock out costs –
  - acquisition costs –
  - start-up quality costs
- Contribute to the efficient and effective operation of the production system.

Inventory Management techniques

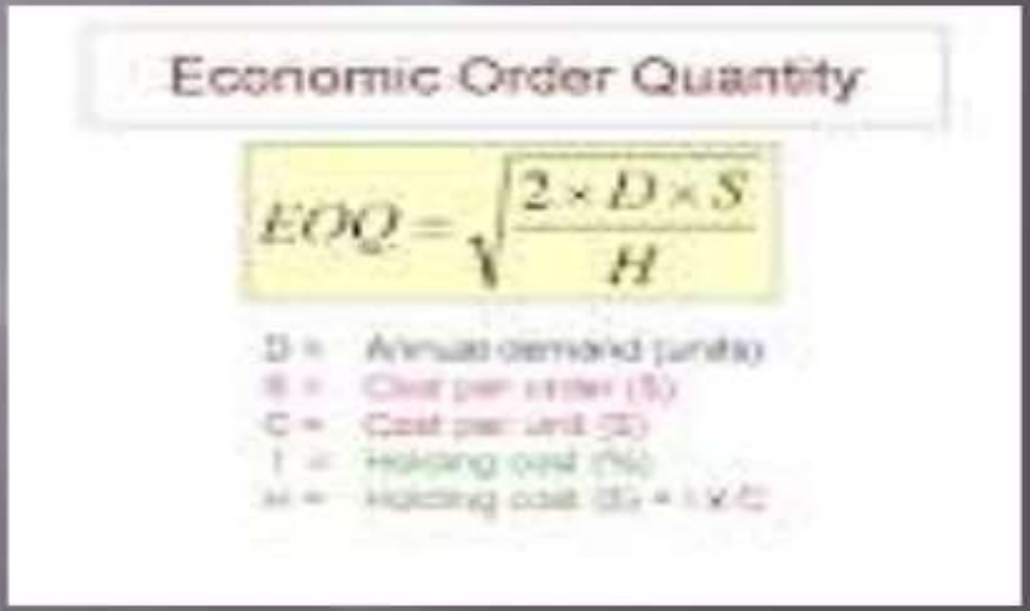
Several techniques of inventory are in use and it depends on the convenience of the firm to adopt any of the techniques.

1) Economic Order Quantity

- EOQ is a quantity of inventory which can reasonably be ordered economically at time.
- In determining this point, ordering costs and Carrying Costs are taken into consideration.
- Ordering costs are basically the cost of placing an order.

❖Carrying cost includes costs of storage facilities and loss of value through physical deterioration, cost of obsolescence.

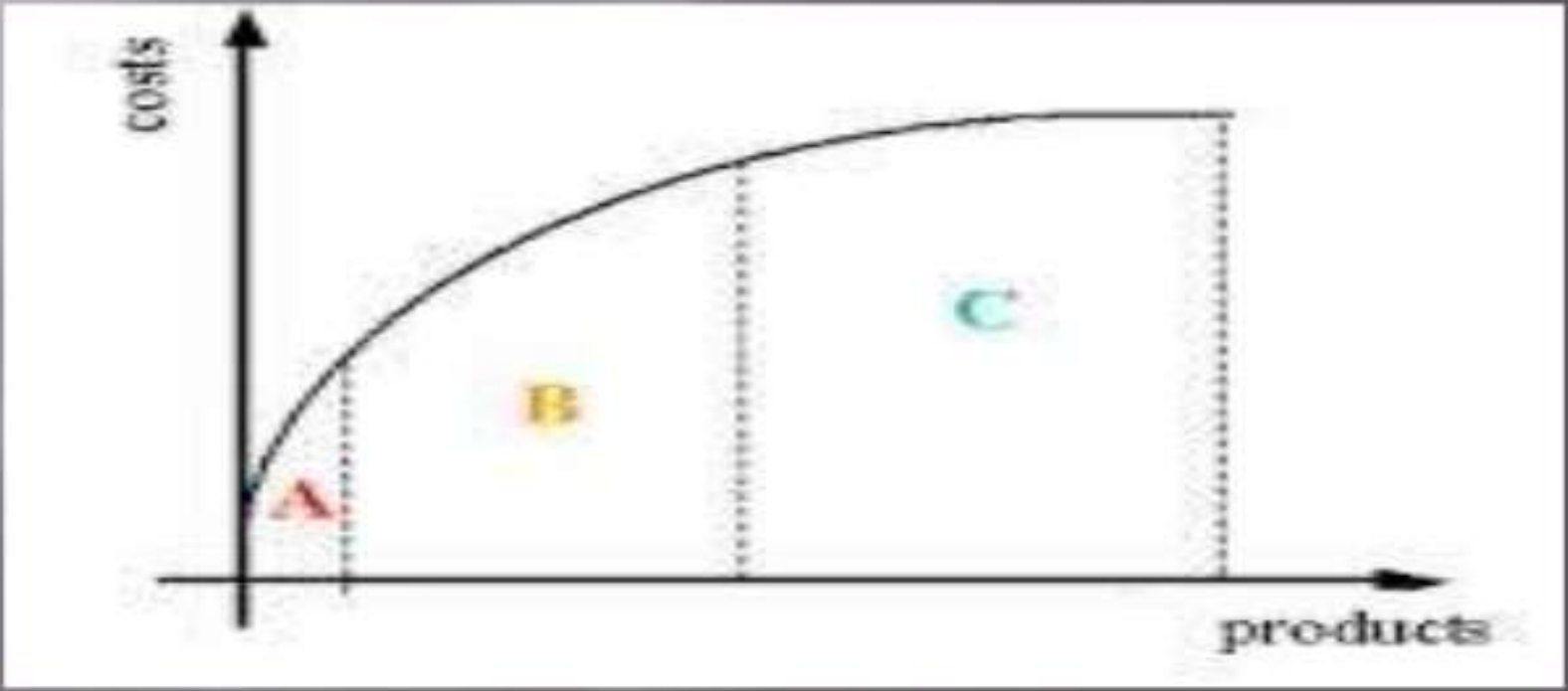
❖The balancing point is known as **Economic Order Quantity.**



2) ABC Analysis

- It means **Always Better Control**
- Under this the inventory is classified into 3 categories viz. **A B and C**. These categories are based upon the inventory value and cost significance .
- Items of High value and small in no. are termed as **A**.
- Items of moderate value and moderate in no. are termed as **B**.
- Items of small value and large in no. are in category **C**

❖The cost of each item is multiplied by the no. used in a given period and then these items are tabulated in descending numeric value order.



3) VED Analysis

- In this, the items are classified on the basis of their criticality to the production process or other services.

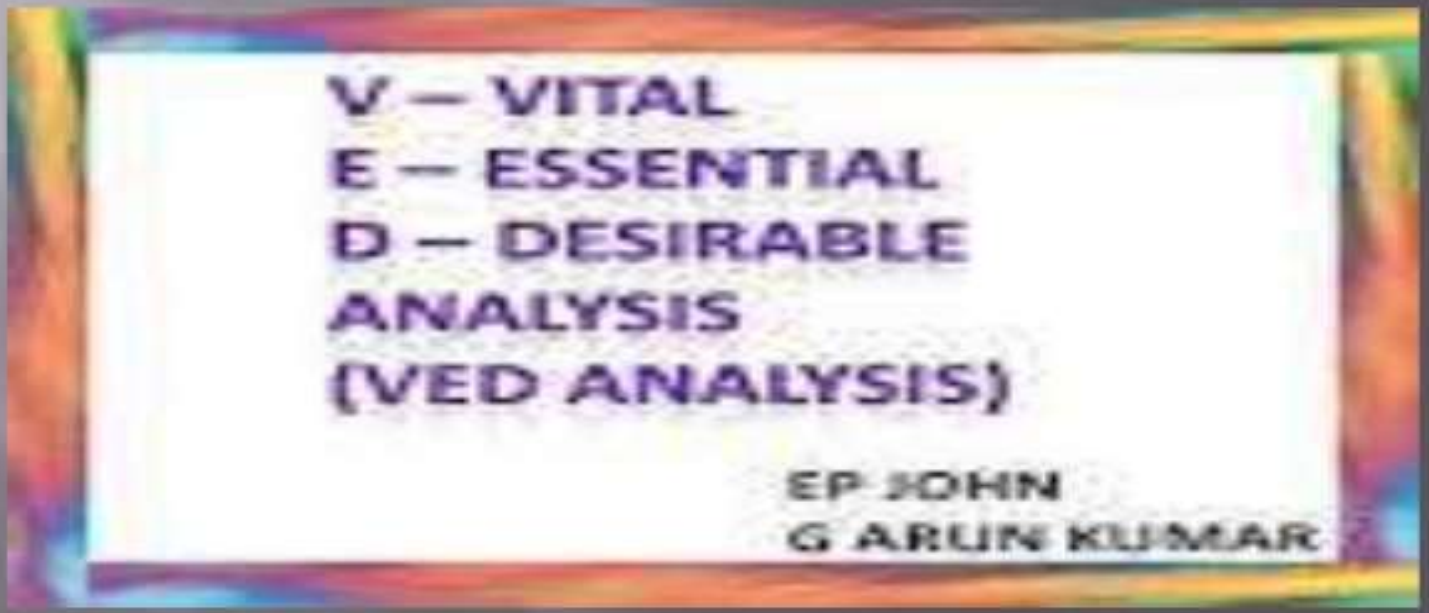
- In this classification of materials, V stands for Vital items without which the production process would come to standstill.

- E denotes Essential items whose stock out would adversely affect the efficiency of the production system. Their non availability might cause temporary losses.

- The D items are the Desirable items which are

Required but do not immediately cause a loss of production.

❖The VED analysis is done mainly in respect of spare parts.



4) Just In Time

- It is a philosophy that focuses attention on eliminating waste by purchasing or manufacturing just enough of the right items just in time.

- It is a Japanese management philosophy applied in manufacturing which involves having the right items of the right quality and quantity in the right place and at the right time.

- It involves having products arrive as soon as the customers order them.

5) Inventory Turnover

- This ratio is computed by dividing the cost of goods sold by the average inventory.

- Stock Turnover Ratio = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

- It is way of measuring how many times a business use inventory in a given time period.

- Business use inventory turnover to assess competitiveness, project profits , and generally figure out how well they are doing in their industry.

6) Inventory Control of Spares

- Stores and Spares term which commonly covers all kinds of supplies necessary to keep production equipment operating.

- The firm should keep each and every component of stores and spares to a reasonable level.

- Stores and Spares inventory turnover:

$$\frac{\text{Annual Consumption of Stores and Spares}}{\text{Stores and spares inventory}}$$

7) Stock keeping unit

- Every product at the store has a unique code. This code helps in identification and tracking of the products at the retail store.

- The retailer feeds each and every SKU in the master computer and can easily track the product in the stock just by entering the SKU no.

8) Stock Review

- It is a regular analysis of stock versus projected future needs. This can be done through a manual review of stock or by using inventory software.

RECEIVABLES MANAGEMENT

MANAGEMENT OF RECEIVABLES •

- Management of accounts receivables may be defined as the process of making decisions relating to the investment of funds in this asset which will result in the maximizing the overall return on the investment of the firm. • Receivables management is also referred to as Trade Credit management.

OBJECTIVES OF RECEIVABLES MANAGEMENT

- Maximise the return on investment in receivables.
- Maximise the sales to the extent the risk involved remains within the acceptable limit.
- Maintaining up-to-date record.
- Accurate billing.
- Establish the credit policies.

The importance of receivables management

- Every company wants to buy low and sell high. But they can lose everything with poor receivables management during the last phase of the sales process (payment). Over half of all bankruptcies can be attributed to poor receivables management, which demonstrates its importance. Receivables management involves much more than reminding customers to pay. It is also about identifying the reason for non-payment. Perhaps a product or service was not delivered? Or there was an administrative error in the invoice? Good receivables management is a comprehensive process consisting of:
- Determining the customer's credit rating in advance
- Frequently scanning and monitoring customers for credit risks
- Maintaining customer relations
- Detecting late payments in due time
- Detecting complaints in due time
- Reducing the total balance outstanding (DSO)
- Preventing any bad debt in receivables outstanding

BENEFITS OF RECEIVABLES MANAGEMENT

- Growth in sales.
- Increase in Profits.
- Capability to Face competition.
- Helps to increase customer satisfaction.
- Takes control of sales processes.

INTERNAL FINANCE

- A company can mobilize finance through external and internal sources. A new company may not raise internal sources of finance and they can raise finance only external sources such as shares, debentures and loans but an existing company can raise both internal and external sources of finance for their financial requirements. Internal finance is also one of the important sources of finance and it consists of cost of capital while compared to other sources of finance.

Internal source of finance may be broadly classified into two categories:

A. Depreciation Funds

B. Retained earnings

Depreciation Funds

- Depreciation funds are the major part of internal sources of finance, which is used to meet the working capital requirements of the business concern. Depreciation means decrease in the value of asset due to wear and tear, lapse of time, obsolescence, exhaustion and accident. Generally depreciation is changed against fixed assets of the company at fixed rate for every year. The purpose of depreciation is replacement of the assets after the expired period. It is one kind of provision of fund, which is needed to reduce the tax burden and overall profitability of the company.

Retained Earnings

- Retained earnings are another method of internal sources of finance. Actually is not a method of raising finance, but it is called as accumulation of profits by a company for its expansion and diversification activities.

Retained earnings are called under different names such as; self finance, inter finance, and plugging back of profits. According to the Companies Act 1956 certain percentage, as prescribed by the central government (not exceeding 10%) of the net profits after tax of a financial year have to be compulsorily transferred to reserve by a company before declaring dividends for the year.

Under the retained earnings sources of finance, a part of the total profits is transferred to various reserves such as general reserve, replacement fund, reserve for repairs and renewals, reserve funds and secrete reserves, etc.

DIVIDEND POLICY

Dividend decisions

- The term dividend refers to that part of profits of a company which is distributed by the company among its shareholders.
- It is the reward of the shareholders for investments made by them in the shares of the company

DETERMINANTS OF DIVIDEND POLICY

Determinants of Dividend Policy

- **(i) Type of Industry:**
- Industries that are characterized by stability of earnings may formulate a more consistent policy as to dividends than those having an uneven flow of income. For example, public utilities concerns are in a much better position to adopt a relatively fixed dividend rate than the industrial concerns.
- **(ii) Age of Corporation:**
- Newly established enterprises require most of their earning for plant improvement and expansion, while old companies which have attained a longer earning experience, can formulate clear cut dividend policies and may even be liberal in the distribution of dividends.

Determinants of Dividend Policy

- **(iii) Extent of share distribution:**
- A closely held company is likely to get consent of the shareholders for the suspension of dividends or for following a conservative dividend policy. But a company with a large number of shareholders widely scattered would face a great difficulty in securing such assent. Reduction in dividends can be affected but not without the co-operation of shareholders.

- **(iv) Need for additional Capital:**
- The extent to which the profits are ploughed back into the business has got a considerable influence on the dividend policy. The income may be conserved for meeting the increased requirements of working capital or future expansion.

Determinants of Dividend Policy

- **(v) Business Cycles:**
- During the boom, prudent corporate management creates good reserves for facing the crisis which follows the inflationary period. Higher rates of dividend are used as a tool for marketing the securities in an otherwise depressed market.

- **(vi) Changes in Government Policies:**
- Sometimes government limits the rate of dividend declared by companies in a particular industry or in all spheres of business activity. The Government put temporary restrictions on payment of dividends by companies in July 1974 by making amendment in the Indian Companies Act, 1956. The restrictions were removed in 1975.

Determinants of Dividend Policy

- **(vii) Trends of profits:**
- The past trend of the company's profit should be thoroughly examined to find out the average earning position of the company. The average earnings should be subjected to the trends of general economic conditions. If depression is approaching, only a conservative dividend policy can be regarded as prudent.

- **(viii) Taxation policy:**
- Corporate taxes affect dividends directly and indirectly—directly, in as much as they reduce the residual profits after tax available for shareholders and indirectly, as the distribution of dividends beyond a certain limit is itself subject to tax. At present, the amount of dividend declared is tax free in the hands of shareholders.

THEORIES OF DIVIDEND POLICY

Theories of dividend policy

THEORY OF IRRELEVANCE

- 1. Residual approach
- 2. Miller and Modigliani approach

THEORY OF RELEVANCE

- 1. Walter's approach
- 2. Gorden approach

DIVIDEND THEORIES

1. **Relevance Theory :** According to relevance theory dividend decisions affects value of firm, thus it is called relevance theory.
   - Walter's Model
   - Gordon's Model

2. **Irrelevance Theory :** According to relevance theory dividend decisions do not affect value of firm, thus it is called irrelevance theory.
   - Residual Theory
   - Miller & Modigliani Hypothesis (MM Approach)

Relevant theories of dividend

Walter's Model's theory :

- Assumption: r,Ke constant
- This model is based on
  1) Return on investment OR Internal rate of return (r).
  2) Cost of capital OR Required rate of return (k).

$$P = \frac{\left[D + r\,(E + D)/\,Ke \right]}{Ke}$$

Where,

P = Price of Equity Share
D = Initial dividend per share
Ke = Cost of Equity capital
r = Internal rate of return
E = Earning per share

Here, the model divides the firm into three groups

1) Growth firms(r>k)
2) Normal firms (r=k)
3) Declining firms(r<k)

Criticism:

r, Ke constant not possible .

Gordon's Model :

Assumptions :

1) The firm is all equity firm.
2) All investment projects are financed by exclusively retained earnings.
3) The rate of return firms is constant.
4) The cost of capital remains constant.
5) The firm has perpetual life.
6) There are no corporate taxes.

According to this model a firm share price is dependent on dividend pay out ratio.

$$P = \frac{E(1-b)}{Ke - br}$$

Where, P = Price of shares

E = Earnings per share

b = Retention ratio

Ke = Cost of equity capital

br = Growth rate in r, i.e. rate of return on investment

So in

1) Growth firms
2) Normal firms
3) Declining firms

Irrelevant theories of dividend

Residual Approach:

- The earnings available may be retained in the business f or re-investment.
- But, if the funds are not required in the business they may be distributed as dividends.
- This theory assumes that investors do not differentiate between dividends and retentions by the firm.

Modigliani and Miller's Theory

Assumptions :

1. There are no taxes and there are no differences in taxes applicable to capital gains and dividends.
2. A firm has fixed investment policies.
3. There is no risk.
4. There are perfect capital market.
5. Investors behave rationally.
6. Information about the company is available to all without any cost.
7. There are no floatation & transaction costs.
8. No investor is large enough to effect the market price of shares.

MM Theory

Dividend policy have no effect on market price of share and the value of the firm.

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

Where,

P_0 = Market price per share at the beginning of the period, or prevailing market price of a share.

D_1 = Dividend to be received at the end of the period.

P_1 = Market price per share at the end of the period.

K_e = Cost of equity capital or rate of capitalization.

Criticism on MM Hypothesis :

1) Tax differential.
2) Floating cost.
3) Transaction cost.
4) Information asymmetry.
5) Institutional restriction.
6) Resolution of uncertainty.
7) Desire for current income v/s distinct dividend.
8) Under pricing.