Where,

DPS = Dividend per share

MPS = Market price per share

R_f = Rate of return on security

b = Beta coefficient

R_m = Rate of return on market portfolio

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

- WACC is defined as the Overall Cost of Capital computed by reference to the proportion of each component of capital as weights. It is denoted by K_o
- Overall Cost of Capital (WACC) represents the cost of funds employed by the Company. It is useful for selecting and deciding investment options.
- WACC uses the **Cut-off Rate** (or **Hurdle Rate**) against which projects can be evaluated. A Project can be considered viable only if the returns from the project are higher than the cost thereof, i.e. WACC.
- If a Company's ROCE is less than its WACC, it means the Company is losing its value / wealth. Such a situation is most disadvantageous to Equity Shareholders.

WACC = Sum of [Cost of Individual Components x Proportion in Capital]

FORMAT

Component	Proportion or %	Individual Cost	Total
Debt	W 1	K_d	K_d x W1
Preference Capital	W2	K_p	K_p x W2
Retained Earnings	W3	K_s	K_s x W3
Equity Capital	W4	K_e	K_e x W4
Total (WACC)			XXX

CAPITAL STRUCTURE

- Capital Structure refers to the mix of sources from where the long-term funds required in a business may be raised.
- In other words, it refers to the proportion of debt, preference capital and equity capital.

FACTORS DETERMINING CAPITAL STRUCTURE

- Nature of industry,
- Risk, Cost and Control considerations,
- Gestation period,
- Certainty with which profits will accrue after the undertaking goes into commercial production,
- Quantum of return on investment,
- Lending policy of financial institutions,
- Monetary and fiscal policies of the Government.

OPTIMUM CAPITAL STRUCTURE

- One of the basic objectives of financial management is to maximize the value or wealth of the firm. Capital Structure is optimum when the firm has a combination of equity and debt so that the wealth of the firm is maximum. At this level, cost of capital is minimum and market price per share is maximum.

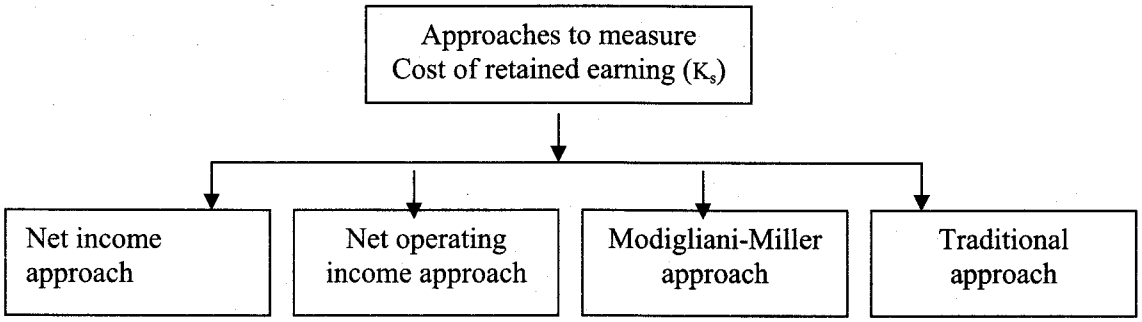
- In theory, one can speak of an optimum capital structure; but in practice, appropriate capital structure is a more realistic term than the former.

- The following are the major features of an appropriate capital structure:

1) **Profitability:** It should minimize the cost of financing and maximize earning per equity share.
2) **Flexibility:** The capital structure should be such that company can raise funds whenever needed.
3) **Conservation:** The debt content should not exceed the maximum which the company can bear.
4) **Solvency:** The capital structure should be such that the firm does not run the risk of becoming insolvent.
5) **Control:** There should be minimum risk of loss or dilution of control of the company.

CAPITAL STRUCTURE THEORIES

The following approaches explain the relationship between cost of capital, capital structure and value of the firm:



ASSUMPTIONS IN CAPITAL STRUCTURE THEORIES

i) There are only two sources of funds viz., debt and equity. **[No Preference Share Capital]**

ii) The Total Assets of a firm and its Capital Employed are fixed. **[No change in Capital Employed]**. However, debt equity mix can be changed:

- either by borrowing debt to redeem equity shares or
- by raising equity capital to repay debt.

iii) All earnings are distributed to equity shareholders. **[No retained earnings]**

iv) The firm earns operating profits and it is expected to grow. **[No losses]**

v) The business risk is assumed to be constant and is not affected by the financing mix decision. **[No change in fixed costs or operating risks]**

vi) There are no corporate or personal taxes. **[No taxation]**

vii) The investors has the same subjective probability distribution of expected earnings. **[No difference in investors' expectations]**

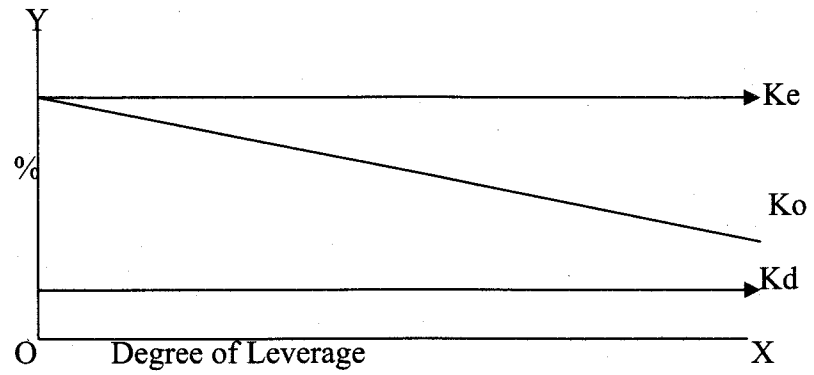
Net Income Approach (NI)

According to this approach, capital structure decision is relevant to the value of the firm. An increase in financial leverage will lead to decline in the weighted average cost of capital, while the value of the firm as well as market price of ordinary share will increase. Under, NI approach, the value of the firm will be maximum at a point where weighted average cost of capital is minimum. Thus, the theory suggests total or maximum possible debt financing for minimising the cost of capital.

1) Debt is a cheaper source of finance than equity due to tax saving effect and investor's risk expectations.
2) Use of cheaper debt funds in total capital structure will reduce the overall cost of Capital.
3) Hence, as the degree of financial leverage increases, the WACC will decline with every increase in the debt content in total fund employed.
4) Since Value of Firm = EBIT / WACC, the value of firm will increase for every decline in WACC.
5) Thus, a firm can increase its value and lower the overall cost of capital by increasing the proportion of debt in the capital structure.
6) The Value of the Firm will be maximum at a point where WACC is minimum.
7) Thus, the theory suggests total or maximum possible debt financing for minimizing the cost of capital.

Value of the firm = Market value of equity + Market value of debt

$$\text{Overall cost of capital} = \frac{\text{EBIT}}{\text{Value of the firm}}$$



Assumptions: In addition to the general assumptions, the following additional assumptions are made:

- Kd < Ke. ie., the Cost of Debt (Kd) is always less than Cost of Equity (Ke).
- Kd and Ke remain constant at all levels of debt-equity mix. This is because, the use of debt content does not change the risk perception of investors.

Net Operating Income Approach (NOI)

- NOI = EBIT
- According to this approach, capital structure decisions of the firm are irrelevant. Any change in the leverage will not lead to any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage.
- As a result, the division between debt and equity is irrelevant.
- Debt may be cheaper than equity. But the risk perception of equity investors increases with the use of additional debt in the capital employed.
- Thus, the advantage of using low-cost debt is set off exactly by increase in equity capitalisation rate.
- Therefore, the overall cost of capital remains constant for all degrees of debt-equity mix.
- Since WACC is constant at all levels, every debt-equity mix is as good as any other mix. There is no optimum capital structure. Every capital structure is optimal one.

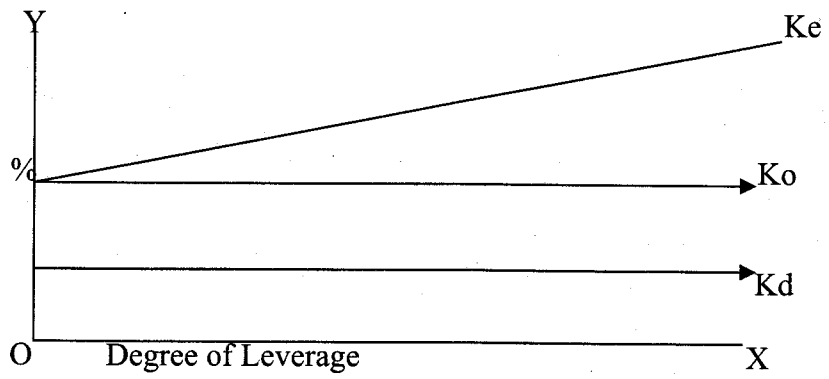
Assumptions:

1) Kd < Ke. ie., the Cost of Debt (Kd) is always less than Cost of Equity (Ke).
2) Kd remains constant at various levels of debt-equity mix.
3) Ke increases as debt content increases due to higher financial risk and higher expectations of equity investors.

Modigliani and Miller Approach (MM)

- This Approach is a refinement of the Net Operating Income Approach. The basic theory is essentially the same, but some additional propositions are made.
- Debt may be cheaper than equity. But the risk perception of equity investors increases with the use of additional debt in the capital employed.
- Increase in financial risk causes the equity capitalisation rate to increase.
- Thus, the advantage of using low-cost debt is set off exactly by the increase in equity capitalisation rate.
- Therefore, the overall cost of capital remains constant for all degrees of debt-equity mix.

- The market capitalizes the value of firm as a whole. Thus the split between debt and equity is not important.
- The market value of the firm is ascertained by capitalizing the net operating income at the overall cost of capital, which is constant. The market value is not affected by changes in debt-equity mix.
- Since WACC is constant at all levels, every debt-equity is as good as any other mix. There is no optimum capital structure. Every capital structure is an optimal one. The total cost of capital of a firm is independent of its methods and level of financing.
- Since WACC is constant, WACC at 0% debt (i.e. 100% equity) should be the same as WACC at any other percentage of debt. Hence WACC = Ke when the firm is financed purely by equity. WACC of a firm equals the capitalisation rate of pure equity stream of its class of risk.



Assumptions:

1) Kd < Ke. i e., the Cost of Debt (Kd) is always less than Cost of Equity (Ke).
2) Kd remains constant at various levels of debt-equity mix.
3) Ko is a constant and not affected by leverage.
4) Ke increases as debt content increases due to higher financial risk and higher expectations of equity investors.
5) The capital markets are perfect.
6) All investors are rational & they are free to buy and sell securities. They are well informed about the risk and return on all type of securities.
7) There are no transaction costs.
8) Firms can be grouped into 'Equivalent risk classes' on the basis of their business risk

Modigliani and Miller Theory is criticized on the following grounds:

1) The assumption of perfect market is not practical. In the real world, various imperfections exist, such as transaction costs for purchase and sale of securities, differential rates of interest etc.
2) The argument that arbitrage nullifies the effect of leverage is not valid. Investors do not behave in such a calculated and rational way in switching from leveraged to unleveraged firm or vice-versa.

3) The theory presumes the availability of free and up to date information on all aspects of the company's functioning. In practice, investors have little or no knowledge about the company's operations. Their dealing in shares are not based only upon the information on hand, but on other considerations also.

Traditional Approach

- Debt is a cheaper source of finance than equity due to tax saving effect and investor's risk expectations.
- Use of cheaper debt funds in total capital structure will reduce the Overall or Weighted Cost of Capital since Debt percentage increases in the total capital structure. This is because the benefits of cheaper debt may be so large that even in offsetting the effect of increase in cost of equity, the WACC may go down.
- Hence, as the degree of financial leverage increases, the WACC will decline with every increase in the debt content in total funds employed.
- However, if financial leverage increases beyond an acceptable limit (called the optimal point), the cost of debt and cost of equity starts rising. This is because of the high financial risk associated with the firm.
- The increasing cost of equity owing to increased financial risk and increasing cost of debt makes the overall cost of capital to increase.
- The firm should strive to reach the optimal capital structure and maximize its total value through a judicious use of both debt and equity in the capital structure. At the optimal capital structure the overall cost of capital will be minimum and the value of the firm is maximum.
- Thus, as per the Traditional Theory, the firm should try to achieve the optimal Capital Structure by minimizing WACC and maximizing its value.

Assumptions: Apart from the general assumptions, the following additional assumptions are made:

1) Kd < Ke. i e., the Cost of Debt (Kd) is always less than Cost of Equity (Ke).
2) Kd and Ke vary with change in debt-equity mix.
3) As debt content increases, financial risk increases, causing increase in the expectations of equity investors and rise in the cost of equity. Also additional loans can be taken only at a higher rate of interest. So Cost of Debt also rises beyond a certain level of debt content.
4) Increase in Cost of Equity is more steeper and higher than increase in cost of debt.

BUSINESS RISK & FINANCIAL RISK

BUSINESS RISK	FINANCIAL RISK
• It refers to the risk associated with the firm's operations. • It is the uncertainty about the future operating income. • That is how well can the operating income can be predicted? • It can be measured by standard deviation of basic earning power ratio	• It refers to the additional risk placed on firm's shareholders as a result of debt used in financing companies. • Companies having more debt instruments in their capital structure would have higher financial risk than companies financed mostly by equity. • Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc • Financial Risk consists of two types: a. Risk of cash insolvency & b. Risk of variation in the EPS

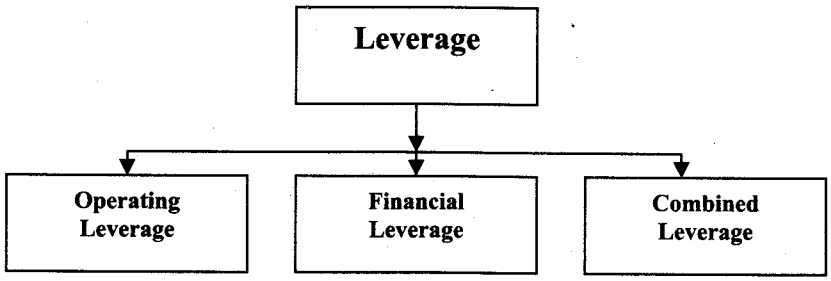
CHAPTER 2

LEVERAGE ANALYSIS

Meaning

- The term Leverage in general refers to a relationship between two interrelated variables.
- In financial analysis it represents the influence of one financial variable over some other related financial variable.
- Leverage is used by business Firms to quantify the risk-return relationship of different alternative capital structures.
- Study of Leverage is essential to define the risk undertaken by the Company's Shareholders. Earnings available to Equity Shareholders fluctuate on account of two risks `
  - **Operating Risk &**
  - **Financial Risk.**

Types of Leverage



Operating Leverage

- It is defined as the Firm's ability to use fixed operating costs to magnify effects of changes in sales on its EBIT.
- It maybe defined as the employment of an asset with a fixed cost in the hope that sufficient revenue will be generated to cover all the fixed and variable costs.
- The use of assets for which a company pays a fixed cost is called operating leverage.
- A change in Sales will lead to a change in Profit i.e. EBIT. However, Variable Costs will change in proportion to Sales while Fixed Costs will remain constant.
- Hence, a change in Sales will lead to a more than proportional change in EBIT. The effect of change in sales on EBIT is measured by Operating Leverage.
- When Sales increases, Fixed Costs will remain the same irrespective of level of output, and so, the percentage increase in EBIT will be higher than increase in Sales. This is the favourable effect of Operating Leverage.

- Operating leverage is the ratio of net operating income before fixed charges to net operating income after fixed charges.
- Degree of operating leverage is equal to the percentage increase in the net operating income to the percentage increase in the output.

Operating leverage is a function of three factors:

(i) Rupee amount of fixed cost,

(ii) Variable contribution margin , and

(iii) Volume of sales.

Formula:

The degree of Operating Leverage (DOL) is measured as under

$$DOL = \frac{\text{\% Change in EBIT}}{\text{\% Change in Sales}} \quad \text{(or)} \quad \frac{\text{Contribution}}{\text{EBIT}}$$

Note: DOL has to be expressed in terms of times.

DOL depends on the amount of Fixed Costs. If Fixed Costs are higher, DOL is higher and vice – versa. Lower the DOL it is better.

Operating leverage is directly proportional to business risk. More operating leverage leads to more business risk, for then a small sales decline causes a big profit.

Financial Leverage

- Financial Leverage is defined as the ability of a Firm to use fixed financial charges (interest) to magnify the effects of changes in EBIT, on the Firm's Earning Per Share.
- It maybe defined as 'the use of funds with a fixed cost in order to increase earnings per share.
- Financial Leverage occurs when a Company has debt content in its capital structure and fixed financial charges.
- These fixed financial charges do not vary with the EBIT. They are fixed and are to be paid irrespective of level of EBIT.
- When EBIT increases, the interest payable on debt remains constant and hence residual income available to Equity Shareholders will also increase more than proportionately.
- Hence an increase in EBIT will lead to a higher percentage increase in Earnings per Share. This is measured by the Financial Leverage.

- Degree of financial leverage is the ratio of the percentage increase in EPS to the percentage increase in EBIT.

Formula:

The degree of Financial Leverage (DFL) is measured as under;

$$DFL = \frac{\text{\% Change in EPS}}{\text{\% Change in EBIT}} \quad \text{(or)} \quad \frac{EBIT}{EBT}$$

Note: DFL has to be expressed in terms of times.
DFL depends on the magnitude of interest and fixed financial charges.
If DFL is high, it implies that fixed interest charges are high. This means that the financial risks are higher.
DFL is advantageous only if Return on Capital Employed (ROCE) is greater than Rate of Interest on Debt.

COMBINED LEVERAGE

- It is used to measure the total risk of a Firm, i.e. Operating Risk and Financial Risk.
- It maybe defined as the potential use of fixed costs, both operating and financial, which magnifies the effect of sales volume change on the earning per share of the firm.
- Effect of Fixed Operating Costs is measured by Operating Leverage. Effect of Fixed Interest Charges is measured by Financial Leverage. The combined effect of these is measured by Combined Leverage.
- Degree of combined leverage (DCL) is the ratio of percentage change in earning per share to the percentage change in sales. It indicates the effect the sales changes will have on EPS.

Formula:

The degree of Combined Leverage (DCL) is measured as under;

$$DCL = \frac{\text{\% Change in Sales}}{\text{\% Change in EPS}} \quad \text{(or)} \quad \frac{\text{Contribution}}{EBIT} \quad \text{(or)} \quad DOL \times DFL$$

Combined Leverage is analysed by reference to the combination of DOL and DFL, as under:

DOL	DFL	Effect	Reason and Significance
High	High	Risky	• High DOL = High Operating Risk = High Fixed Costs & BEP • High DFL = Small fall in EBIT to greater fall in EBT
High	Low	Cautious	• High DOL's impact is sought to be set off with Low Financial Risk. • Hence Equity Shareholders interest is safeguarded.
Low	Low	Cautious & Conservative	• Low DOL = Low Operating Risks = Low Fixed Costs & BEP. • But Equity Shareholder's gains are not maximized since DFL is low.
Low	High	Preferable	• Low DOL = Low Operating Risks = Low Fixed Costs & BEP. • Due to high DFL, small rise in EBIT leads to greater rise in EBT and EPS. • Hence, Equity Shareholders' gains are maximized.

Trading on Equity

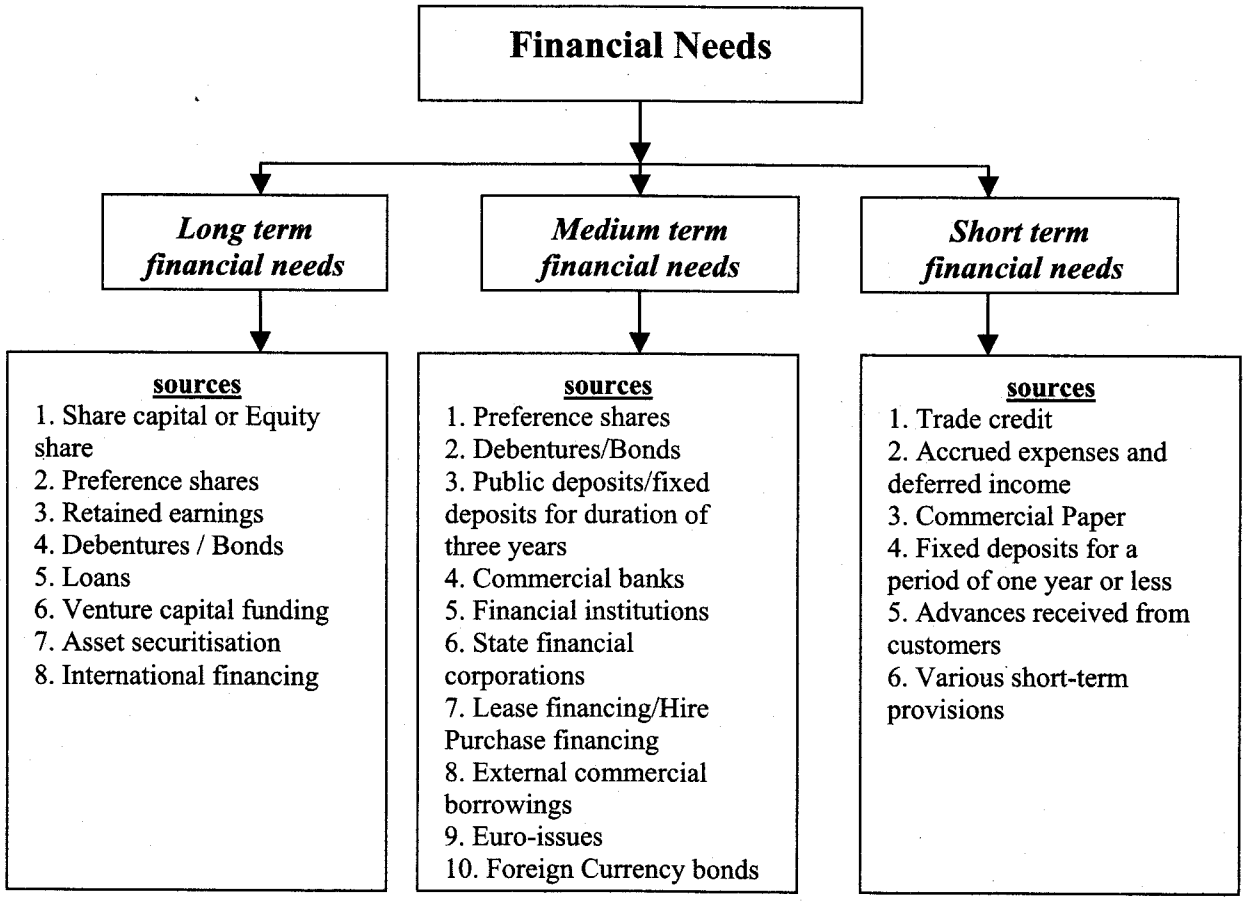
- It is also called Gearing Effect
- When ROCE > Interest Rate on Debt, the Company earns at a higher rate of return on its investment and pays a lower rate of return to the suppliers of long term debt funds.
- The difference between EBIT and the cost of debt funds would enhance the earnings of Equity Shareholders. This will maximize ROE and EPS.
- Therefore, Equity Shareholders gain in a situation where the Company earns a high rate of return and pays a lower rate of interest to the suppliers of long-term debt funds.
- Hence, gain from DFL arises due to –
  - Excess of return on investment over effective cost (cost after considering taxation effect, since the interest cost on debt is tax – deductible expense) of debt funds.
  - Reduction in the number of Equity Shares issued due to the use of debt funds.
- The use of low-cost Debt Funds when Basic Earning Power (ROCE) of the business is higher, thereby increasing the EPS and ROE, is called "Gearing Effect" or "Trading on Equity"

TYPES OF FINANCING

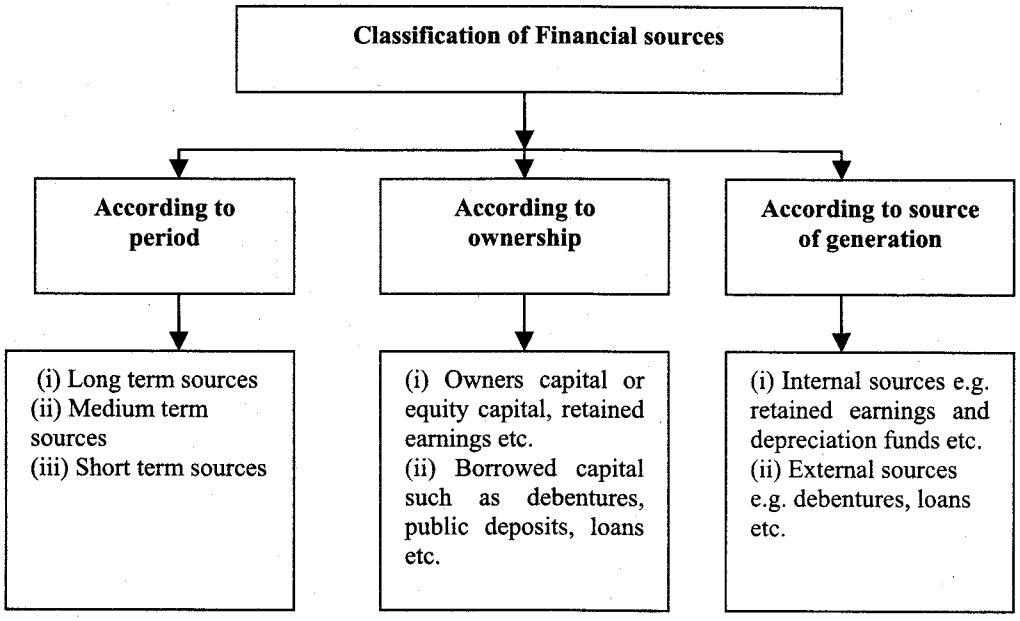
FINANCIAL NEEDS & SOURCES OF FINANCE OF A BUSINESS

Financial Needs of a Business: Business enterprises need funds to meet their different types of requirements. All the financial needs of a business may be grouped into the following three categories:

1. Long term financial needs *(More than 5 years)*
2. Medium term financial needs *(3 to 5 years)*
3. Short term financial needs *(Less than a year)*



CLASSIFICATION OF FINANCIAL SOURCES



However for the sake of convenience, the different sources of funds can also be classified into following categories.

(i) Security financing - financing through shares and debentures.
(ii) Internal financing - financing through retained earning, depreciation.
(iii) Loans financing - this includes both short term and long term loans.
(iv) International financing.
(v) Other sources.

BRIDGE FINANCE

- It refers to loans taken by a company from commercial banks for a short period, pending disbursement of loans sanctioned by financial institutions.
- Normally, it takes time for financial institutions to disburse loans to companies.
- However, once the loans are approved by the term lending institutions, companies, in order not to lose further time in starting their projects, arrange short term loans from commercial banks.
- Bridge loans are also provided by financial institutions pending the signing of regular term loan agreement, which may be delayed due to non-compliance of conditions stipulated by the institutions while sanctioning the loan.
- The bridge loans are repaid or adjusted out of the term loans as and when disbursed by the concerned institutions.
- Bridge loans are normally secured by hypothecating movable assets, personal guarantees and demand promissory notes.
- Generally, the rate of interest on bridge finance is higher as compared to that on term loans.

CHARACTERISTICS:

1. It is a short-term loan.
2. It bridges the gap between the date of sanctioning the loan and the final disbursement of loan.
3. The rate of interest on such loan is usually high.
4. These loans are usually repaid as and when term loans are disbursed.

ADVANTAGES:

1. It helps in avoiding the cost over runs.
2. Such loans is useful to implement the projects on time

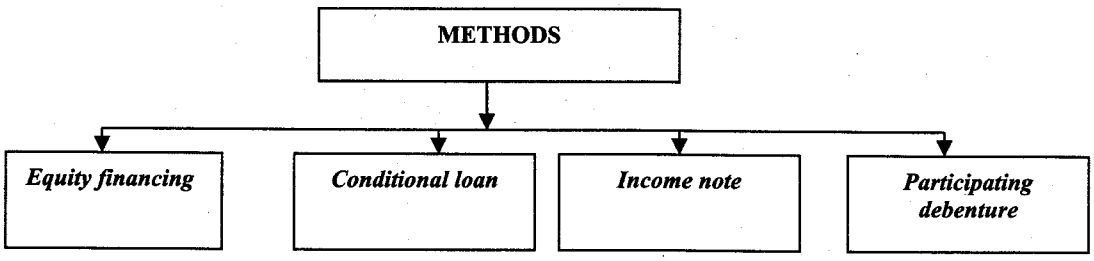
DISADVANTAGES:

1. The rate of interest on such loans is very high.

VENTURE CAPITAL FINANCING

- The venture capital financing refers to financing of ***new high risky venture*** promoted by ***qualified entrepreneurs*** who lack experience and funds to give shape to their ideas.
- Venture capitalist makes investment to purchase equity or debt securities from inexperienced entrepreneurs who undertake highly risky ventures with a potential of success.

Methods of Venture Capital Financing:



Methods	Explanation
(i) Equity financing	○ The venture capital undertakings generally requires funds for a longer period but may not be able to provide returns to the investors during the initial stages. ○ Therefore, the venture capital finance is generally provided by way of equity share capital. ○ The equity contribution of venture capital firm does **not exceed 49%** of the total equity capital of venture capital undertakings so that the effective control and ownership remains with the entrepreneur.

(ii) Conditional loan	o A conditional loan is repayable in the form of a royalty after the venture is able to generate sales. o No interest is paid on such loans. o In India venture capital financiers charge royalty ranging between 2 and 15 per cent; actual rate depends on other factors of the venture such as gestation period, cash flow patterns, risk and other factors of the enterprise.
(iii) Income note	o It is a hybrid security which combines the features of both conventional loan and conditional loan. o The entrepreneur has to pay both interest and royalty on sales but at substantially lower rates.
(iv) Participating debenture	Such security carries charges in three phases.

PHASES		INTEREST RATE
Phase I	start up phase	Nil interest
Phase II	next stage (up to a particular level of operation)	Low rate of interest
Phase III	Final stage after phase II	High rate of interest

DEBT SECURITISATION

- Securitisation is a financial transaction in which assets are pooled and securities representing interests in the pool are issued.
- It is the process by which financial assets (e.g. Loan Receivables, Mortgage backed receivables, Credit Card balances, Hire Purchase Debtors, Trade Debtors, etc.) are transformed into securities.
- Securitisation can take the form of 'debt securitisation' in which the underlying pool of assets (debt) is sold to a company or a trust for an immediate cash payment.
- The company which buys these pool of assets issues securities and utilises the regular cash flows arising out of the underlying pool of assets for servicing such issued securities.
- Thus securitisation follows a two way process,

  (1) the sale of an asset or a pool of assets to a company for immediate cash payment and

  (2) the repackaging and selling the security interests representing claims on incoming cash flows from the asset or pool of assets to third party investors by issuance of tradable securities.

- The company to which the underlying pool of assets or asset is sold is known as a 'Special Purpose Vehicle' **(SPV)**
- The company which sells the underlying pool of assets or asset is known as the **originator.**
- The process of securitisation is generally without recourse i.e. the investor bears the credit risk or risk of default and the issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral.
- The issuer however, has a right to legal recourse in the event of default.
- The risk run by the investor can be further reduced through credit enhancement facilities like insurance, letters of credit and guarantees.
- Securities is different from Factoring since the latter involves transfer of debts without transformation thereof into securities.
- As compared to factoring or bill discounting which largely solve the problems of short term trade financing, securitisation helps to convert a stream of cash receivables into a source of long term finance.

PROCESS OF SECURITISATION:

(a) Originator gives various Loans to different Borrowers & they have to repay the loans in EMI's. These EMI's constitute financial assets / receivables for the Originator.

(b) Financial Assets / Receivables are transferred, fully or partly, by the Originator to a SPV. SPV pays the Originator immediately in cash or in any other consideration for taking over the financial assets.

- The assets transferred are termed Securitised Assets &
- The assets or rights retained by the Originator are called Retained Assets.

(c) SPV finances the assets transferred to it by issue of securities such as Pass Through Certificates / debt securities to Investors. These are generally sold to Investors (Mutual Funds, LIC, etc), through Merchant Bankers.

BENEFITS TO THE ORIGINATOR

(i) The assets are shifted off the balance sheet, thus giving the originator recourse to off balance sheet funding.

(ii) It converts illiquid assets to liquid portfolio.

(iii) It facilitates better balance sheet management as assets are transferred off balance sheet facilitating satisfaction of capital adequacy norms.

(iv) The originator's credit rating enhances.

BENEFITS TO THE INVESTOR

(i) securitisation opens up new investment avenues.

(ii) Though the investor bears the credit risk, the securities are tied up to definite assets.

LEASE FINANCING

- Leasing is an alternative to the purchase of an asset out of own or borrowed funds.
- Leasing is a contract between the owner and user of the asset over a specified period of time.
- The asset is purchased initially by the lessor (leasing company) and thereafter leased to the user (lessee company) which pays a specified rent at periodical intervals.
- The Lessee pays a specified rent (Lease Rental Charges) at periodical intervals as consideration for the use of the asset. This constitutes the Income of the Lessor.
- Lease finance can be arranged much faster as compared to term loans from financial institutions.
- From the lessee's point of view, leasing has the attraction of eliminating immediate cash outflow, and the lease rentals can be deducted for computing the total income under the Income tax Act. As against this, buying has the advantages of depreciation allowance (including additional depreciation) and interest on borrowed capital being tax deductible.
- Lease may be classified into – (a) Operating Lease and (b) Financial Lease.

Types of Packing Credit

(a) *Clean packing credit*
(b) *Packing credit against hypothecation of goods*
(c) *Packing credit against pledge of goods*
(d) *E.C.G.C. guarantee*
(e) *Forward exchange contract*

Seed Capital Assistance

- The Seed capital assistance scheme is designed by IDBI for professionally or technically qualified entrepreneurs and/or persons possessing relevant experience, skills and entrepreneurial traits.
- All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme.
- The project cost should not exceed Rs. 2 crores.
- The maximum assistance under the project will be restricted to ***50% of the required promoter's contribution or Rs. 15 lacs whichever is lower.***
- The Seed Capital Assistance is interest free but carries a service charge of ***one per cent per annum for the first five years and at increasing rate thereafter.***
- However, IDBI will have the option to charge interest at such rate as may be determined by IDBI on the loan if the financial position and profitability of the company so permits during the currency of the loan.

- The repayment schedule is fixed depending upon the repaying capacity of the unit with an initial moratorium up to five years.
- For projects with a project cost exceeding Rs. 200 lacs, seed capital may be obtained from the Risk Capital and Technology Corporation Ltd. (RCTC) For small projects costing upto Rs. 5 lacs, assistance under the National Equity Fund of the SIDBI may be availed.

Deep Discount Bonds

- Deep Discount Bonds is a form of zero-interest bonds. These bonds are sold at a discounted value and on maturity ,face value is paid to the investors.
- There is no interest payout during lock in period.
- These bonds can be traded in the market. Hence, the investor can also sell the bonds in stock market and realise the difference between initial investment and market price.

Secured Premium Notes

- Secured Premium Notes is issued along with a detachable warrant and is redeemable after a notified period of say 4 to 7 years.
- The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

Zero Coupon Bonds

- A Zero Coupon Bonds does not carry any interest.
- It is sold by the issuing company at a discount.
- The difference between the discounted value and maturing or face value represents the interest to be earned by the investor on such bonds.

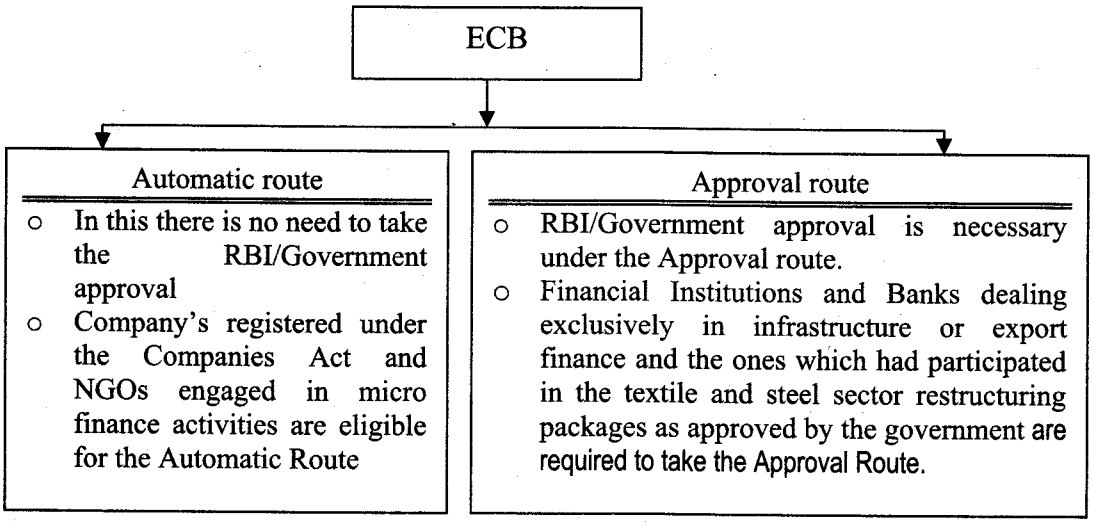
Double Option Bonds

- These have also been recently issued by the IDBI.
- The face value of each bond is Rs. 5,000.
- The bond carries interest at 15% per annum.
- Interest has been compounded half yearly from the date of allotment.
- The bond has maturity period of 10 years.
- Each bond has two parts in the form of two separate certificates, one for principal of Rs. 5,000 and other for interest (including redemption premium) of Rs. 16,500.

- Both these certificates are listed on all major stock exchanges.
- The investor has the facility of selling either one or both parts anytime he likes.

External Commercial Borrowings (ECB)

- It refer to commercial loans availed from non resident lenders.
- It has minimum average maturity of 3 years.
- Borrowers can raise ECBs through internationally recognised sources like
  - international banks,
  - international capital markets,
  - multilateral financial institutions
- External Commercial Borrowings can be accessed under two routes viz



Euro Bonds

- Euro bonds are debt instruments which are not denominated in the currency of the country in which they are issued.
- These are generally issued in a bearer form rather than as registered bonds.
- It does not contain the investor's names or the country of their origin.
- These bonds are an attractive proposition to investors seeking privacy.

American Depository Deposits (ADR)

- Depository Receipts issued by a Company in the USA are known as ADR's.
- It have to be issued in accordance with provisions stipulated by the Securities Exchange Commission (SEC) of the USA, which is a regulatory body like the SEBI in India.

Characteristics:

1. The ADRs may or may not carry voting rights.
2. The ADRs are issued in accordance with the provision laid down by SEC: USA.
3. The ADR is a bearer negotiable instrument and the holder can sell it in the market
4. The ADRs once sold cannot be re-issued.

Advantages:

1. The ADRs are an easy and cost effective way for individuals to hold and own shares in a foreign country.
2. They save considerable money by reducing administration cost and avoiding foreign taxes on each transaction.

Global Depository Receipts: (GDR)

- A Depository Receipt is basically a negotiable certificate, denominated in US Dollars that represents a non-US Company's publicly traded local currency (say, Indian Rupee) Equity Shares.
- Depository Receipt's are created when the local currency shares of an Indian Company are delivered to the depository's local custodian bank, against which the Depository Bank issue GDR's in US Dollars.
- These Depository Receipt's may be freely traded in the overseas markets like any other dollar denominated security through either a foreign Stock Exchange or through Over The Counter (OTC) market or among a restricted group like Qualified Institutional Buyers (QIB's).
- GDR with Warrants are more attractive than plain GDRs due to additional value of attached warrants.

Characteristics:

1. The shares underlying the GDR do not carry voting rights
2. The instruments are freely traded in the international market.
3. They are marketed globally and traded in more than one currency.
4. The investors earn fixed income by way of dividend.
5. GDR's can be converted into underlying shares by Depository/Custodian banks reducing the issue

Advantages:

1. The Indian companies are able to tap global equity market to raise foreign currency
2. The exchange risk is borne by the investors as the payment of the dividend is made in local currency.
3. The voting rights are vested only with the depository.

ADR Vs. GDR

GDR	ADR
o The depository receipts in the world market are called GDR.	o The depository receipts in the US market are called ADR.
o GDRs do not have voting right.	o ADRs may be with or without voting rights.
o GDRs are traded world wide.	o ADRs are traded only in US.
o GDRs are most preferred due to their easy operation.	o ADRs provide certain stringent rules to be followed which make it less preferred.
o The cost involved in operation of GDR is less than that of ADR	o The cost involved in its operation is comparatively high due to formalities to be fulfilled under US GAAP & SEC.

PLOUGHING BACK OF PROFIT

- It's a phenomenon under which the company does not distribute all the profit earned but retains a part of it, which is reinvested in the business for its development. The retained portion of profits is known as Retained Earning.
- It is a technique of self financing.
- It is a source of finance which contributes towards the fixed as well as the working capital needs of the company.
- Under this phenomenon a part of the total profit is transferred to various reserves such as general reserve, reserve for repair and renewal, secret reserves etc.,
- The funds so created entail almost no risk and the control of the owners is also not diluted.

ADVANTAGE:

1. Since the company does not depend upon external sources ,Ploughing back of profit or retained earning acts as an economical method of financing.
2. The retained earning helps the company to pay the dividend regularly. This enhances the credit worthiness of the company
3. Company with large reserves can withstand the shocks of trade cycle and the uncertainty of the market with ease.
4. It allows the financial structure to remain flexible.
5. It makes the company self reliant . It need not depend on outsiders for the financial needs.

DISADVANTAGES:

1. Excessive Ploughing back of profit may lead to over capitalization.
2. The retained earning may be misused by investing in non profitable areas.
3. With the help of retained earning, the company may expand to an extent beyond control.
4. Excessive retention of profit may lead to high dissatisfaction among shareholders.

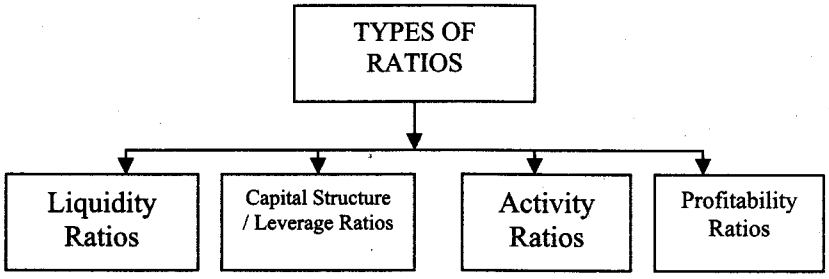
CHAPTER 3

FINANCIAL ANALYSIS & PLANNING

RATIO ANALYSIS

The term ratio in it refers to the relationship expressed in mathematical terms between two individual figures or group of figures connected with each other in some logical manner.

It is a widely used tool of financial analysis.



LIQUIDITY RATIOS

- Liquidity means short-term solvency ie., ability of the business to pay its short-term liabilities.
- Short-term lenders and creditors of a business are very much interested to know its state of liquidity because of their financial stake.

	Ratio	Formula
1.	Current Ratio	Current Assets / Current Liabilities
2.	Quick Ratio (or) Liquid Ratio (or) Acid Test Ratio	Quick Assets / Quick Liabilities
3.	Absolute Cash Ratio	(Cash + Marketable Securities) / Current Liabilities
4.	Net Working Capital Ratio	Current Assets - Current Liabilities

Where,

Current Assets = Inventories + Sundry Debtors + Cash and Bank Balances + Receivables/ Accruals + Loans and Advances + Disposable Investments

Current Liabilities = Creditors for goods and services + Short-term Loans + Bank Overdraft + Cash Credit + Outstanding Expenses + Provision for Taxation + Proposed Dividend + Unclaimed Dividend

Quick Assets = Current Assets –Inventories
Quick Liabilities = Current Liabilities – Bank Overdraft – Cash Credit

CAPITAL STRUCTURE / LEVERAGE RATIOS

- The capital structure/leverage ratios may be defined as those financial ratios which measure the long term stability and structure of the firm.
- These ratios indicate the mix of funds provided by owners and lenders and assure the lenders of the long term funds with regard to:
  - Periodic payment of interest during the period of the loan and
  - Repayment of principal amount on maturity.
- Leverage ratios are of two types :
  1. Capital structure ratios and
  2. Coverage ratios.

Capital Structure Ratios		
	Ratio	**Formula**
1.	Equity Ratio	Share holders' Equity ---------- Total Capital Employed
2.	Debt Ratio	Total Debt ---------- Total Capital Employed
3.	Debt to Equity Ratio	Debt --------- Equity
Coverage Ratios		
	Ratio	**Formula**
1.	Debt Service Coverage Ratio	Earning for debt service ---------- Interest + Installments
2.	Interest Coverage Ratio	EBIT -------- Interest

3.	Preference Dividend Coverage Ratio	EAT ---------- Pref. Dividend
4.	Capital Gearing Ratio	(Pref. Share Capital + Debentures +Long-term Loans) ---------- (Equity share capital + Reserves)
5.	Proprietary Ratio	Proprietary fund ---------- Total Assets

Note:

a) Debt = Long Term Borrowed Funds = Debentures + Long Term Loans from Financial Institutions.

b) Equity = Owner's Fund = Equity Capital + Preference Capital + Reserves & Surplus Less: Accumulated Losses

c) Earning for debt service = Net profit + Non-cash operating expenses like depreciation and other amortizations + Non-operating adjustments like loss on sale of Fixed assets + Interest on Debt Fund.

d) Proprietary fund = Equity Share Capital + Preference Share Capital + Reserve & Surplus – Fictitious Assets.

ACTIVITY RATIO

- It is also called the Turnover ratios or Performance ratios.
- These ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets.
- These ratios usually indicate the frequency of sales with respect to its assets.

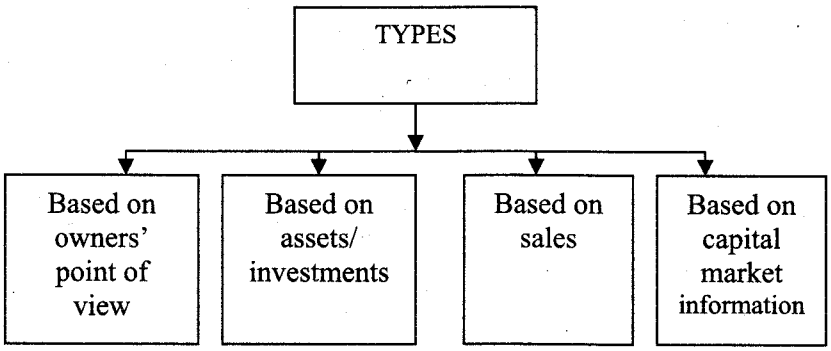
	Ratio	Formula
1.	Capital Turnover Ratio	Turnover ——————— Capital Employed
2.	Fixed Assets Turnover Ratio	Turnover ——————— Fixed Assets
3.	Working Capital Turnover	Turnover ——————— Working Capital
4.	Inventory Turnover Ratio	Cost of Goods sold ---------- Avg. Inventory

5.	Debtors' Turnover Ratio	Credit sales ---------- Avg. Debtors
6.	Creditors' Turnover Ratio	Credit Purchase ---------- Avg. Creditors

PROFITABILITY RATIO

It measures the operational efficiency of the firm.It reflects the final results of business operations.

Types of Profitability Ratio



1. Based on Owner's Point of View		
	Ratio	**Formula**
1.	Return on Equity (ROE)	Earning Available to Equity Share holders ---------- X 100 Net worth
2.	Earnings per Share (EPS)	Earning available to equity share holders ---------- No. of equity shares
3.	Dividend per Share	Total Profit distributed to equity share holders ---------- No. of equity shares
4.	Price Earning Ratio	Market price per share ---------- Earning per share
Based on Assets/Investments		
	Ratio	**Formula**
1.	Return on Capital Employed / Return on Investment	EBIT ---------- X 100 Total Capital employed

2.	Return on Assets	PAT ---------- X 100 Total Assets
Based on Sales		
	Ratio	**Formula**
1.	Gross Profit Ratio	Gross Profit ---------- X 100 Sales
2.	Net Profit Ratio	Net Profit ---------- X 100 Sales
Based on Capital Market Information		
	Ratio	**Formula**
1.	Price Earning Ratio(PE Ratio)	Market price per share ---------- Earning per share
2.	Yield Ratio	Dividend ----------X100 Avg. Share price
3.	Market Value/Book Value per Share	Market Value per share ---------- Book Value per Share

NEED FOR DEBT SERVICE COVERAGE RATIO

- This ratio is the vital indicator to the lender to assess the extent of ability of the borrower to service the loan in regard to timely payment of interest and repayment of principal amount.
- It shows whether the business is earning sufficient profits to pay not only the interest charges but also the installment due of the principal amount.
- Debt service coverage ratio of 2 is considered ideal by the financial institutions
- This ratio will enable the lender to take correct view of the borrower's repayment capacity.
- The ratio is calculated as:

$$= \frac{\text{Earning available for debt services}}{\text{Interest on loan+ installment}}$$

Where ,

Earning available for debt service= profit after tax depreciation+ interest on loan

APPLICATION OF RATIO ANALYSIS

Following are the areas where ratio analysis is helpful in financial decision making.

1. Liquidity Position
2. Long-term Solvency
3. Operating Efficiency
4. Overall Profitability
5. Inter-firm Comparison
6. Financial Ratios for Budgeting

LIMITATIONS OF FINANCIAL RATIOS

7. Historical cost values in financial statement may be substantially different from true values.
8. Many business operate a large number of divisions in quite different industries. In such cases ratios calculated on the basis of aggregate data cannot be used for inter-firm comparisons.
9. Seasonal factors may also influence financial data
10. The business may make some year-end adjustments. Such window dressing can change the character of financial ratios which would be different had there been no such change.
11. Various firms may follow different accounting policies. In such cases companies ratios may be misleading.
    - There is no standard set of ratios against which a firm's ratios can be compared
    - It is very difficult to generalise whether a particular ratio is good or bad. For example, a low current ratio may be said 'bad' from the point of view of low liquidity, but a high current ratio may not be 'good' as this may result from inefficient working capital management.
    - Financial ratios provide clues but not conclusions. These are tools only in the hands of experts because there is no standard ready-made interpretation of financial ratios.
    - The concept of ideal ratio is vague and there is no uniformity as to what an ideal ratio is.
    - Seasonal factor brings boon or recession. Ratios may indicate different result during the different periods.
    - Impact of inflation may leads to false picture.

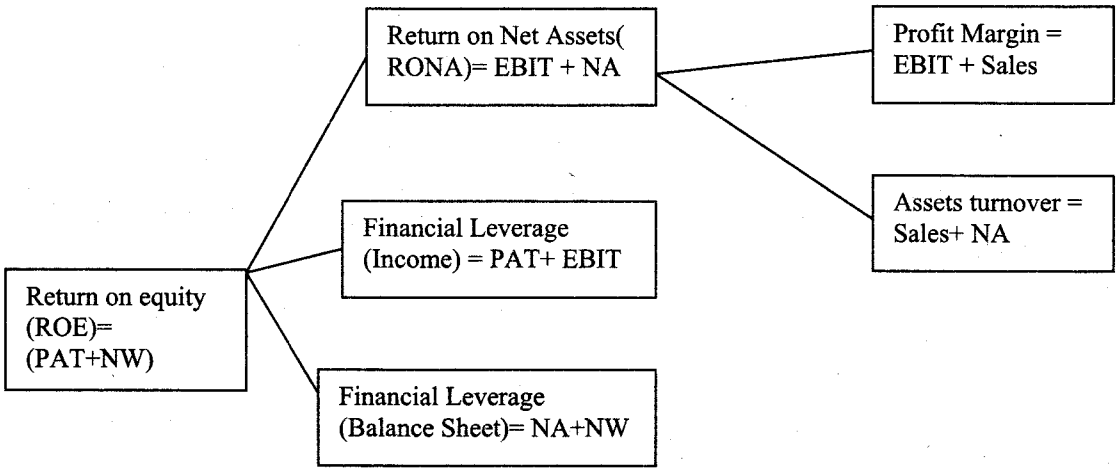
DU PONT CHART
(To calculate return on equity)

- Return on equity is one of the most important indicators of a firm's profitability / growth.
- Companies that boast of high return on equity with little or no debt are able to grow without large capital expenditures.
- Du Pont chart was developed by USA based company Du-Pont.
- This chart is a chart of financial ratios, which analyses the net profit margin in terms of asset turn out.
- This chart shows that the ROI is ascertained as a product of net margin ratio and investment turn over ratio.
- There are three components in the calculation of return on equity using traditional Du Pont model:-
    - the net profit margin,

- asset turnover, and
- the equity multiplier.

- By examining each individual input, the sources of a company's return on equity can be discovered and compared to its competitors.

Return of equity = (Net profit margin)x(Asset turnover)x(Equity multiplier)



CASH FLOW & FUND FLOW STATEMENT

- The cash flow statement is to be prepared in accordance with the provisions contained in Accounting Standard (AS) – 3
- A business enterprise needs sufficient cash to meet its various obligations, hence this statement exhibits the **flow of** incoming and outgoing **cash**
- This statement assesses the **ability of the enterprise** to generate cash and cash equivalents
- ***Cash*** comprises cash on hand and demand deposits with banks.
- ***Cash equivalents*** are short term highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value.
- ***Cash flows*** are inflows and outflows of cash and cash equivalents.
- Cash flows exclude movements between cash and cash equivalents
- A cash flow statement is useful for short-term planning and it helps in;

  - efficient cash management
  - internal financial management
  - Discloses the movements of cash
  - Discloses the success or failure of cash planning

- This standard applies to the enterprises:
  - ❑ Having turnover more than **Rs. 50 Crores** in a financial year;
  - ❑ Listed companies;
- Cash flow statement of **listed companies** shall be presented only under the **<u>indirect method</u>** as prescribed in AS 3
- The cash flow statement should report cash flows during the period classified by
  - ❑ **Operating,**
  - ❑ **Investing and**
  - ❑ **Financing activities.**

OPERATING ACTIVITIES	INVESTMENT ACTIVITIES	FINANCING ACTIVITIES
• These are principal revenue producing activities of the enterprise. • It can be prepared by way of;- a. Direct Method	• The activities of acquisition and disposal of long term assets and investments. • It includes making and collecting loans, acquiring	• Those activities that result in changes in size and composition of owner's capital and borrowing of the organization. • It includes receipts from

b. Indirect Method **Examples:** • Cash receipts from sale of goods / rendering services; • Cash receipts from royalties, fees, commissions and other revenue; • Cash payments to suppliers of goods and service; • Cash payments to and on behalf of employees.	and disposal of debt and equity instruments, property and fixed assets etc. Examples: • Cash payments to acquire fixed assets • Cash receipts from disposal of fixed assets • Cash payments to acquire shares, warrants or debt instruments of other enterprises and interest in joint ventures • Cash receipt from disposal of above investments	issuing shares, debentures, bonds, borrowing and repayment of borrowed amount/loan etc. Examples: • Sale of share • Buy back of shares • Redemption of preference shares • Issue / redemption of debentures • Long term loan / payment thereof • Dividend / interest paid

Format of Cash Flow Statement

Cash Flow Statement (Direct Method)	*Rs.*
a. Cash Flow from Operating Activities	
Cash receipts from customers	xxx
Cash paid to suppliers and employees	(xxx)
Cash generated from operations	xxx
Income tax paid	(xxx)
Net cash from Operating Activities (a)	Xxx
b. Cash Flows from Investing Activities	
Purchase of fixed assets	(xxx)
Proceeds from sale of equipment	Xxx
Interest received	Xxx
Dividend received	Xxx
Net cash from investing Activities (b)	Xxx
c. Cash Flows from Financing Activities	
Proceeds from issuance of share capital	xxx
Proceeds from long-term borrowings	xxx

Repayments of long-term borrowings	(xxx)
Interest paid	(xxx)
Dividend paid	(xxx)
Net cash from Financing Activities (c)	xxx
Net increase (decrease) in Cash and Cash Equivalent (a+b+c)	xxx
Cash and Cash Equivalents at beginning of period	xxx
Cash and Cash Equivalent at end of period	xxx

Cash Flow Statement (Indirect Method)	*(Rs.)*
a. Cash Flow from Operating Activities	
Net profit before tax and extraordinary items	xxx
Adjustments for:	
- Depreciation	xxx
- Foreign exchange	xxx
- Investments	xxx
- Gain or loss on sale of fixed assets	(xxx)
- Interest/dividend	xxx
Operating profit before working capital changes	xxx
Adjustments for:	
- Trade and other receivables	xxx
- Inventories	(xxx)
- Trade payable	xxx
Cash generation from operations	xxx
- Interest paid	(xxx)
- Direct Taxes	(xxx)
Cash before extraordinary items	xxx
Deferred revenue	xxx
Net cash from Operating Activities (a)	xxx
b. Cash Flows from Investing Activities	
Purchase of fixed assets	(xxx)
Sale of fixed assets	xxx
Purchase of investments	xxx
Interest received	(xxx)
Dividend received	xxx
Loans to subsidiaries	xxx
Net cash from Investing Activities (b)	xxx
c. Cash Flows from Financing Activities	
Proceeds from issue of share capital	xxx
Proceeds from long term borrowings	xxx

Repayment of finance/lease liabilities	(xxx)
Dividend paid	(xxx)
Net cash from Financing Activities (c)	xxx
Net increase (decrease) in Cash and Cash Equivalents (a+b+c)	xxx
Cash and Cash Equivalents at the beginning of the year	xxx
Cash and Cash Equivalents at the end of the year	xxx

LIMITATIONS OF CASH FLOW ANALYSIS

1. Cash flow statement cannot be equated with the Income Statement. An Income Statement takes into account both cash as well as non cash items therefore, net cash flow does not necessarily mean net income of the business.
2. The cash balance as disclosed by the cash flow statement may not represent the real liquid position of the business since it can be easily influenced by postponing purchases and other payments.
3. Cash flow statement cannot replace the Income Statement or the Funds Flow Statement. Each of them has a separate function to perform.

FUNDS FLOW STATEMENT

- Both funds flow and cash flow statements are used in analysis of past transactions of a business firm.
- Funds flow statement is based on the accrual accounting system.
- Funds flow statement analyses the sources and application of funds of long-term nature and the net increase or decrease in long-term funds will be reflected on the working capital of the firm.
- It is more useful for long range financial planning.
- This statement tallies the funds generated from various sources with various uses to which they are put to.

DIFFERENCE BETWEEN FUNDS FLOW STATEMENT & CASH FLOW STATEMENT

Cash flow statement	Fund flow statement
• It indicates change in cash position	• It indicates change in working capital
• Its coverage is narrow confined only to cash.	• Its coverage is wide confined to working capital
• It is always prepared by opening cash balance and closing cash balance	• Opening and closing cash balance is not required
• Due weightage is given to outstanding and	• No adjustment is needed for outstanding

prepaid income and expenses	and prepaid expenses.
• No need to prepare schedule of change in working capital	• It is necessary to prepare the schedule of change in working capital
• Cash generated from operation is calculated	• Fund generated form operation is calculated
• Essential for short term financial analysis.	• Essential for long term financial analysis.
• Cash flow statement starts with the opening balance of cash and reach to the closing balance of cash by proceeding through sources and uses	• Funds flow statement tallies the funds generated from various sources with various uses to which they are put