

Ch 1 - Capital Budgeting (Chart 1.1)



It is the time period required to recover back the Principal amount invested for a project

A
Pay-back Period

B
Discounted pay-back period

It is time period to recover back the Principal amount invested considering the time value of money for a project.

- * We first Discount the CFs of future years to PV
- * Then Discounted CFs are cumulated to check the exact discounted pay- back period
- * It is same like pay-back period, exact that here future years cash flows are discounted and then cumulated
- * How To Select: **Lesser** the discounted pay-back period better the project.

Types of cash in flow

Even Cash Flows

$$\text{Pay-back Period} = \frac{\text{Initial Investment}}{\text{Annual Cash Flows}}$$

Uneven Cash Flows

we use cumulative CF to check the exact pay-back period.

How To Select : **Lesser** the pay-back period better the Project

it is the rate of return the project is giving without considering the time value of Money. This method considers profits and not cash flows for calculating rate of return

D
Average rate of return on (ARR)

C
Pay-back reciprocal

it is just opposite of pay- back Period

*As the name suggests, it is exactly opposite of pay back method.

$$\text{Pay back reciprocal} = \frac{1}{\text{Pay back period}}$$

*It indicates the annual rate of return on Initial Investment, without Considering time Value of Money

*How to Select : **Higher** the pay back reciprocal, better the project.

E
Discounted Cash-flow Methods

It has 3 methods.
 (a) Net present Value (NPV) Method.
 (b) Profitability Index (PI) Method
 (c) Internal rate of Return (IRR) method.

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Average rate of return on (ARR)

Based on original Investment

$$\text{ARR} = \frac{\text{Average Annual Profit After Tax}}{\text{Original Investment}} \times 100$$

Based on Average Investment

$$\text{ARR} = \frac{\text{Average Annual Profit After Tax}}{\text{Average Investment}} \times 100$$

Where, Average Annual Profit=

$$\frac{\text{Total Profit}}{\text{No. of Years}}$$

and

$$\frac{\text{Opening WDV} + \text{Closing WDV}}{2}$$

OR

Average Investment =

$$\frac{\text{Original Investment} - \text{Scrap Value}}{2} + \text{Additional Working Capital} + \text{Scrap Value}$$

How To Select: **Higher** the ARR, better the Project.



Ch 1 - Capital Budgeting (Chart 1.2)

Discounted Cash flow Methods

Net Present Value (NPV) Method

*As the Name Suggests it is the net present value of all cash inflows and cash out flows

$$\text{Net Present Value (NPV)} = \frac{\text{Present value of Cash Inflows}}{\text{Present value of cash outflows}}$$

*It indicates by investing the project cost today how much extra we are getting in today's value.

*The cash flows are discounted using cost of capital.

*If NPV is +ve, we accept the project.

*Between 2 Projects the projects with higher NPV will be selected.

*Where the life of 2 projects under consideration is not same EAV is used as:

$$\text{Equated Annual Value (EAV)} = \frac{\text{NPV}}{\text{PVAF for life of Project}}$$

Effective interest Rate (EIR) :
it is same like internal rate of return (IRR)

It is the rate used for discount the future cash flows where present value of inflows will be equal to present value of outflows means at IRR Net present Value of Project will be always 'Zero'

Profitability Index (PI) Method

$$\text{PI} = \frac{\text{PV of Cash in Flows}}{\text{PV of Cash Out Flows}}$$

OR

$$\text{PI} = \frac{\text{NPV} + \text{Initial Investment}}{\text{Initial Investment}}$$

*It indicates that for every 1 rupee invested in the project of how much we are getting in today's Value.

***How To Select:** Higher the PI better the project

Internal Rate of Return (IRR) method

$$\text{IRR} = \text{start rate} + \frac{\text{Surplus}}{\text{Surplus} + \text{Deficit}} \times \text{Difference in rate}$$

*It is the rate of return given by the Project.

*If IRR is taken as discounting Rate, NPV is always Zero & PI is 1.

***How To Select :**

- 1.If there is single project under consideration, IRR should be compared with cut off rate. We accept the Project if, IRR > cut off rate is Minimum required rate of return.
- 2.Between 2 Projects, Projects with higher IRR should be selected.

Important Points to Remember:

- (1) Depreciation is Non-cash expense.
- (2) Still we consider depreciation for Calculating tax amount.
- (3) If there is no tax rate given, we ignore depreciation.
- (4) If tax amount is given, we ignore depreciation

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Ch 2 - Leverage (Chart- 2.1)

Types of Leverage

Operating Leverage or Degree of Operating Leverage (DOL)

Taking advantage of operations of Business i.e., operating fixed cost

By increasing the **SALES** by a certain % we want to increase **EBIT** by a greater %

$$1) \text{ DOL} = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in SALES}}$$

OR

In other words, we are measuring the impact of **FIXED COST**

$$2) \text{ DOL} = \frac{\text{Contribution}}{\text{EBIT}}$$

Formula (1) to be used when two situations are given. Whereas formula (2) to be used when only one situation is given.

Financial Leverage or Degree of Financial Leverage (DFL)

Taking advantage of financial structure of business i.e., fixed cost of finance - Interest

A) Assuming that there are no preference shares

By increasing the **EBIT** by a certain % we want to increase **EPS** by a greater %

$$1) \text{ DFL} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$

OR

In other words, we are measuring the impact of **INTEREST COST**

$$2) \text{ DFL} = \frac{\text{EBIT}}{\text{EBT}}$$

Formula (1) to be used when two situations are given. Whereas formula (2) to be used when only one situation is given.

B) Assuming that there are preference shares

Now, assuming that preference shares are given in question. We can now take advantage of interest and preference dividend.

$$\text{DFL} = \frac{\text{EBIT}}{\text{EBIT} - \text{Interest} - [\text{PD}/(1-t)]}$$

Combined Leverage or Degree of Combined Leverage (DCL)

Taking advantages of both operations and financial structure of business. i.e. fixed cost of operations + fixed cost of finance i.e. Interest

A) Assuming that there are no preference shares

By increasing the **SALES** by a certain % we want to increase **EPS** by a greater %

$$1) \text{ DCL} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in SALES}}$$

OR

In other words, we are measuring the impact of both **FIXED COST OF OPERATIONS & INTEREST COST**

$$2) \text{ DCL} = \frac{\text{Contribution}}{\text{EBIT}}$$

Formula (1) to be used when two situations are given. Whereas formula (2) to be used when only one situation is given.

B) Assuming that there are preference shares

Now, assuming that preference shares are given in question. We can now take advantage of fixed cost of operations & interest & preference dividend.

$$\text{DCL} = \frac{\text{Contribution}}{\text{EBIT} - \text{Interest} - [\text{PD}/(1-t)]}$$



Ch 2 - Leverage (Chart- 2.2)

Assuming that there are no Preference Shares

| Particulars | Amount |
|-------------------|--------|
| Sales | XXX |
| (-) Variable cost | (XX) |
| Contribution | XXX |
| (-) Fixed Cost | (XX) |
| EBIT | XXX |
| (-) Interest | (XX) |
| EBT | XXX |
| (-) Taxes | (XX) |
| EAT or Net Income | XXX |

Assuming that there are Preference Shares

| Particulars | Amount |
|-------------------------|--------|
| Sales | XXX |
| (-) Variable cost | (XX) |
| Contribution | XXX |
| (-) Fixed Cost | (XX) |
| EBIT | XXX |
| (-) Interest | (XX) |
| EBT | XXX |
| (-) Taxes | (XX) |
| EAT | XXX |
| (-) Preference Dividend | (XX) |
| EAT or Net Income | XXX |

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Ch 3 - COST OF CAPITAL (Chart- 3.1)



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Ch 3 - COST OF CAPITAL (Chart- 3.2)

Weighted Average Cost of Capital (WACC)

Using Book Value Weights

- 1) The weights used are derived from book value of different sources of finance as per books of accounts.
- 2) Retained earnings to be Included.
- 3) Always calculate weights for total value of Capital (Take proportion of total values as per books of accounts)

Using Market Value Weights

- 1) The weights used are derived from market value of different sources of finance as per prevailing market rates.
- 2) Retained earnings ignored.
- 3) Always calculate weights for total value of capital (Take proportion of total market values as per prevailing market prices)

Format for calculation of WACC or K_0

| Source of Finance | Book Value or Market Value | Weights | Individual cost of Capital | WACC |
|--------------------|----------------------------|----------------|----------------------------|-----------------|
| Equity Capital | XX | W1 | K_e | $K_e \times W1$ |
| Preference Capital | XX | W2 | K_p | $K_p \times W2$ |
| Retained earning | XX | W3 | K_e | $K_e \times W3$ |
| Debt | XX | W4 | K_d | $K_d \times W4$ |
| Total | XXX | Total of above | | $K_0 = WACC$ |



Ch 4 - Capital Structure (Chart 4.1)

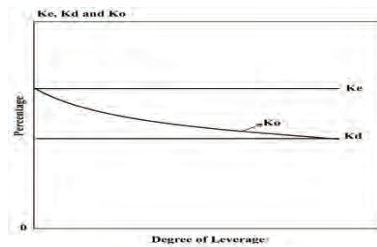
Capital Structure Theories

Net Income Approach

Assumption

- **Kd = Debt Capitalization Rate**
- **Ke = Equity Capitalization Rate**
- **Kd is always less than Ke**
- **Kd & Ke remains constant for debt / equity mix**

Diagram



Steps

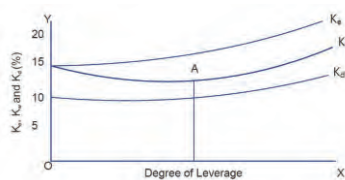
- 1) EBIT
- 2) EBT (NI) = EBIT – Interest
- 3) Value of Equity (s) = $\frac{NI}{Ke}$
- 4) Value of Debt (D) = $\frac{\text{Interest}}{Kd}$
- 5) Value of firm (V) = S + D
- 6) Overall cost of capital (Ko) = $\frac{EBIT}{V} \times 100$

Traditional Theory

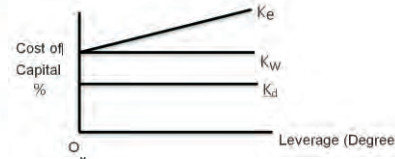
Assumption

- **Kd is always less than Ke**
- **Kd & Ke vary with change in debt equity mix**
- **Ke is more sleeper and higher than increase in Kd**

Diagram



Diagram



Steps

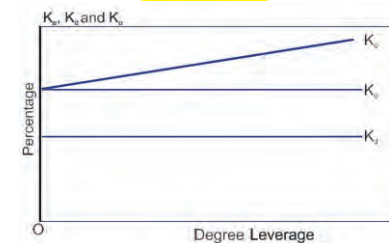
- 1) EBIT
- 2) EBT = EBIT – Interest
- 3) Value of Firm (V) = $\frac{EBIT}{Ko}$
- 4) Value of Debt (D) = $\frac{\text{Interest}}{Kd}$
- 5) S = V - D
- 6) Ke = $\frac{EBIT \text{ or } NI}{S} \times 100$

Modigliani-Miller Approach

MM Approach without Tax Assumption

- **Kd is always less than Ke**
- **Kd remains constant at all levels of debt- equity mix**
- **Ke is increases at debt content increases.**
- **Market capitalises value of firm as a whole without any importance to Debt - Equity mix.**
- **Capital Market is perfect, investors are face to buy or sell securities, no transaction cost, investors can personally borrow without restrictions on same terms as firms do.**
- **Same risk class classification - if 2 firms have same capital employed and same EBIT**

Diagram



MM Approach with Tax

- Value of levered company = Market Value of unlevered firm + (Debt X Tax Rate)**
- Cost of equity in a levered company (Keg) = Keu + (Keu - Kd) Debt / Debt + Equity**

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Ch 4 - Capital Structure (Chart 4.2)

Factors Determining Capital Structure

Nature of Industry (small/ large scale)

Gestation Period (Time required to settled the Business)

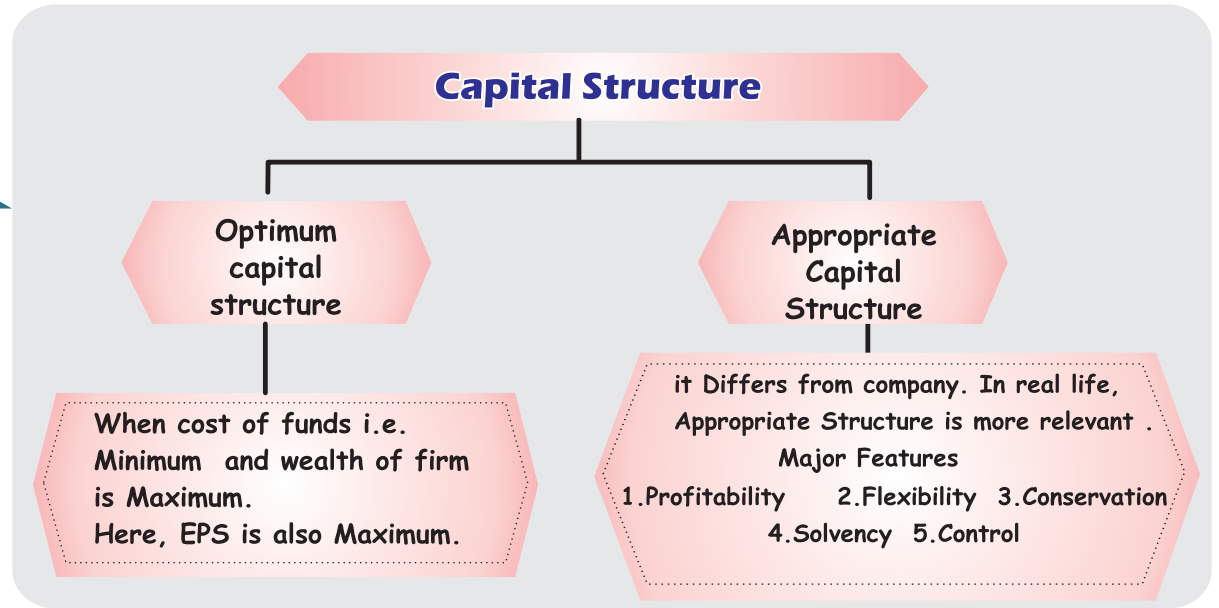
Certainty of profits
(More - Debt & Less - Equity)

Quantum of Return on Investment
(ROI to be compared to Cost of Funds)

Lending Policy of Bank (Liberal / strict)

Monetary and Fiscal policy of Govt.

| Source | risk | cost | Control |
|------------|----------|----------|-------------|
| Equity | Lowest | Highest | Is Diluted |
| Preference | Moderate | Moderate | Not Diluted |
| Debt | Highest | Lowest | Not Diluted |



Other Important Concepts

Financial BEP

It Is that level of EBIT At which EPS under a plan Is Zero

Let the EBIT be 'X'

$$\frac{(X - \text{Interest}) (1-t) - PD}{\text{No. of equity share}} = 0$$

Indifference Point

It is that level of EBIT at which EPS under two Plans is same.

Let the EBIT be 'X' plan A and B.

| | |
|---|---|
| Plan A | Plan B |
| $\frac{(X - \text{Interest}) (1-t) - PD}{\text{No. of equity share}}$ | $= \frac{(X - \text{Interest}) (1-t) - PD}{\text{No. of equity share}}$ |

Marginal Cost of capital:-

- It is cost of raising an additional rupee of capital
- The word marginal means additional
- We compute cost of only additional / New Capital



Ch 5 - DIVIDEND DECISION (Chart- 5.1)

**B
A
S
I
C**

**F
O
R
M
U
L
A
S**

$$\text{Dividend Per Share (DPS)} = \frac{\text{Total Equity dividend}}{\text{No. of Equity Shares}}$$

$$\text{Dividend Rate(\%)} = \frac{\text{Dividend Per Share}}{\text{Face Value per share}}$$

$$\text{Dividend Yield (\%)} = \frac{\text{Dividend Per Share}}{\text{Market price per share}}$$

$$\text{Payout Ratio (\%)} = \frac{\text{Dividend Per Share}}{\text{Earnings per share}}$$

$$\text{Retention Ratio (b)} = 100 - \text{Payout Ratio, (or)} \frac{\text{Retained Earning}}{\text{Residual Earnings}}$$

APPROACHES TO DIVIDEND POLICY

1

Water's Approach

$$\text{Theoretical Market Value of Equity Share} = \frac{D + (E - D) \times R}{K_e}$$

Where, D = Dividend per share
E = Earning per share
Ke = Cost of Equity Capital
R = Internal rate of Return

2

Gordon's Model

$$P = \frac{D_1}{K_e - g} \quad P = \frac{D_1}{\text{(without growth) } K_e}$$

Where, P = Theoretical share Price
g = Growth Rate
D₁ = Dividend of Next Year
Ke = Cost of Equity capital

Conclusion: If R > Ke Payout of Dividend should be Minimum
If R < Ke Payout of Dividend should be maximum &
If R = Ke Dividend payout can be anywhere between 0-100%

3

Modigliani & Miller's Approach (MM Hypothesis)

1) Dividend Not Paid
 $P_1 = P_0(1 + K_e)$

2) Dividend Paid
a] $P_1 = P_0(1 + K_e) - D_1$
b] $P_0 = \frac{P_1 + D_1}{1 + K_e}$

3) Change in No. of Shares $\Delta n = \frac{I - (E - D)}{P_1}$
4) Market Value of Next Year
 $MV_1 = n_1 \times P_1$

Where, P₁ = Price of Next Year
P₀ = Price of Current Year
K_e = Cost of Equity
D₁ = Dividend of Next Year / Expected Dividend
I = Investment
E = Earnings / Profit of the Firm
n₁ = Existing no. of shares + New no. of shares

4

Lintner's Model

$$D_1 = D_0 + [(EPS \times \text{Target Payout}) - D_0] \times Af$$

Where, D₁ = Dividend of period 1
D₀ = Dividend of Period 0
EPS = Earning per share
Af = Adjustment Factor

5

Traditional or Graham & Dodd Model

$$P = m \left[D + \frac{E}{3} \right]$$

Where, P = Market Price
m = Multiplier
D = Dividend per share
E = Earning per share

Ch 6 :- Types of Financing (Chart 6.1)

Financial Needs of a Business

Classification of Financial Sources

i) Long-term financial needs

Such needs generally refer to those requirements of funds which are for a period exceeding 5-10 yrs.

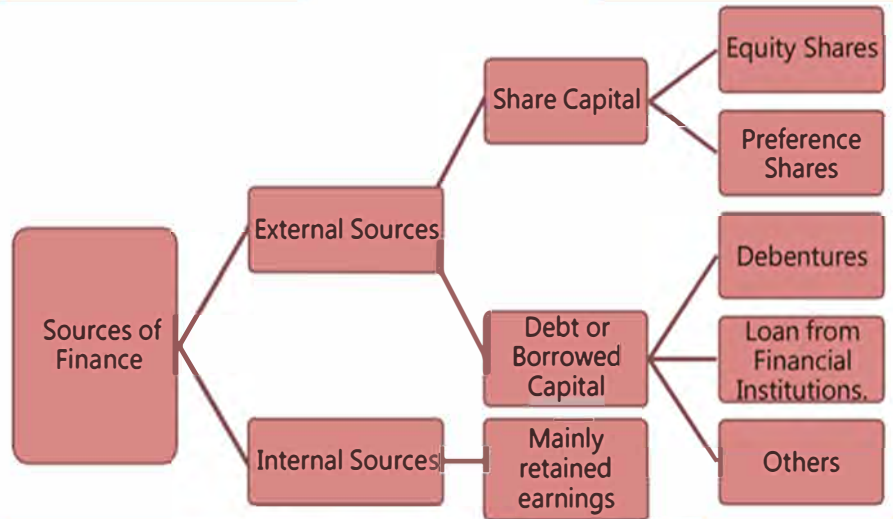
ii) Medium-term financial needs:

Such requirements refer to those funds which are required for a period exceeding 1 yr but not exceeding 5 yrs

iii) Short-term financial needs

Such type of financial needs arises to finance current assets such as stock, debtors, cash, etc. Investment in these assets is known as meeting of working capital requirements of concern

i) Based on basic Sources



ii) Based on Maturity of repayment period

| Long Term | Medium Term | Short Term |
|---|--|--|
| <ol style="list-style-type: none"> 1) Share capital or Eq sh 2) Preference shares 3) Retained earnings 4) Debentures/Bonds of different types 5) Loans from FI 6) Loans from State Financial Corporations 7) Loans from commercial banks 8) Venture cap. funding 9) Asset securitization 10) International financing like Euro-issues, Foreign currency loans | <ol style="list-style-type: none"> 1) Preference shares 2) Debentures/Bonds 3) Public deposits/ fixed deposits for duration of 3 yrs 4) Medium term loans from Commercial banks, Financial Institutions, State Financial Corporations 5) Lease financing/ Hire-Purchase financing 6) External commercial borrowings 7) Euro-issues 8) FC bonds | <ol style="list-style-type: none"> 1) Trade credit 2) Accrued expenses and deferred income. 3) Short term loans like Working Capital Loans from Commercial banks 4) Fixed deposits for a period of 1 year or less 5) Advances received from customers. <p>Various short-term provisions</p> |

Ch 6 :- Types of Financing (Chart 6.2)

Long Term Sources of Finance

I) Owners Capital or Equity Capital

II) Preference Share Capital

a) Characteristics

- 1) Source of permanent capital
- 2) owners of company as they undertake highest risk
- 3) Eq. SH entitled to dividends. dividend payable to them is an appropriation of profits & not a charge against profits.
- 4) In event of winding up, ordinary shareholders can exercise their claim on assets after claims of other suppliers of capital have been met
- 5) There can be various types of equity shares like New issue, Rights issue, Bonus Shares, Sweat Equity

b) Advantages of raising funds by issue of equity shares

- 1) permanent source of finance
- 2) company has no liability for cash outflows associated with its redemption.
- 3) helps further borrowing powers of co.
- 4) company is not obliged legally to pay dividends
- 5) company can make further issue of share capital by making a right issue

c) Disadvantages of raising funds by issue of equity shares

- i) cost of ordinary shares is higher
- ii) Investors find ordinary shares riskier
- ii) issue of new eq. shares reduces EPS & ownership and control of existing SH.

a) Characteristics

- 1) can be raised through a public issue of shares
- 2) Such shares are normally cumulative
- 3) rate of dividend on is normally higher
- 4) carry a stipulation of period & funds have to be repaid at end of a stipulated period.
- 5) It is a hybrid form of financing which imbibes within itself some characteristics of eq. capital & some attributes of debt capital
- 6) Cumulative Convertible Pref. Shares may also be offered
- 7) It may be redeemed at a pre decided future date or at earlier stage inter alia out of profits of company

b) Various types of Preference shares

| Type of Pref. Shares | Salient Features |
|-----------------------|-----------------------------------|
| i) Cumulative | Arrear Dividend will accumulative |
| ii) Non-cumulative | No right to arrear dividend |
| iii) Redeemable | Redemption should be done |
| iv) Participating | Participate in surplus of firm |
| v) Non- Participating | Over fixed rate of Dividend |
| vi) Convertible | Option of Convert into eq. Shares |

c) Advantages

- i) No dilution in EPS on enlarged capital base
- ii) Non-payment of pref. dividends does not force company into liquidity.
- iii) No risk of takeover, as they don't have voting rights
- iv) can be redeemed after a specified period.

d) Disadvantage

- i) preference dividend is not tax deductible & so does not provide a tax shield to co.
- ii) Preference dividends are cumulative in nature. although these dividends may be omitted, they shall need to be paid later

Ch 6 :- Types of Financing (Chart 6.3)

Long Term Sources of Finance

III) Retained Earnings

a) Long-term funds may also be provided by accumulating profits of company and by ploughing them back into business

b) Such funds belong to ordinary shareholders & increase net worth of co.

c) control of present owners is not diluted by retaining profits

d) public ltd company must plough back a reasonable amt of profit every year keeping in view legal requirements in this regard & its own expansion plans

e) Such funds entail almost no risk

IV) Debentures

a) Characteristics

1) Issued in different denominations ranging from ₹ 100 to ₹ 1,000 & carry different rates of interest.

2) Deb. are either secured or unsecured

3) May or may not be listed on stock exchange

4) cost of capital raised through debentures is quite low

5) Deb. offer a more attractive prospect than pref. shares since interest on debentures is payable whether or not company makes profits.

6) Debentures are thus instruments for raising long-term debt capital

b) Classification of Debentures on the basis of their convertibility:

1) Non-convertible debentures

2) Fully convertible debentures

3) Partly convertible debentures

c) Other types of Debentures with their features are :

1) **Bearer** - Transferable like negotiable instruments

2) **Registered** - Interest payable to registered person

3) **Mortgage** - Secured by a charge on Asset(s)

4) **Naked or simple** - Unsecured

5) **Redeemable** - Repaid after a certain period

6) **Non-Redeemable** - Not repayable

c) Advantages

1) cost of debentures is much lower than the cost of preference or equity capital

2) investors consider debenture investment safer than equity or preferred investment

3) Debenture financing does not result in dilution of control

4) period of rising prices, debenture issue is advantageous

d) Disadvantage

1) Debenture financing enhances financial risk associated with firm

2) Protective covenants associated with a debenture issue may be restrictive

Ch 6 :- Types of Financing (Chart 6.4)

Long Term Sources of Finance

V) Bonds

| i) Meaning | iii) Foreign Bonds | | | | |
|--|---|--|--|---|---|
| <p>It is fixed income security created to raise fund. Bonds can be raised through Public Issue & through Private Placement</p> | a) Foreign Currency Convertible Bond | d) Drop Lock Bond | f) Yield Curve Note (YCN) | h) Euro Bond | j) Bulldog Bond |
| | <ul style="list-style-type: none"> • Very low rate of interest • Issuer can get foreign currency at a very low cost. • Risk - It has to be redeemed on date of maturity | <ul style="list-style-type: none"> • Floating Rate Note with a normal floating rate • floating rate bond would be automatically converted into fixed rate bond if interest rate falls below a predetermined level • new fixed rate stays till drop lock bond reaches its maturity | <ul style="list-style-type: none"> • structured debt security • Yield increases when prevailing interest rate declines • Yield decreases when prevailing interest rate increases • used to hedge interest rate • works like inverse floater | <ul style="list-style-type: none"> • issued or traded in a country using a currency other than one in which bond is denominated • bond uses a certain currency, but operates outside jurisdiction of central bank that issues that currency • issued by multinational corp | <ul style="list-style-type: none"> • Denominated in Bulldog Pound Sterling/Great Britain Pound • Issued in London • Issuer Non- UK Company • Regulations : Great Britain • Purpose : Access of capital available in UK market • can be used to fund UK operation or to fund a company's local opportunities |
| ii) Types of Bond | | | | | |
| a) Callable bonds | b) Plain Vanilla Bond | | | | |
| <p>It has a call option which gives issuer right to redeem bond before maturity at a predetermined price known as call price</p> | <ul style="list-style-type: none"> • Issuer would pay principal amount along with interest rate • would not have any options • can be issued in form of discounted bond or coupon bearing bond | | | | |
| b) Puttable bonds | c) Convertible Floating Rate Notes | e) Variable Rate Demand | g) Yankee Bond | i) Samurai Bond | |
| <p>It give investor a put option back to company before maturity</p> | <ul style="list-style-type: none"> • option for holder to convert it into longer term debt security with a specified coupon • protects an investor against falling interest rate • Capital gain is not applicable to FRN | <ul style="list-style-type: none"> • normal floating rate note with a nominal maturity • holder can sell obligation back to trustee at: At par, Plus accrued interest • gives investor an option to | <ul style="list-style-type: none"> • denominated in dollars • issued by non- US banks & non- US corporations • issued in USA • to be registered in SEC • Time taken can be up to 14 weeks Interest rate is dollar LIBOR | <ul style="list-style-type: none"> • Denominated in Japanese Yen • Issued in Tokyo • Issuer Non- Japanese Company • Regulations : Japanese • Purpose : Access of capital available in Japanese market • can also be used to hedge foreign exchange risk | |

Ch 6 :- Types of Financing (Chart 6.5)

| Bonds | Venture Capital Financing | | Debt Securitisation | Lease Financing |
|---|---|--|---|--|
| iv) Indian Bonds | I) Meaning | II) Characteristics | Meaning | Meaning |
| a) Masala Bond | a) It refers to financing of new high risky venture promoted by qualified entrepreneurs who lack experience & funds to give shape to their ideas | a) It is basically an equity finance in new companies b) It can be viewed as a long term investment in growth-oriented small/medium firms | a) Securitisation is a process in which illiquid assets are pooled into marketable securities that can be sold to investors | a) It is a general contract between owner & user of asset over a specified period of time. |
| <ul style="list-style-type: none"> It is an Indian name used for Rupee denominated bond that Indian corporate borrowers can sell to investors in overseas markets issued outside India but denominated in Indian Rupees | b) In venture capital financing venture capitalist make investment to purchase eq. or debt securities from in-experienced entrepreneurs who undertake highly risky ventures with a potential of success | III) Methods of Venture Capital Financing | b) process leads to creation of financial instruments that represent ownership interest in, or are secured by a segregated income producing asset or pool of assets | b) asset is purchased initially by lessor (leasing company) & thereafter leased to user (lessee company) which pays a specified rent at periodical intervals |
| b) Municipal Bonds | | a) Equity financing | c) These assets are generally secured by personal or real property such as automobiles, real estate, or equipment loans but in some cases are unsecured | c) leasing is an alternative to purchase of an asset out of own or borrowed funds |
| <ul style="list-style-type: none"> used to finance urban infrastructure are increasingly evident in India | | b) Conditional loan | | |
| c) Government or Treasury Bonds | | c) Income note | | |
| <ul style="list-style-type: none"> these bonds issued by Government of India, Reserve Bank of India, any state Government or any other Government department. | | d) Participating debenture | | |

Ch 6 :- Types of Financing (Chart 6.6)

Short Term Source of Finance

| | | | | | |
|---|---|--|--|--|---|
| <p>a) Trade Credit</p> <ul style="list-style-type: none"> It represents credit granted by suppliers of goods, etc., as an incident of sale duration of such credit is 15 to 90 days it enhances automatically with increase in volume of business | <p>d) Commercial Paper</p> <ul style="list-style-type: none"> It is an unsecured money market instrument issued in form of a promissory note. issued in denominations of ₹ 5 lakhs or multiples thereof & interest rate is generally linked to yield on one-year government bond | <p>f) Bank Advances</p> <p>Facilities provided by banks :-</p> | | <p>g) Financing of Export Trade by Banks</p> <p>i) Pre-shipment finance</p> | <p>h) Inter Corporate Deposits</p> <p>companies can borrow funds for a short period say 6 months from other companies which have surplus liquidity</p> |
| <p>b) Accrued Expenses & Deferred Income</p> <ul style="list-style-type: none"> It represent liabilities which a co. has to pay for services which it has already received like wages, taxes, interest & dividends these receipts increase a company's liquidity | <p>e) Treasury Bills</p> <ul style="list-style-type: none"> class of CG Securities. meet short term borrowing requirements with maturities ranging between 14 to 364 days | <p>i) Short Term Loans</p> <p>It is a single advance & given against securities like shares, government securities, life insurance policies & FD receipts, etc</p> | <p>iv) Cash Credits</p> <p>It is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank</p> <p>limits are sanctioned against security of tradable goods by way of pledge or hypothecation</p> | <p>Types of Packing Credit</p> <ul style="list-style-type: none"> Clean packing credit Packing credit against hypothecation of goods Packing credit against pledge of goods E.C.G.C. guarantee Forward exchange contract | <p>i) Certificate of Deposit (CD)</p> <p>It is a document of title similar to a time deposit receipt issued by a bank except that there is no prescribed interest rate on such funds</p> |
| <p>c) Advances from Customers</p> <p>a) Manufacturers & contractors engaged in producing or constructing costly goods demand advance money from their customers at time of accepting their orders for executing their contracts or supplying goods</p> <p>b) It is a cost free source of finance</p> | <p>f) Certificates of Deposit (CD)</p> <ul style="list-style-type: none"> It is basically a savings certificate with a fixed maturity date of not less than 15 days up to a maximum of one year | <p>ii) Overdraft</p> <p>Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account</p> | <p>v) Advances against goods</p> <p>provide a reliable source of repayment.</p> <p>safe & liquid</p> | <p>ii) Post-shipment Finance</p> <ul style="list-style-type: none"> Purchase/discounting of documentary export bills E.C.G.C. Guarantee Advance against export bills sent for collection Advance against duty draw backs, cash subsidy, etc | <p>j) Public Deposits</p> <p>A company can accept public deposits subject to stipulations of RBI from time to time maximum up to 35% of its paid up capital & reserves, from public & shareholders</p> <p>accepted for a period of 6 months to 3 years</p> |
| | | <p>iii) Clean Overdrafts</p> <p>clean advance is granted for a short period & must not be continued for long.</p> <p>Request for clean advances are entertained only from parties which are financially sound & reputed for their integrity</p> | <p>vi) Bills Purchased/Discounted</p> <p>These advances are allowed against security of bills which may be clean or documentary</p> | | |

Ch 6 :- Types of Financing (Chart 6.7)



Other source of Financing

i) Seed Capital Assistance

It is designed by IDBI for professionally or technically qualified entrepreneurs &/or persons possessing relevant experience, skills & entrepreneurial traits but lack adequate financial resources

v) Capital Incentives

These incentives usually consist of a lump sum subsidy & exemption from or deferment of sales tax & octroi duty

ix) Zero Coupon Bonds

It does not carry any interest but it is sold by issuing company at a discount.

ii) Internal Cash Accruals

surplus generated from operations, after meeting all the contractual, statutory & working requirement of funds, is available for further capital expenditure

vi) Deep Discount Bonds

It is a form of zero-interest bonds. These bonds are sold at a discounted value and on maturity face value is paid to investors

x) Option Bonds

These are cumulative & non-cumulative bonds where interest is payable on maturity or periodically

iii) Unsecured Loans

provided by promoters to meet promoters' contribution norm. These loans are subordinate to institutional loans

vii) Secured Premium Notes

It is issued along with a detachable warrant & is redeemable after a notified period of say 4 to 7 years

xi) Inflation Bonds

Inflation Bonds are the bonds in which interest rate is adjusted for inflation

iv) Deferred Payment Guarantee

Many a time suppliers of machinery provide deferred credit facility under which payment for purchase of machinery can be made over a period of time

viii) Zero Interest Fully Convertible Debentures

These are fully convertible debentures which do not carry any interest

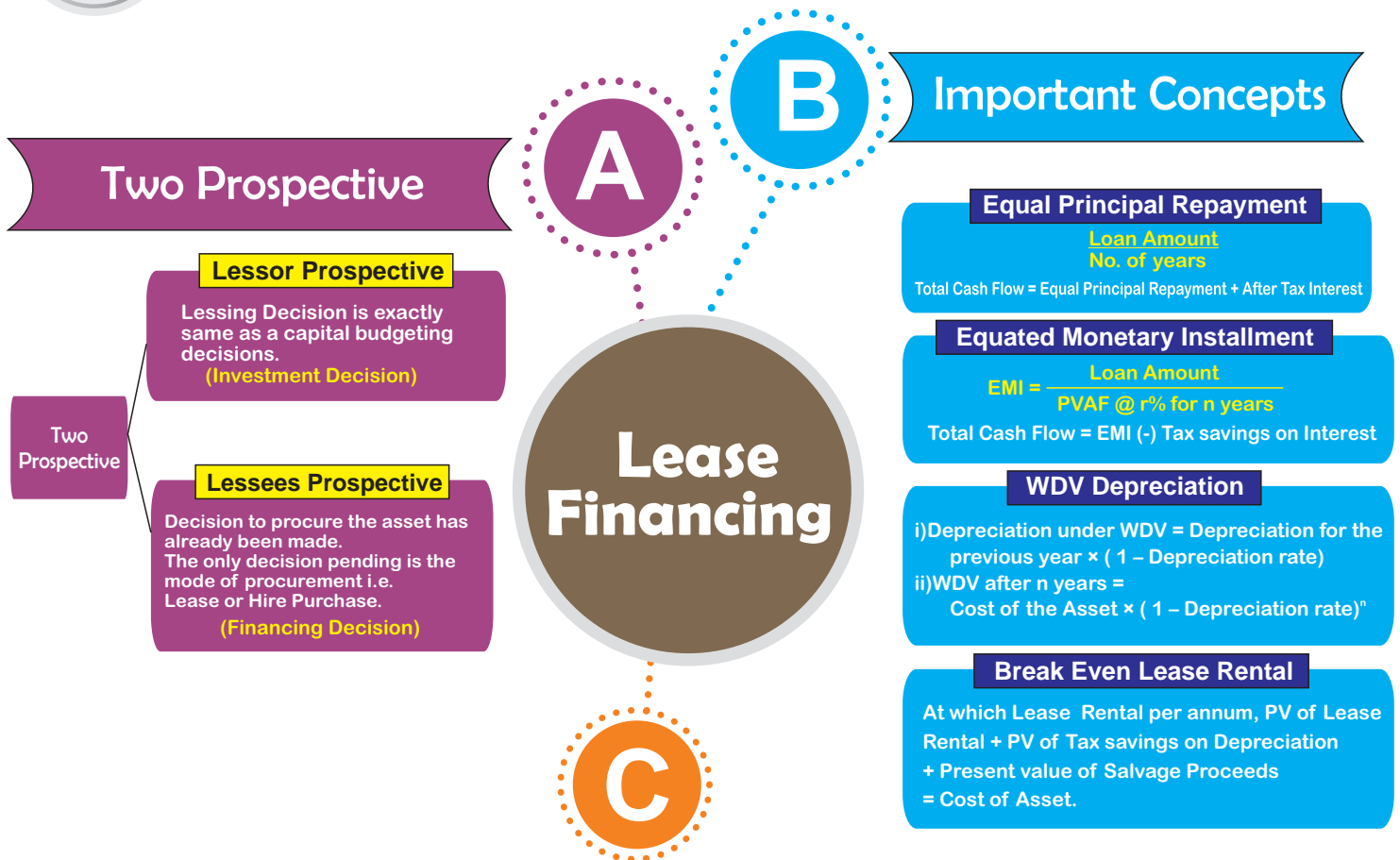
xii) Floating Rate Bonds

It is bond where interest rate is not fixed & is allowed to float depending upon market conditions

Ch 6 :- Types of Financing (Chart 6.8)

| Loans from Financial Institutions | American Depository Receipts (ADRs) | Global Depository Receipts (GDRs) | Indian Depository Receipts (IDRs) |
|--|--|---|---|
| <p>i) Financial Institution: National</p> <p>a) Industrial Finance Corporation of India (IFCI)</p> <p>b) State Financial Corporations</p> <p>c) Industrial Development Bank of India (IDBI)</p> <p>d) National Industrial Development Corporation (NIDC)</p> <p>e) Industrial Credit and Investment Corporation of India (ICICI)</p> <p>f) Life Insurance Corporation of India (LIC)</p> <p>g) Unit Trust of India (UTI)</p> <p>h) Industrial Reconstruction Bank of India (IRBI)</p> | <p>a) offered by non-US companies who want to list on any of US exchange</p> <p>b) represents a certain number of a company's regular shares</p> <p>c) issued by an approved New York bank or trust company against deposit of original shares.</p> <p>d) most onerous aspect of a US listing for companies is to provide full, half yearly and quarterly accounts in accordance with, or at least reconciled with US GAAPs.</p> | <p>a) These are negotiable certificate held in bank of one country representing a specific number of shares of a stock traded on exchange of another country</p> <p>b) used by companies to raise capital in either dollars or Euros</p> <p>c) first Indian firm to issue sponsored GDR or ADR was Reliance industries Limited</p> | <p>a) concept of depository receipt mechanism which is used to raise funds in foreign currency has been applied in Indian Capital Market through issue of Indian Depository Receipts</p> <p>b) IDRs are listed and traded in India in the same way as other Indian securities are traded.</p> |
| <p>ii) Financial Institution:</p> <p>a) The World Bank/ International Bank for Reconstruction & Development (IBRD)</p> <p>b) The International Finance Corporation (IFC)</p> <p>c) Asian Development Bank (ADB)</p> | | | |

Ch 7 – Lease Financing (Chart 7.1)



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Ch 8 – Risk Analysis in Capital Budgeting (Chart 8.1)

A

Application of Various Possible Probabilities to Cash Flows

Steps

- 1) Multiply cash flow with the probabilities to get expected cash flows.
- 2) Use expected cash flows to calculate NPV or IRR.

E

Simulation

- 1) Define the problem or system intended to be simulated.
- 2) Formulate the model intended to be used.
- 3) Test the model and compare its behavior with the behavior of the actual problem environment.
- 4) Identify and collect the data needed to test the model.
- 5) Run the simulation.
- 6) Analyse the results of the simulation and, if desired, change the solution that is being evaluated.
- 7) Return the simulation to test the new solution.
- 8) Validate the simulation, i.e. increase the chances that any interference that may be drawn about the real situation from running the simulation will be valid.

B

Varying the discounting rate or Risk adjusted discount rate

- 1) A situation where actual outcome may deviate from expected outcome, risk can be measured by assigning probabilities.
- 2) Joint probability of two events happening together
- 3) Standard deviation measures how much the actual data varies from expected data

Standard deviation =
(When Probability is not given)

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

Where, X is a variable
X is a mean or expected value
N is No. of years

Standard deviation =
(When Probability is given)

$$S = \sqrt{\sum P (X - \bar{X})^2}$$

- 4) Square of Standard Deviation is called as variance.
- 5) Coefficient of Variance (CV) is a relative measure of deviation useful for comparison of risk of two projects, with different expected NPVs.

CV = $\frac{\text{Standard Deviation}}{\text{Mean}}$

Higher the CV, higher the relative riskiness.

C

Adjusting the Cash Flows or certainty equivalent approach (CEC)

Steps-

- 1) Risky cash flow × certainty equivalent factor to arrive at riskless cash flows
- 2) Riskless cash flow are then discounted at risk free rate (RF) to get the present value.
- 3) NPV is then calculated as

PV of cash inflows – PV of cash outflows
Certainty equivalent co-efficient
= $\frac{\text{Risk less cash flow}}{\text{Risky cash flow}}$

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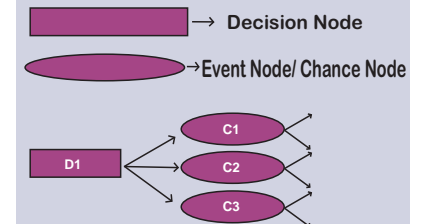
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D

Decision Tree Analysis

It is a graphical device that shows a sequence of strategic decisions & expected consequence under each possible set of circumstances.



Rule 1 – A decision tree begins with a decision point. A decision point (also known as decision node) is represented by a rectangle. An outcome point (also known as chance node) is denoted by circle.

Rule 2 – Decision alternatives (e.g. sales volume in the preceding example) are shown by a straight line originating from the decision node.

Rule 3 – A decision tree diagram is drawn from left to right. The rectangles and the circles are sequentially numbered.

Rule 4 – Values and probabilities for each branch are then incorporated.

Rule 5 – The value of each circle and each rectangle is computed by evaluating from right to left and marked.

Rule 6 – The expected value at a chance node is the aggregate of the expected values of the various branches that emanate from the chance node.

Rule 7 – The expected value at a decision node is the highest amongst the expected values of the various branches that emanate from the decision node.



Ch 9 – Ratio Analysis (Chart 9.1)

| No. | Ratio | Formula |
|-----|--|---|
| 1 | Current Ratio | $\frac{\text{Current Assets}}{\text{Current Liabilities}}$ |
| 2 | Quick Ratio (Also called as Liquid Ratio or Acid Test Ratio) | $\frac{\text{Quick Assets}}{\text{Quick Liabilities}}$ |
| 3 | Absolute Cash Ratio or Absolute Liquidity Ratio | $\frac{\text{Cash + Marketable Securities}}{\text{Current liabilities}}$ |
| 4 | Debt to Total Funds Ratio (or) Debt Ratio | $\frac{\text{Debt}}{\text{Total Funds}}$ |
| 5 | Equity to total Funds Ratio (or) Equity Ratio | $\frac{\text{Equity}}{\text{Total Funds}}$ |
| 6 | Debt – Equity Ratio | $\frac{\text{Debt}}{\text{Equity}}$ |
| 7 | Capital Gearing Ratio | $\frac{\text{Preference capital + Debt}}{\text{Equity Shareholders Funds}}$ |
| 8 | Proprietary Ratio | $\frac{\text{Proprietary Funds}}{\text{Total Assets}}$ |
| 9 | Debt total Assets Ratio | $\frac{\text{Debt Funds}}{\text{Total Assets}}$ |
| 10 | Fixed Asset to Long Term Fund Ratio | $\frac{\text{Fixed Assets}}{\text{Long Term Funds}}$ |

| No. | Ratio | Formula |
|-----|--|---|
| 11 | Gross Profit Ratio | $\frac{\text{Gross Profit}}{\text{Sales}}$ |
| 12 | Operating Profit Ratio | $\frac{\text{Operating Profit}}{\text{Sales}}$ |
| 13 | Net Profit Ratio | $\frac{\text{Net Profit}}{\text{Sales}}$ |
| 14 | Contribution Sales Ratio or PV Ratio | $\frac{\text{Contribution}}{\text{Sales}}$ |
| 15 | Raw Material Turnover Ratio | $\frac{\text{Cost of Raw Material Consumed}}{\text{Average Stock of Raw Material}}$ |
| 16 | WIP Turnover Ratio | $\frac{\text{Factory Cost}}{\text{Average Stock of WIP}}$ |
| 17 | Finished Goods or Stock Turnover Ratio | $\frac{\text{Cost of Goods Sold}}{\text{Avg. Stock of Finished Goods}}$ |
| 18 | Debtors Turnover Ratio | $\frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$ |
| 19 | Creditors Turnover Ratio | $\frac{\text{Credit Purchases}}{\text{Average Accounts Payable}}$ |
| 20 | Working Capital Turnover Ratio (also called Operating Turnover or Cash Turnover Ratio) | $\frac{\text{Turnover}}{\text{Net Working Capital}}$ |
| 21 | Fixed Assets Turnover Ratio | $\frac{\text{Turnover}}{\text{Net Fixed Assets}}$ |

| No. | Ratio | Formula |
|-----|---|---|
| 22 | Capital Turnover Ratio | $\frac{\text{Turnover}}{\text{Capital Employed}}$ |
| 23 | Return on Investment (ROI) or Return on Capital Employed (ROCE) | $\frac{\text{Pre-Tax ROCE}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Equity + Debt}}$ $\frac{\text{Post-Tax ROCE}}{\text{EAT + Interest}} \times \frac{\text{EAT + Interest}}{\text{Equity + Debt}}$ |
| 24 | Return on Equity (ROE) or Return on Net Worth (RONW) | $\frac{\text{Pre - Tax ROE}}{\text{EBT}} \times \frac{\text{EBT}}{\text{Equity}}$ $\frac{\text{Post - Tax ROE}}{\text{EAT}} \times \frac{\text{EAT}}{\text{Equity}}$ |
| 25 | Return on Assets (ROA) (Note 3) | $\frac{\text{Pre - Tax ROA}}{\text{EBT}} \times \frac{\text{EBT}}{\text{Average Total Assets}}$ $\frac{\text{Post - Tax ROA}}{\text{EAT}} \times \frac{\text{EAT}}{\text{Average Total Assets}}$ |
| 26 | Earnings per share (EPS) | $\frac{\text{Residual Earnings}}{\text{Number of Equity Shares}}$ |
| 27 | Dividend Per Share (DPS) | $\frac{\text{Total Equity Dividend}}{\text{Number of Equity Shares}}$ |
| 28 | Dividend Payout Ratio | $\frac{\text{Dividend Per Share}}{\text{Earnings per share}}$ |
| 29 | Price Earnings Ratio (PE Ratio) | $\frac{\text{Market Price Per Share}}{\text{Earnings per share}}$ |
| 30 | Book Value per share | $\frac{\text{Net Worth}}{\text{Number of Equity Shares}}$ |



Ch 9 – Ratio Analysis (Chart 9.2)

| | Term | Alternative Term | Formula for Computation |
|----|----------------------------------|---|--|
| a) | Debt | Borrowed funds (or) Loan Funds | = Debenture + Long term loans from banks, financial Institutions, etc. |
| b) | Equity | Net worth (or) Shareholders funds (or) Proprietors funds (or) Owners funds (or) Own funds | = Equity Share Capital + Preference Share Capital + Reserves & Surplus – Miscellaneous expenditure (as per balance sheet) – Accumulated losses. |
| c) | Equity Shareholders Funds | — | = Equity as above – preference share capital, i.e. = Equity Share Capital + Reserves & Surplus - Miscellaneous expenditure (as per balance sheet) – Accumulated losses. |
| d) | Total Funds | Long Term funds (or) Capital employed (or) Investment | = Debt + Equity (i.e. a + b as above)/.. Liability Route = Fixed Assets + Net Working Capital/.. Asset Route |

| Item | Computation |
|--|--|
| a) Number of days Average Stock of Raw Materials held | $\frac{365}{\text{Raw Material T/O Ratio}}$ |
| b) Number of days Average Stock of WIP held | $\frac{365}{\text{WIP T/O Ratio}}$ |
| c) Number of days Average stock of Finished goods held (Or) Number of days sales in inventory or Average stock velocity | $\frac{365}{\text{Finished Goods T/O Ratio}}$ |
| d) Average collection period (of debtors) (or) Number of days sales in Receivable | $\frac{365}{\text{Debtors T/O Ratio}}$ |
| e) Average Payment period (of Creditors) (Or) Average payment velocity | $\frac{365}{\text{Creditors T/O Ratio}}$ |
| f) Number of days working capital held (also called Operating Cycle or Cash cycle or Working Capital Cycle) | $\frac{365}{\text{Working Capital T/O Ratio}}$ |

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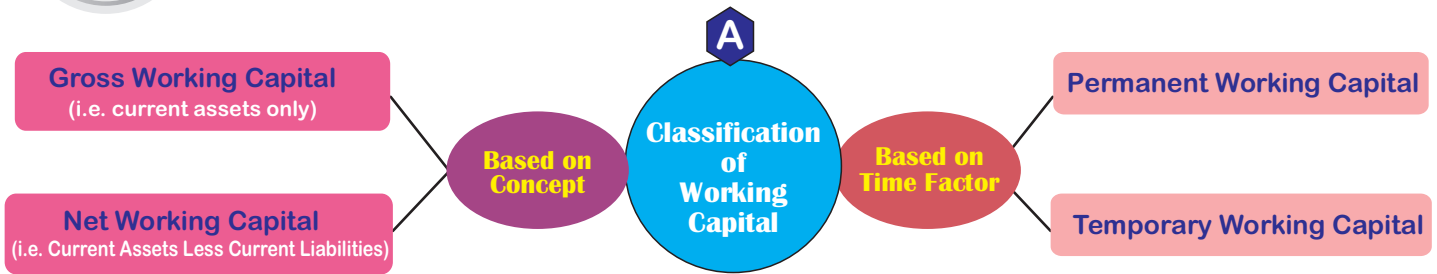
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Ch 10 – Working Capital Management (Chart 10.1)



B Operating Cycle

Raw Material Storage period + WIP holding period + Finished goods storage period + Debtors collection period + Creditors payment Period

C Working Capital Estimation Approaches Rates of valuation of various items

| Component | Total Approach | Cash Cost Approach |
|--------------------|--|---|
| Raw Materials | Purchase price net of Discount | Purchase price net of Discount |
| Work – in Progress | Raw Materials + 50% of (Direct Labour + Direct Expenses + All production OH) | Raw Materials + 50% of (Direct Labour + Direct Expenses + Production OH excluding depreciation) |
| Finished Goods | Cost of Production | Cost of Production Less Depreciation |
| Sundry Debtors | Selling Price | Selling Price Less Profit Margin Less Depreciation |
| Sundry Creditors | Purchase price net of Discount | Purchase price net of Discount |

Note – For WIP valuation, it is assumed that materials are fully issued and conversion (i.e. Labour and POH) is 50% complete.

D BAUMOI Model

$$\text{Optimum investment size} = \sqrt{\frac{2AT}{I}}$$

A = Annual Cash requirement

T = Transaction cost per purchase / sale of investment

I = Interest rate per rupee per annum

Note – Average Cash balance = $\frac{1}{2}$ of optimum investment size (as computed above)

Associated costs of optimum investment size = Transaction costs p.a. + Interest costs p.a.

= [(No. of transactions × Cost per Transaction) + (Average Cash Balance × Interest rate p.a.)]

At the optimum investment size level, Transaction costs p.a. =

Interest cost p.a. = $\frac{1}{2}$ of associated costs p.a.



Ch 10 – Working Capital Management (Chart 10.2)

E

Debtors Decision Making

The following cost benefit analysis procedure should be adopted

- a) **Compute Gross benefit** = Contribution or profit. (Compute profit if total fixed costs are specifically given in the question, otherwise contribution may be used)
- b) **Compute costs relating to debtors** = Interest on average debtors + bad debts + discount allowed + Specific costs
 - i) **Interest** = $\text{Cost of debtors p.a.} \times \frac{\text{Collection Period}}{360} \times \text{Interest Rate}$
 - ii) **Bad debts** = Sales × Bad debts percentage, if any
 - iii) **Discount allowed** = Sales × Percentage of debtors availing discount × Percentage of discount, if any.
 - iv) **Specific collection** costs should be considered only if given in the question, e.g. collection costs, etc.
- c) **Compute Net benefit** = Gross benefit Less Cost of Debtors = Step 1 Less Step 2.
The credit policy with the maximum Net Benefit should be selected by the firm.

F

Working Capital Funding Approach

| Approach | Matching Approach | Conservative Approach | Aggressive Approach |
|--------------------------|--|---|--|
| Long term funds used in | Fixed Assets & Permanent Working Capital | Fixed Assets, Permanent Working Capital & part of Temporary Working Capital | Fixed Assets & Part of Permanent Working Capital |
| Short term funds used in | Temporary Working Capital | Balance part of Temporary Working Capital | Balance part of Permanent Working Capital & entire Temporary Working Capital |
| Effect on Liquidity | Well - balanced | High Liquidity | Low Liquidity |
| Effect on Profitability | Comparatively Well - balanced | Low profitability & return on Assets | High return on assets but risky |

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