Ch 1 - Capital Budgeting (Chart 1.1)

Capital Budgeting Techniques

A. Pay-back Period

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

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 cummulated 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 cummulated
* How To Select: **Lesser** the discounted pay-back period better the project.

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.

D. Average rate of return on (ARR)

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

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

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

OR

Average Investment =

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

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

Next Page

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

Net Present Value (NPV) = Present value of Cash Inflows − 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:

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

Profitability Index (PI) Method

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

OR

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

*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

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

*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

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'

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SWAPNIL PATNI'S CLASSES

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

OR

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

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

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

OR

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

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

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 preferance shares are given in question. We can now take advantage interest and preference dividend.

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

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

OR

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

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

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 preferance shares are given in question. We can now take advantage of fixed cost of operations & interest & preference dividend.

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

Ch 2 - Leverage (Chart- 2.2)

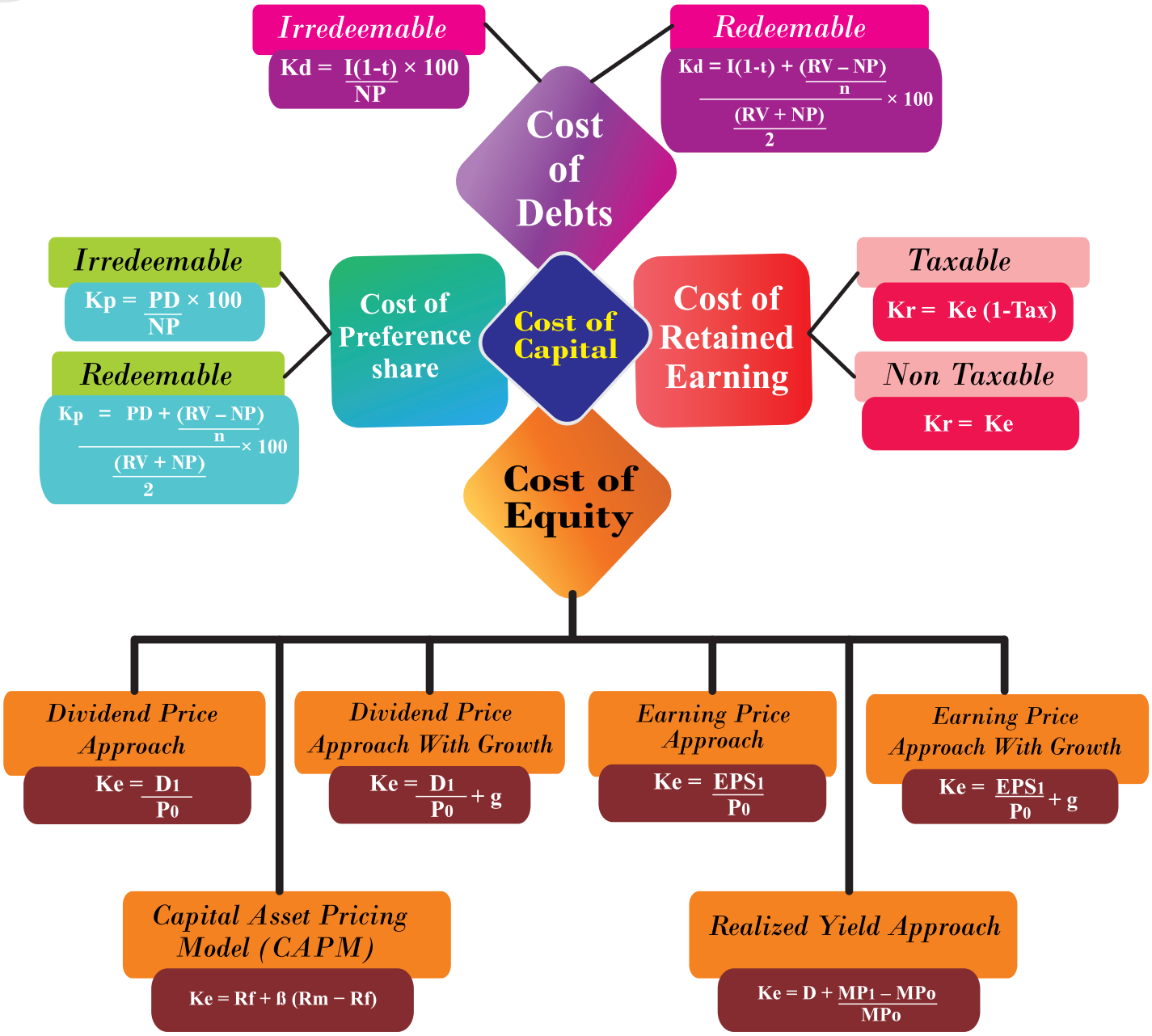
Assuming that there are no Preferance Shares

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 Preferance 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

Ch 3 - COST OF CAPITAL (Chart- 3.1)



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_o = WACC

Ch 4 - Capital Structure (Chart 4.1)

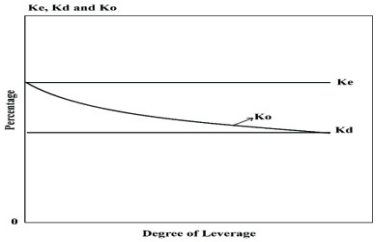
Capital Structure Theories

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) = $\frac{Interest}{Kd}$

5) Value of firm (V) = S + D

6) Overall cost of capital (Ko) =

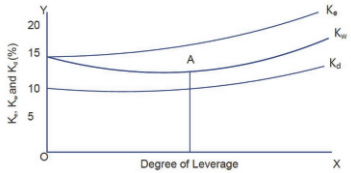
$\frac{EBIT}{V} \times 100$

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 increse in Kd

Diagram

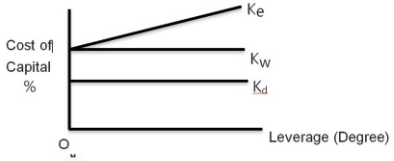


Net Operating Income Approach

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 of debt - equity mix

Diagram



Steps

1) EBIT

2) EBT = EBIT – Interest

3) Value of Firm (V) = $\frac{EBIT}{Ko}$

4) Value of Debt (D) = $\frac{Interest}{Kd}$

5) S = V - D

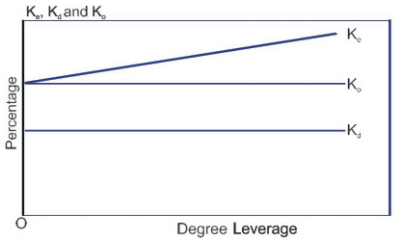
6) Ke = $\frac{EBIT \text{ or } NI}{S} \times 100$

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 emplyed and same EBIT

Diagram



MM Approach with Tax

I) Value of levered company = Market Value of unlevered firm + (Debt X Tax Rate)

ii) Cost of equity in a levered company (Keg) = Keu + (Keu – Kd) Debt / Debt + Equity

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

Capital Structure

Optimum capital structure

When cost of funds i.e. Minimum and wealth of firm is Maximum.
Here, EPS is also Maximum.

Appropriate Capital Structure

it Differs from company. In real life, Appropriate Structure is more relevant .
Major Features
1.Profitability 2.Flexibility 3.Conservation
4.Solvency 5.Control

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.

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

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)

SWAPNIL PATNI'S CLASSES

BASIC FORMULAS

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

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

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

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

Retention Ratio (b) =

100 – Payout Ratio, (or) $\frac{\text{Retained Earning}}{\text{Residual Earnings}}$

Ch 5 - DIVIDEND DECISION (Chart- 5.2)

APPROACHES TO DIVIDEND POLICY

1 Water's Approach

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

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

2 Gordon's Model

$P = \dfrac{D_1}{Ke - g}$ (with growth) $\quad P = \dfrac{D_1}{Ke}$ (without growth)

Where, P = Theoretical share Price
g = Growth Rate
D_1 = 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
$P_1 = P_0(1+Ke)$

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

3) Change in No. of Shares
$\Delta n = \dfrac{I - (E - D)}{P1}$

4) Market Value of Next Year
$MV_1 = n_1 \times p_1$

Where, P_1 = Price of Next Year
P_0 = Price of Current Year
Ke = Cost of Equity
D_1 = Dividend of Next Year / Expected Dividend
I = Investment
E = Earnings / Profit of the Firm
n_1 = Existing no. of shares + New no. of shares

4 Lintner's Model

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

Where, D_1 = Dividend of period 1
D_0 = Dividend of Period 0
EPS = Earning per share
Af = Adjustment Factor

5 Traditional or Graham & Dodd Model

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

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

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:

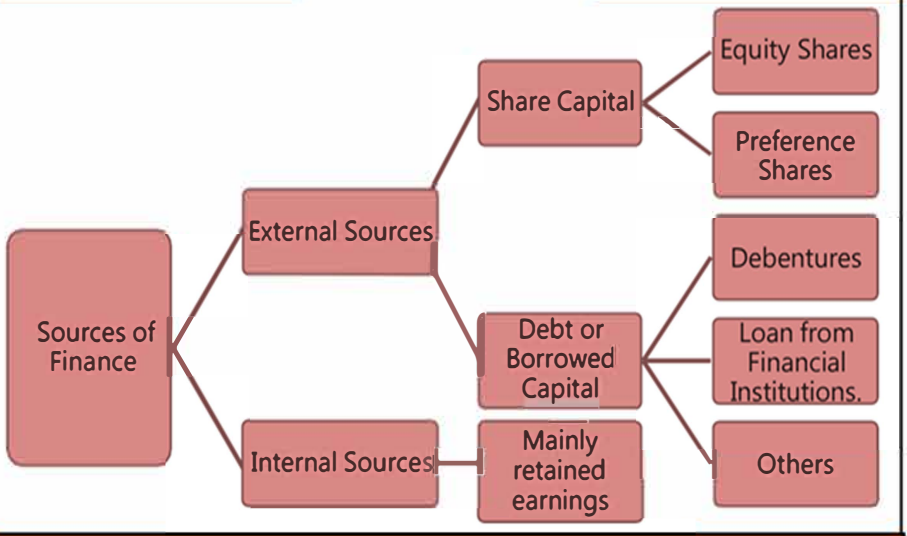
Such requirements refer to those funds which are required for a period exceeding 1 yr but not exceeding 5 yrs

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

Classification of Financial Sources

i) Based on basic Sources



ii) Based on Maturity of repayment period

Long Term	Medium Term	Short Term
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	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	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. Various short-term provisions

Ch 6 :- Types of Financing (Chart 6.2)

Long Term Sources of Finance

I) Owners Capital or Equity 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.

II) Preference Share Capital

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

It is fixed income security created to raise fund. Bonds can be raised through Public Issue & through Private Placement

ii) Types of Bond

a) Callable bonds

It has a call option which gives issuer right to redeem bond before maturity at a predetermined price known as call price

b) Puttable bonds

It give investor a put option back to company before maturity

iii) Foreign Bonds

a) Foreign Currency Convertible Bond

- 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

b) Plain Vanilla Bond

- 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

c) Convertible Floating Rate Notes

- 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

d) Drop Lock Bond

- 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

e) Variable Rate Demand

- 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

f) Yield Curve Note (YCN)

- 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

g) Yankee Bond

- 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

h) Euro Bond

- 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

i) Samurai Bond

- 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

j) Bulldog Bond

- 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

Ch 6 :- Types of Financing (Chart 6.5)

Bonds

iv) Indian Bonds

a) Masala Bond

- 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) Municipal Bonds

- used to finance urban infrastructure are increasingly evident in India

c) Government or Treasury Bonds

- these bonds issued by Government of India, Reserve Bank of India, any state Government or any other Government department.

Venture Capital Financing

I) Meaning

a) It refers to financing of new high risky venture promoted by qualified entrepreneurs who lack experience & funds to give shape to their ideas

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

II) Characteristics

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

III) Methods of Venture Capital Financing

a) Equity financing

b) Conditional loan

c) Income note

d) Participating debenture

Debt Securitisation

Meaning

a) Securitisation is a process in which illiquid assets are pooled into marketable securities that can be sold to investors

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

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

Lease Financing

Meaning

a) It is a general contract between owner & user of asset over a specified period of time.

b) asset is purchased initially by lessor (leasing company) & thereafter leased to user (lessee company) which pays a specified rent at periodical intervals

c) leasing is an alternative to purchase of an asset out of own or borrowed funds

Ch 6 :- Types of Financing (Chart 6.6)

Short Term Source of Finance

a) Trade Credit

- 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

b) Accrued Expenses & Deferred Income

- 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

c) Advances from Customers

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

b) It is a cost free source of finance

d) Commercial Paper

- 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

e) Treasury Bills

- class of CG Securities.
- meet short term borrowing requirements with maturities ranging between 14 to 364 days

f) Certificates of Deposit (CD)

- It is basically a savings certificate with a fixed maturity date of not less than 15 days up to a maximum of one year

f) Bank Advances

Facilities provided by banks :-

i) Short Term Loans

It is a single advance & given against securities like shares, government securities, life insurance policies & FD receipts, etc

ii) Overdraft

Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account

iii) Clean Overdrafts

clean advance is granted for a short period & must not be continued for long.

Request for clean advances are entertained only from parties which are financially sound & reputed for their integrity

iv) Cash Credits

It is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank

limits are sanctioned against security of tradable goods by way of pledge or hypothecation

v) Advances against goods

provide a reliable source of repayment.

safe & liquid

vi) Bills Purchased/Discounted

These advances are allowed against security of bills which may be clean or documentary

g) Financing of Export Trade by Banks

i) Pre-shipment finance

Types of Packing Credit

- Clean packing credit
- Packing credit against hypothecation of goods
- Packing credit against pledge of goods
- E.C.G.C. guarantee
- Forward exchange contract

ii) Post-shipment Finance

- 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

h) Inter Corporate Deposits

companies can borrow funds for a short period say 6 months from other companies which have surplus liquidity

i) Certificate of Deposit (CD)

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

j) Public Deposits

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

accepted for a period of 6 months to 3 years

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

ii) Internal Cash Accruals

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

iii) Unsecured Loans

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

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

v) Capital Incentives

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

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

vii) Secured Premium Notes

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

viii) Zero Interest Fully Convertible Debentures

These are fully convertible debentures which do not carry any interest

ix) Zero Coupon Bonds

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

x) Option Bonds

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

xi) Inflation Bonds

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

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

i) Financial Institution: National

a) Industrial Finance Corporation of India (IFCI)

b) State Financial Corporations

c) Industrial Development Bank of India (IDBI)

d) National Industrial Development Corporation (NIDC)

e) Industrial Credit and Investment Corporation of India (ICICI)

f) Life Insurance Corporation of

g) Unit Trust of India (UTI)

h) Industrial Reconstruction Bank of India (IRBI)

ii) Financial Institution:

a) The World Bank/ International Bank for Reconstruction & Development (IBRD)

b) The International Finance Corporation (IFC)

c) Asian Development Bank (ADB)

American Depository Receipts (ADRs)

a) offered by non-US companies who want to list on any of US exchange

b) represents a certain number of a company's regular shares

c) issued by an approved New York bank or trust company against deposit of original shares.

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.

Global Depository Receipts (GDRs)

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

b) used by companies to raise capital in either dollars or Euros

c) first Indian firm to issue sponsored GDR or ADR was Reliance industries Limited

Indian Depository Receipts (IDRs)

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

b) IDRs are listed and traded in India in the same way as other Indian securities are traded.

Ch 7 – Lease Financing (Chart 7.1)

Lease Financing

A – Two Prospective

Two Prospective

Lessor Prospective

Lessing Decision is exactly same as a capital budgeting decisions.
(Investment Decision)

Lessees Prospective

Decision to procure the asset has already been made.
The only decision pending is the mode of procurement i.e. Lease or Hire Purchase.
(Financing Decision)

B – Important Concepts

Equal Principal Repayment

$$\frac{\text{Loan Amount}}{\text{No. of years}}$$

Total Cash Flow = Equal Principal Repayment + After Tax Interest

Equated Monetary Installment

$$\text{EMI} = \frac{\text{Loan Amount}}{\text{PVAF @ r\% for n years}}$$

Total Cash Flow = EMI (-) Tax savings on Interest

WDV Depreciation

i) Depreciation under WDV = Depreciation for the previous year × (1 – Depreciation rate)
ii) WDV after n years = Cost of the Asset × (1 – Depreciation rate)^n

Break Even Lease Rental

At which Lease Rental per annum, PV of Lease Rental + PV of Tax savings on Depreciation + Present value of Salvage Proceeds = Cost of Asset.

C – How to Solve Lease Problems

Buy

Step 1 – Identify Discount Rate, Interest Rate & Tax Rate

Step 2 – Identify value of Assets

Step 3 – Identify amount of bank installment inclusive of Bank Interest

Step 4 – Identify amount of Interest

Step 5 – Find out depreciation; do not forget to consider salvage.

Step 6 – Take total of Interest and Depreciation

Step 7 – Calculate Tax Saving

Step 8 – Calculate cashflow after tax – (Bank installment – Tax saving)

Step 9 – Find out Net Present value

Step 10 – Do not forget to consider effect of salvage.

Lease

Step 1 – Find out the Lease amount

Step 2 – Less Tax benefit

Step 3 – Find out Present value by using Discounting factor (NPV)

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.

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)

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

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 = Standard Deviation / Mean

Higher the CV, higher the relative riskiness.

C – Adjusting the Cash Flows or certainty equivalent approach (CEC)

Steps-

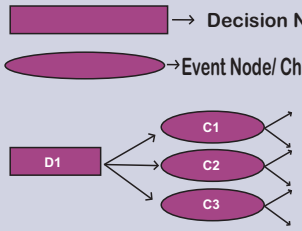
1) Risky cash flow × certainty equivalent factor to arrive at riskless cash flows
2) Riskless cash flow are then discounted at risk free rate (RF) to get the present value.
3) NPV is then calculated as

PV of cash inflows – PV of cash outflows

Certainty equivalent co-efficient = Risk less cash flow / Risky cash flow

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.

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.

Ch 9 – Ratio Analysis (Chart 9.1)

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

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

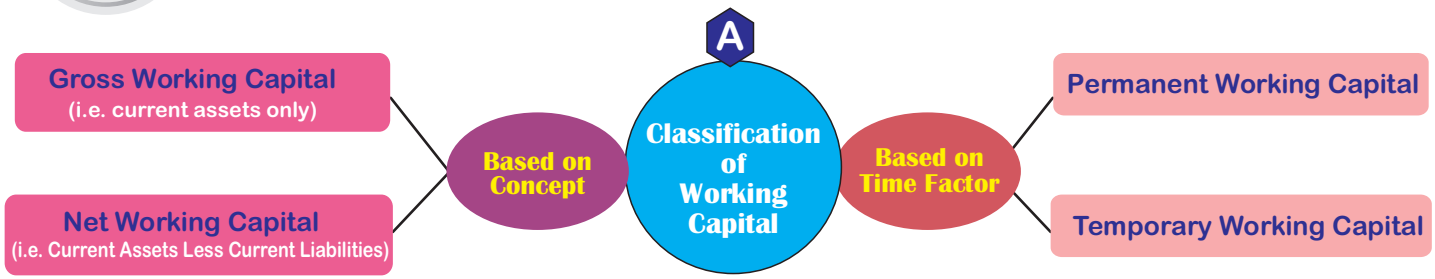
No.	Ratio	Formula
22	Capital Turnover Ratio	Turnover / Capital Employed
23	Return on Investment (ROI) or Return on Capital Employed (ROCE)	Pre-Tax ROCE: EBIT / Equity + Debt Post-Tax ROCE: EAT + Interest / Equity + Debt
24	Return on Equity (ROE) or Return on Net Worth (RONW)	Pre - Tax ROE: EBT / Equity Post - Tax ROE: EAT / Equity
25	Return on Assets (ROA) (Note 3)	Pre - Tax ROA: EBT / Average Total Assets Post - Tax ROA: EAT / Average Total Assets
26	Earnings per share (EPS)	Residual Earnings / Number of Equity Shares
27	Dividend Per Share (DPS)	Total Equity Dividend / Number of Equity Shares
28	Dividend Payout Ratio	Dividend Per Share / Earnings per share
29	Price Earnings Ratio (PE Ratio)	Market Price Per Share / Earnings per share
30	Book Value per share	Net Worth / 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 !ssets + Net Working Capital//.. !sset 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 gods 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)	$\frac{365}{\text{Working Capital T/O Ratio}}$

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 BAUMOl 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 = ½ 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. = ½ 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** = Cost of debtors p.a. × $\frac{\text{Collection Period}}{360}$ × 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