
CA INTER NEW SYLLABUS
FINANCIAL MANAGEMENT
Brahmastra
FORMULA SUMMARY &
IMPORTANT POINTS
CA MOHNISH VORA

Join MVSIR's
Regular or Fastrack Batch
for
CA Inter Paper 6
FM/SM

Get Books & give FREE Quiz on

www.mvsir.in

Students can buy-

Printed Books

Or

E-Books (encrypted pdf, access given within 24 hrs of ordering)

ULTIMATE CA

Congratulations!


SANIYA VITTHAL
76


RAGHAV SHARMA
72


CHETAN BATRA
71


SAMVIT
69


PIYUSH KABRA
69


RIDDHI AGARWAL
69


TUSHAR CHAUDHARY
67


PRITAM KUMAR
67

RASHIKA AGGARWAL
66


PRIYANGSHU BISTOO
66


UMANG MAHESHWARI
66


ADITYA SAINI
66


SOUVIK DAS
65

TEJAS MEHTA
65


JAGJIT SINGH
66
AIR 30


SUSHMITHA
65


KHUSHI SAKHUJA
65


SHASHANK SINGH
65


SHAMIKA MADHAV
65


AAKASH GARG
65

KRISHNA KHATOD
64


AADITI DESAI
62

G GAUTHAM
63


TOMAR HIMANI
63


YASHRAJ SINGH
63


MAYANK ARORA
62


JITESH H PANCHAL
62


BHUMIKA ISSAR
60


SHREYA KHEWARIA
61

SOLOMON REDDY
60


RUSTAM
60


LAKSHAY BHUTANI
60


RAMIZ LOTA
60


BHOOMI KRIPLANI
60

AND MANY MORE...

FM & SM TOPPERS

CA MOHNISH VORA

CA INTER SEP 24


JAGJIT SINGH
AIR 30


ABHISHEK BASAK
AIR 41

FM Brahmastra

CA Intermediate (New Syllabus)

INDEX

Chp No.	Chapter Name	Page No.
3	Ratio Analysis	3.1 – 3.6
4	Cost Of Capital	4.1 – 4.3
5	Capital Structure	5.1 – 5.4
6	Financing Decisions - Leverages	6.1
7	Investment Decisions	7.1 – 7.7
8	Divident Decisions	8.1 – 8.3
9	Working Capital Management	9.1 – 9.8

CHAPTER 3 – RATIO ANALYSIS

Liquidity Ratios

Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick Ratio or Acid Test Ratio	$\frac{\text{Quick Assets}}{\text{Current Liabilities}}$ Quick assets = CA – inventory – prepaid exp
Cash Ratio / Absolute Liquidity Ratio	$\frac{\text{Cash \& Bank Bal + Marketable Securities}}{\text{Current Liabilities}}$ Or, $\frac{\text{Cash \& Bank Bal + Current Investments}}{\text{Current Liabilities}}$
Basic Defense Interval or Interval Measure	$\frac{\text{Cash \& Bank Bal + Net Receivables + Marketable Securities}}{\text{Daily Operating Expenses / No. of Days}}$
	$\frac{\text{Current Assets – Inventories – Prepaid Expenses}}{\text{Daily Operating Expenses}}$
Daily Operating Expenses	$\left[\frac{\text{Cost of Goods Sold + Selling, Admin \& Other General Exp – Depreciation \& Non Cash Exp}}{\text{No. of Days in a year}}\right]$
Net Working Capital Ratio	Current Assets – Current Liabilities

Long-term Solvency Ratios / Leverage Ratios

Capital Structure Ratios

Equity Ratio	$\frac{\text{Equity}}{\text{Total Funds}}$
Debt Ratio	$\frac{\text{Total Debt}}{\text{Total Funds}}$ OR $\frac{\text{Long Term Debt}}{\text{Total Funds}}$
Preference Ratio	$\frac{\text{Preference Share Capital}}{\text{Capital Employed}}$
Debt to Equity Ratio	$\frac{\text{LTD}}{\text{Equity}}$ OR $\frac{\text{Total Debt}}{\text{Sh. Fund}}$
Total Assets → Financed by [FA + CA]	[Owned funds → Proprietary Ratio; Borrowed funds → Debt to Total Assets Ratio]
Debt to Total Assets Ratio	$\frac{\text{Total Outside Liabilities}}{\text{Total Assets}}$ OR $\frac{\text{Total Debt}}{\text{Total Assets}}$
Proprietary Ratio	$\frac{\text{Proprietary Fund}}{\text{Total Assets}}$
Capital Gearing Ratio	$\frac{\text{Fixed Cost Bearing Funds}}{\text{Non-Fixed Cost Bearing Funds}} = \frac{\text{PSC + LTD}}{\text{ESC + R\&S}}$

CHAPTER 3 – RATIO ANALYSIS

Capital Structure

	Equity Share Capital
+	Reserves & Surplus
-	Fictitious Assets
-	P&L Dr. Bal [Acc. Losses]
	Equity
+	Preference Share Capital
	Shareholders' Fund or Net Assets or Net Worth or Proprietary Fund
+	Long Term Debt
	Capital Employed [Total Funds invested in business]

Alternative Formula

Net Assets Or Net Worth = Total Assets - Total Liabilities

= [FA + CA] - [LTD + CL]

Capital Employed = FA + [CA – CL]

= FA + WC

Note: When LTD = 0,
Capital Employed = Proprietary Fund = Sh. Fund

Income Statement

	Particulars	Amt
	Sales	xxx
Less	Variable Cost	xxx
	Contribution	xxx
Less	Fixed Cost (excluding dep & int)	xxx
	Earnings Before Interest, Tax, Depreciation & Amortization [EBITDA] or [PBITDA]	xxx
Less	Depreciation & Amortization	xxx
	Earnings Before Interest & Tax [EBIT] or [PBIT] [Operating Profit]	xxx
Less	Interest	xxx
	Earnings Before Tax [EBT] or [PBT]	xxx
Less	Tax	xxx
	Earnings After Tax [EAT] or [PAT] or [Net Profit]	xxx
Less	Preference Dividend	xxx
	Earnings for Equity Shareholders [EFES]	xxx
Less	Dividend for Equity Holders	xxx
	Retained Earnings	xxx

CHAPTER 3 – RATIO ANALYSIS

Long-term Solvency Ratios / Leverage Ratios

Coverage Ratios

Debt-Service Coverage Ratio (DSCR)	$\frac{\text{Earnings available for debt services}}{\text{Interest + Instalments}}$ OR $\frac{\text{EBITDA}}{\text{Interest + Instalments}}$

Where,

Net Operating Income or EADS
= PBIT → [PAT + Tax + Int]
(+) Loss on sale of F.A. & other Adjustments [Non operating exp]
(+) Non Cash Exp [Dep & Amortization]

Interest Coverage Ratio	$\frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Interest}}$
Preference Dividend Coverage Ratio	$\frac{\text{Net Profit after taxes (PAT)}}{\text{Preference dividend liability}}$
Fixed Charges Coverage Ratio	$\frac{\text{EBIT + Fixed Charges}}{\text{Interest + Fixed Charges}}$

Activity / Efficiency / Performance / Turnover Ratios

Total Assets Turnover Ratio	$\frac{\text{Sales}}{\text{Total Assets}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Total Assets}}$
Fixed Assets Turnover Ratio	$\frac{\text{Sales}}{\text{Fixed Assets}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Fixed Assets}}$
Capital Turnover Ratio	$\frac{\text{Sales}}{\text{Capital Employed}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Capital Employed}}$
Current Assets Turnover Ratio	$\frac{\text{Sales}}{\text{Current Assets}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Current Assets}}$
Working Capital Turnover Ratio	$\frac{\text{Sales}}{\text{Working Capital}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Working Capital}}$
Inventory/ Stock Turnover Ratio	$\frac{\text{Sales}}{\text{Average Inventory}}$ OR $\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$ Where, Average Inventory = $\frac{\text{Op. Stock + Cl. Stock}}{2}$
Inventory Holding period Or Inventory Velocity	$\frac{\text{12 mts/365 days/52 weeks}}{\text{Inventory T/O ratio}}$ OR $\frac{\text{Average Inventory}}{\text{Daily/Monthly/weekly COGS}}$
Raw Material Inventory T/o Ratio	$\frac{\text{R.M Consumption}}{\text{Average R.M. Stock}}$
Receivables (Debtors) T/o Ratio	$\frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$
Receivables (Debtors') Velocity	$\frac{\text{Average Accounts Receivable}}{\text{Average Daily Credit Sales}}$ OR $\frac{\text{12 months/52 weeks/360 day}}{\text{Receivable Turnover Ratio}}$ Average Daily Credit Sales = $\frac{\text{Credit Sales}}{\text{No. of days in year (say360)}}$

CHAPTER 3 – RATIO ANALYSIS

Activity / Efficiency / Performance / Turnover Ratios

Payables (Creditors) Turnover Ratio	$\frac{\text{Annual Net Credit Purchase}}{\text{Average Accounts Payables}}$
Payable Velocity/ Average payment period	$\frac{\text{Average Accounts Payable}}{\text{Average Daily Credit Purchases}}$ OR $\frac{\text{12 months/52 weeks/360 day}}{\text{Payables Turnover Ratio}}$

Profitability Ratios

Profitability Ratios Related to Sales

a) Gross Profit Ratio	$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$
b) Net Profit Ratio	$\left[\frac{\text{Net Profit}}{\text{Sales}} \times 100\right]$ OR $\left[\frac{\text{Earnings after taxes (EAT)}}{\text{Sales}} \times 100\right]$
Pre-tax Profit Ratio	$\frac{\text{Earnings before taxes (EBT)}}{\text{Sales}} \times 100$
c) Operating Profit Ratio	$\left[\frac{\text{Operating Profit}}{\text{Sales}} \times 100\right]$ OR $\left[\frac{\text{Earnings before interest \& taxes (EBIT)}}{\text{Sales}} \times 100\right]$

d) Expenses Ratio

Cost of Goods Sold (COGS) Ratio	$\frac{\text{COGS}}{\text{Sales}} \times 100$
Operating Expenses Ratio	$\frac{\text{Administrative exp. + Selling \& Distribution OH}}{\text{Sales}} \times 100$
Operating Ratio	$\frac{\text{COGS + Operating Exp.}}{\text{Sales}} \times 100$
Financial Exp Ratio	$\frac{\text{Financial Exp}}{\text{Sales}} \times 100$ Financial Exp = Interest + Equity & Pref Dividend

Operating Profit

Sales	Sales	Sales	Gross Profit	Net profit
(-) COGS	(-) [COGS	(-) Op. cost	(-) Op.Exp	(-) Non Operating income
(-) Operating Exp	+ Operating Exp]			(+) Non Op Exp

COGS Ratio + GP Ratio = 100%

Op. cost ratio + Op. profit ratio = 100%

CHAPTER 3 – RATIO ANALYSIS

Profitability Ratios Related to Overall Return on Assets/ Investments

a) Return on Investment (ROI)

$$\frac{\text{Return / Profit / Earnings}}{\text{Investment}} \times 100$$

OR

Profitability Ratio x Investment Turnover Ratio

The concept of investment varies and accordingly there are three broad categories of ROI

i) Return on Capital Employed (ROCE)

$$\text{ROCE (Pre-tax)} = \frac{\text{EBIT}}{\text{Capital Employed}} \times 100$$

$$\text{ROCE (Post-tax)} = \frac{\text{EBIT (1-t)}}{\text{Capital Employed}} \times 100$$

$$\text{ROCE (Post-tax)} = \frac{\text{PAT + Interest (1-t)}}{\text{Capital Employed}} \times 100$$

ii) Return on Assets (ROA)

$$\frac{\text{Net Profit after taxes}}{\text{Average Total Assets}}$$

OR

$$\frac{\text{Net Profit after taxes}}{\text{Average Tangible Assets}}$$

OR

$$\frac{\text{Net Profit after taxes}}{\text{Average Fixed Assets}}$$

ii) Return on Assets (ROA)

As Assets are also financed by lenders, hence ROA can be calculated as-

$$\text{ROA} = \frac{\text{Net Profit after taxes + Interest}}{\text{Average Total Assets or Average Tangible Assets or Average Fixed Assets}}$$

$$\text{Return on Total Assets (ROTA)} = \frac{\text{EBIT (1-t)}}{\text{Average Total Assets}}$$

$$\text{Return on Net Assets (RONA)} = \frac{\text{EBIT (1-t)}}{\text{Average Net Assets}}$$

iii) Return on Equity (ROE)

$$\frac{\text{Net Profit after taxes – Preference dividend (if any)}}{\text{Equity}} \times 100$$

As per Du Pont Model → ROE has three components

$$\text{ROE} = \underbrace{\frac{\text{Profit or Net Income}}{\text{Sales or Revenue}}}_{\text{Net Profit Margin}} \times \underbrace{\frac{\text{Sales or Revenue}}{\text{Investment or Assets or Capital}}}_{\text{Asset Turnover}} \times \underbrace{\frac{\text{Investment or Assets or Capital}}{\text{Equity}}}_{\text{Equity Multiplier}}$$

$$\text{Return on Total Shareholders Fund} = \frac{\text{Net Profit after taxes}}{\text{Total Shareholders Fund (incl. Pref Capital)}} \times 100$$

CHAPTER 3 – RATIO ANALYSIS

Profitability Ratios Required for Analysis from Owner's Point of View	
a) Earnings per Share (EPS)	$\frac{\text{Net profit available to equity shareholders}}{\text{Number of equity shares outstanding}}$
b) Dividend per Share (DPS)	$\frac{\text{Total Equity Dividend}}{\text{Number of equity shares outstanding}}$
c) Dividend Pay-out Ratio (DPR)	$\frac{\text{Dividend per equity share (DPS)}}{\text{Earning per Share (EPS)}}$

Other Ratios related to DPS				
Retained Earning per Share (REPS)	$\frac{\text{Retained Earning}}{\text{Number of equity shares}}$			
EPS	DPS + REPS			
Dividend Pay-out Ratio (DPR)	$\frac{\text{Total Eq. Dividend}}{\text{Earning per Eq Share}}$	OR	$\frac{\text{DPS}}{\text{EPS}}$	
Dividend Rate	$\frac{\text{Total Eq. Dividend}}{\text{FV of ESC}}$	OR	$\frac{\text{DPS}}{\text{FVPS}}$	
Retention ratio [b]	$\frac{\text{Retained Earnings}}{\text{EFES}}$	OR	$\frac{\text{REPS}}{\text{EPS}}$	

Profitability Ratios related to market/ valuation/ Investors	
a) Price- Earnings Ratio (P/E Ratio)	$\frac{\text{Market Price per Share (MPS)}}{\text{Earning per Share (EPS)}}$
b) Dividend and Earning Yield	$\frac{\text{Dividend} \pm \text{Change in share price}}{\text{Initial Share Price}} \times 100$ OR $\frac{\text{Dividend per Share (DPS)}}{\text{Market Price per Share (MPS)}} \times 100$
Earnings Yield or Earnings Price (EP) Ratio	$\frac{\text{Earning per Share (EPS)}}{\text{Market Price per Share (MPS)}} \times 100$

Profitability Ratios related to market/ valuation/ Investors			
c) Market Value /Book Value per Share (MVBV)	$\frac{\text{Average share price}}{\text{Equity} \div \text{No. of equity shares}}$	OR	$\frac{\text{Closing Share Price}}{\text{Equity} \div \text{No. of equity shares}}$
d) Q Ratio	$\frac{\text{Market Value of equity and liabilities}}{\text{Estimated replacement cost of assets}}$ OR $\frac{\text{Market Value of a Company}}{\text{Assets' Replacement Cost}}$		

CHAPTER 4 – Cost Of Capital

Cost of Long Term Debt (Kd)

Cost of Irredeemable Debt

$$Kd = \frac{\text{Interest}}{NP} \times (1-t)$$

- Net proceeds mean issue price less issue expenses.
- If current market price is given in question, then Issue Price = CMP
- If issue expenses are not given then assume, IE = 0

Cost of Redeemable Debt

Approximation Method

$$Kd = \frac{I(1-t) + \left[\frac{(RV - NP)}{n}\right]}{\left[\frac{(RV + NP)}{2}\right]}$$

YTM or IRR Method

Calculate NPV of relevant cash flows at 2 discount rates, such that
NPV @ higher rate = -ve
NPV @ lower rate = +ve

Year	Cash flows
0	NP or CMP
1 to n	Interest net of tax [I(1-t)]
n	Redemption value (RV)

$$IRR = \text{Lower Rate} + \frac{NPVL}{NPVL - NPVH}\left[\text{Higher Rate} - \text{Lower Rate}\right]$$

Amortisation of Bond

$$V_B = \frac{C_1}{(1+K_d)^1} + \frac{C_2}{(1+K_d)^2} + \ldots\ldots + \frac{C_n}{(1+K_d)^n}$$

Cost of Convertible Debentures

→ Holders of convertible debentures have an option on maturity to either

Receive Cash Or Receive Specified no. of equity shares

→ Calculation of cost of convertible debentures is same as that of redeemable debentures
1) Approximation method or,
2) YTM/IRR Method

However difference lies in calculation of Redemption Value.

CHAPTER 4 – Cost Of Capital

COST OF EQUITY SHARE CAPITAL (Ke)

Dividend Price Approach	Earnings Price Approach	Growth Approach or Gordon's Model	Capital Asset pricing model
$Ke = \frac{D1}{P0}$	$\frac{EPS}{P0}$ or $\frac{1}{PE\ Ratio}$	$Ke = \frac{D1}{P0} + g$	$Ke = Rf + \beta (Rm - Rf)$

- D1 = Expected Dividend
- Po = Current Market Price (Ex Dividend)
- Ex Div Price = Cum Div Price (-) DPS
- If Floatation Cost is given, then subtract it in denominator→ [P0 – FC]
- g = b (x) r

Rm – Rf = Market Risk Premium

β (Rm – Rf) = Security Risk Premium

Generally, Ke = Cost of Retained Earnings (Kr)
However, difference comes when floatation cost & personal tax exists

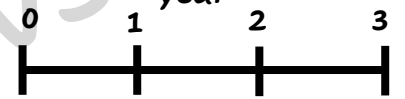
- If personal tax [tp] is given in ques

Kr = Ke (1-FC) (1-tp)

- If we have to calculate both Ke & Kr & Ques mentions → issue price, FC, & CMP {illu. 13}
  - For Ke (assuming new issue of equity shares) → Po = Issue Price – F.C
  - For Kr → Po = C.M.P

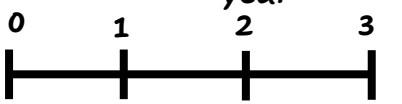
Realised Yield approach
2 ways to calculate Ke as per above method

If ques mentions opening price & closing price (at maturity) & dividend payments every year



Calculate Ke by using "YTM/IRR" method [Illus 10]

If ques mentions opening & closing price of every year along with dividend payments every year



D1 = D2 =

i) Calculate returns of each year →

$$(1 + r1) = \frac{P1+D1}{Po}$$

$$(1 + r2) = \frac{P2+D2}{P1}$$

$$Ke = \left[\sqrt[n]{(1+r1) \times (1+r2) \ldots\ldots \times (1+rn)}\right] - 1$$

CHAPTER 4 – Cost Of Capital

Cost Of Preference Share Capital (Kp)

Cost of Irredeemable Preference Shares

$$Kp = \frac{\text{Annual Pref Div (Pd)}}{\text{Net Proceeds}}$$

- Net proceeds mean issue price less issue expenses.
- If current market price is given in question, then Issue Price = CMP
- If issue expenses are not given then assume, IE = 0

Cost of Redeemable Preference Shares

$$Kp = \frac{Pd + \left[\frac{(RV - NP)}{n}\right]}{\left[\frac{(RV + NP)}{2}\right]}$$

Where,
- if R.V. is not given in Ques, then assume FV = RV
- YTM/IRR method can also be used. (If ques mentions to do so)

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

Sources of Finance	Amount	Proportion / Weights (Wi)	Cost of Captial (Ki)	Wi x Ki
Equity Share Capital	xxx	We	Ke	We x Ke
Retained Earnings	xxx	Wr	Kr	Wr x Kr
Pref Share Captial	xxx	Wp	Kp	Wp x Kp
Long Term Debt	xxx	Wd	Kd	Wd x Kd
	xxx			**WACC**

Floatation Cost

Floatation cost is the cost which a company incurs while issuing a security [shares, deb etc]
They are aka. **Issue Expenses.**
E.g. Legal Fees, Registration fees, Commission, listing exp, etc.

Treatment of Floatation Cost

- ✓ If F.C. id given in "%" form → then **logically** F.C. should be calculated on **Issue Price.**
  [But, if issue price is not given & C.M.P. is given → then use CMP as IP]
- ✓ However if Ques specifically mentions to calculate F.C. on **FACE VALUE** → then do so
- ✓ If **new issue** of Deb/share → N.P. = Issue Price (-) F.C.
- ✓ If **existing** Deb/share → N.P. = Market Price (-) F.C.

Choice of weights

Book value

Market value

- No separate MV of R&S
- Thus, MV of equity shares is to be divided as per

to

MV of ESC

$$\text{MV of Equity} \times \frac{\text{BV of ESC}}{\text{BV of ESC (+) BV of R\&S}}$$

MV of R&S

$$\text{MV of Equity} \times \frac{\text{BV of ESC}}{\text{BV of ESC (+) BV of R\&S}}$$

CHAPTER 5 – Capital Structure

Value of the firm

Before Tax

$$\frac{NOI}{Ko}$$

After Tax

$$\frac{NOI\ (1-t)}{Ko}$$

OR

$$Vf = \text{Mkt Value of Equity} + \text{Mkt Value of Debt}$$

$$= \frac{\text{Net income}}{Ke} + \frac{\text{Interest}}{Kd}$$

Value of Firm (Vf) = S + D

Cost of Capital

Ko = (Cost of debt x weight of debt)
+ (Cost of equity x weight of equity)

Ko = [{Kd x D/ (D+S)} + {Ke x S/(D+S)}]

Ko = [{Kd x Wd} + {Ke x We }]

OR

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

Note :

1) In this chapter we will mainly study about "capital structure theories", where we assume, that a firm has only

Two sources of finance

Equity | **Debt**

2) In this chapter, EBIT = Net operating Income = NOI

When tax exists

NOI
(-) Interest
EBT
(-) Tax
Net Income [EAT = EFES]

Or

NI = (NOI – Interest) (1-t)

No taxes

NOI
(-) Interest
Net Income [EBT = EAT = EFES]

NI = NOI - Interest

Notes:

CHAPTER 5 – Capital Structure

Capital Structure Theories

Relevance Theory

(capital structure decision is relevant to the value of the firm)

Net Income (NI) Approach

NI Approach suggests, a firm should have maximum debt in its capital structure → for minimizing Ko & thereby maximizing Vf

Traditional Approach

A firm should increase leverage (debt) only upto **Optimum point**, where Ko is **minimum** & Vf is **maximum**

Modigliani - Miller (MM) Approach- 1958 (With Tax)

As per this approach, **$V_L > V_{UL}$**

$V_L = V_{UL}$ + Tax Advantage ...OR
$V_L = V_{UL}$ + [Debt x Tax Rate]

Steps to solve Ques of MM Approach (with tax)

Step 1	$V_{UL} = \frac{NOI\ (1-t)}{K_{OUL}}$
Step 2	$V_L = V_{UL}$ + Tax Advantage [Debt x t]
Step 3	Ko of levered co. $= \frac{NOI\ (1-t)}{V_L}$
Step 4	Ko of levered co. $= \frac{NI}{S} = \frac{(NOI - Int)\ (1-t)}{V_L - D}$

Irrelevance Theory

(capital structure is irrelevant to the value of the firm)

Net Operating Income (NOI) Approach

The increase in debt in the capital structure leads to increase in Ke such that Ko remains constant.
Thus, Vf does not change by the amount of debt in total capital.

Modigliani-Miller (MM) Approach- 1958 (Without Tax)

Propositions of MM Approach (without tax)

1) Vf [Levered or unlevered] = NOI/Ko

Value of Lev Co. = Value of Unlev Co.

2) Ke of Levered Co [KeL] > Ke of Unlevered Co [Keul]

$K_{eL} = K_o + [K_o - K_d]\ D/S$

3) Capital Structure does **NOT** affect Ko or value of firm

Arbitrage

Case I: When Value of Levered > Value of Unlevered

- **Step 1:** Sell (assuming we have 10% equity) Shares of Levered Co. & receive cash
- **Step 2:** Personally Borrow an amount equal to 10% of (Debt of Levered Co.) at the same interest rate of levered cos. debt.
- **Step 3:** Buy 10% Equity of Unlevered Co.

✓ Now balance cash left will be →
(Amt recd from shares + Debt Taken) – Value of Unlev Co. 10% sh.

- **Step 4:** Calculate Return due to arbitrage (which will be "0") & you will be left with **balance cash**

Alternatively from step 3, we can also do the following (when que asks to calculate INCREASE in return due to arbitrage)

- **Step 3:** Buy Equity of Unlevered Co. of the WHOLE AMOUNT→ (Amt recd from shares + Debt Taken)

✓ Now balance cash left will be → 0

- **Step 4:** Calculate Return due to arbitrage (which will now have some positive value)

Case II: When Value of Unlevered > Value of Levered

- **Step 1:** Sell (assuming we have 10% equity) Shares of Unlevered Co. & receive cash
- **Step 2:** Buy 10% **Equity & Debt** of Levered Co.

✓ Now balance cash left will be →
(Amt recd from shares + Debt Taken) – Value of Unlev Co. 10% shares

- **Step 3:** Calculate Return due to arbitrage (which will be "0") & you will be left with **balance cash**

Alternatively from step 2, we can also do the following (when que asks to calculate INCREASE in return due to arbitrage)

- **Step 2:** Buy **Equity & Debt** of Levered Co. of the **WHOLE AMOUNT**→ value should in proportion to **Debt to Equity Ratio** of Levered co.

✓ Now balance cash left will be → 0

- **Step 3:** Calculate Return due to arbitrage (which will now have some positive value)

Trade-Off Theory

$$V_L = V_{UL} + \text{Tax Advantage} - \text{Cost of Financial Distress}$$

As per trade off theory, as leverage (amt of debt) increases, there will be a trade-off between – Tax shield on interest [Tax adv] & Cost of Financial Distress

Pecking Order Theory

This theory suggests that capital structure decisions are affected by manager's choice of source of capital.
A Manager will always prefer to give priority to those sources which reveal least amount of info to others.

A co. issues –

- Debt → when it is positive about future earnings.
- Equity → [External equity / New equity shares] → issued when a company is doubtful about future earnings & Retained earnings [internal equity] is insufficient.

- Thus, managers will raise funds in following ORDER-

i. Internal Finance → Retained Earnings
ii. Debt
iii. Equity share → Last option

Optimal Capital Structure

EBIT-EPS-MPS Analysis

In these type of questions, a company would require funds for a project. Further ques will mention about Expected EBIT & alternative options of financing the required amount.

First we will calculate "EPS" of each alternative.

If PE Ratio is not given
↓
Choose the alternative with highest EPS

If PE Ratio is given
↓
- **MPS = EPS x PE Ratio**
- **Calculate for each alternative**
- **Choose the alternative with highest MPS**

CHAPTER 5 – Capital Structure

If question does **NOT** give value of "Expected EBIT" after additional investment, then –

1) First calculate "Existing ROCE" = $\frac{\text{Existing EBIT}}{\text{Existing Cap. Employed.}}$

2) Then assuming ROCE will remain same,
New EBIT = (New Cap Emp) x ROCE

Indifference point

- **AKA. EPS Equivalency Point**
- **It I the amount of EBIT where, value of EPS is equal in two alternative options of financing.**

$$\frac{(EBIT_1 - Int)(1-t) - PD}{\text{No. of Equity shares}} = \frac{(EBIT_2 - Int)(1-t) - PD}{\text{No. of Equity shares}}$$

- **If amount of ESC is same under two financial plans (alternative), then**

No Indifference Point	Or	Many (infinite) Indifference points
If after tax cost of source [other than ESC] is **NOT SAME** under both plans		If after tax cost of source [other than ESC] is **SAME** under both plans

Financial Break-Even Point [BEP]

It is the **minimum level of EBIT** needed to satisfy all the **fixed financial charges**, i.e. interest & pre. Dividend

It is the **Amount of EBIT** where, **EPS = 0** of a particular alternative of financing.

$$\frac{(EBIT - Int)(1-t) - PD}{\text{No. of Eq. shares}} = 0$$

$$\text{F.BEP wala EBIT} = \frac{PD}{(1-t)} + \text{Interest}$$

Sales BEP

At what level (amt) of sales

↓

EBIT = 0

↓

Sales
(-) VC
Contribution
(-) FC
EBIT → 0

Financial BEP

At what level (amt) of EBIT

↓

EPS = 0

↓

$$\frac{(EBIT - Int)(1-t) - PD}{\text{No. of Eq. shares}} = EPS = 0$$

↓

We find out this EBIT, where EPS = 0

CHAPTER 6 – Financing Decisions - Leverages

Formula of Leverages		Alternative Formula	
		When Pref Div does not exist	When P_D exists
Degree of Operating Leverage	$DOL = \frac{\% \Delta EBIT}{\% \Delta Sales}$	$DOL = \frac{Contribution}{EBIT}$	$DOL = \frac{Contribution}{EBIT}$
Degree of Financial Leverage	$DFL = \frac{\% \Delta EPS}{\% \Delta EBIT}$	$DFL = \frac{EBIT}{EBT}$	$DFL = \frac{EBIT}{EBT - \left[\frac{P_D}{1-t}\right]}$
Degree of Combined Leverage	$DCL = \frac{\% \Delta EPS}{\% \Delta Sales}$	$DCL = \frac{Contribution}{EBT}$	$DCL = \frac{Contribution}{EBT - \left[\frac{P_D}{1-t}\right]}$

Margin of Safety and Operating Leverage

$$MOS = \frac{Sales - BEP\ Sales}{Sales} \times 100$$

$$MOS = \frac{Sales - BEP\ Sales}{Sales} \times \frac{PV\ Ratio}{PV\ Ratio}$$

$$MOS = \frac{EBIT}{Contribution}$$

$$\text{Degree of Operating leverage} = \frac{1}{\text{Margin of safety (in \%)}}$$

Formula of BEP Sales

In Units	In Amount	In %
$\frac{\text{Fixed Cost}}{\text{Contribution per unit}}$	$\frac{\text{Fixed Cost}}{\text{PV Ratio}}$	$\frac{\text{Fixed Cost}}{\text{Contribution}}$

Formula of MOS Sales

In Units	In Amount	In %	
$\frac{EBIT}{\text{Contribution per unit}}$	$\frac{EBIT}{\text{PV Ratio}}$	$\frac{EBIT}{Contribution}$	Or $\frac{1}{DOL}$

Combined Analysis of DOL & DFL

DOL	DFL	Comments
Low	High	Moderate Total Risk. → Best Combination Low DOL → Low F.C → High EBIT High DFL → Can take Adv. Of T.O.E High Financial risk is balanced by lower operating Risk.

CHAPTER 7 – Investment Decisions

Capital Budgeting Process

Planning → Evaluation [NPV] → Selection → Implementation → Control

Review

Purpose of Capital Budgeting

1) Substantial Expenditure
2) Irreversible Decision
3) Long time period → Affects long term profitability
4) Complex Decision → Multiple factors are involved

Capital Budgeting Techniques

Traditional OR Non-Discounting Techniques

1) Payback Period
2) Payback Reciprocal
3) Accounting Rate of return (ARR)

Time Adjusted OR Discounting Techniques

1) Net Present Value (NPV) method
2) Profitability Index (PI)
3) Internal Rate of return (IRR) method
4) Modified IRR
5) Discounted Payback period

Traditional OR Non-Discounting Techniques

Payback period	$\frac{\text{Initial Investment}}{\text{Annual C.I}}$
Payback Reciprocal	$\frac{\text{Average annual cash in flow}}{\text{Initial investment}}$
Accounting rate of return (ARR)	$\frac{\text{Average annual net income}}{\text{Average or initial Investment}}$ Where, **Average Investment** = Avg funds which remain blocked during the lifetime of the project. $= \frac{\text{Value of Int @ Beginning (+) Value of Invt @ End}}{2}$ Or $= \left[\frac{1}{2}(\text{Initial Invt.} - \text{Salvage Value})\right] + \text{Salvage Value (SV)}$ Or $= \left[\frac{1}{2}(\text{Initial Invt.} - \text{SV})\right] + \text{SV} + \text{Working Capital (if any)}$

CHAPTER 7 – Investment Decisions

Time Adjusted OR Discounting Techniques

Net Present Value (NPV) method

Sum of PV of cash inflow discounted @ WACC[Ko] – initial investment

Or

$$= \left[\frac{C1}{(1+Ko)^1} + \frac{C2}{(1+Ko)^2} + \ldots\ldots + \frac{Cn}{(1+Ko)^n} \right] (-) \text{ Initial Investment}$$

Year	Particulars	Cf	Df	Dcf

How to take decision as per NPV Method?

NPV > 0	NPV = 0	NPV < 0
Accept	Accept/ Reject	Reject

NPV ≠ Profit

1) When NPV is +ve → It means that the project is able to generate return more than our expectation [Ko]

1) When NPV is -ve → It means that the project is not able to generate returns as per our expectation [Ko]

Time Adjusted OR Discounting Techniques

Profitability Index (PI)

$$\frac{\text{Sum of PV of C.I discounted @ Ko}}{\text{Initial investment}}$$

Sum of PV of CI > Initial Invt	Sum of PV of CI > Initial Invt	Sum of PV of CI > Initial Invt
NPV > 0 [+ve]	NPV = 0	NPV < 0 [-ve]
P.I. > 1	P.I. = 1	P.I. < 1
Accept the project	Accept / Reject the project	Reject the project

CHAPTER 7 – Investment Decisions

Time Adjusted OR Discounting Techniques

Internal Rate of return (IRR) method

IRR is the discounting rate at which

Sum of PV of cF @ IRR = Initial Investment

i.e, when IRR is discounting rate, then **NPV = 0**

$$\text{Lower Rate} + \frac{NPV_{LR}}{NPV_{LR} - NPV_{HR}} (HR - LR)$$

Here, we calculate NPV at 2 discounting rates, such that

NPV_{LR} → +ve

& NPV_{HR} → -ve

➢ How to take decision as per IRR method ?

IRR > Ko	IRR = Ko	IRR < Ko
↓	↓	↓
Accept the project	Accept / Reject the project	Reject the project

Time Adjusted OR Discounting Techniques

Modified IRR

▪ Steps of solving MIRR Questions

Step 1: All cashflows [except initial investment] are to be re-invested till the end [terminal year] of the project,using WACC as compounding rate.

This will result in a single cashflow at the end of the project, i.e, "Terminal Cf".

Step 2: MIRR is the rate at which

$$\frac{\text{Terminal Cf}}{(1 + MIRR)^n} = \text{Initial Investment}$$

Then, calculate MIRR by using "Dirty Power" method on calculator

➢ How to take decision as per MIRR ?

MIRR > Ko	MIRR = Ko	MIRR < Ko
↓	↓	↓
Accept the project	Accept / Reject the project	Reject the project

Discounted Payback period

"**Discounted Payback Period**" is the time taken to recover the initial investment of the project in discounted cashflow terms

➢ How to take decisions as per DPP ?
Projects having **Lower DPP** shall be selected.

CHAPTER 7 – Investment Decisions

Cash Inflow Vs. Cash Outflow	
Cash Inflow	▪ When we actually receive money, due to purchase of asset. ▪ When due to purchase of an asset → an expenditure which was happening earlier, is now saved. This is also considered cash inflow. [Eg → Tax saving due to Depn, Rent saved due to Purchase of a factory]
Cash Outflow	▪ When we actually pay money, due to purchase of asset. ▪ When due to purchase of an asset → an income which we used to receive, will now b NOT received. [Jo income mil rahi thi, vo ab nahi mil rahi, new aseet ke wajah se Eg → Hospital - Commission]

Treatment of Various Amounts	
Depreciation	Depreciation is NON-CASH Exp. So **NOT** an outflow But, **Tax Saving on Dep** is **INFLOW**
Opportunity Cost	Cost of next best alternative foregone. Considered as **Cash Outflow**
Sunk Cost	**Irrelevant** for decision making. **NOT** an outflow
Allocated Overheads	**Irrelevant** for decision making. **NOT** an outflow

Treatment of Various Amounts	
Working Capital	WC Required (At Yr=0) → **Cash Outflow** WC Released (At last year) → **Cash Inflow**
Opportunity Cost	Cost of next best alternative foregone. Considered as **Cash Outflow**
Sunk Cost	**Irrelevant** for decision making. **NOT** an outflow
Allocated Overheads	**Irrelevant** for decision making. **NOT** an outflow

Block of Assets

➢ **Case 1:**

- Ek hi asset tha. [No other asset is block]
- Usse hi hamne seel kar diya. Block will cease to exist.
- Jis year sell karte hain machine → uss year mei dep. calculate Nahi karte.

→ Profit → STCG
→ Or
→ Loss → STCL

➢ **Case 2:**

- More than one asset in the block.
- Usme sirf 1 asset sell kar diya. Block will still continue.

Sale value of 1 machine < WDV of Block

- No STCL
- We will calculate depreciation on balance WDV. Further, the tax saving on Dep. will be cash inflow.

WDV of Block < Sale value

- STCG
- Additional Tax due to STCG will be outflow

CHAPTER 7 – Investment Decisions

Special cases in capital budgeting

a) Capital Rationing

Sometimes due to resourse [capital] constraints [rationing], a company may have to select some projects amount various projects, all having positive NPV

Independent or Divisible projects

- Projects where either
  → Whole project or
  → Part project can be selected
- If only a part of project is selected, then both initial investment & NPV are reduced pro-rata.
- Projects are ranked as per NPV per rupee Invested = $\frac{\text{NPV}}{\text{Initial investment}}$
- Amount will be invested as per above ranking, until all funds are used.

Non-Divisible projects

- Projects which can be accepted or rejected wholly, i.e, part project cannot be accepted
- Ranking is done on the basis of "Absolute NPV"
- We will make combinations of projects as per Capital available & select the combination with highest NPV

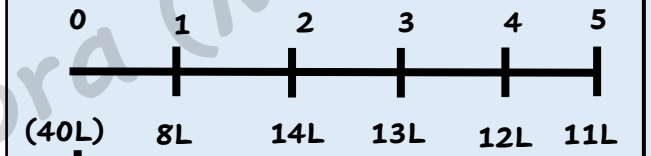
b) Projects with unequal life

Sometimes while evaluating mutually – exclusive projects, problem arises in comparing NPV of projects having UNEQUAL LIFE.
Such situations can be dealt with –

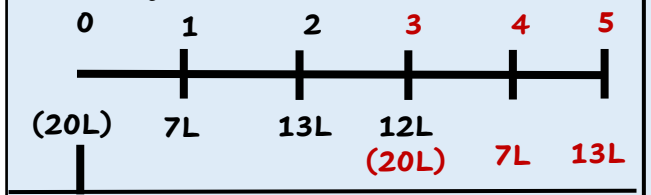
Replacement chain method

- AKA common life method
- Illustration 14

Project A



Project B



Equivalent Annualised criterion [EAC]

- Step 1 : Compute NPV of all projects.
- Step 2 : Compute PVAF of projects as per the respective life.
- Step 3 : Compute

$$\text{EAC} = \frac{\text{NPV}}{\text{PVAF}}$$

& compare the same

EAC net inflows (NPV)	EAC net outflows (NPV)
↓	↓
Choose the project with Higher EAC	Choose the project with Lower EAC

CHAPTER 7 – Investment Decisions

ADJUSTED PRESENT VALUE [APV]

- APV is calculated to show separately, the advantage of financing a project using DEBT.

Adjusted PV = Base case NPV + PV of tax shield on Int. (-) Issue cost

ADJUSTED DISCOUNT RATE [ADR]

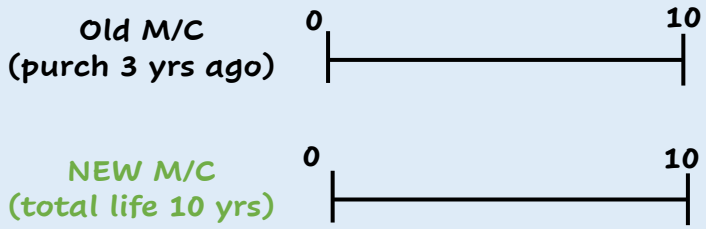
$$ADR = \frac{\text{Annual C. I. where APV = 0}}{\text{Total funds Raised as DEBT}}$$

REPLACEMENT OF MACHINERY

STEP 1 : Calculation of initial cash outflow
(if new m/c is Purch & old is sold)
STEP 2 : Calculation of incremental Base for Depreciation.
STEP 3 : Calculation of Incremental PBDT
STEP 4 : Calculation of Incremental NPV

Yr.	Incr. PBDT	Incr. Depr.	Incr. PBT	Incr. PAT	Incr. CFAT	Df	DCF
	(1)	(2)	(3) = (1)-(2)	(4) = (3) x (1-t)	(5) = (2)+(4)		

Sum of PV of Incremental CF
(+) P. V. of Incremental Salvage value
(-) Initial Cash outflow
Incremental NPV
↓
Replace old m/c, if Incremental NPV is +ve



Total Approach

Separately calculate NPV of old & new M/C
Old M/C → NPV
New M/C → NPV
↓
Then compare,
If NPV of New M/C > NPV of old M/C
↓
Purch new m/c

Incremental Approach (follow this in exams)

Agar new m/c leke old wale ko replace kar diya toh
↓
Incr. CI (-) Incr. C.O. = Incr. NPV

If incr. NPV is positive, then purchase new M/C

If old m/c is the only machine in block of asset [illu 18 & complier 66] ↓ Then	If old m/c is part of block of assets having other m/c also [pp – 11] ↓ then
The value of new m/c will not be added to the WDV of old m/c	The value of new m/c will be added to the WDV of old m/c.

CHAPTER 7 – Investment Decisions

Kya tax calculate karna hain loss pe ?

ICAI SM PP 9

↓

Ques mentions ki loss can be set-off from profits of subsequent years

- Jis year ka loss hain, us year tax saving NAHI nikalna
- Subsequent ye ke profit mei adjust karna loss pichle saal ka
  ↓
  For correct amt of tax of subsequent year.

Q40 of FM compiler

↓

Ques me CG/CL ko ignore karne NAHI bola hain

↓

Use WDV method for depreciation

↓

MC ke last year me SV – op. WDV = STCG/STCL

- STCG
  ↓
  Additional tax lagega
- STCL
  ↓
  Tax saving = STCL x tax rate

Q32 of FM compiler

↓

Ques mentions
→ use SLM method
→ Loss cannot be c/f

↓

Ignore tax saving due to loss

Ques 62 of FM Compiler

↓

- Ques silent about loss c/f
- Existing profit making co.

↓

Toh ab jab loss aaega, toh uss hi year me, tax savings consider karna

Tax saving = loss x tax rate

CHAPTER 8 – Dividend Decisions

THEORIES OF DIVIDEND

IRRELEVANCE THEORY

- Dividend decisions are irrelevant.
- Whether a co. pays dividend or not → value of MPS remains SAME [No charge]

↓

M. M. Approach

RELEVANCE THEORY

Dividend decisions are relevant.

MPS will change according to the amount of dividend paid

- Walter's Model
- Gordon's Model

TRADITIONAL THEORY

- Linter's Model
- Graham & Dodd Model

STEPS FOR SOLVING M. M. APPROACH QUESTION RELATED TO DIVIDEND DECISION

Calculate the following 4 things, in two case :
CASE I : Dividend are not paid
CASE II : Dividend are paid

i. **Calculation of price at the end of 1st year [P.]**
$P1 = P0 (1 + Ke) - D1$

ii. **Calculation of funds required for investment**

Particular	Amount
Earning Less : Dividend	Xx (xx)
Retained earnings Total amount required for investment	xx xx
Balance (Additional) funds required for invt.	xx

[Balanced additional fund to be raised by issuing → new (n1) eqn sh. @ price P1]

iii. **No. of equity shares to be issued for valance funds required [n1]**

$$n1 = \frac{\text{Bal funds read. for investment}}{P1}$$

iv. **Calculation of value of firm**

$$Vf = \frac{(n + n1)\,P1 + E - I}{(1 + Ke)}$$

❖ **Formula of theoretical MPS [walter's model]**

$$MPS = \frac{D + (E - D)\,(r/Ue)}{Ue}$$

❖ **Proposition of Walter**

Situation	Type of co.	Optimum DPR	Correction between size of dividend & MPS
r > Ke	Growth co.	0%	Negative
r < Ke	Declining co.	100%	Positive
r = Ke	Constant co.	0 – 100%	No co-relation

CHAPTER 8 – Dividend Decisions

Proposition of Gordon

- r > Ke → share price will increase → DPR decrease

Or

- r < Ke → share price will decrease → DPR increase

Situation	Type of co.	Optimum DPR
r > Ke	Growth co.	0%
r < Ke	Declining co.	100%
r = Ke	Normal co.	0 – 100%

a. Zero growth

$$\text{Theoretical MPS} = P0 = \frac{D1}{Ke}$$

b. Constant Growth Model [Gordon]

$$P0 = \frac{D0\,(1+g)}{Ke - g} \quad \text{or} \quad \frac{D1}{Ke - g} \quad \text{or} \quad \frac{E1\,(1-b)}{Ke - b.r}$$

When data of EPS [E] & retention ratio [b] is given in question, then prefer formula (3)

c. Variable Growth model [not part of Gordon]

$$\text{Intrinsic value} = \frac{D1}{(1+Ke)^1} + \frac{D2}{(1+Ke)^2} + \ldots\ldots\ldots + \frac{Dn}{(1+Ke)^n} + \frac{Sv}{(1+Ke)^n}$$

IMPORTANT POINTS

1) Retention ratio [b] = $\frac{REPS}{EPS}$ or $\frac{\text{Ret Earnings}}{EFES}$

= 100% - DPR

2) When "ke" is not given in Question directly, But PE ratio is given, then

$$Ke = \frac{1}{PER} = \frac{EPS}{MPS}$$ [Earnings price approach]

3)

- Current dividend
- Last year dividend
- Had paid dividend

} D0

- Expected to pay div.
- Div at end of 1st year
- Next year div.

} D1

❑ Expected to pay dividend → assuming dividends are expected to grow by ___% → then consider DPS it "D0"

Traditional Theories of Dividend

a) Graham & Dodd Model

$$P0 = m\left[DPS + \frac{EPS}{3}\right]$$

Note:
Value of multiplier "m" will be given in Question

b) Linter's model

$$D1 = D0 + [(EPS \times \text{target DPR}) - Do] \times Af$$

Note:
Value of Adjustment factor [Af] will be given in Question

CHAPTER 8 – Dividend Decisions

Dividend Discount Model

- **Zero Growth** → $Po = \frac{D1}{Ke}$
- **Constant Growth** → $Po = \frac{D1}{Ke - g}$
- **Variable Growth** → $Po = \frac{D1}{1 + Ke} + \frac{D2}{(1 + Ke)^2} + \ldots + \frac{RVn}{(1 + Ke)^n}$

Dividend

- **Dividend Rate** (%)
  - Total wala data use karke → $\frac{\text{Equity Div}}{\text{Face value of equity shares}}$
  - Per share wala data use karke → $\frac{DPS}{FVPS}$
- **DPS** (₹ per share)
  - $\frac{\text{Total Equity Div}}{\text{No. of equity shares}}$
  - FVPS x Div rate
  - EPS x DPR
- **DPR** (%)
  - $\frac{\text{Total Equity Div}}{EFES}$
  - [100% – b]
  - $\frac{DPS}{EPS}$

CHAPTER 9 – WORKING CAPITAL MANAGEMENT

Chp 9 – Unit 1

- **Working capital** is the amount (capital) which is used by a business organization to meet its current (short – term) obligations.
- In other words, it is the amount used for carrying out **day to day operations** of the organization.
- The concept of working capital can be explained through two angles.

ON BASIS OF VALUE

- **Gross WC** → Current assets
- **Net WC** → Current Assets (–) Current liabilities

ON BASIS OF TIME

- **Permanent WC**
  - Aka. Base WC
  - Min. amount invested in CA at all times
  - Can be financed using long – term sources of finance
- **Fluctuation WC**
  - Aka. Temporary WC
  - Arises due to fluctuation in sales, in order to meet seasonal demand.

Approaches of WC Investment

AGGRESSIVE

- WC is kept at **minimum level**
- Adv. → **lower** financial cost
- Disadv. → stock out situation

→ High risk & poor liquidity → **Higher** Return on total assets

MODERATE

- In between these two approaches
- Balance between risk & return, due to efficient use of funds.

CONSERVATIVE

- WC → high level
- Adv. → higher sales due to liberal credit policies, increase in goodwill among suppliers.
- Disadv. → cost of Capital ↑, Bad debt ↑, Inventory obsolete, Shortage of liquidity in long run.

→ **Low** risk & **Greater** liquidity (in short. term) → **Lower** return on Total Assets

CHAPTER 9 – WORKING CAPITAL MANAGEMENT

ESTIMATION OF WORKING CAPITAL NEEDS

1) CURRENT ASSET HOLDING PERIOD	2) RATIO OF SALES	3) RATIO OF FIXED INVESTMENTS
This method is based on operating cycle concept. ↓ Will use it in this chapter.	Here, it is assumed that investment in CA changes with charges in sales [WC → % of sales]	Here, WC is calculated as a percentage of fixed investment [WC → % of FA]

Net WC cycle = R + W + F + D (-) C

NOTE :

RM stock —Calculated On→ RM consumed

Creditors —Calculated On→ Credit → RM purchase

RM consumed = RM Purchase + Opening RM – Closing RM

- Number of operating cycles in a year (in times)

$$\frac{\text{No. of days / Months / weeks in year}}{\text{Net WC cycle}}$$

$$\text{Amount of WC reqd.} = \frac{\text{Annual op. cost}}{\text{No. of op. cycles in a year}}$$

Receivables = Estimated Cr. Sales (x) Estimated cost (x) Avg Rec.
(Debtors) 12 mts / 365d/ 52w of sales P. V. Collection period

If cash cost Basis
1st pref. → Cash cost of sales
2nd pref. → Cash COGS

If Ques mentions to calculate debtors value on selling price, then do so [pp 14]

Effect of Double Shift on working capital

Due to working on double shift quantity of
- Production → double
- RM stock → double (p.u. value may change due to discount)
- FG stock → double
- WIP stock → remains same
- Debtors balance → double (if selling price remains same)

NOTE :

When production charges
- VC is constant PER UNIT → VC total value charges.
- FC is constant in total → FC P. U. value charges.

CHAPTER 9 – WORKING CAPITAL MANAGEMENT

❖ **Calculation of WC on cash – cost basis**

→ **When nothing is mentioned in Question separately, it is always logical to calculate WC on " cash – cost Basis"**
Here, Debtors are valued at cash cost of sales & not total sales also, depreciation & other Non-cash Exp are ignored.

❖ **Statement of cost (Required for FM question)**

Particulars	Amount (Rs.)
Direct material (+) direct labour (wages) (+) direct Exp. (MFG Exp.)	
Prime cost (+) op. WIP (-) CS WIP	
Factory cost (+) admin overheads (related to production)	
Cost of production (+) op. FG stock (-) CS FG stock	
Cost of goods sold (+) Selling & Distribution OH (+) Admin overheads (General)	
Cost of sales	

NOTE :
1) In some questions, ICAI has considered
Admin OH → related to **Production** → PP7 .....& in other que,
Admin OH → **General** (not related to prod.) → Illu 4 & PP4

2) When question mentions, it is "**newly commenced business**" it means **opening balance** will be "**O**"

ESTIMATION OF WORKING CAPITAL REQUIREMENT

Particulars	Working	Amount (Rs.)
A) Current Assets R. M. Stock WIP Stock FG Stock Debtors / Bills Rec. Prepaid Exp. Cash Bank Balance		
Total CA / Gross WC		
B) Current Liabilities Creditors / Bills Pay. Outstanding Wages Outstanding Overheads Tax Payable		
Total CL		
C) Excess of CA over CL [A - B] D) Add : Safety margin [only if given in Question]		
E) Net WC Required [C + D]		

CHAPTER 9 – WORKING CAPITAL MANAGEMENT

IMP POINTS WHILE SOLVING QUESTIONS

1. Admin Exp Ko " **Not related to prod** " hi lete hai If que is silent. Lekin jaise PP – 7, isko related to production liya hai, kyuki,
   Sales – GP = COGS (ye amt. mei admin Exp included tha)

2. Debtors ki value (Jab Ques silent ho)
Sales pe le sakte hai → lekin generally cash cost basis follow karna zyada logical hota hai

Toh, for debtors
1st preference : cost of sales
Agar que mei Admin Exp & selling Exp diya hai, toh cost of sales pe hi lena chahiye debtors ko.

2nd preference : COGS
If Qn → Admin & selling exp → NAHI diya then COGS pe le lo Debtors ko.

3rd preference : sales
PP 3 → mei bal sheet banana bola, our WC nikalne bola uske hisab se
Now, bal sheet mei debitors ki value toh, "sales" pe hi hoti hai isliye is que mei humne sales pe hi liya debtors ko.

Also so if que mentions to calculate debitors on selling price or sales → then do so.

If you	Then	EFFECT ON WC CYCLE
Collect receivable (debtors) faster	You release cash from the cycle	Decrease
Collect receivables (debtors) slower	Your receivables soak up cash.	Increase
Get better credit (in terms of duration or amount) from suppliers.	You increase your cash resources.	Decrease
Shift inventory (stocks) faster	You free up cash	Decrease
Move inventory (stocks) slower	You consume more cash.	Increase

❖ Cash Budget

Chp 9 – Unit 2

It is used to plan & control cash receipts & payments. It represents cash requirements of business during the budget period.

Cash budget [format]

Particulars	Month 1	Month 2	Month 3
a) Opening cash Bal. b) Receipts • Cash sales • Collection from decisions [on credit sales] • Other Receipts			
Total receipts			
c) Payments • Payment to creditors • Wages • Overheads • Interest / dividend • Tax • Other payments			

Total payments			
d) Excess of receipts over payments [a + b – c] e) Surplus to be invested deficit to be borrowed			
f) Closing balance [d – e]			

❖ **Cash Management Models**

I) William J. Baumois EOQ Model

Optimum cash balance ⇒ $C = \sqrt{\frac{2 \times U \times P}{S}}$

Where,
C = optimum cash Balance
U = Annual (or monthly) cash Disbursement [Requirement]
P = Fixed cost per transaction
S = opportunity cost per rupee per annum [or per month]

II) Miller – orr cash management Model [1966]

→ According to this model, net cash outflow is completely **stochastic**. [having random probability or pattern that may be analysed statistically but may not be predicted precisely]

→ When changes in cash balance occur randomly the application of control theory [like miller – orr model] serves useful purpose

→ In this model, control limits are set for cash balances these limits are "h" → upper limit i "z" → Return point, zero → lower limit

- **When cash balance reaches upper limit [h]**

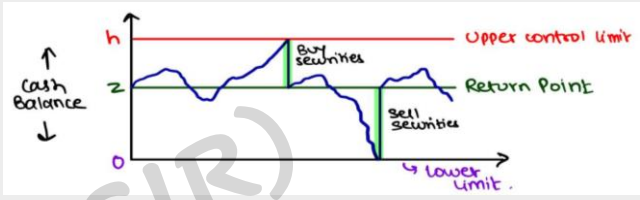
Transfer of cash equal to "h – z" is invested in metastable securities account. [Buy securities]

- **When cash balance touches lower limit [zero]**

Transfer from marketable securities account to cash account is made. [sell securities]

- **When cash balance stay between (h, z) or (z, o), i.e. high & low limits**

No transaction between cash & marketable securities is made



→ Miller orr Model is more realistic since it allows variations in cash balance within lower & upper limits.

The finance manager can set limits according to firms liquidity requirements.

I. Economic order Quantity (EOQ) — Chp 9 – Unit 3

$EOQ = \sqrt{\frac{2 \times A \times O}{C}}$

Where,
A = annual requirements of raw materials [or monthly]
C = carrying cost p. u. p. a.
O = ordering cost per order

II. Lead Time

The no. of days / months it takes between when a purchase order is placed to replenish products & when the order is received in Wherehouse.

III. Lead time consumption

LTC = Annual Requirement × $\frac{Lead\ Time}{365 days/weeks/12 months}$

IV. Re order stock level (ROL)

The level at which fresh order should be placed for replenishment of stock.

ROL = lead time consumption (+) minimum stock level (if any)

Minimum stock level is the level of stock which is to be maintained at all times. It is aka. Safety stock.

V. Average stock level

ASL = minimum stock level (+) $\left[\frac{1}{2} \times Reorder\ qty\right]$

❖ **Evaluation of credit policies** **Chp 9 – Unit 4**

[when Qn is silent → use total approach, use incremental approach, only if Qn specifically asks]

Particulars	Present policy	Proposed policy I	Proposed policy II
A) Expected profit a) Credit sales b) Total cost Other than bad debits i) Variable cost ii) Fixed cost			
c) Bad debts d) Cash discounts			
e) Expected net profit before tax [a – b- c- d] f) Tax (if any)			
g) Expected profit after Tax [e – f]			
B) Opportunity cost of Invt. In Receivables			
C) Net benefits [A – b]			

Advice : The policy _____ should be adopted since the net benefits are highest

NOTE :

→ Fixed cost = [avg. cost (-) variable cost] (x) no. of units in present policy

→ opportunity cost = total cost of credit sales (x) $\frac{collection\ period}{365\ days}$ (x) $\frac{Required\ rate\ if\ return}{100}$

➢ There is one more method to evaluate credit policies → **Expected rate of return method** [use this only if Question mentions]

Expect rate of return = $\frac{incremental\ expected\ profit}{incremental\ invt\ in\ receivables}$ (x) 100

→ Above method can be used only after making table of incremental approach.

→ Here, policy with highest exp rate is selected.

Factoring of receivables

MV foods ltd. → Transfer the right to collect receivables to factor → factoring agency

- Credit sales = Rs. 360 lac
- Avg collection period = 30 days
- Bad debt loss = 2%
- Debtors admin cost = ₹1,40,000 (annual)

- Commission = 1%
- Advance against receivables @ interest 15% P. a. & after with holding reserve of 10%

i. Avg level of receivables = 360L × $\frac{30}{360}$ = Rs. 30L

ii. Calculation of net amount of Advance

Particulars	Amt. (Rs.)
Factoring commission [30L × 1%] Reserve [30L × 10%]	30,000 3,00,000
Total (a)	3,30,000
Thus, amt. available for advance Avg level of receivables Less : total (a) from above	 30,00,000 (3,30,000)
Amt. available for advance Less : int on advance @ 15% pa for 30 days (26,70,000 × 15% × $\frac{30}{360}$)	26,70,000 (33,375)
Net amt. of advance (Adv to be paid)	26,36,625

iii) **Evaluation of Factoring Proposal**

Particulars	Amt. (Rs.)
A) Savings due to factoring Admin cost Bad debts [360L × 2%]	 1,40,000 7,20,000
Total saving	8,60,000
B) Costs due to factoring Factoring commission [360L × 1%] or [30,000 × $\frac{360}{30}$] Interest charge [33,375 × $\frac{360}{30}$]	 3,60,000 4,00,500
Total cost	7,60,500
C) Net Benefits to firm [A – B]	99,500

Since net benefits due to factoring are **positive** [savings cost] factoring proposal should be **accepted**.

❖ **Rate of effective cost of factoring**

$$\frac{net\ annual\ cost\ of\ factoring}{amt\ available\ for\ advance\ (gross)} \times 100 \quad or \quad \frac{net\ annual\ cost\ of\ factoring}{advance\ to\ be\ paid\ (net)} \times 100$$

Where,
Advance to be paid (net amt of adv)
= amount available for advance (-) interest deducted by factor

- Company should avail factoring services,

When,
Effective cost of factoring } **lower than** } existing cost of borrowings

Cost of not taking Discount [CNTD]

Chp 9 – Unit 5

1. Simple interest method

$$CNTD = \frac{d}{100-d} \times \frac{365}{t} \times 100$$

2. Compound interest method

$$CNTD = \left[\frac{100}{100-d}\right]^{\frac{365}{t}} - 1$$

Where, d = amt of discount
t = Gap period = Total credit period (-) Discount period

Note: If question does not mention anything about the type of interest [simple or compounding] → then use SIMPLE Interest method only.

- When, Return on alternative investment (opp. Cost) > CNTD → **Reject** the discount given by creditor

Or

- When, Return on alternative investment (opp. Cost) < CNTD → **Accept** the discount given by creditor

Chp 9 – Unit 6

Working capital finance may be classified into –

Spontaneous Source

Naturally arise in the course of business
a) Trade credit
b) Bill Payable
c) Accrued Expenses

Negotiable Source

They have to specifically negotiated with lenders
a) Inter-Corporate loans & deposits
b) Commercial papers
c) Public Deposits
d) Factoring
e) Bank credit [loans]
Cash credit , Bank overdraft, Bill Discounting ,Bill Acceptance, Line of credit, Letter of credit, Bank Guarantee

Maximum Permissible Bank Finance [MPBF] By Tandon Committee

Lending Norms

1st Method

Current Assets
(-) Current Liab
WC Gap
(-) 25% from long term sources
MPBF

2nd Method

Current Assets
(-) 25% from long term sources
Bal C.A
(-) Current Liab
MPBF

3rd Method

Current Assets
(-) Core Current Assets
Soft core C.A
(-) 25% from long term sources
Bal C.A
(-) Current Liab
MPBF

Join MVSIR's
Regular or Fastrack Batch
for
CA Inter Paper 6
FM/SM

Get Books & give FREE Quiz on

www.mvsir.in

Students can buy-

Printed Books

Or

E-Books (encrypted pdf, access given within 24 hrs of ordering)