



#### RATIO ANALYSIS

## PROFIT & LOSS STAT

#### SALES

cost of goods sold (cogs)

Gross probit

(-) Operating expenses

(admin, selling & dist exp)

Earnings before Int & Tax (EBIT) or operating profit

(-) Interest exp

Earnings before Tax (EBT)

(-) Tax exp

Earnings after Tax (EAT) or Nel profit

(-) preference Dividend

Earnings avail to eq sh (EATESK)

(-) Equity Dividend

Retained Earnings

Sequence of the payment:









Debentures/Loan

Government

Pref·S/h

Equity s/h

INTEREST

TAX

PREF. DIVID

EQ. 21112





2 BALANCE SHEET

Equity Share Cap	ΧX	Fixed Asset:-	
Reserves & Surplus	XX	Plant	XX
Prejerence shave cap	×χ	Machine	XX
· ·		Furniture	××
Non current liab:-			
Debentures	×χ	Current Assets:	
Long To loan	хχ	Inventorp	XX
<b>0</b>		Debtor	XX
Current Liability:		Cash	**
Creditors	××	Bank	xx
Bank · OD	××	Accumulated Loss	×χ
Short. T. Loan	××	Preliminary Exp	Xγ
0/s exp	XX	Advance pay of Exp	XX
Advance Income	xx	Accrued Income	XX

## Important Terms:

- 1 CAPITAL !- Equity + R/s + pref s/cap + debenture
  - Fixed Assets + CA CL
  - Fixed Assets + working capital
- 2 SHARHOLDER'S := Equito + R/S prelim Acc.

  EQUITO S/cap exp 1055

(It means Book value of EQ s. cap)

3 NETWORTH: - Equity + R/s + pref - prelim - Acc S/cap S/cap exp 10ss

(It means market value of Eq. s/cap)

Fixed Assets + CA - Total liability



# 3 PROFITABILITY RATIOS (BASED ON SALES)

BAISC :- ANY INCOME OF ANY EXP
TRICK
SALES

(GP Ratio / NP Ratio / COGS Ratio / Pre-tax profit Ratio)

OPERATING EXP = admin, Selling & dist. OH

Operating profit ratio = EBIT

Sales

operating expratio = admin, selling, dist exp

Operating Ratio = Coqs + admin.selling.distr cxp

# PROFITABILITY RATIOS (BASED ON RETURN)

BASIC :- WHAT I FARNED दया की भाया TRICK WHAT I INVESTED दया लगाया

ROE = EATESH eqs/h fund

ROCE = EBIT ON EBIT - Tax

Capital employ.

Capital employ.





# 5 PROFITABILITY RATIOS (OWNERS P.O.V)





# 6 ACTIVITY RATIOS (TURNOVER RATIO)

BASIC : SALES
TRICK Whose T/O is exked

(FA TIO / CAPITAL TIO / WCAP TIO / CA TIO / TA TIO)

BUT THERE ARE 4 EXCEPTIONS TO IT

Debtors T/O Creditors T/O Inventorp T/O Rm T/O
Credit sales Credit purchases COGS Rm cons.

Avg Debtors Avg. Creditors Avg. Inventorp Avg Rm

- · Sometimes if sales is not available USE cogs
- · cogs = Sales Gross profit
  - If oping & closing data are given USE AVERAGE

Payables 7/0 = Credit Purchases

Bills payables + Creditors

Receivables 7/0 = Credit Sales

Bills Receivable + Debtors

Debtors Days = 360 or 365 Days or 52 weeks or 12m (Debtors relocity) Debtors T/o Ratio

Avg. Debtors x 360 or 365 Days or 52 weeks or 12m

Credit Sales for year





Creditor Days (Creditors relocity) = 360 or 365 Days or 52 weeks or 12m Creditors T/o Ratio

Or Avg. Creditors x 360 or 365 Days or 52 weeks or 12m Credit purchases.

# 7) COVERAGE RATIOS

BASIC EARNINGS RELATED TO EXPENSE EXPENSE YOU WANT TO COVER TRICK

· Interest coverg. EBIT Interest exp

 Pref. Divid coverg Net profit or EAT EATESH Pref. Divid.

· Ea. Divid covg Eq. Divid

· Fixed charges coverg EBIT + Dep Interest + pay of principle

 Debt service coverg EBIT Interest + pay of principle

# SOLVENCY RATIO

· CURRENT PATION CURRENT ASSETS CURRENT LIABILITY · QUICK PATIO

CA - prepaid exp - Inventory CURRENT LIABILITY

· WORKING CAPITAL = CURRENT - CURRENT ASSETS LIABILITY



WREENT LIABILITIES

# 20 PONT ANALYSIS





#### **LEVERAGE**

PROFIT & LOSS STAT

SALES

variable cost

Contribution

(-) Fixed operating cost

(admin, selling & dist exp)

Earnings before Int & Tax (EBIT) or operating profit

(-) Interest exp

Earnings before Tax (EBT)

(-) Tax exp

Earnings after Tax (EAT) or Net profit

(-) Preference Dividend

Earnings avail to eg sh (EATESK)

(-) Equity Sividend

Retained Earnings

Sequence of the payment:









Debentures/Loan

Government

Pref. s/h Equity s/h

INTEREST

TAX

PREF. DIVID

EQ. 211/2



## 2 TYPES OF FIXED COST

OPERATING FIXED

Cost

Cost

Cost

Admin. Selling. Distr. OH

Used for DOL

Used for DFL

# 3 LEVERAGE FORMULA

METHOD I:- FIRST PROFIT

(RATIO METHOD)

SECOND PROFIT

DDL = Contribution DFL = EBIT

EBIT

EBT

If Pref divd = EBIT - Int - PD

METHOD II: Where you reached

( \*/. method)

From Where Started

DOL = 1. Change in EBIT
1. Change in sales

DFL = 1. Change in EPS
1. Change in EBIT





Pro-Tip :- Never use DCL to Calculate EBIT or EBT or contribution.

only use DCL to calculate DOL or OFL





#### CAPITAL STRUCTURE

The only target of this chapter is to have such capital structure which maximises EPS.

No of eq shares in option 1

No of eq share in option 2

FINANCIAL F. cost = Interest + Preference sividend





#### CAPITAL STRUCTURE THEORY

## NET INCOME APPROACH

For two different Firm ke and ka will be same only wacc

Value of Unlewered Firm = EATESH of unlewered ke

Value of levered firm = Value of equity + Value of debt in lever. firm in lever. firm

= EATESH of lev. + Int (1-t)

ke kd (given)

# NET OPERATING INCOME (without tax)

For two different firms kd and WACC is same ke changes.

Value of Unlevered Firm = EATESH of unlevered ke of unler.

Value of levered firm = EBIT ko of levered

> EBIT (08 Ke of unlevered

Fast Cost FM by AB





Value of Debt in levered co = given

Value of Equity in levered co = Value of - Value of debt levered firm in levered firm

## 3 MM APPROACH (WITHOUT TAX)

Here also Value of = value of unlevered firm levered firm

Bo solve it just like Net operating Income without tax

But ke = ko + (ko-kd) x 2

# 4 MM APPROACH (WITH TAX)

Value of unlevered firm = EATESH of unlev firm

ke of unlev.

Value of levered firm = Value of + Debt (1-tax)

unlew firm

Value of Debt in lovered co = given

Value of Equity in levered co = Value of - Value of debt

levered firm in levered firm





# 5 ARBITRAGE

- Step 1: Calculate value of levered firm and value of unlevered firm.
- Step 2:- Find whose value is higher?

  (let sap Viewered firm is higher and we hold 20% in it)
- Step 3:- Sell 20% equity of levered co.

  Borrow debt = 20% debt of levered co.
- Step 4:- Invest Entire amount in unlevered company
- Step 5:- Return from unlevered co 1. of EATESH on our invest in unlevered 6.

luterest of Debt borrowed

+ loss on EATESH in levered co





#### COST OF CAPITAL

## (Ka)

If life 
$$\infty$$
 kd = Interest (1-tax)

Price p

NP = Net proceeds received on issue of deb

## Confusion about what to take as NP

USE Only MARKET = NP

Use FACE VALUE - FLOAT COST = NP

(iii) If Both market value, Float cost & Face value given IRR Method Use MARKET VALUE - FLOAT COST = NP

DIRECT METHOD USE FACE VALUE - FLOAT COST = NP





## 2 COST OF PREF. SHARE (Kp)

If life 
$$\infty$$
 kp = Preference Divid

Price p

RV = Redemption valve

NP = Net proceeds received on issue of deb

## 3 IRR METHOD

Step 1 Calculate your outflow at year 0

Step 2 Calculate your all Inflows. (let's say 10% of 15%)

Step 3 Take two different disc rates and calculate

Prof Inflows - Prof Outflows

Step 4 IRR =





# (4) COST OF EQUITY (Ke)

Gordon's Formula:- Po = 
$$200(1+9)$$
 ke - 9

walter's Formula: - Po = 
$$2$$
 +  $3$  x Retained Earn.

ke ke²

```
Rt = Risk free Rate = Return on gout bonds
B = Beta = Risk
Rm = market rate of tetum
Rm - Rf = market risk premium
```

$$K_{e} = m \int (1 + 4eild_{1}) + (1 + 4eild_{2}) - ... - (1 + 4eild_{n}) - 1$$

yeild: Divid of CY + Price at year end

price at start of year





## 6 WACC

Type of	Amount	weight	COSE	WACC
Capital		(4)	<b>(b)</b>	(axb)
Equity	P	P/ Total		
R/E	Q	By rotal		
Debt	8	R/ Total		
Pref	S	5/ Total		
V	Total	·		

weights can be Book value weights where we use Book value

or Market Value weights where we use market value

Always remember R/earnings how no market value So in wAcc using market value either ignore R/E or distribute market value of equip between Equip f R/E in ratio of their Book value.

Marginal Cost of capital means

we calculate WACC only for the new capital raised and not old values.



#### DIVIDEND

# FOR AIVIAENA

WHEN DIVIDEND IS NOT DECLARED

Step 1 :- Calculate price at end of year 1 (P1)

 $P_0 = P_1 \therefore P_1 = P_0 \times (1+k\epsilon)$ 

Step 2:- Calculate the amount of Funds required

Investment - Earnings
needed avail

Step 3:- Calculate no of new eq shares to be issued

Funds required as Calculated in step 2

Price at end of year Calculated in step 1

Step 4:- Calculate PV of Value at end of the year.

Old eq + New eq ] x P, + Earnings - Invert

(1+ ke)





#### WHEN DIVIDEND IS DECLARED

Step 1 :- Calculate price at end of year 1 (P1)

$$\frac{P_0 = P_1 + \lambda_1}{(1+ke)} : P_1 = P_0 \times (1+ke) - \lambda_1$$

Step 2:- Calculate the amount of Funds required

Investment - [Earnings - Dividend]

needed avail paid

Step 3:- Calculate no of new eq shares to be Issued

Funds required as Calculated in step 2

Price at end of year Calculated in step 1

Step 4:- Calculate PV of Value at end of the year.





### CASH MANAGEMENT

## 1 OPTIMUM CASH BALANCE

$$\frac{0CB}{\sqrt{\frac{2 \times A \times T}{c}}}$$

A = Annual Cash requirement

T = Transaction cost per transaction

C = Carry Cost per unit per annum.

## 2 ECONOMIC OPDER ATY

$$\frac{2 \times A \times O}{C}$$

A = Annual Cash requirement

O = Ordering cost per order

C = Carry cost per unit per annum.





8
CHAPTER

#### DEBTORS MANAGEMENT

## EVALUATION OF CREDIT POLICY

## Totality Basis

	Sale	XXX	XXX	<mark>አ</mark> ኊኦ
	(-) variable cost	(xx)	(××)	(xx)
	(-) fixed cost	(**)	(xx)	(xx)
	(-) Bad debt	(xx)	(xx)	(xx)
	(-) Cash discount	(xx)	(kx)	(xx)
	(-) collection exp	(xx)	(xx)	(Xx)
	Net profit before tax	ХX	XX	xx
-	(-) tax expenses.	(xx)	(**)	(xx)
A	Expected Net Profit	* *	XX	**
	AFTER TAX			
B	Opportunity cost	(xx)	(xx)	(אא)
<u>.</u>	locked up in Debtors			
A-B	NET BENIFIT	<b>x</b> ×	××	×χ

Opportunity cost locked up in the debtors

Total x credit x cost / x Collection period x Rate of Sales Sales /. 365 days

Return





## Totality Basis

	Sale	xxx	XXX	XXX
	(-) variable cost	<i>C</i> . a		
		(xx)	e.	4 .
	(-) Incremental VC		(xx)	(xx)
	(-) fixed cost	(**)		
	(-) Incremental FC		(xx)	(xx)
	(-) Bad debt	(xx)		
	(-) Incremental Bidebt		(xx)	(xx)
	(-) Cash discount	(xx)		
	(-) Inurumental C. Disc	·	(xx)	(%%)
	(-) Collection exp	(xx)		
	(-) Incrumental Colliexp		(xx)	(kx)
	Net profit before tax	Χχ	<b>*</b> *	XX
	(-) tax expenses.	(xx)	(xx)	(xx)
A	Incremental expec-	**	×x	Χ×
B	INCREMENTAL OPP	(**)	(**)	(**)
	Cost			
	Net Benifit	×x	× ×	ጽャ





# 2 FACTORING

PartA	1-	COST SAVED DUE TO FACTOR	1116
		Bad debts saved	XX
	+	Collection cost saved	ΧX
	+	Admin cost saved	XX
	+	Interest saved due to less	χx
	+	Collection period	
	•	COST SAVED	ХХ

# Part B Cost Incurred Due to Factor Commission paid to factor XX † Interest paid on advance to factor XX

t Interest paid on advance to factor XX

Cost Incurred XX

A-B NET SAVINGS in Z XX

NET SAVINGS in 1.

Net amount
received from
factor.





### WORKING CAPITAL

## OPERATIN CYCLE R+W+F+2-C

- (i) RAW MATERIAL HOLDING PERIUD
- = 365 Days Raw mat · T/D
- 365 Days X Avergae RM RM consumed during year
- (11) WORK IN PROGRESS HOLDING PERIUD
- 365 Days WIP T/O
- = 365 Days × Average WIP

  Cost of prod during year
- (iii) FINISHED GOODS = 365 Days HOLDING PERIUD
  - FG T/0
  - 365 Days X Average Fg
    Cost of good sold during year
- (iv) CREDIT DAYS GIVEN = 365 Days TO DEBTORS Debtors T/O
  - 365 Days X Average Debty
    Credit sales during the yea





(V) CREDIT DAYS GIVEN = 365 Days Creditors T/O BY CREDITORS

365 Days X Average Creditors Credit purchases during the year

(VI) HOW MANY WEAP CYCLES IN A YEAR

365 Days

Days taken to complete one working capital cycle

(vii) WHAT IS THE AMOUNT OF W.CAP

Annual Operating cost

No of wicap cycles in 1 year.

## Important point to Note:

- 1 Question can ask us to use 360 Days instead of 365 Days. It nothing is given use 365 Days & give note.
- If details are given in months, try to do calculation in months only.

# COST SHEET

Direct material

- + wirect Labour
- Direct exp.

PRIME COST





+ Factory OH
GROSS FACTORY COST
+ Opening WIP
- closing WIP
NET FACTORY COST
+ alty control cost
t RED COSt
+ Admin related to prod
+ Primary Pack
- scrap of FG
COST OF PRODUCTION
COST OF PRODUCTION
COST OF PRODUCTION  + Opening FG
Cost of Production  + Opening FG  - closing FG
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD  + Secondary pack
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD  + Secondary pack
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD  + Secondary pack  + Selling & Dist OH  + General Admin OH  COST OF SALES
COST OF PRODUCTION  + Opening FG  - closing FG  COST OF GOODS SOLD  + Secondary pack  + Selling & Dist OH  + General Admin OH

## 3 AMOUNT INVESTED

(i) Amount in = Avg cost of consumption x Rm Holding

PAW MATERIAL of Rm per day period

= Annual units prod x 2m cost

365 days P. Unit





Cir	Amount in	= Avg cost o	t production	X	FG Holding
	FINISHED GOODS	per	dajo		period
	J	J	•		
		= Annual Cost	of ond.		
		365 days			
(iii)	Amount in	= Avg. cost of	sales	Х	credit perrod
	Sebtors	= Avg. cost of Per da	ø	^	to debtors
		1.	1		
		= Annual Cost	of sale.		
		365 days	7 244		
ίν	Amount in	= Avg cost of	t consumban	X	Rm Holding
	wip	ok m	consumbon	^	period
					•
		= Annual units	prod x wip c	- 01	
		365 days		unit	
		303 0.0045	, , ,		
	1.00	Proc. and	N. M. Tarak		
	MIR cost/unit				
			et punit x 50%		
		+ OH Cost	punit X50%		
(Ŋ	Amount in =	Credit Durcha	ue for year	X	Cradit Deviced
		•	•		Given to us
	Creditors	<b>363</b> (	onys.		by creditors
					-y acaims
(v)	Amount in =	Total expen	ises for year	X	lag in pau
CO			Days.		1-13 ··· Y-17
	O/s exp		- 1173		



	CASH COST BASIS	TOTAL BASIS
cost of prod.	CASH COST BASIS	COP
• •	·	
cost of sales	cos - dep	(05
•	·	
F6 calculated at	COP	Cos
alebfors calculated	Cas	Sales
at	•	