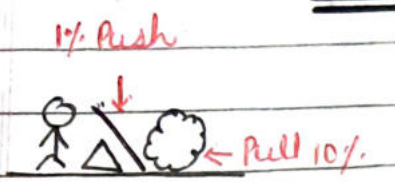
FINANCIAL MANAGEMENT

Chapter _ leverages

Handwritten notes

__Dolly Gorai__

Leverages



Leverage mean "Risk"

Risk involves in business because of Fixed cost

[Example : Coaching class] COST

- Variable cost
  - Text book (No Risk)
- Fixed cost
  - Operating Fixed Cost. (Rent)
    - operating Leverage.
  - Financial Fixed cost. (Interest)
    - Financial Leverage.

Combined Leverage.

Concep Question :

Selling Price : 10PU (per unit)
Variable cost : 8PU
Total fixed cost : 100 (Rent)
Total Interest : 75
Tax : 20%
No of Equity shares = 10
No of Units sold = 100
Calculate all leverages
Prepare Income statement at
100 & 120 Units.

EBIT :- Earning Before Interest & Tax
EBT :- Earning Before Tax
EAT :- Earning After Tax
EAES :- Earning Available to Equity shareholder.
EPS :- Earning per share.
OL :- operating Leverage.
FL :- Financial. Leverage
CL :- Combined. Leverage.
DOL :- Degree of operating Leverage

Soln:-

Particulars		100 Units		change	120 Units.
Sales	10	1000	1% same	20%	1200
-Variable cost	(8)	(800)		20%	(960)
Contribution	2	200		20%	240
-Fixed cost • (OL)		(100)		—	(100)
EBIT		100	2%	40%	140
-Interest • (FL)		(75)		—	75
EBT		25		160%	65
-Tax @ 20%		(5)			(13)
EAT		20			52
-Preference Dividend.		—	same.		—
EAES.		20			52
÷ Equity shares.		÷10			÷10
EPS		2		160%	5.2

① Operating Leverage:

Contribution / EBIT

$$\frac{\% \Delta EBIT}{\% \Delta Contribution}$$

$$\frac{\% \Delta EBIT}{\% \Delta Sales}$$

$$\frac{200}{100}$$

$\% \Delta Contribution = \% \Delta Sales$

$$\frac{40}{20}$$

2 Times.

2 Times.

New - old / old * 100

- OL arises because of operating fixed cost
- OL = 2 times indicates 1% change in sales leads to 2% change in EBIT.

② Financial Leverage.

EBIT / EBT

$$\frac{\% \Delta EBT}{\% \Delta EBIT} \rightsquigarrow \frac{\% \Delta EPS}{\% \Delta EBIT}$$

$$\% \Delta EBT = \% \Delta EPS$$

100 / 25	160 / 40
4 times	4 times.

- FL arises because of Interest
- FL = 4 times indicates 1% change in EBIT leads to 4% change in EPS.

③ Combined Leverage

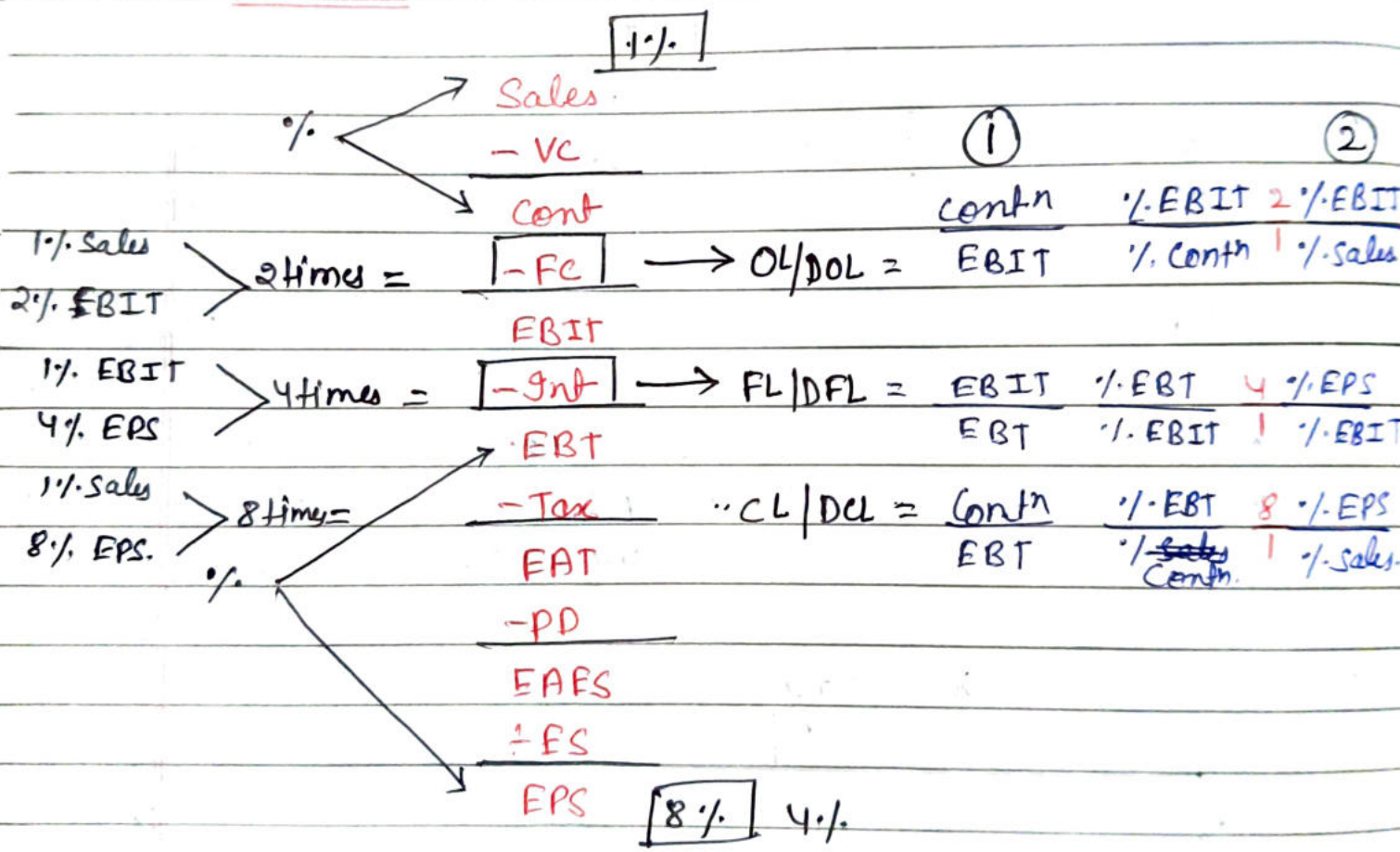
Contribution / EBT.

$$\frac{\% \Delta EBT}{\% \Delta Contribution} \rightsquigarrow \frac{\% \Delta EPS}{\% \Delta Sales}$$

200 / 25	160 / 20
8 times	8 times.

- CL arises because of operating fixed cost + Interest.
- CL = 8 times indicates 1% change in sales leads to 8% change in EPS

Lecture ① Revision



15 July 2025

Illustration -1

A company produces and sells 10,000 shirts the selling price per shirt is ₹ 500. Variable cost is ₹ 200 per shirt and fixed operating cost is ₹ 25,00,000.

(a) Calculate operating leverage

(b) If sales are up by 10% then Compute the Impact on EBIT?

Sol:- Working note -1 Income statement :-

Particular.	10,000 units.	
Sales	(500) × 10,000 = 50,00,000	1%
- VC	(200) × 10,000 = 20,00,000	
Contribution	(300) × 10,000 = 30,00,000	1%
- FC	(25,00,000)	×6 OR
EBIT	5,00,000	6%

1. Operating Leverage :-

$$\frac{\text{Contribution}}{\text{EBIT}} = \frac{30,00,000}{5,00,000} = 6 \text{ times}$$

2. % Δ EBIT

$$\text{Operating Leverage} = \frac{\% \Delta \text{EBIT}}{\% \Delta \text{Sales}} =$$

$$6 = \frac{\% \Delta EBIT}{10}$$

$\therefore \% \Delta EBIT = 60\%$

Illustration - 3.

A Firm's details are as under:

Sales @ 100 per unit	₹ 24,00,000
Variable cost	50%
Fixed cost	₹ 10,00,000

It has borrowed ₹ 10,00,000 @ 10% p.a and its equity share capital is ₹ 10,00,000 (₹ 100 each). Consider tax @ 50%.

Calculate:

(a) operating leverage

(b) Financial leverage

(c) Combined leverage

(d) Return on Investment.

(e) If the sales increases by ₹ 6,00,000 what will the new EBIT?

Soln Working Note - ① Income Statement.

Particular	Total
Sales	
- VC	
Contribution	
EBIT	
- Interest.	
EBT	
- Tax	
EAT / EAES	
÷ ES	
EPS.	

Working Note ① Income statement

	Particular			Total
25%	Sales.	1%	100	24,00,000
	- VC		(50)	1200,000
25%	Contribution	1%	50	1200,000
	- FC			(10,00,000)
	EBIT	6%		200,000
	- Interest (10,00,000 × 10%)			(100,000)
	EBT			100,000
	- Tax @ 50%			(50,000)
	EAT / EAES			50,000
	÷ ES (10,00,000 ÷ 100)			÷ 10,000
	EPS			5

① Operating leverage:

$$\frac{\text{Contribution}}{\text{EBIT}} = \frac{1200,000}{200,000} = 6 \text{ times.}$$

② Financial Leverage:

$$\frac{\text{EBIT}}{\text{EBT}} = \frac{200,000}{150,000} = 2 \text{ times.}$$

③ Combined Leverage:

$$\frac{\text{Contn}}{\text{EBT}} = \frac{1200,000}{150,000} = 12 \text{ times}$$

OR

Combined Leverage = Operating Leverage × Financial Leverage

= 6 × 2

= 12 times.

④ Return on Investment :-

$$\frac{\text{EAES}}{\text{Equity}} \times 100 = \frac{50,000}{10,50,000} \times 100$$

= 5%.

(5) New EBIT

Particular	Total.	
Revised sales (2400,000 + 600,000)	30,00,000	100
−VC	(1500,000)	50
Contribution	1500,000	50
− FC	(10,00,000)	
New EBIT	500,000	

OR.

12 L — 25% — 15 L.

$\frac{3}{12} \times 100$

Practical Problem-1

From the following information extracted from the books of accounts of max ltd. Calculate percentage change in earnings per share, if sales increase by 10% and fixed operating cost is ₹ 1,57,500

Particulars	(₹)
EBIT (Earnings before Interest and Tax)	31,50,000
Earnings before Tax (EBT)	14,00,000

Working note - 1 : Income Statement.

Particular		Total.
Contribution.		33075 00
- FC	+	157500
EBIT		3150,000
- Int	-	175000
EBT		1400,000

Working note - 2: Combined Leverage.

$$\frac{\text{Contribution}}{\text{EBT}} = \frac{33075\,00}{1400,000} = 2.3625 \text{ times.}$$

1 % ΔEPS

$$CL = \frac{\%\ \Delta EPS}{\%\ \Delta Sales.}$$

$$2.3625 = \frac{\%\ \Delta EPS}{10}$$

$$\%\ \Delta EPS = 23.625\%$$

2.5.2 × 100 = 160%

Concept : Summary :-

			Units.	+20%	Units
			100		120.
		Sales.	10 1000	20%	1200
		- VC	8 800	|	960
		Cont	2 200	20%	240
	OL	- FC	100		(100) OL = 2 Times
		EBIT	100	40%	140
CL		- Int	75	~~40%~~	(75) FL = 4 Times
		EBT	25	160%	65
		- Tax @ 20%	5	|	(13) CL = 8 Times.
		EAT / EAES	20	|	52
	FL	÷ ES	÷10	|	÷ 10
		EPS.	2.	160%	5.2

Δ% Cont = % Sales.

Δ% EBT = % EPS.

- $\frac{1200-1000}{1000} \times 100 = 20\%$.
- $\frac{240-200}{200} \times 100 = 20\%$.
- $\frac{65-25}{25} = 100 = 160\%$.
- $\frac{2-5.2}{2} \times 100 = 16\%$.

$OL = \frac{C}{EBIT}$ or $\frac{\% EBIT}{\% sales} = \frac{200}{100} = \frac{2}{1}$

$FL = \frac{EBIT}{EBT}$ or $\frac{\% EPS}{\% EBIT} = \frac{100}{25} = \frac{4}{1}$

$CL = \frac{C}{EBT}$ or $\frac{\% EPS}{\% sales} = \frac{200}{25} = \frac{8}{1}$

Practical Problem 4:-

The capital structure of Rs Ltd. at the end of the Current Financial Year consisted as follows.

Particular	₹
Equity Share Capital: face value ₹ 100 each	10,00,000
10% debentures (₹ 100 each)	10,00,000

During the year, sales decreased to 1,00,000 Units as compared to 120,000 units in the previous year. However the selling price stood at ₹ 12 per unit and variable cost at ₹ 8 per unit for both the years, The fixed expenses were at ₹ 200,000 p.a and the Income tax rate is 30%.

You are required to calculate the following.

(i) the degree of financial leverage at 1,20,000 Units and 1,00,000 Units.

(ii) The degree of operating leverage at, 120,000 Units and 1,00,000 Units.

(iii) The percentage change in EPS

Sol:

Income Statement

Particular		120,000 Units	100,000 Units
Sales.	@12	1440000	1200000
- Variable Cost	(8)	960000	800000
Contribution.	4	480000	400000
- Fixed Cost		200,000	200000
EBIT		280,000	200000
- Int		100,000	100000
EBT		180,000	100000
- Tax @ 30%		54000	30000
EAT / EAE		126000	70,000
÷ ES (10,00,000 ÷ 100)		÷ 10000	÷ 10,000
EPS		12.6	7

1. Financial Leverage = EBIT / EBT = 280,000 / 180,000 = 1.56 times.

2. Operating Leverage = Contribution / EBIT = 480,000 / 280,000 = 1.71 times.

= 400,000 / 200,000 = 2 times.

3. % Δ Change in EPS = (12.6 − 7) / 12.6 × 100

= 5.6 / 12.6 × 100

= 44.44% (Reduction in EPS)

Practical Problem 12

The following data have been extracted from the books of ZM Ltd:

Sales -	₹ 100 lakhs
Interest payable per annum	₹ 10 lakhs
Operating Leverage	1·2
Combined Leverage	2·16

You are required to calculate

(i) The financial leverage
(ii) Fixed Cost and
(iii) P/V ratio.

Solution (i) Financial leverage.

$CL = OL \times FL$

$2·16 = 1·2 \times FL$

$FL = 1·8$ times.

(ii) Fixed Cost:

Sales		10000000
- VC		7300000
Cont	1·2	2700,000 WN-3
- FC	0·2	450,000 (2700-2250K)
EBIT	1	2550000 1·8 WN-2
- Int		-1000000 0·8
EBT		1250,000 1

Working note-1 : EBIT

$$FL = \frac{EBIT}{EBIT - Int}$$

$$1.8 = \frac{EBIT}{EBIT - 10,00,000}$$

$$\therefore 1.8\,EBIT - 18\,00,000 = EBIT$$

$$0.8\,EBIT = 18\,00,000$$

$$EBIT = \frac{18\,00,000}{0.8}$$

$$\boxed{EBIT = 2250000}$$

Working note 2: Contribution.

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

$$1.2 = \frac{Contribution}{2250,000}$$

$$Contribution = 27\,00,000$$

3. Profit Volum Ratio :

$$\frac{Contribution}{Sales} \times 100 = \frac{27\,00,000}{1000000} \times 100$$

$$= 27\%.$$

16 July 2024

Practical Problem - 8

Calculate the operating Leverage financial, leverage and combined leverage from the following data under situation I and II and financial Plan A and Plan B.

Installed Capacity	4000 Units
Actual Production and Sales	75% of the Capacity
Selling Price	₹ 30 per Unit
Variable cost	₹ 15 per Unit

Fixed Cost

Under Situation - I	₹ 15,000
Under situation - II	₹ 20,000

Capital Structure:

	Financial Plan.	
	A (₹)	B (₹)
Equity	10,000	15,000
Debt (Rate of Interest at 20%)	10,000	5,000
	20,000	20,000

Working note :1 Total Contribution.

Selling Per Unit	30
Variable Cost Per Unit	(15)
Contribution Per Unit	15
× No. of Units (4000 × 75%)	× 3000
Total Contribution.	45000

Working note-2 Income statement.

	Situation 1		Situation 2.	
Particular	Plan A	Plan B	Plan A	Plan B.
Total Contribution.	45000	45000	45000	45000
- Fc	15000	15000	20000	20000
EBIT	30,000	30,000	25000	25000
- Interest.	2000	1000	2000	1000
Plan A : 10,000 × 20%	2000			
Plan B : 5000 × 20%	1000			
EBT	28000	29000	23000	24000
Leverages :				
OL = Contr / EBIT	= 45000 / 30,000	= 45000 / 30,000	= 45000 / 25000	45000 / 25000
	= 1.5	= 1.5	= 1.8	= 1.8
FL = EBIT / EBT	= 30,000 / 28000	= 30,000 / 29000	= 25000 / 23000	25000 / 24000
	= 1.07	= 1.03	= 1.09	= 1.04
CL = OL × FL =	1.61	1.55	1.96	1.87

Practical problem II

You are given the following information of 5 firms of the same industry:

Name of the firm.	% change in Revenue.	% change in operating Income	% change in Earning per share
M	28%	26%	32%
N	27%	34%	26%
P	25%	38%	23%
Q	23%	43%	27%
R.	25%	40%	28%

You are required to Calculate for all firms.

(i) Degree of operating Leverage and.

(ii) Degree of Combined Leverage.

Revenue = Sales.
operating Income = EBIT

Firm.	Operating Leverage % EBIT % Sales	Combined Leverage % EPS % Sales.
M	$\frac{26}{28} = 0.93$	$\frac{32}{28} = 1.14$
N	$\frac{34}{27} = 1.26$	$\frac{26}{27} = 0.96$
P	$\frac{38}{25} = 1.52$	$\frac{23}{25} = 0.92$
Q	$\frac{43}{23} = 1.87$	$\frac{27}{23} = 1.17$
R.	$\frac{40}{25} = 1.6$	$\frac{28}{25} = 1.12$

Practical Problem-2.

Consider the following information for Mega Ltd.

Production level.	2500 units
Contribution per unit-	₹150
operating Leverage	6
Combined Leverage	24
Tax rate	30%

Required:

Compute its earning after tax.

Soln 1. Earning after Tax:

Particulars	2500 Units.
Contribution (150 × 2500)	375000
− FC	312500 ← balfig
EBIT	62500
− Interest	46875
EBT	15625
− Tax @ 30%	4688
EAT	10937

Working note no 1: EBIT:

$$OL = \frac{\text{Contribution}}{EBIT} = 6 = \frac{375000}{EBIT}$$

$$\therefore EBIT = \frac{375000}{6} = 62500$$

Working note no 2: financial leverage.

$$CL = OL \times FL$$

$$24 = 6 \times FL$$

$$FL = \frac{24}{6} = 4 \text{ times.}$$

Working note no - 3 EBT

$$FL = \frac{EBIT}{EBT}$$

$$4 = \frac{62500}{EBT}$$

$$\therefore EBT = \frac{6250}{4}$$

$$\therefore EBT = 15625$$

17/07/2025

Practical Problem 6:-

Beta tronics Ltd. has the following balance sheet and income statement information.

Balance sheet

Liabilities	₹	Assets	₹
Equity capital (₹10 per share)	8,00,000	Net fixed assets	10,00,000
10% Debt	600,000	Current assets	9,00,000
Retained earnings	3,50,000		
current liabilities.	1,50,000		
	1900,000		1900,000

Income Statement for the year.

Particular	₹
Sale.	3,40,000
operating expenses (including ₹60,000 depreciation)	1,20,000
EBIT	2,20,000
Less: Interest.	60,000
Earning before tax	160,000
Less: Taxes.	56,000
Net Earnings (EAT)	104,000

(a) Determine the degree of operating, financial and, combined leverages at the current sales level if all operating expenses other than depreciation are variable costs.

(b) If total assets remain at the same level, but sales increase by 20 percent and decrease by 20 percent, compute the earnings per share at the new sales levels

Working Note :- 1 Income Statement :

Particulars	Present	Sales Increase by 20%	Sales Dec by 20%
Sales	340,000 +20%	408000 -20%	272000
-VC	60,000 +20%	72000 -20%	48000
Contn.	280,000 +20%	336000 -20%	224000
-FC	60,000	60,000	60,000
EBIT	220000	276000	164000
-Interest	60,000	60000	60,000
EBT	160,000	216000	104000
-Tax	56,000	75600	36400
EAT/EAE	104000	140400	67600
÷ ES (800,000 ÷ 10)	÷ 80,000	÷ 80000	÷ 80,000
EPS	1.3	1.76	0.85

Working note No-2

$$\frac{56000}{160,000} \times 100 = 35\% =$$

* 216000 @ 35% = 75600
* 104000 @ 35% = 36400

Calculation of operating Leverage = $\frac{\text{Contribution}}{\text{EBIT}}$

$$= \frac{280,000}{220,000}$$

$$= 1.27 \text{ times.}$$

Calculation of financial leverage = $\frac{\text{EBIT}}{\text{EBT}}$

$$= \frac{2,20,000}{160,000}$$

$$= 1.38 \text{ times.}$$

Combined Leverage = OL × FL

$$= 1.27 \times 1.38$$

$$= 1.75 \text{ times.}$$

18/07/25

Illustration no-4

The capital structure of PS Ltd. The following is related to Yizi company Ltd. for the current financial year.

Equity share capital (of ₹ 10 each)	₹ 50 lakhs
12% bonds of ₹ 1,000 each.	₹ 37 lakhs.
Sales.	₹ 84 lakhs.
Fixed cost (excluding interest)	₹ 6.96 lakhs.
financial leverage.	1.49.
Profit-volume Ratio.	27.55%.
Income Tax Applicable.	40%.

You are required to Calculate:

(i) Operating leverage.
(ii) Combined leverage and
(iii) Earnings per share

Show Calculations up-to two decimal points.

Working note-1 Income Statement.

Particular.		₹
Sales	100 ×	8400,000
-VC	72.45	(6085800)
Contn	27.55	2314200
- FC		696000
EBIT		1618200
- Int		532160
EBT (Wn-2)		1086040
- Tax @ 40%		434416
EAT / EAES		651624
÷ ES (50,00,000 ÷ 10)	500,000	500,000
EPS		1.30

(working note-2) EBT

$$FL = \frac{EBIT}{EBT}$$

$$1.49 = \frac{1618200}{EBT}$$

$\therefore$ EBT = 1086040

1. Operating leverage.

$$\frac{2314200}{1618200} = 1.43 \text{ times.}$$

2. CL = OL × FL

= 1.43 × 1.49 = 2.13 times

3. EPS = 1.30

Question में आएगा F.L & नहीं Interest के बारे में

Practical Problem-(10) The following details of a company for the year ended 31st March are given below:

Operating leverage	2:1
Combined leverage.	2.5:1
Fixed Cost excluding interest	₹ 3.4 lakhs
Sales.	₹ 50 lakhs
8% Debentures of ₹100 each	₹ 30.25 lakhs
Equity Share Capital of ₹10 each	34 lakhs.
Income Tax Rate	30%.

Calculate:

(i) Financial Leverage

(ii) P/V ratio and Earning per share (EPS)

(iii) If the company belongs to an Industry, whose assets turnover is 1.5, does it have a high or low assets turnover?

(iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to Zero?

Soln 1. Financial leverage.

$$CL = OL \times FL$$
$$2.5 = 2 \times FL$$
$$FL = 1.25$$

(Working note no: 1) Income statement.

Sales.	:	5050,000
- VC		4320,000
Contn.	(Wrong N-2)	680,000
- FC		-340,000
EBIT		340,000
- Int		68000
EBT	(WN-3)	272000
- Tax	@ 30%.	81600
EAT/EAES		190400
÷ ES	(340,000 ÷ 10)	340000
EPS		0.56

(Working note 2.) Contribution

$$OL = \frac{Contn}{Contn - FC}$$

$$2 = \frac{Contn}{Contn - 340,000}$$

$2\,Contn - 680,000 = Contn$

$Contn = 680000$

Working note no-3 EBT

$$FL = \frac{EBIT}{EBT}$$

$$1.25 = \frac{340,000}{EBT}$$

$$EBT = 27000$$

2(a) PV Ratio $= \frac{\text{Contb}}{\text{Sales}} \times 100$

$= \frac{680,000 \times 100}{50,00,000}$

$= 13.6\%$

(b) EPS = 0.56.

3(a) Total assets : (Equal total liab)

		B/S	
ESC	3400,000	ESA	FA
8% Debt	3025000	Debt	CA
	6425000	CL	
		Total Liab	Total Asset

(b) Asset Turnover Ratio $= \frac{\text{Sales}}{\text{Total assets.}}$

$= \frac{50,00,000}{6425000} = 0.78$

(c) Company has low asset turnover as Compared to Industry.

4) Sales:-

Sales :-	30,00,000	100
(-) VC	2592000	86.4
Cont^n	408000	13.6
(-) FC	(340,000)	
EBIT	68000	
(-) Int	(68000)	
EBT	0	

(Reverse Statement)

practical problem :- 9.

The following particulars relating to Narya. Ltd. for the year ended 31st March is given:

Output	1,00,000 Units at normal Capacity
Selling price per unit	₹ 40
Variable cost per unit	₹ 20
Fixed cost	₹ 10,00,000

The capital Structure of the company as on 31st March is as follows:-

Particulars.	₹
Equity share capital (1,00,000 Shares of ₹ 10 each)	10,00,000
Reserves and surplus.	5,00,000
7% debentures.	10,00,000
Current Liabilities	5,00,000
Total	30,00,000

Navya Ltd. has decided to undertake an expansion project to use the market potential, that will involve ₹ 10 lakhs, The Company expects an increase in output by 50%, fixed cost will be increased by ₹ 5,00,000 and variable cost per unit will be decreased by 10%. The additional output can be sold at the existing selling price without any adverse impact on the market.

The following alternative schemes for financing the proposed expansion programme are planned.

(i) Entirely by equity shares of ₹ 10 each at par.
(ii) ₹ 5 lakh by issue of equity of ₹ 10 each and the balance by issue of 6% deb. of ₹ 100 each at par.
(iii) Entirely by 6% deb of ₹ 100 each at par.

Find out which of the above-mentioned alternatives would you recommend for Navya Ltd. with reference to the risk and return involved assuming a corporate tax of 40%.

(working note-1) EBIT:-

Particulars	Present		After Expansion.
SP per Unit	40		40
VC pu	(20)	(+10%)	(18)
Contr pu	20		22
X Units.	X100000	+50%	X150,000
Contr	20,00,000		33,00,000
(-) FC	(10,00,000)	(+5L)	(15,00,000)
EBIT	10,00,000		18,00,000

Working note:-2 Capital Structure (Rs 10L)

Particular	1	2	3
ESC	10L(10,00,000)	5L(500,000)	—
6% Debenture	—	5L(500,000)	10L(10,00,000)
	10,00,000	10L	10L
New:			
No of Es (ESC÷10)	100,000	50K(50,000)	—
Interest (Deb x 6%)		30k(30,000)	60k(60,000)
		↑ 500,000 x 6%	↑ 1,000,000 x 6%

19/07/2021

Working note: 2 Income statement

Particular	Present	Expansion 1	2	3
EBIT	10,00,000	18,00,000	18,00,000	18,00,000
- Interest	(70000)	(70000)	(100,000)	(130,000)
	(10L × 7%)		(70k+30k)	(70k+60k)
EBT	930,000	1730,000	1700,000	1670,000
- Tax	(372000)	(692000)	(680000)	(668000)
EAT / EAE	558000	1038000	1020,000	1002000
÷ ES	÷ 100000	÷ 200000	÷ 150,000	÷ 100000
		(1L+1K) ↑	(1L+50k) ↑	(1L) ↑
EPS.	5.58	5.19	6.8	10.02
		(33,00,000 ÷ 18,00,000)		
OL =	(2000000 ÷ 100000) = 2	1.83	1.83	1.83
FL =	(10,00,000 ÷ 930000) 1.08	(1800000 ÷ 1730000) = 1.04	(1800000 ÷ 1700000) 1.06	1800,000 ÷ 1670000 1.08
CL = OL × FL =	2.16	1.9	1.94	1.98
Risk = CL		Lowest	Middle / Moderate	Highest
Re ⇒ (EPS)		Lowest	Moderate	Highest

Recommendation :-

1. If Nawya Ltd is ready to take a high degree of risk then option 3 is strongly recommended.

2. In case opting for less risk then option 2 is next best option with reduced EPS of E.S per share.

3. Option 1 is not recommended since its EPS is lower than present EPS.

Practical problem - 7

A Company had the following Balance Sheet at the end of the current financial year.

Liabilities	₹ in Crores	Assets	(₹) in Crores
Equity share Capital. (50 lakhs Shares of ₹10 each)	5	Fixed Asset (Net)	12.5
Reserves and Surplus	1	Current Assets	7.5
15% Deb.	10		
Current Liabilities.	4		
	20		20

The additional information given is as under.

Fixed cost per annum (excluding interest	₹ 4 crores.
Variable operating cost ratio	65%
Total assets turnover ratio	2.5
Income Tax rate	30%

Required:
Calculate the following and comment:
(i) Earnings per share.
(ii) Operating leverage.
(iii) Financial ~~tax~~ leverage.
(iv) Combined Leverage.

Soln:-

		(₹ in cr)
1. EPS		
Sales.	100	50
-VC	(65)	32.5
Contri	35	17.5
-FC		4
EBIT		13.5
- Int (10×15%.		(1.5)
EBT		12
- Tax @ 30%		(3.6)
EAT		8.4
÷ ES (5÷10)		÷ 0.5
EPS		16.8

(Wn-1) Sales :-

Asset Turnover Ratio = Sales / Assets

2.5 = Sales / 20

∴ Sales = 50

2. OL = 1.30 times

3. FL = 1.13 times

4. CL = 1.30 × 1.13 = 1.47 times

Or

17.5 / 12 = 1.46 times.

Practical problem - 3

From the following information, prepare Income Statement of Company A & B:

Particular	Company A	Company B
Margin of safety	0.20	0.25
Interest	₹ 3,000	₹ 2,000
Profit volume ratio	25%	33.33%
Financial Leverage	4	3
Tax rate	45%	45%

Sol^n Income statement:-

Particulars			A			B
Sales	100	?	80,000	100	?	36000
-VC	75	?	60,000	66.67	?	24000
Contn	25		20,000	33.33		12000
-FC			(16000)			(9000)
EBIT (Wn-1)			4000			3000
-Int			3000			2000
EBT			1000			1000
-Tax @ 45%			(450)			(450)
EAT			550			550

$A = \frac{20,000 \times 25}{100}$

$= 80,000$

$B = 66.67 = 33.3$ (Double)

$\therefore 12000 + 12000$

$= 24000$

Working note-1 EBIT.

$$FL = \frac{EBIT}{EBIT - Int}$$

A

$$4 = \frac{EBIT}{EBIT - 3000}$$

$$4EBIT - 12000 = EBIT$$

$$3\,EBIT = 12000$$

$$EBIT = 4000$$

B

$$3 = \frac{EBIT}{EBIT - 2000}$$

$$3EBIT - 6000 = EBIT$$

$$2EBIT = 6000$$

$$EBIT = 3000$$

Working note-2

(1) $$OL = \frac{1}{EPS} = \frac{1}{0.20} = 5$$

Working note no-2 operating leverage.

Particular	A	B.
$OL = \frac{1}{mos}$	$\frac{1}{0.2}$	$\frac{1}{0.25}$
	$= 5$	$= 4$

21/07/05

(Working note no-3) Contribution.

A

$OL = \frac{Contn}{EBIT}$

B

$5 = \frac{Cont}{4000}$

$\therefore Cont = 20,000$

$4 = \frac{Cont}{3000}$

$\therefore Cont = 12000.$

Illustration - 2

Calculate the operating leverage for each of the four firms A, B, C and from the following price and cost data:

	Firm.			
	A ₹	B ₹	C ₹	D ₹
Sale price per unit	20	32	50	70
Variable cost per unit	6	16	20	50
Fixed operating cost	60,000	40,000	1,00,000	Nil

What calculations can you draw with respect to levels of fixed cost and the degree of operating leverage result? Explain Assume number of Units sold is 5,000.

Sol:- Working note - 1 Income Statement

Particular	A	B	C	D
SP PU	20	32	50	70
VC PU	(6)	(16)	(20)	50
Contn PV	14	16	30	20
X Units	X5000	X5000	X5000	X5000
Contn	70,000	80,000	150,000	100,000
-FC	(60,000)	(40,000)	(100000)	(Nil)
EBIT	10,000	40,000	50,000	100,000
OL	7	2	3	1

Comments:-

1. Operating leverage exist only if there is a fixed cost

2. Operating leverage of firm D is 1, It means 1% change in sales will lead to 1% change in EBIT.

3. In case of other firm it exist is following order

firm A = 7 times
firm C = 3 times
firm B = 2 times.

~~4. In case of other firms it exist in following order.~~

4. In case of firm A it is 7,
It means 1% change in Sales will lead to 7% change in EBIT.

Illustration-5

Following are the selected financial information of A Ltd. and B Ltd. for the current financial year:

	A Ltd.	B Ltd.
Variable Cost Ratio	60%	50%
Interest	₹ 20,000	₹ 1,00,000
Operating Leverage	5	2
Financial Leverage	3	2
Tax Rate	30%	30%

You are required to find out:

(i) EBIT

(ii) Sales

(iii) Fixed cost

(iv) Identify the company which is better placed with reasons based on leverages.

Working note-I Income statement.

Particulars		A		B
Sales	100	375000	100	800,000
(-) VC	60	225000	50	400,000
Contn	40	150000	50	400000
(-) FC		120000		200000
EBIT (Wn-2)	:	30,000	2	200,000
(-) Int	:	20,000	1	100,000
EBT	:	10,000	1	100000
- Tax @ 50%		(3000)		(30000)
EAT		7000		70,000

Working note-2 EBIT

$$FL = \frac{EBIT}{EBIT - Int}$$

A ltd.

$$3 = \frac{EBIT}{EBIT - 20,000}$$

$3EBIT - 60,000 = EBIT$

$2EBIT = 60,000$

$EBIT = 30,000$

B ltd.

$$2 = \frac{EBIT}{EBIT - 100000}$$

$2EBIT - 200,000 = EBIT$

$1EBIT = 200,000$

$EBIT = 200,000$

Working note no- 3 Contribution.

$$OL = \frac{Cont^n}{EBIT}$$

A ltd

$$5 = \frac{Cont^n}{30,000}$$

$Cont^n = 150,000$

B ltd.

$$2 = \frac{Cont^n}{200,000}$$

$Cont^n = 400,000$

Particulars	A	B
EBIT	30,000	2L
Sales	375000	8L
FC	120000	2L

4. Comment:-

Company B is better than Company A because of following reasons.

(a) Interest Coverage ratio = (EBIT ÷ Int)

A	B
$\frac{30,000}{20,000}$ = 1.5 times	$\frac{200,000}{100,000}$ = 2 times

Capacity of Company B to pay interest is better than Company A.

(b) financial Risk -

A	B
FL = 3	2

Company B has least financial Risk.

Practical Problem : 5

1. EPS

Sales		20,00,000
- VC		10,00,000
Contb	2.5	10,00,000
- FC	1.5	6000000
EBIT	(Wn-2)	400,000
- Int		150,000
EBT	(Wn-4)	250,000

(-) Tax @ 50%	(125000)
EAT	125000
÷ ES	÷ 100000
EPS	1·25

Working note :- 2. EBIT.

$$OL = \frac{Contn}{EBIT}$$

$$2.5 = \frac{10,00,000}{EBIT}$$

$$EBIT = \boxed{400,000}$$

Working note :- 3 Combined Leverage.

EPS will wipe out means. 100% reduction.

$$CL = \frac{\%\ EPS}{\%\ Sales} = \frac{100}{25}$$

$$\boxed{= 4 \text{ times}}$$

Working note :- 4. EBT.

$$CL = \frac{Contn}{EBT}$$

$$4 = \frac{1000,000}{EBT}$$

$$\boxed{\therefore EBT = 250,000}$$

~~Working note :-~~

2. Amt of Debt.

Int = Debt x %.

150000 = Debt x 16%.

$$Debt = \frac{150000}{16\%}$$

$$\boxed{= 937500}$$

Summary :-

* Profit Volume (PV) Ratio & Variable Cost Ratio :-

PV Ratio = $\frac{\text{Contribution}}{\text{Sales}} \times 100$

Variable Cost Ratio = $\frac{\text{VC}}{\text{Sales}} \times 100$

Example :-

SP	10
VC	8
Contribution	2

PV Ratio: $\frac{2}{10} \times 100 = 20\%$

Variable cost Ratio: $\frac{3}{10} \times 100 = 30\%$

* Assets turnover Ratio

$\frac{\text{Sales}}{\text{Total assets}}$

Total asset = Total liability

* operating leverage :-

OL = $\frac{1}{\text{MOS Ratio}}$ = (PP_3)

margined of safety ratio

* financial leverage if preference share exist :-

$FL = \frac{EBIT}{EBIT - Int - \left\{\frac{\text{Preference Dividend}}{1 - \text{Tax rate}}\right\}}$

* Example :- Concept Question.

Interest = 20,000
pref Div'dend = 7000
Tax rate :- 30%
EBIT => 90,000
Calculate F.V.

Soln $F.L = \frac{EBIT}{EBIT - Int - \left\{\frac{PD}{1-t}\right\}}$

$= \frac{90,000}{90,000 - 20,000 - \left\{\frac{7000}{1-0.3}\right\}}$

$= \frac{90,000}{90,000 - 20000 - 10,000.} = \frac{90000}{60000} = 1.5$ times

* Return on Capital Employed: (ROCE)

$\frac{EBIT}{ESC + RAS + PSC + Deb} \times 100$

* FL is favourable or unfavourable :-

$\frac{Int\%}{10\%} < \frac{ROCE\%}{12\%}$ = FL is favourable.

12% > 10% = FL is unfavourable.