

5

LEVERAGE

Question 1

Calculate the operating leverage, financial leverage and combined leverage from the following data under Situation I and II and Financial Plan A and B:

Installed Capacity	4,000 units
Actual Production and Sales	75% of the Capacity
Selling Price	Rs. 30 Per Unit
Variable Cost	Rs. 15 Per Unit

Fixed Cost:

Under Situation I	Rs. 15,000
Under Situation-II	Rs.20,000

Capital Structure:

	Financial Plan	
	A	B
	Rs.	Rs.
Equity	10,000	15,000
Debt (Rate of Interest at 20%)	<u>10,000</u>	<u>5,000</u>
	<u>20,000</u>	<u>20,000</u>

(Final-May 1996) (14 marks)

Answer

Operating Leverage:	Situation-I	Situation-II
	Rs.	Rs.
Sales (s)	90,000	90,000
3000 units @ Rs. 30/- per unit		
Less: Variable Cost (VC) @ Rs. 15 per unit	<u>45,000</u>	<u>45,000</u>
Contribution (C)	45,000	45,000
Less: Fixed Cost (FC)	<u>15,000</u>	<u>20,000</u>
Operating Profit (OP)	<u>30,000</u>	<u>25,000</u>
(EBIT)		

5.2 Financial Management

Operating Leverage:

$$\frac{C}{OP} = \text{Rs. } \frac{45,000}{30,000} = 1.5 \quad \text{Rs. } \frac{45,000}{25,000} = 1.8$$

(ii) Financial Leverages:

Situation 1

	A (Rs.)	B (Rs.)
Operating Profit (EBIT)	30,000	30,000
Less: Interest on debt	2,000	1,000
PBT	<u>28,000</u>	<u>29,000</u>

$$\text{Financial Leverage} = \frac{OP}{PBT} = \text{Rs. } \frac{30,000}{28,000} = 1.07 \quad \text{Rs. } \frac{30,000}{24,000} = 1.04$$

	A (Rs.)	B (Rs.)
<i>Situation-II</i>		
Operating Profit (OP) (EBIT)	25,000	25,000
Less: Interest on debt	<u>2,000</u>	<u>1,000</u>
PBT	<u>23,000</u>	<u>24,000</u>

$$\text{Financial Leverage} = \frac{OP}{PBT} = \text{Rs. } \frac{25,000}{23,000} = 1.09 \quad \text{Rs. } \frac{25,000}{24,000} = 1.04$$

(iii) Combined Leverages :

	A (Rs.)	B (Rs.)
(a) Situation I	1.5 x 1.07 = 1.6	1.5 x 1.04 = 1.56
(b) Situation II	1.8 x 1.09 = 1.96	1.8 x 1.04 = 1.87

Question 2

A firm has sales of Rs. 75,00,000 variable cost of Rs. 42,00,000 and fixed cost of Rs. 6,00,000. It has a debt of Rs. 45,00,000 at 9% and equity of Rs. 55,00,000.

(i) What is the firm's ROI?

(ii) Does it have favourable financial leverage?

- (iii) If the firm belongs to an industry whose asset turnover is 3, does it have a high or low asset leverage?
- (iv) What are the operating, financial and combined leverages of the firm?
- (v) If the sales drop to Rs. 50,00,000, what will be the new EBIT?
- (vi) At what level the EBT of the firm will be equal to zero? (Final-May 1997) (11 marks)

Answer**Workings:**

	Rs.
Sales	75,00,000
Less: Variable cost	<u>42,00,000</u>
Contribution	33,00,000
Less: Fixed costs	<u>6,00,000</u>
EBIT	27,00,000
Less: 9% interest on Rs. 45,00,000	<u>4,05,000</u>
EBT	<u>22,95,000</u>

$$(i) \text{ ROI} = \frac{\text{EBIT}}{\text{Investment}} = \frac{\text{EBIT}}{\text{Debt} + \text{Equity}} = \text{Rs. } \frac{27,00,000}{1,00,00,000} = 27\%$$

- (ii) Since the return on investment (27%) is higher than the interest payable on debt at 9%, the firm has a favourable financial leverage.

$$(iii) \text{ Asset Turnover} = \frac{\text{Net Sales}}{\text{Total assets} = \text{Total Investment}}$$

$$\text{Firm's Asset Turnover is} = \frac{75,00,000}{1,00,00,000} = 0.75$$

The industry average is 3. Hence the firm has low asset leverage.

$$(iv) \text{ Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{33,00,000}{27,00,000} = 1.2222$$

$$\text{Financial leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{27,00,000}{22,95,000} = 1.1764$$

$$\text{Combined leverage} = \frac{\text{Contribution}}{\text{EBT}} = \frac{33,00,000}{22,95,000} = 1.438$$

(OR)

$$\begin{aligned} \text{Combined leverage} &= \text{Operating leverage} \times \text{Financial leverage} \\ &= 1.2222 \times 1.1764 = 1.438 \end{aligned}$$

5.4 Financial Management

- (v) If the sales drop to Rs. 50,00,000 from Rs. 75,00,000, the fall is by 33.33% Hence EBIT will drop by 40.73%

(%Fall in sales x operating leverage)

Hence the new EBIT will be Rs. 27,00,000 x (1- 40.73%)

= Rs. 16,00,290 or rounded upto Rs. 16,00,000

- (vi) EBT to become zero means 100% reduction in EBT. Since the combined leverage is 1.438, sales have to drop by 100/1.438 i.e. 69.54%. Hence the new sales will be Rs. 75,00,000 x (1- 69.54%) = Rs. 22,84,500 (approx.)

Question 3

From the following, prepare Income Statement of Company A, B and C. Briefly comment on each company's performance:

Company	A	B	C
Financial leverage	3:1	4:1	2:1
Interest	Rs. 200	Rs. 300	Rs. 1,000
Operating leverage	4:1	5:1	3:1
Variable Cost as a Percentage to Sales	$66\frac{2}{3}\%$	75%	50%
Income tax Rate	45%	45%	45%

(Final-Nov. 1997) (12 marks)

Answer

Working Notes:

Company A

$$\text{Financial leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{3}{1} \quad \text{or EBIT} = 3 \times \text{EBT} \quad \dots\dots (1)$$

$$\text{Again EBIT} - \text{Interest} = \text{EBT}$$

$$\text{Or EBIT} - 200 = \text{EBT} \quad \dots\dots(2)$$

$$\text{Taking (1) and (2) we get } 3\text{EBT} - 200 = \text{EBT}$$

$$\text{or } 2 \text{ EBT} = 200 \text{ or EBT} = \text{Rs. } 100$$

$$\text{Hence EBIT} = 3\text{EBT} = \text{Rs. } 300$$

$$\text{Again we have operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{4}{1}$$

EBIT = Rs. 300, hence we get

Contribution = 4 x EBIT = Rs. 1,200

Now variable cost = $66\frac{2}{3}\%$ on sales

Contribution = $100 - 66\frac{2}{3}\%$ i.e. $33\frac{1}{3}\%$ on sales

Hence sales = $\frac{1200}{33\frac{1}{3}\%}$ = Rs. 3,600

Same way EBIT, EBT, contribution and sales for company B and C can be worked out.

Company B

Financial leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{4}{1}$ or EBIT = 4 EBT(3)

Again EBIT – Interest = EBT or EBIT – 300 = EBT(4)

Taking (3) and (4) we get, 4EBT-300=EBT

or 3EBT = 300 or EBT=100

Hence EBIT = 4 x EBT=400

Again we have operating leverage = $\frac{\text{Contribution}}{\text{EBT}} = \frac{5}{1}$

EBIT= 400 ; Hence we get contribution = 5 x EBIT =2000

Now variable cost =75% on sales

Contribution = 100- 75% i.e. 25% on sales

Hence Sales = $\frac{2,000}{25\%}$ = Rs. 8,000

Company C

Final leverage = $\frac{\text{EBIT}}{\text{EBT}} = \frac{2}{1}$ = or EBIT = 2EBT (5)

Again EBIT- Interest = EBT or EBIT– 1000=EBT (6)

5.6 Financial Management

Taking (5) and (6) we get, $2\text{EBT} - 1000 = \text{EBT}$ or $\text{EBT} = 1,000$

Hence $\text{EBIT} = 2 \times \text{EBT} = 2 \times 1,000 = 2,000$

Again we have operating leverage = $\frac{\text{Contribution}}{\text{EBIT}} = \frac{3}{1}$

$\text{EBIT} = 2,000$, Hence we get contribution = $3 \times \text{EBIT} = 6,000$

Now variable cost = 50% on sales

Contribution = $100 - 50 = 50\%$ on sales

Hence sales = $\frac{6,000}{50\%} = \text{Rs. } 12,000$

Income Statement

	A	B	C
	Rs.	Rs.	Rs.
Sales	3,600	8,000	12,000
Less: Variable cost	<u>2,400</u>	<u>6,000</u>	<u>6,000</u>
Contribution	1,200	2,000	6,000
Less: Fixed cost	<u>900</u>	<u>1,600</u>	<u>4,000</u>
EBIT	300	400	2,000
Less: Interest	<u>200</u>	<u>300</u>	<u>1,000</u>
EBT	100	100	1,000
Less: Tax 45%	<u>45</u>	<u>45</u>	<u>450</u>
EAT	<u>55</u>	<u>55</u>	<u>550</u>

Comments on Company's Performance:

The financial position of company C can be regarded better than that of other Companies A & B because of the following reasons:

- Financial leverage is the measure of financial risk. Company C has the least financial risk as it has minimum degree of financial leverage. No doubt it is true that there will be a more magnified impact on earnings per share on A and B companies than that of C due to change in EBIT but their EBIT level due to low sales is very low suggesting that such an advantage is not great.
- Degree of combined leverage is maximum in company B - 20, for Company A - 12 and for Company C - 6. Clearly, the total risk (business and financial) complexion of Company C is the lowest, while that of the other firms are very high.
- The ability of Company C to meet interest liability is better than that of Companies A and B.

EBIT/Interest ratio for three companies:

$$C = \frac{2,000}{1,000} = 2$$

$$B = \frac{400}{300} = 1.33$$

$$A = \frac{300}{200} = 1.5$$

Question 4

Consider the following information for Strong Ltd:

EBIT 1,120 Rs. in lakh

PBT 320 Rs. in lakh

Fixed Cost 700 Rs. in lakh

Calculate the percentage of change in earnings per share, if sales increased by 5 per cent.

(Final-Nov. 2001) (6 marks)

Answer

Computation of percentage of change in earnings per share, if sales increased by 5%

$$\text{Degree of Combined leverage} = \frac{\% \text{ change in Earning per share (EPS)}}{\% \text{ change in sales}}$$

$$\text{or Degree of operating leverage} \times \text{Degree of financial leverage} = \frac{\% \text{ change in Earning per share (EPS)}}{\% \text{ change in sales}}$$

$$\text{or } 1.625 \times 3.5 \text{ (Refer to working notes (i) and (ii))} = \frac{\% \text{ change in Earning per share (EPS)}}{5}$$

$$\text{or } 5.687 = \frac{\% \text{ change in Earning per share (EPS)}}{5}$$

$$\begin{aligned} \text{or } \% \text{ change in EPS} &= 5.687 \times 5 \\ &= 28.4375\% \end{aligned}$$

Working Notes:

$$\begin{aligned} \text{(i) Degree of operating leverage (DOC)} &= \frac{\text{Contribution}}{\text{EBIT}} \\ &= \frac{(\text{Rs. } 1,120 + \text{Rs. } 700 \text{ lakhs})}{\text{Rs. } 1,120 \text{ lakhs}} \\ &= 1.625 \end{aligned}$$

5.8 Financial Management

$$\begin{aligned} \text{(ii) Degree of financial leverage (DOF)} &= \frac{\text{EBIT}}{\text{PBT}} \\ &= \frac{\text{Rs. 1,120}}{\text{Rs. 320}} \\ &= 3.5 \end{aligned}$$

Question 5

The net sales of A Ltd. is Rs. 30 crores. Earnings before interest and tax of the company as a percentage of net sales is 12%. The capital employed comprises Rs. 10 crores of equity, Rs. 2 crores of 13% Cumulative Preference Share Capital and 15% Debentures of Rs. 6 crores. Income-tax rate is 40%.

- (i) Calculate the Return-on-equity for the company and indicate its segments due to the presence of Preference Share Capital and Borrowing (Debentures).
(ii) Calculate the Operating Leverage of the Company given that combined leverage is 3.

(Final-May 2002) (6 marks)

Answer

- (i) Net Sales : Rs. 30 crores
EBIT Rs. 3.6 crores @ 12% on sales
$$\text{ROI} = \frac{\text{EBIT}}{\text{Capital Employed}} = \frac{3.6}{10 + 2 + 6} \times 100 = 20\%$$

	<u>Rs. in crores</u>
EBIT	3.6
Interest on Debt	<u>0.9</u>
EBT	2.7
Less : Tax @ 40%	<u>1.08</u>
EAT	1.62
Less : Preference dividend	<u>0.26</u>
Earnings available for Equity Shareholders	<u>1.36</u>
Return on equity = $1.36/10 \times 100$	$= 13.6\%$

Segments due to the presence of Preference Share capital and Borrowing (Debentures)

Segment of ROE due to preference capital : $[(.20(1-.4) - .13) \times .2] = -.002$

Segment of ROE due to Debentures: $[(.20(1-.4) - .15(1-.4))] \times .6 = -.018$

or $-.2\% + 1.8\% = 1.6\%$

The weighted average cost of capital is as follows

	Source	Proportion	Cost (%)	WACC(%)
(i)	Equity	10/18	13.60	7.56
(ii)	Preference shares	2/18	13.00	1.44
(iii)	Debt	6/18	9.00	<u>3.00</u>
			Total	<u>12.00</u>

$$\begin{aligned}
 \text{(ii) Degree of Financial Leverage} &= \frac{\text{EBIT}}{\text{EBIT} - \text{Interest} - \text{Preference dividend}} \\
 &= \frac{3.6}{3.6 - .9 - .26} = 1.4757
 \end{aligned}$$

$$\begin{aligned}
 \text{Degree of Combined Leverage} &= \text{DFL} \times \text{DOL} \\
 3 &= 1.4754 \times \text{DOL}
 \end{aligned}$$

$$\therefore \text{DOL} = \frac{3}{1.4754}$$

$$\text{Degree of Operating Leverage} = 2.033$$

Question 6

The data relating to two Companies are as given below:

	Company A	Company B
Equity Capital	Rs.6,00,000	Rs.3,50,000
12% Debentures	Rs.4,00,000	Rs.6,50,000
Output (units) per annum	60,000	15,000
Selling price/ unit	Rs.30	Rs.250
Fixed Costs per annum	Rs.7,00,000	Rs.14,00,000
Variable Cost per unit	Rs.10	Rs.75

You are required to calculate the Operating leverage, Financial leverage and Combined leverage of two Companies.
(PE-II-Nov. 2002) (4 marks)

5.10 Financial Management

Answer

Computation of degree of Operating leverage, Financial leverage and Combined leverage of two companies

	Company A	Company B
Output units per annum	60,000	15,000
	Rs.	Rs.
Selling price / unit	30	250
Sales revenue	18,00,000	37,50,000
	(60,000 units × Rs.30)	(15,000 units × Rs.250)
Less: Variable costs	6,00,000	11,25,000
	(60,000 units × Rs.10)	(15,000 units × Rs.75)
Contribution (C)	12,00,000	26,25,000
Less: Fixed costs	7,00,000	14,00,000
EBIT	5,00,000	12,25,000
Less: Interest @ 12% on debentures	48,000	78,000
PBT	4,52,000	11,47,000
 DOL = $\frac{C}{EBIT}$	 2.4 (Rs.12,00,000 / Rs.5,00,000)	 2.14 (Rs.26,25,000 / Rs.12,25,000)
DFL = $\frac{EBIT}{PBT}$	1.11 (Rs.5,00,000 / Rs.4,52,000)	1.07 (Rs.12,25,000 / Rs.11,47,000)
DCL = DOL × DFL	2.66 (2.4×1.11)	2.29 (2.14×1.07)

Question 7

The following summarises the percentage changes in operating income, percentage changes in revenues, and betas for four pharmaceutical firms.

Firm	Change in revenue	Change in operating income	Beta
PQR Ltd.	27%	25%	1.00
RST Ltd.	25%	32%	1.15
TUV Ltd.	23%	36%	1.30
WXY Ltd.	21%	40%	1.40

Required:

- Calculate the degree of operating leverage for each of these firms. Comment also.
- Use the operating leverage to explain why these firms have different beta.

(PE-II-Nov. 2004) (6 marks)

Answer

(i) Degree of operating leverage	$= \frac{\% \text{ Change in Operating income}}{\% \text{ Change in Revenues}}$		
PQR Ltd .	=	25% / 27%	= 0.9259
RST Ltd.	=	0.32 / 0.25	= 1.28
TUV Ltd.	=	0.36 / 0.23	= 1.5652
WXY Ltd.	=	0.40 / 0.21	= 1.9048

It is level specific.

- (ii) High operating leverage leads to high beta. The sources of risk are the cyclic nature revenues, operating risk and financial risk.

Question 8

A Company had the following Balance Sheet as on March 31, 2006:

Liabilities and Equity	Rs. (in crores)	Assets	Rs. (in crores)
Equity Share Capital (one crore shares of Rs. 10 each)	10	Fixed Assets (Net)	25
Reserves and Surplus	2	Current Assets	15
15% Debentures	20		
Current Liabilities	<u>8</u>		
	<u>40</u>		<u>40</u>

The additional information given is as under:

Fixed Costs per annum (excluding interest)	Rs. 8 crores
Variable operating costs ratio	65%
Total Assets turnover ratio	2.5
Income-tax rate	40%

Required:

Calculate the following and comment:

- (i) Earnings per share
- (ii) Operating Leverage
- (iii) Financial Leverage
- (iv) Combined Leverage.

(PE-II-Nov. 2006)(8 marks)

5.12 Financial Management

Answer

Total Assets	= Rs. 40 crores
Total Asset Turnover Ratio	= 2.5
Hence, Total Sales	= 40×2.5 = Rs. 100 crores

Computation of Profits after Tax (PAT)

	(Rs. in crores)
Sales	100
Less: Variable operating cost @ 65%	<u>65</u>
Contribution	35
Less: Fixed cost (other than Interest)	<u>8</u>
EBIT	27
Less: Interest on debentures (15% × 20)	<u>3</u>
PBT	24
Less: Tax 40%	<u>9.6</u>
PAT	<u>14.4</u>

(i) Earnings per share

$$\therefore \text{EPS} = \frac{\text{Rs. 14.4 crores}}{1 \text{ crore equity shares}} = \text{Rs. 14.40}$$

(ii) Operating Leverage

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{35}{27} = 1.296$$

It indicates the choice of technology and fixed cost in cost structure. It is level specific. When firm operates beyond operating break-even level, then operating leverage is low. It indicates sensitivity of earnings before interest and tax (EBIT) to change in sales at a particular level.

(iii) Financial Leverage

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{PBT}} = \frac{27}{24} = 1.125$$

The financial leverage is very comfortable since the debt service obligation is small vis-à-vis EBIT.

(iv) Combined Leverage

$$\begin{aligned}\text{Combined Leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}} \\ &= 1.296 \times 1.125 \\ &= 1.458\end{aligned}$$

The combined leverage studies the choice of fixed cost in cost structure and choice of debt in capital structure. It studies how sensitive the change in EPS is vis-à-vis change in sales.

The leverages – operating, financial and combined are measures of risk.

Question 9

Consider the following information for Omega Ltd.:

	<i>Rs. in lakhs</i>
EBIT (Earnings before Interest and Tax)	15,750
Earnings before Tax (EBT):	7,000
Fixed Operating costs:	1,575
Required:	

Calculate percentage change in earnings per share, if sales increase by 5%.

(PE-II-Nov. 2007) (3 marks)

Answer

Degree of Operating Leverage (DOL)

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{EBIT} + \text{Fixed Cost}}{\text{EBIT}}$$

$$= \frac{15,750 + 1,575}{15,750} = 1.1$$

Degree of Financial Leverage (DFL)

$$= \frac{\text{EBIT}}{\text{EBT}} = \frac{15,750}{7,000} = 2.25$$

Degree of Combined Leverage (DCL)

$$= \text{DOL} \times \text{DFL}$$

$$= 1.1 \times 2.25$$

$$= 2.475$$

Percentage Change in Earnings per share

$$\text{DCL} = \frac{\% \text{ change in EPS}}{\% \text{ change in Sales}}$$

$$2.475 = \frac{\% \text{ change in EPS}}{5\%}$$

∴ % change in EPS = 12.375%.

5.14 Financial Management

Question 10

Delta Ltd. currently has an equity share capital of Rs. 10,00,000 consisting of 1,00,000 Equity share of Rs. 10 each. The company is going through a major expansion plan requiring to raise funds to the tune of Rs. 6,00,000. To finance the expansion the management has following plans:

Plan-I : Issue 60,000 Equity shares of Rs. 10 each.

Plan-II : Issue 40,000 Equity shares of Rs. 10 each and the balance through long-term borrowing at 12% interest p.a.

Plan-III : Issue 30,000 Equity shares of Rs.10 each and 3,000 Rs.100, 9% Debentures.

Plan-IV : Issue 30,000 Equity shares of Rs. 10 each and the balance through 6% preference shares.

The EBIT of the company is expected to be Rs. 4,00,000 p.a. assume corporate tax rate of 40%.

Required:

(i) Calculate EPS in each of the above plans.

(ii) Ascertain the degree of financial leverage in each plan. (PE-II-May 2008) (8 marks)

Answer

Computation of EPS and Financial Leverage

	PLAN I	PLAN II	PLAN III	PLAN IV
Present Equity Shares	1,00,000	1,00,000	1,00,000	1,00,000
New Issue	60,000	40,000	30,000	30,000
Equity share capital (Rs.)	16,00,000	14,00,000	13,00,000	13,00,000
No. of Equity shares	1,60,000	1,40,000	1,30,000	1,30,000
12% Long term loan (Rs.)	—	2,00,000	—	—
9% Debentures (Rs.)	—	—	3,00,000	—
6% Preference Shares (Rs.)	—	—	—	3,00,000
EBIT (Rs.)	4,00,000	4,00,000	4,00,000	4,00,000
Interest on 12% Loan (Rs.)	—	24,000	—	—
Interest on 9% debentures (Rs.)	—	—	27,000	—
EBT (Rs.)	4,00,000	3,76,000	3,73,000	4,00,000

Leverage 5.15

Less : Tax@ 40%	1,60,000	1,50,400	1,49,200	1,60,000
EAT (Rs.)	2,40,000	2,25,600	2,23,800	2,40,000
Less: Preference Dividends (Rs.)	—	—	—	18,000
(a) Earnings for equity shares (Rs.)	2,40,000	2,25,600	2,23,800	2,22,000
(b) No. of equity shares	1,60,000	1,40,000	1,30,000	1,30,000
(c) EPS (a ÷ b) Rs.	1.50	1.61	1.72	1.71
Degree of Financial leverage- $\left(\frac{\text{EBIT}}{\text{EBIT} - I} \right)$ or $\left(\frac{\text{EBIT}}{\text{EBT}} \right)$	1.00	1.06	1.07	1.00

Comments:

Since the EPS and degree of financial leverage both are highest in plan III, the management could accept it

Question 11

Annual sales of a company is Rs. 60,00,000. Sales to variable cost ratio is 150 per cent and Fixed cost other than interest is Rs. 5,00,000 per annum. Company has 11 per cent debentures of Rs. 30,00,000.

You are required to calculate the operating, Financial and combined leverage of the company.
(PE-II-Nov. 2008) (3 marks)

Answer**Calculation of Leverages**

	Rs.
Sales	60,00,000
Less: Variable Cost $\left(\text{Sales} \times \frac{100}{150} \right)$	40,00,000
Contribution	20,00,000
Less: Fixed Cost	<u>5,00,000</u>
EBIT	15,00,000
Less: Interest on Debentures	<u>3,30,000</u>
EBT	<u>11,70,000</u>

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

5.16 Financial Management

$$\begin{aligned} &= \frac{\text{Rs. 20,00,000}}{\text{Rs. 15,00,000}} \\ &= 1.3333 \\ \text{Financial Leverage} &= \frac{\text{EBIT}}{\text{EBT}} \\ &= \frac{\text{Rs. 15,00,000}}{\text{Rs. 11,70,000}} \\ &= 1.2821 \\ \text{Combined Leverage} &= \text{OL} \times \text{FL or } \frac{\text{Contribution}}{\text{EBT}} \\ &= 1.3333 \times 1.2821 \text{ or } \frac{\text{Rs. 20,00,000}}{\text{Rs. 11,70,000}} \\ &= 1.7094. \end{aligned}$$

Question 12

Discuss the impact of financial leverage on shareholders wealth by using return-on-assets (ROA) and return-on-equity (ROE) analytic framework. (PE-II-May 2003 & May 2004) (3 marks)

Answer

The impact of financial leverage on ROE is positive, if cost of debt (after-tax) is less than ROA. But it is a double-edged sword.

$$\text{ROA} = \frac{\text{NOPAT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}}$$

$$\text{ROE} = \text{ROA} + \frac{D}{E} (\text{ROA} - K_d)$$

Where

$$\text{NOPAT} = \text{EBIT} * (1 - T_c)$$

Capital employed = Shareholders funds + Loan funds

D = Debt amount in capital structure

E = Equity capital amount in capital structure

K_d = Interest rate * (1 - T_c) in case of fresh loans of a company.

K_d = Yield to maturity * (1 - T_c) in case of existing loans of a company.