Answers to Activities

Activity 15.1

1. (a) No (b) No (c) No (d) Yes (e) Yes (f) No

Activity 15.2

2. (a) No (b) Yes (c) No (d) Yes (e) Yes (f)

(iii) D/A ratio $= \dfrac{\text{D/E ratio}}{1+\text{D/E ratio}} = \dfrac{2.0}{1+2.00} = \dfrac{2.00}{3.00} = 67\%$

Activity 15.3

Return on Equity

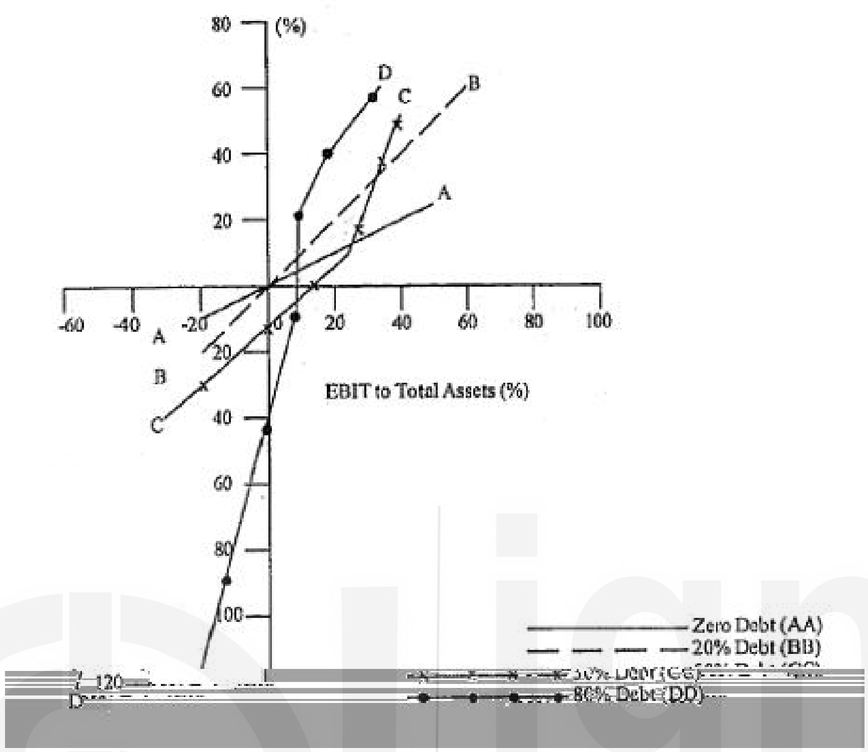

Figure : Financial Leverage and Variation in. Equity Returns Conclusions

a) With zero debt, the ratio of ROE to Return on Total Assets (ROTA) as depicted by AA is a relatively flat line.

b) With 80% debt, the ratio of ROE to ROTA as , shown by DD becomes.. very steep.

This implies that as the debt-assets ratio rises, the ratio of ROE to ROTA becomes steeper:

Thus, greater financial leverage produces greater volatility in the return on equity.

Conclusions are consistent with the analysis of Table 13.3.

4 Firm A has the lowest level of fixed costs and Firm C the highest.

Firm A has a steep total cost curve because the variable cost per unit is high and the low fixed costs of not permitting a net reduction in total costs.

Total cost curve of Firm C is relatively flat. The high fixed cost component ' enables the firm to try variable costs, particularly the labour costs.

The location of Break-even Points (BEP) is interesting. The BEP for Firm A is at the lowest level of sales of the three firms. For firm C, it is at the highest level of sales.

Firm, C which has a BEP at a higher volume is able to record a higher rate of increase in profits once it reaches the BEP, compared to the other two firms. At a high volume of operations, Firm. C begins to command a substantial cost superiority compared to the other two firms and more particularly Firm A. This result is now obvious at a level of 1 lakh units. But if volume of sales rises to 2 lakh units, the per unit costs for the three firms would be as under:

Firm	Fixed cost	Variable cost for 2 lakh units	Total cost	Units of sales	Per unit cost
	(Rs.lakh)	(Rs.lakh)	(Rs.lakh)		
A	1.50	14.00	15.50	2,00,000	7.75
B	3.00	10.00	13.00	2,00,000	6.50
C	4.50	8.00	12.50	2,00,000	6.25

Firm C can use the cost advantage at higher levels of sales in competitive markets. This will be particularly relevant for export sales.

Answers or **approaches to Self-assessment Questions / Exercises Hints for some selected questions:**

1 **Advantages**

a) It provides a method for some investors to hold securities with fixed and prior claims.

b) It may encourage real investment.

c) Financial leverage tends to stabilise economic functions by promoting contra cyclical investment: Debt is costly during booms and firms avoid it after a stage. Investment is reduced and a boom is not fed further. Similarly, debt is cheaper during depressions and it may result in higher investment, which pushes the economy out of unstable, to more stable conditions.

Disadvantages

A major disadvantage is that heavy fixed charges may cause forced liquidation of firms during business downswings and may aggravate the severity of business depressions.

If risk is defined as coefficient of variation, it is not possible to generalise the relationship with absolute certainty. With increased financial leverage, risk could rise proportionately, more than proportionately or, less than proportionately.

The example in the test of the unit demonstrates a case where risk or the Cv rises less than proportionately with the debt ratio. With some other set of data, a linear relationship could be established, or a relationship where risk increases at a decreasing rate with the debt ratio could be found. Note that in all these cases risk does increase to some extent.

5. If sales tend to fluctuate widely, then cash flows and the ability to service fixed charges will also vary. Consequently, the possibility that the firm is unable to meet its fixed obligations increases. For this reason, firms in unstable industries tend to minimise their use of debt.

6. Financial leverage has no effect on EBIT; it only affects equity earnings or net income, given EBIT. The EBIT is influenced by operating leverage.

7. (a) False (b) True (c) True 8 (c) 9 (d) 10 (a) I1 (d) 12 (c)

13 (a) Operating leverage (b) low; debt (c) tax; interest; dividends.

14 (b)

Total assets Rs. 20 crores.

Less : Debt

(.75 of Rs. 20 crores) = Rs. I5 crores

Equity = Rs. 5 crores

Rs. 5 crores representing owner's equity is the amount that assets could drop to before creditors would begin to lose protection.

15 (ii)

	Firm A	Firm B
	Debt 60 % Rs. 30 crores	30% Rs. 15 crores
	Equity 40% Rs. 20 crores	70% Rs. 35 crores
Total Assets	100% Rs. 50 crores	100% Rs. 50 crores

Firm A earns .12 x Rs. 50 crores	= Rs. 6.00 crores
Less : Interest .08 x Rs. 30 crores	= Rs. 2.40 crores
Taxable income	= Rs. 3.60 crores
Less : taxes	= Rs. 1.80 crores
Net income	= Rs. I.80 crores

Rate of return on equity = Rs. 1.8 crores/ Rs. 20 crores = 9 %

Firm B's net income .09 x Rs. 35 crores	= Rs. 3.15crores
Add : B's taxes	= Rs. 3.15 crores
Taxable income	= Rs. 6.30 crores
Add debt interest .08 x Rs. 15 crores	= Rs. 1.20 crores
EBIT	= Rs. 7.50 crores

Rate of return on assets = Rs. 7,5 crores/Rs. 50 crores = 15 %

15.11 FURTHER READINGS

Van Horne, James C. 2002. *Financial Management Policy, 12th edition,* Prentice-Hall of India : New Delhi. (Chapter 10&12).

Keown, Arthur J. (with Scott, Martin, and Petty). 10/14/2002, Foundation of Finance: The Logic and practice of Financial *Management* Prentice-Hall of India: New Delhi.

Khan, M.Y. and P.K. Jain. 1985. *Financial Management,* Tata McGraw-Hill: New Delhi. (Chapter 10).