

- **Capital Structure** The debt-equity mix of a firm is called its capital structure. The capital structure decision is a significant financial decision since it affects the shareholders' return and risk, and consequently, the market value of shares.
- **Financial Structure** The term financial structure, on the other hand, is used in a broader sense, and it includes equity and all liabilities of the firm.
- **Financial Leverage or Trading on Equity** The use of the fixed-charges capital like debt with equity capital in the capital structure is described as financial leverage or trading on equity.

The main reason for using financial leverage is to increase the shareholders' return. Consider an example. Suppose you have an opportunity of earning 20 per cent on an investment of Rs 100 for one year. If you invest your own money, your return will be 20 per cent. On the other hand, you can borrow, say, Rs 50 at 10 per cent rate of interest from your friend and put your own money worth Rs 50. You shall get total earnings of Rs 20, out of which you will have to pay Rs 5 as interest to your friend. You shall be left with Rs 15 on your investment of Rs 50, which gives you a return of 30 per cent. You have earned more at the cost of your friend.

Financial leverage, on the one hand, increases shareholders' return and on the other, it also increases their risk. For a given level of EBIT, EPS varies more with more debt. Consider a simple example. Let us assume that a firm's expected EBIT is Rs 120 with a standard deviation of Rs 63. This implies that earnings could vary between Rs 57 to Rs 183 on an average. Suppose that the firm has some debt on which it pays Rs 40 as interest. Now the shareholders' expected earnings will be: $\text{Rs } 120 - \text{Rs } 40 = \text{Rs } 80$ (ignoring taxes) and standard deviation will remain unchanged. Shareholders' earnings will, on an average, fluctuate within a range of Rs 17 and Rs 143. If EBIT is less than Rs 40, the earnings of shareholders will be negative. In the extreme situation if the firm is unable to pay interest and principal, its solvency is threatened.

In the insolvency, shareholders are the worst sufferers. Thus, we find that financial leverage is a double-edged sword. It increases return as well as risk. A trade-off of between return and risk will have to be struck to determine the appropriate amount of debt.

- **Earnings Per Share (EPS)** A firm determines the advantage of financial leverage by calculating its impact on earnings per share (EPS) or return on

equity (ROE). For a 100 per cent equity-financed company, EPS is calculated as follows:

$$\text{EPS} = \frac{\text{EBIT}(1 - T)}{N}$$

and for a company which employs both debt and equity EPS is given by the following formula:

$$\text{EPS} = \frac{(\text{EBIT} - \text{INT})(1 - T)}{N}$$

where EBIT is earnings before interest and taxes, INT is interest charge which is given by the product of interest rate (i) and the amount of debt (D), T is corporate tax rate and N is number of shares. If the firm's overall profitability is more than interest rate, EPS increases with debt. With increasing EBIT, EPS increases faster with more debt.

- **Degree of Financial Leverage (DFL)** The percentage change in EPS occurring due to a given percentage change in EBIT is referred to as the degree of financial leverage (DFL):

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}} = \frac{\Delta \text{ EPS/EPS}}{\Delta \text{ EBIT/EBIT}}$$

An alternative formula to calculate the degree of financial leverage is as follows:

$$DFL = \frac{\text{EBIT}}{\text{EBIT} - \text{INT}} = \frac{\text{EBIT}}{\text{PBT}} = 1 + \frac{\text{INT}}{\text{PBT}}$$

- **Degree of Operating Leverage (DOL)** EBIT depends on sales. A change in sales will affect EBIT. The variability in EBIT due to a change in sales is affected by the composition of fixed and variable costs. You may recall that the percentage change in EBIT occurring due to a given percentage change in sales is referred to as the degree of operating leverage (DOL):

$$DOL = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in sales}} = \frac{\Delta \text{ EBIT/EBIT}}{\Delta \text{ Sales/Sales}}$$

An alternative formula is as follows:

$$DOL = \frac{\text{Contribution}}{\text{EBIT}} = 1 + \frac{\text{Fixed cost}}{\text{EBIT}}$$

- **Degree of Combined Leverage (DCL)** DOL and DFL can be combined to see the effect of total leverage on EPS. The degree of combined leverage (DCL) is given as follows:

$$\text{DCL} = \text{DOL} \times \text{DFL} = \frac{\% \text{ Change in EPS}}{\% \text{ Change in sales}}$$

$$\text{DCL} = \frac{\text{Contribution}}{\text{EBIT} - \text{INT}} = \frac{\text{Contribution}}{\text{PBT}} = 1 + \frac{\text{INT} + \text{FC}}{\text{PBT}}$$