

# Leverage

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## LEVERAGE

Leverage is generally defined as the ratio of the percentage change in profits to the percentage change in sales. In other words, leverage is the multiplying effect that fixed costs have on profits when there is any change in sales. As sales increases or decreases, it is only the variable costs that change correspondingly, fixed costs remain constant. *Profits therefore increase or decrease at a faster rate than the rate of change in sales.* This can be better understood with an example.

A hypothetical income statement for a firm is as follows:

Sales	2000
Less: Variable costs	800
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Contribution	1200
Less: Fixed costs	500
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Profits	700
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If the sales of this firm is increased by 20%, the income statement will stand revised as follows:

Sales	2500	(increase of 25%)
Less: Variable costs	1000	(increase of 25%)
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Contribution	1500	(increase of 25%)
Less: Fixed costs	500	(No change)
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Profits	1000	
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With an increase in sales of 25% from Rs. 2,000 to Rs. 2,500, profits have increased from Rs. 700 to Rs. 1000, an increase of 43%. This is the effect of leverage. If the firm had no fixed costs at all but all its costs were variable, there would have been no leverage and the percentage change in sales would have been the same as the percentage change in profits. **It is fixed costs that introduce leverage into the firm and higher the fixed cost, higher is the leverage.**

Financial management differentiates between two types of leverages – Operating leverage and financial leverage.

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Operating leverage is the leverage effect on account of all fixed costs other than interest and financial leverage is the leverage effect on account of the financial cost, interest.

The formulae for calculating the operating leverage and financial leverage are:

Operating leverage

$$= \frac{\% \text{ change in PBIT}}{\% \text{ change in sales}}$$

Financial leverage

$$= \frac{\% \text{ change in PBT}}{\% \text{ change in PBIT}}$$

The leverage therefore gives the sensitivity of profit changes to changes in sales. In the method indicated above for calculating the leverages, two sets of values of the income statement for two levels are needed. However, by using the modified formula given below, the operating and financial leverages can be calculated directly from the data in one income statement.

$$\text{Operating leverage} = \frac{\text{Contribution}}{\text{PBIT}}$$

$$\text{Financial Leverage} = \frac{\text{PBIT}}{\text{PBT}}$$

**Combined leverage factor:**

If a firm uses a considerable amount of both operating and financial leverage, even small changes in the level of sales will produce wide fluctuations in PBT. The effect of the superimposition of financial leverage on operating leverage is obtained by multiplying the two leverages. The product is called the combined leverage factor or the leverage multiplier.

Combined leverage factor = Operating leverage \* Financial leverage

$$= \frac{\text{Contribution}}{\text{PBIT}} * \frac{\text{PBIT}}{\text{PBT}}$$

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$$\text{Contribution} \\ = \frac{\text{-----}}{\text{PBT}}$$

A firm having a high operating leverage at a particular sales level means that its profits (PBIT) will be very sensitive to change in sales. Small changes in sales will bring about a magnified change in PBIT. This is both advantageous as well as disadvantageous. A small increase in sales will bring about a greatly magnified increase in profits but a small decrease in sales might well put the firm into losses.

### **Factors affecting financial leverage:**

Financial leverage is PBIT/ PBT. Therefore as interest increases, financial leverage will increase. Interest, in turn, being the cost of borrowed funds, will increase with increase in the proportion of debt used for financing assets. That is why, the ratio of borrowings to assets is also called financial leverage. The higher the degree of financial leverage of a firm, the greater is the sensitivity of its profits before tax to changes in PBIT. The combined leverage factor which is the product of operating leverage and financial leverage determines the overall sensitivity of profits before tax to change in sales. As income taxes are calculated as a percentage of profit before tax, the net profit will normally be proportionate to the profit before tax. Therefore, fluctuations in profit before tax will bring about corresponding fluctuations in net profits which in turn will bring about fluctuations in earnings per share (EPS) as EPS equals net profit divided by the number of equity shares. Therefore, the combined leverage factor influences the extent to which net profits and EPS will fluctuate for a given fluctuation in sales.

It is important to remember that additional benefits will accrue only when the return on assets is higher than the cost of borrowings. If however, the cost of borrowings is higher than the return on assets; the return on net worth will be even less than the return on assets.