

LEVERAGE ANALYSIS

Meaning of Leverage

The term leverage refers to an increased means of accomplishing some purpose. Leverage is used to lifting heavy objects, which may not be otherwise possible. In the financial point of view, leverage refers to the ability to use fixed cost assets or funds to increase the returns to shareholders.

Generally, increases in leverage results in increased returns and risk; and decreases in leverage results in decrease in returns and risk. The amount of leverage in the firm's capital structure (the mix of long-term debt and equity) can significantly affect its value by affecting returns and risks.

Definition of Leverage

James Horne has defined leverage as,

“the employment of an asset or fund for which the firm pays a fixed cost or fixed return.”

According to professor M.C. Kuchhal

“Leverage may be defined as meeting a fixed cost or paying a fixed return for employing resources or funds.”

To understand the concept of leverage it is essential to remember the following income statement

Sales	XXX
Less: Variable Cost	XXX
Contribution	+++
Less: Fixed Cost	XXX
EBIT (Operating Profit)	+++
Less: Interest	XXX
EBT	+++
Less: Tax	XXX
EAT	+++
Less: Preference Dividend	XXX
Earning for equity shareholder	+++
Divide: Number of equity shares	XXX
EPS	+++

TYPES OF LEVERAGE

1. **Operating leverage:** Operating leverage is concerned with the relationship between the firm's sales revenue and its earnings before interest and taxes, or EBIT (Operating profit).

Operating leverage is defined as the firm's ability to use fixed operating costs to magnify effects of changes in sales on its earnings before interest on tax.

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

Degree of Operating Leverage

The degree of operating leverage may be defined as percentage change in the EBIT resulting from a percentage change in the sales. It can be calculated with the help of the following formula:

$$DOL = \frac{\text{Percentage change in } EBIT}{\text{Percentage change in sales}}$$

High operating leverage is risky because of presence of high fixed operating cost. And a small change in sales causes high fluctuations in company's EBIT.

Financial leverage: Financial leverage is concerned with the relationship between the firm's EBIT and its EBT/EPS. It is defined as the firm's ability to use fixed financial charges to magnify the effects of change in EBIT/operating profit on firm's EBT and EPS.

Financial leverage is defined as "the ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on the earnings per share". It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders. Fixed financial charges include debenture and preference dividend.

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

If preference share and tax is given, then Financial leverage is calculated by taking into account preference dividend after adjusting tax. The formula will be

$$FL = \frac{EBIT}{EBT - \frac{Pd}{1-t}}$$

Degree of Financial Leverage:

Degree of financial leverage may be defined as the percentage change in EBT/EPS as a result of percentage change in earnings before interest and tax (EBIT). This can be calculated by the following formula

$$DFL = \frac{\text{Percentage change in } EBT/EPS}{\text{Percentage change in EBIT}}$$

High financial leverage is risky because of presence of high fixed financial cost. And a small change in EBIT causes high fluctuations in company's EBT/EPS.

Combined/Total leverage is concerned with the relationship between the firm's sales revenue and EBT/EPS.

$$CL = OL \times FL$$

or

$$CL = \frac{\text{Contribution}}{EBT}$$

If preference share and tax is given, then Combined leverage is calculated by taking into account preference dividend after adjusting tax. The formula will be

$$CL = \frac{\text{Contribution}}{EBT - \frac{Pd}{1-t}}$$

Degree of Combined Leverage:

The percentage change in a firm's earning per share (EPS) results from one percent change in sales. This is also equal to the firm's degree of operating leverage (DOL) times its degree of financial leverage (DFL) at a particular level of sales.

$$DCL = \frac{\text{Percentage change in } EBT/EPS}{\text{Percentage change in Sales}}$$

Summary:

	Formula	Degree
Operating Leverage	$\frac{\text{Contribution}}{EBIT}$	$\frac{\text{Percentage change in } EBIT}{\text{Percentage change in sales}}$
Financial Leverage	$\frac{EBIT}{EBT}$	$\frac{\text{Percentage change in } EBT}{\text{Percentage change in EBIT}}$
Financial Leverage if preference share and tax is taken into consideration	$\frac{EBIT}{EBT - \frac{Pd}{1-t}}$	$\frac{\text{Percentage change in } EPS}{\text{Percentage change in EBIT}}$
Combined Leverage	$OL \times FL$ or $\frac{\text{Contribution}}{EBT}$	$\frac{\text{Percentage change in } EBT}{\text{Percentage change in Sales}}$
Combined Leverage if preference share and tax is taken into consideration	$OL \times FL$ Or $\frac{\text{Contribution}}{EBT - \frac{Pd}{1-t}}$	$\frac{\text{Percentage change in } EPS}{\text{Percentage change in Sales}}$