Quadrant II- Notes

Paper Code : COD119

Module Name: Calculating leverage: An practical approach

- **TYPES OF LEVERAGES**

Leverage is of two types: Operating leverage and financial leverage. The leverage associated with the employment of fixed cost assets is referred to as operating leverage, while the leverage resulting from the use of fixed cost/return source of funds is known as financial leverage. A combination of these two is the 'composite leverage' which determines the combined effect of the leverages. Thus, Operating leverage is determined by the relationship between the firm's sales revenue and its earnings before interest and taxes (EBIT), on the other hand, financial leverage represents the relationship between EBIT and the earnings available for ordinary shareholders. Thus, EBIT is used as the pivotal point in defining operating and financial leverages.

1. OPERATING LEVERAGE

Operating leverage is concerned with the investment activities of the firm. It relates to the presence of fixed operating costs in the firm's income stream. It is the use of fixed operating costs in magnifying the operating profits arising from a change in sales. The operating cost of a firm is classified into two types of costs – fixed costs and variable costs. The fixed costs do not change with changes in sales and is paid regardless of the sales volume, whereas variable costs vary in direct proportion to sales. With any increase in sales, fixed costs remain the same, and will magnify the operating revenue. Thus operating leverage occurs when a firm has fixed costs. The fixed costs remaining same, the percentage change in operating revenue will be more than the percentage change is sales. The occurrence is known as *operating leverage.* The higher the proportion of fixed operating cost in the cost structure, higher is the degree of operating leverage. The operating leverage is calculated by the degree of operating leverage. The degree of operating leverage will be calculated as:

$$DOL = \frac{\%\text{ change in EBIT}}{\%\text{ change in Sales}} \quad \text{OR} \quad DOL = \frac{\Delta EBIT / EBIT}{\Delta Sales / Sales} \quad \text{OR} \quad DOL = \frac{(\text{New EBIT} - \text{Old EBIT}) / \text{Old EBIT}}{(\text{New Sales} - \text{Old Sales}) / \text{Old Sales}}$$

Again,

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \quad \text{OR} \quad \text{Operating Leverage} = \frac{\text{Sales} - \text{V.C.}}{\text{EBIT}}$$

2. FINANCIAL LEVERAGE OR TRADING ON EQUITY

Financial leverage is related with the financing activities of a firm. It is mainly related to the mix of debt and equity in the capital structure of a firm. The funds may be raised through two sources: own funds, called equity funds, and owed funds called debt funds or creditors' funds. The sources from which funds are used in financing of a business can be categorized into funds having fixed financial charges and funds with no fixed financial charges. The fixed return sources of capital (Debentures, bonds, long-term loans and preference shares) influence the earning of variable return sources. The effect is known as financial leverage. The use of fixed charge capital is known as financial leverage. If there is no fixed charge capital, there is no financial leverage. The proper utilization of fixed charged capital like debentures, bonds, bank loan and preference share capital is measured by financial leverage. The firm having more debt capital and preference share capital in its capital structure has higher degree of financial leverage and greater amount of risk. Financial leverage is used to measure the financial risk. Financial risk refers to the risk of the firm not being able to cover its fixed financial costs.

The higher the proportion of fixed charge bearing fund in the capital structure of a firm, higher is the Degree of Financial Leverage (DFL) and vice-versa. Financial leverage is computed by the DFL. Therefore the degree of financial leverage will be calculated as:

$$DFL = \frac{\%\text{ change in EPS}}{\%\text{ change in EBIT}} \quad OR \quad DFL = \frac{\Delta EPS / EPS}{\Delta EBIT / EBIT} \quad OR \quad DFL = \frac{(\text{New EPS} - \text{Old EPS}) \ / \text{Old EPS}}{(\text{New EBIT} - \text{Old EBIT}) / \text{Old EBIT}}$$

Again,

$$\text{Financial Leverage} = \frac{EBIT}{EBIT - I - Dp / (1\text{-}t)} \quad OR \quad \text{Financial Leverage} = \frac{EBIT}{EBIT - I} \text{ or } \frac{EBIT}{EBT}$$

(when preference dividends are paid) (when preference dividends are not paid)

3. COMPOSITE LEVERAGE

The combination of operating leverage and financial leverage is called total leverage or combined leverage. Operating leverage measures operating risk whereas financial leverage measures financial risks. Total leverage or combined leverage measures total risk of the business. Both financial and operating leverage magnify the revenue of the firm. Operating leverage affects the income (EBIT or operating profits) which is the result of production. On the other hand, the financial leverage is the result of financial decisions. The composite leverage focuses attention on the entire income of the concern.

The degree of composite leverage can be calculated as follows:

DCL = DOL X DFL

OR

$$DCL = \frac{\%\text{ change in EPS}}{\%\text{ change in Sales}} \ ; \quad \text{Combined Leverage} = \frac{\text{Contribution}}{EBT - Dp / (1\text{-}t)} \text{ or } \frac{\text{Contribution}}{EBT}$$