

LEVERAGE

Financial Management

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Meaning of Leverage

- Leverage means the employment of assets or funds for which the firm pays a fixed cost or fixed return.
- The concept that is used to study the effects of various mix of debt and equity on the shareholder's return and risk in the capital structure of a firm is called leverage.

Types of Leverage

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graph TD; A[Types of Leverage] --> B[Operating Leverage]; A --> C[Financial Leverage]; A --> D[Combined Leverage];
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Operating
Leverage

Financial
Leverage

Combined
Leverage

OPERATING LEVERAGE

Meaning of Operating Leverage

- Operating leverage is defined as the use of fixed operating costs to magnify a change in profits relative to a given changes in sales.

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profits}} \text{ or } \frac{\text{Contribution}}{\text{EBIT}}$$

* EBIT = Earning before Interest & Tax

* Contribution = Sales-Variable cost

$$\begin{aligned} & \text{Sales} \\ & - \underline{\text{Variable cost}} \\ & = \text{Contribution} \\ & - \underline{\text{Fixed cost}} \\ & = \underline{\text{EBIT}} \end{aligned}$$

Degree of Operating Leverage

- The multiplier effect resulting from the use of fixed operating costs can be measured by the degree of operating leverage.
- The degree of operating leverage (DOL) at any level of output expressed as the ratio of the percentage change in operating profits to percentage change in sales.

$$\text{DOL} = \frac{\% \Delta \text{ in profits}}{\% \Delta \text{ in Sales}} \quad \text{or} \quad \frac{\% \Delta \text{ in EBIT}}{\% \Delta \text{ in Sales}}$$

Characteristics of Operating Leverage

- It is related to the assets side of balance sheet.
- It is directly related to break-even point.
- It is related to selling price and variable costs.
- It involves business risk.



FINANCIAL
LEVERAGE

Meaning of Financial Leverage

- The firm's ability to use fixed financial charges/costs to magnify the effect of changes in earnings before interest & tax (EBIT) on firm's earnings per share.
- It is sometimes treated as "Trading on Equity".

$$\text{Financial Leverage} = \frac{EBIT}{EBT} \text{ or } \frac{EBIT}{EBT - \left(\frac{PD}{1-t}\right)}$$

*EBIT = Earnings before Interest & Tax

*EBT = Earnings before tax

*PD = Preference dividend

*t = Tax rate

Degree of Financial Leverage

- The DFL can be measured in any of two ways:-

$$1. DFL = \frac{\% \Delta \text{ in } EPS}{\% \Delta \text{ in } EBIT}$$

$$2. DFL = \frac{\% \Delta \text{ in } EBT}{\% \Delta \text{ in } EBIT}$$

Characteristics of Financial Leverage

- It is related to liabilities side of balance sheet.
- It is the mix of methods of financing.
- It shows effect of changes in operating profits on earnings per share due to fixed financial charges.
- It involves financial risk.

Difference between Operating & Financial Leverage

S. no.	Basis	OPERATING LEVERAGE	FINANCIAL LEVERAGE
1.	Objective	Magnifies the effect of changes in sales volume on operating profit.	Magnifies the effect of changes in EBIT on EPS.
2.	Relationship	Establishes relationship b/w EBIT & Sales.	Establishes relationship b/w EBIT & EPS.
3.	Measurement	Measures a firm's ability to use fixed cost assets to magnify the operating profits.	Measures a firm's ability to use fixed cost funds to magnify the return to equity shareholders.
4.	Decision	Concerned with investment decision.	Concerned with financing or capital structure decision.
5.	Risk	Involves the operating risk of being unable to cover fixed operating costs.	Involves the financial risk being unable to cover fixed financial cost.
6.	Relates	Assets side of balance sheet.	Liabilities side of balance sheet.

COMBINED/
COMPOSITE
LEVERAGE

Meaning of Combined Leverage

- The combined leverage may be defined as the relationship b/w contribution and the taxable income.

Combined Leverage = Operating Leverage × Financial Leverage

or

$$\frac{\text{contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}}$$

or

$$\frac{\text{contribution}}{\text{EBT}}$$

Degree of Combined Leverage

- DCL measures the percentage change in earnings per share due to percentage change in sales.

$$DCL = DOL \times DFL$$

or

$$\frac{\% \Delta \text{ in EBIT}}{\% \Delta \text{ in Sales}} \times \frac{\% \Delta \text{ in EPS}}{\% \Delta \text{ in EBIT}}$$

or

$$\frac{\% \Delta \text{ in EPS}}{\% \Delta \text{ in Sales}}$$



ILLUSTRATION

III-1 : A company has sales of ₹15,00,000; variable costs is 40% of sales; fixed cost ₹1,00,000 and 12% debentures of ₹ 7,00,000. Calculate the operating, financial & combined leverage.

Sol :

Given :- Sales = ₹ 15,00,000; Variable cost = ₹ 6,00,000 (40%);

Fixed cost = ₹ 5,00,000; Interest = ₹ 84,000 (12% of ₹ 7,00,000)

$$\text{i). Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{₹ 9,00,000}}{\text{₹ 8,00,000}} = 1.125$$

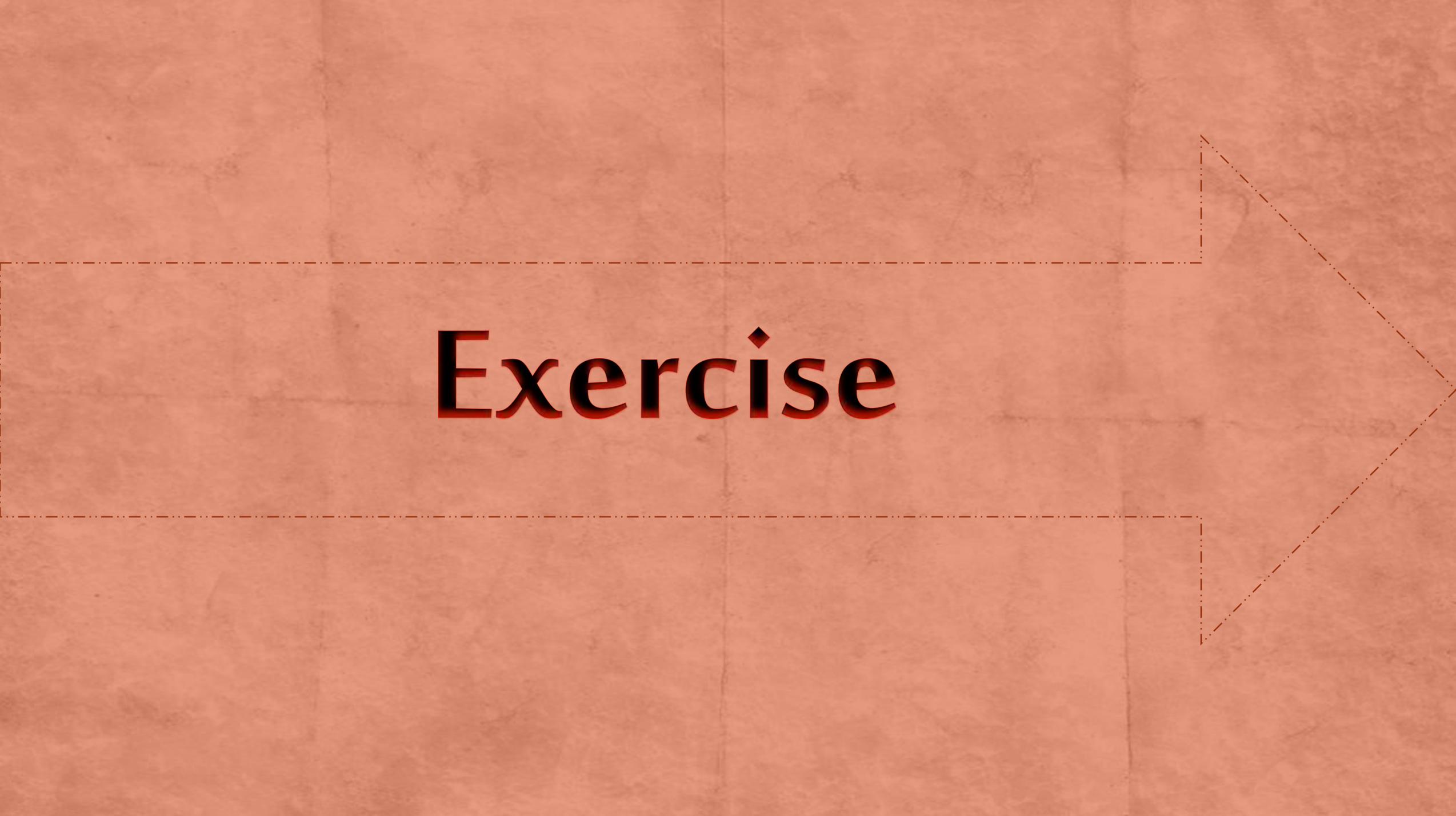
$$\text{ii). Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{₹ 8,00,000}}{\text{₹ 7,16,000}} = 1.12$$

$$\text{iii). Combined leverage} = \frac{\text{contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}} = \frac{\text{₹ 9,00,000}}{\text{₹ 8,00,000}} \times \frac{\text{₹ 8,00,000}}{\text{₹ 7,16,000}} = 1.25$$

$$\text{OR } \frac{\text{contribution}}{\text{EBT}} = \frac{\text{₹ 9,00,000}}{\text{₹ 7,16,000}} = 1.25$$

Sale =	₹ 15,00,000
- Variable cost =	- ₹ 6,00,000
= Contribution =	₹ 9,00,000
- Fixed cost =	- ₹ 1,00,000
= EBIT =	₹ 8,00,000
- Interest =	- ₹ 84,000
= EBT =	₹ 7,16,000

Exercise



Q. 1. Calculate the degree of operating leverage, degree of financial leverage and the degree of combined leverage for the following firms and interpret the results :

	P	Q	R
Output (units)	2,50,000	1,25,000	7,50,000
Fixed Cost	5,00,000	2,50,000	10,00,000
Unit Variable Cost	5	2	7.50
Unit Selling Price	7.50	7	10.0
Interest Expenses	75,000	25,000	---

Q. 2. The following data relate to RT Ltd. :

Earnings before interest and tax (EBIT) 10,00,000

Fixed Cost 20,00,000

Earnings Before Tax (EBT) 8,00,000

Required : Calculate combined leverage.

Q. 3. X Ltd. details are as under :

Sales (@ 100 per unit) 24,00,000; Variable Cost 50%; Fixed Cost 10,00,000

It has borrowed 10,00,000 @ 10% p.a. and its equity share capital is 10,00,000 (₹ 100 each).

The company is in a tax bracket of 50%.

Calculate : (a) Operating Leverage (b) Financial Leverage (c) Combined Leverage (d) Return on Equity (e) If the sales increases by ₹ 6,00,000 ; what will the new EBIT

THANK YOU!

