CAPITAL STRUCTURE DECISION

EBIT – EPS ANALYSIS

The relationship between EBIT and EPS is as follows:

$$\text{EPS} = \frac{(\text{EBIT} - I)(1 - t)}{n}$$

EARNINGS PER SHARE UNDER ALTERNATIVE FINANCING PLANS

	Equity Financing		Debt Financing	
	EBIT : 2,000,000	EBIT : 4,000,000	EBIT : 2,000,000	EBIT : 4,000,000
Interest	-	-	1,400,000	1,400,000
Profit before taxes	2,000,000	4,000,000	600,000	2,600,000
Taxes	1,000,000	2,000,000	300,000	1,300,000
Profit after tax	1,000,000	2,000,000	300,000	1,300,000
Number of equity shares	2,000,000	2,000,000	1,000,000	1,000,000
Earnings per share	0.50	1.00	0.30	1.30

BREAK-EVEN EBIT LEVEL

The EBIT indifference point between two alternative financing plans can be obtained by solving the following equation for EBIT*

$$\frac{(EBIT^* - I_1)(1 - t)}{n_1} = \frac{(EBIT^* - I_2)(1 - t)}{n_2}$$

ROI – ROE ANALYSIS

$ROE = [ROI + (ROI - r)\ D/E]\ (1 - t)$

where ROE = return on equity

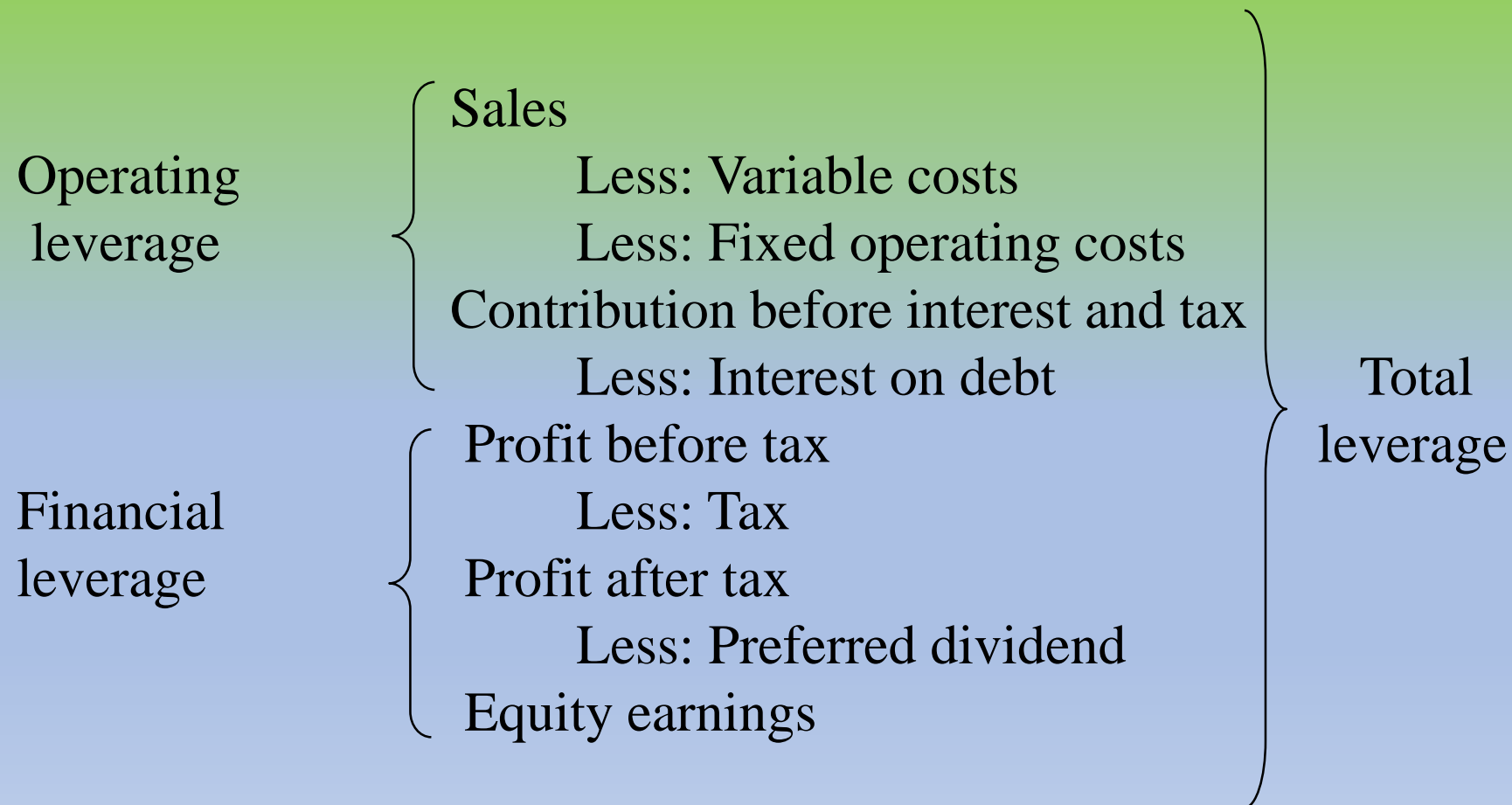ROI = return on investment

r = cost of debt

D/E = debt-equity ratio

t = tax rate

LEVERAGE ANALYSIS

- There are two kinds of leverage, viz., operating leverage and financial leverage.

- Operating leverage arises from the firm's fixed operating costs.

- Financial leverage arises from the firm's fixed financing costs.

INCOME STATEMENT FORMAT

Operating
leverage

{

    Sales

        Less: Variable costs

        Less: Fixed operating costs

    Contribution before interest and tax

        Less: Interest on debt

Financial
leverage

{

    Profit before tax

        Less: Tax

    Profit after tax

        Less: Preferred dividend

    Equity earnings

Total
leverage

CERTAIN RELATIONSHIPS

$$\text{PBIT} = Q(P - V) - F$$

$$\text{PAT} = (\text{PBIT} - I)(1 - T)$$

$$\text{EPS} = \frac{(\text{PBIT} - I)(1 - T) - D_p}{N}$$

$$= \frac{[Q(P - V) - F - I](1 - T) - D_p}{N}$$

OPERATING LEVERAGE

The sensitivity of profit before interest and taxes (PBIT) to changes in unit sales is referred to as the degree of operating leverage (DOL).

$$\text{DOL} = \frac{\Delta\,\text{PBIT}/\text{PBIT}}{\Delta Q / Q}$$

$$= \frac{Q\,(P - V)}{Q\,(P - V) - F} = \frac{\text{Contribution}}{\text{Profit before interest and tax}}$$

FINANCIAL LEVERAGE

The sensitivity of profit before tax (or profit after tax or earnings per share) to changes in PBIT is referred to as the degree of financial leverage.

$$\text{DFL} = \frac{\Delta \, \text{PBT} \, / \, \text{PBT}}{\Delta \, \text{PBIT} \, / \, \text{PBIT}} = \frac{\text{PBIT}}{\text{PBIT} - I}$$

$$= \frac{\text{Profit before interest and tax}}{\text{Profit before tax}}$$

TOTAL LEVERAGE

The sensitivity of profit before tax (or profit after tax or earnings per share) to changes in unit sales is referred to as the degree of total (or combined) leverage (DTL).

$$\text{DTL} = \frac{\Delta \text{PBT} / \text{PBT}}{\Delta Q / Q} = \frac{Q(P - V)}{PBIT - T}$$

$$= \frac{\text{Contribution}}{\text{Profit before tax}}$$

$$\text{DTL} = \text{DOL} \times \text{DFL}$$

RATIO ANALYSIS

☐ Interest Coverage Ratio

$$\frac{\text{Earnings before interest and taxes}}{\text{Interest on debt}}$$

- Cash Flow Coverage Ratio

$$\frac{\text{EBIT + Depreciation + Other non-cash charges}}{\textbf{Interest on debt} + \dfrac{\text{Loan repayment instalment}}{(1 - \text{Tax rate})}}$$

RATIO ANALYSIS

$$\text{DSCR} = \frac{\sum\limits_{i=1}^{n} \text{PAT}_i + \text{DEP}_i + \text{INT}_i + \text{L}_i}{\sum\limits_{i=1}^{n} \text{INT}_i + \text{LRI}_i + \text{L}_i}$$

where   DSCR = debt service coverage ratio
         PAT_i = profit after tax for year i
         DEP_i = depreciation for year i
         INT_i = interest on long-term loan for year i
         LRI_i = loan repayment instalment for year i
         L_i = lease rental for year i
         n = period of the loan

CASH FLOW ANALYSIS

The key question in assessing the debt capacity of a firm is whether the probability of default associated with a certain level of debt is acceptable to the management. The cash flow analysis establishes the debt capacity by examining the probability of default.

COMPARATIVE ANALYSIS

- A common approach to analysing the capital structure of a firm is to compare its debt-equity ratio to the average debt-equity ratio of the industry to which the firm belongs.

- Since the firms in an industry may differ on factors like operating risk, profitability, and tax status it makes sense to control for differences in these variables.

DETERMINANTS OF BUSINESS RISK

- Operating leverage
- Cyclical Variations
- Competition
- Relative price fluctuations
- Firm size and diversification
- Stage in industry life cycle

GUIDELINES FOR CAPITAL STRUCTURE PLANNING

- Resort to timing judiciously

- Finance proactively not reactively

- Know the norms of lenders and credit rating agencies

- Issue innovative securities

- Widen the range of financing sources

- Communicate intelligently with investors