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1. Learning Outcomes

After studying this module, you shall be able to

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- Understand the Concept of Financial Leverage.
- Know the various measures of Financial Leverage.
- Comprehend the meaning, computation and interpretation of Degree of Financial Leverage.
- Learn the meaning of Financial risk and it's relation with Financial Leverage.
- Explain the Application of Financial Leverage.
- Discuss the significance of Financial Leverage.

2. Meaning of Financial Leverage

The capital structure of a firm mainly consists of equity share capital or owner's equity, preference share capital and debt. The preference share capital and debt are having fixed obligations in the form of regular payments of interest and dividend on preference shares. They are also called fixed cost bearing securities. The rate of interest on debt is fixed irrespective of the fact whether company is earning profit or not. The company is legally bound to pay interest on debt on time. Similarly, the rate of preference dividend is also fixed. The usage of fixed cost bearing securities (Preference shares and Debt) together with owner's equity in the capital structure is known as financial leverage.

In words of Guthman, "Financial leverage or Capital gearing is the ability of the firm to use fixed financial charges to magnify the effect of changes in EBIT on firm's EPS".

Let's take two examples to illustrate the use of financial leverage:

Suppose, Ananya uses Rs. 10,00,000 of her cash to purchase 4 acres of land with a total cost of Rs.10,00,000. Ananya is not using financial leverage. While Arjun uses Rs. 3,00,000 of his cash and borrows Rs. 7,00,000 to purchase 4 acres of land having a total cost of Rs. 10,00,000. He is using financial leverage to become legal owner of land worth Rs.10,00,000 with only Rs. 3,00,000 of his own money.

3. Measures of Financial Leverage

Various measures of Financial Leverage are:

1. Debt Ratio
2. Debt-Equity Ratio
3. Interest Coverage Ratio (ICR)

3.1. Debt Ratio

The debt ratio is defined as the ratio of total debt to total assets, expressed in percentage, and can be interpreted as the proportion of a company's assets that have been financed by debt.

The higher this ratio, the more leveraged is the company and the greater its risk of default on payment of fixed financial obligations.

A debt ratio of greater than 1 indicates that a company has more debt than assets. Meanwhile, a debt ratio of less than 1 indicates that a company has more assets than debt.

Illustration 1. Compute Debt Ratio in following cases:

Case I: Advaita Ltd. has total assets of Rs.500 million and debt of Rs. 300 million.

Case II: Anant Ltd. has total assets of Rs. 100 million and debt of Rs. 40 million.

Solution:

Case I:

$$300/500 = 0.60$$

Hence, Advaita Ltd. has a debt ratio of 0.60.

Case II:

$$40/100 = 0.40$$

Hence, Anant Ltd. has a debt ratio of 0.40.

3.1. Debt-Equity Ratio

The debt-to-equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a firm's assets.

It can be measured in terms of book values or market values.

A high debt/equity ratio generally means that a company has been aggressive in financing its growth with debt or the firm has high financial leverage or it is highly geared. A debt-equity ratio of more than 1 indicates that a company has more debt than equity. Meanwhile, a debt-equity ratio of less than 1 indicates that a company has more equity than debt

Illustration 2. Compute Debt-Equity Ratio in following cases:

Case I: Sakshi Ltd. has owner's equity of Rs.600 million and debt of Rs. 300 million.

Case II: Samta Ltd. has owner's equity of Rs. 20 million and debt of Rs. 40 million.

Solution:

Case I:

Hence, Sakshi Ltd. has a debt ratio of 0.50.

Case II:

Hence, Samta Ltd. has a debt ratio of 2.

It is a ratio used to determine how comfortably the interest on outstanding debt can be paid by a company.

The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) of one period by the company's interest expenses of the same period.

The lower the ratio, the more the company is burdened by debt expense. When a company's interest coverage ratio is 1.5 or lower, its ability to meet interest expenses may be questionable. A company that barely manages to cover its interest costs may easily fall into bankruptcy if its earnings suffer for even a single month. An ICR below 1 indicates the company is not generating sufficient revenues to satisfy interest expenses as EBIT will be less than Interest expense. For all values of ICR more than 1, EBIT will be greater than Interest expense.

Illustration 3. Compute Interest Coverage Ratio (ICR) in following cases:

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Case I: Sakshi Ltd. has EBIT of Rs.100 million and interest expenses of Rs. 40 million.

Case II: Samta Ltd. has EBIT of Rs. 4 million and interest expenses of Rs. 3 million.

Solution:

Case I

Hence, Sakshi Ltd. has an Interest Coverage Ratio (ICR) of 2.50.

Case II

Hence, Samta Ltd. has an Interest Coverage Ratio (ICR) of 1.33.

4. Degree of Financial Leverage (DFL)

4.1. Meaning

It is a ratio that measures the sensitivity of a company's earnings per share (EPS) to fluctuations in its operating income (EBIT) as a result of changes in its capital structure.

4.2. Computation

Degree of Financial Leverage (DFL) measures the percentage change in EPS for a percentage change in operating income or earnings before interest and taxes (EBIT).

Where, t = tax rate.

4.3. Interpretation

- Higher the fixed financial cost, greater would be DFL.
- Higher the DFL, the more volatile is EPS.
- Higher the DFL, the more is the financial risk (discussed in detail later).
- If $DFL = K$, an $X\%$ increase or decrease in EBIT will produce a $K \times X\%$ increase or decrease in EPS.

Illustration 4. Compute Degree of Financial Leverage (DFL) in following cases:

Case I: For Advaita Ltd., whose EBIT has increased from Rs.100 million to Rs. 150 million and EPS has increased from Rs. 4 per share to Rs. 7 per share.

Case II: For Anant Ltd., whose EBIT has increased from Rs.20 million to Rs. 25 million and EPS has increased from Re.1 per share to Rs. 1.50 per share.

Solution:

Case I:

Hence, Degree of Financial Leverage (DFL) of Advaita Ltd. is 1.50.

Case II:

Hence, Degree of Financial Leverage (DFL) of Anant Ltd. is 2.

Illustration 5. Universal One Pvt. Ltd. has the following capital structure:

Source of Funds	Amount Rs.
Equity Share capital (Rs. 10 each)	50,000
10% Preference Share Capital (Rs. 100 each)	1,00,000
10% Debentures (Rs. 100 each)	1,00,000

Calculate Degree of Financial Leverage if EBIT is

Case I: Rs.1,00,000.

Case II: Rs. 80,000.

Case III: Rs. 1,20,000.
Assume 50 % tax rate.

Solution: Here, Preference Dividend = 10% of Rs. 1,00,000 = Rs. 10,000.

Interest on Debenture = 10% of Rs. 1,00,000 = Rs. 10,000. Tax rate (t) = 50% = 0.50.

Case I: EBIT = Rs. 1,00,000.

Hence, Degree of Financial Leverage (DFL) is 2.86 when EBIT is Rs. 1,00,000.



Case II: EBIT = Rs. 80,000.

Hence, Degree of Financial Leverage (DFL) is 3.20 when EBIT is Rs. 80,000.

Case III: EBIT = Rs. 1,20,000.

Hence, Degree of Financial Leverage (DFL) is 2.67 when EBIT is Rs. 1,20,000.

5. Financial Risk

5.1. Meaning

Financial risk is the possibility that a firm will be unable to meet its fixed financial obligations like payment of interest on debt. This risk is primarily a function of the relative amount of debt that the firm uses to finance its assets.

It can also be understood as the possibility that shareholders will lose money when they invest in a company that has debt, if the company's cash flow proves inadequate to meet its financial obligations. When a company uses debt financing, its creditors will be repaid before its shareholders if the company becomes insolvent.

It is the additional risk that is borne by a firm's shareholder on account of the firm using both debt and equity.

5.2. Financial Leverage and Financial Risk

A high degree of financial leverage increases financial risk because with more use of debt, interest payments increase.

As a result, the earnings available to equity shareholders decrease because earnings per share (EPS) is negatively affected by interest payments.

So, if fixed financial obligations in form of interest payments is high, the chance of default in making these payments increase in case the firm's EBIT falls.

6. Application of Financial Leverage

A finance manager can easily ascertain whether the firm should use more financial leverage or not. For deciding on whether to further use debt in the capital structure or not the finance manager should compare the cost of debt financing with the firm's average Return on Investment (ROI). Following three situations may arise as a result:

Case I: $ROI > \text{Cost of Debt}$ - This implies that the firm will earn a return on debt funds invested which is more than the cost of those debt funds. Hence, use of debt will result in positive net benefits to shareholders and so more debt should be employed. This situation is also known as **Favourable Financial Leverage or Trading on Equity**.

Case II: $ROI = \text{Cost of Debt}$ - This implies that the firm will earn a return on debt which equals the cost of those debt funds. Hence, use of debt will not provide any additional net benefit to shareholders. Instead use of more debt will only increase financial risk. Hence, more leverage should not be used.

Case III: $ROI < \text{Cost of Debt}$ - This implies that the firm will earn a return on debt which is less than the cost of those debt funds. Hence, use of debt will cause net loss to the firm and earnings to equity shareholders will decline. So in this case, firm should not use any more debt. This situation is also known as **Unfavourable Financial Leverage**.

7. Significance of Financial Leverage

- Financial leverage magnifies the increases in EPS when EBIT is increasing. Similarly, it can cause a manifold fall in EPS when EBIT declines. So, it is imperative to use it prudently.
- A firm that manages financial leverage effectively conveys a message that it can handle the risks associated with carrying debt without any difficulty. Hence, subsequent funds are easily available at more attractive interest rates due to improvement in firm's credit rating.

- Debt is a cheaper source of funds than equity and preference capital. Hence, use of more debt reduces the overall or weighted average cost of capital (WACC) of the firm.
- Most firms use WACC to discount cash flows while making capital budgeting decisions. A reduction in WACC means that more projects will be profitable and can be selected.

8. Summary

- Financial leverage or Capital gearing is the ability of the firm to use fixed financial charges to magnify the effect of changes in EBIT on firm's EPS.
- Various measures of financial leverage are debt ratio, debt-equity ratio and interest coverage ratio.
- Degree of Financial Leverage (DFL) is a ratio that measures the sensitivity of a company's earnings per share (EPS) to fluctuations in its operating income (EBIT) as a result of changes in its capital structure.
- Financial risk is the possibility that a firm will be unable to meet its fixed financial obligations like payment of interest on debt. A high degree of financial leverage increases financial risk.
- A finance manager should use financial leverage when Return On Investment > Cost of Debt. This situation is called Favourable Financial Leverage or Trading on Equity.
- Financial leverage magnifies changes in EPS due to change in EBIT; it's prudent use improves firm's credit rating; reduces weighted average cost of capital (WACC) and makes more investment alternatives profitable.