Lessons for MBA Semester II (Session: 2019-2020)

Paper Code MB 205 — Financial Management

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LESSON - I

Unit II : Financial Leverage

Financial leverage arises when a company deploys funds for which it has to pay a fixed return that remains the same whatever be the level of operating profit earned. Debt and preference share capital belong to the category of fixed return bearing capital as interest and preference dividend rates are prefixed and will not change with the level of profit. As a result of Financial leverage, a given change in the operating profit will give rise to more than proportionate change in the Earnings per share (EPS) or Return on Equity (RoE). We shall now derive the formula for financial leverage.

Formula for Financial Leverage :-

We shall adopt the following notation :

$P = xc - F$ = operating profit before interest and tax

I = Interest expense

$P - I$ = Profit before tax

T = Corporate income-tax rate (Per cent)

$(1 - T)(P - I)$ = Profit after tax

D = amount of Dividend on Preference share capital

$(1 - T)(P - I) - D$ = earnings available to equity shareholders

n = number of equity shares

$\frac{(1 - T)(P - I) - D}{n}$ = earnings per equity share or EPS

$$\text{Financial Leverage (FL)} = \frac{\text{rate of change in EPS}}{\text{rate of change in operating Profit}} \quad - (1)$$

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Let operating Profit change by ΔP from it original level of P.

Then,

Rate of change in operating profit = $\frac{\Delta P}{P}$ ——— (2)

The change in EPS Consequent to a change of ΔP in operating profit is given by:

$$\frac{(1-T)\Delta P}{n}$$

Rate of change in EPS = $\frac{(1-T)\Delta P}{n} \div \frac{(1-T)(P-I)-D}{n}$

$$= \frac{(1-T)\Delta P}{(1-T)(P-I)-D} \quad \text{——— (3)}$$

Substituting the algebraic expressions Contained in equation (2) and (3) in equation (1), we have

$$FL = \frac{(1-T)\Delta P}{(1-T)(P-I)-D} \div \frac{\Delta P}{P} \quad \text{———}$$

$$= \frac{(1-T)P}{(1-T)(P-I)-D} \quad \text{— — — . . (4)}$$

$$= \frac{P}{(P-I)-\left(\frac{D}{1-T}\right)} \quad \text{— — — (4a)}$$

When the Capital Structure of a Company does not include Preference share Capital, the formula given in equations (4) or (4a) reduces to simple form now given as the term D will then become equal to Zero:

$$FL = \frac{P}{P-I} \quad \text{— . (5)}$$

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Practical Example 01

The Apex Company (of our earlier example taught in the class) has a Capital Structure consisting of Rs. 30,000 in the form of debt carrying an interest rate of 10 per cent per annum; Rs. 10,000 in the form of Preference shares with a dividend rate of 12 per cent per annum; Rs. 20,000 in the form of ordinary shares of Rs. 10 each and Rs. 10,000 as reserves and surplus. operating profit before interest and tax for the company is Rs. 12,000. Assuming a corporate income-tax rate of 60%, Calculate the Financial Leverage to the Company.

In this example we have $P = Rs.12,000$; $I = Rs.3000$; $D = Rs.1,200$; $T = 0.6$; $n = 2000$

$$FL = \frac{(1-T)P}{(1-T)(P-I) - D}$$

$$= \frac{(0.4)(12,000)}{(0.4)(12,000-3,000) - 1,200}$$

$$= \frac{Rs.4800}{Rs.2400} \text{ or } 2$$

~~Characteristics~~ Characteristic Features of Financial Leverage

As operating and financial leverages are twin concepts, their characteristic features are also very much similar. only more important features are, therefore, now outlined:

(i) Financial Leverage is expressed as a number like, say, two as in example above. This implies that a given percentage change in operating profit will result in financial leverage times that much

Percentage change in EPS (ROE). Thus, in the above example, a 10% increase (decrease) in operating profit will give rise to a 20 percent (= 2×10 Percent) increase (decrease) in EPS or ROE.

Further, just as operating leverage is the reciprocal of margin of safety, financial leverage is the reciprocal of what might be called as the "financial margin of safety (FMS). Financial Margin of safety may be viewed as the difference between actual level of operating profit (P_a) and the level of operating profit at which EPS is equal to Zero (P_b). P_b may be looked at as the 'financial break even profit'.

P_b is obtained by solving the equation whose general form is now given:

$$\frac{(1-T)(P-I) - D}{N} = 0$$

Where P is the unknown and all others are known magnitudes. Substituting the corresponding values from the example under reference, we have.

$$\frac{(1-0.6)(P - Rs.3000) - Rs.1,200}{2,000} = 0$$

On simplification, we get P_b = Rs.6000

When expressed as a percentage which is the relevant form for the present purpose, we have

$$FMS = \frac{P_a - P_b}{P_a}$$

Substituting the corresponding values from the example cited above, we have

$$FMS = \frac{Rs.12,000 - Rs.6,000}{Rs.12,000} = 1/2.$$

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We have already seen that the value of FL is two which is the reciprocal of FMS.

How much financial leverage do Indian companies employ? Actually companies differ in use of financial leverage since it depends on a number of factors such as size, nature of product, capital intensity, technology, market conditions, management attitude, etc. In fact, companies show wide variations in the use of financial leverage.

Financial Leverage and the Shareholders' Return

The primary motive of a company in using financial leverage is to magnify the shareholders' return under favourable economic conditions. The role of financial ~~leverage~~ leverage in magnifying the return of the shareholders is based on the assumptions that the fixed-charges funds (such as the loan from financial institutions and banks or debentures) can be obtained at a cost lower than the firm's rate of return on net assets (RONA or ROI). Thus, when the earnings generated by assets financed by the fixed-charges funds and cost of these funds is distributed to the shareholders, the earnings per share (EPS) or return on equity (ROE) increases. However, EPS or ROE will fall if the company obtains the fixed-charges funds at a cost higher than the rate of return on the firm's assets. It should, therefore, be clear that EPS, ROE and ROI are the important figures for ~~anything~~ analyzing the impact of Financial ~~Leverage~~ leverage.

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COMBINED LEVERAGE

Operating and financial leverages combine themselves in a multiplicative form to bring about a more

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than Proportionate change in EPS (ROE) for a given Percentage change in sales. The formula for combined leverage can be given as:

$$\text{Combined leverage} = (\text{Operating leverage}) \times (\text{financial leverage})$$

$$= \frac{x_c}{P} \times \frac{P}{(P-I)-\left(\frac{D}{1-T}\right)}$$

$$= \frac{x_c}{(P-I)-\left(\frac{D}{(1-T)}\right)}$$

In the absence of Preference share capital in the capital structure this formula stands simplified in the form

$$\frac{x_c}{P-I}$$

From the discussion above we can see that the Concept of Leverage, either operating or financial, works both ways. It increases or decreases EPS in a more than proportionate ~~manner~~ manner for a given change in sales (or operating profit). The combined leverage further magnifies the change in EPS. As a result of the leverage principle, the variability in EPS (ROE) increases. Thus, a high leverage automatically puts the Company to greater risk exposure. This is also evident from the reciprocal relationship that exists between leverage and margin of Safety. Great caution has, therefore, to be exercised in keeping the Combined leverage within reasonable levels. What Constitutes a reasonable level has to be decided by Considering the nature of business practices followed by other Companies operating in the industry concerned, etc.

Between operating and financial leverages. Operating leverage is less amenable to managerial control. This is so because operating leverage for a company is influenced to a great extent by the magnitude of fixed costs. But fixed costs are very much linked to the ~~industry~~ nature of Industry, choice of technology and the asset structure employed. Thus, capital - ~~in~~ intensive industries like Steel and heavy Engineering are likely to have heavy fixed costs and a high operating leverage when compared to a cigarette - ~~manufacturing~~ industry. The super imposition of high financial leverage on an already high operating leverage will result in a higher combined leverage which is likely to expose the company to greater risks and put the interests of shareholders in jeopardy.

As there is less scope to exercise greater control in respect of operating leverage, one can exercise control in regulating the degree of financial leverage. Companies having high ~~operating~~ financial leverage should, therefore, plan for a capital structure having more equity and less debt to bring down the ~~debt~~ combined leverage to a reasonable level. By properly utilising and flexibility provided by the financial leverage, the management can secure for the shareholders the benefits of leverage without putting them to great risks.

Book recommended for reading

1. Financial Management and Control - Chakrabarty, Bhattacharya, ~~Rao~~ Rao and Sen - Macmillan Publishers, ~~Madras~~ Chennai - 600 041.

2. Financial Management - I M Pandey - Vikas Publishing House Pvt. Ltd. - New Delhi

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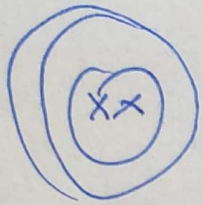

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