

## UNIT - 4

### LEVERAGES

#### Meaning & Definition:

Leverage means in financial area, the firm's ability to use fixed assets and funds to magnify the return to its owners.

"Leverage is the employment of an asset or funds for which the firm pays a fixed cost or fixed return."

- James Horne.

#### Types of Leverages:

There are three types of Leverages implied in financial analysis.

1. operating leverage
2. Financial leverage
3. Combined leverage

## I. Operating Leverage:

It implies that the use of fixed cost in the operation of a firm. Even a small change in sales brings about a more than proportionate change in operating profit, since fixed cost remain constant.

"It is thus defined as" the firm's ability to use fixed operating cost to magnify the effects of changes in sales on its ~~earnings~~ earnings before interest and taxes (EBIT). It can be calculated by applying the following formula;

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

$$\text{Contribution} = \text{Sales} - \text{Variable Cost}$$

$$\text{EBIT} = \text{Operating Profit}$$

## II. Degree of Operating Leverage:

$$\text{DOL} = \frac{\text{Percentage Change in EBIT}}{\text{Percentage Change in Sales}}$$

## II Financial Leverage:

It occurs when a firm uses fixed interest / dividend bearing securities i.e., Debentures and preference share capital along with owner's equity to improve the return on an equity investment.

Financial leverage is concerned with the effect of changes in EBIT on the earnings available to the equity shareholders (EPS). It is thus defined as ability of a firm to use fixed financial charges to magnify the effect of changes in EBIT on the firm's ~~equ~~ earnings per share.

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT}}$$

Degree of Financial Leverage

$$\text{DFL} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in EBIT}}$$

## Combined Leverage:

Combined leverage thus establishes relationship between sales and the corresponding variations in taxable income.

$$\text{Combined Leverage} = \text{Operating Leverage} \times \text{Financial Leverage}$$

$$= \frac{\text{Contribution}}{\cancel{\text{EBIT}}} \times \frac{\cancel{\text{EBIT}}}{\text{EBT}}$$
$$= \frac{\text{Contribution}}{\text{EBT}}$$

## II Dividend Policy

Dividend: The part of the profit after tax is distributed among the owners or shareholders of the firm. In other words it is a ~~tax~~ taxable payment declared by a firm's board of directors and given to its shareholders out of the earnings of the firm.

### Types of Dividend:

#### 1) Regular dividend:

It is paid annually, proposed by the board of directors and approved by the shareholders in general meeting. It is generally paid in cash as a percentage of paid up capital, say 10% or 15% of the capital.

#### 2) Interim Dividend:

If Articles so permit, the directors may decide to pay dividend at any time between the two Annual General Meetings before finalising the accounts. It is generally paid when firm earned heavy profits or abnormal profits during the year.

### 3. Stock Dividend:

It is in the form of issue of bonus shares to the equity shareholders in lieu or addition to the cash dividend. It will increase the capital and reduce the reserves. After a stock dividend shareholders receive more shares, but their proportionate ownership interest in the firm remains constant.

### 4. Bond Dividend:

In rare instances, dividends are paid in the form of bonds, for a long term period. The firm pays interest on these bonds and repays the bond on maturity.

### 5. Property Dividend:

Sometimes dividend is paid in the form of asset instead of cash. The distribution of dividend is made whenever the asset is no longer required in the business.

## Dividend policy meaning:

Dividend policy refers to the policy chalked out by firms regarding the amount they would pay to their shareholders as dividend. They may take decision about retention of dividend and payout the full or part of the dividend.

## Definition:

"Dividend Policy determines the division of earnings between payments to shareholders and retained earnings"  
— Weston and Brigham.

## Theories of Dividend Policy:

The theories of dividend policy of a firm has a direct effect on the position of the firm in the stock exchange. These theories are associated with, Walter and Gordon models, which are called as Relevance Theories.

### (i) Walter's Model:

Prof. James E. Walter argues that dividend policy is an active variable

that influences the market price of a share and the value of the firm. The assumptions of Walter's Model are as follows;

### Assumptions:

(1) ~~Retained earnings~~ is based on the following assumptions:

### Assumptions of Walter Model:

- (1) Retained earnings represent the only source of finance.
- (2) The return on the firm's investment remains constant.
- (3) The cost of capital for the firm remains constant.
- (4) The firm has an infinite life.
- (5) All the earnings are distributed or reinvested in the firm.
- (6) Earnings per share and dividend remain constant.

$$\text{Formula: Market Price Per Share (P)} = \frac{D + \frac{r}{K} \times (E - D)}{K}$$

D = Dividend per share

r = rate of return on investment.

K = Cost of Capital / Capitalization rate.

E = Earnings per share.



## (A) Gordon's formula:

Myron J. Gordon has also put forth a model for relevance theory.

### Assumptions:

- (1) The firm is an equity firm. No external financing is used.
- (2) The internal rate of return ( $r$ ) and cost of capital for the firm are constant.
- (3) The firm has perpetual life and its stream of earnings are perpetual.
- (4) The corporate taxes do not exist.
- (5) The retention ratio ( $b$ ) once decided upon is constant. Thus the growth rate ( $g = br$ ) is also constant.
- (6) Cost of capital is greater than the growth rate.

### Formula:

$$\text{Market price per share} = \frac{D}{k-g} \text{ or } \frac{E(1-b)}{k-br}$$

$D$  = Dividend

$k$  = Cost of capital.

$g$  = growth rate.

$$g = b \times r$$

$b$  = retention ratio

$r$  = Rate of return.

### 3. Theory of irrelevance:

#### Modigliani - Miller Hypothesis:

The irrelevance theory of dividend policy is associated with M.M. Model. According to them, the dividend decision is irrelevant and it does not affect the market value of equity shares, because the increase in wealth of Shareholders resulting from dividend payments will be offset subsequently when additional share capital is raised.

#### Assumptions:

- (1) Capital markets are perfect.
- (2) There are no corporate taxes.
- (3) The firm has a fixed investment policy under which at each year end.
- (4) Investors are able to predict future dividends and future market prices.
- (5) All investments are funded by equity or by retained earnings.

## Formula for M.M. model:

$$P_1 = P_0(1 + k_e) - D_1$$

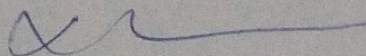
$P_1$  = Market-price per share at the end of the period.

$P_0$  = Market-price per share at the beginning of the period.

$k_e$  = cost of equity

$D_1$  = Dividend per share at the end of the period.

$$P_0 = \frac{D_1}{1 + k_e} + \frac{P_1}{1 + k_e} = \frac{D_1 + P_1}{1 + k_e}$$

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