

Capital Structure, Cost of Capital & value of Firm

Capital structure: It is the relationship between the Leverage, Cost of Capital and the value of the firm. In other words it is a combination of Leverage, Cost of Capital and the value of the firm. The Capital structure relationship based on some assumptions. They are given below:

1. There are only two source of fund. (Equity & Debenture)
2. There is no change in the investment decision of the firm.
3. Entire profit of the business distributes among the shareholder's and implying no retained Earning.
4. Operating profit of the business is given and not expected to grow.
5. There are no corporate or Personal taxes.

Overall cost of Capital (K_0) may be calculated on the above assumptions:

$$K_0 = (D / (D+E)) * K_d + ((E / (D+E)) * K_e$$

$$K_0 = NOP / V = EBIT / V$$

Where

E = Total market value of the Equity

D = Total market value of the Debenture

V = Total market value of the Value (D+E)

NOP = Net operating profit (EBIT)

NP = Net profit after tax

D_0 = Div. paid by company at present

D_1 = Expected Dividend at the end of One year

k_0 = Overall Cost of Capital (WACC)

Net income approach:

$$K_0 = (D / (D+E)) * K_d + ((E / (D+E)) * K_e$$

Net operating income approach: The net operating approach is opposite to NI approach. According to the NOI approach, the market value of the firm depends upon the net operating profit or EBIT and the overall Cost of capital, WACC of the business.

The financing mix or the capital structure is irrelevant and does not affect the value of the company. Like NI approach it has also some assumptions.

$$V = \text{EBIT} / K_0 \quad \& \quad \text{COST OF EQUITY} = \text{EBIT} - \text{INT.} / V - D$$

$$E = V - D \quad , (K_e = \text{Net profit} / \text{value of Equity})$$

MM approach: According to MM model the capital structure and its composition has no affect on the value of the firm. Like NI & NOI approach MM Model also based on some assumptions. According to this model financial leverage does not matter and the cost of capital and value of firm are independent of the capital structure.

As per MM model, the cost of Equity capital, K_e is without Tax

$$K_e = k_0 + (k_0 - k_d)(D/E)$$

$$K_0 = (D / (D+E)) * K_d + ((E / (D+E)) * K_e$$

Cost of Equity capital, K_e is with Tax

$$K_e = k_0 + (k_0 - k_d)(D/E)(1 - \text{tax})$$

OR

$$K_e = k_0 + (k_0 - k_d)(D(1 - \text{tax})/E)$$

Theories on Dividend policies

1. **Walter Approach :** This approach focus on how dividends can be used to maximise the wealth position of Equity holders. The relationship between Dividend and share price on the basis of Walters formula is shown below :

$$P = \frac{D}{k_e} + \frac{(r/k_e)(E - D)}{k_e}$$

- P = Market price of the share
- D = Dividend per share
- r = Rate of return on the firm's investments
- k_e = Cost of equity
- E = Earnings per share'

2. Gorden Growth Model : This theory also contends that dividends are relevant. This models explicity relates the market value of the firm to dividend policy. The relationship between dividend and share price on this basis of Gordon's formula is shown are :

$$P = D (1+g) / (r-g)$$

P= Market price per share

D=Current year dividend

G = Constant annual growth rate of dividends

R= Cost of capital (expected rate of return)

3. MM Hypothesis : this hypothesis states that under conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy have no influence on the market price of share.

$$P_0 = P_1 + D_1 / 1 + K_E$$

Where

P_0 = Prevailing market price of the share

P_1 = Market per share at the end of period one

D_1 = Dividend to be received at the end period one

K_E = The cost of Equity capital