



Overall Cost of capital

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Cost of Capital: **Cost of Equity**

- “Minimum rate of return that a firm must earn on the equity financed portion of an investment project in order to leave unchanged the market price of the shares”.
- Cost of equity can be calculated from the following approach:
- Dividend price (D/P) approach
- Dividend price plus growth (D/P + g) approach
- Earning price (E/P) approach
- Realized yield approach.

Dividend Price Approach

- The cost of equity capital will be that rate of expected dividend which will maintain the present market price of equity shares.
- Dividend price approach can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p}$$

Where,

K_e = Cost of equity

D = Dividend per equity share

N_p = Net proceeds of an equity share

Dividend Price Plus Growth Approach

The cost of equity is calculated on the basis of the expected dividend rate per share plus growth in dividend. It can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p} + g$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

g = Growth in expected dividend

N_p = Net proceeds of an equity share

Dividend Price Plus Growth Approach

- For calculating D1 i.e. Expected dividend per share at the end of yr.
- Formula used : $\frac{D_0 (1+g)}{N_p} + G$
- Further in case, the cost of existing equity share capital is to be calculated the N_p should be changed with M_p (Mkt price per share)

Earning Price Approach

Cost of equity determines the market price of the shares. It is based on the future earning prospects of the equity. The formula for calculating the cost of equity according to this approach is as follows.

$$K_e = \frac{E}{N_p}$$

Where,

K_e = Cost of equity capital

E = Earning per share

N_p = Net proceeds of an equity share

Realized Yield Approach

It is the easy method for calculating cost of equity capital. Under this method, cost of equity is calculated on the basis of return actually realized by the investor in a company on their equity capital.

$$K_e = PVf \times D$$

Where,

K_e = Cost of equity capital.

PVf = Present value of discount factor.

D = Dividend per share.

Cost of Debt

Cost of debt is the after tax cost of long-term funds through borrowing. Debt may be issued at par, at premium or at discount and also it may be perpetual or redeemable.

Debt Issued at Par

Debt issued at par means, debt is issued at the face value of the debt. It may be calculated with the help of the following formula.

$$K_d = (1 - t) R$$

Where,

K_d = Cost of debt capital

t = Tax rate

R = Debenture interest rate

Debt Issued at Premium or Discount

If the debt is issued at premium or discount, the cost of debt is calculated with the help of the following formula.

$$K_d = \frac{I}{N_p} (1 - t)$$

Where,

K_d = Cost of debt capital

I = Annual interest payable

N_p = Net proceeds of debenture

t = Tax rate

Cost of preference capital

Cost of Preference Share Capital

Cost of preference share capital is the annual preference share dividend by the net proceeds from the sale of preference share.

There are two types of preference shares irredeemable and redeemable. Cost of redeemable preference share capital is calculated with the help of the following formula:

$$K_p = \frac{D_p}{N_p}$$

Where,

K_p = Cost of preference share

D_p = Fixed preference dividend

N_p = Net proceeds of an equity share



Redeemable preference share

- Which is redeemed or cancelled on maturity date. The cost of redeemable preference share capital can be calculated as:

Cost of retained earning

- Retained earning do not involve any cost because a firm is not required to pay dividend. However they expect a return on retained profit.
- Retained earning accrue to a firm because of some sacrifice made by the shareholders in not receiving the dividend out of the available profit .

Where,

K_r = Cost of retained earnings

K_e = Cost of equity

t = Tax rate

b = Brokerage cost

$$K_r = K_e (1 - t) (1 - b)$$

Weighted Average cost of capital

- It is the average cost of various financing .
- It is also k/n as composite cost of capital / overall/average cost of capital.
- Weights may be given on the basis of mkt sources of funds.

The computation of the overall cost of capital (K_o) involves the following steps.

- Assigning weights to specific costs.
- Multiplying the cost of each of the sources by the appropriate weights.
- Dividing the total weighted cost by the total weights.

The overall cost of capital can be calculated with the help of the following formula;

$$K_o = K_d W_d + K_p W_p + K_e W_e + K_r W_r$$

Where,

K_o = Overall cost of capital

K_d = Cost of debt

K_p = Cost of preference share

K_e = Cost of equity

K_r = Cost of retained earnings

W_d = Percentage of debt of total capital

Weighted Average cost of capital

W_p = Percentage of preference share to total capital

W_e = Percentage of equity to total capital

W_r = Percentage of retained earnings

Weighted average cost of capital is calculated in the following formula also:

$$K_w = \frac{\sum XW}{\sum W}$$

Where,

K_w = Weighted average cost of capital

X = Cost of specific sources of finance

W = Weight, proportion of specific sources of finance.