UNIT – 2

COST OF CAPITAL.

Meaning:

A firm can raise long term funds through a combination of debt, Preference share capital, and equity share capital for financing its operations. The firm has to pay interest and dividend to service these funds. These payment is called cost of capital.

Definition:

"Cost of capital is the minimum rate of return which a firm requires as a condition for undertaking an investment." – Milton H. Spencer.

Different types of cost of capital:

I. Cost of Debt.

(i) cost of Irredeemable debt.

(ii) cost of Redeemable debt.

II Cost of Preference share capital.

(i) Cost of Irredeemable preference share capital.

(ii) Cost of Redeemable Preference share capital.

III Cost of Equity Share capital:

1. Dividend yield (or) Dividend price method.
2. Dividend price plus growth method
3. Earnings price method.
4. Realised yield method
5. Cost of equity ~~xxx~~ under CAPM.

IV Cost of Retained Earnings.

V Weighted Average cost of capital.

VI Marginal cost of capital.

Methods of calculating cost of capital.

I. Cost of Debentures:

1. cost of Irredeemable debt:

a) Cost of debt before tax (K_{ab})

The debt which is not redeemable during the life time of the firm may be calculated before paying the tax. which is calculated by using the following formula;

$$K(ab) = \frac{\text{Interest}}{\text{Net proceeds (NP)}}$$

(i) Interest on debt should be calculated only on the face value of debt irrespective of the issue price.

(ii) Net proceeds (NP) is to be ascertained as given below;

a) Debt issued at par:

NP = Face value − Issue expenses.

b) Debt issued at premium:

NP = Face value + premium − issue exps.

(c) Debt issued at discount:

NP = Face value − Discount − Issue exps

(b) Cost of debt after tax (K_{da})

As the interest on debt is tax deductible, the firm gets tax savings in its liability. Thus the effective cost of debt is lower than the ~~coupon~~ interest paid to debt investors. Therefore the following formula can be used to find the cost of debt after tax.

$$K_{da} = \frac{\text{Interest} - \text{tax savings}}{\text{Net proceeds.}}$$

(or)

$$K_{da} = K_{db}(1 - \text{tax rate}).$$

2. Cost of Redeemable debt:

The redeemable debt refers that the debt which is repayable after a stipulated period. The cost of this debt is calculated by the following procedure.

(A) Cost of debt before tax (K_{db})

$$K_{db} = \frac{\text{Annual cost before tax}}{\text{Average value of debt.}}$$

a) Computation of annual cost before tax:

Interest on debt P.a.	xxx
Add: Issue exps, P.a annum.	xxx
Add: Discount on issue, P.a	xxx
Add: Premium on redemption of debt, P.a.	xxx
	xxx
Less: Premium on issue of debt P.a	xxx
Annual Cost before tax	xxx

(B) Computation of average value of debt (AV)

It is calculated by find out the average of net proceeds (NP) and redemption value of debt (RV).

$$AV = \frac{NP + RV}{2}$$

(B) Cost of debt after tax (K_{da})

$$K_{da} = \frac{\text{Annual cost} - \text{tax savings}}{\text{Average value of debt.}}$$

(or)

$$K_{da} = K_{db}(1 - \text{tax rate}).$$

II Cost of Preference share capital.

1. Cost of Irredeemable preference shares:

$$K_p = \frac{\text{Annual preference dividend}}{\text{Net Proceeds (NP)}}$$

- The procedure for calculating cost of preference shares before tax is same as in cost of irredeemable debt before tax. So students can refer the above procedure.

(B) Cost of redeemable preference share capital:

$$\text{Cost of redeemable preference share capital} = \frac{\text{Annual cost}}{\text{Average value of RPS.}}$$

Here also the procedure is same as like as cost of debt.

iii) Cost of Equity:

The cost of equity capital may be expressed as the minimum rate of return that must be earned on new equity share capital financed investment in order to keep the earnings available to the existing equity shareholders of the firm, unchanged. There are different methods to calculate the cost of equity are as follows;

(i) Dividend yield method:

(In case of new issue of equity)

$$Ke = \frac{D}{NP}$$

D = Expected dividend per share.

NP = Net proceeds per share.

In case of existing equity

$$Ke = \frac{D}{MP}$$

MP = market price per share.

(ii) Dividend price plus growth method:

Here, the cost of equity is determined on the basis of expected dividend rate plus the rate of growth in dividend.

In case of new issues

$$\text{cost of equity} = \frac{D}{NP} + g$$

In case of existing shares.

$$Ke = \frac{D}{MP} + g$$

g = growth rate

③ Earnings Price method:

In case of new issue,

$$Ke = \frac{EPS}{NP}$$

In case of existing shares.

$$Ke = \frac{EPS}{MP}$$

This method is suitable when, the EPS is expected to remain constant, and the firm does not use any debt.

④ Realised yield method:

Under the realised yield method cost of equity is the Internal Rate of Return (IRR). IRR is the rate at which total present value of inflows is equal to total present value of outflow.

V Cost of Retained earnings:

Retained earnings are the accumulated amount of undistributed profits belonging to the equity shareholders. These are the major source of funds of the firm. These source has the opportunity costs. which are calculated by using the following formula;

$$\text{Cost of Retained earnings}(K_r) = K_e(1-t)(1-b)$$

where, K_e = cost of equity

t = tax rate.

b = brokerage.

V. Weighted Average cost of Capital: (WACC).

After calculating the cost of each component of capital, the average or composit cost of all the sources of capital is to be determined. The proportion or percentage or weight of each component may be determined based on either book value or market value of capital.

The following steps to be followed to calculate WACC;

step 1: calculate the cost of specific source of fund, such as cost of debt, cost of equity etc,

Step: 2 Multiply the cost of each source by its proportion in capital structure

step: 3 Add the weighted component costs to get the firm's WACC