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# FACULTY OF COMMERCE AND MANAGEMENT

**COURSE: BBA III SEM.**

**SUBJECT: FINANCIAL MANAGEMENT**

**SUBJECT CODE: BBA 303**

**LECTURE: 20**

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# LECTURE-20

## 2.3.2 Computation of Cost of Capital

Computation of overall cost of capital of a firm involves:

Computation of cost of Specific source of finance

- Cost of Debt
- Cost of Preference Capital
- Cost of Equity Capital
- Cost of Retained earnings
- Weighted average cost of capital

**C**omputation of cost of Specific source of finance

**Cost of Debt:** The cost of debt is the rate of interest payable on debt.

Cost of perpetual / Irredeemable Debt
Before tax cost of debt

$$\mathbf{Kdb} = \frac{\mathbf{I}}{\mathbf{P}}$$

Where, Kdb = before tax cost of debt
= Interest
P = Principal

**In case if debt is raised at premium or discoun**t, P would be considered as the amount of net proceeds received from the issue and not the face value of the securities. The formula may changed to

$$\mathbf{Kdb} = \frac{\mathbf{I}}{\mathbf{NP}}$$

Where NP = Net proceeds

After Tax Cost of Debt

$$\mathbf{Kda} = \mathbf{Kdb\ (1\text{-}t)}$$

Where, Kda = after tax cost of debt
t = Rate of tax

**Cost of Redeemable Debt:** Usually the debt is issued to be redeemed after a certain period during the lifetime of the firm. Such a debt issue is known as Redeemable Debt. The cost of Redeemable debt may be computed as:
Before Tax Cost of Debt

$$Kdb = \frac{I + \frac{1}{N}(RV-NP)}{\frac{(RVP + NP)}{2}}$$

Where, I = Interest
N = Number of years in which debt is to be redeemed
RV = Redeemable value of debt
NP = Net Proceeds

After Tax cost of debt, **Kda = Kdb (1-t)**

$$Kda = \frac{I + \frac{1}{N}(RV-NP)}{(RV + NP)} (1 - t)$$

Where T = Tax rate

**Illustration 10:** X Ltd. issues Rs. 50,000 8% debenture. The tax rate applicable is 50%. Compute the cost of debt capital, if debentures are issued (i) at par (ii) at Premium of 10% (iii) at discount of 10%

**Solution:**

$$Kda = \frac{I}{NP} (1 - t)$$

$$\frac{4,000}{50,000} (1 - .50) = 4\%$$

$$\frac{4,000}{55,000} (1 - .50) = 3.6\%$$

$$= \frac{4,000}{45, 00} (1 - .50) = 4.4\%$$



**Illustration 11:** A company issues Rs. 10, 00,000; 10% debentures at a discount of 5%. The cost of floatation amounts to Rs. 30,000. The debentures are redeemable after 5 years. Calculate before tax and after tax cost of debt assuming a tax rate of 50%.
**Solution:**

**Before tax Cost of Redeemable debt**

$$Kdb = \frac{I + \frac{1}{N}\frac{(RV-NP)}{}}{\frac{(RVP + NP)}{2}}$$

$$\frac{1,00,000 + \frac{1}{5}(10,00,000 - 9,20,000)}{\frac{(10,00,000 + 9,20,000)}{2}}$$

12.08%

**[NP = Rs. 10, 00,000 – 50,000(discount) – 30,000(cost of floatation) = 9, 20,000]**

**After tax Cost of Redeemable debt**

**Kda = Kdb (1-t)**

12.08 %( 1-.50)

6.875%

**Illustration 12:** A 5-uear Rs.100 debenture of a firm can be sold for a net price of Rs. 96.50. The coupon rate of interest is 14% per annum, and the debenture will be redeemed at 5% premium on maturity. The firm's tax rate is 40%. Compute the after tax cost of debenture.

**Solution:**

$$Kda = \frac{I + \frac{1}{N}\frac{(RV-NP)}{}}{\frac{(RVP + NP)}{2}} (1- t)$$

$$= \frac{14 + \frac{1}{5}(105-96.50)}{\frac{(105 + 96.50)}{2}} (1 - .40)$$

10.025%