

INTRODUCTION

Cost of capital is a decisive factor in investment decision-making. We measure and compare the cost of capital in deciding the capital structure of the company so as to earn a fair return to the owner and at least a fair return to the contributors. The term cost of capital means the rate of acquiring the total amount of all the funds used within a firm. The main object of cost of capital of a firm is the minimum rate of return expected by its investors. The capital used by the firms may be in the form of equity shares, preference shares, debts and retained earnings. The cost of capital is the weighted average cost of these sources of finance used by the firm. If a firm is not able to achieve its cost of capital the market value of its shares may fall. Cost of capital is very important concept in capital structure though it is of recent origin (say since 1965). It has received much attention especially in the advanced countries.

MEANING AND DEFINITION OF COST OF CAPITAL

The term cost of capital refers to the minimum rate of return which a firm must earn on its investment. In economic sense, it is the cost of raising funds required to finance the proposed project. In other words, it is the borrowing rate of the firm. Cost of capital is the weighted average cost of capital of various sources of finance used by the firm. The sources are equity, preference shares, debentures and retained earnings.

The cost of capital has two aspects to it:

- (i) The cost of funds that a company raises and uses, and the return that investors expect to be paid for putting funds into the company.
- (ii) It is therefore the minimum return that a company should make on its own investments, to earn the cash flow out of which investors can be paid their return.

The cost of capital is an opportunity cost of finance, because it is the minimum return which an investor requires. For shareholders it is the dividend they expect to receive plus a capital gain on the value of their shares, while for loan holders it is the rate of interest which is quoted on the loan. Failure to pay such required return will result in the providers of finance transferring their holdings to other opportunities with a better rate of return.

DEFINITION OF COST OF CAPITAL

According to Hunt, William and Donaldson, "The rate that must be earned on the net proceeds to provide the cost elements of the burden at the time they are due."

According to Solomon Ezra, "Cost of Capital is the minimum required rate of earnings or the cut-off rate of capital expenditures."

According to James C. Van Horne, "A cut-off rate for the allocation of capital to investments of projects. It is the rate of return on a project that will leave unchanged the market price of the stock."

According to **Hampton, John**, "The rate of return the firm requires, from investment in order to increase the value of the firm in the market place."

Thus we can say, that cost of capital is that minimum rate of return, which a firm must earn on its investments so as to maintain the market value of its shares. It is also known as Weighted Average Cost of Capital(WACC). It can also be expressed in terms of percentage.

■ BASIC ELEMENTS OF COST OF CAPITAL

The cost of capital has three elements:

(1) Risk free rate of return

Return required from a completely risk free investment. E.g. yield on government securities.

(2) Business risk premium

Increase in required rate of return due to uncertainty about future and business prospects.

(3) Financial risk premium

Dangers of high debt levels, variability in equity earnings after payments to debt capital holders.

■ IMPORTANCE / SIGNIFICANCE OF THE COST OF CAPITAL

The cost of capital is very useful for the management in taking financial decisions. No financial decision is possible without the use of cost of capital. Some important uses of cost of capital are :

(1) Optimum capital structure decision : The concept of cost of capital plays a important role in designing the capital structure of a company. Capital structure of a company consists of different sources of capital such as preference share capital, equity share capital, retained earnings, debt etc. These sources differ from each other in terms of their respective costs. Ensuring an optimal capital structure and securing the financing sources with the least cost of capital is as important, if not more, for corporate entities as it is for individuals. The ability of an organization to perform well in the market depends on the efficiency of its capital structure.

(2) Helpful in taking capital budgeting decision : Capital budgeting is a required managerial tool. One duty of a financial manager is to choose investments with satisfactory cash flows and rates of return. Therefore, a financial manager must be able to decide whether an investment is worth undertaking and be able to choose intelligently between two or more alternatives. To do this, a sound procedure to evaluate, compare, and select projects is needed. This procedure is called capital budgeting.

The concept of cost of capital is very useful in making capital budgeting decisions because cost of capital is the minimum required rate of return on an investment project. Also, a firm must not invest in those projects which generate a return less than the cost of capital incurred for its financing.

Net Present Value (NPV) and Internal Rate of Return (IRR) are two important methods used in capital budgeting. Both of these methods are dependent upon the use of cost of capital.

(3) For evaluating the financial performance : In the words of S.K. Bhattacharya the concept of cost of capital can be used to 'evaluate the financial performance of top management'. The financial performance evaluation involves the comparison of actual profitability of the investment project with the project overall cost of capital of funds raised to finance the project. If the actual profitability is more than the projected cost of capital, then the financial performance may be said to be satisfactory.

(4) Deciding about the method of financing : A capable financial executive must have knowledge of the fluctuations in the capital market and should analyse the rate of interest on loans and normal dividend rates in the market from time to time. Whenever company requires additional finance, he may have a better choice of the source of finance which bears the minimum cost of capital. Calculation of cost of capital is helpful in analysis of usefulness of various sources of finance. A particular source of finance may be encouraged or discouraged on the basis of its changed cost.

(5) **Performance of top management** : The cost of capital can be used to evaluate the financial performance of the top executives. Evaluation of the financial performance will involve a comparison of actual cost incurred in raising the required funds. Lower the actual cost of capital better is the financial performance of the management of the firm.

(6) **For taking financial decisions** : The cost of capital concept is also used in making other financial decisions such as dividend policy, capitalization of profits, making the right issue and working capital etc.

CLASSIFICATION OF COST

(1) **Marginal Cost** : In economics and finance, marginal cost is the change in total cost that arises when the quantity produced changes by one unit. Mathematically, the marginal cost (MC) function is expressed as the derivative of the total cost (TC) function with respect to quantity (Q). Note that the marginal cost may change with volume, and so at each level of production, the marginal cost is the cost of the next unit produced.

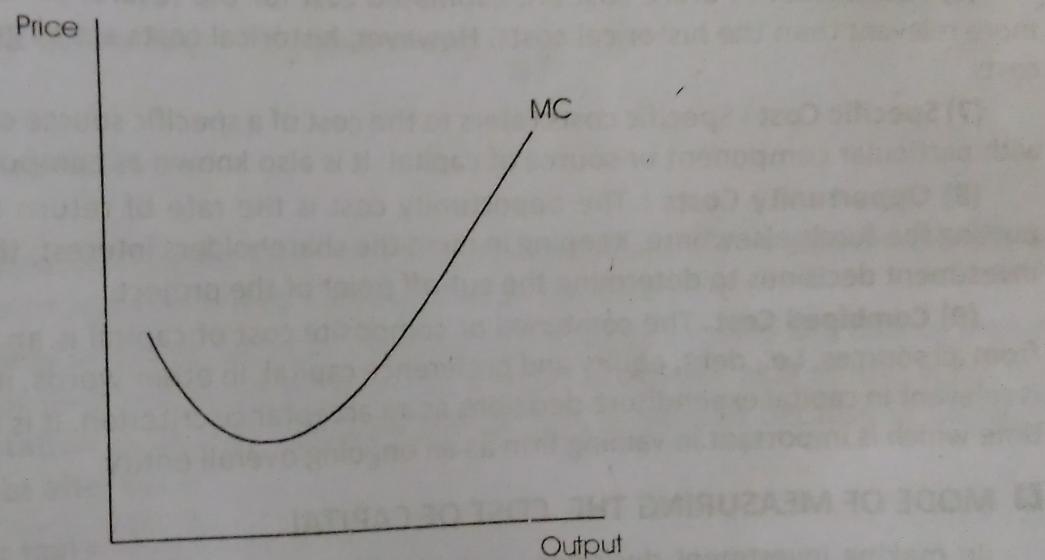


Fig. 19.1 A typical Marginal Cost Curve

In general terms, marginal cost at each level of production includes any additional costs required to produce the next unit. In simple words, In financial management marginal cost of capital refers to the average cost of capital which has to be incurred to obtain additional funds required by the firm. In investment decisions, it is the marginal cost which should be taken into consideration.

(2) **Average Cost** : In economics, average cost is equal to total cost divided by the number of goods produced (the output quantity, Q). It is also equal to the sum of average variable costs (total variable costs divided by Q) plus average fixed costs (total fixed costs divided by Q). In other words, In financial management Average cost is the combined cost of various sources of capital such as debentures, preference shares and equity shares. It is the weighted average cost of various sources of finance.

(3) **Explicit Cost** : An Explicit cost is a business expense accounted cost that can be easily identified such as wage, rent and materials. Explicit costs gives clear and evident cash outflows from business that increases its end result profitability. This cost directly effect the revenue. Intangible expenses such as goodwill and amortization are not explicit expense because these expenses don't show clear effects on a business's revenue and expenses.

(4) **Implicit Cost** : An implicit cost results if the person who at first foregoes the satisfaction in search of an activity and is not rewarded by money or another form of payment. The implicit cost benefits the company's well-being then that cost is considered as implicit cost. Goodwill is a good example of implicit cost.

Implicit cost is also known as the opportunity cost is the of the opportunity foregone in order to take a particular project.

Example : A firm's use of its own capital. This is considered an implicit cost because the capital could have been rented to another firm instead. This rental income foregone, or the implicit rental rate of capital, is the firm's opportunity cost of using its own capital. This implicit rental rate can be broken down before interest forgone.

(5) **Historical Cost** : Historical costs are the book cost which are related to the past. The book values has its origin in the accounting system in which the book values, as maintained by the books of accounts, are readily available. It is in common use for computation of cost of capital.

(6) **Future Cost** : Future cost are estimated cost for the future. In financial decisions future cost are more relevant than the historical costs. However, historical costs act as guide for the estimation of future costs.

(7) **Specific Cost** : Specific costs refers to the cost of a specific source of capital. It is the cost associated with particular component or source of capital. It is also known as component cost of capital.

(8) **Opportunity Costs** : The opportunity cost is the rate of return the shareholder forgoes by not putting the funds elsewhere. Keeping in mind the shareholders interest, this cost is used while making the investment decisions to determine the cut-off point of the project.

(9) **Combined Cost**. The combined or composite cost of capital is an aggregate of the cost of capital from all sources, i.e., debt, equity and preference capital. In other words, it is weighted cost of capital. This is relevant in capital expenditure decisions as an acceptance criterion. It is the overall mix of financing over time which is important in valuing firm as an ongoing overall entity.

■ MODE OF MEASURING THE COST OF CAPITAL

In making investment decisions, cost of different types of capital is measured and compared. The source, which is the cheapest is chosen and capital raised. Now the problem is how to measure the cost of different sources of capital. In fact, there is no exact procedure for measuring the cost of capital. It is based largely on forecasts and is subject to various margins of error. While computing the cost of capital, care should be taken about such factors as the needs of the company, the conditions under which it is raising capital, corporate policy constraints and level of expectation. In fact, a company raises funds from different sources, and therefore, composite or overall cost of capital can be determined after specific cost of each type of fund has been obtained. It is therefore, necessary to determine the specific cost of a source in order to determine the minimum obligation of a company, i.e., composite cost of raising capital.

Measuring of overall cost of capital involves :

- (A) Computation of Specific Sources of Finance
- (B) Computation of Overall or Weighted Average Cost of Capital.

Computation of Specific Sources of Finance

It includes the following :

- (I) Cost of debt, (II) cost of preference share capital, (III) cost of equity share capital and (IV) retained earnings.

Cost of Debt

The company can raise debt in a variety of ways. It can borrow funds from financial institutions or public either in form of debentures or public deposits for specified period of time at a specified rate of interest. A debenture may be issued at par or at a premium or at a discount. The contractual rate of interest forms the basis for calculating the cost of any form of debt.

Debt capital may be of two types viz.

- (a) Perpetual or Irredeemable debt
- (b) Redeemable debt after certain period

Cost of both these types may be calculated as follows :

(a) **Perpetual or Irredeemable debt :** Perpetual debt provides permanent funds to the firm, because funds will remain in the firm till liquidation. Computation of cost of perpetual debt is conceptually relatively easy. Cost of perpetual debt is the rate of return that lender expect (i.e. fixed interest rate). For calculating the cost of perpetual debt, capital, amount of interest payable on it is divided by the net proceeds from its issue. The formula is:

$$(i) \text{Cost of Irredeemable debt Before-tax : } K_d \text{ (Before tax)} = \frac{i}{N.P.} \times 100$$

Where, K_d – Cost of debt

i – Annual Interest charges

$N.P.$ – Net proceeds

Note : Net proceeds of debt means the par value of debt plus premium and minus discount on issue & flotation Cost (such as under-writing commission, brokerage, advertisement etc.).

(ii) **Cost of Irredeemable debt after-tax :** When a company uses debt as a source of finance then it gives a considerable amount of payment of tax because the amount of interest paid on the debts is a deductible expense in computation of tax. The effective cost of debt is reduced because of saving in taxation. Formula of cost of debt after tax is :

$$K_d \text{ (After tax)} = \frac{i(1-t)}{N.P.} \times 100$$

or

$$K_d \text{ (After tax)} = K_d \text{ (A.T.)} (i - t)$$

Where, K_d – Cost of debt

i – Annual Interest charges

$N.P.$ – Net proceeds

t – Tax rate

Illustration 1. (Cost of irredeemable) Raj Rani Ltd. issues ₹ 10,00,000, 9% debentures (i) at par (ii) at a discount of 6%, (iii) at a premium of 5%.

You are required to calculate the cost of debt.

Solution. $K_d \text{ (Before tax)} = \frac{i}{N.P.} \times 100$

(i) **Cost of debt issued at par :**

$$i = 9\% \text{ of } ₹ 10,00,000 = ₹ 90,000$$

$$N.P. = ₹ 10,00,000$$

$$K_d \text{ (before tax)} = \frac{90,000}{10,00,000} \times 100 = 9\%$$