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Topic: Methods of Capital budgeting or Evaluation of Investment proposals

While making investment for longer period or before taking investment decision, a business firm has a number of proposals regarding various projects in which it can invest funds. But the funds available with the firm are always limited and it is not possible to invest in all the proposals at a time. Hence, it is very essential to select from amongst all the various competing proposals, those which give the highest benefits. The crux of the capital budgeting is the allocation of available resources to various proposals. There are many considerations, economic and non-economic which influence the capital budgeting decisions. The crucial factor that influence the capital budgeting decision is the profitability of the prospective investment. However the risk involved in the proposal cannot be ignored because profitability and risk are directly related that is higher profitability, the greater the risk and vice-versa.

There are many methods of evaluating profitability of capital investment proposals. Some commonly used methods are as follows:

[A] Traditional method : Under which two methods are there;

1. Payback period method, and
2. Accounting rate of return method

[B] Time Adjusted Method or Discounted Method: under which four methods are there;

1. Net Present Value method
2. Profitability Index Method
3. Benefit Cost Ratio Method
4. Internal Rate of Return Method

[A] Traditional method : It is the method of evaluating of investment proposal where the amount of benefit as expected from the investment proposal in different subsequent years is given equal weightage. It means that under this method the value of the benefit of the current year and the subsequent year both are considered as same. Under this method the time value of money in respect of cash inflows is not taken into consideration. However the time value of money goes to decrease with the passage of time and it goes to decrease the value of the benefit at different rates in different years to come but when these values are ignored and amount of the benefit is not adjusted with the time value of money it is called traditional method. Under this method investment proposal is evaluated on the basis of Payback period and accounting rate of return.

1. Payback period :It is the most common and very popular method of evaluating investment proposal under this method we select that investment proposal in which payback period is comparatively low.It means that we calculate payback period of every investment proposal and recommend for selection to those investment proposal where payback period is low. Payback period is the period within which the cost of investment is realized. This method represents the period [normally in number of years] which is required to get back the original cost of the investment by - annual savings. Thus under this method it is observed on the basis of annual savings that in how many years the total amount of the capital expenditure will be recovered. There are several components with the help of that payback period is calculated such as; cost of investment, economic life of the project, Salvage value, depreciation ,annual cash inflows or cash flows before depreciation but after taxes.

This period is calculated under two different situations - one is when the amount of the cash inflows is equal in each and every year throughout the economic life of the project and other situation is when this amount is different in different years throughout the life.

[a] when the amount is equal; $\text{payback period} = \text{net investment} / \text{cash inflows}$

[b] when the amount is different ; $\text{payback period} = E + B / C \times P$

Here, 'Net Investment' denotes the cost of investment.

'Cash Inflows' denotes the operating profit before depreciation but after taxes.

'E' denotes number of years preceding the year of final recovery of the cost of investment.

'B' denotes the balance of the cost of investment to be recovered.

'P' denotes Period either in months or in days.

Thus, all alternatives are ranked according to the payback period and only that alternative is approved which has relatively lesser payback period. Some concerns formulated policy in this regard as to approve and implement a project only when it has payback period of not more than 1, 2, 3, 4, or 5 years. Such maximum acceptable payback period is generally derived by taking reciprocal of cutoff rate.

So far the positive and negative aspects of this method are concerned we find that

- i. This method is very easy to calculate and understandable for the line managers. s
- ii Sound and effective decisions on capital expenditure may be taken on the basis of the payback period in case of those Industries where rapid technological changes do take place. Under the payback period in such cases, greater is the margin of safety from the expected loss through obsolesce.
- iii. Where the returns beyond 3 to 4 years are assumed to be uncertain and hence there is no need to recognise them in deciding capital acquisitions only payback period Method can be used as a method of evaluating such investment projects.
- iv. Due to its short term approach, this method is particularly suited to a Firm which has shortage of cash or whose liquidity position is not particularly good.

In spite of these advantages there are certain limitations also which are;

- i. it does not take into account the cash flows earned after the payback period and hence the true profitability of the project cannot be correctly assessed.
- ii. this method ignores the time value of money and does not consider the magnitude and timing of cash inflows. It treats all cash inflows as equal though they occur in different time periods. It ignores the fact that cash received today is more important than the same amount of cash received in future years.
- iii. It does not take into consideration the cost of capital which is a very important factor in making sound investment decisions.
- iv. This method is not an exact measurement of the productivity of capital expenditure plan because it does not attempt to measure the return on investment.

2. Accounting rate of return method- This method takes into account the earnings expected from the investment over their whole life. It is known as accounting rate of return method for the reasons that under this method the accounting concept of profit that is net profit after depreciation and Taxes is used rather than cash inflows. According to this method various projects are ranked in order of the rate of earnings or the rate of return. The project with the higher rate of return is selected as compared to the one with the lower rate of return. This method can also be used to make the decision as to accepting and rejecting a proposal. The expected return is determined and the project which has a higher rate of return than the minimum rate specified by the firm called the cut-off rate is accepted and the one which gives a lower expected rate of return than the minimum rate is rejected.

The return on investment Method can be used in several ways which are as follows :

1. Average rate of return method: Under this method average profit after tax and depreciation is calculated and then it is divided by the total capital outlay or total investment in the project. In other words it establishes the relationship between average annual profits to total investment.

$$\text{Average rate of return} = \frac{\text{Average annual profits}}{\text{Net investment}} \times 100$$

2. Return on average investment method: under this method the return on average investment is calculated. Average investment is calculated by keeping in view the annual depreciation as charged from the original cost of investment or by dividing the original investment with two.

3. Average return or average investment method : this is the most appropriate method of rate of return on investment. Under this method average profit after depreciation and tax is divided by the average amount of investment.

Thus we find that under this method Calculation and understanding both are very easy hence it is very popular in most of the corporate concern. It is very easy to operate.

It uses the entire earnings of the project in calculating rate of return and not only the earnings up to the payback period and hence gives a better view of the profitability as compared to payback period method.

This method is based on accounting concept of profit as it can be readily calculated from the financial data.

In spite of these advantages, it also suffers from certain limitations these are;

1. This method like payback period ignores the time value of money as the profit earned at different points of time are given equal weight by averaging the profits.
2. This method can not be applied to a situation where investment in a project is to be made in parts.

Despite these limitations this method seems to be appropriate for evaluating investment proposal.