

Solution:

Calculation of Net Present Value

Year	Cash Inflows Rs.		Present Value factor at 10%		Present Value of cash inflows Rs.
1	9,000	✗	0.909	=	8,181
2	8,000	✓	0.826		6,608
3	7,000	✗	0.751	=	5,257
4	6,000	✓	0.683	-	4,098
5	5,000	✗	0.621	=	3,105
					27,249
Total present value of cash inflows					
Less: Total present value of cash outflows (investment)					25,000
Net Present Value (NPV)					2,249

As Net Present Value is positive, the project is recommended.

1. What do you understand by capital budgeting? Examine its need and importance.

Capital budgeting is the process of making investment decisions regarding capital expenditures. A capital expenditure is an expenditure incurred for acquiring or improving the fixed assets the benefits of which are expected to be received over a number of years in future. Capital expenditure involves non-flexible long-term commitment of funds. Capital budgeting is also known as long-term planning for investment decisions.

Charles T. Horngreen has defined capital budgeting as, "a long-term planning for making and financing proposed capital outlays".

Need and Importance of Capital Budgeting

Capital budgeting decisions are among the most crucial and critical business decisions. Special care should be taken in making these decisions on account of the following reasons.

- 1) **Heavy Investment:** All capital expenditure projects involve heavy investment of funds. These funds are raised by the firm from various external and internal sources. Hence, it is important for a firm to plan its capital expenditure.
- 2) **Permanent Commitment of Funds:** The funds involved in capital expenditures are not only large but also more or less permanently blocked. Therefore, these are long term investment decisions. The longer the time, the greater is the risk involved. Hence, careful planning is essential.
- 3) **Long Term Effect on Profitability:** Capital budgeting decisions have a long term and significant effect on the profitability of the concern. If properly planned, they can increase the size, scale and volume of sales as well the growth potential of the concern.
- 4) **Irreversible in Nature:** In most cases, capital budgeting decisions are irreversible. Once the decision for acquiring a permanent asset is taken, it is very difficult to reverse that decision. This is because it is difficult to dispose of these assets without incurring heavy losses.

1. Pay Back Period Method.
2. Accounting Rate of Return Method.
3. Discounted Cash Flow Method:
 - a) Net Present Value Method
 - b) Present Value Index Method
 - c) Internal Rate of Return Method

1. PAY BACK PERIOD METHOD

Pay back method is popularly known as pay off, or pay out method. It is defined as the number of years required to recover the initial cash outlay invested in a project.

Merits

The pay back method has the following merits.

1. It is easy to calculate and simple to understand.
2. It is preferred by executives who like quick answers for selection of the proposal.
3. It is useful where the business is suffering from shortage of funds as quick recovery is essential for repayment.
4. It is useful for industries subject to uncertainty, instability or rapid technological changes.
5. It is useful where profitability is not important.

Demerits

The method has the following demerits.

1. This method is delicate and rigid. A slight change in the operation cost will affect the cash inflows and the pay back period. *Small*
2. It does not take into account the life of the project, depreciation, scrap value, interest factor etc.
3. It completely ignores cash inflows after the pay back period.
4. The profitability of the project is completely ignored. *2/7/20*
5. It gives more importance to liquidity as a goal of capital expenditure decisions which is not justifiable.

Following methods

$$1. \text{ ARR} = \frac{\text{Average Annual profit}}{\text{Original investment}} \times 100 \text{ (or)}$$

$$2. \text{ ARR} = \frac{\text{Average Annual profit}}{\text{Average investment}} \times 100$$

The term average annual profit refers to average profit after depreciation and tax over the life of the project.

The average investment can be calculated by any of the following methods.

$$\frac{\text{Original Investment}}{2} \text{ (or)}$$

$$\frac{\text{Original Investment} - \text{Scrap value}}{2}$$

Merits

The following are the merits of accounting rate of return method.

1. It is simple to understand and easy to calculate.
2. This method gives due weightage to the profitability of the project.
3. It takes into consideration the total earnings from the project during its life time.
4. Rate of return may be readily calculated with the help of accounting data.

Demerits

This method suffers from the following weaknesses.

1. It uses accounting profits and not the cash inflows in appraising the project.

known. The rate of interest is

Merits of Discounted Cashflow Method

1. This method considers the entire economic life of the project.
2. It gives due weightage to time factor. That is, time value of money is considered.
3. It facilitates comparison between projects.
4. This approach by recognising time factor, makes sufficient provision for uncertainty and risk.
5. It is the best method where cash inflows are uneven.

Demerits

1. It involves a great deal of calculations. Hence it is difficult and complicated.
2. It is very difficult to forecast the economic life of any investment exactly.
3. The selection of an appropriate rate of interest is also difficult.
4. It does not correspond to accounting concepts for recording costs and revenues.