# Quadrant II - Notes

## Course Code: CEC102

## Module Name: Methods of Project Evaluation with Numerical Problems (Payback Period Method)

## Module No: 05

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**Project Evaluation:**

Project Evaluation is necessary to understand which project is feasible and should be considered depending on the conditions set by the Capital Budgeting.

The methods of Project Evaluation can be divided into two categories: i) techniques with undiscounted cash flows and ii) with discounted cash flows.

The end goal is to arrive at a number that a manager can rely upon to evaluate a particular or set of projects.

It helps the firm manager to rank the projects and prioritize its resources to select few projects.

**Payback Period Method:**

The Payback period is the length of time it takes for a project to recover its initial cost by the cash inflow that it generates over time.

The method allows for choosing that project which repays the initial investment in the shortest possible time.

It requires calculation of the period in which the cost of the project will be completely recovered.

This period is also referred to as '*the time that it takes for an investment to pay for itself'.*

The method Measures the number of years required for Cash Flow After Tax (CFAT) to payback the original outlay invested in a project.

The Payback Period is the ratio of the initial investment to annual net cash inflows.

When multiple similar projects are competing to be selected, Payback Period Method helps rank such projects.

The formula for calculating Payback Period can be expressed as:

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

Where: **P** is the Payback Period, **I** is the initial Investment and **C** is the yearly net cash inflow.

The above formula can be used if the annual cash inflows are the same every year.

Incase the cash inflow vary, we add the net cash flows of each year till the year when its cumulative total equals the initial cost.

**Calculating Payback Period:**

- Formula :- $P=\frac{I}{C}$

| Project | Initial Cost (I) in Rs. | Annual Cash Inflow(C) in Rs. | Payback Period | Rank |
|---|---|---|---|---|
| A | 50,000 | 10,000 | 5 years | 3rd |
| B | 90,000 | 20,000 | 4.5 years | 2nd |
| C | 80,000 | 15,000 | 5.3 years | 4th |
| D | 1,00,000 | 25,000 | 4 years | 1st |
| E | 70,000 | 12,000 | 5.8 years | 5th |

From the above example, we can infer that the project having the lowest payback period will be selected first.

The remaining projects will be considered based on the funds available and will be selected on the basis of their rank.

**Advantages of Payback Period:**

- It is a simple method to understand and execute.
- Uncertainty attached with the returns is reduced.
- It favours the projects which generate substantial cash inflows in the initial years.
- This method of project evaluation is suitable for management which is risk averse or concerned with early recovery of investment.

**Limitations of the Payback Period Method:**

- It ignores the cash flows occurring after the payback period.
- It does not consider time value of money.
- It ignores the rate of return on investment.
- This method of project evaluation is suitable for management which is risk averse or concerned with early recovery of investment.