

Capital Investment Decisions

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Special Features of Capital Investment Decisions

- **Significant amount of initial cash outflow at the beginning of the projects**
- **The benefits of the projects will occur over numbers of years**
- **Once the decision is take it is difficult to reverse**

Tools Used in Capital Investment Decisions

- **Accounting Rate of Return (ARR)**
- **Payback Period (PBP)**
- **Net Present Value (NPV)**

Accounting Rate of Return (ARR)

○ **ARR is calculated using the following methods**

1. $ARR = \frac{\text{Average Annual Profit}}{\text{Initial Investment}}$

2. $ARR = \frac{\text{Average Annual Profit}}{\text{Average Investment}}$

Accounting Rate of Return (ARR)

Exercise 1

A business is planning to invest Rs.5,000,000 in a new project and the project period is 5 years. The scrap value of the assets invested for the project at end the project period is Rs.1,000,000.

Year	Expected Profit (Rs.)
1	800,000
2	1,200,000
3	2,000,000
4	2,000,000
5	1,500,000

Calculate the ARR of the Project

Accounting Rate of Return (ARR)

Exercise 2

A business is planning to invest Rs.8,000,000 in a new project and the project period is 5 years. The scrap value of the assets invested for the project at end the project period is Rs.2,000,000.

Year	Income (Rs.000)	Expenses (Rs.000)
1	1,500	1,000
2	2,000	1,000
3	2,500	1,500
4	2,500	1,000
5	1,500	500

Calculate the ARR of the Project

Payback Period

- **Payback period measures the time taken recover the initial investment out of the net cash inflows generated from the project.**
- **Payback period consider cashflows of the project rather than profit.**

Payback Period

Exercise 3

A company is planning to invest Rs.7,000,000 to purchase a new plant . The useful life of the plant is 6 years. The net cash inflows expected to generate from the plant are given below.

Year	1	2	3	4	5	6
Net cash flows (Rs.000)	1,500	2,000	3,500	2,500	2,500	2,000

Calculate the payback period of the Project

Payback Period

Exercise 4

A company is planning to invest Rs.6,000,000 to purchase a new plant . The useful life of the plant is 5 years. The net cash inflows expected to generate from the plant are given below.

Year	1	2	3	4	5	6
Net cash flows (Rs.000)	1,500	2,500	3,000	2,500	2,000	2,000

Calculate the payback period of the Project

Advantages and Limitations of Payback

Advantages	Limitations

Net Present Value

- Net present value is calculated by considering all the cashflows over the project period as well as time value of money.
- Accordingly, when calculating NPV, the cash flows are multiplied by the discounting factor.

Year	0	1	2	3	4	5	6
Discounting Factor-10%	1.00	0.91	0.83	0.75	0.68	0.62	0.56
Discounting Factor-15%	1.00	0.87	0.76	0.66	0.57	0.50	0.43

Net Present Value

Exercise 5

Consider all information given in exercise 3 and calculate the net present value at the discounting factor of 10%. State your recommendation based on calculations.

Net Present Value

Exercise 6

Consider all information given in exercise 4 and calculate the net present value at the discounting factor of 15%. State your recommendation based on calculations.

Net Present Value-Estimating Cash flows

Exercise 7

A company is planning to replace its old machine with a new one. If the new machine is acquired, the old one could be sold for Rs.800,000. The carrying amount of old machine is Rs.500,000. The purchase price of new plant is Rs.4,000,000 and estimated useful life is 5 years. Transport and installation of new machine will cost Rs.600,000. The additional working capital requirement of new machine is Rs.500,000 and expected to be realized at end of the useful life. The residual value of the plant is Rs.400,000. The increase in annual net profit due to purchase of new plant is Rs.750,000. The expected rate of return (Discounting factor) of the project is 10%.

Required:

1. Prepare a schedule showing cash inflows and outflows
2. Calculate NPV of the project and make your recommendation