

What is the Payback Period?

Worksheet

The payback period is the time required for cumulative cash inflows to equal the initial investment. For even annual cash flows: $\text{Payback Period} = \text{Initial Investment} / \text{Annual Cash Flow}$.

$$\text{Payback} = \frac{I_0}{\text{Annual CF}}$$

Questions

1. A \$60,000 project returns \$15,000 per year evenly. Payback period?
A) 4 years
B) 3 years
C) 6 years
D) 15 years
2. What does the simple payback period ignore?
A) Initial investment
B) The time value of money
C) Cash flow amounts
D) Project cost
3. Cumulative cash flow after Year 2 is -\$10,000, and Year 3 cash flow is \$40,000. What is the payback period?
A) 2.25 years
B) 2.5 years
C) 3 years
D) 2.75 years
4. Which project is preferred using the payback method (all else equal)?
A) Longer payback period
B) Shorter payback period
C) Payback period is irrelevant
D) Negative payback period
5. A project costs \$50,000 and generates \$10,000 per year evenly. Find the payback period.
6. A machine costs \$120,000 and produces \$30,000 in even annual cash flow. Find the payback period.
7. A \$100,000 project generates uneven cash flows: \$40,000 in Year 1, \$40,000 in Year 2, and \$40,000 in Year 3. Find the payback period.
8. Define: What is the payback period?
9. Define: Payback period formula for even cash flows?
10. Define: Biggest weakness of the payback period?

Answer Key

1. A) 4 years - $60,000/15,000 = 4$ years.
2. B) The time value of money - It doesn't discount cash flows, unlike NPV or discounted payback.
3. A) 2.25 years - Remaining amount $10,000/40,000 = 0.25$ year $2 + 0.25 = 2.25$ years.
4. B) Shorter payback period - Shorter payback periods return invested cash sooner, reducing risk.
5. Payback Period = Initial Investment / Annual Cash Flow Payback Period = $50,000 / 10,000 = 5$ years
6. Payback Period = $120,000 / 30,000 = 4$ years
7. Cumulative after Year 1 = 40,000 (still -60,000 short) Cumulative after Year 2 = 80,000 (still -20,000 short) During Year 3, remaining $20,000 / 40,000 = 0.5$ year Payback Period = $2 + 0.5 = 2.5$ years
8. The time it takes for cumulative cash inflows to equal the initial investment.
9. Payback Period = Initial Investment / Annual Cash Flow.
10. It ignores the time value of money and any cash flows received after the payback point.

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