Profitability Index (Benefit per Unit of Investment)

Profitability index: present value of a project's future cash flows divided by the initial investment, with the NPV, for ranking projects when capital is limited.

Method: Profitability index (present value index)

Input parameters

Unit system: SI

Parameter	Value	Unit
Initial investment	1,000,000	
Year 1	300,000	
Year 2	350,000	
Year 3	400,000	
Year 4	300,000	
Year 5	200,000	
Year 6	0	
Discount rate	10.000	%

Calculated results

Parameter	Value	Unit
Present value of the future cash flows	1,191,598	
Net present value	191,598	
Profitability index	1.1916	

Notes for this case

• The profitability index is the present value of the future cash flows per unit of money invested. Above 1 the project earns more than the discount rate (NPV positive). When capital is rationed, funding projects in order of PI gives the most total NPV for the money available (for independent, divisible projects).

Formula and method

$$PI = \frac{\sum_{k=1}^{n} C_k (1+r)^{-k}}{I_0}, \quad NPV = PV - I_0$$

Variables

I_0	Initial investment	-
C_1	Year 1	-
C_2	Year 2	-
C_3	Year 3	-
C_4	Year 4	-
C_5	Year 5	-
C_6	Year 6	-
r	Discount rate	-
PV	Present value of the future cash flows	-
NPV	Net present value	-
PI	Profitability index	-

Method and standards

Profitability index.

Assumptions and limits

- Year-end cash flows; investment at time zero.

References

Profitability index (present value index)

Report details

Report reference	FCC-R6M3-PYCZ (the same inputs always give the same reference)
Generated	23 November 2026, 17:51 UTC
Calculator	Profitability Index (Benefit per Unit of Investment)
Method last reviewed	17 November 2026
Software release	FireCAD Calc, release of 22 November 2026
Release checks	3 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/general/economics/profitability-index

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.