INVESTMENTS / PROJECT APPRAISAL

NPV, IRR and payback: appraise investments without mistakes

Every investment competes for the same scarce capital. NPV, IRR and payback exist to compare those alternatives on equal footing.

What each metric measures

NPV — Net Present Value

How much value the project creates, in today's money. It discounts all future cash flows to the present and subtracts the initial investment. Positive NPV: the project earns more than the cost of capital. The king of criteria — it measures value in currency, not percentages.

IRR — Internal Rate of Return

The project's implicit percentage return. The rate that makes NPV equal zero. Accept the project if the IRR exceeds the cost of capital. Intuitive — but full of traps when used alone.

Payback — Recovery period

How long until the money comes back. It doesn't measure profitability: it measures exposure to risk and liquidity. Useful as a complementary filter; insufficient as the sole criterion.

The five most common mistakes

1. Deciding on payback alone. It ignores the time value of money and everything the project generates after recovery. A project that returns the investment in 18 months and dies there can be worse than one that takes 3 years and generates cash for 10.

2. Ranking projects of different scale by IRR. A 45% IRR on a small investment can create far less value than 25% on a large one. When projects are mutually exclusive, NPV rules.

3. Using an arbitrary discount rate. The rate must reflect the business's cost of capital and the project's risk. Understating it inflates NPV and approves value-destroying projects.

4. Mixing nominal cash flows with real rates (or vice versa). The classic error under inflation. Nominal flows are discounted at nominal rates; constant-currency flows at real rates. Mixing them distorts the result entirely.

5. Forgetting working capital and incremental flows. A project is appraised on the cash flows it adds to or removes from the business — including the inventory and receivables that growth demands — not on its standalone accounting.

3

metrics, one combined read: NPV decides, IRR communicates the return, and payback sizes the liquidity risk. None replaces the other two.

Standard corporate finance criterion (Brealey, Myers & Allen)

How to compare projects on equal footing

Every project competing for capital should be appraised in the same currency (constant or nominal, but one only), with the same risk-adjusted base rate, the same analysis horizon and the same macro assumptions. And always with scenarios: an NPV that is only positive in the upside case is not a project — it's a bet.

For an SME, this framework also professionalizes the conversation with banks and investors: incremental cash flows, a justified discount rate and sensitivity analysis change the quality of the dialogue — and often, the cost of financing.

> ***"IRR seduces and payback reassures — but NPV is what pays the salaries."***

Sources: Brealey, Myers & Allen, Principles of Corporate Finance (13th ed.); Damodaran, Applied Corporate Finance; Graham & Harvey, JFE (2001).