**Capital Budgeting and Investment Appraisal**

**High-Risk Project Analysis**

You are a financial analyst at Green Future Ventures, a private equity firm that invests in innovative sustainable construction technologies.

Your team is considering two high-risk projects for possible investment. Both projects are in **early-stage markets**, where future cash flows are highly uncertain and subject to market fluctuations.

You must perform a rigorous financial appraisal to help the Investment Committee decide which project — if any — should be funded.

|  | **Project A: 3D-Printed Modular Housing Units** | **Project B: Carbon-Negative Concrete** |
| --- | --- | --- |
| **Initial Investment** | $750,000 | $700,000 |
| **Discount Rate** | 12% | 12% |
| **Year 1 Cash Flow** | $180,000 | $150,000 |
| **Year 2 Cash Flow** | $250,000 | $300,000 |
| **Year 3 Cash Flow** | $130,000 | $220,000 |
| **Year 4 Cash Flow** | $310,000 | $180,000 |
| **Year 5 Cash Flow** | $200,000 | $350,000 |

**Key Tasks**

Net Present Value (NPV)

* Calculate the NPV for each project.
* Which project has the higher NPV?

Internal Rate of Return (IRR)

* Calculate the IRR for each project.
* Compare the IRRs — which project offers higher potential return

**Payback Period**

* Determine how many years it will take to recover the initial investment.

**Net Return Value (NRV)**

* Compare the absolute returns of both projects.

**Strategic Analysis**

**Investment Committee Questions**

1. Based on NPV and IRR, which project is more financially attractive?
2. If the firm is risk-averse, which project is safer based on cash flow patterns?
3. If short-term liquidity is a concern, which project is better based on Payback Period?
4. What are the risks associated with investing in these markets?
5. How might non-financial considerations (market leadership, innovation reputation, ESG goals) affect the decision?
6. Should the firm invest in both projects, one, or neither? Why?

**Deliverables**

* NPV, IRR, Payback Period, NRV calculations (clearly presented)
* 1-page recommendation report for the Investment Committee