Capital Budgeting

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1 Capital Budgeting – Overview

Capital budgeting: Choosing which investments a firm should make.

Goal: Identify investment projects that *add value* to a company.

Investment Criterion: The only criterion that identifies the added value:

- Net Present Value (NPV) – The discounted present value of expected cash flows from a project, less the initial investment.

  $$NPV = \sum_{t=1}^{T} \frac{E[C_t]}{(1+r)^t} - C_0$$

  where

  - C_t = Cash flow in period t.
  - r = opportunity cost of capital.
  - C_0 = Initial cost of the investment.

Some alternatives to NPV

- Internal Rate of Return (IRR) – The interest rate that sets NPV to zero.
  - Useful as a relative measure of the attractiveness of an investment, but problems with comparing investments in special cases (e.g. mutually exclusive investments)
- Payback period – How long it takes before the project returns the investment amount
  - Useful to understand cash flows, but will not measure the value added of a project.
- Accounting rates of return – sensitive to accounting decisions.

Estimating Cash Flow

Actual Cash flow: Money received less money paid out. i.e. after taxes

Timing of cash flow: When money flows in or out. (e.g. account for credit periods)

Estimate the *incremental* cash flows for a project.

- Include incidental effects (complements/substitutes)
- Remember necessary working capital.
- Include opportunity costs
- Beware of allocated overhead