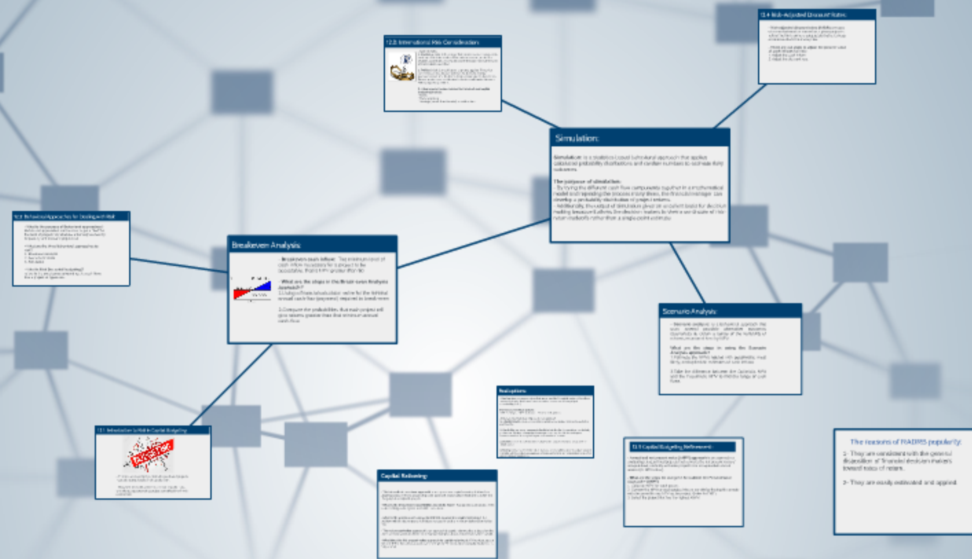
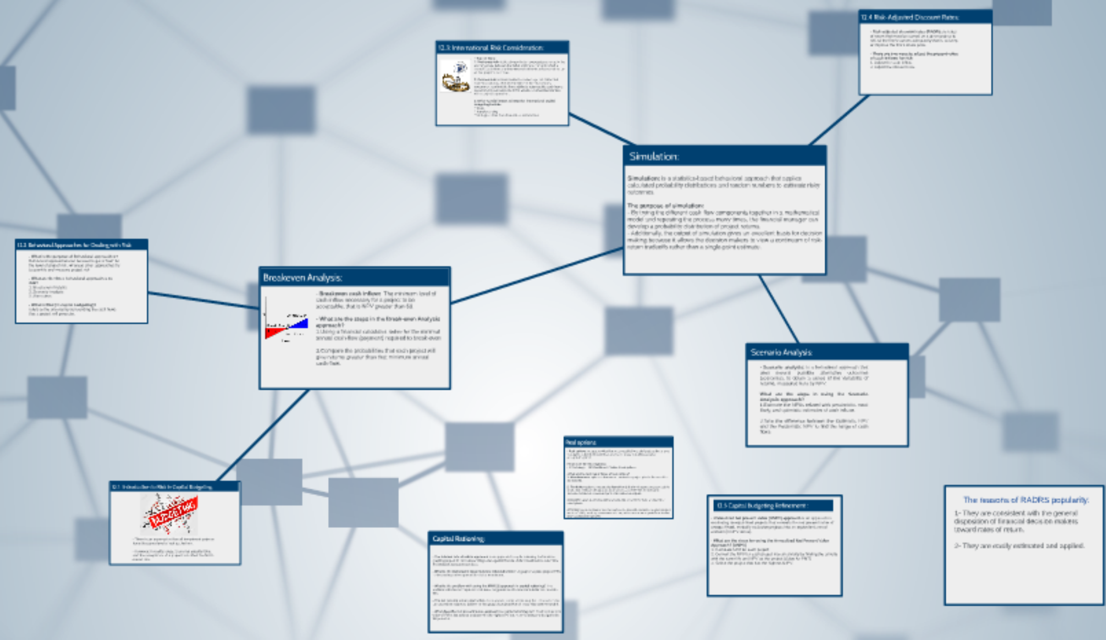


Risk and Refinements in Capital Budgeting

Musab Aljuwaiber



Risk and Refinements in Capital Budgeting

Musab Aljuwaiber

12.1: Introduction to Risk in Capital Budgeting:

- There is an assumption that all investment projects have the same level of risk as the firm.

- However, in reality, projects are not equally risky, and the acceptance of a project can affect the firm's overall risk.

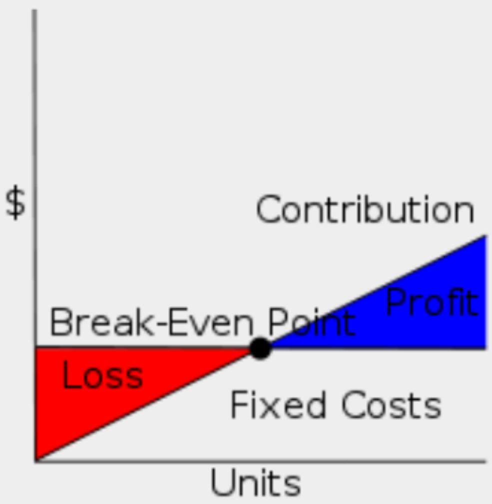
12.2: Behavioral Approaches for Dealing with Risk:

- What is the purpose of Behavioral approaches?
Behavioral approaches can be used to get a "feel" for the level of project risk, whereas other approaches try to quantify and measure project risk

- What are the three behavioral approaches to risk?
1. Breakeven Analysis
2. Scenario Analysis
3. Simulation

- What is Risk (in capital budgeting)?
refers to the uncertainty surrounding the cash flows that a project will generate.

Breakeven Analysis:



- **Breakeven cash inflow:** The minimum level of cash inflow necessary for a project to be acceptable, that is NPV greater than $0.

- **What are the steps in the Break-even Analysis approach?**

1.Using a financial calculator, solve for the minimal annual cash-flow (payment) required to break-even

2.Compare the probabilities that each project will give returns greater than that minimum annual cash-flow.

Scenario Analysis:

- Scenario analysis: is a behavioral approach that uses several possible alternative outcomes (scenarios), to obtain a sense of the variability of returns, measured here by NPV.

What are the steps in using the Scenario Analysis approach?

1.Estimate the NPVs related with pessimistic, most likely, and optimistic estimates of cash inflows

2.Take the difference between the Optimistic NPV and the Pessimistic NPV to find the range of cash flows

Simulation:

Simulation: is a statistics-based behavioral approach that applies calculated probability distributions and random numbers to estimate risky outcomes.

The purpose of simulation:

- By trying the different cash flow components together in a mathematical model and repeating the process many times, the financial manager can develop a probability distribution of project returns.
- Additionally, the output of simulation gives an excellent basis for decision making because it allows the decision makers to view a continuum of risk-return tradeoffs rather than a single-point estimate.

12.3: International Risk Consideration:

- Type of risks:

1. Exchange risk: is the danger that an unexpected change in the exchange rate between the dollar and the currency in which a project's cash flows are denominated will reduce the market value of that project's cash flow.

2. Political risk: is much harder to protect against. Firms that make investments abroad may find that the host-country government can limit the firm's ability to return profits back home. Governments can seize the firm's assets, or otherwise interfere with a project's operation.

3. Other special issues relevant for international capital budgeting include:

" Taxes

" Transfer pricing

" Strategic, rather than financial, considerations