DECISION MAKING AND SCENARIOS

MODULE 2.5 – Evaluating Projects

Key Considerations in Evaluations

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Things to Keep in Mind

- Only the change in after-tax cash flows of the organization is relevant. Estimate cash flows on an incremental basis.

How will the after-tax cash flows of the organization change?

Things to Keep in Mind

- Remember we are asking how the cash flows of the organization change – we are not analyzing the project in isolation.

Suppose a project loses money in the first few years. The company will get a tax benefit from that loss as long as the company is profitable and paying taxes

Things to Keep in Mind

- Only future cash flows are relevant.

  Do not reinvest in a project just because it has been profitable in the past. Future potential is the only thing that matters. History is a guide to the future – it is not the future

Things to Keep in Mind

- Consider only investment-related cash flows. (i.e., ignore financial costs)

  The cost of financing is embedded in the discount rate used. Therefore, cash flows are typically created assuming that the investment is derived from all-equity financing or cash the company has available. If you subtract interest payments from your incremental cash flows, you will be charging the project twice for financing since that is part of the cost of capital calculation.

Things to Keep in Mind

- Include all incidental effects

  It is important to include all incidental effects on the remainder of the business. Will a new product cannibalize sales of existing products? Will it increase sales of other products or services? Remember we are not analyzing the project in isolation!!!

  Some incidental effects are hard to quantify. Quantify everything you can and weigh the non-quantified issues against the NPV of the quantified costs and benefits.

Things to Keep in Mind

- Do not forget working capital requirements

  Working capital is the difference between a company's current assets and current liabilities. Many projects require an additional investment in working capital before the operating phase and that investment may further increase during the operating phase. Those working capital investments should be recognized in the cash flow forecasts. Working capital is usually recovered at the end of the project when it is released (inventory is sold and receivables are collected and payables are paid).

Things to Keep in Mind

- Don’t forget taxes

  Consider the effect of taxes on any decision. That is, make sure to calculate the incremental cash flows **after taxes**. Note that this means you need to have some understanding of the company’s tax situation
  - What is their tax rate?
  - What form of depreciation do they use?
  - Do they pay tax in multiple jurisdictions?

Things to Keep in Mind

- Forget sunk costs - they are **never** relevant
  Sunk costs are past and irreversible outflows. They cannot affect a decision made today. Therefore they should be ignored.
- Suppose a company had spent $100 million developing a new product, but had not finished development yet. It is now deciding whether to continue development, which the company estimates will cost $50 million more. Should the company factor the $100 million into the decision?
- More specifically would your NPV analysis include the $100 million in its analysis in deciding today whether to continue development as well as the $50 million?

Things to Keep in Mind – Sunk Costs (Continued)

- No – the $100 million is a sunk cost and is irrelevant for deciding whether to proceed with development at this stage.
- What is relevant is what is the present value of the additional amounts the company needs to spend, weighed against the present value of the benefits from continuing development
- Sunk costs are not relevant

Things to Keep in Mind

- Don’t forget opportunity costs

The opportunity cost of a resource (the value of the resource in its next most highly valued use) may be relevant to the investment decision even when no cash changes hands.

For example, suppose a company is contemplating building a new manufacturing operation on land the company already owns. Assume the land cost the company $10,000 five years ago, but could now be sold for $100,000. In analyzing whether to build the manufacturing facility, should the net present value analysis consider the cost of the land to be $10,000 or $100,000?

Things to Keep in Mind

- Use expected values of cash flows

- Future cash flows are forecasts of the future. As such, there is uncertainty associated with these numbers. Base case for the analysis is the expected value of the future cash flows (the mean estimate of the future.)
- We sometimes approximate expected values by looking at different scenarios weighting them probabilistically

Things to Keep in Mind

- Perform Sensitivity Analysis

1 To estimates of future cash flows
2 To estimates of the discount rate
3 To timing and length of project

Sensitivity analysis allows us to see the key drivers of value in a project. Once you understand the key sensitivities (key value drivers), you can expend extra effort on those areas to solidify your knowledge and make sure your forecasts are reasonable. You can also manage the project knowing what the key determinants of value creation are and hold the personnel responsible for managing the project appropriately.

Summary

- In the first two modules, we have:
  - Discussed how to calculate present values and why that is the relevant criterion for evaluating projects
  - Discussed how to evaluate projects with emphasis on how we model the change in the company's after-tax cash flows because of the project
- In the next two modules, we will:
  - Discuss how to model a project's cash flows using basic financial statements
  - Discuss a detailed example of a new product venture, complete with a valuation and scenario analysis


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