

DUE 5/7/17

Comprehensive/Spreadsheet Problem

11-23

- **CAPITAL BUDGETING CRITERIA** Your division is considering two projects. Its WACC is 10%, and the projects' after-tax cash flows (in millions of dollars) would be as follows:

	0	1	2	3	4
Project A	-\$30	\$5	\$10	\$15	\$20
Project B	-\$30	\$20	\$10	\$8	\$6

1. Calculate the projects' NPVs, IRRs, MIRR, regular paybacks, and discounted paybacks.
2. If the two projects are independent, which project(s) should be chosen?
3. If the two projects are mutually exclusive and the WACC is 10%, which project(s) should be chosen?
4. Plot NPV profiles for the two projects. Identify the projects' IRRs on the graph.
5. If the WACC was 5%, would this change your recommendation if the projects were mutually exclusive? If the WACC was 15%, would this change your recommendation? Explain your answers.
6. The crossover rate is 13.5252%. Explain what this rate is and how it affects the choice between mutually exclusive projects.
7. Is it possible for conflicts to exist between the NPV and the IRR when *independent* projects are being evaluated? Explain your answer.
8. Now look at the regular and discounted paybacks. Which project looks better when judged by the paybacks?
9. If the payback was the only method a firm used to accept or reject projects, what payback should it choose as the cutoff point, that is, reject projects if their paybacks are not below the chosen cutoff? Is your selected cutoff based on some economic criteria, or is it more or less arbitrary? Are the cutoff criteria equally arbitrary when firms use the NPV and/or the IRR as the criteria? Explain.
10. Define the MIRR. What's the difference between the IRR and the MIRR, and which generally gives a better idea of the rate of return on the investment in a project? Explain.
11. Why do most academics and financial executives regard the NPV as being the single best criterion and better than the IRR? Why do companies still calculate IRRs?