

Chapter 9

Practice Problems

1. What is the NPV, and IRR of a project costing \$5 million that produces FCFF of \$0.75m every year forever (starting one year from today). Assume that the project's WACC is 10%.
2. A project is expected to produce FCFF of \$500 every year for 5 years starting 3 years from today. If the project's initial cost is \$1,000—raised entirely with equity—and the project's beta is 1.455, should the project be accepted according to MIRR? NPV? Assume that the risk-free rate is 7% and the MRP is 5.5%.
3. A project has an initial cost of \$2,000 and produces a single FCFF of \$4,000 in 10 years. What is the project's IRR? What is the project's MIRR? Why don't you need the WACC to figure out this project's MIRR?
4. A project produces FCFF of \$1 million in its first year. Its FCFF is expected to grow at a constant 5% every year for the next 24 years. What is the most you would consider paying for the project, if the appropriate cost of capital is 10%?
5. You are considering developing a new Web browser. Startup costs are \$18 million. You expect to produce FCFF of \$1.15 million the first year ($t=1$) that will grow at a constant rate of 15% for the next 7 years. After that, FCFF is expected to grow at a constant 7% forever. What is the NPV of the project if the project WACC is 19%?
6. A project is expected to produce FCFF of \$500 every year for 5 years starting in 3 years. If the project's initial cost is \$1,000—raised entirely with equity—and the project's beta is 1.2, should the project be accepted (assume an 8% risk-free rate, and a 5.5% MRP)?
7. Phoenix Products requires a new machine. Two companies have submitted bids, and you are responsible for choosing which machine to buy. You believe the cost of capital is 5%, and cash flow analysis indicates the following:

Year	Machine A	Machine B
0	(2000)	(1000)
1	0	430
2	0	430
3	0	430
4	5000	430

What is the IRR for each machine? What is the NPV for each machine? Which machine should be chosen. Why?