11-1. (*Relevant cash flows*) Captins' Cereal is considering introducing a variation of its current breakfast cereal, Crunch Stuff. The new cereal will be similar to the old with the exception that it will contain sugarcoated marshmallows shaped in the form of stars and will be called Crunch Stuff n' Stars. It is estimated that the sales for the new cereal will be $25 million; however, 20 percent of those sales will be former Crunch Stuff customers who have switched to Crunch Stuff n' Stars but who would not have switched if the new product had not been introduced. What is the relevant sales level to consider when deciding whether to introduce Crunch Stuff n' Stars?

11-4. (*Calculating free cash flows*) Racin' Scooters is introducing a new product and has an expected change in EBIT of $475,000. Racin' Scooters has a 34 percent marginal tax rate. The project will also produce $100,000 of depreciation per year. In addition, the project will also cause the following changes in year 1:

	WITHOUT THE PROJECT	WITH THE PROJECT
Accounts receivable	$45,000	$63,000
Inventory	65,000	80,000
Accounts payable	70,000	94,000

What is the project's free cash flow in year 1?

11-9. (*New project analysis*) The Chung Chemical Corporation is considering the purchase of a chemical analysis machine. Although the machine being considered will result in an increase in earnings before interest and taxes of $35,000 per year, it has a purchase price of $100,000, and it would cost an additional $5,000 to properly install the machine. In addition, to properly operate the machine, inventory must be increased by $5,000. This machine has an expected life of 10 years, after which it will have no salvage value. Also, assume simplified straight-line depreciation and that this machine is being depreciated down to zero, a 34 percent marginal tax rate, and a required rate of return of 15 percent.

a. What is the initial outlay associated with this project?
b. What are the annual after-tax cash flows associated with this project for years 1 through 9?
c. What is the terminal cash flow in year 10 (what is the annual after-tax cash flow in year 10 plus any additional cash flows associated with the termination of the project)?
d. Should this machine be purchased?

11-15. (*Comprehensive problem*) The Shome Corporation, a firm in the 34 percent marginal tax bracket with a 15 percent required rate of return or cost of capital, is considering a new project. The project involves the introduction of a new product. This project is expected to last 5 years and then, because this is somewhat of a fad product, be terminated. Given the following information, determine the free cash flows associated with the project, the project's net present value, the profitability index, and the internal rate of return. Apply the appropriate decision criteria.

Cost of new plant and equipment	$6,900,000
Shipping and installation costs	$ 100,000
Unit sales	

YEAR	UNITS SOLD
1	80,000
2	100,000
3	120,000
4	70,000
5	70,000

Sales price per unit	$250/unit in years 1 through 4, $200/unit in year 5
Variable cost per unit	$130/units
Annual fixed costs	$300,000 per year in years 1–5
Working-capital requirements	There will be an initial working-capital requirement of $100,000 just to get production started. For each year, the total investment in net working capital will be equal to 10 percent of the dollar value of sales for that year. Thus, the investment in working capital will increase during years 1 through 3, then decrease in year 4. Finally, all working capital is liquidated at the termination of the project at the end of year 5.
The depreciation method	Use the simplified straight-line method over 5 years. Assume that the plant and equipment will have no salvage value after 5 years.

11-17. (*Real options and capital budgeting*) You have come up with a great idea for a Tex-Mex-Thai fusion restaurant. After doing a financial analysis of this venture, you estimate that the initial outlay will be $6 million. You also estimate that there is a 50 percent chance that this new restaurant will be well received and will produce annual cash flows of $800,000 per year forever (a perpetuity), while there is a 50 percent chance of it producing a cash flow of only $200,000 per year forever (a perpetuity) if it isn't received well.

a. What is the *NPV* of the restaurant if the required rate of return you use to discount the project cash flows is 10 percent?
b. What are the real options that this analysis may be ignoring?
c. Explain why the project may be worthwhile even though you have just estimated that its *NPV* is negative.

11-20. (*Risk-adjusted discount rates and risk classes*) The G. Wolfe Corporation is examining two capital-budgeting projects with 5-year lives. The first, project A, is a replacement project; the second, project B, is a project unrelated to current operations. The G. Wolfe Corporation uses the risk-adjusted discount rate method and groups projects according to purpose, and then it uses a required rate of return or discount rate that has been preassigned to that purpose or risk class. The expected cash flows for these projects are given here:

	PROJECT A	PROJECT B
Initial investment	−$250,000	−$400,000
Cash inflows:		
Year 1	$130,000	$135,000
Year 2	40,000	135,000
Year 3	50,000	135,000
Year 4	90,000	135,000
Year 5	130,000	135,000

The purpose/risk classes and preassigned required rates of return are as follows:

PURPOSE	REQUIRED RATE OF RETURN
Replacement decision	12%
Modification or expansion of existing product line	15
Project unrelated to current operations	18
Research and development operations	20

Determine each project's risk-adjusted net present value.

Review Questions

16-6. What is meant by (a) exchange risk and (b) political risk?

16-8. What risks are associated with direct foreign investment? How do these risks differ from those encountered in domestic investment?

16-2. (*Spot exchange rates*) An American business pays $10,000, $15,000, and $20,000 to suppliers in, respectively, Japan, Switzerland, and Canada. How much, in local currencies, do the suppliers receive?

COUNTRY	CONTRACT	$/FOREIGN CURRENCY
Canada—dollar	Spot	0.8437
	30-day	0.8417
	90-day	0.8395
Japan—yen	Spot	0.004684
	30-day	0.004717
	90-day	0.004781
Switzerland—franc	Spot	0.5139
	30-day	0.5169
	90-day	0.5315

16-7. (*Spot exchange rate*) Suppose the exchange rate between U.S. dollars and Japanese yen is $1 US = ¥79.1 JPY, and the exchange rate between the U.S. dollar and the British pound is $1 US = £0.64 GBP. What is the cross rate of Japanese yen to British pounds? (In other words, how many yen are needed to purchase 1 pound?)

16-10. (*Interest rate parity*) Suppose 90-day investments in Europe have a 5 percent annualized return and a 1.25 percent quarterly (90-day) return. In the United States, 90-day investments of similar risk have a 7 percent annualized return and a 1.75 percent quarterly return. In today's 90-day forward market, 1 euro equals $1.32. If interest rate parity holds, what is the spot exchange rate ($/€)?

16-11. (*Purchasing-power parity*) A McDonald's Big Mac costs 2.44 yuan in China, but costs $4.20 in the United States. Assuming that purchasing-power parity (PPP) holds, how many Chinese yuan are required to purchase 1 U.S. dollar?