

### ADDITIONAL PROBLEMS FOR CHAPTER 11

**11-19**  
Scenario analysis

Worldwide Technologies encounters significant uncertainty in its sales volume and price with its primary product. The firm uses scenario analysis to determine an expected NPV, which it then uses in its capital budget. The base-case, best-case, and worst-case scenarios and probabilities are provided in the following table. What are this product's expected NPV, standard deviation, and coefficient of variation?

SCENARIO	PROBABILITY OF OUTCOME	UNIT SALES VOLUME	SALES PRICE	NPV (IN 000'S)
Worst case	0.30	10,800	\$6,480	−\$10,800
Base case	0.50	18,000	7,560	+23,400
Best case	0.20	23,400	7,920	+50,400

**11-20**  
New project analysis

The Harris Company is evaluating the proposed acquisition of a new milling machine. The machine's base price is \$108,000, and it would cost another \$12,500 to modify it for special use by your firm. The machine falls into the MACRS 3-year class, and it would be sold after 3 years for \$65,000. The applicable depreciation rates are 33 percent, 45 percent, 15 percent, and 7 percent. The machine would require an increase in net operating working capital (inventory) of \$5,500. The milling machine would have no effect on revenues, but it is expected to save the firm \$44,000 per year in before-tax operating costs, mainly labor. Harris's marginal tax rate is 35 percent.

- What is the net cost of the machine for capital budgeting purposes? (That is, what is the Year 0 net cash flow?)
- What are the net operating cash flows in Years 1, 2, and 3?
- What is the terminal cash flow?
- If the project's cost of capital is 12 percent, should the machine be purchased?