

Exercise 16-14 *Determining the unadjusted rate of return*

LO 8

Lilly Painting Company is considering whether to purchase a new spray paint machine that costs \$4,000. The machine is expected to save labor, increasing net income by \$600 per year. The effective life of the machine is 15 years according to the manufacturer's estimate.

Required

- Determine the unadjusted rate of return based on the average cost of the investment.
- What is the predominant shortcoming of using the unadjusted rate of return to evaluate investment opportunities?

Exercise 16-15 *Computing the payback period and unadjusted rate of return for one investment opportunity*

LO 7, 8

Foy Rentals can purchase a van that costs \$60,000; it has an expected useful life of three years and no salvage value. Foy uses straight-line depreciation. Expected revenue is \$30,000 per year.

Required

- Determine the payback period.
- Determine the unadjusted rate of return based on the average cost of the investment.

PROBLEMS

All applicable Problems are available with McGraw-Hill's *Connect Accounting*.

**Problem 16-16** *Using present value techniques to evaluate alternative investment opportunities*

LO 3, 5, 6



Fast Delivery is a small company that transports business packages between New York and Chicago. It operates a fleet of small vans that moves packages to and from a central depot within each city and uses a common carrier to deliver the packages between the depots in the two cities. Fast recently acquired approximately \$6 million of cash capital from its owners, and its president, Don Keenon, is trying to identify the most profitable way to invest these funds.

Clarence Roy, the company's operations manager, believes that the money should be used to expand the fleet of city vans at a cost of \$720,000. He argues that more vans would enable the company to expand its services into new markets, thereby increasing the revenue base. More specifically, he expects cash inflows to increase by \$280,000 per year. The additional vans are expected to have an average useful life of four years and a combined salvage value of \$100,000. Operating the vans will require additional working capital of \$40,000, which will be recovered at the end of the fourth year.

In contrast, Patricia Lipa, the company's chief accountant, believes that the funds should be used to purchase large trucks to deliver the packages between the depots in the two cities. The conversion process would produce continuing improvement in operating savings with reductions in cash outflows as the following.

| Year 1 | Year 2 | Year 3 | Year 4 |
|-----------|-----------|-----------|-----------|
| \$160,000 | \$320,000 | \$400,000 | \$440,000 |

The large trucks are expected to cost \$800,000 and to have a four-year useful life and a \$80,000 salvage value. In addition to the purchase price of the trucks, up-front training costs are expected to amount to \$16,000. Fast Delivery's management has established a 16 percent desired rate of return.

Required

- Determine the net present value of the two investment alternatives.
- Calculate the present value index for each alternative.
- Indicate which investment alternative you would recommend. Explain your choice.

CHECK FIGURES

- NPV of the vans investment: \$100,811.42
- NPV index of the trucks investment: 1.126