

## CHAPTER 9 CASE

### Making Norwich Tool's Lathe Investment Decision

Norwich Tool, a large machine shop, is considering replacing one of its lathes with either of two new lathes—lathe A or lathe B. Lathe A is a highly automated, computer-controlled lathe; lathe B is a less expensive lathe that uses standard technology. To analyze these alternatives, Mario Jackson, a financial analyst,

prepared estimates of the initial investment and incremental (relevant) cash inflows associated with each lathe. These are shown in the following table.

	Lathe A	Lathe B
Initial investment ( $CF_0$ )	\$660,000	\$360,000
Year ( $t$ )	Cash inflows ( $CF_t$ )	
1	\$128,000	\$ 88,000
2	182,000	120,000
3	166,000	96,000
4	168,000	86,000
5	450,000	207,000

Note that Mario plans to analyze both lathes over a 5-year period. At the end of that time, the lathes would be sold, thus accounting for the large fifth-year cash inflows.

One of Mario's dilemmas centered on the risk of the two lathes. He believes that although the two lathes are equally risky, lathe A has a much higher chance of breakdown and repair because of its sophisticated and not fully proven solid-state electronic technology. Mario is unable to quantify this possibility effectively, so he decides to apply the firm's 13% cost of capital when analyzing the lathes. Norwich Tool requires all projects to have a maximum payback period of 4.0 years.

#### TO DO

- Use the *payback period* to assess the acceptability and relative ranking of each lathe.
- Assuming equal risk, use the following sophisticated capital budgeting techniques to assess the acceptability and relative ranking of each lathe:
  - Net present value (NPV).
  - Internal rate of return (IRR).
- Summarize the preferences indicated by the techniques used in parts a and b, and indicate which lathe you recommend, if either, (1) if the firm has unlimited funds and (2) if the firm has capital rationing.
- Repeat part b assuming that Mario decides that because of its greater risk, lathe A's cash inflows should be evaluated by using a 15% cost of capital.
- What effect, if any, does recognition of lathe A's greater risk in part d have on your recommendation in part c?