

Capital Budgeting—An Overview

Typical Capital Budgeting Decisions

Any decision that involves a cash outlay now in order to obtain a future return is a capital budgeting decision. Typical capital budgeting decisions include:

1. Cost reduction decisions. Should new equipment be purchased to reduce costs?
2. Expansion decisions. Should a new plant, warehouse, or other facility be acquired to increase capacity and sales?
3. Equipment selection decisions. Which of several available machines should be purchased?
4. Lease or buy decisions. Should new equipment be leased or purchased?
5. Equipment replacement decisions. Should old equipment be replaced now or later?

Capital budgeting decisions fall into two broad categories—*screening decisions* and *preference decisions*.

Screening decisions relate to whether a proposed project is acceptable—whether it passes a preset hurdle. For example, a company may have a policy of accepting projects only if they provide a return of at least 20% on the investment. The required rate of return is the minimum rate of return a project must yield to be acceptable.

Preference decisions, by contrast, relate to selecting from among several acceptable alternatives. To illustrate, a company may be considering several different machines to replace an existing machine on the assembly line. The choice of which machine to purchase is a preference decision.

Cash Flows versus Net Operating Income

The first three capital budgeting methods discussed in the chapter—the payback method, the net present value method, and internal rate of return method—all focus on analyzing the *cash flows* associated with capital investment projects, whereas the simple rate of return method focuses on *incremental net operating income*. To better prepare you to apply the payback, net present value, and internal rate of return methods, we'd like to define the most common types of cash outflows and cash inflows that accompany capital investment projects.

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Typical Cash Outflows

Typical Cash Outflows Most projects have at least three types of cash outflows. First, they often require an immediate cash outflow in the form of an initial investment in equipment, other assets, and installation costs. Any salvage value realized from the sale of old equipment can be recognized as a reduction in the initial investment or as a cash inflow. Second, some projects require a company to expand its working capital.

Working capital is current assets (e.g., cash, accounts receivable, and inventory) less current liabilities. When a company takes on a new project, the balances in the current asset accounts often increase. For example, opening

a new Nordstrom's department store requires additional cash in sales registers and more inventory. These additional working capital needs are treated as part of the initial investment in a project. Third, many projects require periodic outlays for repairs and maintenance and additional operating costs.

Typical Cash Inflows

Typical Cash Inflows Most projects also have at least three types of cash inflows. First, a project will normally increase revenues or reduce costs. Either way, the amount involved should be treated as a cash inflow for capital budgeting purposes. Notice that from a cash flow standpoint, a reduction in costs is equivalent to an increase in revenues. Second, cash inflows are also frequently realized from selling equipment for its salvage value when a project ends, although the company may actually have to pay to dispose of some low-value or hazardous items. Third, any working capital that was tied up in the project can be released for use elsewhere at the end of the project and should be treated as a cash inflow at that time. Working capital is released, for example, when a company sells off its inventory or collects its accounts receivable.

The Time Value of Money

Beyond defining a capital project's cash outflows and inflows, it is also important to consider when those cash flows occur. For example, if someone offered to give you \$1,000 dollars today that you could save toward your eventual retirement or \$1,000 dollars a year from now that you could save toward your future retirement, which alternative would you choose? In all likelihood, you would choose to receive \$1,000 today because you could invest it and have more than \$1,000 dollars a year from now. This simple example illustrates an important capital budgeting concept known as *the time value of money*. The **time value of money** recognizes that a dollar today is worth more than a dollar a year from now if for no other reason than you could put the dollar in a bank today and have more than a dollar a year from now. Because of the time value of money, capital investments that promise earlier cash flows are preferable to those that promise later cash flows.

Although the payback method focuses on cash flows, it does not recognize the time value of money. In other words, it treats a dollar received today as being of equal value to a dollar received at any point in the future. Conversely, the net present value and internal rate of return methods not only focus on cash flows, but they also recognize the time value of those cash flows. These two methods use a technique called *discounting cash flows* to translate the value of future cash flows to their lesser present value. If you are not familiar with the concept of discounting cash flows and the use of present value tables, you should read Appendix 8A: The Concept of Present Value, at the end of the chapter, before studying the net present value and internal rate of return methods.

IN BUSINESS

INVESTING IN A VINEYARD: A CASH FLOWS PERSPECTIVE

When Michael Evans was contemplating moving to Buenos Aires, Argentina, to start a company called the Vines of Mendoza, he had to estimate the project's initial cash outlays and compare them to its future net cash inflows. The initial cash outlays included \$2.9 million to buy 1,046 acres of land and to construct a tasting room, \$300,000 for a well and irrigation system, \$30,000 for underground power lines, and \$285,000 for 250,000 grape plants. The annual operating costs included \$1,500 per acre for pruning, mowing, and irrigation and \$114 per acre for harvesting.