

## Capital Budgeting Example #1:

You are looking to invest in a new machine for your production plant. The machine costs \$8000. You expect to make products on this machine for 4 years, then you will no longer need the machine. Revenues of the company are expected to increase by \$1000 each year the machine is in production. The machine is also expected to decrease production costs of the company by \$3000 per year. There is no net change in working capital due to the new machine. The market value of the machine in 4 years is expected to be \$1000. The company will depreciate the machine using straight-line depreciation, expensing \$2000 per year as a depreciation expense. The corporate tax rate is 34%, and the required rate of return demanded by the company on any capital expenditure is 10%. Should the company buy the machine?

Incremental CFs:

Operating CFs: which will be determined by revenues, operating costs, depreciation and taxes.

Initial investment = \$8000

Proceeds from sale of equipment = selling price – (selling price – book value)(tax rate)

	Year 0	1	2	3	4
+ Δ Revenues					
- Δ costs					
- Δ depreciation					
= Δ EBIT					
- Δ Taxes					
= Δ Net Income					
Add back Depr.					
- Capital Expenditures					
- Opportunity cost					
+ proceeds from sale					
- Δ Net Working Capital					
= Net Cash Flow					

## Example #2:

Lights-Out Electric Company is considering a contract to manufacture a specialized light switch. The contract calls for the company to deliver 3000 switches per year for 4 years at a price of \$30 per switch (paid on delivery). Producing the switch will require the use of some existing equipment and investment of \$100,000 in new equipment. The variable cost of the switch will be \$15 per switch throughout the life of the contract.

The existing equipment that would be used is already fully depreciated. If used to make switches, it will not require any maintenance expenditures but it will be worthless at the end of the contract. The company has no other use for the equipment but could sell it now for \$10,000. The new equipment that would be used on the switch contract requires no maintenance expenditures but will be depreciated to zero on a straight-line basis over 4 years. At the end of 4 years, this equipment can be sold for \$15,000.

The cost of capital for this project is 10%. Lights-Out's tax rate is 33%. Should Lights-Out take the switch contract?

Assume that all CFs except the initial equipment-related flows occur at the end of years 1 through 4.

### Example #3:

You are considering the following project:

The project will last for 4 years. Each year you will have revenues of \$230,000 and expenses of \$100,000. The project will require new equipment valued at \$80,000. This equipment will be depreciated to zero using the straight-line method over a 4-year life. You will also sell the equipment for \$10,000 in year 4. Working capital at the firm will have to rise to \$20,000 from the current level of \$10,000 immediately. It will go down to \$15,000 in year 2 and to \$10,000 in year 4. Forecast all of the incremental cash flows for this project and compute its NPV based on a discount rate of 10%. Your tax rate is 33%.