A company has $300,000 in a bank account established for Capital Investments. This account pays 4% interest, compounded annually. A member of the finance department has approached you with an investment opportunity for the $300,000 that covers a five-year period and has the following projected after-tax cash flows:

|  |  |
| --- | --- |
| Year | Projected Cash Flow |
| 1 | $90,000 |
| 2 | $115,000 |
| 3 | $135,000 |
| 4 | $110,000 |
| 5 | $90,000 |

**Based on this information, answer the following questions:**

1. How much money will be in the bank account if you leave the $300,000 alone (earning 4% compounded interest) until you need it in five years?
2. If you undertake the investment opportunity, what is the Nominal Payback Period?
3. Using the Present Value factors for 7% (which can be found on any PV Factor table), what is the discounted Payback Period of the investment opportunity?
4. What is the Net Present Value at 7% of the investment opportunity?
5. Which option (make the investment or leave the money in a savings account) would you recommend to your CEO? Why? What additional factors/information might make you change your point of view?

The CEO of a company was at a conference and talked to a supplier about a new piece of equipment for its production process that she believes will produce ongoing cost savings. As the Operations Manager, your CEO has asked for your perspective on whether or not to purchase the machinery.

After talking to the supplier and meeting with your Engineers and Financial Analysts, you’ve gathered the following pieces of data:

* + Cost of Machine: $140,000
  + Estimated Annual After Tax Cash Flow Savings: $60,000 (which may or may not grow)
  + Estimated machinery life: 3-5 years (after which there will be zero value for the equipment and no further cost savings)
  + You seem to recall that Dynamic’s Finance organization recommends either a 10% or a 15% discount rate for all Cost Savings Projects

**Calculate the Nominal Payback, the Discounted Payback, the Net Present Value and the IRR for *each***

**scenario, assuming:**

1. Person (A) recommends using the base assumptions above: 3 year project life, flat annual savings, 10% discount rate.
2. Person (B) recommends savings that grow each year: 3 year project life, 10% discount rate and a 10% compounded annual savings growth in years 2 & 3. In other words, instead of assuming savings stay flat, assume that they will grow by 10% in year 2, and then grow another 10% over year 3 in year.
3. Person (C) believes we use a higher Discount Rate because of the risk of this type of project: 3 year project life, flat annual savings, 15% discount rate.
4. Person (D) is convinced the machine will last longer than 3 years. He recommends using a 5 Year Equipment Life: 5 year project and savings life, flat annual savings, 10% discount rate. In other words, assume that the machine will last 2 more years and deliver 2 more years of savings.

**In paragraph form, respond to the following questions:**

1. Which person’s scenario would you present to management and why? From a strictly financial (numbers) perspective, would you recommend this purchase to management?
2. In your opinion, which person’s scenario is based on the most aggressive assumptions? If you were to select this scenario as the basis for your proposal, how would you justify the more aggressive assumptions?
3. In SIMPLE English (as in talking to a non-Finance and non-MBA person), explain why there is value to management in running all 4 of these scenarios.
4. Beyond financial measures, what other factors would you want to consider, before making a recommendation to management?
5. If you were the CEO, would you approve this proposal? Why or why not?

The general manager is looking to do a buy out of a smaller firm.

With help from your finance leader, you have estimated the following benefit streams for this new division:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** | **Year 7** | **Year 8** |
| **Before Tax Cash Flow From Operations** | $(149,000) | $0 | $51,380 | $88,760 | $114,100 | $129,780 | $143,640 | $167,300 |
| **After Tax Net Income From Operations** | $(103,500) | $(50,500) | $36,700 | $63,400 | $81,500 | $92,700 | $102,600 | $119,500 |
| **After Tax Cash Flow From Operations** | $(85,600) | $15,000 | $48,600 | $72,200 | $95,550 | $101,300 | $125,200 | $140,200 |

* You estimate that the purchase price for this firm would be $200,000 and that additional net working capital would be needed in the amount of $60,000 in year 0, an additional $15,000 in year 2 and then

$15,000 in year 5.

* Your company usually spends about $275,000 per year in advertising. If you make this acquisition, you would ask that advertising spending be increased by an incremental one-time amount of $45,000 in year 0 to publicize the firm’s expansion.
* Your finance leader has indicated that the firm has access to a credit line and could borrow the funds at a rate of 6%. He also mentions that when he runs project economics for capital budgeting (such as a new copier or a company car), he recommends a standard 10% rate discount, but the one other time they looked at an acquisition of a smaller firm, he used a 13% rate discount. Obviously you will want to select the most appropriate discount rate for this type of project.
* At the end of 8 years, the plan is to sell this division. The estimated terminal value (the sale and the return of working capital) is conservatively estimated to be $350,000 of after-tax cash flow help.

**Using the data that you need (and ignoring the extraneous information), for this potential acquisition, calculate each of the following items:**

* **the Nominal Payback**
* **the Discounted Payback**
* **the Net Present Value**
* **the IRR**

**In paragraph form, respond to the following questions:**

1. From a purely financial (numbers) perspective, would you recommend this purchase to management? Why?
2. What are some of the non-financial elements that need to be considered for this proposal?
3. Assumptions in project economics can have a huge impact on the result. Identify 3 financial elements/assumptions in your analysis that would make this project financially *unattractive*? In other words, what would have to be true for this to be a bad investment?
4. If you were the CEO, would you approve this proposal? Why or why not?