**Risky Cash Flows**

**The Bartram-Pulley Company (BPC) must decide between two mutually exclusive investment projects. Each project costs $7,250 and has an expected life of 3 years. Annual net cash flows from each project begin 1 year after the initial investment is made and have the following probability distributions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROJECT A** | | **PROJECT B** | |
| **Probability** | **Net Cash Flow** | **Probability** | **Net Cash Flow** |
| 0.2 | $7,000 | 0.2 | $        0 |
| 0.6 | 6,750 | 0.6 | 6,750 |
| 0.2 | 7,000 | 0.2 | 21,000 |

**BPC has decided to evaluate the riskier project at a 11% rate and the less risky project at a 10% rate.**

1. What is the expected value of the annual net cash flows from each project? Round your answers to nearest dollar.

|  |  |  |
| --- | --- | --- |
|  | **Project A** | **Project B** |
| Net cash flow | $ | $ |

What is the coefficient of variation (CV)?

|  |  |  |
| --- | --- | --- |
|  | **σ (to the nearest whole number)** | **CV (to 2 decimal places)** |
| Project A | $ |  |
| Project B | $ |  |

1. What is the risk-adjusted NPV of each project? Round your answer to the nearest dollar.

|  |  |  |
| --- | --- | --- |
| Project A |  | $ |
| Project B |  | $ |

1. If it were known that Project B is negatively correlated with other cash flows of the firm whereas Project A is positively correlated, how would this affect the decision?  
   This would tend to reinforce the decision to (**Accept or Reject**) Project B.

If Project B's cash flows were negatively correlated with gross domestic product (GDP), would that influence your assessment of its risk? **YES or NO**?

**Scenario Analysis**

**Shao Industries is considering a proposed project for its capital budget. The company estimates that the project's NPV is $12 million. This estimate assumes that the economy and market conditions will be average over the next few years. The company's CFO, however, forecasts that there is only a 50% chance that the economy will be average. Recognizing this uncertainty, she has also performed the following scenario analysis:**

|  |  |  |
| --- | --- | --- |
| **Economic  Scenario** | **Probability of  Outcome** | **NPV** |
| Recession | 0.05 | -$80 million |
| Below average | 0.20 | -12 million |
| Average | 0.50 | 12 million |
| Above average | 0.20 | 18 million |
| Boom | 0.05 | 30 million |

**What is the project's expected NPV, its standard deviation, and its coefficient of variation? Enter your answers for the NPV and standard deviation in millions. For example, an answer of $1.2 million should be entered as 1.2, not 1,200,000. Round your answers to two decimal places.**

|  |  |
| --- | --- |
| E(NPV) | $   million |
| σNPV | $   million |
| CVNPV |  |

**New-Project Analysis**

**The Campbell Company is considering adding a robotic paint sprayer to its production line. The sprayer's base price is $1,150,000, and it would cost another $22,500 to install it. The machine falls into the MACRS 3-year class (the applicable MACRS depreciation rates are 33.33%, 44.45%, 14.81%, and 7.41%), and it would be sold after 3 years for $629,000. The machine would require an increase in net working capital (inventory) of $18,500. The sprayer would not change revenues, but it is expected to save the firm $405,000 per year in before-tax operating costs, mainly labor. Campbell's marginal tax rate is 30%.**

1. What is the Year-0 net cash flow?  
   $
2. What are the net operating cash flows in Years 1, 2, and 3? Round your answers to the nearest dollar.

|  |  |
| --- | --- |
| Year 1 | $ |
| Year 2 | $ |
| Year 3 | $ |

1. What is the additional Year-3 cash flow (i.e, the after-tax salvage and the return of working capital)? Round your answer to the nearest dollar.  
   $
2. If the project's cost of capital is 11 %, what is the NPV of the project? Round your answer to the nearest dollar.  
   $     
     
   Should the machine be purchased? **YES or NO**?

**Long-Term Financing Needed**

**At year-end 2013, Wallace Landscaping’s total assets were $1.4 million and its accounts payable were $435,000. Sales, which in 2013 were $2.3 million, are expected to increase by 30% in 2014. Total assets and accounts payable are proportional to sales, and that relationship will be maintained. Wallace typically uses no current liabilities other than accounts payable. Common stock amounted to $450,000 in 2013, and retained earnings were $255,000. Wallace has arranged to sell $150,000 of new common stock in 2014 to meet some of its financing needs. The remainder of its financing needs will be met by issuing new long-term debt at the end of 2014. (Because the debt is added at the end of the year, there will be no additional interest expense due to the new debt.) Its profit margin on sales is 7%, and 60% of earnings will be paid out as dividends.**

1. What was Wallace's total long-term debt in 2013? Round your answer to the nearest dollar.  
   $    
   What were Wallace's total liabilities in 2013? Round your answer to the nearest dollar.  
   $
2. How much new long-term debt financing will be needed in 2014? (*Hint:* AFN - New stock = New long-term debt.) Round your answer to the nearest dollar.  
   $

**Financing Deficit**

**Garlington Technologies Inc.'s 2013 financial statements are shown below:**

**Balance Sheet as of December 31, 2013**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cash | $   180,000 |  | Accounts payable | $   360,000 |
| Receivables | 360,000 |  | Notes payable | 156,000 |
| Inventories | 720,000 |  | Line of credit | 0 |
| Total current assets | $1,260,000 |  | Accruals | 180,000 |
| Fixed assets | 1,440,000 |  | Total current liabilities | $   696,000 |
|  |  |  | Common stock | 1,800,000 |
|  |  |  | Retained earnings | 204,000 |
| Total assets | $2,700,000 |  | Total liabilities and equity | $2,700,000 |

**Income Statement for December 31, 2013**

|  |  |
| --- | --- |
| Sales | $3,600,000 |
| Operating costs | 3,279,720 |
| EBIT | $  320,280 |
| Interest | 18,280 |
| Pre-tax earnings | $  302,000 |
| Taxes (40%) | 120,800 |
| Net income | 181,200 |
| Dividends | $  108,000 |

**Suppose that in 2014 sales increase by 20% over 2013 sales and that 2014 dividends will increase to $158,000. Forecast the financial statements using the forecasted financial statement method. Assume the firm operated at full capacity in 2013. Use an interest rate of 14%, and assume that any new debt will be added at the end of the year (so forecast the interest expense based on the debt balance at the beginning of the year). Cash does not earn any interest income. Assume that the AFN will be in the of form of a line of credit. Round your answers to the nearest dollar. Do not round intermediate calculations.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Garlington Technologies Inc. Pro Forma Income Statement December 31, 2014** | | | |
| Sales |  | $ |  |
| Operating costs |  | $ |  |
| EBIT |  | $ |  |
| Interest |  | $ |  |
| Pre-tax earnings |  | $ |  |
| Taxes (40%) |  | $ |  |
| Net income |  | $ |  |
| Dividends: |  | $ |  |
| Addition to RE: |  | $ |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Garlington Technologies Inc. Pro Forma Balance Statement December 31, 2014** | | | |
| Cash |  | $ |  |
| Receivables |  | $ |  |
| Inventories |  | $ |  |
| Total current assets |  | $ |  |
| Fixed assets |  | $ |  |
| Total assets |  | $ |  |
| Accounts payable |  | $ |  |
| Notes payable |  | $ |  |
| Accruals |  | $ |  |
| Total current liabilities |  | $ |  |
| Common stock |  | $ |  |
| Retained earnings |  | $ |  |
| Total liabilities and equity |  | $ |  |