**Practice Exercise**

**Introduction**

You will assume that you still work as a financial analyst for AirJet Best Parts, Inc. The company is considering a capital investment in a new machine and you are in charge of making a recommendation on the purchase based on (1) a given rate of return of 15% (Task 4) and (2) the firm’s cost of capital (Task 5).

**Task 4. Capital Budgeting for a New Machine**

A few months have now passed and AirJet Best Parts, Inc. is considering the purchase on a new machine that will increase the production of a special component significantly. The anticipated cash flows for the project are as follows:

**Year 1 $1,100,000**

**Year 2 $1,450,000**

**Year 3 $1,300,000**

**Year 4 $950,000**

You have now been tasked with providing a recommendation for the project based on the results of a Net Present Value Analysis. Assuming that the required rate of return is 15% and the initial cost of the machine is $3,000,000.

1. What is the project’s IRR?

**TIP: the internal rate of return is the interest rate or discount rate that makes the net present value of a project zero. The simplest way to calculate rate of return is using an XLS spreadsheet as shown on page 244 of your textbook. You can also use an online calculator. The following calculator will allow you to compute the net present value, IRR and payback of the project: http://zenwealth.com/BusinessFinanceOnline/CB/CBCalculator.html**

**You need to remember to include in your calculations the initial cost of the machine which is $3 million. Because this is an outflow it should be represented by a negative side on the calculator. Alternatively, you can calculate the present value of the cash flows for years 1 to 4 and then then deduct the $3 million from that amount.**

**Remember that IRR is always a rate or percentage, never a dollar amount!**

1. What is the project’s NPV?   
   **TIP: the same applies here. You can use the calculator above or you can simply compute the present value of each cash flow.**
2. Should the company accept this project and why (or why not)?   
   **TIP: You need to find out the rules for accepting a project based on its present value and IRR. Describe the rule and if it applies to the project above based on your findings.**
3. Explain how depreciation will affect the present value of the project.

**TIP: Here are the key is to differentiate between a cash and a non-cash item. You need to remember that there is a difference between income and cash flow, but that your net income would also depend on your depreciation expense, because depreciation affects your tax due amount.**

1. Provide examples of at least one of the following as it relates to the project:
   1. Sunk Cost
   2. Opportunity cost
   3. Erosion

**You need to provide one example of each of this. Therefore, at least one example of a sunk cost, one of an opportunity cost and one of erosion cost.**

1. Explain how you would conduct a scenario and sensitivity analysis of the project. What would be some project-specific risks and market risks related to this project? (20 pts)

**Task 5: Cost of Capital** <http://www.expectationsinvesting.com/tutorial8.shtml>

AirJet Best Parts Inc. is now considering that the appropriate discount rate for the new machine should be the cost of capital and would like to determine it. You will assist in the process of obtaining this rate.

1. Compute the cost of debt. Assume AirJet Best Parts Inc. is considering issuing new bonds. Select current bonds from one of the main competitors as a benchmark. Key competitors include Raytheon, Boeing, Lockheed Martin, and the Northrop Grumman Corporation.   
   1. What is the YTM of the competitor’s bond? You may use a number of sources, but we recommend Morningstar. Find the YTM of one 15 or 20 year bond with the highest possible creditworthiness. You may assume that new bonds issued by AirJet Best Parts, Inc. are of similar risk and will require the same return. (5 pts)

**TIP:Remember the YTM is always a percentage amount, not a dollar amount. There is no need for calculations here. You only need to observe the YTM posted on Morningstar for the bond.**

* 1. What is the after-tax cost of debt if the tax rate is 34%?

**TIP: Use the following formula:   
Cost of debt (Bonds) = Current YTM of Bonds x (1-t)  
  
where t is the tax rate of 34% and the YTM is the YTM you found under (a) above.   
  
For instance, if the YTM you found is 5%, you will use the formula as follows:  
  
Cost of debt = 0.05 x (1-0.34)**

**Remember the cost of any capital is always a percentage amount, not a dollar amount.**

* 1. Explain what other methods you could have used to find the cost of debt for AirJet Best Parts Inc.
  2. Explain why you should use the YTM and not the coupon rate as the required return for debt.

1. Compute the cost of common equity using the CAPM model. For beta, use the average beta of three selected competitors. You may obtain the betas from Yahoo Finance. Assume the risk free rate to be 3% and the market risk premium to be 4%.   
   1. What is the cost of common equity?

**Remember the cost of any capital is always a percentage amount, not a dollar amount.**

* 1. Explain the advantages and disadvantages to use the CAPM model as the method to compute the cost of common equity. Compare and contrast this method with the dividend growth model approach.

1. Compute the cost of preferred equity assuming the dividend paid for preferred stock is $2.93 and the current value of the stock is $50 per share.  
   1. What is the cost of preferred equity?
   2. Is there any other method to compute this cost? Explain.
2. Assuming that the market value weights of these capital sources are 30% bonds, 60% common equity and 10% preferred equity, what is the weighted cost of capital of the firm?

Therefore:

**WACC = (0.3 x after-tax cost of debt) + (0.6 x cost of common equity) + (0.10 x cost of preferred equity).   
  
These three costs are the ones you found above. Cost of debt under 1(B), cost of common equity under 2(A) and cost of preferred equity under 3(A). Your result should be a rate or percentage amount!**

1. Should the firm use this WACC for all projects? Explain and provide examples as appropriate.
2. Recompute the net present value of the project based on the cost of capital you found. Do you still believe that your earlier recommendation for accepting or rejecting the project was adequate? Why or why not?

**TIP: Instead of using the required rate of return of 15% provided above, use the rate or percentage amount (cost of capital) you found under item 4 above.**