

**BUSS207**  
**Fall, 2016**

**Assignment 3**  
**(Due by November 23, 2016)**

Please solve the following questions. If you prefer to work in a group in completing this assignment, you may do so. Groups are limited to a maximum size of 3 students. If you work in a group, the group will turn in one solution to the assignment and everyone in the group will receive the same grade on the assignment. If you work in a group, please make sure that you write down the names of all of your group members. If more than one group works together and turns in, substantially, the same work, this violates the rules of the course and the rules on academic integrity, and penalties will be assessed. The assignment is due at the beginning of class on the due date. Please show all the intermediate steps and calculations when solving the problems and state your assumptions (if any). Please type your answers.

1. Use the following corporate bond quote information to answer the questions that follow. Since this is a corporate bond, assume the company makes semi-annual coupon payments and also assume the bond matures on today's date (Nov. 23) in its maturity year. Note that the price of the bond is quoted as the percentage of the par value.

Company	Coupon	Maturity	Price	Yield
XYZ Inc.	7.000	Nov. 23, 2018	97.667	

- a. How much would this bond cost you to buy today if its par value is \$1000?
  - b. What is the bond's yield to maturity?
  - c. If your required return is 9% APR, would you buy this bond today? Show work to prove why or why not.
2. A year ago, you purchased two bonds issued by the same company, ABC Co. : (1) a 20-year \$1,000 par value, annual coupon bond with a 7 percent coupon rate, and (2) a 5-year \$1,000 par value, annual coupon bond also with a 7 percent coupon rate. Both bonds had a yield to maturity (required rate of return) of 9 percent when you bought them.
  - a. What price did you pay for each bond a year ago?
  - b. Today, assume the yield to maturity on both bonds is 11 percent. What is **total rate of return** on each bond if you sell these bonds today?
  - c. Now, imagine today's yield to maturity is 13 percent for each bond. Unfortunately, you need cash from selling these bonds for your winter vacation trip to Aspen and Jamaica. What is **total rate of return** on each bond if you sell these bonds today?
  - d. Examine your answers for each bond from questions b and c. Which bond had the best return in each question and why? What bond risk concept does this problem illustrate?
3. Your stockbroker, John Smith, calls you with a hot stock tip to buy SMITH Inc. The stock is currently selling for \$25 a share. You gather the following data to evaluate Smith's recommendation. The risk free rate is 3%, and you demand a 14% return on the market portfolio. SMITH's current dividend is \$2.50 a share. You decide to get other necessary estimates from a third-party, Rocky Enterprises. Rocky has estimated that SMITH's beta is 2.0 and that the stock's dividend will grow at a constant 10 percent rate.

Based on your estimates, is Smith's recommendation to buy SMITH a good one? What do you think the stock is worth?

4. Mark Smith, the new CFO of ITG is considering increasing the company's growth rate entering a new line of business. Currently, ITG has a current dividend of \$1.50 per share and its dividend is expected to grow at a constant rate of 8%. The company's beta is 1.5 and the risk free rate is 3% and the market risk premium is 9%. Mark Smith has consulted some security analysts and told them about the new line of business he is considering. These analysts say if ITG enters this new line of business their growth rate in dividends and earnings will increase to a constant rate of 13% per year, but the company will have more market risk causing its beta to rise to 1.9. Now Mark needs your help. Should ITG enter this new line of business? Show your work to justify your recommendation.
5. Here are some analysts' estimates for Citigroup (the banking and financial services giant) common stock. The recent price of this stock was \$33
  - a. Analyst 1 has the following growth estimates. Given the following information what is the analyst's value for Citigroup? What should the analyst recommend based on the recent price of \$33?

• Current Dividend Per Share	\$0.72
• Required Rate of Return	12% or 0.12
• Annual Dividend Growth Rate, year 1-3	16% or 0.16
• Annual Dividend Growth Rate, year 4 to infinity	9% or 0.09
  - b. Analyst 2 thinks Citigroup is a constant growth stock. He expects a constant growth rate of 10% of Citigroup's current dividend of \$0.72 and estimates a required return of 12.5%. What is this analyst's value for Citigroup? What should the analyst recommend based on the recent price of \$33?
  - c. Citigroup's recent stock price is \$33, and its current dividend is \$0.72 a share. Now, let's assume that Citigroup is a constant growth stock with a required return of 12%. What is Citigroup's expected annual constant growth rate assuming the recent \$33 stock price is in equilibrium?