Activity 9

Bond Valuation and Yield-to-Maturity

The purpose of this assignment is to practice bond valuation and YTM estimation for annual coupon bonds. You are also asked to think through the mechanics of interest rate sensitivity. Finally, there is an optional exercise to do at the end, using a semi-annual coupon bond. You can wait to attempt that exercise until next class, after you have listened to the final recording for the chapter on bonds.

Group:

Section:

1. You are considering purchasing an annual coupon bond. Your required rate of return is 12% because the bond has a low S&P rating: CCC. The coupon for the bond is only 6% per year because it was issued several years ago, before the firm ran into financial difficulties. There are 5 years remaining to maturity on the bond, and it has a face value of $1,000. What price should you pay for the bond?

2. Suppose that in the above problem your required return is only 6% per year, because (e.g.) the firm is not in financial difficulties, and the rating on the bond is much higher than CCC. *Without performing any calculation*, what is the price you are willing to pay for this bond?

3. A 5% annual coupon bond with face value equal to $1,000 and 7 years of maturity remaining is selling in the bond market for $1,020. What is the bond's yield-to-maturity (YTM)?

4. Bond A and Bond B both pay 7% annual coupons and both have a face value of $1,000. Bond A matures in 3 years, and bond B matures in 8 years. Investors have the same required return for both bonds. Given a sudden decline in bond investors' required returns…

   A. The percentage change in Bond A's price exceeds that of Bond B.
   B. The percentage change in Bond B's price exceeds that of Bond A.
   C. The percentage change in Bond A's price is the same as that of Bond B.
   D. None of the above.

5. Bond A is a 7% annual coupon bond with a par value of $1,000. Bond B is a *zero* coupon bond. Both bonds mature in 5 years, and investors have the same required return for both bonds. Given a sudden decline in bond investors' required returns…

   A. The percentage change in Bond A's price exceeds that of Bond B.
   B. The percentage change in Bond B's price exceeds that of Bond A.
   C. The percentage change in Bond A's price is the same as that of Bond B.
   D. None of the above.

6. (Optional) Explain the logic behind your answer to the last question. How does the question relate to *price risk* and *reinvestment (rate) risk*.