

ECO 301: Money and Banking

Week 10 Homework: Risk and Term Structure of Interest Rates

Directions: Provide written answers for the following questions and prompts. You may print these sheets and put your answers in the space provided or you may use your own paper to write your answers.

Hint: Many of these problems involve two different types of bonds. The difference may be in risk, liquidity, term, etc. For such problems, draw two supply and demand graphs side-by-side, one for each type of bond, and illustrate the difference in bond prices.

1. Use a market for bonds to describe and illustrate the difference in the rate of interest paid for one-year investment-grade corporate bonds and one-year U.S. federal government bonds. Use two graphs for the two bond markets, and illustrate the difference in the price of bonds. Which bond has a higher interest rate? What would you call this premium?

2. Use a market for bonds to describe and illustrate the difference in the rate of interest paid for one-year U.S. federal government bonds and ten-year U.S. federal government bonds. Use two graphs for the two bond markets, and illustrate the difference in the price of bonds. Which bond has a higher interest rate? What would you call this premium?

3. Suppose with a high degree of certainty, people expect interest rates to decrease over the next two years. Use a market for bonds to describe and illustrate the difference in the rate of interest paid for a one-year government bond and a two-year government bond. Use two graphs for the two bond markets, and illustrate the difference in the price of bonds. Which bond has a higher interest rate? What explains this difference?

4. Use a market for bonds to describe and illustrate the difference in the rate of interest paid for an investment-grade corporate bond and a speculative-grade corporate bond. Use two graphs for the two bond markets, and illustrate the difference in the price of bonds. Which bond has a higher interest rate? What would you call this premium?

5. Suppose with a high degree of certainty, people expect interest rates to remain the same or change very little for the next two years. After this time, people expect interest rates will rise, but there is a greater degree of uncertainty in this expectation. Draw and describe a yield curve that illustrates this situation. Identify the two-year maturity in your illustration.

6. In December 2007, people began to expect the economy could fall into a recession due to drops in demand for goods and services. Suppose people expected real GDP to fall, unemployment to rise, and inflation rates to fall. Suppose people expect this situation for approximately three years before returning to normal. Draw and describe a yield curve that illustrates this situation.
7. In 1979, the inflation rate in the United States was very high. Paul Volker became chair person of the Fed in 1979 and immediately started raising interest rates. By 1981, the Federal Reserve increased the federal funds rate to 19% to combat inflation. Suppose in 1979 that people expected the significant contractionary monetary policy that was to come and expected it to last approximately one year, after which they expect the Federal Reserve to decrease interest rates significantly to history normal levels. Draw and describe a yield curve in 1979 that illustrates this expectation.
8. For fun, go to <https://www.ustreasuryyieldcurve.com/> and look at what the U.S. yield curve actually looked like on the following dates:
- (a) December 3, 2007: the situation in problem #6
 - (b) January 1, 1979; the situation in problem #7