

Homework Assignment 3. Due: Tuesday, February 7.

1. (2 points) Compute the yield to maturity of the following bonds:
 - a. \$100 face-value, 5-year, pure discount bond selling for \$78.
 - b. \$100 face-value, 5-year, pure discount bond selling for \$61.
 - c. \$100 face-value, 1-year, coupon bond with coupon rate of 10% selling for \$102.
 - d. \$100 face-value, 1-year, coupon bond with coupon rate of 8% selling for \$95.
 - e. \$100 face-value, 1-year, coupon bond with coupon rate of 6% selling for \$90.

2. (2 points) You purchase a consol with annual coupon payments of \$100, the interest rate is 8%. One year later the interest rate has changed to 8.5% and you decide to sell the consol. What is your one-year holding period return?
3. (2 points) Suppose that US government decides to decrease its budget deficit. Draw a graph and explain what will happen to bond prices and interest rates.
4. (2 points) Imagine that the recent economic forecasts for the US economy for the next couple of years are really gloomy – analysts expect a major recession with reduction in output. Use graphs to explain what you think will happen to prices and interest rates of government and private bonds?
5. (2 points) Consider the following investment projects: (1) Invest \$100 today and get \$107 with probability=1. (2) Invest \$100 today and get \$102 with probability=0.5, or get \$112 with probability=0.5. Compute expected returns and variances (risks) of each investment. Assuming that all investors are risk-averse, would anybody invest in project (2)? Now consider that another investment opportunity is available (3): Invest \$100 today and get \$102 with probability=0.5 or get \$115 with probability=0.5. What is the expected return and variance of this project. Compare the risk and return of this project to the risk and return of project (1).