PROBLEM SET: Bond Pricing

**Exercise 1.**

Explain why the yield of a bond that trades at a discount exceeds the bond's coupon rate.

**Exercise 2.**

6-11. Suppose that Ally Financial Inc. issued a bond with 10 years until maturity, a face value of $1000, and a coupon rate of 7% (annual payments). The yield to maturity on this bond when it was issued was 6%.

a. What was the price of this bond when it was issued?

b. Assuming the yield to maturity remains constant, what is the price of the bond immediately before it makes its first coupon payment?

c. Assuming the yield to maturity remains constant, what is the price of the bond immediately after it makes its first coupon payment?

**Exercise 3.**

Suppose you purchase a 10-year bond with 6% annual coupons. You hold the bond for four years, and sell it immediately after receiving the fourth coupon. If the bond's yield to maturity was 5% when you purchased and sold the bond,

a. What cash flows will you pay and receive from your investment in the bond per $100 face value?

b. What is the internal rate of return of your investment?

**Exercise 4.**

Explain why the expected return of a corporate bond does not equal its yield to maturity.

**Exercise 5.**

Suppose the yield on German government bonds is 1%, while the yield on Spanish government bonds is 6%. Both bonds are denominated in euros. Which country do investors believe is more likely to default? How can you tell?

**Exercise 6.**

Suppose the current zero-coupon yield curve for risk-free bonds is as follows:

| Maturity (years) | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| YTM | 3.25% | 3.50% | 3.90% | 4.25% | 4.40% |

10) The price per $100 face value of a three-year, zero-coupon, risk-free bond is closest to:

A) $93.80.

B) $90.06.

C) $89.16.

D) $86.39.

**Exercise 7.** [3]

Consider a zero-coupon bond with 20 years to maturity. The amount that the price of the bond will change if its yield to maturity decreases from 7% to 5% is closest to:

A) $118.

B) -$53.

C) $53.

D) $673.

**Exercise 8.** *Corporate Bonds* [1]

Which of the following statements is FALSE?

A) Investors pay less for bonds with credit risk than they would for otherwise identical default-free bonds.

B) Credit spreads fluctuate as perceptions regarding the probability of default change.

C) Credit spreads are high for bonds with high ratings.

D) We refer to the difference between the yields of the corporate bonds and the Treasury yields as the default spread or credit spread.

**Exercise 9.** *Sovereign Debt*

1) Sovereign debt is:

A) debt issued by national governments.

B) debt denominated in sovereigns.

C) always riskless.

D) debt issued by corporations in Greece.