Zenlin Roosenboom-Kwee
Aleksandrina Ralcheva

PRACTICE EXERCISES LECTURE 3

Long-Term Financing and Financial Markets

Q1. **How do private companies raise capita? List some of the alternative sources from which private companies can raise equity capital.**

Q2. **What are the main advantages and disadvantages of going public?**

Bond Valuation

(For bond valuation exercises, round all your answers to two decimal places)

Q3. **Suppose the current zero-coupon yield curve for risk-free bonds is as follows:**

Maturity (years)	1	2	3	4	5
YTM	4.14%	4.55%	4.78%	4.99%	5.37%

a. **What is the price per $100 face value of a three-year, zero-coupon, risk-free bond?**

b. **What is the price per $100 face value of a four-year, zero-coupon, risk-free bond?**

Q4. **Suppose a five-year, $1,000 bond with annual coupons has a price of $990 and a yield to maturity of 6%. What is the bond's coupon rate?**

Q5. **Suppose that Ally Financial Inc. issued a bond with 10 years until maturity, a face value of $1,000, and a coupon rate of 11% (annual payments). The yield to maturity on this bond when it was issued was 5%.**

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?**

Q6. **Suppose you purchase a 30-year, zero-coupon bond with a yield to maturity of 4%. You hold the bond for five years before selling it.**

a. **If the bond's yield to maturity is 3% when you sell it, what is the internal rate of return of your investment?**

b. Is your investment risk free if you plan to sell it before it matures and even if a bond has no chance of default? Explain.

Q7. **A BBB-rated corporate bond has a yield to maturity of 9%. A U.S. Treasury security has a yield to maturity of 7.5%. These yields are quoted as APRs with semiannual compounding. Both bonds pay semiannual coupons at a rate of 8.4%, have face value of $100 and five years to maturity.**

a. What is the price of the U.S. Treasury bond?

b. What is the price of the BBB-rated corporate bond?

a. U.S. Treasury bond:

$r = 7.5\% / 2 = 3.75\%$

C = coupon payment rate × FV = $100 \times \frac{8.4\%}{2} = 4.2$ \$

price $= \sum_{n=1}^{10} \frac{C}{(1+r)^n} + \frac{FV}{(1+r)^{10}} = 103.696$ \$

b. BBB-rated corporate bond:

$r = 9\% / 2 = 4.5$

price $= \sum_{n=1}^{10} \frac{C}{(1+r)^n} + \frac{FV}{(1+r)^{10}} = 97.626$ \$