CHAPTER 4
Interest Rates

Practice Questions

Problem 4.1.
A bank quotes you an interest rate of 14% per annum with quarterly compounding. What is the equivalent rate with (a) continuous compounding and (b) annual compounding?

Problem 4.2.
What is meant by LIBOR and LIBID. Which is higher?

LIBOR is the London InterBank Offered Rate. It is calculated daily by the British Bankers Association

Problem 4.3.
The six-month and one-year zero rates are both 10% per annum. For a bond that has a life of 18 months and pays a coupon of 8% per annum (with semiannual payments and one having just been made), the yield is 10.4% per annum. What is the bond's price? What is the 18-month zero rate? All rates are quoted with semiannual compounding.

Problem 4.4.
An investor receives $1,100 in one year in return for an investment of $1,000 now. Calculate the percentage return per annum with a) annual compounding, b) semiannual compounding, c) monthly compounding and d) continuous compounding.

Problem 4.5.
Suppose that zero interest rates with continuous compounding are as follows:

Maturity (months)	*Rate (% per annum)*
3	8.0
6	8.2
9	8.4
12	8.5
15	8.6
18	8.7

Calculate forward interest rates for the second, third, fourth, fifth, and sixth quarters.

Problem 4.6.
Assuming that zero rates are as in Problem 4.5, what is the value of an FRA that enables the holder to earn 9.5% for a three-month period starting in one year on a principal of $1,000,000? The interest rate is expressed with quarterly compounding.

Problem 4.12.
A three-year bond provides a coupon of 8% semiannually and has a cash price of 104. What is the bond's yield?

Problem 4.13.
Suppose that the 6-month, 12-month, 18-month, and 24-month zero rates are 5%, 6%, 6.5%, and 7% respectively. What is the two-year par yield?