DEBT SECURITIES, SEMESTER 1, 2012 – TUTORIAL 8

CHAPTER 8: TERM STRUCTURE AND VOLATILITY OF INTEREST RATES

Problem 1)
What are the four types of shapes observed for the yield curve?

Problem 7)
What are the advantages of using the swap curve as a benchmark of interest rates relative to a government bond yield curve?

Problem 15)
There are two forms of the "biased" expectations theory. Why are these two forms referred to as "biased" expectations?

Problem 16)
You are the financial consultant to a pension fund. After your presentation to the trustees of the fund, you asked the trustees if they have any questions. You receive the two questions below. Answer each one.
a. "The yield curve is upward-sloping today. Doesn't this suggest that the market consensus is that interest rates are expected to increase in the future and therefore you should reduce the interest rate risk exposure for the portfolio that you are managing for us?"
b. "I am looking over one of the pages in your presentation that shows spot rates and I am having difficulty in understanding it. The spot rates at the short end (up to three years) are increasing with maturity. For maturities greater than three years but less than eight years, the spot rates are declining with maturity. Finally, for maturities greater than eight years the spot rates are virtually the same for each maturity. There is simply no expectations theory that would explain that type of shape for the term structure of interest rates. Is this market simply unstable?"

Problem 18)
Compute the 10-day daily standard deviation of the percentage change in yield assuming continuous compounding assuming the following daily yields:

t	y_t
0	5.854
1	5.843
2	5.774
3	5.719
4	5.726
5	5.761
6	5.797
7	5.720
8	5.755
9	5.787
10	5.759

Problem 19)
For the daily yield volatility computed in the previous question, what is the annual yield volatility assuming the following number of days in the year:
(a) 250 days?
(b) 260 days?
(c) 365 days?