Problem Set #2

Due in lecture on **Wednesday, October 4**th. No late submissions will be accepted. Make sure your name is on your problem set, as well as the name of your (official) TA.

1. Consider Figure 1, a graph of the yield spread, in percentage points. Explain why we observe this pattern of spreads.

![Figure 1: Baa minus Aaa corporate yield. Source: Moody’s via St. Louis Fed.](image)

2. Consider the corporate bonds associated with Ford Motor Company. If the U.S. Government were to declare that it would ensure that Ford would not go bankrupt, what would happen to yields on Ford Motor Company bonds? Use diagrams to explain what happens.

3.1. Assume the expectations theory of the term structure is correct. Draw the yield curves (at 1, 3 and 5 years) for the following series of one year interest rates:
   a) .04, .05, .06, .05, .04
   b) .04, .01, .02, .03, .04
   (Where the interest rates are expressed in decimal form, i.e., 15% = 0.15).

3.2. Suppose in case (b), \( i_t \) jumped by .02 (2 percentage point), while \( i_t \) remained constant. Can you say when and by how much future expected short term interest rates changed? Why or why not?

3.3. Returning to the figures given to you in part 3.1., suppose \( l_t = 0, l_3t = .01, \) and \( l_5t = .02 \). Recalculate the yield curves.

4. Consider the Figure 2, a graph of yield curves on September 27, 2005. Compare it against Figure 3, a graph of the yield curves on September 22, 2006.

4.1 What has happened at the short end (3 month), 5 year, 10 year and 20 year maturities, relative to September 27, 2005?
4.2. Can you explain economically why the slope of the yield curve has changed since one year ago?

5. Chapter 7, #3.

6. Calculate the price of a share of stock, assuming dividends are expected to be constant at $D_0 = 1$ and $k_e$ is also expected to be constant at 0.05. Show your algebraic work. Suppose that you revise your expectations regarding $k_e$ downward by 2 percentage points. What immediately happens to the price of the share of stock? Once again, show your work.