Problem Set II
(Due on: June 4, 2004; Homework Help Session: June 1, 2004)

Note: Please try the problems on your own before the homework help session to be conducted by Babatunde Abidoye on Tuesday, June 1. I shall hold 2 hours of office on Thursday May 27 (1.30 – 3.30pm).

The first midterm shall be held on Friday, June 4. Babatunde Abidoye shall conduct the exam. The exam shall cover material from Chapters 1 – 4 of Mishkin and problem sets I & II. Please use my office hours on Thursday, May 27, to clarify any doubts you may have about this material. There shall be no class Wednesday June 2 & Thursday June 3. Contrary to previous announcement, we shall have class on Friday June 4 (Midterm 1).

A. Problems from the text: Mishkin Ch.4, Questions 4, 6, 8, 12, 14.

B. Additional Problems:
1. You are taking out a $100,000 loan to be repaid over 25 years in 300 monthly payments.
   a. If the interest rate is 16 % per year, what is the amount of the monthly payment?
   b. If you can only afford to pay $1,000 per month, how large a loan could you take?
   c. If you could afford to pay $1,500 per month and need to borrow $100,000, how many months would it take to pay off the mortgage?

2. You want to invest $10,000 for 5 years. There are two options available:
   a. A zero coupon bond with a Face Value of $1000 payable after 5 years. Its current market price is $800. What is its yield to maturity (YTM)?
   b. A simple 5-year time deposit paying an interest rate of 5 % per year.

Which one would you prefer?

3. You want to invest $10,000 for 2 years. There are two options available:
   a. A bond with a coupon rate of 10%, a Face Value of $10,000, and maturing in two years. Its current price is $9,500.
   b. A simple 2-year time deposit offering an interest rate of 9 % per year.

Which one would you prefer?

4. Suppose you buy a bond with Face Value of $1000, annual coupon rate 10% payable annually, with a term to maturity of 2 years. Its yield to maturity is 3.86%.
   a. What is its selling price?
   b. Exactly one year later, nominal interest rates rise to 16%. If your holding period is 1 year i.e., you have to sell the bond after one year, what price would you end up selling at? What will be your rate of return in holding this bond for one year?
c. Now, suppose you could hold it until its maturity. What is your rate of return now? Do you think you were better off by holding it until maturity?

5. A 2-year zero-coupon bond with a Face Value of $1000 is sold at a price of $900. If the annual inflation rate is expected to be 4%, what is the expected real return on this investment? If the actual inflation rate turns out to be 6%, would it benefit the issuer or the investors?