FINM2063 Introduction to Finance

Chapter 3 Exercises

1. Yesterday Sanjay sold 1,000 shares of stock that he owned for $45 per share. When he purchased the stock two years ago, Sanjay paid $50 per share. Every three months during the time that he held the stock, Sanjay received a quarterly dividend equal to $0.50 per share. A total of eight dividends were received.
2. What return (yield) did Sanjay earn during the two years he held the stock?
3. If the price of the stock was $45 per share one year ago, what return did Sanjay earn in each year he held the stock?
4. Suppose the annual yield on a two-year Treasury bond is 7.5%, the yield on a one-year bond is 5%, r\* is 3%, and the maturity risk premium is zero.
5. Using the expectations theory, forecast the interest rate on a one-year bond during the second year.
6. What is the expected inflation rate on Year 1? Year 2?
7. Suppose economists have determined that the real risk-free rate of return is 3% and that inflation is expected to average 2.5% per year long into the future. A one-year Treasury note offers a rate of return equal to 5.6%. You are evaluating two corporate bonds: (1) Bond A has a rate of return, rA, equal to 8%; and (2) Bond B has a rate of return, rB, equal to 7.5%. Except for their maturities, these bonds are identical – Bond A matures in 10 years, whereas Bond B matures in five years. You have determined that both bonds are very liquid, thus neither bond has a liquidity premium. Assuming that there is an MRP for bonds with maturities equal to one year or greater, compute the annual MRP. What is the DRP associated with corporate bonds?
8. Assume that the real risk-free rate of return, r\*, is 3%, and it will remain at that level far into the future. Also assume that maturity risk premiums on Treasury bonds increase from 0% for bonds that mature in one year or less to a maximum of 2%, and MRP increases by 0.2% for each year to maturity that is greater than one year – that is, MRP equals 0.2% for a two-year bond, 0.4% for a three-year bond, and so forth. Following are the expected inflation rates for the next five years:

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| --- | --- |
| Year | Inflation Rate |
| 1 | 3.0% |
| 2 | 5.0 |
| 3 | 4.0 |
| 4 | 8.0 |
| 5 | 3.0 |

1. What is the average expected inflation rate for one-, two-, three-, four-, and five-year bonds?
2. What should be the MRP for one-, two-, three-, four-, and five-year bonds?
3. Compute the interest rate for one-, two-, three-, four-, and five-year bonds.
4. If inflation is expected to equal 2% every year after Year 5, what should be the interest rate for 10- and 20-year bonds?
5. Plot the yield curve for the interest rates you computed in parts (c) and (d).