

## 1 Problem 1: Yield Curves

(Show your work for each of the following. Refer to chapter 6 for equations.)

Suppose the market interest rate for 1-year bonds is currently 7%, but people expect it to fall to 5% next year and to 3% two years from now. After that, they expect it to stay at 2% for the foreseeable future.

- 1.1 Based on expectations theory alone, what should the interest rate on 3-year bonds be?
  - 1.2 Now suppose the interest rate on 3-year bonds is 6%. What is the liquidity premium on 3-year bonds?
  - 1.3 Suppose for 4-year bonds, the liquidity premium is 1.5% and the interest rate is 6%. What do people expect the 1-year interest rate to be three years from now?
  - 1.4 In this example, the yield curve slopes downwards. In your own words, briefly explain why real yield curves typically slope upwards.
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## 2 Problem 2: Stock Prices

(Show your work for each of the following. Refer to chapter 7 for equations.)

Consider the “generalized dividend valuation model” in chapter 7 with the following numbers:

- People expect that Company A will pay out 25 dollars in dividends per share, every year, forever.
- People expect that Company B will pay out 10 dollars in dividends this coming year, \$10.50 the next, \$11.025 the year after that, &c, with dividends growing 5% per year, forever.
- The value of  $k_e$ , the “required return on equity” is 8%

2.1 What’s the price of Company A’s stock, according to the model?

2.2 What’s the price of Company B’s stock, according to the model?

Now consider the One-period Valuation Model.

- Company C has a stock price of 100 dollars per share.
- People expect that Company C will pay 6 dollars in dividends
- The value of  $k_e$ , the “required return on equity” is still 8%

2.3 What is the expected price of Company C’s stock next year?

### 3 Problem 3: Pick a Stock

- 3.1 Pick any firm in the S&P 500 Stock Market Index. Note the company's name, the symbol for their stocks, and the current price of each share. In your own words, briefly describe what the company does.**

(For some topics, Wikipedia is hazardous, but for this problem, Wikipedia's list of such firms is easily accessible and links to a primary source for prices. We also have some Bloomberg terminals if you want to get fancy with it.)

Now suppose I promise to give an extra credit point to anyone whose stock goes up in price between the due date of this assignment and the date of the final exam. Even if you want that extra credit, my advice would be to not spend too much time deliberating over which stock to pick. Just pick a random company that sounds vaguely interesting.

- 3.2 Explain in your own words, using concepts from chapter 7, why I might advise you to just pick a stock at random for problem 3.1**
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### 4 Problem 4: Case Study

Read the following article: "The Failure of Silicon Valley Bank and the Panic of 2023"

- 4.1 In your own words, briefly explain one of the factors that led to the collapse of Silicon Valley Bank, and relate it to what we talked about in chapters 8 and 9.**