Economics 304 Fall 2017
Practice problems covering Chapters 6 & 7

1. Draw a budget-constraint/indifference-curve diagram to illustrate each of the following situations with current consumption (C_1) on the horizontal axis and future consumption (C_2) on the vertical axis. You should assume that the person is approximately a consumption smoother, so that whether she is initially a saver or dissaver (borrower) is determined mainly by her endowment point. Be sure to identify clearly the endowment point, the budget constraints before and after the change, and the amounts saved or dissaved before and after the change.

a. A person who is initially a saver in period 1 and who responds to an increase in the real interest rate by decreasing saving.
b. A person who is initially a saver in period 1 and who responds to an increase in the real interest rate by increasing saving.
c. A person who is initially a dissaver (borrower) in period 1 and who responds to an increase in the real interest rate by increasing saving (reducing dissaving).
d. Explain (based on substitution and income effects) why the fourth case (dissaver who increases dissaving when the real interest rate rises) is impossible.

2. Explain why the real interest rate rather than the nominal interest rate is used in the budget constraint for consumers. Explain why the real interest rate rather than the nominal interest rate is relevant for firms deciding whether to invest in real capital.

3. Consider a model in which individuals live for three periods, earning income of Y_1, Y_2, and Y_3 and consuming C_1, C_2, and C_3. You may assume that they receive and leave no bequests.

a. Show the equation for the individual's lifetime budget constraint.
b. Solve for permanent income using an extension of equation (8.2) in the textbook.
c. Assuming for simplicity that the real interest rate is zero and that the consumer chooses perfectly smooth consumption, what consumption level will she choose in each year if Y_1 = \$20,000, Y_2 = \$100,000, and Y_3 = \$0 and she has access to perfect capital markets? In an economy comprising many such consumers, what pattern of borrowing and lending will emerge among individuals of various ages?

4. Some stocks promise high dividend payments and others promise none.

a. Why do firms choose not to pay dividends?
b. What kind of firms are likely to make that choice?
c. Why are people willing to hold stocks that do not pay dividends?
d. Is it plausible that these stocks will never, ever pay dividends to shareholders?

5. The "price/earnings ratio" or P/E is a common metric for evaluating stocks. It is the ratio of the current share price to current annual earnings.

a. What economic forces that would tend to equalize P/E ratios across firms in an efficient market?
b. Why wouldn't you expect all P/E ratios to be exactly the same?
c. What kinds of firms would you expect to have high or low P/E ratios at any moment in time?

6. If you believe that interest rates are likely to rise in the future, what do you expect will happen to the prices of existing long-term bonds? Does this make bonds an attractive or unattractive investment choice? If everyone shares this opinion, will they tend to move their money into or out of bonds? How will this affect bond prices and the expected rate of return on bonds? How will this affect the prices of alternative assets such as stocks? Given this change in the value of stocks (assuming there is no change in the expected future profits of the firms), how will this affect the rate of return on stocks? How will equilibrium between the returns on stocks and bonds be restored?