Homework 9

Chapter 18

1, 2 and part (a) of 6

Please put homework in your TA’s mailbox before 2pm of next Monday.

QUESTIONS FOR REVIEW

1. In the neoclassical model of business fixed investment, under what conditions will firms find it profitable to add to their capital stock?
2. What is Tobin's q, and what does it have to do with investment?
3. Explain why an increase in the interest rate reduces the amount of residential investment.
4. List four reasons firms might hold inventories.

PROBLEMS AND APPLICATIONS

1. Use the neoclassical model of investment to explain the impact of each of the following on the rental price of capital, the cost of capital, and investment.
   a. Anti-inflationary monetary policy raises the real interest rate.
   b. An earthquake destroys part of the capital stock.
   c. Immigration of foreign workers increases the size of the labor force.
2. Suppose that the government levies a tax on oil companies equal to a proportion of the value of the company's oil reserves. (The government assures the firms that the tax is for one time only.) According to the neoclassical model, what effect will the tax have on business fixed investment by these firms? What if these firms face financing constraints?
3. The *IS–LM* model developed in Chapters 10 and 11 assumes that investment depends only on the interest rate. Yet our theories of investment suggest that investment might also depend on national income: higher income might induce firms to invest more.
   a. Explain why investment might depend on national income.
   b. Suppose that investment is determined by
   $$I = \bar{I} + aY,$$
   where a is a constant between zero and one, which measures the influence of national income on investment. With investment set this way, what are the fiscal-policy multipliers in the Keynesian-cross model? Explain.
   c. Suppose that investment depends on both income and the interest rate. That is, the investment function is
   $$I = \bar{I} + aY - br,$$
   where a is a constant between zero and one that measures the influence of national income on investment and b is a constant greater than zero that measures the influence of the interest rate on investment. Use the *IS–LM* model to consider the short-run impact of an increase in government purchases on national income Y, the interest rate r, consumption C, and investment I. How might this investment function alter the conclusions implied by the basic *IS–LM* model?
4. When the stock market crashes, as it did in October 1929 and October 1987, what influence does it have on investment, consumption, and aggregate demand? Why? How should the Federal Reserve respond? Why?
5. It is an election year, and the economy is in a recession. The opposition candidate campaigns on a platform of passing an investment tax credit, which would be effective next year after she takes office. What impact does this campaign promise have on economic conditions during the current year?
6. The United States experienced a large increase in the number of births in the 1950s. People in this baby-boom generation reached adulthood and started forming their own households in the 1970s.
   a. Use the model of residential investment to predict the impact of this event on housing prices and residential investment.
   b. For the years 1970 and 1980, compute the real price of housing, measured as the residential investment deflator divided by the GDP deflator. What do you find? Is this finding consistent with the model? (*Hint:* A good source of data is the *Economic Report of the President,* which is published annually.)
7. U.S. tax laws encourage investment in housing (such as through the deductibility of mortgage interest for purposes of computing income) and discourage investment in business capital (such as through the corporate income tax). What are the long-run effects of this policy? (*Hint:* Think about the labor market.)