

Econ 116b
Problem Set 6

Fed Behavior

1. Consider two cases, where in each case the Fed follows an interest rate rule in which the interest rate depends on output and the price level. Case 1: the demand for money is highly sensitive to the interest rate (small changes in the interest rate lead to large changes in the demand for money). Case 2: the demand for money is not very sensitive to the interest rate (large changes in the interest rate lead to only small changes in the demand for money). If the government changes government spending (G), how will the effects on output differ in the two cases, assuming that the Fed follows the same rule in each case? Explain carefully. Say instead there is a price shock (increase in PM). How will the effects on output differ in the two cases?
2. How is the government spending multiplier affected if the Fed behaves according to an interest rate rule rather than keeping the interest rate unchanged in the face of the government spending change?

Household Behavior

1. Consider a consumer Jane who lives for 50 periods. Her income in each of the first 10 periods is \$15,000. Her income in each of the next 25 periods is \$40,000. In the last 15 periods she gets no income because she is retired. She has \$50,000 initial wealth, and the interest rate is zero for all periods. Assume that she can save, but not borrow, and that she plans to end her life with zero wealth.
 - (a) What is Jane's optimal consumption in each period? What is her wealth at the end of 35 periods?
 - (b) Suppose that in period 31 Jane receives an unanticipated gift of \$10,000 for each period for the rest of her life (20 periods). What is her optimal consumption and saving from period 31 through 50? What is Jane's MPC from the gift in period 31?
 - (c) Suppose that Jane had anticipated the gift at the beginning of her life (at the beginning of period 1). What would her optimal consumption in each period have then been?

- (d) Suppose that the gift was unanticipated but that it was only for period 31. What would her optimal consumption in each period then have been from periods 31 through 50? In this case what is Jane's MPC from the gift in period 31?
2. "The effects on labor supply from stimulating the economy by lowering tax rates differ from the effects on labor supply from stimulating the economy by increasing transfer payments." Explain carefully what this statement means.
 3. Why might consumption depend on the interest rate as well as income?

Firm Behavior

1. Why might it be optimal for firms to smooth production relative to sales? To smooth employment relative to production?
2. The unemployment rate generally fluctuates less than output. What are the three main reasons for this?
3. Why might investment depend on output as well as the interest rate?