

## Economics 101b; Fall 2003; Problem Set 5

*Due in section October 14*

1. Suppose that the rate of labor force growth is 3% per year but the efficiency of labor is stable, and the economy is on its steady state growth path. Suppose also that the rate of growth of the nominal money stock is 10% per year. Do you think that it is likely that the inflation rate is less than 5% per year? Why or why not?
  
2. What would the Federal Reserve have to do if it wanted to raise the monetary base today by \$10 billion? What do you guess would happen to the price of short-term government bonds if the Federal Reserve did this?
  
3. Do you think that unspent balances on credit cards--the difference between what you currently owe on your credit card and the limit that the credit card company allows you--should be counted as "money"? Why or why not?
  
4. Consider an economy in which prices are sticky, the marginal propensity to consume out of disposable income  $C_y$  is 0.6, the tax rate  $t$  is 0.25, and the share of national income spent on imports  $IM_y$  is 20 percent.
  - a. Suppose that total autonomous spending is \$6 trillion. Graph planned expenditure as a function of total national income.
  - b. Determine the equilibrium level of national income and real GDP.
  - c. What is the value of the multiplier?
  - d. Suppose that total autonomous spending increases by \$100 billion to \$6.1 trillion. What happens to the equilibrium level of national income and real GDP,  $Y$ ?
  
5. Classify the following set of changes into two groups: those that increase equilibrium real GDP, and those that decrease real GDP.
  - a. An increase in consumers' desire to spend today.
  - b. An increase in interest rates overseas.
  - c. A decline in foreign exchange speculators' confidence in the value of the home currency.
  - d. A fall in real GDP overseas.
  - e. An increase in government purchases.
  - f. An increase in managers' expectations of the future profitability of investments.
  - g. An increase in the tax rate.

6. Suppose that the government wishes (for good reasons) to increase the equilibrium level of real GDP by \$800 billion. How would you suggest that the government go about figuring out how to accomplish this goal?
7. Suppose that the economy is short of its full-employment level of GDP, \$12 trillion, by \$1,000 billion, with the MPC out of disposable income  $C_y$  equal to 0.6, the import share  $IM_y$  equal to 0.2, and the tax rate  $t$  equal to 25%.
- Suppose the government wants to boost real GDP up to full employment by cutting taxes. How large a cut in the tax rate is required to boost real GDP to full employment? How large a cut in total tax *collections* is produced by this cut in the tax rate?
  - Suppose the government wants to boost real GDP up to full employment by increasing government spending. How large an increase in government spending is required to boost real GDP to full employment?
  - Can you account for any asymmetry between the answers to (a) and (b)?
8. Think about the four possible source of price stickiness: money illusion, "fairness" considerations, misperceptions of price changes, and menu costs. What have you read or seen in the past two months that strike you as examples of any of these four phenomena? Which of the four strikes you as most likely to be the most important?
9. What changes in the economy's institutions can you think of that would diminish price stickiness and increase price flexibility? What advantage in terms of the size of the business cycle would you expect to follow from such changes in institutions? What disadvantages do you think that such institutional changes might have?
10. Suppose that at the end of 2003 the unemployment rate is 6.3 percent, and the rate of growth of potential output has been 3.8 percent per year. Assuming that the rate of growth of potential output remains unchanged and that labor productivity does not depend on the unemployment rate, what would you expect unemployment to be at the end of 2005 if real GDP growth averages 4.3 percent per year?