Economics 201 Fall 2016
Introduction to Economic Analysis Jeffrey Parker
Problem Set #8 Due: Wednesday, November 30

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1. Suppose that Congress passes a law requiring employers to provide employees with some benefit (such as health insurance or pension contributions) that raises the cost of each employee by $4 per hour. (Assume, for this problem, that this benefit was not previously provided by employers. Use graphs in your answers.)
    a. What effect does this law have on the demand for labor? (Be specific about both direction and magnitude.)
    b. If employees value this benefit at exactly the $4 per hour that it costs, what effect does the law have on the supply of labor? (Again, be as specific as possible.)
    c. If the wage adjusts freely to balance the labor market, how does the law affect employment and the wage? Are employers better or worse off? Are employees better or worse off? Explain.
    d. Now suppose that before the law was enacted, the equilibrium wage in this market was $3 above the minimum wage. Is your answer to part (c) different under this condition? Explain.
    e. Now, returning to the freely adjustable wage situation, suppose that workers do not value the benefit at all. Re-do the analysis of parts (a) through (c).

2. Suppose that the economy experiences rapid "sectoral shifts," in which some industries grow rapidly while others stagnate or shrink. How might this affect the natural unemployment rate and why? Are there policies that might help in such a situation?

3. The economy of Reedia contains one million one-dollar bills and any bank reserves are held in vault cash.
    a. Given that $M = C + D$ (money supply = currency held by public plus deposits) and $B = C + R$ (monetary base = currency held by public plus bank reserves), derive a general equation for the money-supply multiplier (M/B) as a function of the public's currency/deposit ratio (C/D) and banks' reserve ratio (R/D). Use your formula to demonstrate your answers below.
    b. If Reedians hold all of their money as currency, what is the quantity of money?
    c. If Reedians hold all of their money as bank deposits and banks hold 100% reserves, what is the quantity of money?
    d. If Reedians hold equal amounts of currency and bank deposits and banks maintain 100% reserves, what is the quantity of money?
    e. If Reedians hold all of their money as deposits and banks hold 10% reserves, what is the quantity of money?
    f. If Reedians hold equal amounts of currency and bank deposits and bank hold 10% reserves, what is the quantity of money?

4. Suppose that Friedlandia is well described by the traditional quantity theory of money: $MV = PY$. This is a long-run analysis, so output can be assumed always to be at its natural level or on its steady-state long-run growth path.
    a. Initially assume that the velocity of money and the level of output are constant over time. If the money supply grows at 10% per year, what will be the rate of inflation? Why?
    b. If the rate of money growth falls to 5%, what will happen to the rate of inflation and why?
    c. With the money supply growing at 5%, suppose that real GDP grows at 2% per year. What will the inflation rate be now? Why?
    d. With money growing at 5% and output growing at 2%, suppose that steady advances in banking technology cause people to need 1% less money relative to nominal expenditures each year, in other words, M / PY declines by 1% per year. What happens to velocity over time? What will the inflation rate be? Why?

5. Through a process called "quantitative easing," the Federal Reserve engaged in massive asset purchases after the 2008 financial crisis. This increased the monetary base dramatically, as shown below.
    a. Why did these purchases increase the monetary base?
    b. Despite the large increase in the monetary base, the money supply continued to grow steadily without a corresponding upward jump. What must have happened to the money-supply multiplier during this period?
    c. What changes in (1) the currency-deposit ratio or (2) the reserve-deposit ratio could have caused this change in the money-supply multiplier?
    d. Which of these is the more plausible explanation and why?