Economics 201 Fall 2020
Introduction to Economic Analysis Jeffrey Parker
Problem Set #8 Due: Wednesday, December 2

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1. 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?

2. The economy of Reedia contains one million one-dollar bills and any bank reserves are held as 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?

3. 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?