Econ 108: Principles of Macroeconomics Spring 2023

HW 2

Ch 25 & 26: Money and Monetary Policy

Ch 28: Inflation, Unemployment and CB Policy

Instructions: You need to submit your work as a word file to Moodle by June 2, Friday 23:59.

Question 1 [18 pts]**: Money's Effect on Real Economy**

Assume a reserve requirement ratio of 10 percent and no excess reserves in banking system to start with. Suppose that the Central Bank conducts an open market operation in which it purchases 5000 TL worth of Treasury Bills from the commercial banks.

a. (2 pts) Show the initial effect of this open market operation on the commercial bank's balance sheet using a T-account.

b. (4 pts) Assume that the public holds no currency and commercial bank holds no excess reserves. Determine what the balance sheet of the banking system will look like after all lending capacity is used by the bank. What is the amount of bank reserves, loans, deposits, and the increase in money supply? Briefly explain.

c. (4 pts) Use well labeled money demand and money supply curves and explain the effects of the increase in money supply on the interest rates. Explain the mechanism that changes interest rates.

d. (2 pts) What would be the effect of this interest rate change on the components of AD?

e. (3 pts) Suppose while the size of the open market operations is the same; commercial banks are reluctant to lend (credit crunch). How would this change the money creation process? Explain by referring to the role of commercial banks in the money creation process.

f. (3 pts) Monetary policy's influence on real economy (through AD) depends heavily on economic agents' behavior. Explain one case for which expansionary monetary policy might not have the intended effects due to private agent's behavior.

Question 2 [37 pts] **Monetary Policy**

Consider a faraway country with a natural rate of unemployment of %12. Inflation rate has been stable at %10 for many years and hence inflation expectations are initially at %10.

a. (4 pts) Draw the short-run and long-run Phillips curves that are consistent with the given information. Mark the current long-run equilibrium on your graph as point A. Argue that at point A there is no reason for the unemployment rate and inflation rate to change (that is; argue that it is an equilibrium point).

b. (5 pts) Its policy makers in the hope of stimulating the economy use a **surprise** expansionary monetary policy (low interest rate policy). Show the **SR consequences** of the monetary policy on your graph of part (a) and explain the reason for the short-run tradeoff between inflation and unemployment. How would the economy adjust to a **long-run equilibrium** if no further policy action is taken? Mark the long-run equilibrium on your graph. Explain the adjustments that move the economy to the long run equilibrium.

c. Seeing that policy works to stimulate demand at least for a while, they start to apply the expansionary monetary policy repeatedly (low interest rate policy). Work on the potential consequences of the policy:

   - (4 pts) Explain adaptive and rational expectation formation. Which of the expectation formation do you think would be relevant? Would it depend on the economic policy applied? (Lucas critique)
   - (3 pts) Given your answers for the expectation formation you assumed in previous part, show the effects of the repeated expansionary policy on the Phillips curve, and explain how the results of the policy will differ from the one in part (a).

d. (4 pts) Low interest rates are beneficial and can lead to increases in productive capacity if they lead to an increase in investment. If the supply side effects take place before demand side effects what would be the consequence of the low interest rate policy? [You do not need to use the Phillips curve to explain; if you need a graphical tool to work with AD and AS analysis would do]. What other factors other than interest rate is the investment decisions depend on?

e. (4 pts) State two adverse effects of inflation.

f. (3 pts) Suppose that yet no supply side effects took hold but due to the demand side effects of the policy inflation build up to %70. And monetary authorities decided to fight with inflation using contractionary monetary policies. Assume that individuals have **rational expectations** and Central Bank has **credibility**. Using Phillips curve, analyze the effects of the contractionary monetary policies. Briefly explain.

g. (4 pts) How would your analysis change if individuals have rational expectations and yet Central Bank does not have credibility? Explain the SR consequences of the contractionary monetary policy (the one that is trying to decrease inflation) on your Philips curve. Explain why even if the long-run consequences regarding the inflation changes will be the same as in part (f) the SR consequences of the policy will differ when CB does not have credibility.

h. (3 pts) Consider two different agents: the lenders and borrowers. Explain which of these agents will loose and which will gain due to the high interest rate that the contractionary policy creates?