

Homework 2: Eco 403, Spring 2009  
Due Wednesday, March 25, 2009

**Question 1**

We saw that in the hyperinflation in Austria after WWI, inflation dropped to nearly zero (actually became slightly negative) well before money supply growth dropped to zero.

- a. What was the primary cause of hyperinflation in Austria?
- b. What must have happened to inflationary expectations and money demand when inflation dropped?
- c. Consider the three periods before inflation fell, after inflation became slightly negative, and after money growth fell and inflation was zero. Assume money supply growth was the same in the first two periods and the money multiplier is one. Which period had the highest seigniorage revenue? Which had the lowest?

**Question 2**

Suppose the price level is 50 and to counter the recession the FED buys \$800 billion in t-bills. Suppose further that the price level does not change: any change in high powered money ends up in bank reserves.

- a. Calculate the seigniorage revenues.
- b. Suppose instead the FED conducts a TAF auction for \$800 billion in printed money. What are the seigniorage revenues? Does the FED earn any other revenues?

**Question 3**

Graph the market for money, the IS-LM graph, and the AD-AS graph, with the Keynesian aggregate supply. Be sure to label the original equilibrium.

- a. Show on the graphs the effect of an increase in excess reserves. Explain what happens to interest rates, equilibrium money holdings, the number of withdrawals, excess reserves, investment, output, and prices.
- b. Suppose the FED wants to counter the effects in part (a). Give one specific policy (move what parameter in which direction?) that can counter the effect in part (a).
- c. Show on the graph the effect of your policy. You should return to the original equilibrium.
- d. Give a one sentence intuition as to why the economy has returned to the original equilibrium.

#### Question 4

Repeat question 5 except use the classical aggregate supply.

#### Question 5

Consider the equation on page 853 of the Fischer article, which refers to Table 9.

- a. Calculate the inflation rate which maximizes seigniorage revenues as a function of  $\beta$  and  $\gamma$ .
- b. Assume  $\alpha = 0$ . Calculate the rate of inflation which results in a barter economy as a function of  $\beta$  and  $\gamma$ .
- c. Calculate the seigniorage maximizing inflation rate for all countries (use 9.563 and -4.961 from column 2) and for high inflation countries (use 9.775 and -1.586 from column 4).
- d. Consider the country with the highest inflation rate (the rightmost dot in figure 4). Note that this graph uses the results for all countries. Explain how that country could increase welfare.