

Second Challenge: Review, Eco 403, Spring 2012

The formulas provided below will also be provided on the challenge. All questions come from the notes (inflation tax to Lucas monetary misperceptions). Also review chapters BM:5.1-5.8, DC:12, BM:9.2, DC:512-16, BM:9.4, DC:516-520, the Fischer article on hyperinflation (sections 3.2-3.4), the Economist article on the Phillips curve, the second homework, and this review sheet. Note: the review questions only cover material since the last homework.

Money Supply

$$M = Hk(R) \quad , \quad \Delta M = \Delta Hk(R) \quad , \quad k(R) = \frac{cr + 1}{cr + rrr + e(R - R_0)}$$
$$MS = m = \frac{M}{P} \quad , \quad h = \frac{H}{P} \quad , \quad m = hk(R)$$

Money Demand

$$MD = \sqrt{\frac{\delta Y}{2R}} \quad , \quad MD = \frac{M}{P} = m = a - b\pi_{t+1}^e$$

Inflation Taxes: short run

$$\text{seignorage} = \frac{H_{t+1} - H_t}{P_t} = h_{t+1}(1 + \pi_t) - h_t$$

$$\text{taxes paid} = \frac{M_{t+1}}{P_t} - \frac{M_{t+1}}{P_{t+1}} = m_{t+1}\pi_t = k(R_t)h_{t+1}\pi_t$$

Inflation Taxes: Long run

$$\text{Long run seignorage} = \pi h \quad , \quad \text{long run taxes paid} = k(R)\pi h$$

$$G - T = \text{deficit} = \text{borrowing} + \pi h$$

Phillips Curve and Monetary Misperceptions

$$u = NR - k\Delta Y = NR - k(Y - Y^*) \quad , \quad u = NR - k \cdot a(\pi_t - \pi_t^e)$$

$$Y = Y^* + a(P - P^e)$$

Short answer questions (1-2 sentences)

Question 1

Suppose inflation is unexpectedly low. Carefully explain how unemployment is affected, according to the monetary misperceptions model.

Question 2

In which of the following cases is monetary policy likely to be effective?

- a. The currency to deposit ratio is low.
- b. Housing demand increases a lot in response to a fall in interest rates.
- c. Banks fear borrowers will not be able to repay loans.
- d. Excess reserves are high.
- e. Households hold about the same amount of money, regardless of the interest rate.

Question 3

Give one advantage and one disadvantage of a flat Phillips curve.

Longer Questions

Question 4

Suppose, due to lack of confidence in the banking system in Japan, households hold more currency and less deposits, making money supply sensitive to interest rates. Is monetary policy effective? Show graphically using the money market, the IS-LM graph, and the AD-AS graph. Label the change in spending and trapped liquidity.

Question 5

Suppose the classical model with monetary misperceptions, where $k \cdot a = \frac{1}{2}$. The initial period has $\pi_0^e = \pi_0 = 12\%$ and $NR = 6\%$. Inflationary expectations are:

$$\pi_{t+1}^e = \pi_t \tag{1}$$

Consider two possible plans by the FED to lower the inflation rate to 4%.

- i. The FED sets $\pi_1 = 4\%$ and keeps inflation at 4% thereafter.
- ii. The FED adopts a “go slow” policy of:

$$\pi_{t+1} = 2 + \frac{1}{2}\pi_t \tag{2}$$

For each policy:

- a. Calculate π , π^e , and u for periods 0-4.
- b. Graph the Phillips curve and plot periods 0-4. Show all shifts of the Phillips curve.

Question 6

Consider a version of a question asked by a recent student of this class: suppose the economy is such that even a large decrease in interest rates means only a few extra households will desire to borrow to buy a new house. That is, investment spending, and therefore total spending, is NOT sensitive to interest rates.

- a. Is the IS curve flat or steep in this case?
- b. Is monetary policy effective in this case? Show graphically using the money market, the IS-LM graph, and the AD-AS graph.
- c. Does a liquidity trap exist in this case? Explain briefly.