

## Second Challenge: Review, Eco 403, Spring 2009

The formulas provided below will also be provided on the challenge. All questions come from the notes. Also review chapters BM:5.1-5.8, BM:9.2, DC:512-16, BM:9.4, DC:516-20, the articles (the Fischer article on hyperinflation, the article on the FED's recent tbill purchases, and the article on the flat Phillips curve), the second homework, and this review sheet.

### Money Supply

$$M = Hk(R), \quad \Delta M = \Delta Hk(R), \quad k(R) = \frac{cr + 1}{cr + rrr + e(R)}$$

$$MS = m = \frac{M}{P} = \frac{H}{P}k(R) = hk(R)$$

### Money Demand

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

### Inflation Taxes: short run

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

$$\text{taxes paid} = \frac{M_t}{P_{t-1}} - \frac{M_t}{P_t} = m_t\pi_t = k(R_t)h_t\pi_t$$

### Inflation Taxes: Long run

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

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

### Phillips Curve and Monetary Misperceptions

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

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

## Short answer questions (1-2 sentences)

### Question 1

Explain intuitively what a “liquidity trap” is. Under what circumstances is a liquidity trap most likely to occur?

### Question 2

According to the article on the FED’s recent tbill purchases, the FED will almost double the monetary base. Give two possible scenarios under which this policy *not* lead to high inflation.

## Longer Questions

### Question 3

Suppose money supply is not sensitive to interest rates. Is monetary policy effective? Show graphically using the money market, the IS-LM graph, and the AD-AS graph.

### Question 4

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  $\pi$ ,  $\pi^e$ , and  $u$  for periods 0-4.
- b. Graph the Phillips curve and plot periods 0-4. Show all shifts of the Phillips curve.

### Question 5

These questions pertain to the Phillips curve article passed out in class.

- a. The article points out the short run Phillips curve has flattened since the early 1980s. In what direction, then, has the parameter  $a$  been changing? Explain why the parameter  $a$  has been changing.

- b. Explain one problem with a flatter Phillips curve. Use the Phillips curve graph to illustrate your point.
- c. Graphically show the problem discussed in the last paragraph of the article: starting with a flat Phillips curve with expectations at 2%, an overly aggressive response to the credit market problems causes inflationary expectations to subsequently increase. LOOKING AT THE GRAPH, Is this possibility a serious danger as the article implies?