Monetary Policy: Questions

Short answer questions

1. Use the $WS - PS$ model of the labour market to examine the effect on (i) involuntary unemployment; (ii) voluntary unemployment; (iii) total unemployment from each of the following

- a positive productivity shock

- an increase in producer market power

- the abolition of employment protection legislation

2. In the Phillips curve equation

$$\pi_t = \pi_{t-1} + \alpha(y_t - y_e) + u_t$$

what determines the size of α, the slope of the Phillips curve?

3. Suppose there is a permanent increase in the price of oil relative to the price of domestically produced goods and that the domestic economy is an oil importer.

i. Use the $WS - PS$ framework to evaluate the impact of this shock on the labour market and the position of the vertical Phillips curve (VPC).

ii. Use the $IS - PC - MR$ model as set out in lecture 2 to assess the impact of the shock on output, inflation and interest rates. In your analysis assume that the monetary authority learns of the shock (and varies interest rates) only in the period in which the shock occurs.

iii. How would your answer to part ii. change if the monetary authority learned of the shock (and could vary interest rates) one period in advance?

4. Consider the Phillips curve equation from the $IS - PC - MR$ model

$$\pi_t = \pi_{t-1} + \alpha(y_t - y_e) + u_t$$

Suppose that in period t the monetary authority learns of a persistent cost-push shock, i.e. it knows as of period t that $u_t = u_{t+1} = 1$, but then expects the shock to be 0 from $t + 2$ onwards.

i. Assuming the economy was in equilibrium at the inflation target before period t, show the position of the economy in the $IS - PC - MR$ diagram in period t.

ii. Assuming that private agents have adaptive expectations whereas the monetary authority is forward-looking, describe the path followed by the economy from period $t+1$ until the inflation target is restored.

iii. Now suppose that private agents have rational expectations and the same information as the monetary authority. In what ways would your answers to i. and ii. change?

5. Suppose that there is evidence that following a 1% shock to inflation, two central banks implement exactly the same increase in nominal and therefore real interest rates. Does it follow that these two central banks have the same preferences over output and inflation?

6. Suppose that a central bank loss function places equal weight on the output gap and deviations of inflation from the target. The central bank faces a Phillips curve with a slope equal to one, i.e.

$$\pi_t = \pi_{t-1} + (y_t - y_e) + u_t$$

i. What will the slope of the monetary rule be in this case?

Following a positive shock to u the central bank is advised to implement a larger rise in interest rates and a larger output recession than predicted by the monetary rule in part i.

ii. Describe a possible justification for such advice.

iii. What are the potential disadvantages of following such advice (other than the fact that the justification provided in ii. may be flawed)?

7. Consider the version of the $IS - PC - MR$ model with positive inflation bias in Figure 20 in lecture 4. Suppose the economy starts at point Z in the diagram and that then a conservative central bank is appointed.

i. Analyse the effects of this reform assuming that the private sector has adaptive expectations. Will the reform be welfare-improving?

ii. Analyse the effects of the reform assuming that the private sector has rational expectations and learns of the reform in advance. Will the reform be welfare-improving?