

Economics 101b; Fall 2000; Problem Set 8

Due in class November 9

1. What is the Lucas critique? How would the Lucas critique suggest that you should design a policy to try to reduce inflation from 10% per year down to 2% per year?
2. What is "dynamic inconsistency"? Why does dynamic inconsistency strengthen the case for having policy rules rather than leaving economic policy to the discretion of authorities?
3. Under what circumstances should the Federal Reserve focus on keeping the interest rate stable? Under what circumstances should the Federal Reserve focus on keeping the growth rate of the money stock stable?

4. Suppose that the economy's Phillips curve is given by:

$$u = u^* - \beta(\pi - \pi^e)$$

with β equal to 0.4 and the natural rate of unemployment u^* equal to .06--six percent. Suppose that the economy has for a long time had a constant inflation rate π equal to 3% per year. Suddenly the government announces a new policy: it will use fiscal policy to boost real GDP by 5% relative to potential--enough by Okun's law to push the unemployment rate down by 2%--and promises it will keep that expanded fiscal policy in place indefinitely.

Suppose that the dominant way of forming expectations in the economy is such that people have *adaptive expectations* of inflation--so that this year's expected inflation

is equal to last year's actual inflation. What will be the course of inflation and unemployment in this economy in the years after the shift in fiscal policy? Track the economy out twenty years, assuming that there are no additional shocks.

5. Suppose that the economy's Phillips curve is given by:

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with β equal to 0.4 and u^* equal to .06--six percent. Suppose that the economy has for a long time had a constant inflation rate equal to 3% per year. Suddenly the government announces a new policy: it will use fiscal policy to boost real GDP by 5% relative to potential--enough by Okun's law to push the unemployment rate down by 2%--and it will keep that expanded fiscal policy in place indefinitely.

Suppose that for each one percentage point that the inflation rate rises above three percent, the central bank raises nominal interest rates by two percentage points--and that each one percentage point increase in real GDP moves the economy along the IS curve sufficiently to shrink real GDP by one percent.

Suppose that agents in the economy have *adaptive expectations* of inflation--so that this year's expected inflation is equal to last year's actual inflation. What will be the course of inflation and unemployment in this economy in the years after the shift in fiscal policy? Track the economy out twenty years, assuming that there are no additional shocks.

6. Suppose that the economy's Phillips curve is given by:

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with β equal to 0.4 and u^* equal to .06--six percent. Suppose that the economy has for a long time had a constant inflation rate equal to 3% per year. Suddenly the government announces a new policy: it will use fiscal policy to boost real GDP by 5% relative to

potential--enough by Okun's law to push the unemployment rate down by 2%--and it will keep that expanded fiscal policy in place indefinitely.

Suppose that for each one percentage point that the inflation rate rises above three percent, the central bank raises nominal interest rates by two percentage points--and that each one percentage point increase in real GDP moves the economy along the IS curve sufficiently to shrink real GDP by one percent.

Suppose that agents in the economy have *rational expectations* of inflation--so that this year's expected inflation is what an economist knowing the structure of the economy and proposed economic policies would calculate actual inflation was likely to be. What will be the course of inflation and unemployment in this economy in the years after the shift in fiscal policy? Track the economy out twenty years, assuming that there are no additional shocks.

7. Why do economists today tend to believe that monetary policy is superior to discretionary fiscal policy as a stabilization policy tool? In what circumstances that you can imagine would this belief be reversed?

8. The sacrifice ratio is the ratio of the total loss of output (in percentage points of a year's production) to the amount by which inflation is permanently reduced in a disinflation. Suppose that the economy has adaptive expectations. How does the sacrifice ratio depend on the slope of the Phillips curve? Suppose that the economy has rational expectations. Would you expect the sacrifice ratio to be larger or smaller?