

# Econ 101b--Fall 1999-Stabilization Policy

**Due in class November 16**

1. Under what circumstances will a government expansionary fiscal or monetary policy do nothing to raise GDP or lower unemployment? If an expansionary government policy fails to raise GDP or lower unemployment, what would the policy manage to do?
2. If expectations of inflation are *adaptive*, is there any way to reduce inflation without suffering unemployment higher than the natural rate? What would you advise a central bank that sought to reduce inflation without provoking high unemployment to do?
3. Do you think that inflation expectations in the U.S. today are static, adaptive, or rational? Why?
4. Suppose that the natural rate of unemployment is 5% for adults, 8% for teenagers, and that teenagers make up 10% of the labor force. What is the natural rate of unemployment? What would be the natural rate of unemployment if a baby boom led to a year in which teenagers made up 20% of the labor force?
5. Suppose that you were advising a government that wants to reduce its inflation rate from 10% per year to 5% per year. It wants to know whether it should (i) try to immediately and suddenly reduce inflation to the target, or (ii) undertake a gradual reduction to the target over a number of years. What are the chief arguments against choosing option 1? What are the chief arguments against choosing option 2?
6. Suppose that the Phillips curve in an economy is:

$$\pi_t = \pi_t^e + 0.18 - 3 \times u_t,$$

where  $u_t$  is the unemployment rate (and  $6\% = .06$ ),  $\pi_t$  is the annual inflation rate, and  $\pi_t^e$  is the rate of expected inflation.

A. What is the natural rate of unemployment?

B. Suppose that in year  $t-1$ , the unemployment rate is equal to its natural rate and the inflation rate is zero. Suppose that beginning in period  $t$  the authorities bring the unemployment rate down to 5% and keep it there. If expected inflation is equal to last year's inflation ( $\pi_t^e = \pi_{t-1}$ ), what is the inflation rate in periods  $t$ ,  $t+1$ ,  $t+2$ ,  $t+3$ ?

C. Suppose that in year  $t-1$ , the unemployment rate is equal to its natural rate and the inflation rate is zero. Suppose that beginning in period  $t$  the authorities bring the unemployment rate down to 5% and keep it there. If expected inflation is static ( $\pi_t^e = 0$ ), what is the inflation rate in periods  $t$ ,  $t+1$ ,  $t+2$ ,  $t+3$ ?

7. Suppose that the economy is described by:

$$\pi_t = \pi_{t-1} - (u_t - .06) \text{ (Phillips curve with adaptive expectations)}$$

$$u_t = u_{t-1} + .012 - 0.4 \times M_t \text{ (Aggregate demand)}$$

Where  $\pi$  is the inflation rate,  $u$  is the unemployment rate, and  $M$  is an index of changes in government policy that affect aggregate demand. Suppose that at the beginning  $u_t = u_{t-1} = 0.06$ ,  $\pi_t = 0.07$ , and  $M_t = .10$ . And suppose that the government suddenly follows a policy in year  $t-1$  of reducing  $M_t$  to 0, and keeping it at zero.

A. What happens to unemployment and inflation in year  $t+1$ ?

B. What happens to unemployment and inflation in year  $t+2$ ?

C. What happens to unemployment and inflation in the long run?

D. How would your answer be different if the economy had rational rather than adaptive expectations?