

Economics 100B
Midterm #3 Questions
Fall 2007
100 points, 80 minutes, 20% of grade

Question 1 (10 points total; 7 minutes total)

- a. (6 points) Explain why the Fed lowers interest rates when the inflation rate falls. Be complete.
- b. (4 points) Explain why unemployment is expected to rise when real GDP grows by just 1% per year.

Question 2 (20 points total; 15 minutes total)

Suppose the following equations describe the economy.

MPRF: $u = 0.02 + 3(\pi - 0.03)$

PC: $\pi = 0.02 - 0.5(u - 0.04)$

- a. (3 points) What is the expected inflation rate?
What is the Fed's target inflation rate?
What is the natural rate of unemployment?
- b. (7 points) Solve for the equilibrium values of unemployment and inflation rates. If you can't solve this without a calculator (tsk tsk), set it up and go as far as you can to get as much partial credit as possible.
- c. (5 points) If expectations are adaptive, what is the equation for the Phillips Curve in the next period? Explain how you came to this answer.
- d. (5 points) If instead expectations are rational, what is the equation for the Phillips Curve in the next period? Explain how you came to this answer.

Question 3 (15 points; 11 minutes)

California is required to balance its budget each year. Unless something is done, the California state budget will be in deficit in 2008. So the California Legislature plans to reduce spending and raise tax rates.

- a. (10 points) What impact will the California Legislature's actions have on the IS curve for the California economy? What impact will their actions have on the multiplier? Explain your answers. Draw the old and new IS curves.
- b. (5 points) Suppose the real interest rate remains the same. What effect will the California Legislature's actions have on total income and output in California? On unemployment in California? Explain your answers.

Question 4 (5 points total; 4 minutes total)

The Fed decides it will fight inflation when the inflation rate is above its target level, but will do nothing when the inflation rate is below its target level. Draw this Taylor rule.

Question 5 (23 points total; 15 minutes total)

Due to a fall in the inflation rate, the Fed lowers the federal funds rate by purchasing short-term U.S. Treasury bonds. Their action lowers the interest rate on short-term U.S. Treasury bonds. But suppose long-term interest rates do not change.

- a. (5 points) Briefly (one sentence), what is a yield curve? Draw the old and new yield curves, before and after the Fed's action.
- b. (6 points) What effect would the Fed's action have on gross exports? Explain your answer.
- c. (4 points) What effect would the Fed's action have on investment spending? Explain your answer.
- d. (8 points) What effect would the change in the yield curve have on the Monetary Policy Reaction Function? Explain your answer.

Question 6 (27 points; 20 minutes)

The Fed sets interest rates in reaction to inflation. If the inflation rate is above the Fed's target rate, the Fed raises interest rates. If the inflation rate is below the Fed's target rate, the Fed lowers interest rates. Suppose initially the economy is in equilibrium with the actual unemployment rate, u_1 , equal to the natural rate of unemployment (u^*). In addition, the actual inflation rate π_1 initially equals the expected inflation rate (π^e).

Every day on every TV channel and every website, someone is advising Americans to avoid using their credit cards this holiday season. "Spend less money! Bake cookies! Visit an elderly shut-in! There are many ways to give gifts without spending money." Moreover, consumer confidence has been falling. Consumers heed the advice and give in to their fears about the future . . . and reduce their spending. (This is a drop in autonomous consumption, not a change in the m.p.c.)

- a. (8 points) If expectations are static, what is the effect of the drop in consumption on the inflation and unemployment rates? Explain the process by which the economy adjusts from the initial equilibrium to the new equilibrium. Draw a graph to supplement your answer.
- b. (7 points) Suppose instead that expectations are adaptive. In this case, what effect would the drop in consumer spending have on unemployment and inflation over time? Explain your answer. Supplement your answer with a graph.
- c. (6 points) Suppose instead that expectations are rational (strong form, or what Prof. Olney called "crystal ball" expectations). In this case, what effect would the drop in consumer spending have on unemployment and inflation over time? Explain your answer. Supplement your answer with a graph.
- d. (6 points) In which case – static, adaptive, or rational expectations – did real interest rates change by the smallest amount? In which case did nominal interest rates change by the smallest amount? Explain your answers.