

BOSTON COLLEGE
Department of Economics

EC 204
Macroeconomics

Prof. Murphy

Sample Mid-Term Exam

Part I. True, False, or Uncertain. Explanation determines grade.
Answer 4 out of the following 5 questions.

1. According to Okun's Law, the 4.7% increase in U.S. real GDP during the fourth quarter of 1996, if sustained for a year, will lead to an increase in the rate of unemployment.
2. There would be no costs associated with inflation if the rate of inflation were known with complete certainty.
3. If the Boston College Art Museum purchases a rare 19th century painting from an art collector at an auction, the value of the sale will be counted in this year's GDP.
4. Under conditions of perfect capital mobility, an increase in the money supply will have the same effect on output regardless of whether the exchange rate is flexible or fixed.
5. If investment spending is not a function of the interest rate, the aggregate demand curve will be horizontal.

Part II. Solow Growth Model

The Clinton Administration has proposed an increase in spending by the government on education. The Administration claims that this increased investment in workers is needed to raise the efficiency of labor and ultimately to increase the rate of economic growth. Answer the following questions as you assess whether the Clinton program will have its intended effects.

1. Assuming that the economy is initially at a steady-state equilibrium, illustrate in a diagram how an increase in the level of education will affect the economy. Assume that the increase in the level of education raises the level of labor efficiency but has no effect on the rate of technological progress. Immediately following the increase in education, what happens to the actual capital/effective-labor ratio? What happens to the steady-state capital/effective-labor ratio?
2. Does an increase in the level of education (and thus the level of efficiency) raise economic growth? Explain carefully and distinguish between growth during the transition to the steady state and growth once the steady state has been reached.
3. Suppose instead that the increased investment in education actually does raise the rate of technological progress. Illustrate in a separate diagram the effects on the economy. Does the increased rate of technological progress raise economic growth once the new steady state

is reached? Does the standard of living, measured by consumption per worker, increase at a more rapid rate? Explain.

4. President Clinton's budget also calls for eliminating the budget deficit by the year 2002. Starting from an initial steady-state equilibrium, analyze in a separate diagram the likely effects on the economy resulting from a reduction in the budget deficit. What is the effect on the steady-state capital/effective-labor ratio? Does deficit reduction raise economic growth once the new steady state is reached?

Part III. Unemployment

Consider a model of the natural rate of unemployment in which the labor force itself is allowed to vary, unlike the model developed in the text (and class) in which the labor force was constant.

1. Define the labor force.
2. Briefly describe all of the possible transitions between the state of employment, the state of unemployment, and the state of being out of the labor force.
3. Intuitively describe how an increase in the rate of transition between the state of unemployment and the state of being out of the labor force will affect the natural rate of unemployment.
4. Discuss briefly how unemployment insurance affects the transition rates between certain states. Be specific in your answer. What is the likely overall effect on the natural rate of unemployment resulting from unemployment insurance? If unemployment insurance is shown to raise the natural rate of unemployment, should it be eliminated as a government program? Explain.

Part IV. Aggregate Supply and Aggregate Demand.

1. Briefly describe why the aggregate demand curve slopes downward (i.e., why is aggregate demand a negative function of the price level)?
2. Pick two of the four cases discussed in class for why the aggregate supply curve is upward sloping in the short run (i.e., explanations for why aggregate supply is a positive function of the price level), and briefly describe how the short-run aggregate supply curve is derived in those cases.
3. Consider an increase in government purchases of goods and services. Illustrate in an aggregate demand-aggregate supply diagram how the price level and the level of output are affected in the short run.
4. Illustrate in your diagram how the economy adjusts in the long run. Briefly describe how this adjustment occurs in each of the two cases you chose in part 2.