Spring 97

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Quiz 1 14.02

1 True, False or Uncertain. Explain. (30 points; answer 6 out of 8)

1. If investment is very sensitive to changes in the interest rate, monetary policy is a very powerful tool to change equilibrium output.

2. The unemployment rate in the U.S. has consistently exceeded the unemployment rate in the European Union for the last 10 years.

3. The inflation rate computed with the GDP deflator will most likely be higher than the inflation rate computed with the CPI index when the prices of all imported goods and services rise sharply relative to U.S. goods.

4. If firms's production responds sluggishly (with a one period lag) to changes in sales, fiscal policy is not likely to be an effective policy instrument because the multiplier is very small.

5. The marginal propensity to consume is equal to total consumption spending divided by disposable income.

6. There is something wrong with the ISLM model; a sudden increase in the savings rate brings the economy into a recession!

7. A fiscal expansion coupled with a monetary contraction must always cause output and interest rates to rise.

8. A reasonable dynamic assumption for the ISLM model is that the economy is always on the IS curve, but moves only slowly to the LM curve.

2 Short Problems (15 point each)

1. Alan Greenspan, head of the Federal Reserve, announces that the Fed will take steps to raise interest rates 12 months from today.

   - (a) Illustrate the effect of this announcement on tomorrow's (i.e. 12 months from today) output and interest rate.
   - (b) Illustrate the effects of this announcement on today's output and interest rate.
   - (c) What happens to today's investment, government spending, and consumption?
   - (d) How will this announcement effect the price of 1-year bonds? Why?

2. Consider an economy that produces and consumes bread and automobiles. The data for 1990 and 1991 are reported in the following table:

	1990	1991
Price of one automobile	$50,000	$60,000
Price of one loaf of bread	$10	$20
Number of automobiles produced	100	120
Number of loaves produced	500,000	400,000

   - (a) Using 1990 as the base year, compute nominal GDP, real GDP and the GDP deflator for 1991.
   - (b) In 1992, the country exports 20 used automobiles for $40,000. How does this export affect 1992's nominal GDP?
   - (c) Compute the inflation rate in 1991 using 1990 as the base year. Show your computations.
   - (d) Multiple Choice. U.S. nominal GDP in 1994 was approximately: (i) $6.7 trillion; (ii) $6.7 billion; (iii) $ 10 billion; (iv) $ 10 trillion;

3 Long Question (30 points)

Consider the following economy:

$$C = c_0 + c_1 (Y - T)$$

$$T = tY$$

$$I = d_0 + d_1 Y - d_2 i$$

with $(c_1 + d_1) < 1$ and G exogenous.

1. Write down aggregate demand, Z, as a function of Y, i, and exogenous variables.

2. Draw the demand curve in (Z, Y) space (Z on the y-axis and Y on the x-axis) and label autonomous spending A. What is the slope of aggregate demand?

3. For a given interest rate, find an expression for equilibrium output.

4. Draw a standard ISLM model. As investment becomes more sensitive to changes in the interest rate, how does the IS curve change? How does the increase in d_2 affect the effectiveness of monetary policy?

5. Assume the government permanently increases the tax rate (increases t). How is the slope of aggregate demand affected? Draw this event in (Z,Y) space.

6. How does the increase in t affect the IS curve? Be precise.

7. In response to the increase in t, the Fed decides to take steps to return output back to its original equilibrium level. What actions will the Fed take? Draw the effects of both the increase in t and the subsequent Fed policy in the ISLM model.

8. How is the effectiveness of monetary policy (i.e. the response of output to a given change in M) affected by the increase in t?