

**Part I. Answer six of the following nine questions in this part.**

1. True, false, or uncertain: “In an open economy with flexible exchange rates, a given tax cut will have a smaller impact on real GDP than it would in an otherwise identical closed economy.” Explain your reasoning.
2. Many phenomena in economics are symmetrical, i.e., the analysis of an increase is just the reverse of the analysis of a decrease. One exception is the analysis of a central bank’s ability to maintain indefinitely an overvalued currency versus its ability to maintain indefinitely an undervalued currency. Explain.
3. In Irving Fisher’s model of intertemporal choice, suppose a person who is initially a saver is faced with an increase in the interest rate. Is it possible for the saver to become a borrower in response to this rise in the interest rate? Explain.
4. True, false, or uncertain: “If the money supply is endogenous, monetary policy tends to be more effective.” Explain your reasoning.
5. True, false, or uncertain: “Given the product (goods) market equilibrium represented by the IS curve, at any point above the IS curve there will be an excess supply of goods, and output will be tending to decline.” Explain your reasoning.
6. Milton Friedman said, “Inflation is always and everywhere a *monetary* phenomenon.” Tom Sargent said, “Inflation is always and everywhere a *fiscal* phenomenon.” Explain how both statements can be true. (Hint: Your answer should include a discussion of a government’s requirement for seigniorage.)
7. True, false, or uncertain: “In the Diamond overlapping-generations model, individuals always make rational choices for their given circumstances, but the outcome is not necessarily Pareto-efficient.” Explain your reasoning.
8. To provide an adequate explanation of short-run fluctuations in output, Real Business Cycle theory requires a significant degree of intertemporal substitution of labor. Explain.
9. True, false, or uncertain: “According to the q-theory of investment, investment responds more to a temporary investment tax credit than to a permanent investment tax credit.” Explain your reasoning.

**Part II. Answer one of the following two questions in this part.**

10. Consider the following model of an economy:

$$(1) Y = C(Y-T) + I(r) + G + NX(\epsilon)$$

$$(2) M/P = L(i, Y)$$

$$(3) NX(\epsilon) = CF(r) - r^*$$

$$(4) i = r + \pi^e$$

$$(5) \epsilon = eP/P^*$$

$$(6) Y = \bar{Y} + \alpha(P - P^e) \quad \alpha > 0$$

$$(7) \bar{Y} = F(\bar{K}, \bar{L})$$

where:

$Y$  = real output

$\bar{Y}$  = natural rate of real output

$\bar{K}$  = capital stock (fixed)

$\bar{L}$  = labor force (fixed)

$C$  = real consumption

$T$  = real tax revenue

$I$  = real gross private investment

$r$  = domestic real interest rate

$r^*$  = world real interest rate

$G$  = real government spending

$NX$  = real net exports

$CF$  = real net capital outflows (net foreign investment)

$\epsilon$  = domestic real exchange rate (quantity of foreign goods required to trade for one unit of domestic goods)

$e$  = domestic nominal exchange rate (units of foreign currency per unit of domestic currency)

$M$  = nominal money supply

$P$  = domestic price level

$P^*$  = foreign price level

$P^e$  = expected domestic price level

$i$  = nominal domestic interest rate

$\pi^e$  = expected inflation rate

- a. Equation (6) is the equation for the short-run aggregate supply curve (SRAS). Under what condition would the SRAS be horizontal (when graphed with  $P$  on the vertical axis and  $Y$

on the horizontal)? Under what condition would the SRAS be vertical?

- b. Assume the following:

$$P = P^e$$

$$CF(r - r^*) = 0$$

$$\pi^e = 0$$

$$L(i, Y) = (1/V)Y \quad \text{where } V \text{ is the constant income-velocity of money } (V = PY/M)$$

What is the impact of an increase in government spending (holding tax revenue constant) on (a) output, (b) the real interest rate, (c) consumption, and (d) investment?

- c. Now consider the same situation as in part (b), but  $CF(r - r^*)$  is infinitely elastic (there is perfect capital mobility so that  $r = r^*$ ). What is the impact of an increase in government spending (holding tax revenue constant) on (a) output, (b) the real interest rate, (c) consumption, (d) investment (e) net exports, and (f) the real exchange rate?
11. a. Consider a Fischer model of predetermined prices in which all producers have rational expectations, and each producer has some degree of market power and sets her own price to maximize profits. However, producers set their prices every other year for the next two years, with possibly a different price set for each of the two years. Half of all producers set their prices in even-numbered years, and half set prices in odd-numbered years. What would be the effect on price level and output over time of a surprise increase in the money supply just before the beginning of an even-numbered year? How long would these effects persist? Explain.
- b. Consider a Taylor model of fixed prices in which producers are again price-setters, but they must set the *same* price for the next two years. What would be the effect on price level and output over time of a random increase in the money supply at the start of a particular year? How long would these effects persist? Explain.
- c. One strong implication of the rational expectations hypothesis in a model with fully flexible wages and prices is that a high rate of long-run steady-state inflation can be lowered to zero without any temporary increase in unemployment by reducing the growth rate of the money supply, so long as this disinflationary monetary policy is fully credible. Would the same conclusion hold in a Taylor model of staggered price setting? Explain.

**Part III. Answer one of the following two questions in this part.**

12. a. Discuss the extent to which you agree and/or disagree with the following statement: “Since deflation is simply negative inflation, deflation will have the same real effects on output and employment as inflation.”
- b. What remedy would you propose for dealing with a problem of sustained deflation? Explain your reasoning.
13. Beginning in the last week of July 2003, 25 million American taxpayers will begin receiving checks of \$400 per child – an advance payment of the increase in the child tax credit for the 2003 tax year. Previously households could receive a reduction of their income taxes of a maximum of \$600 per child. The Jobs and Growth Tax Relief Reconciliation Act of 2003 increased the maximum to \$1,000 per child. Households that claimed the child tax credit in 2002 will be receiving the additional \$400 per child now rather than when they file their 2003 income taxes in 2004.
- a. Carefully explain how the advance payment of the tax credit will affect economic activity. Be sure to clearly state the model(s) and assumptions underlying your response.
- b. This tax reduction in conjunction with increased government spending is resulting in large projected government deficits. What are the implications of the increasing deficits for short-run and long-run economic activity, interest rates, exchange rates, and trade balance?