



AP[®] Macroeconomics 2009 Free-Response Questions

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MACROECONOMICS

Section II

Planning Time—10 minutes

Writing Time—50 minutes

Directions: You have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

1. Assume that the United States economy is in long-run equilibrium with an expected inflation rate of 6 percent and an unemployment rate of 5 percent. The nominal interest rate is 8 percent.
 - (a) Using a correctly labeled graph with both the short-run and long-run Phillips curves and the relevant numbers from above, show the current long-run equilibrium as point A.
 - (b) Calculate the real interest rate in the long-run equilibrium.
 - (c) Assume now that the Federal Reserve decides to target an inflation rate of 3 percent. What open-market operation should the Federal Reserve undertake?
 - (d) Using a correctly labeled graph of the money market, show how the Federal Reserve's action you identified in part (c) will affect the nominal interest rate.
 - (e) How will the interest rate change you identified in part (d) affect aggregate demand in the short run? Explain.
 - (f) Assume that the Federal Reserve action is successful. What will happen to each of the following as the economy approaches a new long-run equilibrium?
 - (i) The short-run Phillips curve. Explain.
 - (ii) The natural rate of unemployment

2. Assume that as a result of increased political instability, investors move their funds out of the country of Tara.
 - (a) How will this decision by investors affect the international value of Tara's currency on the foreign exchange market? Explain.
 - (b) Using a correctly labeled graph of the loanable funds market in Tara, show the impact of this decision by investors on the real interest rate in Tara.
 - (c) Given your answer in part (b), what will happen to Tara's rate of economic growth? Explain.

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3. Assume that the reserve requirement is 20 percent and banks hold no excess reserves.
- (a) Assume that Kim deposits \$100 of cash from her pocket into her checking account. Calculate each of the following.
- (i) The maximum dollar amount the commercial bank can initially lend
 - (ii) The maximum total change in demand deposits in the banking system
 - (iii) The maximum change in the money supply
- (b) Assume that the Federal Reserve buys \$5 million in government bonds on the open market. As a result of the open market purchase, calculate the maximum increase in the money supply in the banking system.
- (c) Given the increase in the money supply in part (b), what happens to real wages in the short run? Explain.

STOP

END OF EXAM



AP[®] Macroeconomics 2009 Scoring Guidelines

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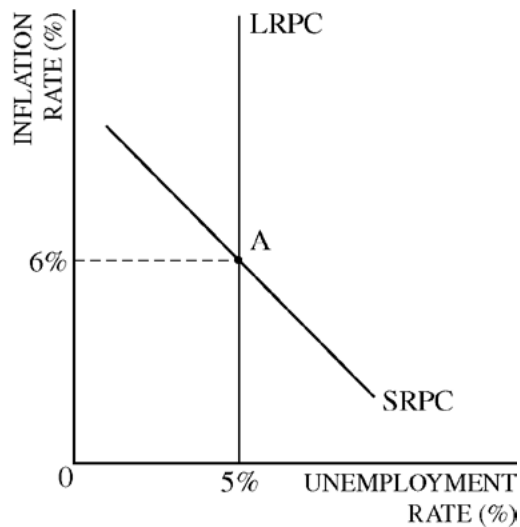
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Question 1

11 Points (2 + 1 + 1 + 2 + 2 + 3)



(a) 2 points:

- One point is earned for a correctly labeled graph of the short-run Phillips curve.
- One point is earned for showing position “A” on the LRPC at the correct coordinates where the SRPC crosses the LRPC curve.

(b) 1 point:

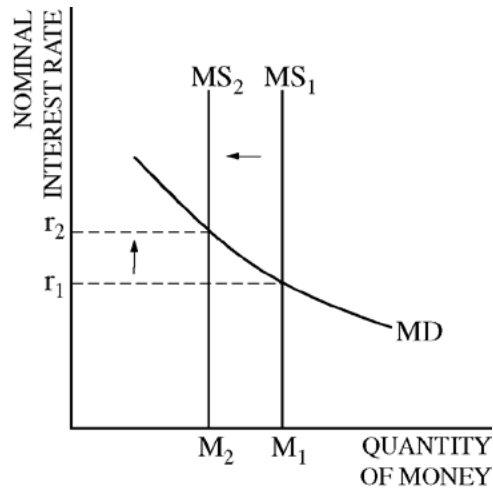
- One point is earned for the correct calculation of the real interest rate: $8\% - 6\% = 2\%$.

(c) 1 point:

- One point is earned for stating that the Federal Reserve should sell bonds.

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Question 1 (continued)



(d) 2 points:

- One point is earned for a correctly labeled graph of the money market.
- One point is earned for showing a leftward shift of the money supply curve resulting in a higher interest rate.

(e) 2 points:

- One point is earned for stating that aggregate demand decreases.
- One point is earned for explaining that the higher interest rate decreases investment and interest-sensitive consumption spending, and that both consumption and investment are components of aggregate demand.

(f) 3 points:

- One point is earned for stating that the short-run Phillips curve will shift to the left.
- One point is earned for explaining that Federal Reserve policy will lower inflationary expectations.
- One point is earned for stating that the natural rate of unemployment will remain unchanged.

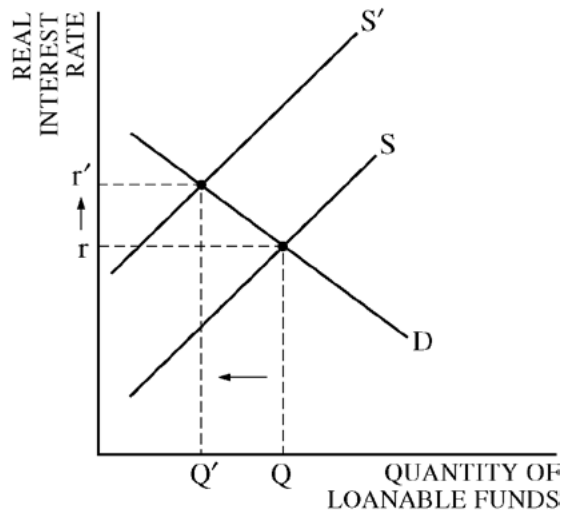
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Question 2

6 points (2 + 2 + 2)

(a) 2 points:

- One point is earned for stating that Tara's currency will depreciate.
- One point is earned for explaining that capital flight increases the supply of and/or decreases the demand for Tara's currency in the foreign exchange market, thereby lowering the market equilibrium exchange rate.



(b) 2 points:

- One point is earned for a correctly labeled graph of the loanable funds market. The graph must have correctly labeled axes and correctly labeled supply and demand curves.
- One point is earned for showing a leftward shift of the supply curve and a higher interest rate.

(c) 2 points:

- One point is earned for stating that the interest rate rise found in (b) will result in a decrease in the rate of economic growth.
- One point is earned for explaining that the interest rate increase reduces investment, which causes a decline in the rate of growth of the capital stock.

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Question 3

6 points (3 + 1 + 2)

(a) 3 points:

- One point is earned for stating that the maximum dollar amount the bank can initially lend is \$80.
- One point is earned for stating that the maximum change in demand deposits is \$500.
- One point is earned for stating that the maximum change in the money supply is \$400.

(b) 1 point:

- One point is earned for stating that the Federal Reserve's action will increase the money supply by at most \$25 million.

(c) 2 points:

- One point is earned for stating that the real wages will fall.
- One point is earned for explaining that real wages fall because the Federal Reserve's action causes inflation.