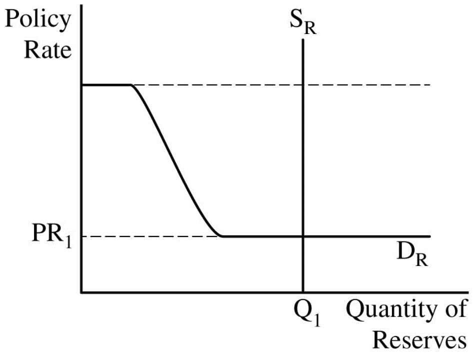
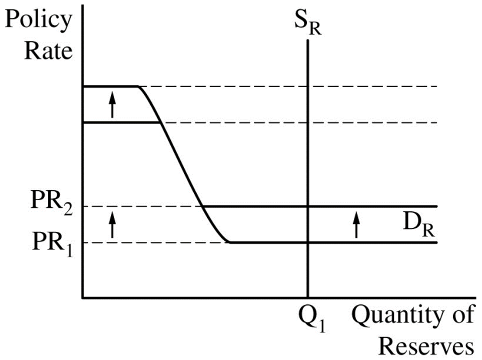
Question 2: Short — 5 points

A Point 1	State that the central bank would increase its administered interest rates or increase interest on reserves.	**1 point**
B Point 2	Draw a correctly labeled graph of the reserve market with the supply curve intersecting the demand curve in the range of ample reserves.	**1 point**

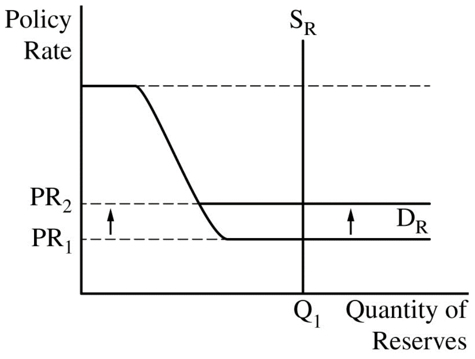


Point 3	The graph must show an increase in the administered interest rates, resulting in an increase in the policy rate.	**1 point**



OR

The graph must show an increase in the lower bound of the demand curve for reserves, resulting in an increase in the policy rate.

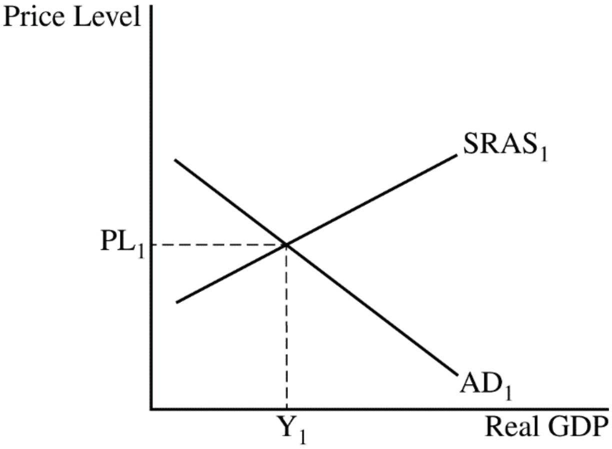


C **(i)** Point 4	State that the price of previously issued bonds will decrease.	**1 point**
(ii) Point 5	State that the price level will decrease and explain that the increase in interest rates will decrease interest-sensitive spending (consumption, investment, or net exports), which will decrease aggregate demand.	**1 point**

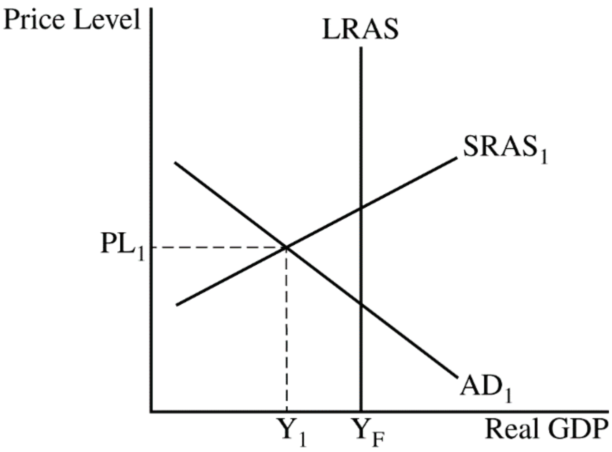
AP Macroeconomics: **2023 Set 1**

Question 1: Long — 10 points

(a)	Draw a correctly labeled aggregate demand–aggregate supply graph that shows PL_1 and Y_1 at the intersection of aggregate demand and short-run aggregate supply.	**1 point**



	For the second point, the graph must show a vertical long-run aggregate supply curve to the right of Y_1 and label the full-employment output as Y_F.	**1 point**



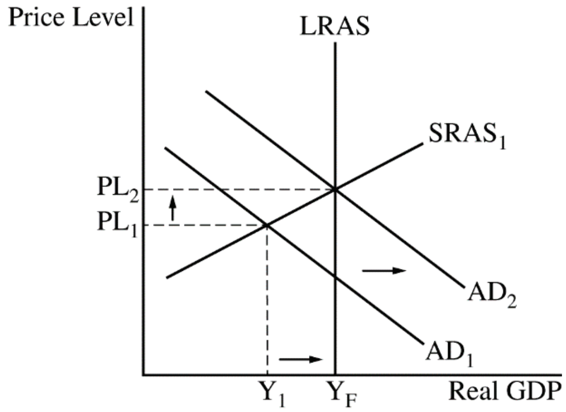
	Total for part (a)	**2 points**
(b)(i)	Explain that input prices (e.g., nominal wages) and/or inflationary expectations will decrease, causing SRAS to increase until it reaches full employment.	**1 point**
(ii)	State that the price level will be less than PL_1.	**1 point**
	Total for part (b)	**2 points**

(c) (i) Calculate the minimum change in government spending as an increase of \$10 million and show your work. **1 point**

$$\textbf{Minimum Change} = \frac{\textbf{Output Gap}}{\textbf{Spending Multiplier}} = \frac{\$\textbf{50 million}}{\left(\frac{\textbf{1}}{\textbf{0.2}}\right)} = \frac{\$\textbf{50 million}}{\textbf{5}}$$

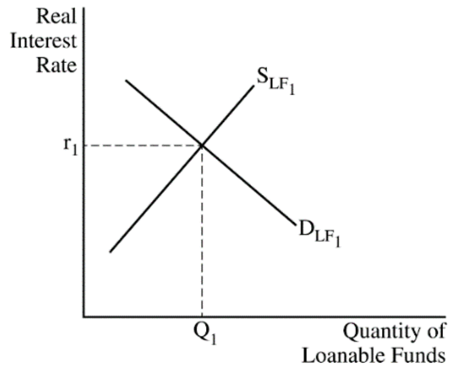
$$= \$\textbf{10 million}$$

(ii) On the graph from part (a), show the short-run effect of the change in government spending as a rightward shift of the aggregate demand curve where the new short-run equilibrium intersects the long-run aggregate supply curve at a higher equilibrium price level, labeled PL_2. **1 point**

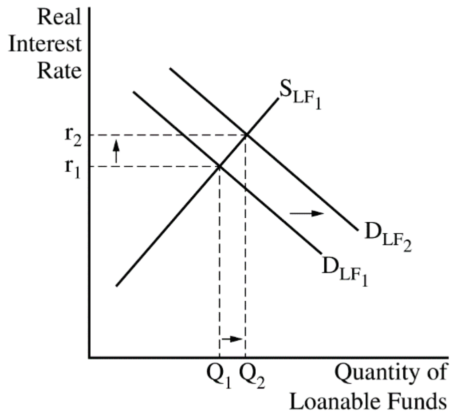


Total for part (c) **2 points**

(d)	Draw a correctly labeled graph of the loanable funds market.	**1 point**



For the second point, the graph must show an increase in the demand for loanable funds (or a decrease in the supply of loanable funds), resulting in an increase in the equilibrium real interest rate. **1 point**



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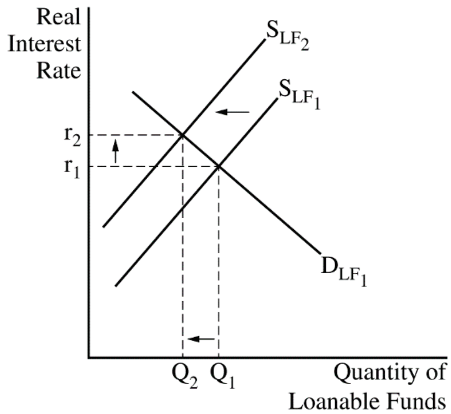


Total for part (d) 2 points

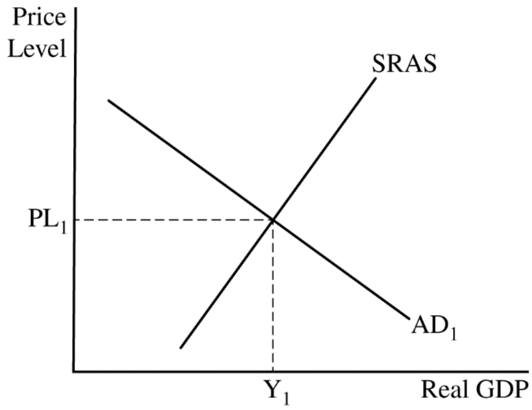
(e)(i)	State that the price of previously issued bonds will decrease.	**1 point**
(ii)	State that the rate of economic growth in the long run will decrease and explain that an increase in the real interest rate means the cost of borrowing has increased, which will decrease investment spending on physical capital, human capital, and/or research and development.	**1 point**

Total for part (e) 2 points

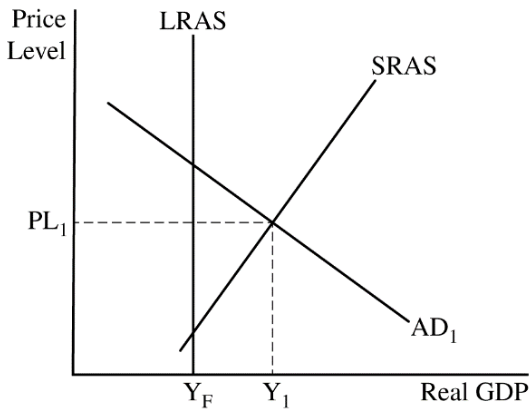
Total for question 1 10 points

Question 1: Long — 10 points

(a) Draw a correctly labeled aggregate demand-aggregate supply graph that shows PL_1 and Y_1 at the intersection of aggregate demand and short-run aggregate supply. **1 point**

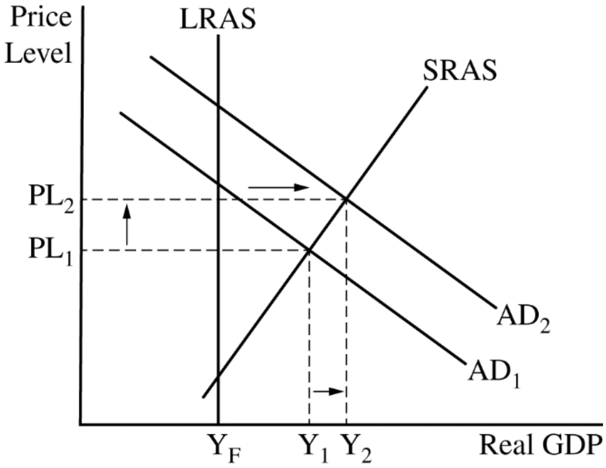


For the second point, the graph must show a vertical long-run aggregate supply curve to the left of Y_1 and label the full-employment output Y_F. **1 point**



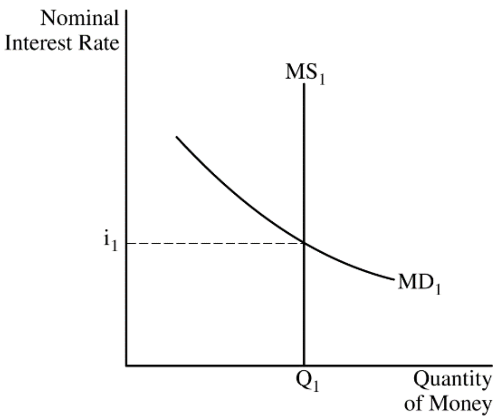
Total for part (a) 2 points

(b)	On the graph from part (a), show the short-run effect of the increase in government spending as a rightward shift of the aggregate demand curve, resulting in an increase in equilibrium real output and an increase in the equilibrium price level, labeled Y_2 and PL_2 respectively.	**1 point**

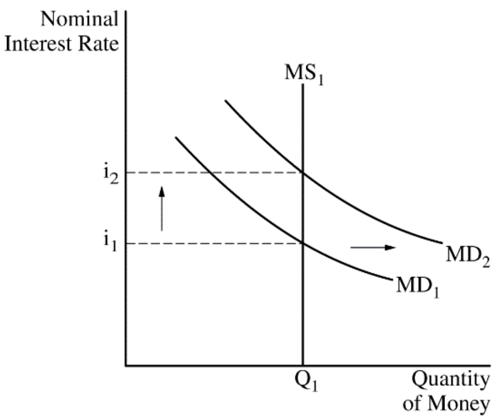


(c)	State that the maximum increase in real output is $500 billion, and the maximum increase in household savings is $100 billion.	**1 point**

(d) Draw a correctly labeled graph of the money market. **1 point**



For the second point, the graph must show a rightward shift in the money demand curve, resulting in a higher nominal interest rate. **1 point**



Total for part (d) 2 points

(e) State that the price of previously issued bonds will decrease. **1 point**

(f) (i) State that the demand for dollars will decrease and explain that United States goods are relatively more expensive than European goods as a result of the increase in the inflation rate in the United States. **1 point**

(ii) State that the dollar will depreciate. **1 point**

Total for part (f) 2 points

(g) State that the Federal Reserve should sell the euro and buy the dollar. **1 point**

Total for question 1 10 points

2017

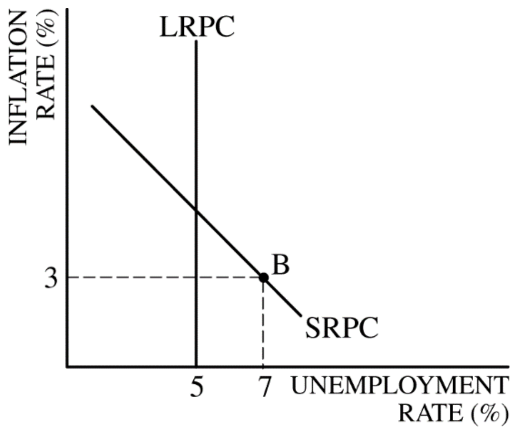
AP Macroeconomics

Scoring Guidelines

2017 SCORING GUIDELINES

Question 1

9 points (2 + 2 + 1 + 2 + 1 + 1)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph of a downward-sloping short-run Phillips curve (SRPC).
- One point is earned for showing a correctly labeled vertical long-run Phillips curve (LRPC) at the natural rate of unemployment, 5%, and for showing point B on the SRPC to the right of LRPC at the actual unemployment rate, 7%, and the inflation rate, 3%.

(b) 2 points:

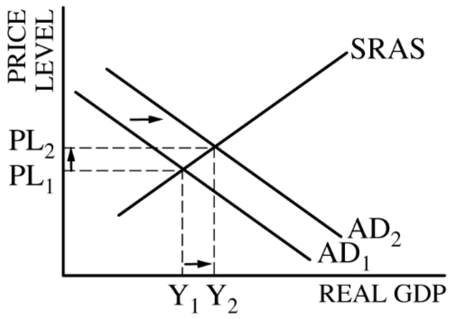
- One point is earned for stating that the short-run aggregate supply (SRAS) curve will shift to the right in the long run and for explaining that nominal wages will fall in response to high unemployment.
- One point is earned for stating that LRPC will remain unchanged.

(c) 1 point:

- One point is earned for stating that the government should either increase its expenditures (or purchases) or decrease taxes.

2017 SCORING GUIDELINES

Question 1 (continued)



(d) 2 points:

- One point is earned for drawing a correctly labeled graph showing a downward-sloping AD curve, upward-sloping SRAS curve, the equilibrium price level, and the equilibrium real GDP.
- One point is earned for showing a rightward shift of the AD curve and for showing an increase in both the price level and real GDP.

(e) 1 point:

- One point is earned for stating that the supply of country X’s currency will increase and for explaining that spending on imports will increase as a result of the increase in real GDP.

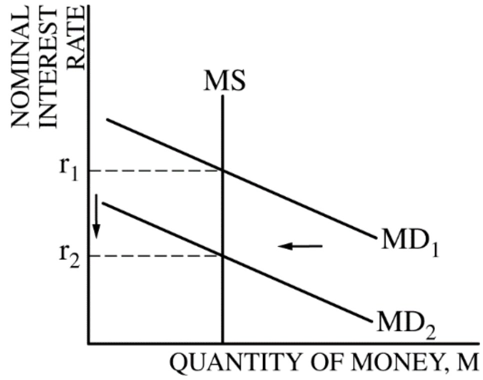
(f) 1 point:

- One point is earned for stating that country X’s currency will depreciate.

2017 SCORING GUIDELINES

Question 2

6 points (2 + 2 +1 + 1)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph of the money market.
- One point is earned for showing a leftward shift in the money demand curve, resulting in a lower nominal interest rate.

(b) 2 points:

- One point is earned for stating that the price of previously issued bonds will increase.
- One point is earned for stating that both the price level and real income will increase and for explaining that the lower interest rate will increase consumption, investment, and/or net exports (interest-sensitive spending), which increases aggregate demand.

(c) 1 point:

- One point is earned for stating that the velocity of money will increase.

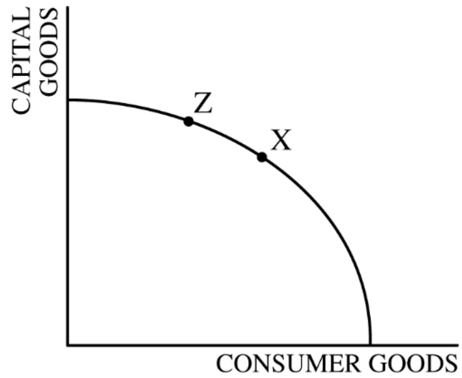
(d) 1 point:

- One point is earned for stating that the central bank would sell bonds.

2017 SCORING GUIDELINES

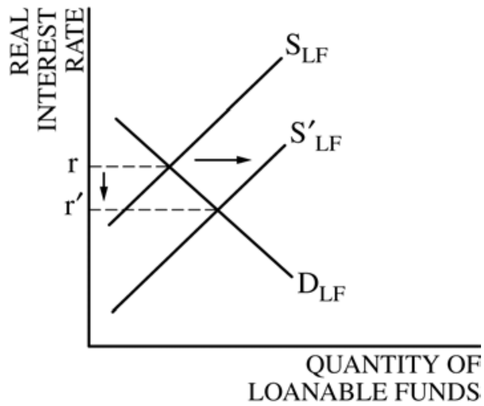
Question 3

5 points (1 + 2 + 1 + 1)



(a) 1 point:

- One point is earned for drawing a correctly labeled graph of the production possibilities curve (PPC) and for showing point X on the curve.



(b) 2 points:

- One point is earned for drawing a correctly labeled graph of the loanable funds market.
- One point is earned for showing a rightward shift of the supply curve and a decrease in the real interest rate.

(c) 1 point:

- One point is earned for showing point Z to the left of point X on the curve.

(d) 1 point:

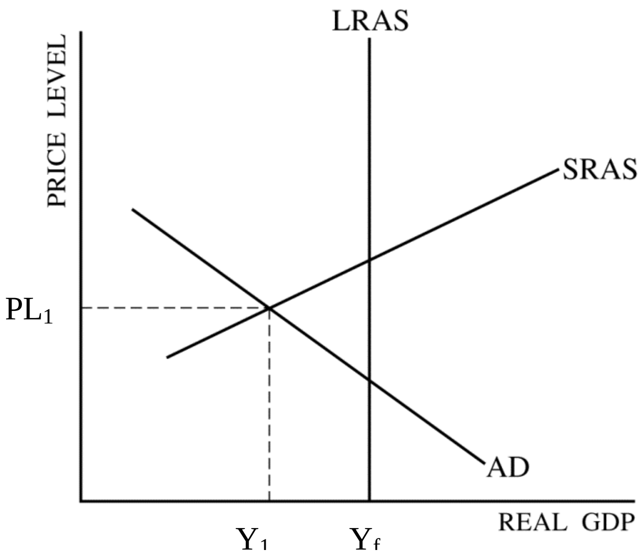
- One point is earned for stating that the long-run aggregate supply (LRAS) curve will shift to the right and for explaining that capital accumulation will increase.

AP® Macroeconomics 2014 Scoring Guidelines

2014 SCORING GUIDELINES

Question 1

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



2 points:

- One point is earned for drawing a correctly labeled graph showing an equilibrium with AD, SRAS, Y_1, and PL_1 labeled.
- One point is earned for drawing a vertical LRAS curve at Y_f to the right of the intersection of AD and SRAS.

2 points:

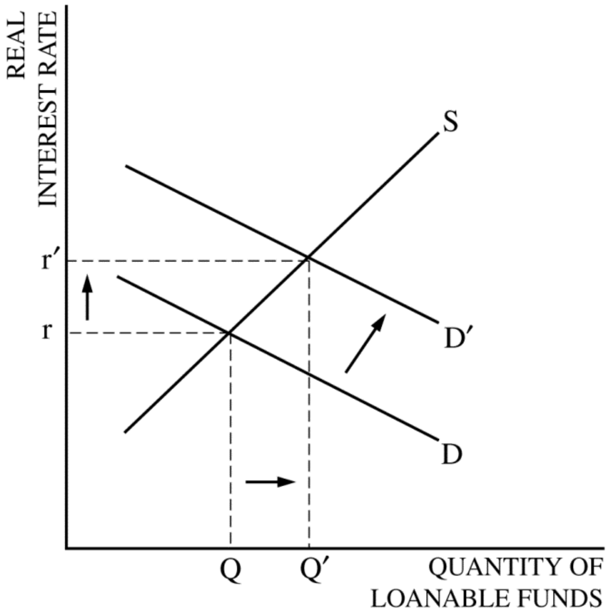
- One point is earned for stating that cyclical unemployment will decrease.
- One point is earned for stating that the natural rate of unemployment will not change.

1 point:

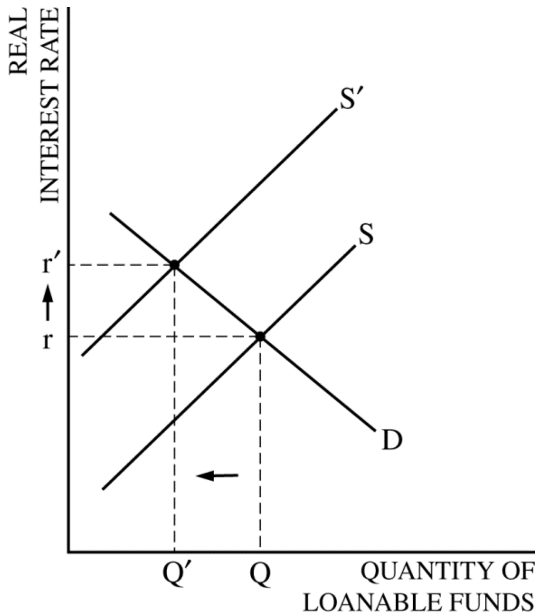
- One point is earned for calculating the maximum change in real GDP:
  Change in GDP = (1/0.25) X \$100 billion = \$400 billion.

2014 SCORING GUIDELINES

Question 1 (continued)



OR



2 points:
- One point is earned for drawing a correctly labeled loanable funds market graph.
- One point is earned for shifting the demand curve to the right (or shifting the supply curve to the left) and showing an increase in the real interest rate.

2 points:
- One point is earned for stating that the economic growth rate will fall.
- One point is earned for explaining that the higher real interest rate will slow down capital formation.

2 points:
- One point is earned for stating that real gross domestic product will increase.
- One point is earned for explaining that the expansionary effect of the increase in government spending outweighs the contractionary effect of the increase in taxes of the same size. (Or students may explain by calculating the net increase in GDP, $100 billion, or stating the tax multiplier is smaller than the spending multiplier.)

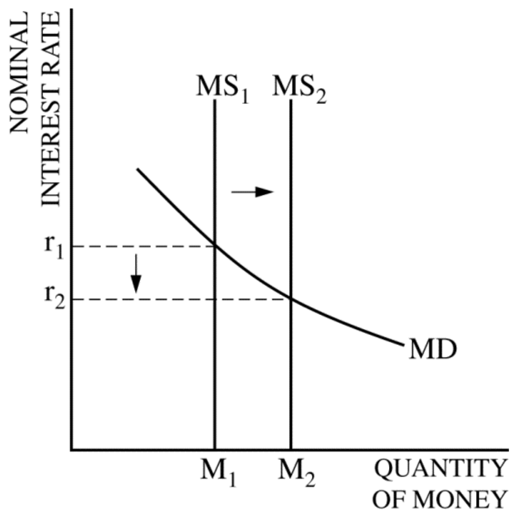
2014 SCORING GUIDELINES

Question 2

6 points (2+2+1+1)

2 points:

- One point is earned for stating that the Federal Reserve will buy government bonds.
- One point is earned for stating that the price of government bonds will increase.



2 points:

- One point is earned for drawing a correctly labeled graph of the money market.
- One point is earned for shifting the money supply curve to the right and showing a decrease in the nominal interest rate.

1 point:

- One point is earned for stating that the Federal Reserve purchase will not initially affect commercial banks' required reserves.

1 point:

- One point is earned for defining the discount rate as the interest rate that the Federal Reserve charges banks for borrowing from its discount window.

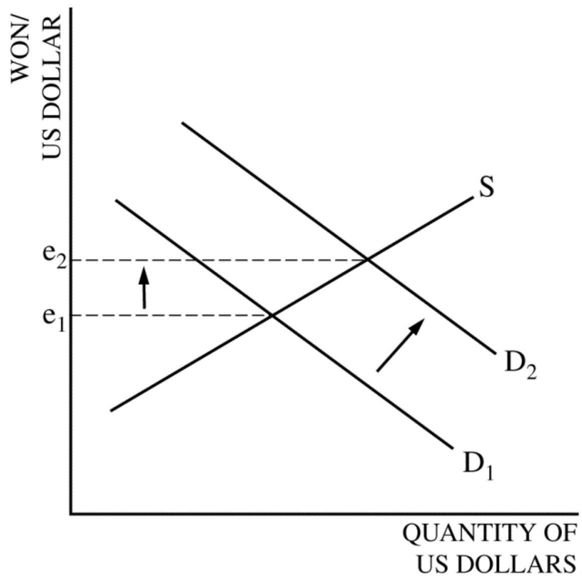
2014 SCORING GUIDELINES

Question 3

5 points (1+2+2)

1 point:
- One point is earned for stating that United States exports to South Korea will increase.

2 points:
- One point is earned for stating that the United States current account will be in surplus.
- One point is earned for stating that the United States gross domestic product will increase and explaining that higher U.S. exports increase AD (or that production increases to meet the increased export demand from South Korea).



2 points:
- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the U.S. dollar.
- One point is earned for shifting the demand curve for the dollar to the right (and/or shifting the supply curve to the left) and showing an increase in the won price per dollar.