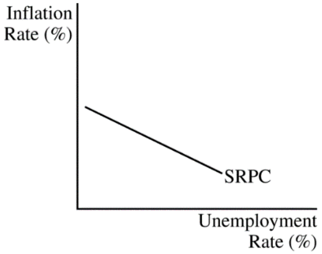
Question 1: Long — 10 points

A

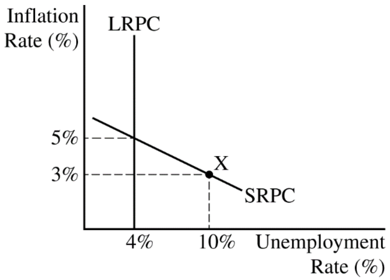
Point 1 — State that the actual unemployment rate is 10%. **1 point**

B

Point 2 — Draw a correctly labeled graph of the short-run Phillips curve (SRPC). **1 point**



Point 3 — The graph must include a vertical long-run Phillips curve (LRPC) at the natural rate of unemployment (4%), the expected inflation rate (5%) at the intersection of the SRPC and the LRPC, and a point labeled X on the SRPC to the right of the LRPC at the actual unemployment rate (10%) and the actual inflation rate (3%). **1 point**



C

Point 4 — State an increase in government spending, a decrease in taxes, or an increase in transfer payments. **1 point**

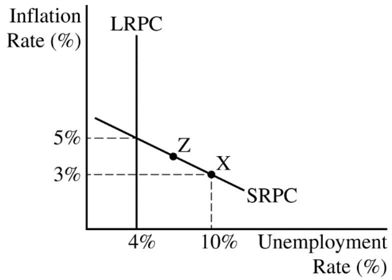
AP Macroeconomics: **2025 Set 2**

D (i)

Point 5 — State that the government budget will move into deficit and explain that government outlays exceed revenue. **1 point**

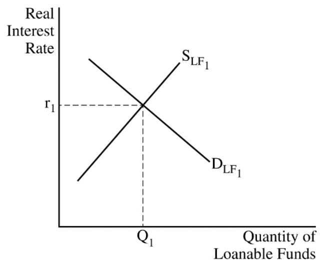
(ii)

Point 6 — On the graph from part B, show a point labeled Z on the SRPC to the left of point X. **1 point**

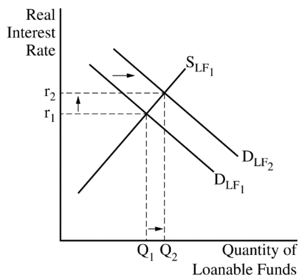


(iii)

Point 7 — Draw a correctly labeled graph of the loanable funds market. **1 point**



Point 8 — 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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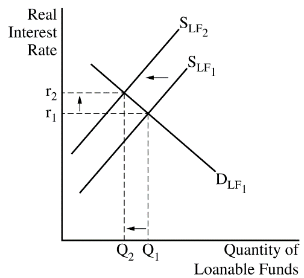


E

Point 9 — State that Barrikos' capital and financial account (CFA) will move into surplus and explain that international investors will seek higher returns on financial capital in Barrikos, which will increase financial capital inflows into Barrikos. **1 point**

F

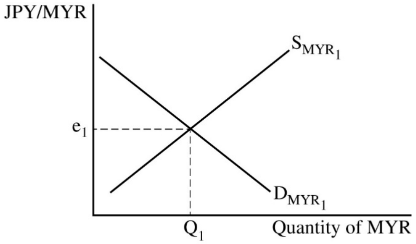
Point 10 — State that Barrikos' currency will appreciate and explain that demand for the currency will increase (or the supply of the currency will decrease). **1 point**

Question 3: Short — 5 points

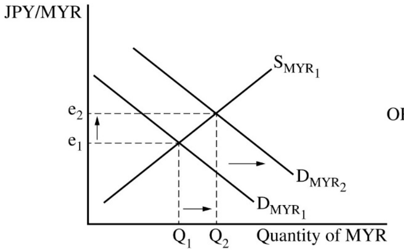
(a) State an increase in government spending, a decrease in taxes, or an increase in transfer payments. **1 point**

(b) State that the real interest rate will increase and explain that government borrowing will increase, which will increase the demand for loanable funds (or decrease the supply of loanable funds). **1 point**

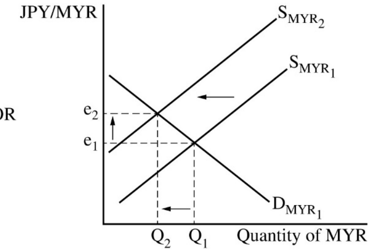
(c) Draw a correctly labeled graph of the foreign exchange market for the ringgit. **1 point**



For the second point, the graph must show an increase in the demand for the ringgit (or a decrease in the supply of the ringgit), resulting in an appreciation of the ringgit. **1 point**



OR



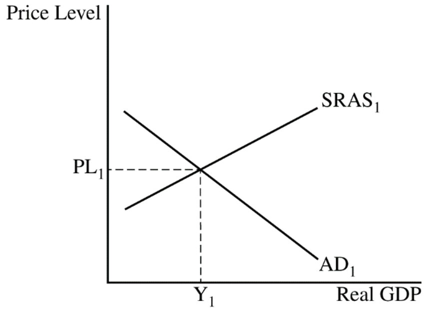
Total for part (c) — 2 points

(d) State that Malaysia's imports will increase and explain that the appreciation of the ringgit will make Japanese goods relatively less expensive than they were before. **1 point**

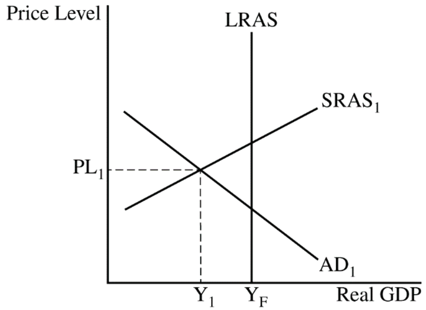
Total for question 3 — 5 points

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 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**

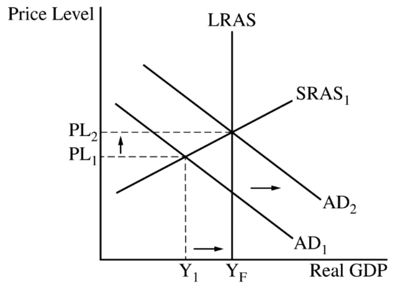
Total for part (b) — 2 points

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

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

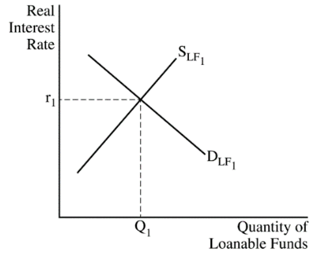
$$= \$10\textbf{ million}$$

(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**

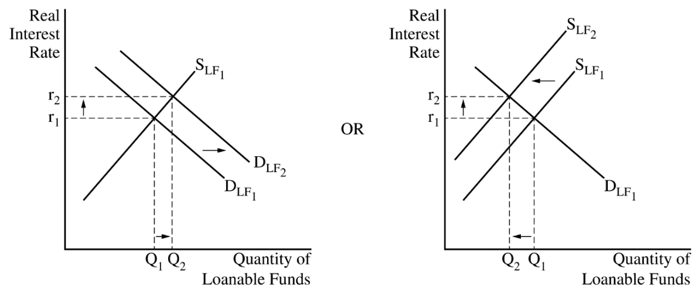


Total for part (c) 2 points

(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**



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**

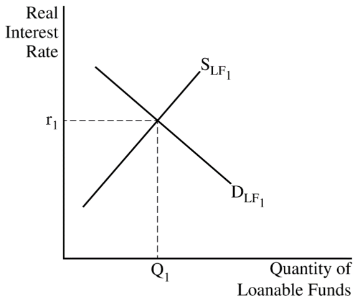
Total for part (e) 2 points

Total for question 1 10 points

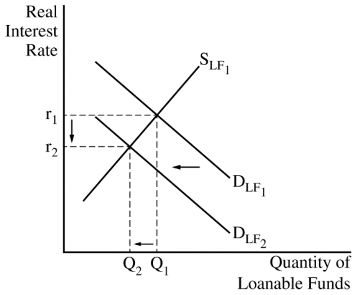
Question 3: Short — 5 points

(a) State increase taxes, decrease government spending, or decrease transfer payments. — **1 point**

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



For the second point, the graph must show a leftward shift of the demand for loanable funds curve (or a rightward shift of the supply of loanable funds curve), resulting in a decrease in the real interest rate. — **1 point**



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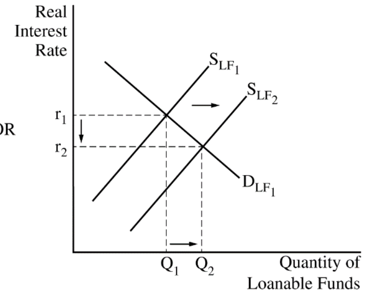


Total for part (b) — **2 points**

(c) (i) State that aggregate demand will increase and explain that interest-sensitive spending (consumption, investment, or net exports) will increase. — **1 point**

(ii) State that potential real output will increase and explain that the decrease in the real interest rate means the cost of borrowing has decreased, which increases investment spending on plant and equipment and increases capital formation. — **1 point**

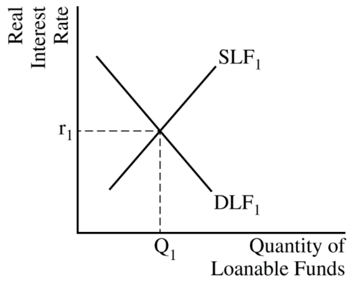
Total for part (c) — **2 points**

Total for question 3 — **5 points**

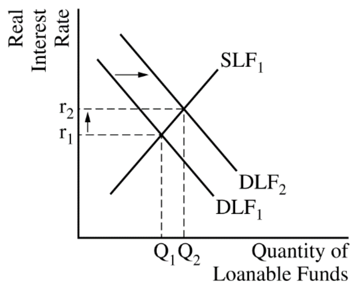
Question 2: Short — 5 points

(a) State that the country could implement one of the following fiscal policy actions: increase government spending, increase transfer payments, or decrease taxes. — **1 point**

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



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



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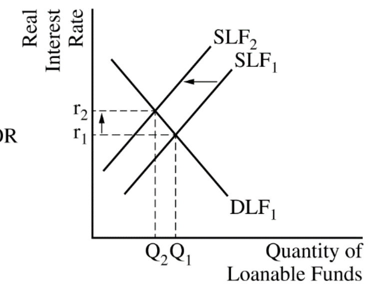

Total for part (b) — **2 points**

(c) (i) State that net exports will decrease and explain that the increase in the real interest rate will increase the demand for the country's currency, which will cause the country's currency to appreciate and make domestic goods relatively more expensive than foreign goods, thereby decreasing exports. — **1 point**

(ii) State that the stock of physical capital will decrease and explain that the increase in the real interest rate will discourage investment spending in physical capital. — **1 point**

Total for part (c) — **2 points**

Total for question 2 — **5 points**

2019

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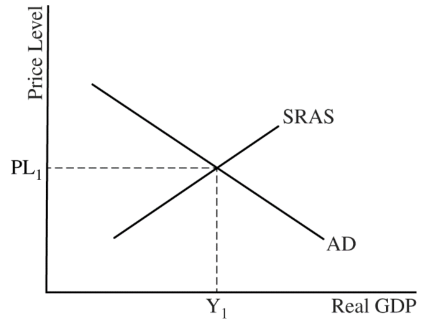
Scoring Guidelines
Set 2

2019 SCORING GUIDELINES

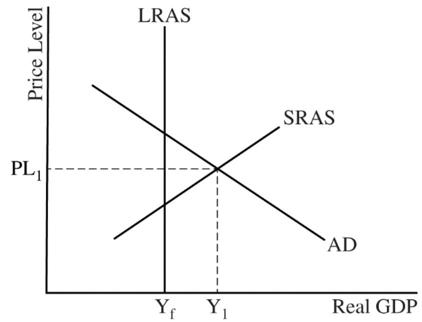
Question 1

10 points (2 + 2 + 3 + 2 + 1)

(a) 2 points



- One point is earned for drawing a correctly labeled graph showing a downward sloping aggregate demand (AD) curve, an upward sloping short-run aggregate supply (SRAS) curve, the equilibrium output level labeled Y_1, and the equilibrium price level labeled PL_1.

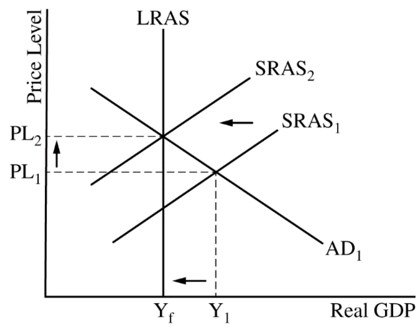


- One point is earned for drawing a correctly labeled vertical long-run aggregate supply (LRAS) curve with full employment output labeled Y_f to the left of the short-run equilibrium output level, Y_1.

2019 SCORING GUIDELINES

Question 1 (continued)

(b) 2 points



- One point is earned for showing a leftward shift in the SRAS curve and for showing PL_2 higher than PL_1.
- One point is earned for explaining that the SRAS curve will shift to the left due to the increase in input prices, nominal wages, or inflationary expectations.

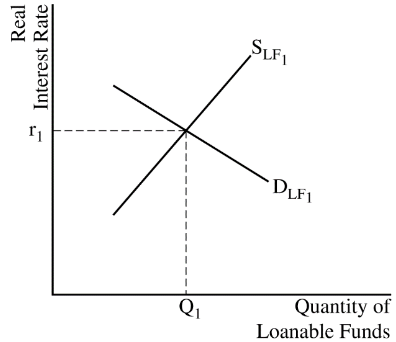
(c) 3 points

- One point is earned for stating a decrease in government spending, a decrease in transfer payments, or an increase in taxes.
- One point is earned for stating that the unemployment rate will increase and the natural rate of unemployment will not change.
- One point is earned for stating that the automatic adjustment will produce a higher price level than the fiscal policy.

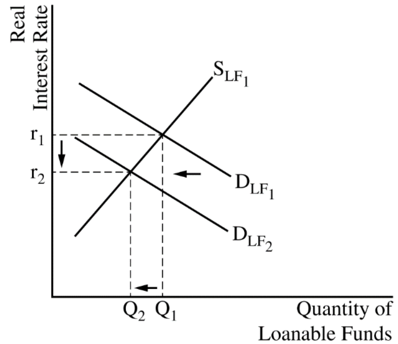
2019 SCORING GUIDELINES

Question 1 (continued)

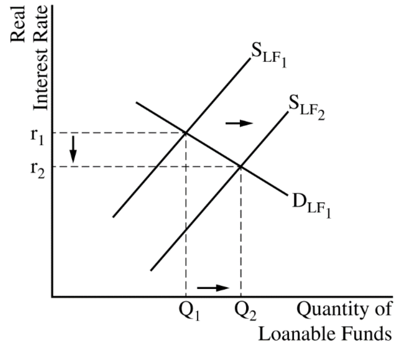
(d) 2 points



- One point is earned for drawing a correctly labeled graph of the loanable funds market.



OR



- One point is earned for showing a leftward shift of the demand for loanable funds curve (or a rightward shift in the supply of loanable funds curve) and a decrease in the real interest rate.

(e) 1 point

- One point is earned for stating that the LRAS curve will shift to the right and for explaining that the lower real interest rate will lead to increased capital formation due to increased investment spending.

2019 SCORING GUIDELINES

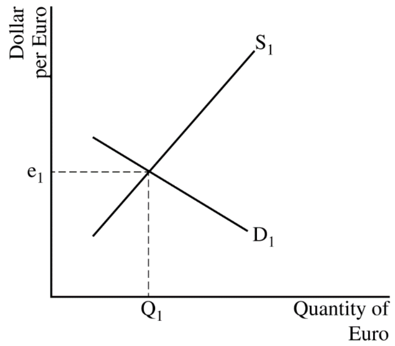
Question 2

5 points (1 + 2 + 2)

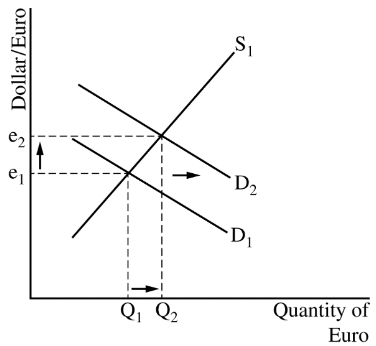
(a) 1 point

- One point is earned for stating that the U.S. current account will be in deficit and for explaining that an increase in the U.S. real GDP increases the U.S.'s demand for European goods and services, which increases imports.

(b) 2 points



- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the euro.



- One point is earned for shifting the demand curve for the euro to the right and showing an increase in the value of the euro relative to the U.S. dollar.

2019 SCORING GUIDELINES

Question 2 (continued)

(c) 2 points

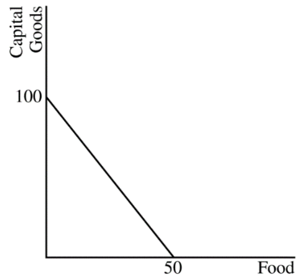
- One point is earned for stating that the demand for the dollar will decrease and for explaining that capital flows from the European Union to the U.S. will decrease.

- One point is earned for stating that the dollar will depreciate.

2019 SCORING GUIDELINES

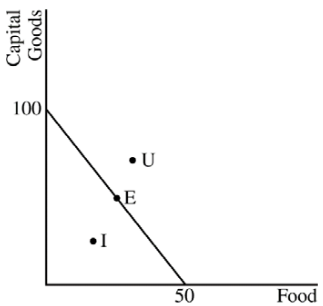
Question 3

5 points (1 + 1 + 1 + 1 + 1)



(a) 1 point

- One point is earned for drawing a correctly labeled production possibilities curve (PPC) for Sweden with food on the horizontal axis, capital goods on the vertical axis, and the relevant numerical values plotted.



(b) 1 point

- One point is earned for showing point I inside the PPC, point E on the PPC, and point U outside the PPC.

(c) 1 point

- One point is earned for stating that Sweden's economic growth rate will slow or be reduced.

2019 SCORING GUIDELINES

Question 3 (continued)

(d) 1 point

- One point is earned for stating that Norway has a comparative advantage in the production of capital goods and for explaining that it has the lowest opportunity cost in producing capital goods (the opportunity cost of producing one unit of capital goods in Norway is 1/4 a unit of food and in Sweden is 1/2 a unit of food).

(e) 1 point

- One point is earned for stating a number between 20 and 40 units of capital.

2018

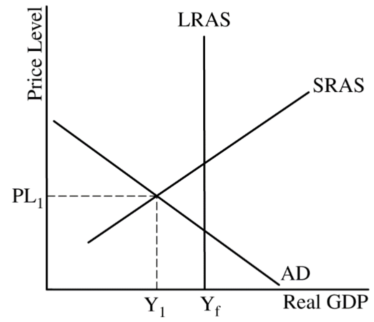
AP Macroeconomics

Scoring Guidelines

2018 SCORING GUIDELINES

Question 1

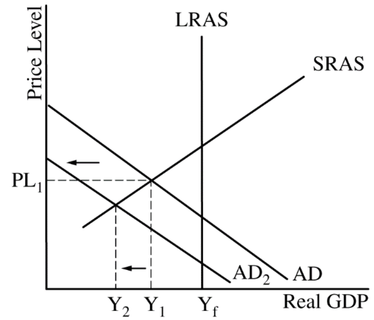
10 points (2 + 3 + 2 + 3)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph for aggregate demand (AD) and short-run aggregate supply (SRAS), showing PL_1 and Y_1 at the intersection of AD and SRAS.

- One point is earned for drawing a vertical LRAS curve to the right of Y_1.



(b) 3 points:

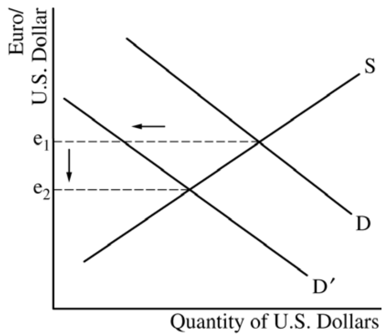
- One point is earned for stating that United States exports will decrease and for explaining that the fall in income in the euro zone reduces the demand for United States goods.

- One point is earned for showing a leftward shift of the aggregate demand (AD) curve and showing lower United States real output on the graph.

- One point is earned for stating that unemployment in the U.S. will increase.

2018 SCORING GUIDELINES

Question 1 (continued)



(c) 2 points:

- One point is earned for stating that the euro will appreciate against the U.S. dollar because the supply of euros decreases OR because the dollar depreciates against the euro, the euro must appreciate.
- One point is earned for drawing a correctly labeled graph of the foreign exchange market for dollars and for showing a leftward shift in the demand curve for the dollar, which would result in a depreciation of the dollar.

(d) 3 points:

- One point is earned for stating that the U.S. aggregate demand will increase.
- One point is earned for stating that the U.S. price level will increase.
- One point is earned for stating that the change in the interest rate is indeterminate and for explaining that the combination of expansionary fiscal and monetary policies has opposite effects on interest rates (the expansionary fiscal policy will increase the interest rate, as government borrows to finance its spending, and the expansionary monetary policy will increase the money supply and decrease the interest rate).

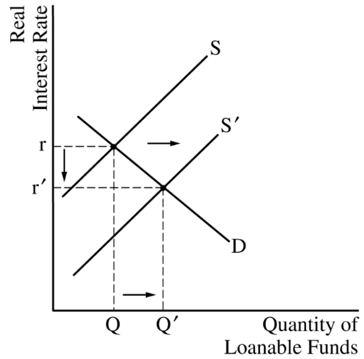
2018 SCORING GUIDELINES

Question 2

5 points (1 + 2 + 2)

(a) 1 point:

- One point is earned for stating that private savings will increase.



(b) 2 points:

- One point is earned for drawing a correctly labeled graph of the loanable funds market showing a downward sloping demand curve and an upward sloping supply curve.
- One point is earned for showing a rightward shift in the supply curve (increased private savings) and for showing a decrease in the equilibrium real interest rate.

(c) 2 points:

- One point is earned for stating that aggregate demand will increase and for explaining that the decrease in the real interest rate will result in an increase in interest-sensitive spending (consumption or investment or net exports).
- One point is earned for stating that potential real gross domestic product (GDP) will increase as a result of an increase in capital formation brought about by the increase in investment spending (or because capital formation increased the long-run aggregate supply).

2018 SCORING GUIDELINES

Question 3

5 Points (1 + 1 + 1 + 2)

(a) 1 point:

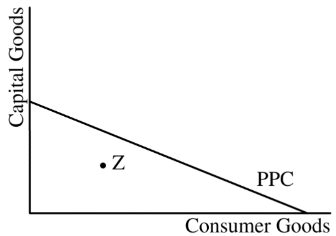
- One point is earned for stating that neither country has a comparative advantage in producing consumer goods and for explaining that the opportunity cost of producing 1 unit of consumer goods is the same for both countries (which is 1/2 a unit of capital goods).

(b) 1 point:

- One point is earned for correctly calculating the unemployment rate as 10 percent (20,000/200,000 × 100 = 10%).

(c) 1 point:

- One point is earned for correctly calculating the labor force participation rate as 66.67 percent (200,000/300,000 × 100 = 66.67%).



(d) 2 points:

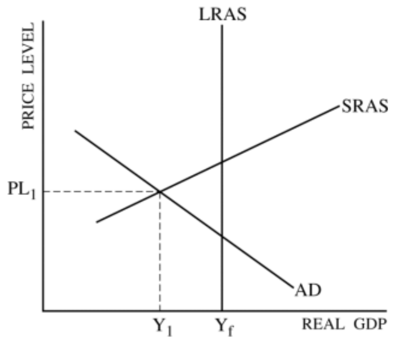
- One point is earned for drawing a correctly labeled graph of the production possibilities curve (PPC).
- One point is earned for correctly showing point Z below the PPC.

AP® Macroeconomics 2015 Scoring Guidelines

2015 SCORING GUIDELINES

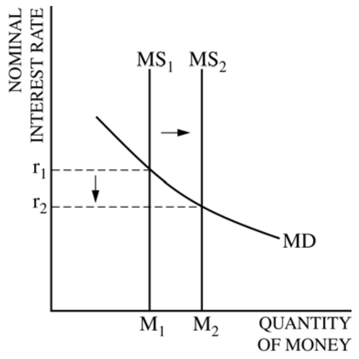
Question 1

10 points (2+1+2+3+2)



(a) 2 points:
- One point is earned for drawing a correctly labeled graph showing AD, SRAS, Y_1 and PL_1.
- One point is earned for drawing a vertical LRAS at Y_f to the right of Y_1.

(b) 1 point:
- One point is earned for stating that the Federal Reserve should target a lower federal funds rate.



(c) 2 points:
- One point is earned for drawing a correctly labeled money market graph.
- One point is earned for shifting the money supply curve to the right and showing a decrease in the nominal interest rate.

2015 SCORING GUIDELINES

Question 1 (continued)

(d) 3 points:
- One point is earned for calculating the minimum required change in government spending: $60 billion ($300/5=$60).
- One point is earned for stating that the minimum required change in taxes will be greater than the minimum required change in government spending.
- One point is earned for explaining that the tax multiplier (mpc/mps = 0.8/0.2 = 4) is smaller than the government spending multiplier (1/mps = 1/0.2 = 5) because part of the initial increase in disposable income caused by the decrease in income tax will be saved rather than spent.

(e) 2 points:
- One point is earned for stating that aggregate demand will increase and for explaining that lower income tax rates will increase disposable income and/or consumption and investment.
- One point is earned for stating that long-run aggregate supply will stay the same because lowering income taxes will increase consumption and/or investment, or there is no change in inputs.
  OR
  One point is earned for stating that long-run aggregate supply will increase in the long run because lowering taxes will increase savings and investment in physical capital, or because of increased incentives to work.
  OR
  One point is earned for stating that long-run aggregate supply will decrease in the long run because lowering taxes leads to a crowding out of private investment.

2015 SCORING GUIDELINES

Question 2

5 points (1+1+2+1)

(a) 1 point:
- One point is earned for stating that Country Y has an absolute advantage in producing solar panels.

(b) 1 point:
- One point is earned for calculating the opportunity cost of a furnace for Country Y: 2 solar panels per furnace.

(c) 2 points:
- One point is earned for stating that Country X has the comparative advantage in producing furnaces.
- One point is earned for explaining that Country X has a lower opportunity cost of producing furnaces than Country Y.

(d) 1 point:
- One point is earned for stating that Country X should produce solar panels domestically.

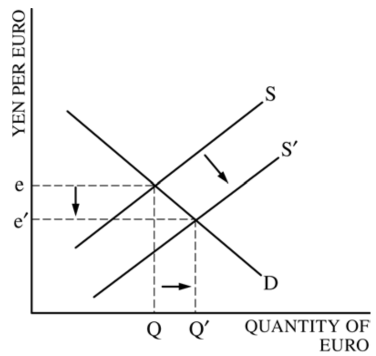
2015 SCORING GUIDELINES

Question 3

6 points (2+3+1)

(a) 2 points:

- One point is earned for stating that the real interest rate in Japan will increase in the short run because the supply of loanable funds will decrease or the demand for loanable funds will increase.
- One point is earned for stating that private domestic investment in plant and equipment in Japan will decrease.



(b) 3 points:

- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the euro.
- One point is earned for showing that the supply curve for euros shifts to the right and for concluding that the yen price of the euro decreases.
- One point is earned for explaining that the European purchases of Japanese financial assets will increase due to the relatively higher rate of return in Japan.

(c) 1 point:

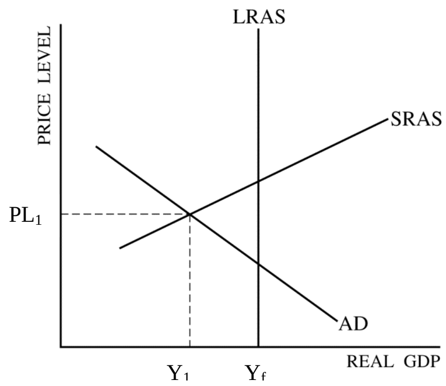
- One point is earned for stating that European Central Bank should buy euros.

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:

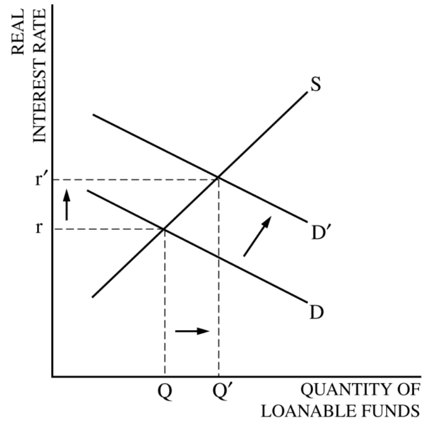
- One point is earned for stating that cyclical unemployment will decrease.
- One point is earned for stating that the natural rate of unemployment will not change.

1 point:

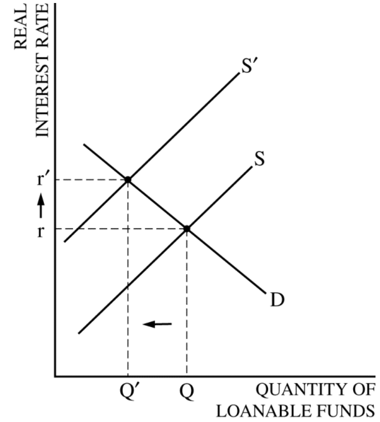
- One point is earned for calculating the maximum change in real GDP:
  Change in GDP = (1/0.25) X \$100 billion = \$400 billion.

2014 SCORING GUIDELINES

Question 1 :ontinued



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:

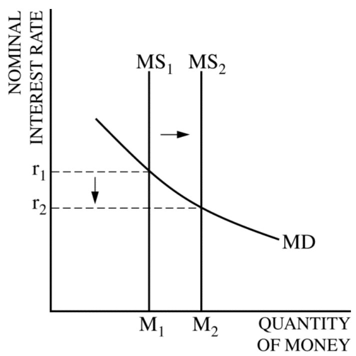
- One point is earned for stating that real gross domestic product will increase.
- One point is earned for explaining that the expansionary effect of the increase in government spending outweighs the contractionary effect of the increase in taxes of the same size. (Or students may explain by calculating 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.

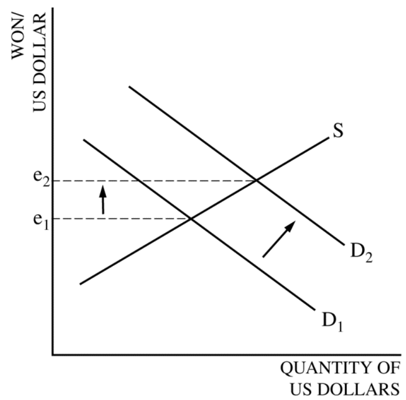
2014 SCORING GUIDELINES

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.