AP® Macroeconomics
2002 Scoring Guidelines

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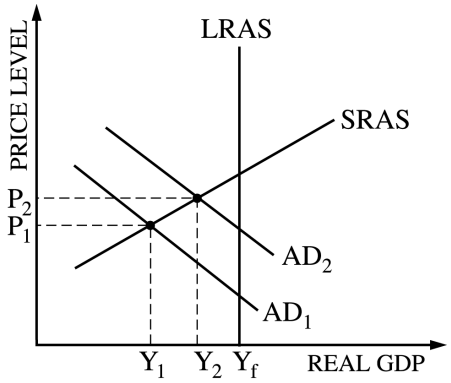
Question 1

Correct Answer:

Part a: Expansionary fiscal policy would involve either an increase in government expenditures or a decrease in taxes.

Part b:

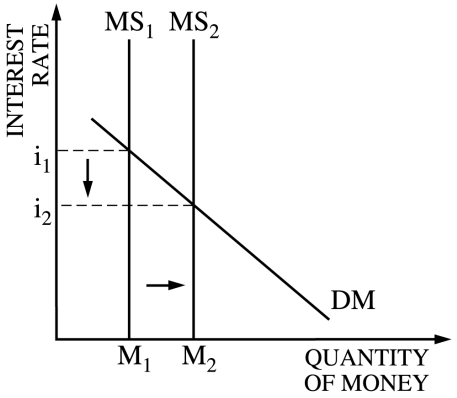


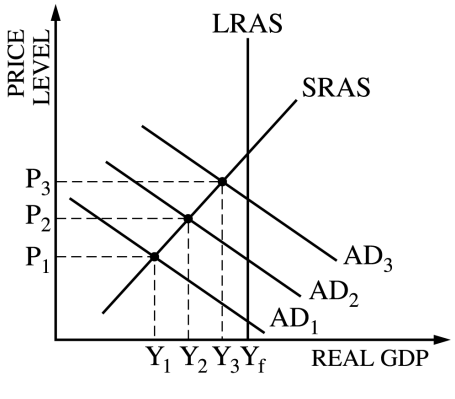
The increase in government spending increases aggregate demand, causing real GDP to increase toward but not completely to the full employment real GDP, Y_f. The increase in AD causes price level and real GDP both to increase. The student needed to recognize that the equilibrium real output (or GDP) was below potential GDP both before and after the expansionary policy.

Part c: The increased borrowing by the government to fund the expansionary policy would increase the demand for loanable funds, increasing interest rates. Alternatively, an increase in income will increase the demand for money and interest rates.

Part d: The expansionary open-market policy that the Federal Reserve should use is to buy bonds.

Part e: This purchase of bonds will increase bank reserves and increase the money supply, lowering the rate of interest. The lower interest rate leads to greater spending on interest-sensitive items such as investment in plant and equipment and consumer durables, increasing aggregate demand or shifting the AD curve rightward. The outward shift in AD leads to a higher price level and real GDP.





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Question 1 (cont'd.)

Grading Rubric:

Point allocations: [1+4+1+1+4=11 points]

a) **1 point:** Fiscal Policy to reduce unemployment: G up or T down (or increase in Transfer payments)

b) **1 Point for each of the 4 responses = 4 points**

- **1 point:** Correctly labeled AS and AD graph with appropriate slopes (even vertical AS okay for this point).
- **1 point:** Showing a difference between actual GDP and full employment GDP – must have some notion of full employment output.
- **1 point:** AD outward shift (must not be linked to a money supply change). Accept AS shift with only if accompanied by an explanation relating to a (a) personal tax cut with labor supply increase or (b) corporate income tax cut
- **1 point:** Price level up and GDP up (need both for the full point—0 or 1 here) [Actual result is a function of the shape of AS curve, P would be constant with a perfectly elastic AS curve.]

May receive point for correctly interpreting the result of either an expansionary (rightward) AD shift or AS shift. No point may be awarded for correctly interpreting the result of a contractionary (leftward) shift of either AD or AS.

c) **1 Point:** Increase in interest rates: with <u>one</u> of the following explanations:

(i) government spending (or tax decrease) should lead to deficit funding—increase in demand for loanable funds; OR an increase in the demand for money

(ii) price level increase causes interest rate increase (nominal rate = real rate + inflation rate)

NOTE: crowding out alone cannot serve as explanation w/o using argument (i) a
[Explanation needed to receive the 1 point; no assertion for the interest rate should be accepted.]

d) **1 Point:** Monetary Policy: Fed. Reserve should buy government bonds (Question asks for open-market action, not any other type of expansionary monetary policy)

e) **1 Point for each of the 4 responses = 4 Points**

- **1 point:** Correctly labeled and drawn money market graph (with r and M on the axes, and money demand, and money supply functions)
- **1 point:** Show an increase in the money supply and a decrease in interest rate (or good explanation of this process when there is no graph)
- **1 point:** Linkage of interest rate (down) to investment and/or other interest-sensitive components (up) to AD (out)
- **1 point:** Price level up and GDP up (need both for the full point—0 or 1 here) – Price level can be consistent with flat AS if both AD curves intersect a perfectly elastic aggregate supply curve.

Question 1 (cont'd.)

Commentary:

This long question tested the student's understanding of aggregate analysis and discretionary fiscal and monetary policies. The final scoring distribution was very effective in separating students across the different grading points. Many students were unable to recognize that the economy was operating below full employment in parts a and b. Greater care is needed to contrast the portion of the aggregate supply curve associated with full employment or potential GDP with an equilibrium level below potential GDP.

Many students were unable to show a linkage between the expansionary fiscal policy and higher interest rates in part c. Simply stating "crowding out" was insufficient to earn the point. The crowding out of private spending is the result of higher interest rates and not the process that drives up interest rates.

Students often did not provide a fully correct graph of the money market, as asked. Finally, many students did not understand that the expansionary monetary policy required to answer the question was an open-market operation. Many incorrectly suggested other forms of expansionary monetary policy, e.g., lower the required reserve ratio.

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Question 2

Correct Answer:

Part a. A decrease in the labor force participation rate would reduce (or shift leftward) the long-run aggregate supply, since there will be a lower level of employment in the economy.

Part b. An increase in the deficit following a reduction in personal income taxes causes the demand for loanable funds to increase driving up interest rates. The higher interest rates will lower investment spending and hence the capital stock. A lower capital stock leads to a decrease in long-run aggregate supply. [It should be noted that if students pursued a supply-side argument that suggested income tax reductions would increase savings, investment, the capital stock, and potential income, the student received credit when all these linkages were present in the response.]

Part c. A decrease in the quantity of inputs required to produce a unit of output means that the economy is experiencing greater productivity which increases long-run aggregate supply.

Part d. An increase in the quality and quantity of education will lead to a more productive work force, increasing long-run aggregate supply.

Part e. An increase in the rate of savings will lead to more investment spending for capital goods. Increased capital leads to an increase in the long-run aggregate supply.

Grading Rubric:

Point allocations: [1 point for each of the five questions = 5 points]

Part a: .5 point for LRAS shifts left (or potential GDP falls)
.5 point for lower employment or lower labor force.
Argument that unemployment increase causes LRAS decline is not acceptable.

Part b: 1 point for a conclusion and consistent explanation – **no half points**

LRAS shifts left (or potential GDP falls)
Deficit causes higher interest rates, less investment, and **less capital**
(If K not mentioned, there must be some logical link from I to LRAS)
OR
LRAS shifts right (or potential GDP increases)
Tax cut causes increased labor supply and greater potential GDP

Part c: .5 point for LRAS shifts right (or potential GDP increases)
.5 point for one of the following:
Productivity or efficiency improves
Output per unit of input increases
Average cost or production cost per unit declines

Question 2 (cont'd.)

Part d: **.5 point** for LRAS shifts right (or potential GDP increases)
.5 point for one of the following:
Increase in human capital or human resources
Increase in labor productivity/efficiency

Part e: **.5 point** for LRAS shifts right (or potential GDP increases)
.5 point for increased savings leads to an investment increase and an increase in the capital stock.
[Note: explanation must include increase in capital stock.]

Commentary:

Statistically, this question did not perform very well. Students could receive up to two points with correct assertions, and few students earned all five points. Thus, scores were lumped in the one to four range, with some weak students receiving two points.

Many students showed that they really did not understand the factors of production or determinants of potential income: labor, capital, land, and technology. Each element of the question referred to a potential change in one of these factors of production. Too many students wrote about the short-run impact on the aggregate demand curve; such discussion was not relevant to the question being asked.

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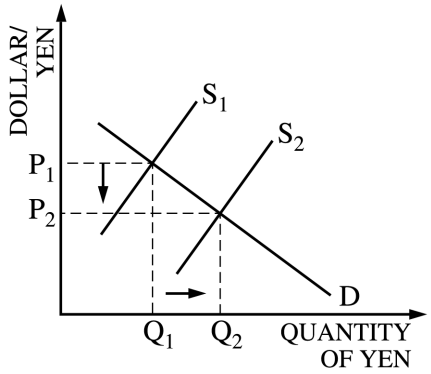
Question 3

Correct Answer:

Part a: There will be an increase in funds flowing to the United States from Japan as Japanese investors seek the higher real return in the United States, increasing the supply of yen to purchase dollars. There will be a decrease in funds flowing from the United States to Japan due to the lower real returns in Japan, reducing the demand for yen by holders of dollars.

Part b: A correct graph would have quantity of yen on the horizontal axis and the dollar price of a yen on the vertical axis. In a correct graph, the supply of yen in the market would increase, lowering the equilibrium dollar price of a yen. The yen depreciates compared to the dollar. Alternatively, the student could show a decrease in the demand for yen, again with a depreciation of the yen. Many students inappropriately (as least for the question) tried to analyze the impact in the market for dollars.



(Alternately, the student could show a decrease in demand or both a decrease in demand and an increase in supply in the yen market graph.)

Part c: The depreciation of the yen or the appreciation of the dollar will increase U.S. imports from Japan and reduce U.S. exports to Japan. Since it takes fewer dollars to buy a given amount of yen, U.S. imports from Japan become cheaper in dollar terms and hence U.S. imports from Japan increase. U.S. exports become more expensive for Japanese buyers since it now takes more yen to buy a dollar after the depreciation of the yen. To receive full credit in this part of the question, the student needed to explain how an appreciation or depreciation of a currency would impact the relative price of imports or exports when compared to the domestic price level.

Grading Rubric:

Increase in U.S. real interest rate compared to that of Japan [2+3+2=7]

Part a: 2 Points

1 point (RESULT) financial capital flows from Japan to U.S.
(or decrease outflow from U.S. to Japan)

1 point (REASON) in search of greater rate of return due to higher rate in U.S. and/or lower rates in Japan
must have correct result to get second point for reason

Question 3 (cont'd)

Part b: 3 Points
With a graph, show that the yen depreciates following an increased supply of yen for dollars [also, reduced demand for yen by holders of non-Yen currency, like dollars] — $ Price of the Yen on vertical axis, and # Yen on horizontal or quantity axis

1 point: correctly labeled YEN market graph
1 Point: with appropriate outward shift of the supply of yen and/or inward shift in the demand for yen
1 Point: interpretation – depreciation of the Yen (or appreciation of the dollar)

Part c: 2 Points
U.S. imports from Japan will increase as the appreciated/stronger dollar makes Japanese goods less expensive to U.S. citizens. U.S. exports will decrease as the depreciated/weaker Yen makes U.S. goods relatively more expensive in the Japanese market.

1 point: U.S. imports increase and U.S. exports decrease (assertions-both needed)
1 point: Explanation: Japanese goods cheaper in the U.S., and U.S. goods more expensive in Japan due to the change of the exchange rate.

Commentary:

This question was effective in differentiating students according to overall performance. Students found it difficult to draw an appropriate graph of the yen market. Too frequently students tried to trace the impacts through the market for dollars, even though the yen market was specifically requested in the question. Finally, students were not always clear in their explanations for why imports and exports changed as the exchange rate varied. We required them to note that there would be a relative price change of imported versus domestic goods, and that consumers would be attracted to those goods whose relative price had fallen.