2. Explain how each of the following will affect long-run aggregate supply (potential real gross domestic product).
   (a) A decrease in the labor force participation rate
   (b) An increase in the government deficit following a reduction in personal income taxes
   (c) A decrease in the quantity of inputs required to produce a unit of output
   (d) An increase in the quantity and quality of education
   (e) An increase in the rate of savings

3. Initially, the real interest rates in the United States and Japan are equal to 7 percent. The real interest rate in the United States increases to 8 percent while the real interest rate in Japan decreases to 6 percent.
   (a) How and why will capital flows be affected by this change in real interest rates?
   (b) Using a correctly labeled graph for the yen market, show and explain how the value of the yen will change relative to the value of the dollar.
   (c) Explain how the change in the value of the yen will affect each of the following in the United States.
      (i) Imports from Japan
      (ii) Exports to Japan

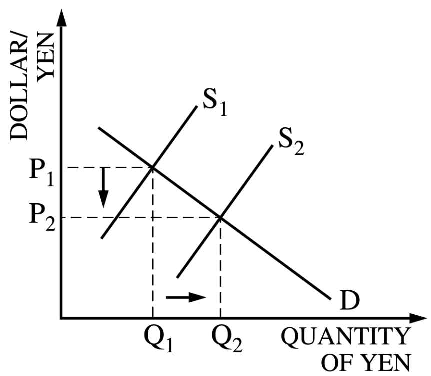
END OF EXAMINATION

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
<u>must</u> 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.