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 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.