

**1999**

The College Board

Advanced Placement Examination

**MACROECONOMICS**

Planning Time – 10 minutes

Writing Time – 50 minutes

**Directions:** You have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include diagrams, if useful or required, in explaining your answers. All diagrams should be clearly labeled.

**Question 1**

Following an increase in the demand for money, an open economy is experiencing a significant increase in real interest rates relative to the rest of the world.

- a. Explain how this increase in interest rates will affect each of the following for the country.
  - i. Investment
  - ii. The international value of its currency
  - iii. Exports
- b. Using a correctly labeled aggregate demand and aggregate supply diagram, show how the change in investment you identified in part (a) will affect each of the following in the short run.
  - i. Output
  - ii. The price level
- c. Identify one fiscal policy action that could counter the effects identified in part (b). Explain how this policy will affect each of the following.
  - i. Output
  - ii. The price level
  - iii. Nominal interest rates
  - iv. The price of bonds
- d. Identify one monetary policy action that could counter the effects identified in part (b). Using a correctly labeled money market graph, show how this policy will affect nominal interest rates.

## **Question 2**

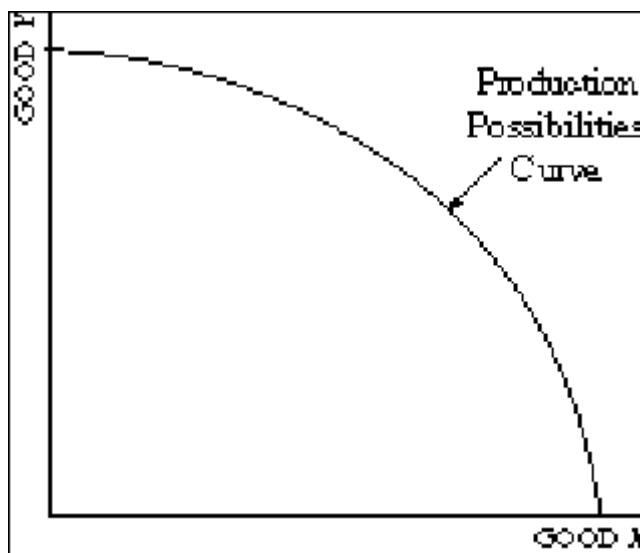
Assume an open economy with a public sector.

- Identify two methods of calculating gross domestic product for this economy.
- Explain why the two methods you identified in part (a) must yield the same value of gross domestic product.
- Identify one shortcoming of using gross domestic product as an indicator of the actual level of national output.
- If nominal gross domestic product increased by 4 percent in 1996, identify two additional pieces of information you need before you can conclude that the living standard of the typical person increased by 4 percent during that year.

## **Question 3**

Assume that an economy is at full employment.

- a. Explain how an increase in net investment will affect each of the following.
  - i. Aggregate demand
  - ii. Capital stock
  - iii. Long-run aggregate supply
  - iv. Output
- b. Explain how the increase in net investment will affect the country's production possibilities curve shown below.



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**Question 1**

**Correct Answer**

Part (a) Given the inverse relationship between desired investment and the rate of interest, higher interest rates will reduce investment. With higher interest rates, firms will not undertake certain investment projects. Higher interest rates will attract capital from abroad into this country. The flow of funds increases the demand for the country's currency and leads to an appreciation of the currency. With the appreciated currency, the country's exports are more expensive to foreigners who purchase less; thus, exports fall.

Part (b) With reduced investment (and exports), aggregate demand falls (shifts in) leading to less real output and a lowered price level.

Part (c) An appropriate expansionary fiscal policy would either be an increase in government expenditures or a reduction in taxes. Such a policy would increase (shift out) aggregate demand, leading to higher real output and a higher price level. Nominal interest rates would increase. The expansionary fiscal policy would increase the demand for loanable funds, raising interest rates. Also, with a higher real output, the demand for money increases, raising interest rates. Bond prices will fall. An increase in the supply of bonds to fund the expansionary fiscal policy would lower bond prices. Higher interest rates would also bid down the price of existing bonds.

Part. (d) An appropriate monetary policy would be for the monetary authorities to buy government bonds, increasing the money supply, or for the monetary authorities to lower reserve requirements or reduce the discount rate. In each of these cases, the money supply would increase (or shift out). Given a constant money demand (a simplifying assumption), interest rates would fall.

**Scoring Rubric**

Part (a) = 3 points, Part (b) = 1 point, Part (c) = 3 points, Part (d) = 2 points; 9 Points in Total

**Part (a)**

(1 point) investment falls

(1 point) the currency appreciates due to increased demand for currency in foreign exchange markets, inflow of foreign funds or increased supply of foreign currency

(1 point) decrease in exports due to appreciated currency the price of exported goods has increased for foreign purchasers who are importing the goods (purchasing power argument)

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***Question 1 (cont.)***

**Part (b)**

(1 point) On a Correctly Labeled GRAPH: AD falls --> output down and price level down

Alternatives: -the student has a vertical AS curve, Q (or Y) unchanged and P down; or shifts AS to left, acceptable only if AD also shifts correctly

**Part (c)**

(1 point) Example of expansionary fiscal policy: increase G or decrease T

Alternative: decrease corporate taxes, then AS increase is acceptable, but ONLY if AD also shifts

(1 point) working through the aggregate demand or aggregate expenditure output up and price level up

(1 point) deficit financing: nominal interest rates increase so price of existing bonds falls, OR increase in the supply of bonds lowers the price of bonds

**Part (d)**

(1 point) Example of expansionary monetary policy  
preferred: buy bonds, decrease discount rate or decrease reserve requirement; Printing money" is ok, but not "expansionary monetary policy"

(1 point) On Correctly Labeled GRAPH: Increase money supply and lower interest rate [Note: A perfect graph is expected, but the absence of labeling the horizontal axis can be excused; also, an upward sloping money supply function is acceptable.]

**Note:** Besides counting points, the answer may be looked at a whole and ultimately judged by its overall quality. The final total should mean something in terms of the overall quality of the answer. An 8 or 9 should reflect an excellent answer (a 9 is not necessarily a perfect answer); a 6 or 7, a good answer; a 4 or 5, an adequate answer; a 3 is a seriously deficient answer, but still an answer; a 2 an answer signifying nothing except one sustained argument; and a 1, containing only a correct, relevant-to-the question statement. A 0 has no relevant economic answer to the question. A dash (-) is given for an unresponsive or blank answer.

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***Question 1 (cont.)***

**Purpose of the Question and Commentary on Students' Responses**

As in the past, this long macroeconomic question is aimed at testing students' understanding of aggregate analysis and policy. The question begins by

investigating the impact of higher interest rates on investment, the value of the country's currency, and exports. Students frequently did not describe the linkage from higher interest rates to increased demand for the currency to the appreciation of the currency. The importance of capital flows in affecting interest rates should be well explained to students. Students are then asked to link the appreciation of the currency to a reduction in a country's exports. In the second part, students are asked simply to use aggregate analysis to show the impact of reduced investment on real output and the price level. In part (c), students are to identify one expansionary fiscal policy to counter the lowered real output from part (b). The more difficult aspect of part (c) for students was to link higher interest rates (from the expansionary fiscal policy) to lower prices on existing bonds. Alternatively, students could have reached this conclusion by explaining that an increase in the supply of bonds would lower bond prices. In the last part of the question, the students are to identify an expansionary monetary policy. On a correctly labeled graph for the money market, students are then asked to show the impact on nominal interest rates of the expansionary monetary policy. Generally, students responded well to this question; the primary exceptions concerned the link between capital flows and currency value, and the link between expansionary fiscal policy, interest rates, and bond prices.