



## Student Performance Q&A: 2015 AP<sup>®</sup> Macroeconomics Free-Response Questions

The following comments on the 2015 free-response questions for AP<sup>®</sup> Macroeconomics were written by the Chief Reader, Arthur Raymond of Muhlenberg College, and Question Leaders Fred Smith, Richard Rankin, and Gabriel Sanchez. They give an overview of each free-response question and of how students performed on the question, including typical student errors. General comments regarding the skills and content that students frequently have the most problems with are included. Some suggestions for improving student performance in these areas are also provided. Teachers are encouraged to attend a College Board workshop to learn strategies for improving student performance in specific areas.

### Question 1

#### *What was the intent of this question?*

The question addressed the monetary and fiscal policy responses to a recession. Part (a) asked students to use the aggregate supply and demand model to graphically show an economy in recession. Part (b) asked whether the Federal Reserve should target a lower or higher federal funds rate in response to the recession. Part (c) required students to draw the money supply and demand model to show the effect of the monetary policy identified in part (b) on the nominal interest rate. In part (d) students were directed to calculate the minimum change in government spending necessary to close a given recessionary gap and to explain whether the minimum change in taxes necessary to close the same gap would be larger or smaller than the calculated change in government spending. Part (e) asked students to explain the effect of a decrease in income tax rates on aggregate demand and on long-run aggregate supply.

#### *How well did students perform on this question?*

The average score on this question was 5.43, which for a 10 point question is 54.3 percent of the maximum.

#### *What were common student errors or omissions?*

The two most common errors on the exam were: 1) the inability of students to explain why the minimum change in taxes necessary to close a recessionary gap is larger than the minimum change in government spending and 2) the failure to adequately explain why long-run aggregate supply might shift (or not shift) in response to a reduction in income taxes.

*Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?*

An emphasis on how changes in government spending and how changes in income taxes affect aggregate demand and output is important. All of a change in government spending is spent, but because a change in income taxes first changes disposable income, consumers may save some of the income from the tax decrease so that not all of the decrease in income taxes is spent.

Teachers should distinguish between the effects of a change in taxes on aggregate demand and on long-run aggregate supply. A change in taxes changes aggregate demand, but unless the tax change leads to a change in the quantity of inputs, long-run supply is unaffected.

## **Question 2**

*What was the intent of this question?*

The question focused on absolute advantage, comparative advantage, and trade. Students were given the production of furnaces or solar panels for two nations and were then asked to (a) identify absolute advantage, (b) calculate the opportunity cost of a furnace, (c) explain which country has the comparative advantage in producing furnaces, and (d) determine for a given terms of trade whether solar panels should be produced domestically or imported.

*How well did students perform on this question?*

Students scored high on this question, earning an average of 3.87 out of a possible 5 points, or 77.4 percent of the maximum.

*What were common student errors or omissions?*

The most common error made by students was in determining whether a nation should trade internationally for a good or produce the good domestically for the terms-of-trade specified by the question.

*Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?*

Teachers should emphasize that although nations with different opportunity costs can beneficially trade at many terms of trade, not all terms of trade will be mutually beneficial. A beneficial terms-of-trade is one that allows a nation to consume outside of its production possibilities frontier, or export less in return for the import of a good than it would give up to produce the good domestically.

## **Question 3**

*What was the intent of this question?*

The question focused on the effect of an increased government budget deficit on the interest rate and the exchange rate. Part (a) asked students to explain the effect of Japan's increased government budget deficit on the real interest rate in the short run in Japan and indicate the effect of the increased government budget deficit on private domestic investment in plant and equipment in Japan. Part (b) required students to draw a correctly labeled graph of the foreign exchange market to show the effect of the change in the real interest rate identified in part (a) on the supply of euros and the yen price of the euro, and to explain the effect of the

real interest rate change on the supply of euros. Part (c) asks whether the European Central Bank should buy or sell euros in order to reverse the change in the yen price of the euro indicated in part (b).

***How well did students perform on this question?***

This was a difficult question for students. Out of 6 possible points, students scored an average of 2.49, which is 41.5 percent of the maximum.

***What were common student errors or omissions?***

The most common, and yearly recurring error, is the incomplete or omitted explanation of how a change in the real interest rate in Japan affects the supply of euros on the foreign exchange market for euros. Another common error was the inability of students to explain how an increase in the government deficit affects the real interest rate.

***Based on your experience of student responses at the AP Reading, what message would you like to send to teachers that might help them to improve the performance of their students on the exam?***

It is important to establish that a change in the foreign real interest rate affects currency markets because investors must exchange currency in order to purchase foreign financial assets. If the real return on financial assets in Japan increases, then those with euros will supply more euros on the foreign exchange market in order to buy yen in order to buy the Japanese financial assets that bear the increased return.

In explaining the real interest rate, it should be emphasized that the loanable funds framework is appropriate. An increase in the government deficit increases the demand for funds (an increase in borrowing), which increases the real interest rate. [In an alternative loanable funds framework, an increase in a government deficit decreases the supply of funds (a decrease in lending) and increases the real interest rate. Both frameworks are acceptable.]