



## **Student Performance Q&A: 2004 AP<sup>®</sup> Macroeconomics Free-Response Questions**

The following comments on the 2004 free-response questions for AP<sup>®</sup> Macroeconomics were written by the Chief Reader, Clark G. Ross of Davidson College. 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?***

This question tested the students' understanding of aggregate analysis, aggregate demand, and aggregate supply. The first part of the question required students to demonstrate understanding of the concept of full-employment output. The second part asked them to identify an expansionary open-market operation, and the third part traced the impact of the Federal Reserve's purchase of bonds through the money market. In Parts (d) and (e) of the question, students had to show the impact of lowered interest rates on interest-sensitive expenditures (e.g., investment and consumer durables) and aggregate demand, as well as on the real output and price level. Finally, the question asked students to sketch out the Classical response to a recessionary gap, in the absence of expansionary discretionary policy.

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

Students performed well on this question. The mean score was 6.8 out of a possible 13 points or 52.6 percent of the maximum; moreover, students scored over a broad range on the point scale. The most difficult points to earn related to the Classical adjustment process.

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

Some recurring errors are worth mentioning. Students continued to show little understanding of the full-employment constraint, and they did not provide good money market graphs. Students frequently mislabeled graphs, confusing the money supply with real output and losing points. There really is no excuse for not showing a good money market graph; monetary policy is a

fundamental concept that should be at the heart of any introductory economics course. Finally, many students were completely unaware of the Classical adjustment to a recession. The prompt of “flexible prices and wages” should have keyed students to an adjustment process that would lead to falling wages and other input prices, shifting out the aggregate supply curve and raising the equilibrium real output.

***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?***

Essentially, three areas should be emphasized: the difference between actual and full employment, the money market and determination of the nominal interest rate, and discretionary policy action versus the Classical adjustment process to reach full employment.

## **Question 2**

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

This question tested understanding of the loanable funds market and its relationship to the international value of a currency. Students should understand that an increase in national savings increases the supply of funds and lowers the real interest rate in the economy; as a result, reduced financial funds flow to the United States, reducing the demand for U.S. dollars and depreciating the dollar. Thus, U.S. imports will become more expensive and fall; U.S. exports will become more competitive and increase.

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

Students performed reasonably well on this question. The mean score was 3.4 out of a possible seven points or 49.3 percent of the maximum. At the low end of the performance scale, some students were able to achieve one or two points by simply guessing a correct assertion. In contrast, achieving the maximum score of 7 was relatively rare, earned by less than 3 percent of the test-taking population. In summary, scores were somewhat bunched between 2 and 6 (slightly over 80 percent falling in the 2 to 6 range), a somewhat tighter distribution than desired.

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

Clearly many students confused the loanable funds and the money market. Teachers need to emphasize this difference, as it is increasingly becoming more important both within the financial sector and the economics profession. Making this distinction between the money market and the loanable funds market will help students understand better those factors that determine nominal interest rates, as opposed to real interest rates. Also, the effects of government budget deficits and crowding out can be better shown with the loanable-funds market analysis.

***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?***

Help students understand the difference between the loanable funds market and the money market—students were clearly confusing the two. Emphasize the movement of international financial flows towards areas of higher real returns.

### **Question 3**

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

This question tested students' understanding of the money-creation process. Students were asked to trace the effects of an expansionary open-market operation by the Federal Reserve, first in a banking system that required 100 percent reserves and then in a fractional-reserve system. Within the fractional-reserve system, students were then asked about the money-creation process as banks loaned out funds. The question concluded with a discussion of the common factors (excess reserves and cash drain) that reduce the effective money-supply multiplier.

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

The mean score was 3.8 out of a possible seven points or approximately 54.6 percent of the maximum. The distribution was quite robust, with 10 percent of students receiving the maximum score of 7.

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

The most common confusion among better students dealt with the issue of the “maximum” amount of money that can be created. Students should realize that the initial effect of the open-market operation, that of buying bonds, is for the money supply to increase by \$5,000, the amount of new deposits and cash reserves (or cash itself, if outside the banking system) resulting from the transfer of bonds from the public to the Federal Reserve for money. Thereafter, when fractional banking (with the 10% reserve requirement) is introduced, an additional \$45,000 of new money can be created through the money-multiplier process. In the final analysis, these two sums must be added to generate the potential maximum increase of \$50,000. The other parts of the question related to the two standard leakages from the money-multiplier process: excess reserves and cash drain.

***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?***

A fundamental issue to address is the actual impact on the money supply from an open-market operation and how such an operation, if expansionary, immediately increases the money supply with an infusion of new money. This process contrasts with the case of money held by the public being deposited in a bank, a process that is also expansionary, but not as powerful as the open-market operation.