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What Do College Seniors Know About Economics?

By WILLIAM WALSTAD AND SAM ALLGOOD*

If college seniors who have taken an economics course were asked questions that test their knowledge of basic economics, what would the results show? Would seniors give correct answers to most questions, or would they show significant deficiencies? Students are exposed to many ideas during their undergraduate education, so one would not expect them to retain all of the economic content they were taught, but one would hope that they would retain at least a knowledge of basic economics. This study investigates whether that is the case.

Two data sources were used for the study. The first was from a Gallup survey of a national random sample of 300 college seniors (Walstad and Max Larsen, 1992). The survey includes 15 multiple-choice questions testing economic knowledge. The responses from that survey can be separated according to whether students took economics. The second data set came from the economics scores for 12,854 students who took the Major Field Test in Business II (MFTB) sponsored by Higher Education Assessment of the Educational Testing Service (ETS, 1998). The MFTB covers content typically taught in an undergraduate program in business and contains about 20 multiple-choice questions on basic economics.

Although there are differences between the two data sets, we viewed this as an advantage for our study. Our hypothesis is that most college seniors would show relatively limited knowledge of basic economics, no matter what questions were asked or how the data were collected. We expected students responding to the Gallup questions to score higher than students taking the MFTB because the Gallup questions were simpler and designed for telephone in-

terviews. The MFTB, by contrast, is a standardized achievement test with definitions and analytical questions of the type that would be used in course exams for Principles of Economics.¹ With both sets of test data, however, we expected to find significant gaps in the economic knowledge of college seniors.

I. Results

The two-thirds of college seniors who had taken an economics course scored 62-percent correct on the 15 knowledge questions on the Gallup survey. The one-third without economics scored 48-percent correct. Table 1 provides examples of six questions from the survey and the percentage of correct responses for students with and without an economics course.

The results can be interpreted in two ways. What is encouraging is that economic education does make a significant difference in what students know. Students with economics scored 14 percentage points higher than those without, a statistically significant, but modest, gain.² What is discouraging, however, is that college seniors with economics show only a limited knowledge of basic economics. To put this score in perspective, it would be equivalent to a D- on a standard grading scale.³

To obtain additional evidence of the level of student achievement in economics we exam-

¹ There is a Major Field Test in Economics, but the sample was too small for analysis. This test was also not suitable for our purposes, because it covers advanced content for economics majors.

² The *z* value is 2.31. Regression analysis was also used to evaluate course effect after controlling for age, gender, race, and employment. Students with an economics course scored significantly higher, but only by 12 percentage points. The result is consistent with that reported by Phillip Saunders (1980).

³ Most students were aware of their deficiencies. Only a minority of students with economics rated their economic knowledge as excellent (3 percent) or good (19 percent). The vast majority rated it as either fair (56 percent) or poor (23 percent).

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TABLE 1—SAMPLE QUESTIONS
AND PERCENTAGE CORRECT

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-
1. Economic growth is measured by a change in which of the following?
 - a. The money supply
 - b. The balance of payments
 - c. The Producer Price Index
 - d. The Gross Domestic Product [60; 48]*
 2. Who sets monetary policy in the U.S.?
 - a. Congress
 - b. The President
 - c. The U.S. Treasury
 - d. The Federal Reserve [57; 28]**
 3. What is an example of fiscal policy? A change in:
 - a. the prime rate.
 - b. the discount rate.
 - c. Federal income tax rates. [52; 41]*
 4. What economic policy would most likely be used to combat a recession during a period of *low* inflation?
 - a. An increase in taxes
 - b. An increase in the money supply [63; 39]**
 - c. An increase in stock market prices
 5. The basic purpose of profits in our market economy is to:
 - a. transfer income to the wealthy.
 - b. pay for the wages and salaries of workers.
 - c. lead businesses to produce what consumers want. [61; 36]**
 6. If the U.S. dollar increases in value, what will most likely be the effect on U.S. exports of goods to other countries? Will U.S. exports *increase*, *decrease*, or *stay the same*?
 - a. Increase
 - b. Decrease [66; 49]**
 - c. Stay the same
-

Notes: The letter of the correct response is in bold type. Numbers in square brackets show the percentage correct with economics course ($n = 200$); percentage correct without economics course ($n = 100$).

* Significant at 5-percent level (one-tailed test).

** Significant at 1-percent level (one-tailed test).

ined the scores from the economics questions on the MFTB. The test outline showed that economics questions covered macroeconomics, microeconomics, and international economics, and accounted for about 16 percent of the test questions. The test manual states that questions measure a student's knowledge and ability to apply significant facts, concepts, theories, and analytical methods.

The above descriptions might imply that the questions would be difficult for students, but

our review of test items led us to conclude that they were relatively easy. Students who have taken Principles of Economics should be able to answer them. Test copyright prevents us from giving the actual test questions, but here is a sample question from the test brochure that makes our point:

A movement to the right along the downward-sloping demand curve for product *X* may be caused by:

- (a) a fall in the price of product *X* ;
- (b) a fall in the price of a substitute product;
- (c) a rise in the price of a complementary product; or
- (d) an increase in income.

(By the way, option a is correct.) We labeled this question as a "definition" that tests understanding of basic terms or concepts necessary for simple economic analysis. In our review of the test, half the questions are definitions, and the other half are analytical. The analytical ones require use of supply and demand in microeconomics, or aggregate supply and demand in macroeconomics, but the analysis is only at the Principles level.

We obtained data from ETS on the results from all college seniors who had taken the MFTB from January to June 1998. These students were in business programs that required them to take Principles of Economics and probably other economics courses, such as money and banking, intermediate micro- or macroeconomics, or international economics. We suspect that the ability level of this group is probably higher than that of the typical undergraduate who takes college economics because many business schools require a higher GPA for admittance than do other colleges (Michael Salemi and Carlie Eubanks, 1996). Given the sample, the economics scores are likely to overstate achievement in economics that would be revealed by the scores if the same items were administered to all undergraduates taking economics.

Table 2 shows that seniors taking the MFTB could correctly answer only 41 percent of the economics items. Given that the mean and median are about equal, it indicates that fewer than half of college seniors could correctly

TABLE 2—ECONOMICS SCORES ON MFTB
(PERCENTAGE CORRECT)

Sample	Mean	SD	Number
Overall	41.42	13.85	12,854
By Gender			
Female	39.16	13.17	6,310
Male	43.60	14.13	6,544
By race			
White	42.83	13.60	9,934
Black	33.39	12.60	1,432
Hispanic	37.90	13.29	415
Asian	39.94	13.69	657
Other	41.11	14.57	416
By transfer			
Yes	40.76	13.55	5,156
No	41.85	14.03	7,698
By enrollment			
Full-time	41.62	13.96	11,028
Part-time	40.16	13.10	1,826
By English			
First language or equivalent	41.33	13.82	11,932
Second language	42.47	14.17	922
By aspirations			
Bachelors	39.86	13.49	5,217
Masters	42.37	13.88	5,482
Doctorate	44.66	15.21	800
Undecided	41.61	13.58	1,355
By GPA			
A's	47.55	14.04	2,705
B's	42.08	13.33	4,427
C's	38.54	13.14	4,205
<C's	36.51	12.70	1,517

answer nine or more of the 20 economics items. This score is well below the cutoff for a failing grade on a standard scale, a result that inspires little confidence in the economic knowledge of college seniors.

The percentage correct for the MFTB sample was lower than it was for the Gallup sample, but we expected this difference. The MFTB questions were somewhat more difficult because they all had four options and were designed to be taken as a paper-and-pencil test. Both sets of questions, however, covered basic content that should have been known by college students who had taken some economics. Even if there is some measurement error in either set of questions, it does not begin to ex-

plain the low level of achievement.⁴ We suspect that a test with 15–20 questions on basic economics that is given to college seniors will produce scores in about the same range.

As shown in Table 2, the average scores are even lower for some groups with certain characteristics. Males outperform females by 4.4 percentage points. Whites score 9.5 percentage points higher than blacks and 4.9 percentage points higher than Hispanics. Educational aspirations appear to matter or may be a result of differences in learning capacity. Students who plan to earn a doctorate score 4.8 percentage points higher than those who expect to earn only a bachelors degree. Also, those students who report higher grade-point averages have higher test scores (there is an 11-percentage-points difference between an "A" GPA and a less than a "C" GPA).

Other group characteristics seem to have little effect on scores. There is only about a percentage-point advantage for students who remain at the same institution compared with those who transfer. Full-time students score slightly more than one percentage point better than part-time students. Surprisingly, students for whom English is a second language score higher than students for whom English is the first language, or equivalent to a first language, although there is still only about a percentage-point difference between the groups.

To evaluate the effects of group characteristics on MFTB economics scores, we specified a regression equation with the economics score as the dependent variable and dummy variables as regressors. Four dummy variables (1 = yes; 0 = no) capture the effects of gender (1 = MALE), whether a student transferred from one institution to another (TRANSFER), enrollment status (FULLTIME), and whether English was a first or equivalent language (ENGLISH1). Three other characteristics were repre-

⁴ Lack of motivation is not a likely explanation for the low scores. Gallup survey respondents volunteered to answer questions and could answer "don't know" (few did). Each MFTB costs about \$22, which suggests that institutions take the test seriously, a message presumably conveyed to students. Even if some students did not care about economics when tested, their scores are probably an accurate reflection of the economic knowledge they retain.

sented by multiple dummy variables. The race and ethnicity variables were WHITE, ASIAN, HISPANIC, and OTHER, with BLACK omitted. Educational aspirations were represented by BACHELORS, MASTERS, and DOCTORATE, with UNCERTAIN omitted. Grade-point average was captured by AGRADE, BGRADE, and CGRADE, with less than a C grade (<CGRADE) omitted.

Table 3 gives the results for a fixed-effects model that includes the above dummy variables plus ones to control for differences among students at the 287 institutions where the data were collected. Many differences reported in Table 2 are found in Table 3. For example, males score about 4.8 percentage points higher than females. This difference is a concern, because it suggests that if a male scores in the 50th percentile, a female with the same characteristics will score only in the 20th percentile. Whites score about 4 percentage points higher than blacks. Those students with an overall A grade-point average score about 12.5-percentage-points higher than those students with a below-C average. The coefficient estimates in Table 3 can also be used to illustrate how students attending the same institution vary in their economic knowledge by selected characteristics.

II. Implications

Why does it matter whether a student has taken an economics course or knows basic economics? One reason is that economic knowledge has a direct and substantive effect on opinions about economic issues, as illustrated by an example from the Gallup data.⁵ An opinion question asked:

If the supply of oil was reduced by a crisis in the Middle East, do you think the United States government should prohibit oil companies from raising oil and gasoline prices?

⁵ For results from the general public, see Walstad (1997).

TABLE 3—FIXED-EFFECTS RESULTS FOR MFTB ECONOMICS SCORES

Variable	Mean (SD)	Coefficient (t value)
MALE	0.509 (0.500)	4.797 (21.549)**
WHITE	0.773 (0.419)	4.044 (9.095)**
ASIAN	0.051 (0.220)	0.735 (1.104)
HISPANIC	0.032 (0.177)	0.838 (1.091)
OTHER	0.032 (0.177)	2.737 (3.718)**
FULLTIME	0.858 (0.349)	0.723 (2.194)*
TRANSFER	0.401 (0.490)	-0.295 (1.213)
ENGLISH1	0.928 (0.258)	-1.151 (2.650)**
BACHELOR	0.406 (0.491)	-1.372 (3.650)**
MASTERS	0.427 (0.495)	0.420 (1.127)
DOCTORATE	0.062 (0.242)	1.948 (3.534)**
AGRADE	0.210 (0.408)	12.539 (29.642)**
BGRADE	0.344 (0.475)	6.260 (16.375)**
CGRADE	0.327 (0.469)	2.249 (6.040)**
Adjusted R ² :		0.242
Lagrange multiplier test:		2,854.93
Hausman test:		97.58
N:		12,854

* Significant at the 5-percent level (two-tailed test).

** Significant at the 1-percent level (two-tailed test).

Over four in ten college seniors were opposed to allowing the oil companies to raise prices, hardly a strong endorsement of competitive markets.

When the responses to the opinion question are cross-tabulated by whether an economics course was taken in college, a

significant difference emerges. Among those college seniors who had taken a course, 74 percent did not think the government should intervene in the oil market. Among college students who had not taken an economics course, only 26 percent thought the government should not intervene in this market. The differences in the percentages show that what many college seniors know about economics directly affects their acceptance of a market result.

Despite the importance of economics, more work needs to be done in order to improve undergraduate education in economics (William Becker, 1997). Our results show that many college seniors who have taken an economics course still show a lack of understanding of basic economics. Why does this low level of achievement occur? Does it arise from poor Principles instruction, problems with the economics curriculum, the neglect of outcome assessment, or another factor? These questions need to be investigated so that achievement in economics among college students can be improved.

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