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What Students Remember and Say about College Economics Years Later

By Sam Allgood, William Bosshardt, Wilbert van der Klaauw, and Michael Watts*

In his presidential address to the American Economic Association, George Stigler (1963) offered the provocative hypothesis that students would retain very little knowledge from principles courses in economics five years or more after taking the courses. The few empirical studies that have been published on this topic generally found no or small lasting effects, at least for those who took fewer than four courses (see e.g., G. L. Bach and Phillip Saunders, 1965; Gerald J. Lynch, 1990). That raises even broader questions about the long-term effects of studying economics in college, in terms of individuals' behavior as consumers, workers, and voters, which we are now beginning to investigate using both survey and transcript data.

We have two major goals in this study. First, we want to learn how students perceive their classroom experience in economics courses years after leaving school, both in absolute terms and compared to other courses they took. We drew samples of economics, business, and other majors, who attended our four universities in 1976, 1986, and 1996, and asked which topics regularly covered in economics courses they now viewed as being most (and least) important. We asked whether they now viewed the economics courses they took as interesting, important, too difficult, or too abstract. We also compared their perceptions of teaching methods and grading rigor in economics courses to those developed in other courses.

Our second major goal represents an empirical test of the common claim that economics is a unique "way of thinking." If it is, we might reasonably expect people with more training in economics to have different views on policy issues, and to make different decisions as consumers, workers, savers, investors, and voters. We collected survey data on many of these choices, and by matching those responses with transcript data, we plan to investigate whether there are observable behavioral responses associated with being an economics major, or simply taking some minimum number of economics courses, compared to students who took fewer courses or none at all.

There are other uses for these data. They can likely be used to study choice of major and course-taking behavior as well as common labor-economics issues such as human capital versus screening in the labor market. Certainly the data can provide insight into curriculum development for economics departments, and business schools as well. There is, obviously, the potential for response biases in the analysis of these data, but we expect that having transcript data for respondents and nonrespondents will allow us to deal with these issues econometrically.

This first, brief report from this ongoing project addresses only the first goal of the project, specifically, how our former students evaluate their experience with economics courses and instructors. What economic courses and concepts do they now believe are most important? Do they wish they had taken more, or less, coursework in economics? What do they think now about various economic issues? And

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do former students who took more economics coursework respond differently to these questions than those who took less coursework, or none at all? We believe answers to these questions are interesting and important for economics instructors and departments, from the standpoint of both academic content and departmental policies.

I. Survey Development, Methodology, and Response Rates

Funding for this project was approved by the Calvin K. Kazanjian Economics Foundation in mid-2001. After reviewing other surveys dealing with college coursework and individuals' economic decisions, we met to prepare a draft survey form, which was then reviewed by several of our colleagues and members of the AEA Committee on Economic Education. The final version of the survey was completed in May 2002.

During this same period and for some months later, we dealt with human-subjects offices and requirements at and across our four universities. When those approvals were secured we contacted the Registrars' and Development offices at our schools to begin drawing names and obtaining mailing addresses. We drew a random sample of 1,000 names for each of the nine subgroups (three groups of majors for each of three time cohorts) at each university or, when fewer than 1,000 were available, all of the available names in each subgroup. Usually we drew names first from Registrars' records, then mailing addresses from Development Office records; but in some cases, especially for the 1976 cohorts, we started from Development Offices' list of "good" addresses. All four universities update their mailing lists several times each year, purchasing information from commercial-credit-reporting or direct-mail-information companies. Despite that, we were warned that general mailings from the universities frequently experience up to 10-percent returns for invalid addresses.

Given these inherent problems, the length and personal (some called it "intrusive") nature of the financial and political-participation questions we asked on the survey, the years/decades since the former students had attended college, and the usual problems with mail surveys, we anticipated a low response rate. That held true, but if anything not as much as we had feared. We planned and prepared to deal with those problems, as much as possible, by drawing large initial samples and collecting transcript data that might allow us to correct for response bias.

In January 2002 we mailed out 25,292 surveys. Invalid addresses and indications that individuals were deceased resulted in 1,321 surveys being returned by the Postal Service. We received 2,165 completed surveys, for an overall response rate of 9.0 percent (of surveys mailed and not returned due to invalid addresses). We received 310 completed surveys from economics majors, 922 from business majors, and 933 from the sample of all other majors. Response rates for the three groups of majors were: economics, 13.5 percent; business, 8.5 percent; other majors, 8.6 percent. Response rates for the four universities were: Florida Atlantic University (FAU), 5.8 percent; University of Nebraska, 9.5 percent; University of North Carolina (UNC), 11.4 percent; Purdue University, 8.8 percent.

Transcript data for some respondents and nonrespondents are still being entered (incredibly, records at some of the schools for all students or some subgroups are only available as paper copies). Both for that reason and tight space constraints, in this paper we only report the survey responses on economic coursework, content, and teaching items. While response bias may have some effects on these questions, we do not expect those effects to be nearly as severe for these sections as for those dealing with such items as salaries; employment; use of credit cards; balances in savings, investment, and retirement plan accounts; membership in unions and political parties; frequency of voting. Even viewing the data reported here as purely opportunistic, information from so many former students, who took economics so many years ago, is rarely available. The results offer important perspectives on undergraduate economics, and perhaps different from those we hear far more often, from current students.

II. Economics Coursework, Content, and Issues

We first asked what factors were most important in choosing an undergraduate major, by having respondents rate each item in a list of 10

factors on a 1–5 scale, with 5 = extremely important and 1 = not at all important. All three groups of majors rated interest in subject as the most important item, and the influence of friends and ease of getting good grades as least and next-to-least important factors, respectively. The average value for the interest-in-subject item was lower for business majors (4.21) than for economics majors (4.51) and other majors (4.63). No other listed item had an average rating of 3.9 or above for any of the three groups.

There are interesting similarities across majors, albeit with some difference in ordering, in the rankings for the second- to fifth-most-important items for this question. Economics majors cite good experience in introductory courses, good instructors in the subject, earning high salary and wages, and job stability and security. Business majors chose job stability and security, earning high salaries, good experience in introductory courses, and good instructors. Other majors picked job stability and security, good instructors, good experience in introductory courses, and good experience in a subject in high school, but ranked earning a high salary lower. In sum, all groups point to the importance of good introductory courses and teachers, while the economics majors are perhaps relatively less risk-averse in terms of the importance of job stability and security, or perhaps more confident about their job prospects.

When asked what undergraduate economics courses they had taken, essentially all of the economics majors reported taking a two-semester principles sequence except at UNC, where only a one-semester course has been offered in recent decades. There is then a slight drop in the number who reported taking intermediate theory courses. At UNC and Nebraska, the great majority of economics majors took an introductory statistics course taught in the economics department (not offered in economics departments at FAU or Purdue). Almost two-thirds of the economics majors took a course on international economics or international trade, but no more than one-third reported taking any other specific course. Over two-thirds of the economics major respondents attended UNC, so course offerings and requirements there dominate these results. Generally, beyond principles and intermediate theory courses, there is considerable variation in what courses economics majors took at the four schools.

Essentially all of the business majors took principles courses (two semesters at FAU, Nebraska, and Purdue; one semester at UNC, except for the 1976 cohort). Business majors at Nebraska take statistics courses taught by the economics department, but not at the other schools. Nearly one-third of the business majors took a course on money and banking, though not at UNC in recent years. No other economics course was reported as being taken by as many as 10 percent of the business majors.

Just over one-third of the other majors took a one-semester principles course (offered at all four schools), and less than 30 percent took either the micro or macro course, or both, from the two-semester principles sequence at the three universities where those two courses are offered. Less than 5 percent took any particular economics course other than a principles course.

Two general and related conclusions from these results seems clear: (i) most students took economics courses they were required to take because of their choice of major; and (ii) students rarely take economics as a free elective, especially any course beyond principles. Part of the reason for that is undoubtedly that principles courses are typically prerequisites for taking most (if not all) other economics courses.

Asked if the economics courses they took were a good or bad experience, economics majors responding were most favorable (1.02, with 1 = good and 2 = bad), then business majors (1.17) and other majors (1.28). Nearly all economics and business majors responded on this item, but just over half of the other majors, which is not surprising because 45 percent of the other-majors group did not report taking any economics courses.

Asked if they wished they had taken more courses in economics, two-thirds of the business majors and nearly 60 percent of the other majors said no. Asked if they wished they had taken fewer courses in economics, about 90 percent of both groups said no. In short, they are generally satisfied with the choices they made about how many economics courses to take, as largely determined by their choice of major. There is, however, a significant minority (roughly one-third) who might have wanted to take additional

courses in economics had they faced fewer constraints.

The business and other majors were specifically asked to indicate why they did not take more economics courses. About 60 percent of the business majors said they were more interested in other subjects, about 45 percent said that they did not have enough time for electives, 17 percent said that economics is too abstract, and 15 percent cited poor teachers. For the other-majors sample, over 40 percent checked that they were more interested in other subjects (which was over two-thirds of those responding to this item). Over one-fourth indicated that they did not have enough time for electives. Slightly less than 10 percent indicated that economics was too difficult or too technical, and about the same number noted the poor quality of economics teachers.

Economics majors were asked whether they would advise an entering freshman today, similar to themselves in interest and ability, to major in economics. Over 80 percent said yes.

Taken together, these questions point to an important self-selection process in determining choice of majors, and from that, enrollment patterns in economics courses. That suggests a potentially important role for pre-college economics instruction, because currently roughly half (or somewhat more) of all pre-college students do not take a separate course in economics, and few see it consistently or effectively incorporated in social studies or other courses that most students do take (William B. Walstad, 2001).

All three groups of majors were asked to indicate which economic concepts and topics (from a list of 18) they remembered studying, and then, regardless of whether or not they remembered studying them, to say whether each of these concepts had proved to be important after leaving school. There is general agreement across the groups of majors in the rank ordering of concepts/topics they remember being taught, especially by business and economics majors. All three groups list markets/supply and demand first, with imperfect competition second or third, and scarcity and opportunity cost always in the top four. Elasticity is ranked fourth by the economics majors, fifth by business majors, and sixth by the other majors. Incentives is listed last by business and economics majors, and in the bottom five by the other majors.

In one respect, that degree of agreement is surprising, given differences in the number of economics courses taken by the groups, but that may well be another indication of how important principles classes are. The most important difference to note here is that, in percentage terms, there is a much sharper drop-off in the number of the other-majors group who remember topics near the bottom of their list than there is for the economics and business majors.

Economics majors rated all of the specific concepts as more important than the business and other-majors groups, and business majors rated each topic as more important than the other-majors group. On a 1–5 scale, with 5 = "extremely important," the average ratings for the other-majors group never reach the 4.0 threshold, and over one-third of the concepts fall below 3.0. That may be surprising to economists, who like to believe that everyone sees economics as important, even if they are put off by its being technical, difficult, or dull. But as seen earlier, most of the other-majors group do not say that they find economics particularly difficult or technical, probably reflecting the number of engineers and other technical majors who are required to take principles courses, at least at our schools.

Two important patterns appear for all three groups on these items. First, basic microeconomics concepts (supply and demand, scarcity and opportunity cost, discounting, marginal analysis) are rated highly, while several macroeconomic concepts (national income accounting, real vs. nominal values, money and monetary policy) appear in the bottom half of all three lists. Both economics and business majors rank unemployment in the bottom half, with fiscal policy barely in the top half, further strengthening the preference for micro- vs. macroeconomics. The second result shows that the news is not all good for typical instruction in microeconomics courses, however, with perfect competition ranked at or near the bottom of all three lists, and imperfect competition in the lower half. Both of these topics were remembered by respondents who took principles courses, but not judged as being particularly important after school.

There are some interesting differences in orderings across the groups (e.g., business and other majors rank productivity relatively higher than economics majors), providing some support for calls to offer different kinds of principles courses for different groups of majors (see e.g., W. Lee Hansen et al., 2002; Watts, 2003). It would also be possible to cover the topics that are generally ranked most highly here in a one-semester survey principles course—though that course would look considerably different from the coverage provided in most current textbooks written specifically for that course. Then students in different majors might enter a different track of principles courses in a second or perhaps even third semester (especially for economics majors) of principles, or go directly to upper-level field courses.

Our survey included seven items on current economic issues, taken from surveys used to look for consensus or dissention among economists (Richard M. Alston et al., 1992), and also used in a national survey of economic educators, secondary economics and social studies teachers, and journalists (William E. Becker et al., 1994). The economics majors look distinctly different from the business and other-majors groups on two of the seven questions, both dealing with international trade. Specifically, they are more likely to agree that trade barriers reduce welfare, and less likely to agree that a large balance-of-trade deficit will have an adverse effect on the economy. They are also more likely to oppose price controls on oil if a cartel restricts supply. The other four items, for which differences between groups were much smaller, concerned federal deficits, income distribution, the level of government spending, and the effects of an increase in the minimum wage.

III. Ratings of Economics Courses and Teaching

Compared to other courses they took, about two-thirds of the economics majors responding rated economics courses more interesting and more important; over 40 percent said economics courses were more lecture-based, less discussion-based, and more difficult; over 60 percent said economics courses were more mathematical (but of course this group took more economics courses that used higher mathematics); and about one-third said the courses were graded harder. Roughly half saw no difference in grading, lecture/discussion, or course difficulty.

About 40 percent of business majors responding said economics courses were less interesting than other courses, with the rest evenly split in saying they were more or equally interesting. Just over one-fourth of the business majors said economics courses were more important, but nearly one-fourth said they were less important, and most said they were about the same. Over 40 percent of this group said economics courses were more difficult, nearly half said they were equally difficult, and just over 10 percent said they were less difficult. About one-third said economics courses were more mathematical, about 30 percent said they were less mathematical, and nearly 40 percent said they were about the same. About 30 percent of the business majors said economics courses were graded harder, about two-thirds said they were graded about the same, and less than 5 percent said that they were graded easier. Nearly 60 percent said economics courses were more lecture-based, nearly 40 percent said they were equally lecture-based, and less than 5 percent said that they were less lecture-based. Nearly 60 percent said they were less discussion-based, just over 30 percent that they were equally discussion based, and only 11 percent that they were more discussion-based.

In the other-majors group, of those responding not quite half found economics courses less interesting, over 30 percent rated them about as interesting as other courses, and only 21 percent said they were more interesting. Over one-third said economics courses were less important than other courses they took, 45 percent said they were equally important, and less than 20 percent said they were more important. Over one-third said economics courses were more difficult, about one-fourth said they were less difficult, and about 40 percent said they were equally difficult. Nearly 40 percent said economics courses were more mathematical, about one-third said they were less mathematical, and 28 percent said that they were about the same. Almost two-thirds said economics courses were graded at about the same level of difficulty as their other courses, with the rest fairly evenly split between saying they were graded harder or easier. Over half said economics courses were more lecture-based; nearly 40 percent said about

the same, and only 6 percent said that they were less lecture-based. Over half said economics courses were less discussion-based, 10 percent said they were more discussion based, and just over one-third said they were about the same.

Responses on these questions provide considerable support for claims that the dominant teaching method in undergraduate economics courses is "chalk and talk," and that economics courses are much more likely to be taught that way than courses in other subjects. Becker and Watts (1996, 1998, 2001) have made such claims based on surveys of U.S. economics instructors.

Finally, when asked what characteristics are most important in making an instructor effective, from a list of 14 attributes, the economics majors rated the following six items (in order) as extremely or very important (4 or 5 on a 1–5 scale): knowledge of subject, preparation, enthusiasm, ability to give a good lecture, concern for what students learn, and ability to speak clearly. They rated as less than somewhat important (mean value < 3) providing lecture notes to students and using grading assignments other than quizzes and exams. The business majors rated six items as very or extremely important: knowledge of subject, enthusiasm, preparation, ability to speak clearly, ability to give a good lecture, and concern for what students learn. They rated as less than somewhat important use of grading assignments other than quizzes and exams, and rigorous exams and other graded assignments. The other majors rated seven items as extremely or very important: knowledge of subject, preparation, enthusiasm, ability to speak clearly, concern for what students learn, ability to give a good lecture, and careful and fair grading practices. They rated as less than somewhat important use of grading assignments other than quizzes and exams, and rigorous exams or other graded assignments. These findings are consistent with student ratings in a national sample of principles classes reported in Bosshardt and Watts (2001), who also discuss differences between student and instructor ratings of good teaching.

IV. Conclusions

The good news here is that people who majored in economics generally liked what they studied and would still recommend it to entering students with similar interests and backgrounds. On the other hand, the persistently small percentage of undergraduate students who choose to major in economics (except notably at liberal-arts schools that do not offer business majors) seems most likely to reflect students' greater interest in other subjects, which are quite possibly formed before students reach college. The choice of majors largely determines the number of students who take economics courses as undergraduates—which for most majors means only one or two principles courses, or no courses at all. There may not be a lot economics departments can do to change those enrollment patterns substantially, although at the margin what is taught in principles courses, how it is taught, and who teaches those courses seems likely to make a difference. In those areas, there certainly seems to be room for improvement. Our former students, especially those who did not major in economics, are not particularly impressed with how important much of the content in our courses is, or with how the courses are taught.

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