

## Fundamentals of Economics Courses: Fun Course or a Positive Learning Experience?

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### ABSTRACT

Economics departments are more complex than most academic organizations in that they often have multiple and diverse missions. Given the scarce (and sometimes declining) amount of financial resources allocated to economics departments, it often becomes necessary for a department to re-consider how to allocate those scarce resources so as to best fulfill its missions. One approach taken by many departments is to offer a Fundamentals of Economics course. This one-semester survey style course is often viewed by economics faculty as being a “fun” course for non-majors rather than a “real” economics course. The purpose of this paper is to provide some preliminary empirical evidence about the impact of taking a Fundamentals of Economics course on student performance and learning outcomes using data gathered over the last decade from a Midwestern, comprehensive university.

### INTRODUCTION

Economics departments are more complex than most academic organizations in that they often have multiple and diverse missions. First and foremost, they have a responsibility to provide quality courses, advising and other academic services to their majors. Economics departments also play a service role to the University by offering courses that satisfy the University’s general education requirements. Finally, many economics departments may be required to offer service courses to traditional business students. Given the scarce (and sometimes declining) amount of financial resources allocated to economics departments, it often becomes necessary for a department to re-consider how to allocate those scarce resources so as to best fulfill its missions.

One approach taken by many departments is to offer a Fundamentals of Economics course. This one-semester survey style course is often viewed by economics faculty as being a “fun” course for non-majors rather than a “real” economics course. Yet, this type of course has a number of distinct advantages that allow the department to fulfill its various missions. First, such courses typically can be used to fulfill the University’s general education and/or business degree requirements. Additionally, because of the early and

non-technical exposure to economics afforded by these courses, economics majors who take the course may be better prepared for future economics courses and the discipline of economics may become a more attractive major to non-economics students.

The purpose of this paper is to provide some preliminary empirical evidence about the impact of taking a Fundamentals of Economics course on student performance and learning outcomes using data gathered over the last decade from a Midwestern, comprehensive university. Specifically, our study will attempt to answer the following questions:

1. Does a Fundamentals of Economics course have a significant impact on overall student performance?
2. Does a Fundamentals of Economics course have a significant impact on student performance in subsequent economics courses?

By answering these questions we will attempt to provide some empirical evidence about the effectiveness of using a Fundamental of Economics course to fulfill its mission. Specifically, if such a course does have a positive and significant impact on learning outcomes, then the course allows the department to fulfill its missions in an efficient and efficacious manner. However, if a Fundamentals course does not have a significant impact on learning outcomes, then using such a course to fulfill the department’s missions should be reconsidered on the premise that it does not provide an efficacious means of fulfilling its mission.

### BACKGROUND

Economics teachers know that the vast majority of students within economics courses have no intention of becoming economics majors. In fact, recent studies suggest that only about three percent of introductory principles students go on to become economics majors (Siegfried, 1998). Yet, the size of our classes and the number of institutions teaching economics classes lead us to believe that many students are taking economics

courses and that such courses play a vital role in a student's education.

In the fall of 1998, the results of the American Economics Association's Universal Academic Questionnaire indicate that 1,363,000 students would take some introductory economics course in 2000 (Siegfried, 2000). The vast majority of those students would be exposed to economics in a two-course approach, since most degree programs in economics begin with a two-semester sequence in principles of microeconomics and principles of macroeconomics (Siegfried and Wilkinson, 1982).

The aforementioned survey also indicated that most institutions use only a two-course sequence for elementary economics (78.9 percent). However, these numbers also suggest that a large number of students receive their first college level economic exposure in a single-semester introductory course combining both macro and micro. Thus, these "Fundamentals" of economics courses play a major role in exposing students to economic principles. Yet, very little is known about these courses. This lack of information is surprising given both the number of students for whom this course provides their first exposure to economics and the significant concern within the profession about trends in the numbers of economics majors and student interest in economics in general. Why is it that the vast majority of institutions of higher learning seem to see no value in offering a one-semester economics principles course?

This paper presents the preliminary results of an ongoing study of the relationship between student performance in a one-semester "fundamentals" of economics course student performance later in their academic career at a comprehensive public Midwestern university. Of particular interest is the relationship between student performance in their first exposure to economics and their success in later economics courses.

### DATA ANALYSIS

In order to study the relationship between the fundamentals course and subsequent performance, a data set was constructed of student characteristics. Data were gathered on all students taking Economics 175, fundamentals of economics, over a two year (four semester) period from the spring of 1993 through the fall of 1994. The resulting database contained 1358 students; however, there are some missing values. These four semesters were chosen to allow for a meaningful comparison to graduation rates. For each entering student, information was gathered on their cohort membership (age, race, gender, and ethnicity), baseline

ability or human capital measures (SAT composite, SAT math, SAT verbal, ACT comp., and course grades), and academic profile (school of their declared major, hours attempted in each semester, hours completed in each semester). Instructor information was constant because the same individual taught all sections of this course over the period of study.

Table 1 presents basic descriptive statistics on cohort membership and baseline ability or human capital measures. Information is not provided concerning race/ethnicity because the sample is overwhelmingly homogeneous in this respect. Likewise, information on ACT scores is not available for the vast majority of the sample because the campus uses SAT for admissions purposes. Table 2 provides nonparametric correlations between the demographic characteristic variables and the fundamentals of economics course proxy variable (course grade). With the exception of gender, all variables show a highly positive correlation to performance in the fundamentals of economics course.

Tables 3 through 7 present basic cross-tabulations of the data along with the resulting chi-squared ( $\chi^2$ ) test statistics. The cross-tabs allow for a more disaggregated look at possible trends within the data. This is accomplished by dividing the data into classes or groups and ascertaining whether or not there is independence between groups.

Tables 3 - 5 reveal that students who do well in the fundamentals of economics class are more likely to do well in other classes, more likely to accumulate more earned hours and are more likely to graduate than students who do not perform as well. Table 3 shows that there is a significant relationship between a student's performance in the fundamentals of economics class and the student's lifetime accumulated GPA. Table 4 illustrates the relationship between a student's performance in the first economics course and their career total accumulated earned hours. Earned hours are measured at the current point in time which would be either 9 or 10 years after a student's first taking the fundamentals course. Thus, earned hours represent lifetime earned hours at this institution. No allowance has been made for subsequent transfer hours in this table.

Table 5 shows that a significant relationship between a student's fundamentals of economics performance and whether or not a student received a bachelors degree. Again, these figures represent graduation rates 9 or 10 years after the student first took the fundamentals of economics course. It is highly likely that any student who would be receiving his/her degree would have done so within this time frame. Thus, it appears that a student's fundamentals of economics

performance, as measured by course grade, has a significant and positive relationship to performance in other class work, to their ability to accumulate earned hours, and to their subsequent graduation.

Tables 6 and 7 illustrate that students who perform well in fundamentals of economics also tend to receive higher grades in principles of economics. Table 6 presents the relationship between fundamentals performance and student pooled grade in principles of microeconomics. The data was pooled across grades to allow for sufficient cell contents for analysis. The results indicate a significant relationship between fundamentals performance and the grade received in micro principles. Table 7 shows the relationship between fundamentals performance and pooled grade in macro principles. Once again, students who received high grades in fundamentals tend to also receive high grades in macro principles.

### IMPLICATIONS

These preliminary results show that a student's performance in a one-semester fundamentals of economics course that combines some macro and micro economics can have a significant relationship to later performance. Students who take a fundamentals course and do well are likely to have higher GPA, accumulate more earned hours and to graduate. In addition, there is also a statistical relationship between a student's fundamentals grade and their grades in subsequent principles of economics courses, both micro and macro.

It appears that the preliminary empirical evidence supports the idea that a fundamentals of economics course can provide an economics department with a means to fulfill its mission. The course does have a positive and significant impact on student learning outcomes.

Table 1: Descriptive Statistics

<u>Variable</u>	<u>Mean</u>	<u>Std. Deviation</u>	<u>Number of Observations</u>
<b>Cumulative GPA</b>	2.27	0.9313	1320
<b>Cumulative Earned Hours</b>	74.02	52.78	1320
<b>Proportion Earning Bachelor Degree</b>	0.3394	0.4737	1320
<b>Proportion Female</b>	0.4737	0.4995	1313
<b>Age</b>	21.7	6.3	1320
<b>HS GPA</b>	2.36	0.6353	1106
<b>Math SAT</b>	450.6	81.8	717
<b>Verbal SAT</b>	446.6	89.3	717
<b>Composite SAT</b>	897.2	150.6	717

Table 2: Nonparametric (Spearman) Correlations with the Econ175 Proxy Variable

<u>Variable</u>	<u>Correlation</u>	<u>Probability</u>	<u>Number of Observations</u>
<b>Cumulative GPA</b>	0.6670	0.0000	1320
<b>Cumulative Earned Hours</b>	0.5430	0.0000	1320
<b>Proportion Earning Bachelor Degree</b>	0.4000	0.0000	1320
<b>Proportion Female</b>	0.0030	0.9170	1313
<b>Age</b>	0.2410	0.0000	1320
<b>HS GPA</b>	0.4340	0.0000	1106
<b>Math SAT</b>	0.3230	0.0000	717
<b>Verbal SAT</b>	0.3650	0.0000	717
<b>Composite SAT</b>	0.3860	0.0000	717

Table 3: Comparison of Econ175 Performance Versus Cumulative GPA

### Absolute Frequencies

		ECON 175 Grade						
		W	F	D/D+	C/C+	B/B+	A	TOTAL
Cumulative GPA	<1.00	34	73	24	5	1	0	137
	1 - 1.99	48	48	120	74	28	0	318
	2 - 2.99	44	17	93	195	170	29	548
	3 - 3.49	12	1	6	39	102	52	212
	3.5+	4	0	0	0	28	73	105
	TOTAL	142	139	243	313	329	154	1320
Chi-Square Statistic		1067.23						
Probability		0.000						

Table 4: Comparison of Econ175 Performance Versus Cumulative Earned Hours

		Absolute Frequencies ECON 175 Grade						
		W	F	D/D+	C/C+	B/B+	A	TOTAL
Cumulative Earned Hours	< 25	77	99	89	43	19	6	333
	25 - 49	27	23	61	65	53	10	239
	50 - 74	14	8	25	41	47	11	146
	75 - 99	6	4	7	19	24	12	72
	100 - 124	6	1	13	36	52	21	129
	125+	12	4	48	109	134	94	401
TOTAL	142	139	243	313	329	154	1320	
Chi-Square Statistic		473.22						
Probability		0.000						

Table 5: Comparison of Econ175 Performance Versus Earned Bachelors Degree

		Absolute Frequencies ECON 175 Grade						
		W	F	D/D+	C/C+	B/B+	A	TOTAL
<b>Did Not Earn Degree</b>		129	135	192	193	171	52	872
<b>Did Earn Degree</b>		13	4	51	120	158	102	448
<b>TOTAL</b>		142	139	243	313	329	154	1320
Chi-Square Statistic		220.35						
Probability		0.000						

Table 6: Comparison of Econ175 Performance Versus Best Performance in Principles of Microeconomics

Pooled Absolute Frequencies

		ECON 175 Grade			
		D,F,W	C	B,A	TOTAL
Max Grade	D,F,W	12	24	21	57
Received in	C	7	12	37	56
Micro Principles	B,A	2	4	43	49
Course	TOTAL	21	40	101	162
Chi-Square Statistic	29.68				
Probability	0.000				

Table 7: Comparison of Econ175 Performance Versus Best Performance in Principles of Macroeconomics

		Pooled Absolute Frequencies				
		ECON 175 Grade				
		D,F,W	C	B,A	TOTAL	
Max Grade	D,F,W	3	12	24	39	
Received in	C	8	19	21	48	
Macro Principles	B,A	5	6	37	48	
Course	TOTAL	16	37	82	135	
Chi-Square Statistic	12.64					
Probability	0.013					

## REFERENCES

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