

WHAT IS AN ECONOMICS MAJOR? A MULTI-STATE ANALYSIS

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Abstract:

By evaluating a new data set on colleges and universities across six states, this paper characterizes the state of the economics major and identifies institutional characteristics that may influence key features of an economics major. Although majors are similar in terms of credit hour requirements and choice, there are significant differences in course requirements. Variations in requiring calculus, econometrics, international economics, and a capstone course are analyzed. PhD granting public institutions are more likely to require quantitative coursework such as calculus and econometrics, whereas economics departments in the business school are more likely to require international economics. Further, more selective institutions offer a greater share of quantitative and international courses, but relatively fewer microeconomics electives.

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Introduction

Most colleges and universities have a requirement that departments conduct an assessment of their programs, which often includes assessing learning outcomes. For example, standardized tests such as the GRE subject test or ETS Major Field Test can be used to see how students' knowledge stacks up against the national cohort. And a capstone course might also be used to evaluate analytical thinking, research skills, and strength of oral and written communication. However, another important type of assessment is a curriculum review. This requires faculty to evaluate their economics program to determine if it is meeting the needs of their stakeholders and how it is tied to the institution's mission. It might also address how the curriculum compares to the economics degrees offered at competing schools. Unfortunately, this type of investigation is likely to be limited in scope since any such comparison requires departments to collect extensive amounts of data from college websites and catalogs. Even if it is of interest to departments, there is, unfortunately, no simple way that programs can be compared with those at their peer institutions.

This paper seeks to address a major shortcoming in the assessment process by offering the profession an analysis of what constitutes an "economics major." For example, what are the required courses in economics, what quantitative methods are incorporated, how is the focus divided between macroeconomics and microeconomics, are there international components, how much attention is on economics relative to the total number of hours in the program, what degree of choice are students given in terms of designing their own program, is there a capstone experience, are internships required, etc.?

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An analysis of all economics majors offered in a 6-state region is presented in this paper. The goal is to describe the “average” economics majors, as well as highlight key differences found between private and public schools, smaller and larger schools, more exclusive and less exclusive schools, institutions with and without a business major, and programs housed or not housed in a business school. In addition to aiding economics departments with the task of assessment, this research creates a baseline whereby the evolution of the economics major over time can be measured.

The paper offers a literature review, discusses the data set and descriptive statistics, addresses econometric results, and formulates conclusions.

Literature Review

Sigfried (2010) tracked the number of undergraduate economics degrees awarded at American institutions and reports a decrease in the 1990s followed by growth between 2000 and 2008. Sigfried (2012) reported positive growth between 2008 and 2011 ranging from 2.6% to 6.2%. Growth was much higher at public institutions (11%) than private institutions (4%).

Economics departments operate in a competitive market where the large variety of academic majors offers students a lot of choice. So, the quality of the “product” is relevant. Surveys reported in Jones, et al. (2008) indicate that over 78% of students were satisfied with the major. However, satisfaction levels were higher at liberal arts colleges than at state colleges. They were highest where there was open access to the business program and lowest when admission to business was restricted, suggesting that students who were denied admission to business may be choosing the economics major as the next best alternative. Only 28% of students indicated that they felt the information learned was relevant to their career with 59% indicating it was somewhat relevant. Almost two-third (63%) of respondents wanted increased emphasis on real world issues.

Clearly the field of economic education has seen many contributions aimed at exploring questions important to economists and faculty members who teach economics. For example, how can we teach economics more effectively, what impacts students’ success in economics, and how does economics prepare students for postgraduate education or the start of a career? More recently the conversation has taken a more “macroeconomic” approach.

Colander and McGoldrick (2009) suggested that liberal orientation is at risk as programs increase the focus on specialized training and graduate school preparation. They point to the widening gap between the graduate and undergraduate training, suggesting that newly minted PhDs might be ill-trained for undergraduate teaching. The authors offered potential changes to the economics curriculum, from offering different tracks that target “economic science” and “economic policy” separately to revising introductory classes, improving integration of skills and content across the different classes, and increasing focus on best practices. In response, Hill (2009) suggested that a move in the direction of interdisciplinary/multidisciplinary majors can result in too much breadth. The author suggested that depth is a requirement for there to be a value to greater breadth, since it is tied to a student’s ability to reason logically and to approach an issue with “intellectual discipline. Breneman (2009) supported the idea of differentiated economics programs and suggested that it is up to faculty members to create such differentiation. Daly (2009) suggested that the classes taken outside of the economics major can comprise the majority of an economics degree, and these will help promote a liberal focus.

The starting point for any continued conversation likely requires in-depth knowledge of what the economics major actually looks like—what courses are students asked to take, what prerequisites are required, how is the focus divided between the broad areas of economics

(microeconomics, macroeconomics, international economics, quantitative economics), how much flexibility do students have in designing their programs, what proportion of their credits are devoted to economics, what are the quantitative requirements, is an internships and/or capstone experience incorporated, etc.? However, there are only limited studies that collect school and departmental level data.

McGoldrick (2008) investigated the writing activities and research opportunities open to economics students. Almost three-fourths (70%) of departments had writing requirements, some in the form of writing-intensive courses or capstone courses. In almost all departments, students had term paper requirements. Only 40% of departments required econometrics and less than 10% had a research methods course requirement. Liberal arts colleges/universities were more likely to have a capstone experience in the curriculum (64%) than masters-granting institutions (38%) and national universities (31%).

Myers, Nelson, and Stratton (2011) investigated assessment practices of economics programs. Only 63.8% of the 202 schools surveyed had an assessment plan for their undergraduate majors. Course embedded assignments, followed by a senior surveys, were the most popular assessment instruments. Around 47% of departments with a formal assessment plan use a capstone course. More common instruments include assessments embedded into key courses and senior surveys. Use of specific assessment instruments did vary by location of the department (business school or not). For example, senior projects are used far less and standardized exams far more for programs located in a business school.

Johnson, Perry, and Petkus (2012) investigated the econometrics requirement at the 807 institutions in the *U.S. News & World Report* rankings that have an economics major. They found that these 807 schools offer a total of 1,642 different programs for majoring in economics. Just over 40% require econometrics, with 2% of these programs requiring more than one course. More than half of the “national universities” require econometrics. The frequency is lower for masters-granting and undergraduate-only institutions. When looking at “top 10” schools, econometrics is much more frequently required—90% for schools in the “national” ranking and 80% in the “liberal arts” ranking. The frequency drops dramatically below the “top 10.”

There is still the need for more information about what constitutes an “economics major.” For that reason, this paper fills an important gap in information and is the first in a series of that aims at characterizing what is meant by the term “economics major” and how the answers differ in relation to size of the institution, its liberal arts orientation, and its degree of selectivity. This information will help guide departments as they review their own curriculum.

The Dataset

Information was collected on all 4-year comprehensive institutions in a 6-state geographical region to determine where students could pursue an undergraduate degree in economics. Our work was not designed to be a random sample of universities, but rather a focused study of a specific six-state region (our state plus those in close proximity). We found that, in this region, 97 institutions offered a major in economics (53.9%) and 83 did not (46.1%). What resulted is a dataset containing every 4-year college or university that offers a major in economics in Kentucky (16), Maryland (14), North Carolina (20), Tennessee (12), Virginia (28), and Washington DC (7). (Please note that schools that are not comprehensive 4-year institutions—for example, beauty schools, divinity schools, and technical schools—do not appear in the data set in any way. They are *not* included as schools without economics.)

Table 1 offers descriptive statistics for schools with and without an economics major. The data suggest that for schools with economics majors, over half are private institutions (59.8%). However, for schools without an economics major, four-fifths are private schools (80%). On average, schools without an economics major are smaller than those that have one (2708 v. 6578 noting that two extreme outliers bid up the mean school size for institutions without economics majors from 2117 to 2708). Also, schools without an economics major are, on average, less selective. The mean SAT score at the 75th percentile is much lower for schools without economics majors (1063) than for those with economics majors (1218). (Note that some schools required the ACT, so those scores were converted to the comparable SAT scores. And there were 10 open admissions institutions so SAT scores were not available.)

Table 1. Descriptive Statistics for Institutional Variables

	Private Institutions	Number of Undergraduates	Total Enrollment	SAT (75 th percentile)
Schools with Economics Major				
Mean	.60	6,578	8,866	1218
Std. Dev.	.49	6,462	8,994	136.3
Min	0	649	656	940
Max	1	24,145	31,802	1540
Count	97	97	97	97
Schools without Economics Major				
Mean	.80	2708	3,515	1063
Std. Dev.	.41	4,249	6,523	130.7
Min	0	409	469	770
Max	1	28,986	46,312	1450
Count	83	83	83	83

To further investigate schools with an economics major, information was collected on:

- Program variables (describe where the economics program is housed and what degrees are offered at the graduate and undergraduate levels)
- Major variables (describe the undergraduate degrees in economics based on requirements)
- Course offerings (describe the breakdown of courses offered into the primary areas of economics and looks at prerequisites)

In some cases, an institution offered more than one version of a major in economics. For example, a university might offer tracks with a focus on general economics, business economics, international economics, mathematical economics, and occasionally there was a pre-law or public policy-oriented option. The dataset specifically included all of the descriptors for only the general economics track available at each institution (although the data was collected on the total number of tracks offered in a department). We found that the economics requirements differed very little when looking at the other tracks—often the differences between tracks were limited to classes outside of economics (history, political science, math, etc.). Also, in more than one instance, a liberal arts college offered what essentially looked like a business degree under the heading of

economics major. The decision was made to exclude these from the dataset. Table 2 details the particular variables that are present in the dataset.

Table 2. Variables Included in Dataset

PROGRAM VARIABLES
Dummy if school offers a degree in business
Dummy if school offering a degree in business has a concentration in economics
Dummy if school has a school or college of business (not just a department)
Dummy if business and economics are housed together (in business school or dept.)
Dummy if program offers a minor in economics
Number of credits required to complete the minor in economics
Dummy if program offers a master's in economics
Dummy if program offers a doctorate in economics
MAJOR VARIABLES
Number of different tracks students can choose from in the major
Dummy if a Bachelor of Arts is offered
Dummy if a Bachelor of Science is offered
Number of total hours required to complete the major
Number of hours required in economics to complete the major
Number of economics hours that student gets to choose
Dummy if degree incorporates international economics requirement
Dummy if degree incorporates econometrics requirement
Dummy if degree incorporates calculus requirement
Dummy if degree incorporates statistics requirement
Dummy if degree incorporates capstone requirement
Dummy if degree incorporates internship requirement
COURSE OFFERINGS
Number of courses beyond principles in catalog (ignores rotating special topics designation, independent studies, and capstone)
Number of courses beyond principles with micro orientation
Number of courses beyond principles with macro orientation
Number of courses beyond principles with international orientation
Number of courses beyond principles with quantitative orientation
Dummy if there exist intermediate theory prerequisite

As seen in Table 3, of the 97 schools offering a major in economics, 73% have an identifiable school of business (as opposed to simply a department of business). However, 90% offer a degree in business and 29% offer a business degree with a concentration in economics, a possible substitute for the major in economics. (Note that the schools offering a business concentration in economics reflects 32% of schools offering a business degree). Interestingly, economics and business are housed together 62% of the time. Only 26% of schools offer a Masters in economics and only 18% offer a doctorate. As mentioned above, many schools had multiple “tracks” for studying economics. The average was 1.58 tracks per school with a minimum of 1 and

a maximum of 5. Almost all schools that offer a major in economics also offer a minor (91%), with the number of required hours in economics ranging from 12 to 24 (with an average of 18.3).

Table 3. Descriptive Statistics for Program Variables

	Business School	BSBA Offered	BSBA in Econ	Bus/Econ Together	Master's Granting	PhD Granting	# of Tracks	Minor Offered	Minor Hours
Mean	.71	.90	.29	.62	.26	.18	1.59	.91	18.3
Std. Dev.	.46	.31	.46	.49	.44	.38	.85	.29	2.5
Min	0	0	0	0	0	0	1	0	12
Max	1	1	1	1	1	1	5	1	24
Count	97	97	97	97	97	97	97	97	97

As indicated in Table 4, the Bachelor of Arts is offered more frequently than a Bachelor of Science (73% of schools versus 45% of schools), although 20% of the schools offer both options. Economics courses comprise between 15% and 38% of the total credits required for a degree in economics (with a mean of 26%). Departments offer students different degrees of flexibility with respect to choice of classes. For example, in most cases, students were free to choose some number of economics electives from a list of acceptable options. The average economics track allows 41% of all economics coursework to be chosen by the student, although the minimum is 0 (students have no choice) and the maximum is 75%.

Table 4. Descriptive Statistics for Major Variables

	Bachelor of Science	Bachelor of Arts	Econ as % of Total Hrs	% of Econ credits chosen by student
Mean	.41	.77	.26	.41
Std. Dev.	.49	.42	.04	.16
Min	0	0	.15	0
Max	1	1	.38	.75
Count	97	97	97	97

Table 5 details information about particular requirements of the economics major. Just over half of the economics tracks (54%) require a calculus course (generally a business or engineering calculus class—precalculus did not meet this requirement for purposes of the dataset), and almost all tracks (95%) require statistics. Interestingly, econometrics is required in less than half of the tracks (45%). Just over one-fourth of the tracks (27%) have an international requirement, slightly more than half of the tracks (53%) have a capstone requirement (a senior seminar that incorporates some kind of research methods), and only a handful require an internship (2%).

Table 5. Descriptive Statistics for Major Variables (Course Requirements)

	Calculus Required	Statistics Required	Econometrics Required	International Required	Capstone Required	Internship Required
Mean	.54	.95	.45	.27	.53	.02
Std. Dev.	.50	.22	.50	.45	.50	.14
Min	0	0	0	0	0	0
Max	1	1	1	1	1	1
Count	97	97	97	97	97	97

Catalogs were reviewed to understand the basket of courses offered (beyond principles, independent studies, generic special topic designations, and the capstone course) with the results summarized in Table 6. On average, there are 22.2 course offerings, with a minimum of 7 and a maximum of 99. On average, just under half of all course offerings (45%) are micro-oriented, compared to 23% for macroeconomics, 19% for international economics, and only 11% quantitative courses. (Note that a very small number of classes could not be divided into a category, for example, an issues class that incorporate macroeconomics, microeconomics, and international issues.) It should be noted that there is a growing number of macroeconomics courses with an international theme, for example, international monetary policy. These generally were coded as international offerings, meaning that the percentage of courses that are macroeconomics may be understated. Courses labeled as quantitative include econometrics, mathematical economics, game theory, experimental economics, research methods, and modeling. Interestingly, only about one-third of schools (35%) indicate intermediate theory as being a prerequisite for upper level electives courses. And while the actual number of courses with this prerequisite was not recorded in the dataset, it was surprisingly small (generally limited to only a small number of courses and often just one course).

Table 6. Descriptive Statistics for Course Offerings

	Total Course Offerings	% Micro	% Macro	% International	% Quantitative	Intermediate Prerequisite
Mean	22.2	.45	.23	.19	.11	.35
Std. Dev.	14.9	.09	.09	.08	.07	.48
Min	7	.25	.04	0	0	0
Max	99	.71	.63	.4	.27	1
Count	97	97	97	97	97	97

Our empirical analysis contains two sections. Initially we partition the sample into categories and, using sample t-tests, examine mean differences. We focus our analysis on differences in specific major requirements as well as broad economic course requirements. We examine how these features vary based on the following institutional factors: whether the college is public or private, undergraduate economics degree only or master's granting, economics either housed in the business school or not, schools with SAT scores either above or below the median SAT score of the data set, and schools with total enrollments either above or below the data median. Although interesting, we recognize that establishing causation is difficult with such

analysis. Therefore, in the second portion of the empirical investigation, we report the results of regression analyses. For dummy dependent variables, we estimate maximum likelihood Probit models to get partial effects on response probabilities (see Madalla 1986). For all other dependent variables, we use Ordinary Least Squares. All estimates use heteroskedastic robust standard errors.

Comparison of Means

Our data allow us to examine mean differences of various required economic courses as well as the percentage of total graduating credit hours from economic courses and the percentage of economic coursework that is from electives. For comparisons involving binary variables, a Chi-Square test was performed. All other mean comparisons relied on a T-test. Table 7 indicates that economics majors at private colleges are more likely to require a capstone course, but there is no significant difference when looking at calculus, econometrics, and international economics. In contrast, public institutions require more economics as a percent of total credits and provide them with a greater choice over which economics courses to take (measured as a % of total economics credits).

Table 7: Public ($N=38$) vs. Private ($N=59$)

Variable	Public Mean	Private Mean	P-Value
Calculus Requirement	.55	.51	.93
Econometrics Requirement	.42	.44	.56
International Requirement	.24	.29	.51
Capstone Requirement	.42	.61	.02**
Econ Hours as % of Total Credits	.27	.25	.07*
% of Econ Credits that Students Choose	.46	.39	.04**

***=significant at 1%; **=significant at 5%; *=significant at 10%*

Table 8 examines mean differences between universities that only grant undergraduate degrees in economics and those institutions that also have a master's program in economics. Significant differences indicate that a capstone course is more typical at undergraduate-only universities. In addition, master's institutions offer students more opportunity to choose which economics classes to take. There was no difference in the proportion of schools that required calculus, econometrics, or international economics. There was also no difference in the mean number of hours in economics as a percent of total hours in the degree.

Table 8: Undergraduate ($N=73$) vs. Master's Institutions ($N=24$)

Variable	Undergrad Mean	Master's Mean	P-Value
Calculus Requirement	.49	.63	.13
Econometrics Requirement	.44	.42	.84
International Requirement	.29	.21	.16
Capstone Requirement	.60	.33	.01**
Econ Hours as % of Total Credits	.26	.26	.62
% of Econ Credits that Students Choose	.40	.47	.04**

***=significant at 1%; **=significant at 5%; *=significant at 10%

Interesting mean differences appear when comparing universities where economics is or is not housed in the business School. (Note that for this comparison we included all institutions, even those that did not have a business school.) Table 9 shows that economics departments within the business school are more likely to require international economics, but they are less likely to require calculus. Economics programs housed in a business school offer students less choice over the economics courses that they take.

Table 9: Economics not in B-School ($N=38$) vs. Economics in B-School ($N=59$)

Variable	Not in B-School Mean	In B-School Mean	P-Value
Calculus Requirement	.63	.46	.10*
Econometrics Requirement	.47	.41	.52
International Requirement	.05	.41	.00***
Capstone Requirement	.53	.54	.88
Econ Hours as % of Total Credits	.26	.26	.80
% of Econ Credits that Students Choose	.46	.38	.01***

***=significant at 1%; **=significant at 5%; *=significant at 10%

Partitioning the sample into “low” and “high” SAT score schools using the median SAT score of 1210 also yields insights. As shown in Table 10, below median SAT scoring institutions are more likely to require international economics, but they provide economics majors with less opportunity to choose which economics courses are taken to meet degree requirements. Surprisingly, there are no differences related to calculus, econometrics, a capstone experience, or percentage of total degree hours that must be taken in economics.

Table 10: Below Median SAT ($N=49$) vs. Above Median SAT ($N=48$)

Variable	Low SAT Mean	High SAT Mean	P-Value
Calculus Requirement	.49	.56	.02
Econometrics Requirement	.47	.40	.62
International Requirement	.43	.10	.00***
Capstone Requirement	.51	.56	.94
Econ Hours as % of Total Credits	.26	.26	.46
% of Econ Credits that Students Choose	.35	.48	.00***

***=significant at 1%; **=significant at 5%; *=significant at 10%

The data were also separated at the median enrollment size. In Table 11 we see that larger schools are no more likely to require calculus and econometrics than smaller schools. However, smaller schools are more likely to require international economics and a capstone course. Larger schools are more likely to give students more choice over which economics courses are taken to meet economics requirements. This may be because large schools typically have greater course offerings, which would naturally encourage them to allow students greater course flexibility in their major.

Table 11: Below Median Size ($N=50$) vs. Above Median Size ($N=47$)

Variable	Small School Mean	Large School Mean	P-Value
Calculus Requirement	.50	.55	.17
Econometrics Requirement	.40	.47	.76
International Requirement	.34	.19	.01*
Capstone Requirement	.74	.32	.00***
Econ Hours as % of Total Credits	.26	.26	.31
% of Econ Credits that Students Choose	.37	.47	.00***

***=significant at 1%; **=significant at 5%; *=significant at 10%

Overall, our comparison of sample means reveals several significant differences. Calculus is more likely to be required in economics tracks from economics departments not housed in the business school. However, exclusivity (as measured by SAT), size, and whether the institution is masters granting do not yield any significant differences in the calculus requirements. We were also surprised that we did not see any differences in means related to the econometrics requirements. International economics is more likely to be required for departments within the business school at smaller, less selective (based on SAT scores) colleges and universities. A capstone course is more prevalent at small, private institutions that only offer economics degrees at the undergraduate level. There were no significant differences in the economics credits as a percentage of the total credits required for the degree. However, there were many significant differences related to the percent of the economics requirements that gets to be chosen by students. This percentage was higher for larger, more selective, public, masters-granting schools where economics is not in the business school.

Regression Analysis

The first set of regression results utilizes a Probit approach using robust standard errors in order to see what variables impact the probability of an economics degree program requiring calculus, econometrics, international economics, or a capstone course. In all four cases, the probability of a specific course being required is a function of a set of core variables, the state dummy variables, and any relevant interaction variables as follows:

$$\text{Prob (course X)} = f\{\text{core variables, state dummies, interaction variables}\}$$

The set of core variables includes: whether the school is private, SAT scores, if business and economics are housed together, if the department offers a doctorate, if the department offers a bachelor of science, the number of tracks offered in the economics major, and economics as a % of the total credits required for graduation. Coefficients for state dummy variables are suppressed and available upon request.

The results presented in Table 12 suggest that the probability of calculus being required in the general economics curriculum increases if the department offers a doctorate in economics. The probability of requiring calculus decreases as more tracks are offered in the program. It is possible that schools with multiple tracks in economics add calculus to a different track that has a greater quantitative focus. The probability of requiring calculus also decreases as economics comprises a larger share of the total credits required for graduation, since there would be fewer degrees of freedom. Whether a school is private, its level of selectivity as measured by SAT scores, if

economics and business are housed together, and if a B.S. degree is offered do not appear to be determining factors.

Table 12: Calculus Requirement

Variable	Coefficient	Standard Error	P> Z
Private	-.1528	.1291	.244
SAT	.0004	.0005	.498
Bus and econ together	-.1290	.1227	.300
PhD	.5087	.0844	.000***
Bachelor of Science	-.1598	.1173	.177
Number of tracks	-.1219	.0667	.068*
Econ hrs as % of total credits	-4.336	1.8841	.021***

$N=97$; $R^2=.23$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

As indicated in Table 13, the probability of a general economics degree including econometrics decreases when a school is private but increases when economics takes up a greater share of total credits (since there would be more opportunity to offer additional economics courses). The interaction term suggests that for private institutions, the higher the SAT score then the more likely econometrics will be required.

Table 13: Econometrics Requirement

Variable	Coefficient	Standard Error	P> Z
Private	-.9950	.0171	.028**
SAT	-.0009	.0007	.187
Bus and econ together	-.0114	.1180	.923
PhD	-.0260	.1896	.891
Bachelor of Science	.1474	.1247	.241
Number of tracks	.0254	.0594	.669
Econ hrs as % of total credits	5.4614	1.7647	.002***
SAT x Private	.0021	.0009	.025**

$N=97$; $R^2=.21$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

As seen in Table 14, the probability of requiring international economics in the general economics track decreases as SAT increases and as number of tracks available to choose from decreases. Again, this latter result may be driven by the presence of a specialized track focusing on international issues. However, it increases when business and economics are housed together in a school or department. This, perhaps, reflects a service objective of economics departments housed in business schools where international economics/issues may be emphasized or required.

Table 14: International Requirement

Variable	Coefficient	Standard Error	P> Z
Private	.0860	.0706	.234
SAT	-.0011	.0003	.001***
Bus and econ together	.2447	.0628	.001***
PhD	-.0412	.0949	.700
Bachelor of Science	.0036	.0637	.955
Number of tracks	-.1036	.0525	.044**
Econ hrs as % of total credits	.0015	.8174	.999

$N=97$; $R^2=.27$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

As the results in Table 15 suggest, the probability of a capstone course being included in the general economic curriculum increases if there is a PhD program in economics at the institution. However, this impact appears to be lower for institutions with SAT scores above the median. Thus, the results indicate that the negative impact of being a private institution on the likelihood of offering a capstone class is lower for more selective colleges and universities.

Table 15: Capstone Requirement

Variable	Coefficient	Standard Error	P> Z
Private	.1636	.1219	.186
SAT	.0005	.0005	.357
Bus and econ together	-.0573	.1264	.651
PhD	.9743	.0470	.007***
Bachelor of Science	-.0930	.1210	.444
Number of tracks	.0808	.0663	.223
Econ hrs as % of total credits	-1.3514	1.5161	.373
SAT x PhD	-.0041	.0014	.003***

$N=97$; $R^2=.19$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

A second set of regression analyses were performed to determine what variables influence the course offerings found in the catalog. Courses were divided into 4 categories (microeconomics, macroeconomics, international, quantitative) with the goal of determining how institutional variables impacted the percentages of courses falling into each category. The following OLS specification was employed for each of the 4 groups:

$$\text{Percent (orientation)} = f\{\text{Private, SAT, Bus/Econ together, Masters, Total enrollment, State dummies}\}$$

Data reported in Table 16 indicates that the percent of courses that are microeconomic in orientation range from 25 to 71% for the 97 institutions in the dataset. Regression results reported in Table 16 indicate that selectivity (measured by SAT) has a small, negative impact on the proportion of course offerings that have a microeconomic orientation, meaning schools that are more selective have a larger proportion of courses that are not considered to be microeconomics.

In addition, the size of the school, as measured by total enrollment, has a small but positive impact on the proportion of courses that are microeconomic in orientation.

Table 16: % of Courses with Microeconomic Orientation

Variable	Coefficient	Standard Error	P> Z
Private	.0069	.0276	.805
SAT	-.0002	.0001	.034**
Bus and econ together	-.0102	.0205	.621
Masters	-.0292	.0269	.281
Total enrollment	4.54e-06	1.55e-06	.004***

$N=97$; $R^2=.15$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

The percent of macroeconomics courses offered in the catalog range from 4 to 63% across institutions. Regression results reported in Table 17 suggest that, while SAT is not a factor, a larger total enrollment results in a smaller proportion of courses that fall into the category of macroeconomics. Given that macroeconomics and microeconomics courses generally comprise the bulk of an economics curriculum, it is not surprising that if one increases the other will decrease.

Table 17: % of Courses with Macroeconomic Orientation

Variable	Coefficient	Standard Error	P> Z
Private	.0087	.0231	.707
SAT	-.0000	.0001	.723
Bus and econ together	.0006	.0194	.977
Masters	-.0087	.0216	.688
Total enrollment	-2.86e-06	1.22e-06	.021**

$N=97$; $R^2=.27$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

At the suggestion of a reviewer, we investigated whether number (as opposed to proportion) of courses in microeconomics/macroeconomics varies with enrollment, with the speculation that as programs grow in enrollment, the growth in classes is more oriented toward microeconomics. To do this, number of courses was used at the dependent variable. For both microeconomics and macroeconomics, enrollment has the expected sign (positive for micro and negative for macro). However, neither result was statistically significant.

As presented earlier, the percent of courses that are considered to be international in focus ranges from 0 to 40% across institutions. Regression results in Table 18 suggest that selectivity and having a Masters program (significant only at the 10% level) increases the proportion of course offerings that are international in orientation. Total enrollment has a small but negative impact. Based on our Probit analysis, we anticipated that economics being housed with business might increase the proportion of international-themed course offerings. Although the sign of the coefficient supports this, the result is not statistically significant.

Table 18: % of Courses with International Orientation

Variable	Coefficient	Standard Error	P> Z
Private	-.0372	.0236	.119
SAT	.0001	.0001	.013**
Bus and econ together	.0148	.0160	.356
Masters	.0379	.0228	.100*
Total enrollment	-3.22e-06	1.34e-06	.019**

$N=97$; $R^2=.18$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

Finally, regression analysis was used to investigate what variables impact the share of course offerings that were quantitative in orientation. Data previously reported indicate that the proportion ranged from 0 to 27% (with the caveat that these courses did not include basic mathematics and statistics and captured instead subjects like econometrics, mathematical economics, game theory, etc.). Results in Table 19 indicate that the proportion of courses with a quantitative orientation increase the more selective is the institution (as measured by SAT).

Table 19: % of Courses with Quantitative Orientation

Variable	Coefficient	Standard Error	P> Z
Private	-.0003	.0155	.985
SAT	.0001	.0000	.042**
Bus and econ together	-.0066	.0135	.626
Masters	-.0026	.0162	.873
Total enrollment	1.56e-06	9.47e-07	.103

$N=97$; $R^2=.18$; ***=significant at 1%; **=significant at 5%; *=significant at 10%

Conclusion

Using a unique set of data, this paper describes the similarities and differences in economics majors across academic institutions in a six state region. Although majors are broadly similar in terms of credit hour requirements and, to a lesser degree, choice, there are significant differences in specific course requirements. Large variations in requiring calculus, econometrics, international economics, and a capstone course are documented and analyzed. Overall, it appears that PhD granting public institutions are more likely to require quantitative coursework such as calculus and econometrics, whereas economics departments housed in the business school are more likely to require international economics. In terms of elective offerings, more selective institutions (SAT scores higher than the sample median) offer a greater share of quantitative and international courses, but relatively fewer microeconomics courses. In the future, regular updates of this data set will provide insight into the evolution of the economics major over time.

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