THE ECONOMICS MAJOR: WHO OFFERS IT AND WHAT IS REQUIRED OF STUDENTS?

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Abstract

This paper econometrically investigates what variables impact the probability a college/university offers an undergraduate major in economics, multiple tracks within the major, or economics minor. Data is collected from four-year, comprehensive institutions, with control variables accounting for whether the school is public, year founded, enrollment, if the school offers a business degree, and selectivity measures. In addition, data is collected on the requirements of economics majors across institutions. Regression is used to determine what institutional variables influence specific track requirements, such as math/statistics, econometrics, capstone course, and internship. Given the unique data set that has been created, this paper offers new information and several conclusions about the economics major.

Key Words: economics major, economics minor, course requirements, undergraduate, regression

JEL Classification: I21, I23, I29

Introduction

The rise of economics as an academic discipline dates back to 1870. Before this, the occasional political economy course was buried in other departments, such as history or literature, or was provided by clergymen delivering "moral philosophy." Economists were generally self-trained and often travelled to Europe for further study. In 1871 and 1872, respectively, Harvard and Yale established chairs that included "political economy" in the title. The field was further solidified when Harvard, Yale, and Johns Hopkins provided formal opportunities for graduate students to study political economy. By 1878, all three had awarded a Ph.D. in political economy (Parrish, 1967), and in 1886, Harvard began publishing the *Quarterly Journal of Economics*, the first journal of economics in the Anglophone world (Harvard Department of Economics, 2022).

Economics has become a mainstream academic discipline with 48,297 degrees awarded in 2019 by 806 4-year, not-for-profit institutions, 45% of which were public (Data USA 2022). In that year, there were 791 public and 1,621 private, not-for-profit, 4-year institutions offering majors in economics (Lederman, 2021). This suggests that approximately 46% of all public, 4-year institutions and 27% of private, not-for-profit, 4-year institutions (including schools of art, divinity, etc.) offered a major in 2019. Not surprisingly, the top five producers of economics majors (degrees conferred) were large, public institutions—UCLA (799), UC-Berkeley (745), Wisconsin-Madison (734), Texas (611), and UC-Santa Barbara (599). However, several elite private schools

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ranked amongst the top 20—NYU (#6), University of Chicago (#15), Boston College (#17), Boston University (#18), and Columbia University (#19) (Data USA 2021). Students can also study economics at some of the country's smallest institutions. Our data collection revealed 41 colleges with undergraduate enrollments below 1,000 (22% of sample) offering an economics major.

What characteristics of colleges or universities increase the probability of offering an undergraduate economics major? Are larger institutions more likely to offer an economics major? Is exclusivity (SAT scores or acceptance rates) a determining factor? Does having a business degree (a competitor of the economics major) influence the probability? Given the historical evolution of the major, are older institutions more likely to offer opportunities in economics? This study investigates these questions. Additionally, our investigation focuses on paths (termed "tracks") to a degree in economics, many of which are thematic and target specific audiences. The most frequently offered track was general economics, but others offered a more specific focus, such as international and development economics, financial economics, health economics, public policy, and environmental or resource economics. Some tracks combined economics with other disciplines such as math/analytics, political science, or psychology/neuroscience. Interestingly, a number of institutions offered only one track, with observations not limited to smaller schools. This suggests that, while enrollment might matter, other variables influence decisions about economics programs. Perhaps the need to compete with business, accommodate graduate-school bound students, or appeal to students in other social science fields leads to more tracks. We also found that not all institutions offered an economics minor, even when offering economics courses or a major. There was variation in what constituted core classes in the economics major. Is calculus more likely to appear in the core for more elite schools? Are smaller institutions more likely to require a capstone experience? Are internships more commonly a part of the private school or business school experience? We investigate these questions, as well.

This study started with creation of a unique data set comprised of all 4-year, reasonably comprehensive, not-for-profit institutions in 24 states. We gathered both institutional variables and details of every track offered by schools with an economics major. Linear probability and probit models are used to identify what factors influence the decision to offer an economics major, additional tracks leading to an economics degree, and economics minor. We also explore what variables explain the requirements of economics degrees (e.g., quantitative requirements, capstone courses, or internships). Departments contemplating revisions to their curriculum will benefit from the track-level data presented.

Literature review

Siegfried (2021) analyzed 297 institutions and found 86% growth in the number of economics degrees awarded between 2001 and 2020. Interestingly, 37% of those students graduated with a second degree as well. Marshall and Underwood (2022) conclude that quantitative economics degrees awarded increased dramatically between 2012 and 2019. We find no literature investigating *who* offers an economics major and limited information on what is required of students. There is more focus on skill requirements, core requirements, the discouraged business major effect (related to economics enrollment), and courses designed to enhance skills, such as the capstone and internship.

Skills and requirements

Hansen (2001) described six proficiencies that students of economics should have at graduation—ability to "access existing knowledge, display command of existing knowledge, interpret existing knowledge, interpret and manipulate economic data, apply existing knowledge, and create new knowledge." He suggested students generally display mastery of the first five but struggle with the last, leading him to advocate for a research experience in the major. Myers, Nelson, and Stratton (2011) explored learning outcomes of economics major and found that critical thinking skills, using economic data appropriately, and applying existing knowledge were highly valued. Zaho et al. (2018) surveyed students who completed internships at AACSB institutions. Nearly all expressed an interest in learning to combine classroom knowledge with creativity and soft skills essential in the workplace. Over half felt that professors limited creativity by requiring assignments be done exactly as advised; only 38% said that professors encouraged them to apply creativity. Urquía-Grande and Pérez Estébanez (2020) found that employers of interns noted a disconnect between students' cognitive skills, their ability to apply what they know, and their ability to make creative and unique contributions to the company.

Professors understand that quantitative/math abilities influence success in economics. Formal studies investigate if this is true at the principles level, but samples involve more than just students of economics. McCrickard et al. (2018) found that the Aplia Math Assessment, which tests fundamental skills such as reading graphs, understanding slopes and areas, etc., was a significant predictor of success in introductory macroeconomics. Darlington and Bowyer (2017) surveyed economics students from the United Kingdom on how they felt A-level exams (standardized tests in courses considered preparation for math-based disciplines in college) readied them for university study. The authors acknowledge selection bias, as students who did well were more likely to respond. Amongst students who completed units in statistics, 56.1% reported content as very helpful. Roughly 40% who completed units in "pure" mathematics (real analysis, geometry, algebra, calculus) regarded them as useful. When asked for overall assessments, most participants found their preparation through the UK programs were worthwhile for the study of economics.

Monteiro and Lopes (2007) compared economics degrees in the US and Europe to find that six courses were commonly required—introduction to economics, microeconomics, macroeconomics, econometrics, a math course, and a statistics course. Bosshardt, Watts, and Becker (2013) found that over 90% of responding institutions required microeconomics, macroeconomics, and statistics. Furthermore, 41% of Bachelor of Arts and 56% of Bachelor of Science degrees in economics required econometrics. Petkus, Perry, and Johnson (2012) found that schools appearing in the 2010 US News & World Report Best Colleges ranking offered an econometrics course, even if not required. Marks and Lehr (2014) conducted a six state analysis of economics major requirements—95% of programs required statistics, 54% calculus, and 53% a capstone course. Econometrics, international economics, and internships were required less than half of the time, with internships being required in only 2% of programs. Bosshardt and Walstad (2017) reviewed over 15,000 transcripts of students graduating from US institutions in 2007-2008 and found that economics students took an average of 8.3 economics courses, while business majors completed an average of 2.5 courses. The most commonly completed courses included microeconomics, macroeconomics, econometrics, and international economics. More recently,

Marshall and Underwood (2022) found that over half of institutions offering economics provided both a traditional and quantitative option, with differences in requirements for introductory and multivariate calculus, linear algebra, and basic and advanced econometrics. Additionally, starting in 2016, international students pursuing STEM degrees could work in the USA for three years after graduation, as opposed to only one. Departments had an incentive to redesign and designate their economics degrees as STEM to attract foreign students, potentially increasing the quantitative focus seen in the past decade.

Discouraged business major effect

Increased mathematical requirements of economics graduate programs and importance in the admissions process (see Jones et al., 2020; Milkman and Marjadi, 2019) has potentially influenced undergraduate offerings and requirements in economics. Competition between economics and degrees in business (and other majors) might be influential, as well. A common assumption is that economics is a likely second choice for students who fail to meet business program entry requirements, termed the "discouraged business major" effect. Asarta and Butters (2012) determined this was not the driving force in their economics program (housed in Arts & Science), as only 9% of students did not meet qualifications for the Economics degree offered in the business school. Likely, students were choosing take advantage of the greater flexibility of studying economics in Arts & Science. Emerson and McGoldrick (2019) reviewed student transcripts for 6 institutions over 23 years. Results showed that 83% of students graduating in economics switched into economics, with the majority coming from business, engineering, science, and mathematics. GPA and SAT scores suggested that weak students in these fields switched into the economics major.

Capstone courses and internships

Over two decades ago, Hansen (2001) advocated for a research-oriented capstone course to teach economics students about creation of knowledge. The specific model of the economics capstone course has evolved over time. Siegfried (2001) recommended a senior honors thesis be completed with a faculty advisor for the duration of a student's final 3 semesters, with requirements of a proposal, substantial data collection, and final paper worthy of submission to a scholarly journal. Klein (2013) recommended a single semester course with requirements that paralleled those of Siegfried (2001). However, Klein envisioned a capstone that was combined with an econometrics course, allowing total credits to stay within state mandates and with a more realistic student to teacher ratio. More recently, Li and Simonson (2016) recommended a proposal, literature review, data work, analysis, and a final paper presentation, where students are guided by the professor through the process. Given their program's implementation at a small, private university, the professor could meet with students on a frequent and individual basis. Marks and Lehr (2014) reported that only 53% of economics programs in a six state data set included a capstone course.

Economics programs have also increased the skills of students through internships. In a pilot study, Cameron et al. (2013) found that internships had a positive influence on students' self-reported levels of satisfaction, self-efficacy, and perception of their general work-place skill set. Authors acknowledge small sample size and short timeframe, suggesting need for more analysis.

Despite potential usefulness, Marks and Lehr (2014) determined that only 2% of institutions in a six state region required internships for economics majors. Decloure, Karst, and Longoria (2018) developed a model to prepare students for internships and the workforce, including a three-step process emphasizing career readiness, networking, and immersion experience and advocate for implementation of similar programs and emphasis on internships at other institutions. Urquıa-Grande and Perez Estebanez (2020) collected student, employer, and academic advisor opinions related to internship success. Students valued teamwork, oral communication skills, and creativity learned in college but found it difficult to apply course work to their internship experience, as company expectations did not match course outcomes. Employers valued social skills and adaptation to the company but claimed creativity and cognitive skills could be improved.

Data and methodology

As is evident in the literature review, only limited information is known about economics majors across institutions in the US. This study expands on the knowledge by exploring the following key questions:

A. What variables influence the probability an institution offers an economics major/minor?
B. What variables impact the number of program tracks students may choose between?
C. What factors explain specific requirements of the economics major?

Data set

This study involved collection of a unique data set capturing information about every institution in 24 randomly selected states that represented all official Census Bureau regions. Information was retrieved primarily from college websites and undergraduate catalogs. To ensure data accuracy, more than one person coded each institution and discrepancies were investigated. Observations were limited to 4-year, not-for-profit, reasonably comprehensive institutions with a face-to-face presence. Schools with very few majors (for example, only education) and specialty schools offering only divinity or art degrees were omitted, leaving 409 institutions[2]. Of these institutions, 58.2% (238) had a major in economics and 66% offered a minor. Just over 41% of institutions are public, and schools varied greatly in enrollment (360 to over 61,000) and selectivity (acceptance rates ranging from 6% to 100%). Table 1 summarizes the institutional characteristics collected.

[2] We were on the fence about one institution included in Table 1, given it was only somewhat comprehensive. Without this observation, minimum SAT measures change to an average of 820, 25th percentile of 740, 75th percentile of 900, and range of 60. However, regression results do not change in significance or magnitude of estimates with inclusion of the observation, so it was retained.

Table 1. Descriptive statistics of institutional characteristics (N=409)

Variables	Definitions	Mean	Std. Dev.	Min	Max
Econ major	=1 if institution offers an econ major.	0.582	0.494	0	1
Minor	=1 if institution offers an econ minor.	0.660	0.474	0	1
Public	=1 if institution is public.	0.416	0.493	0	1
Under. enrollment	Undergrad enrollment for institution.	5856.4	7375.6	350	49209
Total enrollment	Total enrollment for institution.	7509.7	9520.9	360	61391
SAT average	Average SAT score for institution.	1129.7	122.5	575	1520
SAT 25th	SAT at the 25th percentile.	1027.6	125.1	550	1470
SAT 75th	SAT at the 75th percentile.	1231.4	123.8	600	1570
SAT range (75-25)	Interquartile range of SAT scores.	203.8	44.4	50	409
Acceptance rate	Acceptance rate for institution.	69.4	19.8	6	100
Age	Age of institution (since founded).	130.5	46.2	16	325

Table 2 illustrates that the 409 institutions are distributed across Census Bureau regions. Regions serve as control variables in regression analysis, in lieu of state controls, to avoid perfect identification. For example, Wyoming has only one university in the data set, so a state dummy is a perfect predictor.

Table 2. Regional level data on institutions with economics majors (N=409)

Region	Without Major	With Major	Total
Midwest	73 (40.1%)	108	**182**
Northeast	16 (37.2%)	27	**43**
South	63 (51.2%)	60	**123**
West	19 (31.1%)	42	**61**
TOTAL	**171 (41.8%)**	**238**	**409**

Table 3 details the programmatic variables collected. Out of 409 schools, 92.2% offered a business degree. Of this subset, 21.4% (0.922*0.232) offered a business economics track, 64.7% (0.922*0.702) have a formal college or school of business (as opposed to department), and 37.9% (0.922*0.411) were AACSB accredited. A master's in economics is offered at 13.9% and a doctorate at 9.5% of all institutions, translating into 23.9% and 16% of programs offering an undergraduate degree in economics. There is only one institution offering a doctorate in economics but not an undergraduate degree. All institutions offering a master's in economics also offer the undergraduate major.

Table 3. Descriptive statistics of programmatic variables (N=409)

Variables	Definitions	Mean	Std. Dev.	Min	Max
Business degree	=1 if institution offers a degree in business.	0.922	0.269	0	1
Business econ	=1 if institution offers business econ. concentration.	0.232	0.423	0	1
Business school	=1 if institution has school/college of business.	0.702	0.458	0	1
AACSB	=1 if business is AACSB accredited.	0.411	0.493	0	1
Masters	=1 if institution offers a Master's in economics.	0.139	0.347	0	1
PhD	=1 if institution offers a PhD in economics.	0.095	0.294	0	1
Tracks	Number of different tracks offered in economics.	1.210	1.521	0	9
Minor credits	Number of credits required for economics minor.	12.71	9.622	0	32

Methodology

The first investigation focuses on the probability an institution offers an economics major. This was explored using the following model, where "i" denotes the college or university:

$$Y_i = \beta_0 X_i + \beta_1 \theta_i + \beta_2 Z_i + \varepsilon_i$$

Y_i captures whether or not institution i offers an economics major (binary dependent variable), X_i is a vector of i's institutional characteristics (subset of Table 1), and θ_i is a vector of programmatic variables (subset of Table 3), including if the institution offers a degree in business. Having a degree in business is also interacted with whether or not the business degree offers a concentration in economics, if business has AACSB accreditation, and if it is housed in a formal school of business. Finally, Z_i is a vector of dummy variables capturing regional effects since state dummies are perfect predictors at times and consume many degrees of freedom. A related model investigates the probability of offering an economics minor (Y_i becomes a binary variable indicating a minor). Additional models investigate what factors influence the number of tracks offered by institutions and also specific requirements—econometrics, capstone course, internship, and specific quantitative courses.

Results

Who offers an economics major?

Linear probability models (LPM) and marginal effects from probit models were used to analyze the factors that impact the probability an institution offers an economics major. In Model 1, probability of offering a major is a function of institutional variables—if the school is public, average SAT scores (measured in 100s), natural log of undergraduate enrollment (allowing for nonlinearities), natural log of age of the institution (allowing for nonlinearities), and the ratio between graduate and undergraduate students.[3] All models employed regional dummy variables with standard errors clustered by state in lieu of state controls, since some state variables perfectly predict economics major in the probit analysis. Interestingly, the proportion of institutions within a state with an economics major ranges from 33% (Alabama) to 100% (Rhode Island with 7 of 7 and, trivially, Wyoming with 1 of 1). Since clustered standard errors result in higher standard errors and lower t-statistics than robust standard errors, this approach sets a higher bar for hypothesis testing.

Table 4 details regression results for specifications that differ by programmatic variables. Specification 1A captures whether the institution offers a degree in business, a discipline that competes with economics. Specification 1B interacts the business major variable with others that might be influential—if business offers a concentration in economics, is AACSB accredited, and is housed in an identifiable school/college of business. Interactions allow having a business degree to impact the probability of offering an economics major differently, based on opportunity to study business economics, indications of quality/prestige, and visibility. For example, an institution offering a business degree might impact the probability of offering a degree in economics, but the impact might differ in magnitude if business is AACSB accredited. Note that interactions fall out

[3] A specification using enrollment and enrollment^2 was tested and produced similar results.

for the handful of institutions that are only AACSB accredited for a graduate program and do not have an undergraduate business program. This is the intended effect since we speculate that graduate programs in business do not impact the probability of offering an undergraduate economics major.

For ease of discussion, the LPM results are interpreted, and large differences from probit results are noted. Results for model 1A suggest that an institution being public or private had no bearing on the probability of offering an economics major, but size of institutions did. For every 10% increase in enrollment, there is a 1.52% increase in probability of offering an economics major. As institutions get 10 years older, the probability increases by 2.12%. Average SAT score is highly significant across models, where an increase of 100 points raises the probability of offering an economics major by 14.6%. We speculated that SAT range (interquartile range) might matter, as it reflects heterogeneity/homogeneity in student abilities, but it did not. Also, acceptance rate—another measure of exclusivity that is not highly correlated with SAT average—was not a significant factor. The proportion of graduate to undergraduate students did matter. When the ratio increases by .1, the probability of offering an economics major decreases by 1.25%. Having a competing business degree has no influence, unless the degree is AACSB accredited (model 1B), where accreditation increases the probability of an economics major.

Table 4. Probability of offering an economics major

Variables	LPM (1A)	Probit (1A)	LPM (1B)	Probit (1B)
Public	-0.0569	-0.0226	-0.0826	-0.0485
	(0.061)	(0.053)	(0.056)	(0.050)
ln (Undergrad enrollment)	0.152$^{\#\#}$	0.143$^{\#\#}$	0.114***	0.119$^{\#\#}$
	(0.031)	(0.026)	(0.036)	(0.033)
ln (Age of institution)	0.212***	0.193$^{\#\#}$	0.218***	0.191$^{\#\#}$
	(0.060)	(0.054)	(0.058)	(0.053)
SAT average (100s)	0.146$^{\#\#}$	0.164$^{\#\#}$	0.137$^{\#\#}$	0.154$^{\#\#}$
	(0.016)	(0.016)	(0.014)	(0.015)
SAT range (75 -25)	-0.000236	-0.000299	-0.000171	-0.000250
	(0.000)	(0.000)	(0.000)	(0.000)
Acceptance rate (in %)	0.000103	-0.00161	0.0000247	-0.00153
	(0.001)	(0.001)	(0.001)	(0.001)
Grad/undergrad ratio	-0.125$^{\#\#}$	-0.107***	-0.128$^{\#\#}$	-0.108***
	(0.031)	(0.033)	(0.030)	(0.037)
Business degree	0.0757	0.120	0.0358	0.0955
	(0.080)	(0.088)	(0.081)	(0.085)
Business * Business Econ	---	---	-0.0281	-0.0312
			(0.053)	(0.048)
Business * AACSB	---	---	0.173***	0.108***
			(0.046)	(0.041)
Business * Business School	---	---	-0.0120	-0.00234
			(0.067)	(0.055)
Midwest region	0.101**	0.0983**	0.122**	0.109**
	(0.047)	(0.043)	(0.049)	(0.045)
Northeast region	0.0671	0.0817	0.0819	0.0900
	(0.083)	(0.079)	(0.080)	(0.077)
West region	0.145**	0.123**	0.159**	0.135**
	(0.063)	(0.061)	(0.069)	(0.068)
Observations	409	409	409	409
R-square/Pseudo	0.354	0.334	0.369	0.342

Standard errors in parentheses; McFadden's R-square is reported for probit models.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, $^{\#\#}$ $p < 0.001$

Model 1 was applied to a stratified data set, where we separated institutions with and without graduate schools, as seen in Table 5. Results were generally similar with a couple of exceptions. Enrollment is not a significant factor for undergraduate-only institutions but is for institutions with graduate schools. Age of the institution is significant in all specifications but differs in level of significance and magnitude of impact. AACSB increases the probability of an economics major at institutions with graduate programs but not for undergraduate-only institutions. SAT average continues to be highly significant for both subgroups.

Table 5. Probability of offering an economics major-undergraduate only vs graduate

Variables	LPM Undegrad. only (1C)	Probit Undergrad. only (1C)	LPM With graduate (1D)	Probit With graduate (1D)
Public	-0.0593	-0.680	-0.0617	-0.0317
	(0.098)	(0.422)	(0.071)	(0.063)
ln (Undergrad enrollment)	0.154	0.106	0.110***	0.116##
	(0.091)	(0.065)	(0.038)	(0.034)
ln (Age of institution)	0.370##	0.226*	0.188**	0.175***
	(0.071)	(0.124)	(0.072)	(0.064)
SAT average (100s)	0.176##	0.184##	0.132##	0.147##
	(0.030)	(0.027)	(0.022)	(0.020)
SAT range (75 -25)	-0.00145	-0.00107	-0.0000879	-0.000192
	(0.002)	(0.001)	(0.000)	(0.000)
Acceptance rate (in %)	0.00204	-0.000743	0.0000340	-0.00143
	(0.003)	(0.002)	(0.002)	(0.001)
Grad/undergrad ratio	---	---	-0.0933***	-0.0848**
			(0.033)	(0.037)
Business degree	-0.0520	-0.638	0.0948	0.176*
	(0.127)	(0.402)	(0.088)	(0.093)
Business * Business Econ	-0.0534	0.150	-0.0176	-0.0228
	(0.128)	(0.118)	(0.054)	(0.050)
Business * AACSB	0.0930	0.0426	0.169***	0.108**
	(0.209)	(0.104)	(0.050)	(0.045)
Business * Business School	-0.121	-0.135	0.0392	0.0399
	(0.115)	(0.088)	(0.085)	(0.071)
Midwest region	-0.00976	0.0395	0.137**	0.122**
	(0.121)	(0.069)	(0.055)	(0.052)
Northeast region	-0.253*	0.0715##	0.140*	0.134*
	(0.140)	(0.009)	(0.080)	(0.078)
West region	0.0362	0.164	0.173**	0.146**
	(0.122)	(0.160)	(0.072)	(0.070)
Observations	61	61	348	348
R-square/ Pseudo	0.624	0.701	0.347	0.317

Standard errors in parentheses; McFadden's R-square is reported for probit models.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ## $p < 0.001$

Who offers an economics minor?

Hours required for an economics minor ranged from 12 to 32 in this sample. Table 6 presents results related to the probability of offering an economics minor. Not surprisingly, 91.5% of institutions with an economics major also offer an economics minor. However, only 31.2% of those without a major offer a minor. Analysis was performed using all institutions and regional dummies, with standard errors clustered by state. Note that a probit analysis cannot be employed with specification 1E because for schools without an economics major, lack of a business degree perfectly predicts lack of an economics minor.

Perhaps the most interesting result is the coefficient on economics major in version 1C. As expected, it is highly significant. Having an economics major increases the probability of an economics minor by 56.5% in LPM or 40.3% in probit. While these are large, we anticipated an even greater impact, since departments with an undergraduate degree can design a minor at zero cost (as it is usually a subset of the major). In Models 1D and 1E, being a public institution reduces

the probability of having an economics major by 11% for LPM and 8.6% for probit, when analyzing only schools with an economics major. Acceptance rate has a negative impact except for with schools without the economics major—if acceptance rate decreases by 10% (more exclusive), the probability of offering an economics minor increases marginally by .0262% when employing the data set with all schools. A similar result appears in all versions except for schools without an economics major (1E).

Table 6: Probability of offering an economics minor (Models 1C, 1D, 1E)

Variables	All Schools LPM (1C)	All Schools Probit (1C)	With Major LPM (1D)	With Major Probit (1D)	Without Major LPM (1E)
Economics major	0.565$^{\#\#}$ (0.045)	0.403$^{\#\#}$ (0.021)	---	---	---
Public	-0.00204 (0.082)	-0.00708 (0.064)	-0.110* (0.055)	-0.0863* (0.052)	0.0867 (0.120)
ln (Undergr enrollment)	-0.00476 (0.040)	-0.00110 (0.035)	0.0359 (0.038)	0.0367 (0.041)	-0.0234 (0.055)
ln (Age of institution)	0.0743 (0.045)	0.0799** (0.039)	0.0870 (0.052)	0.0988** (0.042)	0.0445 (0.065)
SAT average (100s)	-0.0101 (0.030)	-0.0165 (0.025)	-0.0318 (0.021)	-0.0255 (0.021)	0.00482 (0.049)
SAT range (75 -25)	-0.000212 (0.000)	-0.000107 (0.000)	-0.0000906 (0.001)	-0.000168 (0.000)	0.0000327 (0.001)
Acceptance rate (in %)	0.00262** (0.001)	0.00239*** (0.001)	0.00377*** (0.001)	0.00289$^{\#\#}$ (0.001)	0.000223 (0.001)
Grad/undergrad ratio	-0.0262 (0.043)	-0.00753 (0.032)	0.0421 (0.079)	0.0170 (0.056)	-0.0407 (0.065)
Business degree	0.0607 (0.101)	0.0362 (0.079)	0.0271 (0.142)	-0.0374 (0.066)	0.149 (0.101)
Business * Bus. Econ	0.136*** (0.046)	0.146$^{\#\#}$ (0.043)	-0.00405 (0.035)	0.0127 (0.043)	0.322$^{\#\#}$ (0.078)
Business * AACSB	0.139** (0.062)	0.160*** (0.060)	0.0751 (0.058)	0.0835 (0.065)	0.264* (0.128)
Business * Bus. School	0.0662* (0.037)	0.0442 (0.034)	0.0507 (0.076)	0.0185 (0.051)	0.111** (0.050)
Midwest region	-0.0527 (0.038)	-0.0206 (0.034)	-0.0257 (0.034)	-0.0176 (0.031)	-0.0101 (0.067)
Northeast region	-0.0166 (0.048)	0.0168 (0.055)	-0.0745 (0.047)	-0.0508 (0.037)	0.218*** (0.060)
West region	-0.0184 (0.038)	0.0185 (0.039)	-0.0278 (0.039)	0.0181 (0.043)	0.0150 (0.095)
Observations **R-square/Pseudo**	409 0.482	409 0.453	238 0.195	238 0.283	171 0.238

Standard errors in parentheses; McFadden's R-square is reported for probit models.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, $^{\#\#}$ $p < 0.001$

Number of and types of tracks offered

Many institutions offer multiple "tracks" leading to a degree in economics. Additional tracks might add more rigor for students preparing for graduate school or might be specialized

(public policy, environmental, etc.). Table 7 offers a breakdown of concentrations associated with the 471 different economics tracks offered at 234 institutions (purging a handful where we could not obtain information about degree requirements). A majority of tracks are labelled as "general economics" (55%). The next most prevalent track was marketed with titles signaling "quantitative economics" (10.8%), followed by business economics, financial economics, international/development economics, public policy economics, and environmental economics. "Other" captures a handful of tracks including computer science and economics, law and economics, and secondary education licensure.

Table 7. Types of economics tracks offered (N=471)

Track Type	Freq.	Percent
General Economics track	259	55.0
Quantitative Economics track	55	11.6
Business Economics track	37	7.9
International or Development Economics track	32	6.8
Financial Economics track	31	6.6
Public Policy Economics track	27	5.7
Environmental Economics track	17	3.6
Other	13	2.8

Number of tracks varied substantially across institutions, ranging from 1 to 9, with a mean of 2.01. Table 8 presents results of a linear model, Poisson model, and negative binomial model (with average marginal effects reported for the latter two) for Model 3, where the dependent variable is "additional tracks" (*beyond* 1 track). The number of observations falls since institutions offering a single track are eliminated. The boundary likelihood ratio test of the dispersion parameter (alpha) generates a test statistic of 13.57, indicating that there is more dispersion than appropriate for the Poisson model. Thus, the negative binomial results are preferred and are what we interpret. Regardless, results are very similar across the models.

Since number of tracks might reflect the size of the economics program, a variable capturing number of economics degrees awarded per institution (2015 to 2019) is added. Different specifications are tested, including the 5-year average (logged and linear), a weighted 5-year average with more weight placed on recent years (logged and linear), and number of economics degrees awarded as a percent of undergraduate enrollment.[4] Degrees awarded was also not prohibitively correlated with institution enrollment. Interestingly, number of economics degrees awarded was not significant in any form. Controlling for enrollment, size of the economics program does not influence number of tracks offered. For that reason, only the log of the 5-year weighted mean is reported.

[4] It should be noted that degrees awarded includes graduate students and data could not be disaggregated. However, graduate degrees awarded in economics are usually small relative to the number of undergraduates, and many institutions have no graduate programs.

Table 8: Number of "additional" tracks offered (Models 3A, 3B, 3C)

Variables	Linear (3A)	Poisson (3B)	Negative Binomial (3C)
Ln (Degrees awarded)	0.120	0.151	0.134
	(0.140)	(0.162)	(0.153)
Public	-0.524*	-0.700**	-0.685**
	(0.297)	(0.337)	(0.327)
ln (Undergr enrollment)	0.417**	0.494**	0.473**
	(0.182)	(0.202)	(0.189)
ln (Age of institution)	0.0224	0.0486	0.0323
	(0.214)	(0.251)	(0.262)
SAT average (100s)	0.0452	0.0525	0.0632
	(0.129)	(0.115)	(0.115)
SAT range (75 -25)	-0.00124	-0.00265	-0.00206
	(0.002)	(0.003)	(0.003)
Acceptance rate (in %)	0.00346	0.00627	0.00584
	(0.006)	(0.006)	(0.006)
Grad/undergrad ratio	-0.731**	-0.851**	-0.828**
	(0.285)	(0.357)	(0.361)
Business degree	0.552	0.535	0.467
	(0.521)	(0.441)	(0.421)
Business * Bus. Econ	-0.361	-0.430*	-0.440*
	(0.226)	(0.244)	(0.235)
Business * AACSB	-0.369	-0.431**	-0.362*
	(0.238)	(0.218)	(0.203)
Housed with business	0.0905	0.166	0.189
	(0.226)	(0.236)	(0.241)
Econ grad program	0.240	0.136	0.137
	(0.302)	(0.327)	(0.301)
Midwest region	0.127	0.180	0.178
	(0.163)	(0.187)	(0.187)
Northeast region	0.586	0.604**	0.573*
	(0.367)	(0.300)	(0.312)
West region	0.937***	0.856***	0.837***
	(0.323)	(0.279)	(0.272)
Constant	-3.621*		
	(1.827)		
Observations	227	227	227
R-square/ Pseudo	.0167	0.106	.0672

Standard errors in parentheses; McFadden's R-square is reported for Poisson and Negative Binomial models.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ## $p < 0.001$

Having a graduate program in economics had no impact on number of tracks. Also, age and exclusivity (SAT, acceptance rates) had no impact. However, public institutions offered one-half as many tracks, all else constant. Greater undergraduate enrollment increased the number of tracks, with diminishing returns. The graduate to undergraduate enrollment ratio decreased the number of tracks offered, where a 0.1 unit change (adding a graduate program that is 10% of the undergraduate program or increasing the size of the graduate school by 10%) decreases tracks by .083. Simply having a business degree (a competitor) at the institution did not impact number of economics tracks offered, unless business was AACSB accredited. In that case, for the Poisson

and binomial distributions, an institution had 0.43 or 0.36 fewer tracks (negative binomial only significant at 10%) if competing with an accredited business degree. In these same models, institutions offered 0.43 or 0.44 fewer tracks when they faced competition from a business degree offering a concentration in economics (significant only at 10%). This is logical since a business economics degree is essentially an additional track available to students.

Requirements of economics majors

Data was collected on the requirements associated with the 471 different economics tracks. It should be noted that all tracks leading to a degree in economics were coded, even if requirements seemed quite light (a rare instance discussed below). Table 9 provides track-level descriptive statistics. Just over 38% of degree tracks lead to a Bachelor of Science, as opposed to Bachelor of Arts. International economics was required in 18.5% of tracks and money & banking in 14.2% of tracks. Econometrics was required in 64.5% of tracks and a capstone course in 52% of tracks. Internships are not often required—only 6.4% of tracks required one. Calculus 1 is required in 63.3% of tracks, but statistics 1 is required more frequently, in 87.4% of tracks. If looking only at degree tracks requiring students to take calculus 1 or statistics 1, only 28% of tracks require math/stat beyond that level. Computer science courses are required in only 11% of tracks.

Total number of economics credits required ranges from 9 to 72, with a mean of 32.3 credits. This represents a range of 8% to 54% of total credits required for degree completion, with a mean of 17.6%. Data on total economic credits required can be misleading, however. In rare instances, an economics track really did have miniscule economics requirements (9-12 credits). Other tracks had limited economics requirements (15-21), but then students had to choose from a list of classes that included economics. Likely, students took more than the required minimum number of economics credits. Also, some degree tracks that were lighter in economics supplemented with extra analytics courses taught outside of the economics department. Some tracks combined economics with other complementary fields, such as philosophy or political science.

Table 9: Track-level variable descriptive statistics (N=471)

Variables	Definitions	Mean	Std. Dev.	Min	Max
BS	=1 if track leads to a BS instead of a BA degree	.382	.486	0	1
International	=1 if track requires international econ	.185	.388	0	1
Money & Banking	=1 if track requires money & banking	.142	.350	0	1
Econometrics	=1 if track requires econometrics	.645	.479	0	1
Capstone	=1 if track requires capstone course	.520	.500	0	1
Internship	=1 if track requires internship	.064	.244	0	1
Calculus1	=1 if track requires calculus 1	.633	.483	0	1
Statistics1	=1 if track requires statistics 1	.874	.331	0	1
Advanced math	=1 if track requires math beyond calc1 or stat1	.259	.439	0	1
Advanced math	--Using only schools requiring calc1 or stat 1	.281	.450	0	1
Computer science	=1 if track requires computer science	.110	.314	0	1
Econ credits	Total econ credits required for degree	32.286	9.342	9	72
Econ credits %	Econ as proportion of total hours required	.257	.064	.08	.54
Total credits	Total credits required for degree	126.348	17.571	96	210

In a final analysis, we explore what impacts the probability of including specific requirements— capstone course, internship, international economics, econometrics, calculus 1, and advanced math beyond calculus 1 or statistics 1. Control variables include categorical dummies for track concentrations (Table 9), with "general economics" as the omitted category, regions, and number of total tracks offered at the institution. Tables report LPM and probit results with regional dummies suppressed. Some variables perfectly predicted internships (given they are infrequent) so only 311 observations were usable. Discussions focus on results that were consistent between the LPM and probit models with the LPM results interpreted.

Table 10 reveals that the probability of requiring international economics decreased by 1.13% for an additional 10 years of age for the institution, increased by 9.2% when economics is housed with business, increased by 16.7% when the track is branded as financial and 67.1% when branded as international economics (relative to general economics). The probability of requiring a capstone course increased by 22.8% for public institutions, and, not surprisingly, decreased with enrollment. The probability of requiring an internship also decreased with enrollment. Given the resource requirements, capstone courses and internships may be difficult to deliver on a large scale. The probability of requiring an internship did, however, increase by 8.4% when economics was housed with business. Tracks focusing on financial economics were also 10.9% more likely to require an internship, but the result was slightly smaller in magnitude and more significant in the probit model. Despite this, capstone and internships are more likely a departmental or college requirement and would not be impacted by theme of tracks or number of tracks an institution offers.

Table 10. Probability of international, capstone, and internship (Models 4,5,6)

Variables	Internat. LPM (4A)	Internat. Probit (4B)	Capstone LPM (5A)	Capstone Probit (5B)	Internsh. LPM (6A)	Internsh. Probit (6B)
BS	-0.0118	-0.0120	-0.0195	-0.0198	0.0242	0.0283
	(0.037)	(0.033)	(0.062)	(0.059)	(0.024)	(0.028)
Public	0.0606	0.0583	0.228**	0.250**	-0.0127	0.0251
	(0.074)	(0.061)	(0.112)	(0.110)	(0.052)	(0.065)
ln (Undergr enrollment)	0.00520	0.00263	-0.183**	-0.189**	-0.0738*	-0.0831**
	(0.051)	(0.040)	(0.080)	(0.076)	(0.044)	(0.037)
ln (Age of institution)	-0.113*	-0.107**	0.112	0.123	0.0387	0.0362
	(0.060)	(0.048)	(0.114)	(0.105)	(0.043)	(0.048)
SAT average (100s)	-0.00675	-0.00633	-0.00324	-0.00347	-0.0360*	-0.0192
	(0.027)	(0.022)	(0.043)	(0.041)	(0.022)	(0.021)
SAT range (75 -25)	-0.000450	-0.000387	-0.000995	-0.000990	0.000347	-0.000379
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Acceptance rate (in %)	-0.000745	-0.000175	0.00313	0.00333	-0.00172	-0.000895
	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Grad/undergrad ratio	0.106	0.102	0.0857	0.107	0.0817	0.0939
	(0.089)	(0.074)	(0.137)	(0.134)	(0.058)	(0.071)
Business degree	0.0611	0.0659	-0.123	-0.128	0.0487	0.112*
	(0.050)	(0.064)	(0.134)	(0.130)	(0.049)	(0.060)
Business * Bus. Econ	-0.0199	-0.00983	-0.0559	-0.0479	0.0279	0.0215
	(0.058)	(0.043)	(0.089)	(0.084)	(0.045)	(0.035)
Business * AACSB	-0.0113	-0.0126	-0.0214	-0.0310	0.0429	-0.0223
	(0.060)	(0.051)	(0.107)	(0.102)	(0.053)	(0.040)
B&E housed together	0.0920*	0.0719*	0.0392	0.0324	0.0840**	0.0756**
	(0.050)	(0.039)	(0.081)	(0.077)	(0.041)	(0.033)
Grad program in Econ	-0.0975	-0.101*	0.0141	0.0140	0.0155	0
	(0.069)	(0.057)	(0.113)	(0.106)	(0.045)	(.)
Quantitative track	-0.0601	-0.118*	0.0289	0.0225	0.0280	0.0673*
	(0.040)	(0.066)	(0.065)	(0.062)	(0.030)	(0.038)
Financial track	0.167*	0.142**	0.0452	0.0411	0.109*	0.0869***
	(0.095)	(0.063)	(0.083)	(0.078)	(0.058)	(0.033)
Business track	0.0196	0.00186	0.0557	0.0536	0.0770	0.128***
	(0.064)	(0.055)	(0.079)	(0.075)	(0.066)	(0.043)
International track	0.671##	0.422##	0.155**	0.158**	-0.000332	-0.0387
	(0.085)	(0.058)	(0.068)	(0.067)	(0.025)	(0.032)
Environmental track	-0.0258	-0.0346	0.0673	0.0452	-0.0586	0
	(0.079)	(0.110)	(0.156)	(0.143)	(0.038)	(.)
Public policy track	-0.0201	-0.00292	0.113	0.120	0.0209	0.00392
	(0.061)	(0.064)	(0.089)	(0.091)	(0.026)	(0.025)
Other track	0.0304	0.0233	-0.0904	-0.0884	-0.0542	0
	(0.119)	(0.096)	(0.137)	(0.141)	(0.036)	(.)
2 tracks	0.0594	0.0620	0.0655	0.0625	0.0256	0.0172
	(0.056)	(0.044)	(0.078)	(0.074)	(0.040)	(0.050)
3 tracks	-0.0559	-0.0709	0.0792	0.0790	0.0374	0.00980
	(0.056)	(0.054)	(0.109)	(0.101)	(0.052)	(0.053)
4 tracks	-0.0237	-0.00732	0.191	0.217*	-0.00951	-0.0748
	(0.065)	(0.058)	(0.125)	(0.129)	(0.049)	(0.075)
5-9 tracks	-0.0117	-0.0470	-0.00635	-0.00799	0.183	0.167***
	(0.084)	(0.069)	(0.145)	(0.136)	(0.113)	(0.060)
Observations	471	471	471	471	471	311
R-square/Pseudo	0.287	0.283	0.149	0.119	0.224	0.401

Standard errors in parentheses; McFadden's R-square is reported for probit models.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ## $p < 0.001$

Table 11 presents a similar analysis for econometrics, calculus, and math required beyond calculus 1 and statistics 1. Since more than 86% of tracks required statistics 1, we exclude that from the analysis. Results indicate that the probability of requiring econometrics increases by 10% when the track leads to a BS instead of BA, by 17% if the institution offers a graduate degree in economics, and by 19.3% if the track is labelled as quantitative. The probability decreases by 23.4% when there is a 100 point greater range between the 25^{th} and 75% percentile of SATs, by 1.4% if the graduate to undergraduate ratio increases by 10%, by 21% if the institution offers a business degree with an even larger decrease of an additional 16.6% if business offers a concentration in economics, and by 29.5% if the track has a public policy focus. The probability of requiring calculus 1 increases by 11.7% for every 100 point increase in the SAT average and decreases by 17.4% for every additional 100 point increase in the interquartile range of SAT scores. Having a competing business degree does not impact the probability of requiring calculus 1 unless business offers a concentration in economics, and then probability of calculus 1 decreases by 15%. The probability of requiring calculus 1 increases by 27.7% if a track is marketed as quantitative economics and 21.5% if it is marketed as environmental economics. The probability of requiring calculus decreases by 19.6% if a track focuses on international economics and by 20.7% if public policy. Interestingly, the probability of requiring calculus is not different for a BS versus BA. The probability of requiring advanced math (beyond calculus 1 and statistics 1) increases by 15.5% if the track leads to a BS, by 5.57% for each additional 100 points increase in SAT average, by 15.5% if the institution offers a business degree, by 20.8% if the institution offers a graduate degree in economics, by 57.6% if the track is labelled as quantitative economics, and by 16.5% if the track is labelled as financial economics.

Table 11. Probability of econometrics, calculus, and advanced math (Models 7,8,9)

Variables	Ecmt. LPM (7A)	Ecmt. Probit (7B)	Calculus LPM (8A)	Calculus Probit (8B)	Adv Math LPM (9A)	Adv Math Probit (9B)
BS	0.100*	0.102**	0.0785	0.0738	0.169##	0.155##
	(0.054)	(0.049)	(0.060)	(0.058)	(0.046)	(0.039)
Public	0.0304	0.0317	0.0162	0.0177	0.119*	0.120*
	(0.090)	(0.083)	(0.088)	(0.085)	(0.072)	(0.072)
ln (Undergr enrollment)	-0.0284	-0.0327	0.0116	0.0147	-0.0942	-0.0977*
	(0.060)	(0.055)	(0.065)	(0.061)	(0.059)	(0.054)
ln (Age of institution)	0.0682	0.0641	0.00537	0.0123	0.0482	0.0545
	(0.083)	(0.075)	(0.102)	(0.091)	(0.064)	(0.064)
SAT average (100s)	0.0391	0.0340	0.117##	0.110##	0.0537**	0.0557**
	(0.033)	(0.032)	(0.033)	(0.029)	(0.027)	(0.026)
SAT range (75 -25)	-0.00234**	-0.00212**	-0.00174*	-0.00178**	-0.000213	-0.000460
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Acceptance rate (in %)	0.000177	-0.000335	0.00213	0.00168	-0.00100	-0.000856
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Grad/undergrad ratio	-0.140	-0.110	-0.0898	-0.0813	0.0435	0.0346
	(0.114)	(0.118)	(0.111)	(0.105)	(0.096)	(0.086)
Business degree	-0.210**	-0.247**	0.0826	0.0925	0.155**	0.180**
	(0.092)	(0.114)	(0.102)	(0.100)	(0.069)	(0.084)
Business * Bus. Econ	-0.166**	-0.152**	0.150**	0.143**	0.0465	0.0484
	(0.079)	(0.066)	(0.067)	(0.064)	(0.066)	(0.055)
Business * AACSB	0.0151	0.00800	-0.0169	-0.0365	0.123	0.121*
	(0.073)	(0.072)	(0.080)	(0.075)	(0.079)	(0.070)
B&E housed together	0.0573	0.0485	-0.0309	-0.0227	0.0158	0.0257
	(0.062)	(0.055)	(0.064)	(0.060)	(0.050)	(0.046)
Grad program in Econ	0.170**	0.191**	0.0364	0.0362	0.208**	0.187**
	(0.085)	(0.078)	(0.090)	(0.085)	(0.096)	(0.074)
Quantitative track	0.193##	0.246##	0.277##	0.373##	0.576##	0.438##
	(0.054)	(0.063)	(0.060)	(0.090)	(0.069)	(0.049)
Financial track	0.0270	0.0313	-0.0429	-0.0475	0.165**	0.151**
	(0.070)	(0.064)	(0.072)	(0.061)	(0.078)	(0.060)
Business track	-0.0408	-0.0329	-0.0126	-0.0174	-0.0524	-0.0575
	(0.085)	(0.076)	(0.083)	(0.073)	(0.062)	(0.067)
International track	-0.106	-0.0990	-0.196**	-0.181***	-0.0540	-0.0577
	(0.074)	(0.063)	(0.077)	(0.066)	(0.045)	(0.045)
Environmental track	0.160*	0.216	0.215**	0.245*	-0.100	-0.102
	(0.096)	(0.133)	(0.102)	(0.132)	(0.070)	(0.084)
Public policy track	-0.295***	-0.266***	-0.207**	-0.189***	-0.0230	-0.0232
	(0.098)	(0.084)	(0.085)	(0.071)	(0.080)	(0.083)
Other track	-0.0805	-0.0773	-0.157	-0.168	0.156	0.112
	(0.126)	(0.111)	(0.131)	(0.106)	(0.126)	(0.088)
2 tracks	0.0209	0.00224	-0.116	-0.105*	0.0125	0.00202
	(0.070)	(0.063)	(0.071)	(0.063)	(0.055)	(0.051)
3 tracks	-0.0520	-0.0782	-0.0324	-0.0303	-0.0316	-0.0379
	(0.087)	(0.077)	(0.091)	(0.084)	(0.074)	(0.068)
4 tracks	0.0822	0.0617	-0.179**	-0.185**	-0.0515	-0.0455
	(0.081)	(0.076)	(0.091)	(0.085)	(0.076)	(0.074)
5-9 tracks	0.0942	0.0919	0.0448	0.0569	-0.00237	-0.00887
	(0.101)	(0.105)	(0.113)	(0.114)	(0.101)	(0.090)
Observations	471	471	471	471	471	471
R-square/Pseudo	0.207	0.187	0.224	0.197	0.321	0.290

Standard errors in parentheses; McFadden's R-square is reported for probit models.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, ## $p < 0.001$

Given that the set of regression equations in Tables 10 and 11 is estimated using the same 471 observations, it seems plausible that there could be cross-equation correlations in the error terms. To investigate, this system of equations was estimated via seemingly unrelated regression (SUR). The Breusch-Pagan test strongly rejects the assumption of independence with $chi^2(15)=46.232$ and p-value=0.0000. The larger issue in this system is that the observations are not seemingly unrelated, as many colleges have multiple tracks, meaning that observations are correlated within the regression. However, LPM is estimated with errors clustered by college. In 90% of the cases where the significance level of a coefficient differs between the two models, the LPM model produces larger standard errors which would result in lower t-statistics. In the other 10% (three cases) the coefficients in the SUR model remain significant, but at a lower level. The bottom line is that LPM sets a higher threshold for hypothesis testing and, therefore, is the more rigorous test. The SUR results are available upon request.

Conclusion

The goal of this paper is to investigate which colleges and universities offer an economics major and minor and what they require of their students. We gathered data from over 400 institutions across 24 randomly selected states representing all Census Bureau regions. These institutions, collectively, offer 471 different paths to a degree in economics. In addition to providing a useful snapshot of the major, we use econometrics to identify the likelihood a given institution will offer a major, have additional tracks (beyond the first), or have a minor. We also identify the likely requirements of an institution's economics degree.

Our findings indicate that colleges/universities that are larger and older, have a higher SAT average, have a higher graduate to undergraduate population ratio, and those with AACSB accredited business programs are more likely to have an economics major. Our findings also indicate that larger, private institutions, with smaller graduate to undergraduate population ratios are more are more likely to offer multiple tracks that lead to a degree in economics. In some specifications, having a business degree that offers a concentration in economics or an accredited business program decreases the probability of having multiple tracks in economics.

Not surprisingly, tracks leading to a Bachelor of Science (as opposed to Arts) are more likely to require econometrics and math beyond calculus and principles of statistics. Econometrics is also more likely required when the interquartile range in SAT scores is smaller (students are more homogenous), when the institution offers a graduate degree in economics, and when a track is marketed as quantitative; however, the probability decreases at institutions that offer a business degree with a concentration in economics. Public institutions and smaller schools are more likely to offer a capstone experience. Internships are more likely to be required in tracks housed at smaller institutions and those where business and economics are housed together.

References

Angrist, Joshua, Pierre Azoulay, Glenn Ellison, Ryan Hill, and Susan Feng Lu. 2017. "Economic Research Evolves: Fields and Styles." *American Economic Review* 107 (5): 293–97. https://doi.org/10.1257/aer.p20171117.

Asarta, Carlos J., and Roger B. Butters. 2012. "The Discouraged-Business-Major Hypothesis Revisited: Could Economics Be the Encouraged-Business-Major?" *The Journal of Economic Education* 43 (1): 19–32. https://doi.org/10.1080/00220485.2011.636707.

Bosshardt, William, and William B. Walstad. 2017. "Economics and Business Coursework by Undergraduate Students: Findings from Baccalaureate and Beyond Transcripts." *The Journal of Economic Education* 48 (1): 51–60. https://doi.org/10.1080/00220485.2016.1252299.

Bosshardt, William, Michael Watts, and William E Becker. 2013. "Course Requirements for Bachelor's Degrees in Economics." *American Economic Review* 103 (3): 643–47. https://doi.org/10.1257/aer.103.3.643.

Cameron, Craig, Brett Freudenberg, and Mark Brimble. 2013. "Making Economics Real—The Economics Internship." *International Review of Economics Education* 13 (May): 10–25. https://doi.org/10.1016/j.iree.2013.04.011.

Darlington, Ellie, and Jessica Bowyer. 2017. "Students' Views of A-Level Mathematics as Preparation for Degree-Level Economics." *Citizenship, Social and Economics Education* 16 (2): 100–116. https://doi.org/10.1177/2047173417716423.

Decloure, Natalya, Rusty V. Karst, and Cynthia A. Longoria. 2018. "Business Internships: A Practical Framework." *Business Education & Accreditation* 10 (1): 59-72. http://www.theibfr2.com/RePEc/ibf/beaccr/bea-v10n1-2018/BEA-V10N1-2018-6.pdf.

"Economics." n.d. Data USA. Accessed April 12, 2022. https://datausa.io/profile/cip/economics.

Emerson, Tisha L. N., and KimMarie McGoldrick. 2019. "Switching Majors – into and out of Economics." *The Journal of Economic Education* 50 (3): 321–32. https://doi.org/10.1080/00220485.2019.1618763.

Hansen, W. Lee. 2001. "Expected Proficiencies for Undergraduate Economics Majors." *Journal of Economic Education,* 32 (3): 231-242. https://doi.org/10.2307/1183381.

"History." 2022. Harvard Department of Economics. 2022. https://economics.harvard.edu/history.

Jones, Adam, Peter Schuhmann, Daniel Soques, and Allison Witman. 2020. "So You Want to Go to Graduate School? Factors That Influence Admissions to Economics PhD Programs." *The Journal of Economic Education* 51 (2): 177–90. https://doi.org/10.1080/00220485.2020.1731385.

Klein, Christopher C. 2013. "Econometrics as a Capstone Course in Economics." *The Journal of Economic Education* 44 (3): 268–76. https://doi.org/10.1080/00220485.2013.795460.

Lederman, Doug. 2021. "The Number of Colleges Continues to Shrink ." Number of Colleges Shrinks Again, Including Publics and Private Nonprofits. August 2, 2021. https://www.insidehighered.com/news/2021/08/02/number-colleges-shrinks-again-including-publics-and-private-nonprofits.

Li, Ishuan, and Robert Simonson. 2016. "Capstone Senior Research Course in Economics." *The Journal of Economic Education* 47 (2): 161–67. https://doi.org/10.1080/00220485.2016.1146103.

Marks, Melanie, and David Lehr. 2014. "What Is an Economics Major." *Journal for Economic Educators* 14 (1): 2-16. https://libjournals.mtsu.edu/index.php/jfee/article/view/1504.

Marshall, Emily, and Anthony Underwood. 2020. "Is Economics STEM? Trends in the Discipline from 1997 to 2018." *Journal of Economic Education* 51 (2): 167-174. https://doi.org/10.1080/00220485.2020.1731387.

McCrickard, Myra, Anne Raymond, Frank Raymond, and Hongwei Song. 2018. "The APLIA Math Assessment Scores and Introductory Economics Courses: An Analysis." *Journal of Business and Educational Leadership* 8 (1): 4–18.

Milkman, M I, and R D Marjadi. 2019. "AN ANALYSIS OF MATHEMATICS REQUIREMENTS AND RECOMMENDATIONS FOR PHD PROGRAMS IN ECONOMICS IN CANADA AND THE UNITED STATES," 19 (1): 23-35. https://libjournals.mtsu.edu/index.php/jfee/article/view/1557.

Monteiro, Henrique, and Alexandra Ferreira Lopes. 2007. "A Benchmarking of the Undergraduate Economics Major in Europe and in the United States." *International Review of Economics Education*, 6 (2): 9-26. https://doi.org/10.1016/S1477-3880(15)30106-7.

Myers, Steven C., Michael A. Nelson, and Richard W. Stratton. 2011. "Assessment of the Undergraduate Economics Major: A National Survey." *The Journal of Economic Education* 42 (2): 195–99. https://doi.org/10.1080/00220485.2011.555722.

Parrish, John B. 1967. "Rise of Economics as an Academic Discipline: The Formative Years to 1900." Southern Economic Journal 34 (1): 1-16. https://www.jstor.org/stable/1055330.

Petkus, Marie, John J. Perry, and Bruce K. Johnson. 2014. "Core Requirements for the Economics Major." *The Journal of Economic Education* 45 (1): 56–62. https://doi.org/10.1080/00220485.2014.859961.

Siegfried, John J. 2001. "Principles for a Successful Undergraduate Economics Honors Program." *Journal of Economic Education*, 32 (2): 169-177. https://doi.org/10.2307/1183492

Siegfried, John J. 2021. "Trends in Undergraduate Economics Degrees, 2001–2020." *The Journal of Economic Education* 52 (3): 264–67. https://doi.org/10.1080/00220485.2021.1925191.

Urquía-Grande, Elena, and Raquel Pérez Estébanez. 2020. "Bridging the Gaps between Higher Education and the Business World: Internships in a Faculty of Economics and Business." *Education + Training* 63 (3): 490–509. https://doi.org/10.1108/ET-01-2018-0017.

Zaho, Jensen J., Allen D. Truell, Melody W. Alexander, and Edward J. Lazaros. 2018. "IS BUSINESS EDUCATION MEETING JOB MARKET DEMAND AND STUDENT INTEREST?" *Issues In Information Systems* 19 (1): 76–82. https://doi.org/10.48009/1_iis_2018_76-82.