



Who does (and does not) take introductory economics?

Wendy A. Stock

To cite this article: Wendy A. Stock (11 Nov 2023): Who does (and does not) take introductory economics?, The Journal of Economic Education, DOI: [10.1080/00220485.2023.2277768](https://doi.org/10.1080/00220485.2023.2277768)

To link to this article: <https://doi.org/10.1080/00220485.2023.2277768>



© 2023 The Author(s). Published with license by Taylor & Francis Group, LLC.



Published online: 11 Nov 2023.



Submit your article to this journal [↗](#)



Article views: 336




View related articles [↗](#)



View Crossmark data [↗](#)

Who does (and does not) take introductory economics?

Wendy A. Stock 

MSU Initiative for Regulation and Applied Economic Analysis, Montana State University, Bozeman, MT, USA

ABSTRACT

The author of this article summarizes which, when, where, and how students take introductory economics. Among students who began college in 2012, 74 percent never took economics, up from 62 percent in 2004. Fifteen percent of beginning college students in 2012 took *some economics*, and 12 percent were *one-and-done* students. About half of introductory economics students never took another economics class, and only about 2 percent majored in economics. The characteristics of *one-and-done* and *some economics* students are generally similar and closer to one another than to students with *no economics*. The implication is that efforts to diversify the profession should focus at least in part on attracting students who would otherwise not take introductory economics.

KEYWORDS

Beginning Postsecondary Survey; diversity in economics; undergraduate economics courses and majors

JEL CODES



A2; A22

The question of which college students do (and do not) take introductory economics is important for economics departments seeking to adjust enrollments or curricula, faculty members designing and teaching introductory courses, and students considering college majors. In addition, since *one-and-done* students and *some economics* students are generally similar,¹ understanding the characteristics of college students who do *not* take economics can help departments and faculty members diversify the profession by engaging with students who would not take economics otherwise.

I describe the characteristics of college students who do (and do not) take economics, as well as when, where, and how students take economics.² I examine trends in earning economics credit via “alternative” methods, like Advanced Placement (AP) programs or dual enrollment, and compare these trends to other disciplines. Finally, I summarize the differences between *one-and-done* students, *some economics* students, and students with no college-level economics exposure.

Although prior studies have examined postsecondary economics exposure, they are limited by relying on data from graduating seniors, from non-representative samples, or from surveys of economics department chairs. Because these samples do not include students who begin but do not complete their degrees and because they do not include students at two-year institutions, they likely overstate college students’ exposure to economics. In this article, I use nationally representative transcript data for all beginning postsecondary students, including those who begin but do not complete their degrees and those who attend two-year colleges. Because these groups complete college at different rates, they likely are more representative of potential introductory economics students than students at four-year institutions (NCES 2022a).

Among students who began college in 2004, only 38 percent had college-level economics exposure, while only 26 percent of those who began college in 2012 had college-level economics. Both estimates indicate that college-level economics exposure is lower than the 40–60 percent exposure rates estimated in studies using other data. About half of the students in the 2012 Beginning Postsecondary Students (BPS) survey who took introductory economics were *one-and-done* students, and only about 2 percent

CONTACT Wendy A. Stock  wstock@montana.edu  Professor of Economics and Director, MSU Initiative for Regulation and Applied Economic Analysis, Montana State University, P.O. Box 172920, Bozeman, MT 59717-2920, USA. The data used in this article were obtained under a restricted-use license from the National Center for Education Statistics, <https://nces.ed.gov/surveys/bps/>

© 2023 The Author(s). Published with license by Taylor & Francis Group, LLC.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

of introductory economics students majored in economics.³ As is the case in other disciplines, a growing share of students earn college-level economics credit through dual enrollment and/or Advanced Placement (AP) programs, although the growth of college credit based on AP exams has been larger in economics than in other disciplines. The share of beginning college students in 2012 who transferred economics credits across institutions was nearly double that of beginning students in 2004, and most of these transferred economics credits were earned at two-year institutions. Similar increases in transferring credits occurred in other disciplines.

As was the case in earlier studies examining who takes economics, students with exposure to economics are disproportionately male and white. They also have higher ACT and SAT scores than their peers who do not take economics. Health-related majors, vocational/technical majors, and “undeclared” students are the least likely to be exposed to economics. For example, 88 percent of the health-related majors who started college in 2012 did not take economics. Given that health-related majors are the fastest growing, particularly among women, engaging with health-related students and faculty members could be an opportunity to both expand and diversify the set of college students exposed to economics.

Previous literature on postsecondary economics exposure

Although economics has consistently accounted for about 2 percent of college majors for several decades, the share of students with any exposure to collegiate economics is much larger (Siegfried 2022; Stock 2017). Using departmental responses to the 1998 and 2013 American Economic Association’s Universal Academic Questionnaire (UAQ), Siegfried (2000) and Siegfried and Walstad (2014) find that approximately 40 percent of college students take at least one economics course before graduating, although private colleges and PhD-granting institutions report higher rates of economics exposure (62 and 46 percent, respectively). The UAQ is an annual survey addressed to the chair of the economics department at each institution that grants an economics major in the United States, and about one-third of departments respond to the survey (aeaweb.org/uaq).

One concern about using the UAQ to estimate postsecondary exposure to economics, however, is that the survey question, “How many undergraduates [at your institution] take at least one economics course before they graduate?” does not make it clear how respondents should measure, estimate, or guess about economics exposure. In addition, because the UAQ surveys only four-year institutions that offer a major in economics, the data do not include students currently attending two-year colleges, with the implication that it likely overcounts the share of college students who take economics more generally.

Three studies have utilized postsecondary transcript data to examine college-level economics exposure. Emerson, McGoldrick, and Mumford (2012) use the Multiple-Institution Database for Investigating Engineering Longitudinal Development (MIDFIELD) to examine introductory course-taking and majoring in economics, focusing on differences for men and women. The MIDFIELD data were originally collected to analyze factors that contribute to engineering student success, and it contains comprehensive undergraduate student records from about a dozen educational institutions with engineering programs.⁴ Emerson, McGoldrick, and Mumford find that about 40 percent of students at MIDFIELD institutions take introductory economics, although this figure is smaller for women. One concern with the MIDFIELD data is that engineering majors have among the most college-level exposure, behind only economics and business majors. Engineering colleges also tend to disproportionately enroll males and whites, groups who are also more likely to take economics, raising the risk that estimates of economics exposure from the sample are biased upward.

The two studies closest to this one are Bosshardt and Watts (2008) and Bosshardt and Walstad (2017), who use transcript data from the Baccalaureate and Beyond (B&B) surveys to examine economics course-taking by undergraduate students.⁵ The B&B is administered by the National Center for Education Statistics (NCES), the primary federal entity for collecting and analyzing data related to education in the United States. Initially available for those who graduated in 1993, the B&B is a nationally representative longitudinal survey of students who completed bachelor’s degree requirements in a given year, with follow-up surveys one, four, and ten years afterward. Four cohorts of graduates (1993, 2000, 2008, and 2016) have been included in the B&B thus far, although transcript data are available only for the 1993

and 2008 cohorts of graduates. Bosshardt and Watts (2008) estimate that about 59 percent of undergraduate students in the 1993 graduating cohort took at least one economics course, while Bosshardt and Walstad (2017) estimate that about 54 percent of those who graduated in 2008 took at least one economics course. Both estimates are higher than the estimated 40 percent using either the MIDFIELD or UAQ data. Students in humanities, education, and health-related majors in the B&B data had the lowest rates of exposure to economics.

One concern with using the B&B to estimate college exposure to economics, particularly introductory economics, is that graduating students are not representative of college students more generally. For example, if business or economics students tend to graduate at higher rates than other majors, using the B&B to estimate exposure to economics in general will overestimate economics exposure. In addition, because it does not include students at two-year colleges (many of whom do not go on to further study), estimates of economics exposure based on the B&B likely overstate exposure among college students more broadly.

Data

I use two primary data sources to examine who does (and does not) take economics. First, I use transcript data from the Beginning Postsecondary Students (BPS) surveys of 2004–9 and 2012–17. Second, I use data from the 2008 B&B (described above) to compare estimates of economics exposure among college graduates to estimates of economics exposure among beginning college students. Like the B&B, the BPS is administered by the NCES. Unlike the B&B, the BPS is a nationally representative sample of *first-time beginning* postsecondary students rather than a survey of postsecondary *graduates*. The B&B is intentionally limited to those who persist and graduate, while the BPS includes the roughly 60 percent of entering students who do not complete their degrees (NCES 2022b).

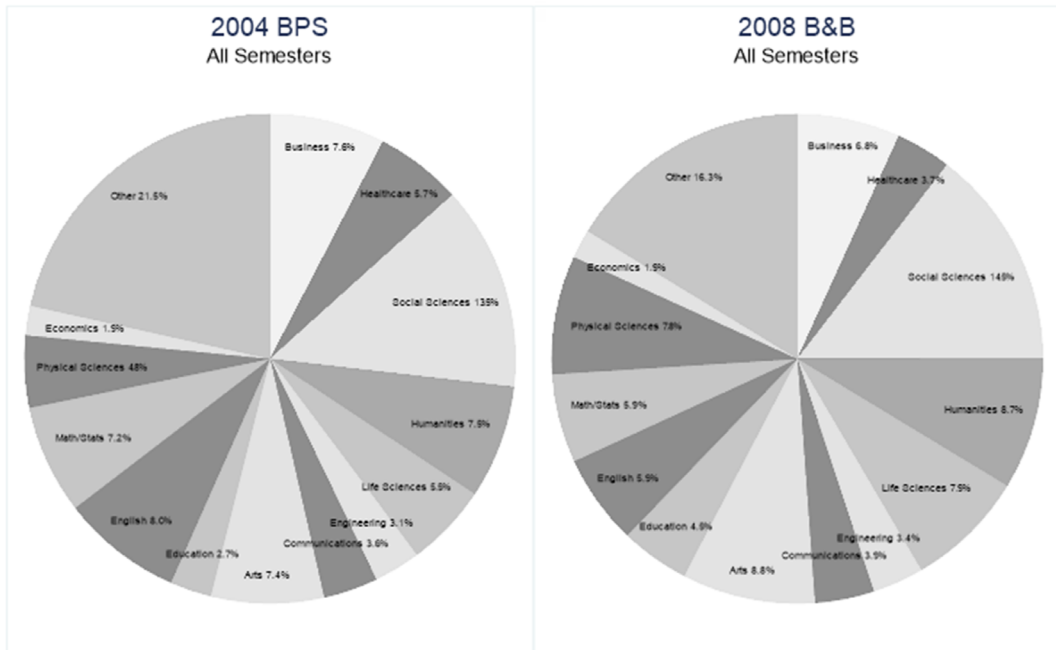
Students in the BPS are surveyed three times over six academic years. The 2004 BPS cohort was surveyed in 2003, 2006, and 2009, while the 2012 BPS cohort was surveyed in 2011, 2014, and 2017. The BPS includes extensive demographic and financial information, as well as academic transcripts from all postsecondary institutions attended, including fields of study, course-taking, and academic performance.

For each BPS dataset, I exclude those with missing demographic or transcript information but make no other sample restrictions.⁶ All reported statistics are weighted using BPS transcript weights. I use a combination of Classification of Instructional Programs (CIP) codes and course names and numbers to classify courses into disciplines across time.⁷ I classify economics courses as those with a CIP code in the economics category, as well as those with CIP codes corresponding to natural resource economics, economic history, business economics, or managerial economics.⁸ I manually classify economics courses into introductory and post-introductory categories based on whether or not the course title includes “introduction,” “principles,” “basic,” “survey,” “foundation,” or similar terms.⁹

In the following sections, I first use the 2004 BPS and 2008 B&B surveys to compare estimates of economics course-taking using samples of students who began college at the same time but were selected and surveyed differently. I then use the 2004 and 2012 BPS surveys to compare economics exposure among different cohorts of college students and to examine economics course-taking across time. Finally, I conclude with a discussion of trends in majors across time and potential opportunities for expanding postsecondary students’ exposure to economics.¹⁰

Exposure to economics across samples

Figure 1 presents the distribution of courses taken during their college careers for the 2004 BPS and 2008 B&B samples. Although there are statistically significant differences in course-taking across all the fields, the size of the differences is relatively small. Those in the B&B took a larger share of social science, humanities, life science, art, education, and physical science courses and a smaller share of business,



Graph depicts the percentage of courses taken in each category for the samples. Social Sciences also includes psychology and history. Humanities also includes liberal studies, philosophy, foreign language. Life Sciences includes biology and biomedical sciences. Arts also includes architecture. All differences between the samples are statistically significant (p -value < 0.01).

Figure 1. Course taking across samples.

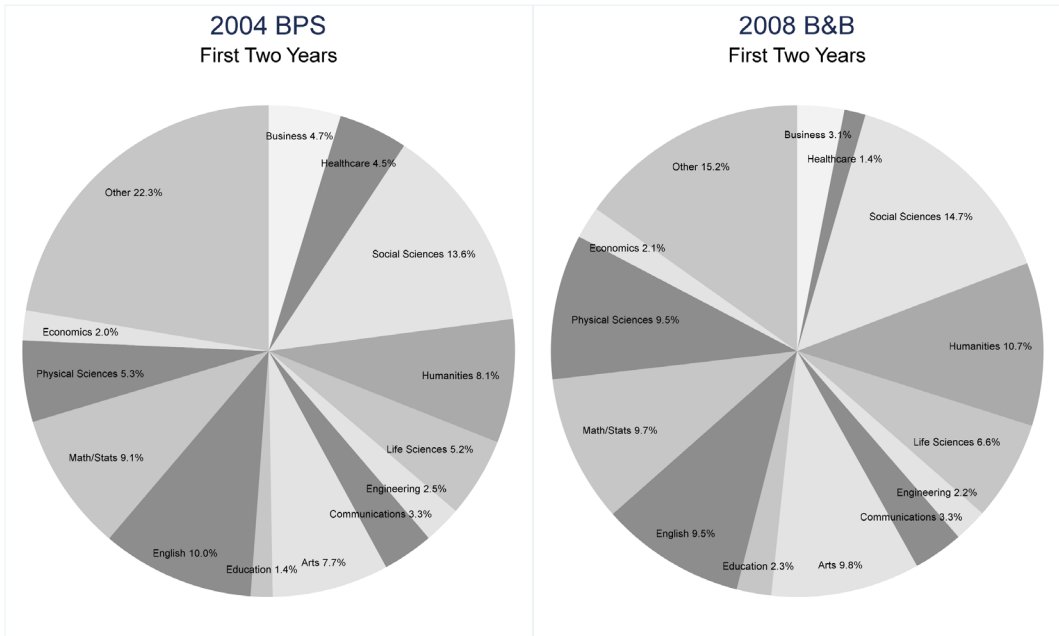
healthcare, English, and math/stats courses than those in the BPS. The share of economics courses taken (1.9 percent) is the same for both samples.

The BPS 2004 cohort began their postsecondary studies in the fall of 2003. The B&B 2008 cohort graduated in 2008 but could have started their postsecondary studies at any time (e.g., some started as far back as the mid-1960s). To make things more comparable and to examine course-taking during their early academic careers, in [figure 2](#), I limit the B&B sample to those who began their postsecondary study in or after the fall of 2003 (5 years before graduation) and assign fall 2003 as the first semester of postsecondary study for this subsample. Thus, [figure 2](#) compares courses taken among students who began their postsecondary study in the fall of 2003 (the BPS 2004 cohort) to courses taken by students who began postsecondary study at roughly the same time but who eventually graduated in 2008.

Economics accounts for 2.0 percent of the early (first two years) courses taken by students in the 2004 BPS and for 2.1 percent of the early courses taken by students in the 2008 B&B, with the implication that students who eventually graduate from college are slightly more likely to have taken economics than college students more generally. Courses in social sciences, humanities, life sciences, art, and physical sciences also account for a larger share of early courses taken by graduating students than by beginning students. Graduating students were also less likely to have taken business, healthcare, and courses in the catchall “other” category.

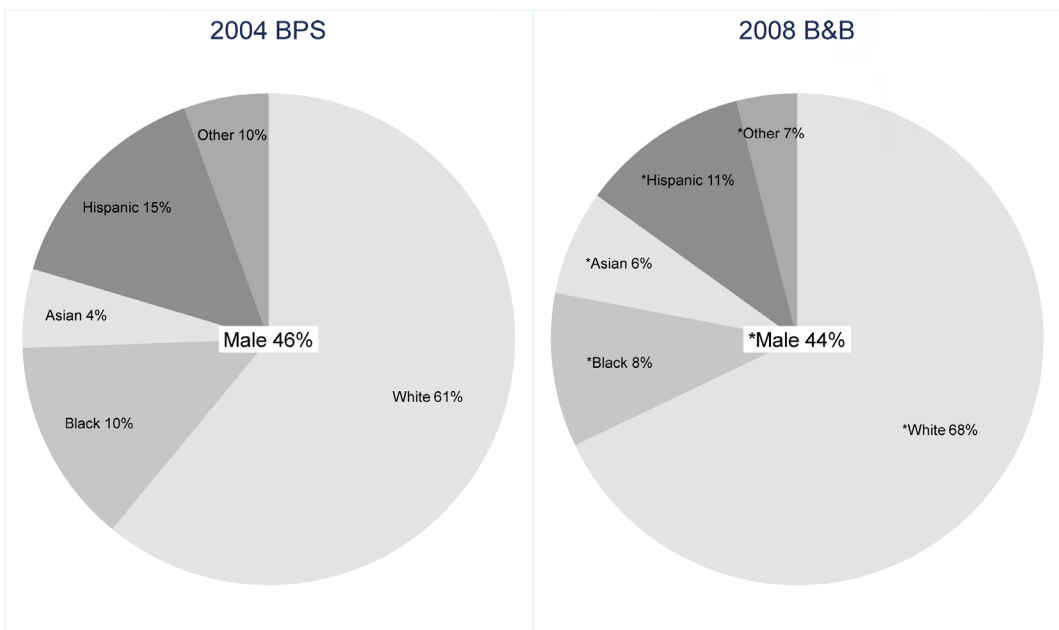
[Figure 3](#) summarizes the demographic characteristics of the 2004 BPS and 2008 B&B samples. The cohort of graduating students (2008 B&B) is significantly more white and Asian, less Black and Hispanic, and slightly less male than the cohort of beginning students from the same time period. This is consistent with research showing that women are more likely to complete college than men and that, with the exception of Asians, whites are more likely to complete college than other racial and ethnic groups (Reeves and Smith 2021; de Brey et al. 2019). Because men and whites are more likely to major in economics, the B&B sample likely overestimates economics course-taking among postsecondary students more generally.

To further compare economics exposure for entering students relative to graduating students, panel A of [table 1](#) reports the share of the 2008 B&B, 2004 BPS, and 2012 BPS samples who were *one-and-done*, *no economics*, and *some economics* students. Consistent with [figures 1](#) and [2](#), graduating students appear



Graph depicts the percentage of courses taken in each category during the first two years of postsecondary education for the samples. For the B&B sample, the first two semesters are assigned as Fall 2003 and Spring 2004. Social Sciences also includes psychology and history. Humanities also includes liberal studies, philosophy, foreign language. Life Sciences includes biology and biomedical sciences. Arts also includes architecture. All differences between the samples are statistically significant except engineering (p-value <0.01).

Figure 2. First year course taking across samples.



Pie chart reports the percentage of each sample by race, middle text box reports the percent male in each sample. *Asterisks indicate statistically significant differences from the 2004 BPS cohort (p-value <0.05).

Figure 3. Demographic differences across samples.

slightly more likely to have taken economics than beginning students. Forty percent of those in the 2008 B&B cohort took economics, while only 38 percent of those in the 2004 BPS took economics.

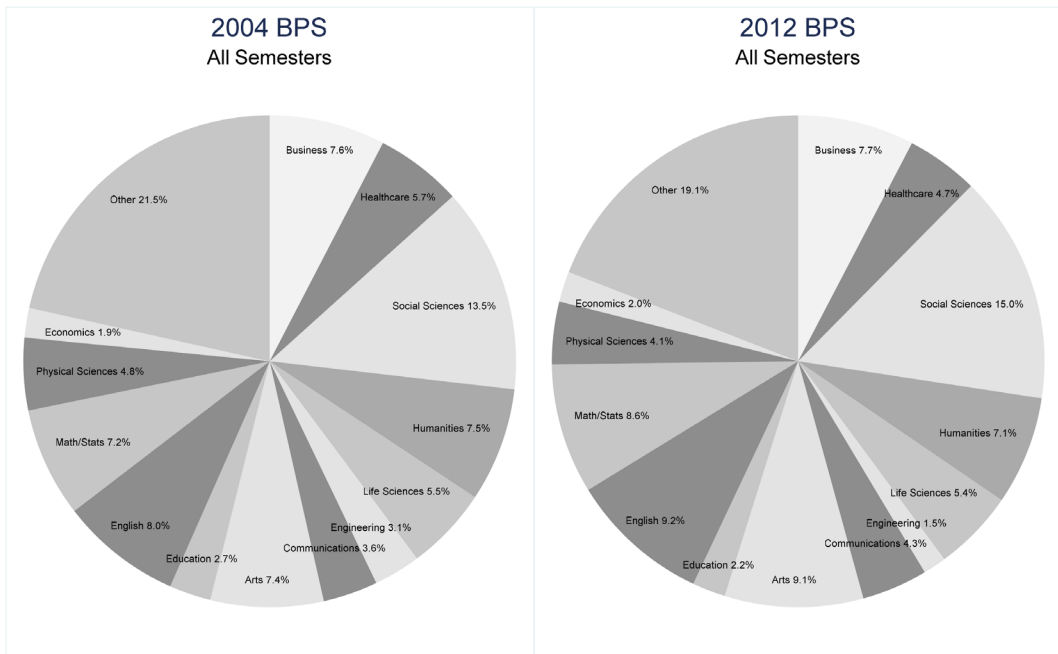
Table 1. Share of students who take economics, by sample.

	2008 B&B			2004 BPS			2012 BPS		
Panel A: Economics Courses Among All Students									
	One-and-done	No economics	Some economics	One-and-done	No economics	Some economics	One-and-done	No economics	Some economics
St. dev.	0.20*	0.60*	0.20*	0.17	0.62	0.21	0.12*	0.74*	0.14*
N ^a	(0.40)	(0.49)	(0.40)	(0.37)	(0.49)	(0.41)	(0.32)	(0.44)	(0.36)
		13,500			13,390			10,910	
Panel B: Economics Courses Among Some Economics Students Only									
	Two courses	Three courses	Four + courses	Two courses	Three courses	Four + courses	Two courses	Three courses	Four + courses
St. dev.	0.54*	0.21*	0.25	0.51	0.23	0.25	0.59*	0.19*	0.22*
N ^a	(0.50)	(0.40)	(0.40)	(0.50)	(0.01)	(0.43)	(0.49)	(0.39)	(0.42)
		2,700			2,810			1,520	

Source: Author's calculations using the 2008 Baccalaureate and Beyond (B&B), 2004 and 2012 Beginning Postsecondary Survey (BPS).

Notes: Cells in Panel A report the share of students in each sample that took one economics course (*one-and-done*), no economics courses, or more than one economics course (*some economics*). Cells in Panel B report the share of *some economics* students in each sample that took two, three, or four or more economics courses. Standard deviations are reported in parentheses. Asterisks indicate statistically significant differences from the 2004 BPS sample at the 0.05 level or smaller.

^aBecause of the restricted nature of the data, nondisclosure policies require reporting sample sizes rounded to the nearest 10.



Graph depicts the percentage of courses taken in each category for the cohorts. Social Sciences also includes psychology and history. Humanities also includes liberal studies, philosophy, foreign language. Life Sciences includes biology and biomedical sciences. Arts also includes architecture. All differences between the cohorts are statistically significant except business (p -value < 0.01).

Figure 4. Course taking across cohorts.

Taken together, [figures 1–3](#) and [table 1](#) suggest that using the B&B to estimate the share of college students exposed to economics likely overstates economics exposure. In the next sections, I rely on the 2004 and 2012 BPS surveys to make further comparisons regarding who does (and does not) take economics.

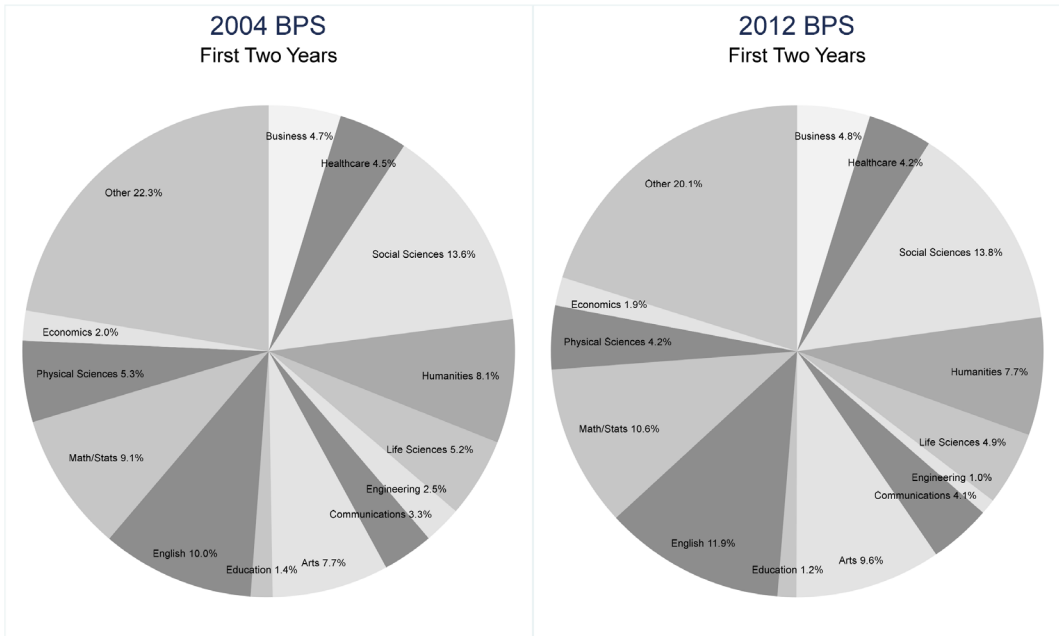
Exposure to economics across cohorts

To assess whether exposure to economics has changed over time, I compare in [figure 4](#) the distribution of courses taken by the 2004 BPS cohort to those taken by the BPS 2012 cohort (who began college eight years later). The two cohorts' course-taking is very similar, with the exception that the 2012 cohort took a larger share of social science, arts, English, and math/stats than the 2004 BPS cohort. Economics accounts for a slightly larger share of the courses taken by the 2012 cohort than the 2004 cohort (2.0 and 1.9 percent, respectively).

In [figure 5](#), I compare course-taking during the first two years of college for the two cohorts. Again, the distributions are very similar, indicating that economics accounts for about 2 percent of courses taken in the first two years of college for both cohorts. The 2012 BPS cohort took slightly more courses in communications, arts, and English than the 2004 BPS cohort.

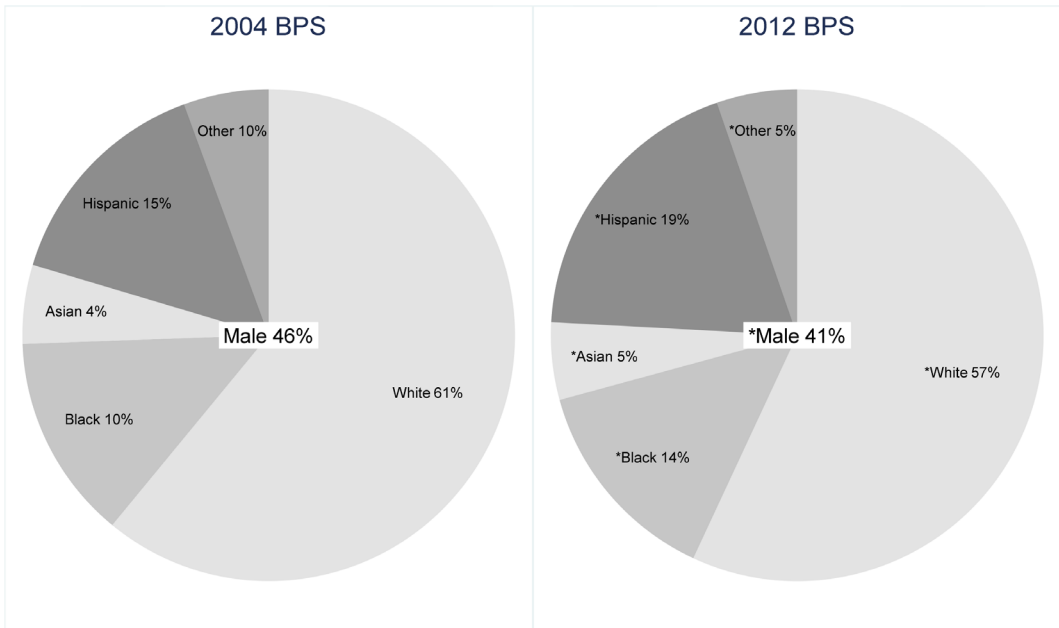
In [figure 6](#), I compare the demographic characteristics of beginning college students across time. Roughly 57 percent of the students who began college in 2012 were white, and 41 percent were male. Both are statistically significantly smaller than among the 2004 cohort, consistent with broader trends indicating larger shares of females and slightly smaller shares of whites attending college over time (NCES 2020). Because whites and males are more likely to enroll in economics, these changing demographics also may be correlated with less exposure to economics among later rather than earlier college cohorts.

To further compare economics exposure for beginning postsecondary students over time, panel A of [table 1](#) reports the share of students in the 2004 and 2012 BPS samples who were *one-and-done*, *some economics*, or *no economics* students during their college careers. The BPS data indicate that economics course-taking has declined remarkably over time. Roughly 17 percent of those in the 2004 BPS were



Graph depicts the percentage of courses taken in each category during the first two years of postsecondary education for the cohorts. Social Sciences also includes psychology and history. Humanities also includes liberal studies, philosophy, foreign language. Life Sciences includes biology and biomedical sciences. Arts also includes architecture. All differences between the cohorts are statistically significant except social sciences, education, and economics (p-value <0.01).

Figure 5. First year course taking across cohorts.



Pie chart reports the percentage of each cohort by race, middle text box reports the percent male in each cohort. *Asterisks indicate statistically significant differences from the 2004 BPS cohort (p-value <0.05).

Figure 6. Demographic differences across cohorts.

one-and-done students, while only 12 percent of those in the 2012 BPS were one-and-done students. In addition, while 21 percent of the 2004 BPS cohort took more than one economics course, only 15 percent of the 2012 BPS did so. These data imply that about 38 percent of beginning college students in 2004

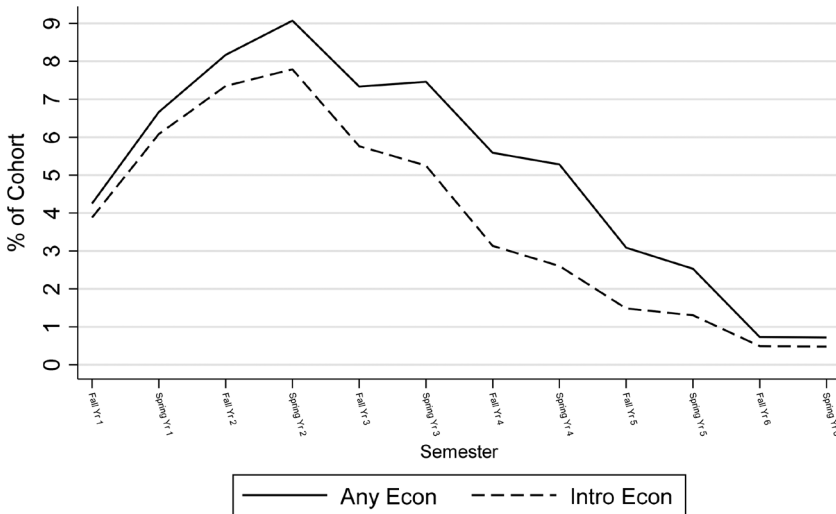


Figure reports the percent of 2004 and 2012 BPS cohorts that enrolled in economics each semester. Outcomes are very similar when reported separately by BPS sample.

Figure 7. When students take economics.

were exposed to college-level economics, but only about 26 percent of those in the 2012 BPS had any college economics exposure. A back-of-the-envelope calculation implies that this difference translates into roughly 2.5 million fewer college students exposed to economics in the 2012 BPS cohort versus the 2004 BPS cohort.¹¹ This is a remarkable drop in economics enrollment that has not been documented elsewhere, and further research is necessary to determine whether this is an anomaly.

Panel B of [table 1](#) presents the share of *some economics* students who took two economics courses, three economics courses, or four or more economics courses. The share of *some economics* students who took only two economics courses is 59 percent in the 2012 BPS, up from 51 percent in the 2004 BPS. Correspondingly, the share of *some economics* students who took three economics courses fell from 23 percent in the 2004 BPS to 19 percent in the 2012 BPS, and the share of *some economics* students with four or more economics courses fell from 25 to 22 percent across the BPS samples. Although not shown in the table, the share of *some economics* students in the 2012 BPS who major in economics is 4 percent.¹²

When students take introductory economics

[Figure 7](#) illustrates when students take introductory and other economics courses by showing the share of the 2004 and 2012 BPS cohorts who enrolled in economics each semester.¹³ Most enrollment in introductory economics happens in the first five semesters of postsecondary study, particularly in the third and fourth semesters when 7–7.5 percent of students enroll in introductory economics. This percentage drops off rapidly, and fewer than 1 percent of students in their fifth and sixth years of college take economics. Consistent with other research indicating that about 2 percent of college students major in economics ([Stock 2017](#)), the share of the cohorts who enroll in non-introductory economics courses peaks at 2 percent in the spring semester of students' fourth year of college.

Where students take introductory economics

The share of students who take economics varies across postsecondary institutions. [Figure 8](#) shows the distribution of institutions where students took economics based on the Carnegie Classification (carnegieclassifications.iu.edu) of each institution. Consistent with the relatively large share of college students who attend two-year institutions, roughly half of the students in the 2004 BPS who had college economics

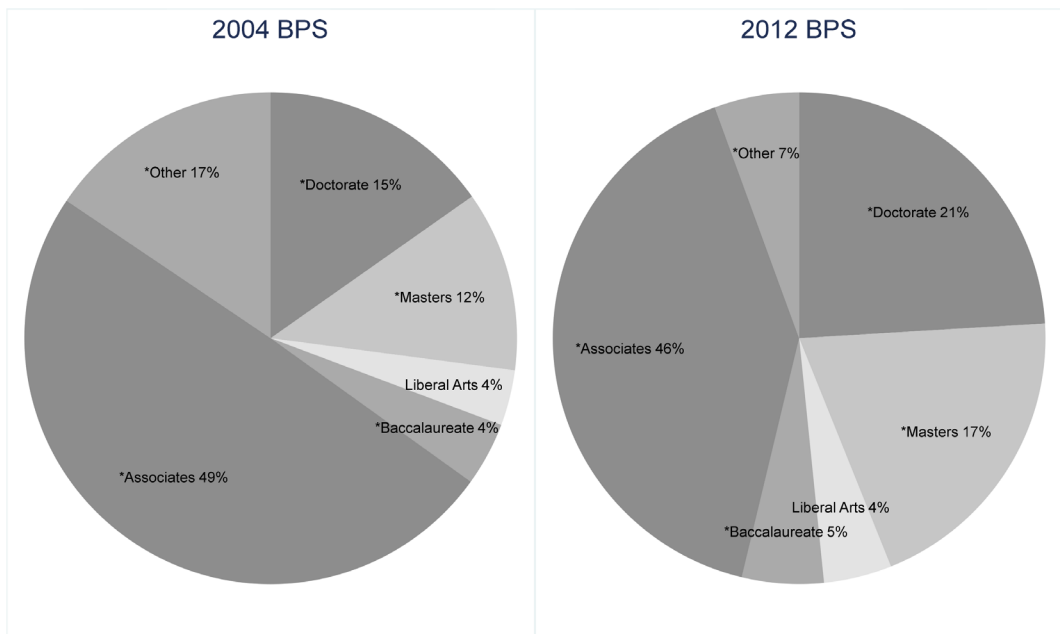


Chart shows the distribution of institution type among students who took economics in the 2004 and 2012 BPS samples. Asterisks indicate statistically significant differences between the samples (p -value < 0.05).

Figure 8. Where students take economics.

Table 2. Economics enrollment, by institution type.

	One-and-done	No Economics	Some Economics	N ^a	One-and-done	No Economics	Some Economics	N ^a
Doctorate	0.21 (0.41)	0.50 (0.50)	0.29 (0.45)	1,550	0.19* (0.39)	0.53* (0.50)	0.27 (0.45)	1,480
Master's	0.17 (0.37)	0.56 (0.50)	0.27 (0.45)	1,380	0.17 (0.37)	0.64* (0.48)	0.20* (0.40)	1,580
Baccalaureate	0.16 (0.37)	0.62 (0.49)	0.21 (0.41)	560	0.11* (0.31)	0.74* (0.44)	0.15* (0.36)	590
Liberal arts	0.21 (0.41)	0.58 (0.49)	0.21 (0.41)	440	0.19 (0.40)	0.61 (0.49)	0.20 (0.40)	330
Associates	0.17 (0.37)	0.62 (0.49)	0.21 (0.41)	6,500	0.09* (0.29)	0.78* (0.41)	0.12* (0.33)	5,420
Other	0.13 (0.34)	0.73 (0.44)	0.14 (0.34)	2,970	0.06* (0.23)	0.89* (0.31)	0.05* (0.22)	1,500

Source: Author's calculations using the 2004 and 2012 BPS.

Notes: Cells report the proportion of students in each institutional category who took *one economics* course, *no economics* courses, and more than one economics course. Standard deviations are reported in parentheses. Asterisks indicate statistically significant differences across BPS samples at the 0.05 level or smaller.

^aBecause of the restricted nature of the data, nondisclosure policies require reporting sample sizes rounded to the nearest 10.

credits earned those credits at an associates (two-year) institution. Slightly fewer students with economics credit in the 2012 BPS took economics at a two-year institution (46 percent) than their peers in the 2004 BPS cohort (49 percent). Twenty-one percent of 2012 BPS students with college economics credit took economics at doctoral institutions, 17 percent took economics at master's institutions, and 4–5 percent took economics at liberal arts or baccalaureate colleges.

Although the largest share of students who took economics did so at a two-year institution, students at two-year institutions actually have slightly less exposure to economics than their peers at other schools. In table 2, I report the share of students exposed to economics at different Carnegie-classified institutions. Consistent with the decline in economics exposure presented in table 1, exposure to economics is lower among the 2012 BPS cohort than the 2004 BPS cohort across all types of institutions. The largest drop

Table 3. Course credit via alternate routes.

	Economics						Math		History		English		Psychology		Comp. Sci.		Biology		Foreign Language	
	2004		2012		2004		2012		2004		2012		2004		2012		2004		2012	
	0.01 (0.12)	0.03* (0.16)	0.04 (0.19)	0.04* (0.20)	0.04 (0.20)	0.07* (0.26)	0.04 (0.19)	0.04 (0.22)	0.05 (0.22)	0.04 (0.12)	0.04 (0.17)	0.03* (0.17)	0.00 (0.06)	0.00 (0.06)	0.02 (0.15)	0.03 (0.16)	0.03 (0.18)	0.03 (0.18)	0.03 (0.19)	
AP credit	0.13 (0.33)	0.20* (0.40)	0.16 (0.37)	0.20* (0.40)	0.16 (0.37)	0.22* (0.41)	0.20 (0.40)	0.22* (0.42)	0.15 (0.36)	0.22* (0.41)	0.16 (0.36)	0.16* (0.37)	0.11 (0.32)	0.16 (0.36)	0.21* (0.41)	0.13 (0.34)	0.13 (0.34)	0.18* (0.38)	0.18* (0.38)	
Dual enrollment	0.00 (0.03)	0.03* (0.18)	0.00 (0.02)	0.04* (0.19)	0.00 (0.03)	0.03* (0.16)	0.00 (0.02)	0.05* (0.21)	0.00 (0.03)	0.03* (0.16)	0.03* (0.18)	0.03* (0.18)	0.00 (0.02)	0.00 (0.01)	0.02* (0.13)	0.00 (0.03)	0.00 (0.03)	0.03* (0.18)	0.03* (0.18)	
Other (CLEP, IB)	0.00 (0.05)	0.01* (0.08)	0.02 (0.12)	0.02 (0.12)	0.00 (0.09)	0.02* (0.12)	0.02 (0.13)	0.02 (0.14)	0.00 (0.06)	0.01* (0.10)	0.01* (0.10)	0.01 (0.08)	0.01 (0.08)	0.01 (0.08)	0.01 (0.08)	0.04 (0.19)	0.04 (0.19)	0.05* (0.22)	0.05* (0.22)	
N ^a	5,160	3,550	12,270	10,680	8,210	6,620	9,940	9,170	9,020	7,680	7,040	5,570	7,910	6,570	5,640	4,430	4,430			

Source: Author's calculations from the 2004 and 2012 Beginning Postsecondary Surveys.

Notes: Cells report the proportion of students (among all students with credit for the subject) who earned course credit via alternate routes. Standard deviations are reported in parentheses. Asterisks indicate statistically significant differences across cohorts at the 0.05 level or smaller.

^aBecause of the restricted nature of the data, nondisclosure policies require reporting sample sizes rounded to the nearest 10.

in economics exposure occurred at two-year colleges and “other” institutions (tribal colleges, health professions, technical professions, arts and design, and other special focus institutions).

Students attending doctoral institutions have the most exposure to economics. About 19 percent of 2012 BPS students at doctoral institutions were *one-and-done* students, 27 percent were *some economics* students, and 53 percent had *no economics* courses in college. Alternatively, students at “other” institutions and two-year institutions have among them the least exposure to economics. In the 2012 BPS, 89 percent of students at “other” institutions and 78 percent of students at two-year institutions had *no economics* exposure, up dramatically from 73 and 62 percent, respectively, for 2004 BPS students. Economics exposure among students at liberal arts colleges does not appear to have changed across the cohorts. For most institution types, the decline in economics exposure is manifest in both fewer students taking introductory economics (i.e., fewer *one-and-done* students) as well as in fewer *some economics* students.

How students take introductory economics

Students can increasingly earn college economics credits without taking economics in college. College credit for economics can be earned via an AP exam, through dual enrollment, the International Baccalaureate (IB) program, the College Level Examination Program (CLEP), or via institution-specific tests.¹⁴ In table 3, I report the share of students (among all those with college credit for the subject) who earned college economics credits using these options. I also report the share of students who transfer economics credits across institutions.

Among 2004 BPS students with introductory economics college credits, about 1 percent earned those credits by earning a passing score on an AP economics exam, a smaller share than in other subjects.¹⁵ There was a 200 percent (from 0.01 to 0.03) increase in the share of students who earned economics credit through an AP exam between 2004 and 2012, a larger increase than in other disciplines during the same time period. For example, the share of students earning AP credit in history rose by 75 percent between 2004 and 2012 (from 0.04 to 0.07), the share earning AP credit in math rose slightly (from 3.8 to 4.1 percent), and the share earning AP credit in psychology fell from 0.04 to 0.03 between 2004 and 2012. The share earning AP credit in English, computer science, biology, and foreign language was the same across the cohorts.¹⁶

As would be expected based on the large share of students who enroll at two-year institutions, the portion of students who transfer economics credits across institutions has risen over time. Whereas 13 percent of the 2004 BPS cohort who earned economics credit transferred those credits across institutions, 20 percent of the 2012 BPS cohort who earned economics credit did likewise. As was the case with AP credits, the 54 percent increase in transfer credits in economics is larger than the roughly 40–45 percent increase in transfer credits in history, computer science, and foreign language and is much larger than the 25 and 10 percent increases, respectively, in transfer credit in math and English.

The share of students who earn college credit via dual enrollment also has increased over time.¹⁷ Almost no students in the 2004 BPS cohort earned dual enrollment credit in economics, while 3 percent of students in the 2012 BPS cohort earned credit in economics via dual enrollment. Similar shares earn dual enrollment credit in history, psychology, computer science, and foreign language. A higher share (5 percent) earned dual enrollment credit in English, while a smaller share (2 percent) earned dual enrollment credit in biology. Approximately 1 percent of beginning students with economics credit in 2012 earned those credits via a CLEP, IB, or institution-specific exam. The share is similar in psychology, biology, and computer science. A larger share of beginning students earn CLEP or IB credit in math, English, and foreign language.

Who does (and does not) take introductory economics?

In table 4, I compare the demographic characteristics among *one-and-done*, *some economics*, and *no economics* students in the 2004 and 2012 BPS. Among the 2004 *one-and-done* students, 50 percent were male, 75 percent were white, 11 percent were Black, 11 percent were Hispanic, and 7 percent were Asian. The average ACT score was 23, and the average SAT math and verbal scores were 538 and 532,

Table 4. Economics enrollment, by sociodemographic characteristics.

	2004 BPS			2012 BPS		
	One-and-done	No Economics	Some Economics	One-and-done	No Economics	Some Economics
Age	20.16 [^] (5.61)	21.99 (7.74)	19.97 [^] (5.21)	19.27* [^] (4.11)	20.76* (6.17)	19.15 [^] (3.94)
Male	0.50 [^] (0.50)	0.39 (0.49)	0.60 [^] (0.49)	0.46* [^] (0.50)	0.37* (0.48)	0.56 [^] (0.50)
ACT ^a	23.10 [^] (4.90)	21.52 (5.06)	23.21 [^] (4.84)	22.93 [^] (5.21)	21.11 (5.00)	23.09 [^] (5.19)
SAT Math ^a	537.69 [^] (107.89)	494.45 (111.99)	544.67 [^] (105.73)	530.75 [^] (111.90)	490.25 (105.97)	540.06 [^] (111.20)
SAT Verbal ^a	532.36 [^] (105.11)	505.73 (112.54)	529.64 [^] (104.37)	525.76 [^] (108.74)	493.96 (109.52)	525.78 [^] (108.54)
White	0.75 [^] (0.43)	0.66 (0.47)	0.74 [^] (0.44)	0.61* [^] (0.49)	0.55* (0.50)	0.63 (0.48)
Black	0.11 [^] (0.32)	0.16 (0.37)	0.13 (0.34)	0.11 [^] (0.31)	0.15* (0.36)	0.09 [^] (0.29)
Asian	0.07 [^] (0.26)	0.04 (0.20)	0.08 [^] (0.28)	0.08 [^] (0.27)	0.04 (0.19)	0.09 [^] (0.29)
Hispanic	0.11 [^] (0.32)	0.17 (0.37)	0.12 [^] (0.33)	0.15* (0.37)	0.20 (0.40)	0.14 [^] (0.35)
Other race	0.06 (0.24)	0.06 (0.23)	0.06 (0.24)	0.04 (0.20)	0.06 (0.23)	0.05 (0.21)
N ^b	2,270	8,300	2,830	1,270	8,020	1,620

Source: Author's calculations using the 2004 and 2012 BPS surveys.

Notes: Cells report variable means for each subsample. Standard deviations are reported in parentheses. Asterisks indicate statistically significant differences across BPS samples at the 0.05 level or smaller. Carets indicate statistically significant differences within samples for *one-and-done* and *some economics* students relative to *no economics* students.

^aThe number of observations for ACT, SAT Math, and SAT Verbal are slightly smaller than the total because of missing scores for some students.

^bBecause of the restricted nature of the data, nondisclosure policies require reporting sample sizes rounded to the nearest 10.

Table 5. Economics enrollment, by major.

Major	2004 BPS; Percent of Major			2012 BPS; Percent of Major		
	One-and-done	No Economics	Some Economics	One-and-done	No Economics	Some Economics
Humanities	0.16 (0.36)	0.69 (0.46)	0.15 (0.36)	0.10* (0.30)	0.84 (0.37)	0.07 (0.25)
Social Sciences	0.19 (0.39)	0.58 (0.49)	0.24 (0.42)	0.15 (0.36)	0.69* (0.46)	0.16 (0.39)
Life Sciences	0.23 (0.42)	0.60 (0.49)	0.17 (0.37)	0.14* (0.35)	0.73* (0.44)	0.13 (0.33)
Physical Sciences & Math	0.21 (0.41)	0.52 (0.50)	0.27 (0.45)	0.16 (0.37)	0.67 (0.47)	0.17 (0.38)
Computer Science	0.23 (0.42)	0.56 (0.50)	0.21 (0.41)	0.15* (0.35)	0.73* (0.44)	0.12 (0.33)
Engineering	0.30 (0.46)	0.44 (0.50)	0.26 (0.44)	0.21* (0.41)	0.62* (0.49)	0.17 (0.38)
Education	0.16 (0.37)	0.70 (0.46)	0.15 (0.36)	0.10 (0.30)	0.81* (0.39)	0.10* (0.26)
Business	0.15 (0.35)	0.33 (0.47)	0.52 (0.50)	0.13* (0.33)	0.41* (0.49)	0.46 (0.50)
Health	0.13 (0.33)	0.77 (0.42)	0.11 (0.31)	0.07 (0.26)	0.88 (0.33)	0.05* (0.22)
Voc./Tech.	0.16 (0.37)	0.67 (0.47)	0.17 (0.38)	0.08* (0.26)	0.86* (0.35)	0.07 (0.25)
Other Professional	0.17 (0.37)	0.70 (0.46)	0.13 (0.34)	0.18* (0.38)	0.71* (0.45)	0.11* (0.32)
Other	0.17 (0.37)	0.61 (0.49)	0.22 (0.42)	0.14 (0.35)	0.67* (0.47)	0.19* (0.39)

Source: Author's calculations using the 2004 and 2012 BPS surveys.

Notes: Cells report variable means for each major. Economics is included among the social sciences majors. Standard deviations are reported in parentheses. Asterisks indicate statistically significant differences across BPS samples at the 0.05 level or smaller.

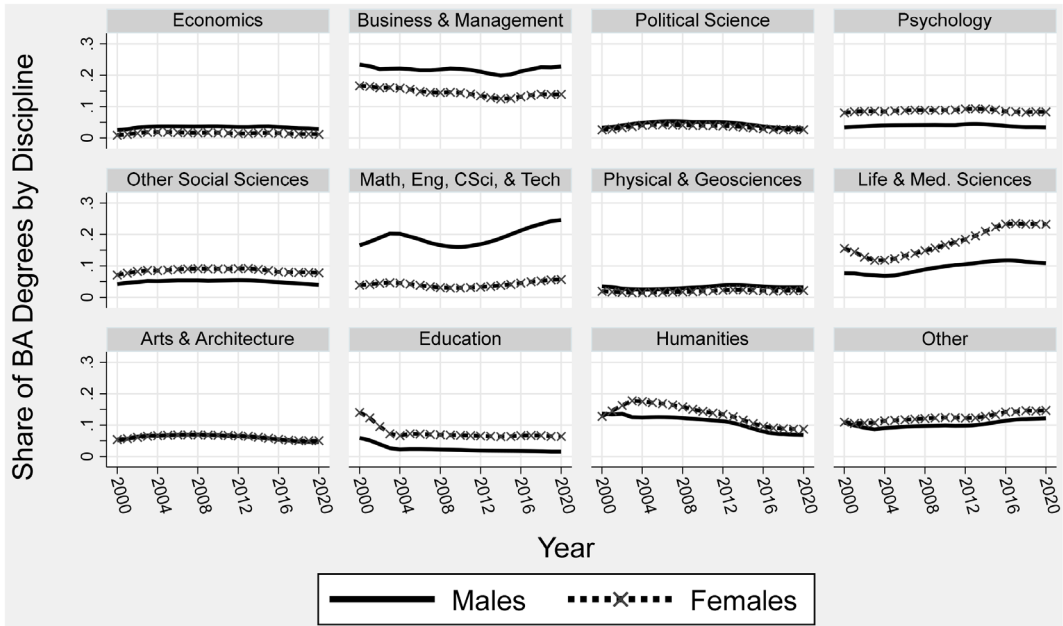


Figure 9. Disciplines' shares of majors 2000–2020 by sex.

respectively. The demographics of the *some economics* group are generally similar to the *one-and-done* group, with the exception that the *some economics* group is more male and has slightly higher math SAT scores. This is consistent with the *some economics* group that includes primarily business majors, who are disproportionately male. Demographic characteristics are generally similar for the 2004 and 2012 cohorts, with the exception that the *one-and-done* and *some economics* students in the 2012 BPS were less male, less white, and more Hispanic than those in the 2004 BPS. Overall, the *one-and-done* and *some economics* students are more similar to one another than to the *no economics* students, who are less male, less white or Asian, and more Black and Hispanic than students with at least *some economics* exposure. Because *one-and-done* and *some economics* students are relatively similar, one could argue that factors that change economics exposure at the extensive margin (i.e., whether students take economics at all) may be more impactful for diversifying economics than factors that change economics exposure on the intensive margin (i.e., converting *one-and-done* students into *some economics* students).

In table 5, I compare the share of *one-and-done*, *some economics*, and *no economics* students across college majors and BPS cohorts. Among the college majors, business has the smallest share of *no economics* students (41 percent in the 2012 BPS) and the largest share of *some economics* students (46 percent in the 2012 BPS). In the 2012 BPS, more than two-thirds of humanities, social sciences, life sciences, physical sciences and math, computer science, education, health, vocational/technical, and other majors took no college economics. Health-related majors have the largest share of *no economics* students; nearly 9 in 10 students in health-related majors never take college economics. I show below that health-related majors are among the fastest growing, with the implication that changing the probability that health-related majors take economics at all would expand college economics exposure considerably.

Although the majority of business majors take college-level economics, the fraction of *no economics* business majors grew from 33 to 41 percent for the 2004 BPS cohort relative to the 2012 BPS cohort. Indeed, for every major, the fraction of *no economics* students was higher for the 2012 BPS cohort than for the 2004 BPS cohort. The largest change in the fraction of *no economics* students occurred among engineering and vocational/technical majors. Slightly more than half (56 percent) of engineering majors in the 2004 BPS had college economics, but that number declined to only 38 percent of engineering majors in the 2012 BPS. Among humanities, social science, life sciences, physical sciences, and math, computer science, education, health, and vocational/technical majors, the fraction of *no economics* students rose more than ten percentage points across the cohorts.

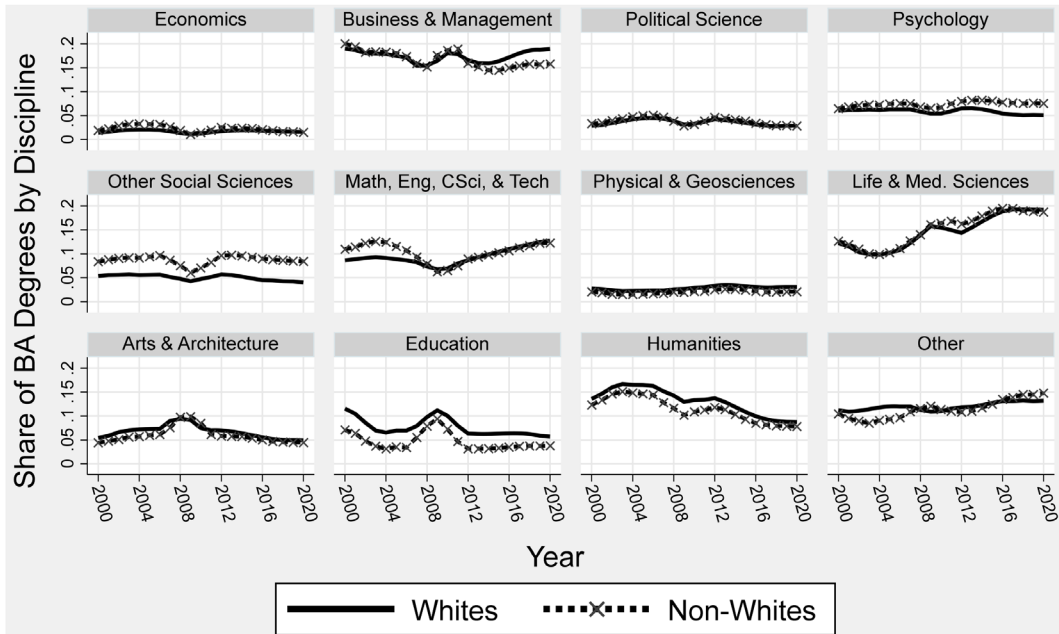


Figure 10. Disciplines' shares of majors 2000–2020 by race.

The increase in the share of *no economics* students is primarily driven by fewer *one-and-done* students among humanities, life sciences, computer science, engineering, business, and vocational/technical majors. At the same time, the fraction of education, health, and “other” students with *some economics* declined across the cohorts. As noted above, changes in economics exposure at the extensive margin may be more impactful for diversifying economics than changes in economics exposure at the intensive margin. Research that examines changes in economics requirements in humanities and STEM majors (e.g., required courses, opportunities for elective courses) across time could identify factors generating changes in economics exposure at the extensive margin, while research examining changes in economics requirements in education, business, and health majors could help explain changes in economics exposure at the intensive margin.

In figures 9 and 10, I present trends in disciplines' shares of majors by sex and race over the past 20 years.¹⁸ As noted earlier, economics has consistently accounted for about 2 percent of all bachelor's degrees earned in the United States for more than two decades. However, economics accounts for different shares of degrees among males relative to females and among whites relative to nonwhites. In 2020, economics accounted for about 2.9 percent of all bachelor's degrees earned by males but only 1.2 percent of those earned by females. Alternatively, psychology accounted for about 8 percent of all bachelor's degrees earned by females but only 3.4 percent of bachelor's degrees earned by males. Majors in life and medical sciences accounted for 23.2 percent of all degrees earned by women but only 11 percent of degrees earned by men. Alternatively, majors in math, engineering, computer science, and technology accounted for 25 percent of degrees earned by men but only 8 percent of degrees earned by women. Attracting more students from STEM majors would increase economics exposure but not necessarily increase diversity in economics. Given that health-related majors are disproportionately women and have the largest fraction of *no economics* students, attracting students from health-related majors could increase both economics exposure and gender diversity in economics classes.

Figure 10 summarizes disciplines' shares of majors by race. With the exception of business/management, psychology, other social sciences, education, and humanities, most disciplines have similar shares of degrees earned among white and nonwhite students. Business/management, education, and humanities account for a smaller share of degrees earned by nonwhite students, while majors in psychology and

other social sciences account for a larger share of degrees earned by nonwhite students. Economics accounts for about 2 percent of degrees earned by both whites and nonwhites.

Conclusion

The questions of who takes economics, what they take, where they take it, and when they take it are of perennial interest, particularly when considering what should go into the only economics class students will ever take. Among beginning postsecondary students in 2012, 74 percent had no exposure to college-level economics, 15 percent had *some economics*, and 12 percent were *one-and-done* students. A back-of-the-envelope calculation applying these figures to a typical introductory economics class implies that about half of the students continue on to take at least a second economics class (including the 2 percent who will major in economics), and half will be *one-and-done*. The characteristics of *one-and-done* and *some economics* students are generally similar and closer to one another than to students with *no economics*. Given that *one-and-done* and *some economics* students are generally similar, one could argue that efforts to diversify and expand economics should focus on factors that impact whether students take economics at all rather than on factors that impact whether students persist in economics. Attracting students in health-related fields to take introductory economics could both expand and diversify those who take economics.

Notes

1. *One-and-done* students take one economics course during college. *Some economics* students take more than one economics course in college, and *no economics* students take no college-level economics. The share of *one-and-done* students for whom the one economics class was not an introductory course is very small (2% in the 2012 BPS, 3% in the 2004 BPS, and 4% in the 2008 B&B). Thus, *one-and-done* students are overwhelmingly those who have taken only introductory economics.
2. I refer to postsecondary institutions and outcomes using the terms “college,” “university, and “institution” interchangeably throughout the article.
3. See table 1. In the 2012 BPS, 12 percent of students were *one-and-done*, and 14 percent were *some economics* students. Of the 26 percent of students who had at least one economics course, 46 percent (12/26) were *one-and-done*, implying that roughly half of introductory students never take another economics course. In the 2012 BPS, 47 percent of students who took introductory economics were *one-and-done*. This figure was 43 percent in the 2004 BPS and 47 percent in the 2008 B&B. Among the 14 percent of the sample with *some economics*, 4 percent major in economics. Applying these percentages to a typical introductory class implies that 46 percent take no other economics, 54 percent take additional economics, and 2.2 percent (0.04×0.54) major in economics.
4. The MIDFIELD institutions are Clemson, Florida A&M, Florida State, Georgia Tech, North Carolina A&T, North Carolina State, Purdue, University of Colorado, University of Florida, University of North Carolina at Charlotte, and Virginia Tech, although the number of participating institutions has varied over time and not all institutions are represented every year.
5. Bosshardt and Watts (2005) also use the B&B to examine undergraduate coursework in economics but with a focus on economics exposure among future teachers.
6. Roughly 3 percent of observations were missing complete demographic or transcript information.
7. The CIP was developed by the NCES to provide a consistent taxonomic scheme to track outcomes for different fields of study across time (see <https://nces.ed.gov/pubs2002/cip2000/> for more information on the CIP classification system).
8. The 45.06 CIP “economics” category includes 45.0601 general economics, 45.0602 applied economics, 45.0603 econometrics and quantitative economics, 45.0604 development economics, 45.0605 international economics, and 45.069 other economics. Natural resource economics is in the 03.02 CIP category, economic history is in 54.01, and business/managerial economics is in 52.06.
9. For each dataset, I examined all the course names in the 45.06, 03.02, 54.01, and 52.06 CIP categories and any course with “economics” or a similar term in the title. The Stata code I used is available on request.
10. I use data from the Integrated Postsecondary Education Data System (IPEDS, <https://nces.ed.gov/ipeds/>) in figures 9 and 10. IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs and includes information on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid.
11. According to the NCES (<https://nces.ed.gov/ipeds/search/ViewTable?tableId=11308>), there were 17.7 million students enrolled in college in the fall of 2004 and 21.1 million enrolled in the fall of 2012. Using the average of the two (19.4 million), I estimate that roughly 7.4 million students (38%) from the 2004 cohort were exposed to economics,

while only 5 million students (26%) from the 2012 cohort were exposed to economics, a difference of roughly 2.4 million students.

12. Because the BPS surveys beginning college students, many are undeclared/general education majors and/or leave college before formally declaring a major. The 2012 (but not 2004) BPS includes a BPS-derived first-year major at a detailed enough CIP code level to identify economics majors separately from social sciences majors more generally. The distribution of majors among *some economics* students in the 2012 BPS who did not major in economics is business (41%), undeclared/general (15%), engineering (7%), social sciences, health, vocational/technical (6% each), life sciences (5%), humanities (4%), education and computer science (3% each), and physical sciences and other professional (1.5% each), and math (<1%).
13. Both cohorts are included in [figure 7](#) because their timing of economics course-taking is nearly identical.
14. AP credits for economics could be from either the AP macroeconomics or AP microeconomics exam.
15. A score of 3 on the exam counts for college credit at many institutions, but because different institutions have different criteria for accepting AP credits, the score necessary to “pass” varies.
16. The College Board, which administers the AP program, notes that AP exam participation rose from 19 percent of the high school graduating class of 2003 to 33 percent of the class of 2013, in part due to an array of programs to expand access to the AP program (<https://newsroom.collegeboard.org/10-years-advanced-placement-exam-data-show-significant-gains-access-and-success-areas-improvement>).
17. Dual enrollment programs are partnerships between colleges and high schools that allow high school students to enroll in college courses and earn transferable college credit.
18. The discipline groups are aggregated from more than 50 separate majors in the IPEDS data. *Arts and Architecture* includes architecture and environmental design and arts and music. *Political Science* includes political science, and public administration and law. *Other Social Sciences* includes anthropology, area and ethnic studies, history of science, linguistics, social service professions, and sociology. *Math, Engineering, Computer Science, and Technology* includes mathematics and statistics, all subfields of engineering, computer science, and health, science, and engineering technologies. *Humanities* includes English and literature, foreign languages, history, and religion and theology. *Life and Medical Sciences* includes agricultural sciences, biological sciences, medical sciences, and “other” life sciences (e.g., nursing, physical therapy, exercise science, and occupational therapy). *Physical & Geosciences* includes astronomy, atmospheric sciences, chemistry, earth sciences, oceanography, physics, and interdisciplinary sciences. *Other Disciplines* includes communication and librarianship, vocational studies and home economics, and other non-sciences or unknown disciplines.

Acknowledgments

The author thanks John Siegfried, Tisha Emerson, KimMarie McGoldrick, Avi Cohen, Scott Wolla, and participants at the SEE annual meeting for helpful comments.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

This work was supported in part by the MSU Initiative for Regulation and Applied Economics.

ORCID

Wendy A. Stock  <http://orcid.org/0000-0002-8580-1784>

References

- Bosshardt, W., and W. Walstad. 2017. Economics and business coursework by undergraduate students: Findings from Baccalaureate and Beyond transcripts. *Journal of Economic Education* 48 (1): 51–60. doi: 10.1080/00220485.2016.1252299.
- Bosshardt, W., and M. Watts. 2005. Teachers’ undergraduate coursework in economics in the Baccalaureate and Beyond Longitudinal Study. *Journal of Economic Education* 36 (4): 400–405. doi: 10.3200/JECE.36.4.400-406.
- . 2008. Undergraduate students’ coursework in economics. *Journal of Economic Education* 39 (2): 198–205. doi: 10.3200/JECE.39.2.198-205.

- de Brey, C., L. Musu, J. McFarland, S. Wilkinson-Flicker, M. Diliberti, A. Zhang, C. Branstetter, and X. Wang. 2019. *Status and trends in the education of racial and ethnic groups 2018*. NCES 2019-038. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Emerson, T., K. McGoldrick, and K. Mumford. 2012. Women and the choice to study economics. *Journal of Economic Education* 43 (4): 349–62. doi: [10.1080/00220485.2012.714306](https://doi.org/10.1080/00220485.2012.714306).
- National Center for Education Statistics (NCES). 2020. *The condition of education 2020*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, NCES. https://nces.ed.gov/programs/coe/pdf/coe_cpb.pdf (accessed May 15, 2022).
- . 2022a. Characteristics of postsecondary students. *Condition of education*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, NCES. <https://nces.ed.gov/programs/coe/indicator/csb> (accessed May 1, 2022).
- . 2022b. Undergraduate retention and graduation rates. *Condition of education*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, NCES. <https://nces.ed.gov/programs/coe/indicator/ctr> (accessed May 1, 2022).
- Reeves, R., and E. Smith. 2021. The male college crisis is not just in enrollment, but completion. Brookings Institution. Blog, October 8. <https://www.brookings.edu/blog/up-front/2021/10/08/the-male-college-crisis-is-not-just-in-enrollment-but-completion/> (accessed April 15, 2022).
- Siegfried, J. J. 2000. How many college students are exposed to economics? *Journal of Economic Education* 31 (2): 202–4. doi: [10.2307/1183192](https://doi.org/10.2307/1183192).
- . 2022. Trends in undergraduate economics degrees, 2001–2021. *Journal of Economic Education* 53 (3): 273–76. doi: [10.1080/00220485.2022.2075511](https://doi.org/10.1080/00220485.2022.2075511).
- Siegfried, J., and W. Walstad. 2014. Undergraduate coursework in economics: A survey perspective. *Journal of Economic Education* 45 (2): 147–58. doi: [10.1080/00220485.2014.889965](https://doi.org/10.1080/00220485.2014.889965).
- Stock, W. 2017. Trends in economics and other undergraduate majors. *American Economic Review Papers Review* 107 (5): 644–49. doi: [10.1257/aer.p20171067](https://doi.org/10.1257/aer.p20171067).