

Is a Name Change a Game Change? The Impact of College-to-University Conversions

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Abstract

In the competitive U.S. higher education market, institutions differentiate themselves to attract both students and tuition dollars. One understudied example of this differentiation is the increasing trend of “colleges” becoming “universities” by changing their names. Leveraging variation in the timing of such conversions in an event study framework, I show that becoming a university increases enrollments at both the undergraduate and graduate levels, which leads to an increase in degree production and total revenues. I further find that these effects are largest when institutions are the first in their market to convert to a university and can lead to negative spillover effects on non-converting colleges.

JEL Codes: H44, I21, I23, L14

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1 Introduction

Colleges and universities in the United States make a myriad of strategic decisions each year to attract students to their campuses. In recent years, such decisions have become increasingly important as institutions, particularly those outside of the elite echelon, have faced many challenges. For example, a declining traditional college-age population has left institutions in the northeast and Midwest competing for a smaller pool of potential students (Grawe, 2019). Meanwhile, public institutions have faced declining state support (Mitchell et al., 2019) and many Americans express skepticism about the value of a college education (Parker, 2019). In the face of these trends, colleges have sought new ways to differentiate themselves in hopes of enrolling more students and claiming more tuition dollars. Many have done so by investing in non-instructional amenities (Jacob, McCall, and Stange, 2018), adding new programs of study (Cook, 2020), or increasing their advertising presence (Cellini and Chaudhary, 2020).

However, some smaller colleges have taken an alternative approach: they have re-branded themselves as a “university,” rather than a “college.” Indeed, between 2001 and 2016, over 100 four-year colleges changed their names to forgo the word college and include the word university instead. College leaders are not shy in providing their motivations for such changes. When Lynchburg College in Virginia announced that it would become the University of Lynchburg in the fall of 2018, their vice president and dean for academic affairs stated that “claiming our status as a university will... enable us to attract and recruit more students” (Gentry, 2017). Similarly, when Lasell College in Massachusetts announced its plans to convert to Lasell University, their president told *The Atlantic* that the change had “promotional value” and that the institution experienced an immediate bump in internet search activity following the announcement (Wong, 2019).

While there is some research on factors that influence colleges’ decisions to convert to universities (Morphew, 2002; Jaquette, 2013), there is no direct evidence on whether such conversions successfully attract students to institutions and affect institutions’ finances. In this paper, I leverage variation in the timing of institutions’ conversions in an event study framework to provide the first analysis in the literature of how college-to-university conversions affect a variety of institu-

tional outcomes. I first show that the conversions are salient to the general public, with the share of Google searches for the “college” decreasing and the share of searches for the “university” increasing following a conversion announcement. I then use rich, institution-level data from the U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS) and College Scorecard to estimate the impacts of conversions on enrollments, awards, and finances. I find that converting to a university increases an institution’s first-time undergraduate enrollment by 4.3% and total graduate enrollment by 15.8% within two years. These effects grow to 6.7% and 46.5%, respectively, five or more years following a conversion. Conversions further increase the number of awards institutions confer—particularly at the master’s and graduate certificate levels—by 10.6% and lead to 7-9% higher revenues, which institutions spend on instruction and academic support services and use to hire more staff members. These results are robust to controlling for a variety of time-varying institutional characteristics, including changes in degree offerings and physical capacity, suggesting that the name of an institution influences student demand above and beyond the educational experience it offers.

I further provide evidence that college-to-university conversions have implications for competition within the higher education market. First, I document a clear first-mover advantage, where the effects of conversions are larger for institutions that are the first in their markets to do so. Second, I estimate the impact of conversions on other institutions in the same market and find negative spillover effects of conversions on non-converting colleges’ degree production and revenues. This result suggests that a portion of the gains to a college-to-university conversion come at the expense of other institutions’ ability to attract, retain, and graduate students.

Taken together, my findings contribute to a large body of empirical work on students’ college choices. The college application and admissions processes are complicated and students often lack information and guidance regarding where to apply and where to attend. As a result, students often rely on rankings (Griffith and Rask, 2007; Alter and Reback, 2014; Hurwitz and Smith, 2018) and media coverage (Lindo et al., 2019; Rooney and Smith, 2019) to make their decisions, and relatively small changes in application costs can dramatically affect students’ behavior (Smith, Hurwitz, and Howell, 2014; Pallais, 2015; Knight and Schiff, 2019). In this paper, I document that

students' choices are also sensitive to the name of an institution, which students may interpret as a signal of its quality in the absence of reliable information and guidance about college attributes. This finding is consistent with work by Clinton (2020), who finds that students enrolled in a college that converts to a university experience higher earnings in the labor market, suggesting that employers also interpret a "university" as higher quality than a "college."¹

I also build on prior work showing how colleges behave strategically to maximize their rankings, enrollments, and revenues. For example, Conlin, Dickert-Conlin, and Chapman (2013) find that colleges strategically use test-optional admission policies to improve their rankings, while Luca and Smith (2015) provide evidence that business schools selectively choose which ranking information to provide students to appear higher-quality. In addition, my results relate to research within finance and industrial organization on the impacts of firm name changes on profitability. Cooper et al. (2001) finds that corporations that added ".com" to their name in the late 1990s experienced abnormally high stock returns surrounding their name change announcements, while Wu (2010) documents that firms add or delete parts of their names to foreshadow a change in their business focus. McDevitt (2011) further shows that a record of complaints induces residential plumbing firms to change their names, particularly in small markets. I find that name changes can lead to financial gains for higher education institutions, suggesting that such changes may affect consumer demand and financial outcomes in other industries as well.

2 Background & Institutional Setting

2.1 Motivation for College-to-University Conversions

In 2016, there were 1,348 public and private, not-for-profit four-year institutions in the United States.² Of these, 408 (30.3%) contained the word "college" in their name, while 925 (68.6%) contained the word "university," and 15 (1.1%)—such as the Massachusetts Institute of Technol-

¹Outside of the U.S. context, Eble and Hu (2020) find that Chinese colleges who change their names attract more qualified applicants and that employers respond rationally to these changes.

²This number reflects all institutions whose 2016 institutional category in IPEDS was "degree-granting, primarily primarily baccalaureate." It excludes tribal colleges and specialty institutions, such as art institutes and religious seminaries, as well as institutions that only award graduate degrees (e.g., law schools) and those that do not accept federal financial aid.

ogy and the Virginia Military Institute —contained neither word.³ In general, colleges tend to be smaller institutions, enrolling an average of 2,520 students, as compared to an average enrollment of 10,145 at universities. Colleges are also less likely to confer graduate degrees than universities, although the majority of them do offer graduate programs. 62% of colleges enrolled graduate students in 2016, while 95% of universities did. These averages, however, mask the substantial heterogeneity in size and degree focus among institutions in both name categories. For example, Boston College enrolled more students (14,466) than 77% of universities and awarded more graduate degrees than 86% of them in 2016. In contrast, in the same year, Finlandia University in northern Michigan enrolled only 507 students —a lower enrollment than 94% of colleges —and awarded no graduate degrees.

Why, then, do some institutions choose to call themselves colleges, while others choose to call themselves universities? As with many decisions that occur within the competitive U.S. higher education market, the choice is likely a strategic one. Postsecondary institutions seek to maximize some objective function that depends on the quantity and quality of the students they enroll (Epple, Romano, and Sieg, 2006; Fu, 2014; Epple et al., 2017). To attract more, or different, students, institutions make decisions and implement policies that they anticipate will alter students' college enrollment decisions and will induce them to enroll at their institution.

In the case of names, a 1997 article in *The Chronicle of Higher Education* outlines several reasons why, all else equal, students may be more likely to attend a university, rather than a college (Lively, 1997). For example, students may not be able to easily distinguish the differences in educational offerings between two-year community colleges —which have increasingly dropped the word “community” from their names—and four-year colleges. Similarly, students and families from outside of the United States may associate colleges with secondary or high school education, rather than higher education. In both cases, adopting a university name can signal to prospective students that the institution offers bachelor's degrees, and in many cases, graduate degrees.

Beyond clarifying institutional offerings, a university name may also signal to students —rightly or wrongly —that an institution offers a higher quality educational experience. In general, Ameri-

³⁹ institutions, such as The University of Maryland at College Park, contained both the word “college” and the word “university.” In these descriptive statistics, I consider these institutions universities.

cans appear to believe that universities represent the best of the U.S. higher education system. For example, when students and parents are asked to name their “dream college,” they overwhelmingly list private and public universities, such as Stanford, Harvard, UCLA, and the University of Michigan (Review, 2020). Moreover, when respondents to Gallup surveys are asked to name the top college or university in the country, they rarely name colleges (Newport, 2003). Given these responses, as well as evidence that employers value degrees from universities more than degrees from colleges (Clinton, 2020), institutions may expect that students would value a university education more than a college education, even if all other institutional characteristics were the same. Converting from a college to a university then becomes a strategic decision where colleges re-brand themselves in hopes of attracting new students.

2.2 Identifying Conversions

To determine whether such conversions successfully attract students, I first identify all colleges that have converted to universities using annual information on higher education institutions’ names from IPEDS. I limit the sample to public and private, not-for-profit institutions that report awarding bachelor’s degrees every year from 2001 and 2016 and contained the word “college” in their name in 2001. I then identify all institutions that remove the word “college” from their names and add the word “university.” Most instances of these deletions and additions are very straightforward and simply replace “college” with “university.” For example, Bentley College became Bentley University and College of the Southwest became University of the Southwest. Others include a slight change in the ordering of words, such as Mount Olive College becoming The University of Mount Olive. I define these types of changes as college-to-university conversions but drop any institutions that substantially alter other words in their names, as these changes may have influenced student demand and institutional outcomes through other channels.

Of the 512 colleges in my sample that did not experience substantial name changes over the time frame of my data, 122 (23.8%) converted to a university by 2016. Appendix Table A.1 lists the pre- and post-conversion names of these institutions, along with their state, sector, and year of their conversion and Appendix Figure A.1 maps their locations. Institutions in 37 states

converted to universities, with the most conversions occurring in Pennsylvania (15), Ohio (11), and Massachusetts (9). Panel A of Figure 1 plots the number of institutions converting to universities each year, showing a smooth distribution of conversions over the time frame of the data. Panel B further presents the cumulative number of conversions that have occurred each year, separated by public and private institutions.

Most institutions that convert to universities are private, as these institutions typically have substantial control over their names and need only a vote by their Board of Trustees to convert to a university (Lively, 1997). Exceptions include religious institutions —who may also need approval from their affiliated religious organization —and institutions in New Jersey, Pennsylvania, Massachusetts, and New Hampshire —who require approval from a state agency before converting to a university.⁴ In contrast, public universities almost always require approval from a state agency, the state legislature, or the governor to convert. While I do not have precise information on each state’s policies regarding conversions, I include state-by-sector-by-year fixed effects in all specifications to account for any changes in these policies over time that may differentially affect public and private institutions in each state.

3 Data & Empirical Strategy

3.1 Data Sources

My analysis relies on annual, institution-level data from IPEDS and the College Scorecard. Both datasets include rich information on institutions’ applications, undergraduate and graduate enrollment, awards conferred, revenues, staffing levels, and expenditures. Through the award conferral data, I construct measures of an institution’s program offerings at the bachelor’s, master’s, graduate certificate, and advanced degree (e.g., Ph.D., M.D., J.D.) levels. I do by counting the number of unique four-digit Classification of Instructional Program (CIP) codes that an institution lists in their awards report for each credential level. I include CIP codes with zero degrees conferred in a given year, as these are programs that institutions report operating, but have no stu-

⁴I gather information on state policies from news articles about colleges’ conversions. These are the only states in which articles mention that state approval was required for a conversion. All others indicate that the decision was made by an institution’s Board of Trustees.

dents completing within a given year. Thus, these counts summarize the total number of programs institutions report offering in a given year.

To complement the IPEDS and Scorecard data, I also gather monthly institution-level internet search data from Google Trends on all institutions that change their name from college to university. Specifically, I obtain all searches for an institution’s “college name” (e.g., Bentley College) and “university name” (e.g., Bentley University) in a given month. Observations for each institution are standardized on a 0 to 100 scale, where 100 represents the maximum search volume for either of the two terms over the time period. I aggregate the data to the academic year to track average monthly search activity from 2004 to 2015 and analyze whether the general public changes the search terms they use for an institution following a conversion.

Table 1 provides summary statistics on the colleges that do and do not convert to universities, both in 2001 (before any conversions in the sample have occurred) and in 2016 (after all conversions in the sample have occurred). At baseline, the colleges that will convert to universities enroll slightly more undergraduate and graduate students and offer more graduate programs than their peers who remain as colleges throughout the time period. They also tend to be somewhat less selective —evidenced by their higher admissions rates and lower average SAT scores —and less resourced, spending less per student on instruction, academic support, and student services.⁵ Many of these differences persist at the end of the sample period, with the gaps in graduate offerings and enrollment growing between 2001 and 2016.

The raw differences in characteristics between colleges that do and do not convert to universities align closely with work by Morphew (2002) and Jaquette (2013), who show that less selective institutions that have already begun offering graduate programs are the most likely to convert to universities. They further hypothesize that these colleges convert in order to move into a different “prestige market,” where they compete with regional comprehensive universities rather than selective liberal arts colleges. Doing so may place them in a more competitive position to attract students and revenues, which is what the remainder of the paper seeks to empirically answer.

⁵The average SAT score measure is provided by the College Scorecard and is computed as the average SAT or ACT-equivalent score across all admitted students. This measure is not reported for all institutions in all years, particularly if a college does not require standardized tests for admissions.

3.2 Event Study Framework

To estimate the causal effect of college-to-university conversions on institutions' outcomes, I exploit colleges' staggered conversions to universities in an event study framework. Intuitively, this approach compares changes in the outcomes of colleges that have converted to a university to changes at colleges that have either not yet changed their name or will not change their name across the time frame of the data. The event study estimating equation is:

$$Y_{isct} = \sum_{k=-13}^{-1} \pi_k * C_i * 1[t - t_i^* = k] + \sum_{k=1}^{15} \phi_k * C_i * 1[t - t_i^* = k] + \mathbf{X}_{it} \boldsymbol{\Gamma} + \mu_i + \lambda_{sct} + \varepsilon_{isct} \quad (1)$$

where Y_{isct} is an outcome of interest for institution i in state s and control c (public vs. private) in year t . \mathbf{X}_{it} is a vector of time-varying institutional characteristics that may affect the outcome, such as tuition rates and the number of programs offered. λ_{sct} is a year fixed effect that varies at the state-by-control level and captures any changes in state-level demographics and policies that may affect public and private institutions differently. ε_{isct} is an idiosyncratic error term. To account for the potential correlation of error terms within an institution, I cluster all standard errors at the institution level.

The indicator C_i takes on a value of 1 if an institution ever converts to a university over the time frame of the data and is equal to 0 otherwise. Therefore, the interactions of C_i and event-year dummies, $1[t - t_i^* = k]$, are equal to 1 when the year of observation is $k = -13, \dots, 15$ years from t_i^* , the date when an institution converts from a college to university.⁶ The omitted year, $k = 0$, corresponds to the final year that an institution operates under its college name. Thus, $k = 1$ corresponds to the first year an institution operates under its university name.

The π_k coefficients trace out the trend of an outcome of interest for colleges that eventually convert from a college to a university, before the year of conversion. Meanwhile, the ϕ_k coefficients estimate how an outcome changes after a college converts to a university. To succinctly summarize these event study results, I follow Bailey and Goodman-Bacon (2015) and also present estimates

⁶Following Sun and Abraham (2020) and Borusyak and Jaravel (2018), I do not bin the endpoints of the event study specification and instead include a fully saturated set of relative time indicator variables. In the figures that follow, I present only a subset of these relative time estimates.

of the following grouped DID equation:

$$Y_{isct} = \beta_{pre} * C_i * 1[t - t_i^* < 0] + \beta_{1-2} * C_i * 1[1 \leq t - t_i^* \leq 2] + \beta_{3-4} * C_i * [3 \leq t - t_i^* \leq 4] \\ + \beta_{5+} * C_i * 1[t - t_i^* \geq 5] + \mathbf{X}_{it}\Gamma + \mu_i + \lambda_{sct} + \varepsilon_{isct} \quad (2)$$

where the β_{pre} , β_{1-2} , β_{3-4} , and β_{5+} coefficients capture how the outcome of interest changes before, in the first two years following, three to four years following, and five or more years following a conversion, respectively. All other variables are the same as in equation (1). I again cluster standard errors at the institution level to account for any potential correlation of the error terms within an institution.

Both equations (1) and (2) rely on a two-way fixed effects (TWFE) approach that compares the outcomes of converting colleges to the outcomes of colleges that have not, have already, or never will convert to universities. However, an emerging literature documents that TWFE models with variation in treatment timing can be biased away from the sign of the true treatment effect if they rely heavily on early treated units as controls for later treated units (Goodman-Bacon, 2021; de Chaisemartin and D'Haultfoeuille, 2020; Callaway and Sant'Anna, 2020; Sun and Abraham, 2020). Thus, in Section 4.4, I also estimate alternative event study specifications proposed by Sun and Abraham (2020) and Cengiz et al. (2019). Both specifications rely on the comparison of treated institutions to only “clean” control institutions that never convert to universities and produce very similar results to my main approaches.

3.3 Validity of Name Change Timing & Anticipatory Effects

My empirical approach estimates how a college’s outcomes change after they officially begin operating as a university. However, colleges may announce plans to convert to universities in advance of these official changes, potentially inducing anticipatory effects of a name change. To determine when name changes become salient to the public, I leverage Google search data on the relative intensity of searches for an institution’s ‘college name’ as opposed to their ‘university name.’⁷ Figure 2 presents event study estimates of these two search measures. Panel A shows that

⁷Because the Google search data is only available beginning in 2004 and at least two pre-treatment periods are needed for the event study approach, this analysis is restricted to institutions that converted to universities in 2006 or later.

the intensity of searches for a college’s name is flat leading up to the year of conversion and then drops precipitously following, indicating that users stop searching for the college name after an institution converts to university. Panel B shows analogous trends for searches of the institution’s university name, which are flat leading up to the conversion year and then increase following. Together, these figures indicate that there is limited public knowledge of the name change prior to an institution operating under their new university name.⁸

3.4 Other Threats to Identification

Even if there are no anticipatory effects of conversions, the event study and grouped DID approaches still rely on the assumption that, conditional on the control variables, institutions that have not or never will convert to universities serve as valid comparisons for the institutions that do. Functionally, this assumption may be broken down into two parts. First, there should be no evidence of differential trends between converters and non-converters before a conversion. This assumption is directly testable through the estimation of the event study specification, which I present visually for all outcomes of interest. Second, there must be no unobserved, contemporaneous changes at converting institutions that would also affect enrollments, awards, or finances. While it is not possible to rule out all changes that may occur simultaneously as an institution converts to a university, there are several that I can test.

First, as colleges convert to universities, they are likely to add more programs of study, particularly at the graduate level. These additions may attract more students to the institution, independent of its name. To test for such changes, Panel A of Appendix Figure A.3 presents event study coefficients on the total number of undergraduate and graduate programs offered by an institution, showing that programs increase both before and after a conversion. In Appendix Figure A.4, I separate the program offerings by degree level and show the largest increases occur in bachelor’s and master’s programs. As such, in the event study and grouped DID specifications that follow, I control explicitly for the number of bachelor’s, master’s, advanced degree, and graduate certificate

⁸ Appendix A.2 presents analogous specifications using quarterly search data and defining treatment as the second quarter of the year in which a conversion occurs(e.g., the second quarter of 2008 if the 2008-2009 academic year is the first year in which an institution appears with their new name in the IPEDS data). These specifications suggest that there is little pre-trend in search behavior prior to the spring preceding the academic year in which the change occurs.

programs an institution offers. In Section 5, I further separate these controls by field of study to account for different impacts of new programs in high-demand and low-demand fields.⁹

Colleges may be adding more programs to change their classification in the Carnegie system, which classifies colleges based on the number and types of degrees they award. To test for changes in colleges' Carnegie classifications, I aggregate the Carnegie data from 2000, 2005, 2010, and 2015 into four categories: (1) baccalaureate institutions, (2) master's institutions, (3) doctoral institutions, and (4) all other institutions.¹⁰ Panel B of Appendix Figure A.3 shows that institutions are likely to become classified as either master's or doctoral institutions prior to their conversion. In Appendix Figure A.6, I further show that this trend is driven by baccalaureate institutions becoming master's institutions prior to a conversion. To account for this potential pre-conversion trend, I control for a college's Carnegie classification in all specifications that follow.

As colleges add more programs and prepare to convert to universities, they may also expand the physical capacity of their campuses, which could allow them to enroll more students and/or generate additional revenue through room and board fees. Such expansions could occur through purchasing new land, constructing new buildings, or upgrading existing buildings. To test for changes in an institution's physical capacity, I estimate event study specifications of the log of the total value of an institution's buildings and land. Panel C of Appendix Figure A.3 presents these results. Colleges increase the value of their land and buildings both in the years leading up to and following a conversion. To capture the effects of these investments, I control for the logged value of buildings and land in the specifications that follow.

Finally, conversions may be more likely to occur when there are changes in administrative leadership, which may be indicative of other, unobserved changes in an institution's reputation or trajectory. The most salient change in leadership institutions can experience is a change in their president. However, I find little evidence that presidential positions change leading up to, or following, a college-to-university conversion. Panel D of Appendix Figure A.3 shows these trends by estimating the event study specification for a dummy variable indicating that an institution has

⁹ Appendix Figure A.5 shows trends in undergraduate and graduate programs in different fields surrounding college-to-university conversions.

¹⁰The Carnegie classification system is only updated every five years and categorizations change slightly over time. Aggregating the data to these four categories allows for reasonable comparisons over the time frame of the sample.

a different president than in the prior year. There is no systematic trend in the probability of having a new president before a conversion, and little evidence that probability changes following a conversion. Nevertheless, in Section 5, I show that the results are robust to including president-by-institution fixed effects that account for any changes in institutions' leadership before or after a conversion.

4 Effects of College-to-University Conversions on Institutional Outcomes

4.1 Enrollment Effects

I begin the analysis by estimating how college-to-university conversions affect both undergraduate and graduate student demand for institutions. Figure 3 presents event study estimates of how the application and enrollment behavior of undergraduate students changes following a college's conversion to a university. In these figures and those that follow, I present both the baseline estimates and estimates of specifications with the following control variables included: the highest degree offered by the institution; the institution's Carnegie classification; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; and the log of average undergraduate in-state and out-of-state tuition and fees.¹¹

Panel A shows that converting to a university immediately increases the number of first-time undergraduate students enrolling in the institution, and Panel B shows a modest increase in total undergraduate enrollment in the years that follow. These results are quite similar with and without controls, suggesting that the name change —rather than, for example, the availability of new dorms or new programs of study —influences students' choices. However, there are minimal effects on the number of applications received (Panel C) or the admissions rate (Panel D), suggesting that conversions do not substantially alter the number of students who apply or are accepted to the institution. Panel E shows that the average SAT score of admitted students also does not change, which is not surprising if institutions are competing in a less selective market. Instead, Panel

¹¹ Appendix Figure A.7 shows changes in tuition rates surrounding college-to-university conversions. There is little evidence that institutions systematically change their tuition rates leading up to, or following, a conversion.

F shows that conversions increase institutions' yield rates, meaning that more admitted students choose to enroll in the university. Table 2 presents the grouped DID estimates of these outcomes. The estimates indicate that first-time enrollment increases by 4.3% in the first two years following a conversion, 6.2% in years three to four, and by 6.7% five or more years after.¹² Yield rates increase by 3.7pp, 2.3pp, and 1.3pp over the same time frames, although the final estimates are not statistically significant, while total undergraduate enrollment increases by an imprecise 3.7% five or more years following a conversion.

Next, Figure 4 shows how graduate enrollments change surrounding an institution's conversion. After including the control variables, Panel A shows that there is little change in whether or not an institution has graduate students enrolled following a college-to-university conversion. However, there are large increases in the number of graduate students enrolled.¹³ Panel B shows that the total number of graduate students is relatively flat prior to a conversion, but increases dramatically following. Panels C and D show that these increases occur among both domestic and international students, the latter of which is often a goal in converting to a university. Finally, because undergraduate enrollments also increase with conversions, Panel E shows how the share of all students enrolled in graduate programs changes when a college converts. This quantity is also relatively flat pre-conversion, but markedly increases following. Table 3 then presents the grouped DID results with the full set of controls for these outcomes. Five years following an institution's conversion, total graduate enrollment increases by 46.5%, with domestic enrollment increasing by 45.4% and international enrollment increasing by 35.2%. The share of students enrolled in graduate programs increases by 2.6pp, which is about an 18% increase over the pre-conversion mean of 14.8%.

4.2 Degree Production Effects

Figure 5 analyzes whether these increases in undergraduate and graduate enrollment translate to increases in awards conferred by an institution, i.e. whether new enrollees persist and earn

¹²In Appendix Figures A.8, I consider whether conversions affect the geographic composition of entering students. Using data on freshmen residency that is reported to IPEDS in even years, I find little effect of conversions on the percentage of freshmen that are in-state, out-of-state, or international.

¹³In the results that follow, I use the inverse hyperbolic sine (IHS) transformation to approximate the log transformation but include observations with zero graduate enrollments. In Panel A of Appendix Figure A.9, I show that using a $\log(x)$ or $\log(x+1)$ functional form produces similar results for total graduate enrollment.

degrees. Panel A shows a small and generally not statistically significant increase in bachelor's degree production, which is consistent with the modest effects of conversions on total undergraduate enrollment. The following panels, however, show relatively flat pre-trends for graduate awards that increase dramatically following a conversion.¹⁴ This effect is particularly pronounced for master's degrees (Panel C) and graduate certificates (Panel E), both of which are shorter in duration than advanced degrees (Panel D). In Panel E, I show that total awards also increase, especially three or more years following a conversion, when the new enrollees have had time to complete degree programs. Table 4 provides the corresponding point estimates for the grouped DID specifications. Total awards increase by 10.6% five or more years out, with the largest effects coming from increases in master's degrees (62% increase) and graduate certificates (36% increase).

In Appendix Figure A.10, I plot estimates of β_{5+} for awards in seven separate fields of study: arts and humanities, business, education, health and medicine, public and social services, social sciences, and STEM. Panel A shows that, while conversions only modestly increase total bachelor's degrees awarded, they markedly increase bachelor's degrees in health and medicine. Panels B, C, and D further show that the increases in graduate degrees occur almost exclusively in business, education, health and medicine, and public and social service. Taken together, these findings suggest that conversions strengthen an institution's focus on pre-professional education, rather than traditional liberal arts and sciences. This increased focus is consistent with work by Morphew (2002) and Jaquette (2013), who find that institutions with specializations in pre-professional programs are also the most likely to convert to universities.

4.3 Financial Effects

Figure 6 shows how converting to a university affects institutions' revenues. Panels A and B show that log revenue, both with and without investment income included, increases following a college's transition to a university. The following panels disaggregate this revenue increase by the source of funds.¹⁵ The increases are most pronounced for net tuition and fees —meaning the tuition

¹⁴I once again use the IHS transformation to include observations with zero graduate degrees awarded. Panel B of Appendix Figure A.9 shows qualitatively similar results for total graduate degrees awarded when using a $\log(x)$ or $\log(x+1)$ functional form.

¹⁵I also use the IHS transformation for these outcomes since some institutions report zero revenue from a given source in a given year.

and fees an institution collects from students, less any discounts they provide —and net revenues from auxiliary enterprises. The latter category includes revenues from dorms and dining halls, which are likely to increase as more students attend an institution. In contrast, there is little change in government revenues or other non-investment revenues, such as donations. Table 5 presents the grouped DID estimates for these outcomes, which indicate that total revenues increase by 7.1% five or more years following a conversion, or 8.7% when the noise from investment income is excluded. Net tuition and fees revenue increases by 8.2% and net auxiliary enterprise revenue increases by 12.5% five or more years following a conversion. As shown in the figures, the estimates for other sources of revenue are noisy and there is no clear evidence that they increase.

With increased revenues, institutions should be able to increase their expenditures. In Appendix Figure A.11, I show that this is indeed the case. Institutions spend 6.9% more five or more years following a conversion, with instructional expenditures increasing by 5.6% and academic support service expenditures increasing by 11.9%. Since higher education is a very labor-intensive industry, this increased spending should increase the number of employees at an institution. To analyze this potential effect, Appendix Figure A.12 then presents event study estimates of conversions on institutions' staffing levels. Panel A indicates that total staff increases following a conversion, while the following panels separate this increase by occupational category. Both faculty (Panel B) and non-faculty staffing levels increase, with a larger increase in the latter category. Taken together with the revenue results, these findings indicate that converting to a university leads to an improved financial standing for the institution, whereby they earn, spend, and hire more.

However, these increases in revenues, expenditures, and staffing levels do not necessarily lead to a higher-quality educational experience for students as total enrollments are also increasing. In Appendix Figure A.13, I show that *per-student* revenue and expenditures actually decrease following a college-to-university conversion (with some evidence of pre-treatment trends). The number of faculty per student does not change in a meaningful way, while the number of no-faculty staff per student increases slightly. While declining per-student resources bolsters the interpretation that students are responding to changes in institutions' names, rather than their educational quality, it also provides a cautionary tale for the future outcomes of students enrolled in these institutions

since prior work finds positive effects of increased per-student spending on both educational attainment (Bound and Turner, 2007; Deming and Walters, 2018) and long-run financial outcomes (Chakrabarti, Gorton, and Lovenheim, 2020).

4.4 Robustness & Heterogeneity

As discussed in Sections 2 and 3, the event study specifications are estimated across 122 college-to-university conversions taking place between 2002 and 2015. This variation in treatment timing can contaminate the main event study estimates if there are heterogeneous treatment effects across treatment cohorts. To assess the extent to which such contamination is a concern in my empirical setting, Figure 7 compares my main event study specifications to alternative event study estimators for four key outcomes of interest: log first-time enrollment, graduate enrollment share, log total awards, and log total revenue.

The first estimator is the one proposed by Sun and Abraham (2020) and allows the event study coefficients to vary by the year in which an institution converts and then produces a weighted average of the cohort-specific estimates for each coefficient, where the weights are based on the relative number of conversions that occur in each year. The second estimator is the stacked event study introduced by Cengiz et al. (2019), where I compare each converting institution only to institutions that never convert to universities within the time frame of the data. Both specifications rely on the comparison of treated units (i.e., colleges that convert to universities) to clean control units (i.e., colleges that do not convert to universities within the sample period) to prevent the negative weighting of some events that may occur in the traditional TWFE design. For all four outcomes, the results are nearly identical between my main specification and the alternative estimators and none of the event study estimates are statistically different from one another. This finding is likely driven by the fact that the specifications include more than three times the number of control units (390) than treated units (122) and indicates that heterogeneous treatment effects across cohorts are not contaminating the main results.¹⁶

Table 6 then summarizes several additional specifications for the key outcomes, concentrating

¹⁶A decomposition of all possible 2x2 DID comparisons, as proposed by Goodman-Bacon (2021), indicates that 88% of comparisons are those between converting and never-converting institutions (as opposed to early vs. late or late vs. early conversions).

on the long-run effects five or more years following a conversion. Column (1) provides the main specification estimate, while column (2) includes year fixed effects that I do not interact with state and sector indicators. The results from this approach are somewhat attenuated, suggesting that there are likely unobserved changes over time at the state-sector level that are correlated with name change decisions. Nevertheless, the estimated effects for graduate enrollment share, total awards, and total revenue remain positive and statistically significant.

Column (3) includes detailed measures of program offerings to account for the fact that changes in student demand may be sensitive to the fields in which new programs are offered. For example, more students may be interested in an institution when it increases their offerings in business and STEM subjects, as opposed to arts or humanities. When including separate controls for the number of bachelor's, master's, advanced degree, and graduate certificate programs in seven different fields of study, the results attenuate slightly.¹⁷ However, all remain positive and statistically significant, indicating that the students' responses to conversions are not solely driven by changes in the types of programs offered.

Column (4) then tests the sensitivity of the results to including a full set of president-by-institution fixed effects that capture any changes related to a new president directing the institution.¹⁸ The results hardly change with the inclusion of these controls, providing further evidence that students are responding to a college's conversion to a university, rather than other unobserved changes that may be induced by a new administration. Finally, Column (5) drops conversions that occurred as part of a system-wide change in a public university system, as such conversions may be more likely to coincide with other, unobserved changes in institutional characteristics. These conversions include four West Virginia public colleges that converted to universities in 2004, six Massachusetts public colleges that did so in 2010, and three Colorado public colleges that did so in 2012. Excluding such conversions from the sample minimally change the results and, if anything, produces slightly larger point estimates.

Next, Table 7 presents estimates of heterogeneous long-run effects for the main outcomes of

¹⁷The seven different fields of study are the same used to disaggregate the award results in the previous section: arts and humanities, business, education, health and medicine, public and social services, social sciences, and STEM.

¹⁸For institutions that retain the same president throughout the time frame of the data, these interactions are absorbed by the institution fixed effects. For institutions that change presidents, the inclusion of these interactions allows the institution fixed effects to vary by president.

interest. I first stratify the sample by sector to understand how conversions differentially affect public and private institutions. Unsurprisingly, the effects for private institutions —who make up the majority of the sample —align closely with the main results. The effects for public institutions are noisier but suggest that conversions have a greater impact on graduate enrollment and degree production than for private institutions. However, they have a much smaller impact on first-time undergraduate enrollment. Conversions also do not increase total revenues for public colleges, which could reflect differences in the objectives of public and private institutions. For example, whereas private institutions may convert to improve their financial viability, public institutions may do so to provide more opportunities for residents of their state to pursue graduate degrees or to make up for a decline in state appropriations for higher education (Jaquette, 2019).

In columns (4) and (5), I stratify the sample by baseline selectivity, identifying institutions as being above or below the median admissions rate in 2001. In terms of graduate enrollment, total awards, and total revenues, converting to a university benefits selective institutions more than their less selective peers. These findings indicate that more selective institutions may be better able to leverage their selectivity and resources to attract new students when they convert, whereas less selective institutions may struggle to do so.

In columns (6) and (7), I stratify the sample by baseline size, defined as being above or below the median total full-time equivalent enrollment in 2001. Smaller institutions see larger increases in first-time undergraduate enrollment and revenues, while larger institutions see more of an increase in their graduate enrollment share and total awards. Finally, in columns (8) and (9), I stratify the sample by college age, using data on the years in which they were first established from the 1980 IPEDS survey. Older colleges, which I define as those with establishment dates below the median of the sample, see much larger increases in first-time enrollment, awards, and revenues, than their younger peers. Similar to the selectivity results above, it may be the case that more established colleges can better leverage their reputation to attract students. As such, institutions and policymakers should take these differences into account when deciding whether a conversion is likely to help them achieve their longer-run goals.

5 Implications for Competition

College-to-university conversions increase the enrollment, degree production, and revenues of converting institutions, but may also have effects on non-converting institutions. To establish the welfare effects of conversions on the competitive U.S. higher education market as a whole, I first document that there is a first-mover advantage, where colleges that are the first in their market to convert to universities experience larger returns to doing so. I then consider the spillover effects of conversions on non-converting institutions' enrollments, awards, and revenues.

5.1 First-Mover Advantage

To establish the presence of a first-mover advantage in conversions, I estimate equation (2) separately for colleges that are the first in their region, in their region/sector pair, in their state, or in their state/sector pair to convert to a university. Table 8 presents these estimates. Panel A considers the advantage of being a first-mover on first-time enrollment. There is little evidence of an advantage of being the first-mover in one's region or region/sector pair, but a clear advantage of being the first college in one's state or state/sector pair to convert to a university. First-movers at the state level see an 11.1% increase in first-time enrollment, while non-first-movers see a statistically insignificant 1.2% increase. Similarly, first-movers at the state/sector level see a 9.9% increase in first-time enrollment, compared to a 2.2% increase for those who are not the first to convert. Panel B repeats this analysis for graduate enrollment share. While there is some evidence that institutions that are the first in their region/sector pair to convert experience a larger growth in graduate enrollment, in general, both first-movers and non-first-movers experience increases in graduate enrollment.

Panel C then assesses the first-mover advantage for total awards conferred five or more years following a conversion. Across all four market definitions, the estimated effects are larger for first-movers than non-first-movers. At the state level, an institution that converts first experiences a 15.5% increase in total awards conferred, whereas an institution that is not the first to convert experiences a statistically insignificant 4.3% increase. A similar trend emerges for total revenues in

Panel D, where first-movers experience larger gains across all specifications. First-movers within a state experience a 13.3% increase in revenue, whereas non-first-movers in a state experience a 4.5% increase, which is not statistically significant at conventional levels. Taken together, these results suggest that a substantial share of the average return to converting to a university can be attributed to the novelty of being the first institution in one's market to do so.

5.2 Spillover Effects on Other Institutions

To assess the extent to which colleges' decisions to convert to universities have spillover effects on other institutions in the higher education market, I limit the sample to colleges that never convert to a university and append the dataset with institutions that were already universities in 2001.¹⁹ Thus, the analysis sample consists of all colleges and universities that retain their "college name" or "university name" for the entirety of the sample. I then estimate specifications of the following form:

$$Y_{imt} = \beta_1 \text{ShareConverted}_{mt} * \text{College}_i + \beta_2 \text{ShareConverted}_{mt} * \text{University}_i + \mathbf{X}_{it} \boldsymbol{\Gamma} + \mu_i + \lambda_t + \varepsilon_{isct} \quad (3)$$

where Y_{imt} is some outcome of interest for institution i that competes in market m in year t . The main independent variable of interest is $\text{ShareConverted}_{mt}$, which measures the share of institutions in market m that have converted from colleges to universities by year t . I allow the effect of this variable to vary based on whether the non-converting institution is a college or a university and define markets in the same manner as in Section 5.1: region, region/sector, state, and state/sector. \mathbf{X}_{it} is a vector of the same time-varying, institution-level controls I include in the main analysis. μ_i is an institution fixed effect and λ_t is a year fixed effect. Because the variation in conversion shares comes from the market level, I cluster all standard errors at the market level.

Table 9 presents estimates of β_1 and β_2 for three outcomes of interest: total headcount enrollment (both undergraduate and graduate), total awards conferred, and total revenue less investment income. Panel A shows how other institutions converting to universities affects a non-converting

¹⁹I continue to drop any institution that initiates any major name change between 2001 and 2016.

institution's enrollment. Across the market definitions, there is little evidence that conversions affect enrollment at non-converting universities, but suggestive evidence that conversions cut into enrollment at non-converting colleges. A 10pp increase in the share of the market that has converted to a university reduces enrollment at non-converting colleges by 1.9-4%, with the largest effects coming from the region/sector market definition.

Panel B presents a similar trend for total awards conferred. A 10pp increase in the share of the market that has converted to a university decreases awards conferred by colleges by 1.4-7.7% and awards conferred by universities by up to 4.8%. The estimates are most precise when considering the region/sector market definition and the effects are consistently larger in magnitude for colleges than for universities. Finally, Panel C shows that non-converting colleges experience revenue declines when other colleges in their market convert to universities. A 10pp increase in the share of the market that has converted decreases colleges' revenues by 0.8-2.4%, with little evidence that such conversions decrease revenues for existing universities. In sum, these results suggest that college-to-university conversions have negative spillover effects on non-converting colleges that operate in the same markets.

6 Conclusion

Between 2001 and 2016, over 100 four-year colleges converted to universities. In this paper, I present the first analysis in the literature of the effects of these conversions on institutions' enrollments, degree production, and institutional finances, as well as on non-converting institutions in the same markets. Leveraging variation in the timing of institutions' conversions, I show that becoming a university increases enrollment among both undergraduate and graduate students, accelerates degree production, and leads to improved financial outcomes for the university. Importantly, these effects are robust to accounting for other institution-level changes that often surround conversions, such as the addition of new programs and the expansion of campuses. Thus, my results suggest that the name of an institution can influence student demand above and beyond the educational experience it offers.

I further find that college-to-university conversions have implications for the functioning of the U.S. higher education market as a whole. I show that institutions that are the first in their market to convert to a university experience the largest increases in degree production and total revenues, suggesting that there is a first-mover advantage in initiating a college-to-university conversion. In addition, I find that conversions can reduce enrollments, awards, and revenues at non-converting colleges in the same markets. Policymakers may wish to consider these spillover effects when crafting rules and regulations about college-to-university conversions.

Research on such policies would be a valuable contribution to the literature, as would work on other name and branding changes within the higher education market. For example, many public two-year colleges have changed their names multiple times since their inception, evolving from junior colleges to community colleges to now colleges, that sometimes offer bachelor's degrees Marklein (2014). Other institutions have made decisions to remove directional words, such as northeast or southwest (Riley, 2015), or religious indicators (Boehnke, 2011) from their names. Understanding how these types of changes affect students' enrollment decisions and institutional outcomes remains an important line of inquiry, as they provide insight into both the college choice process and the strategic behavior of institutions.

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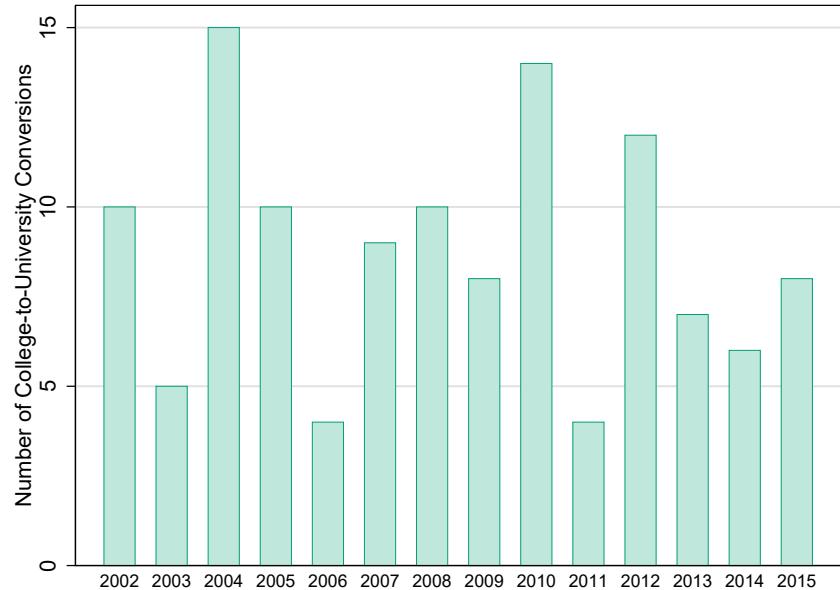
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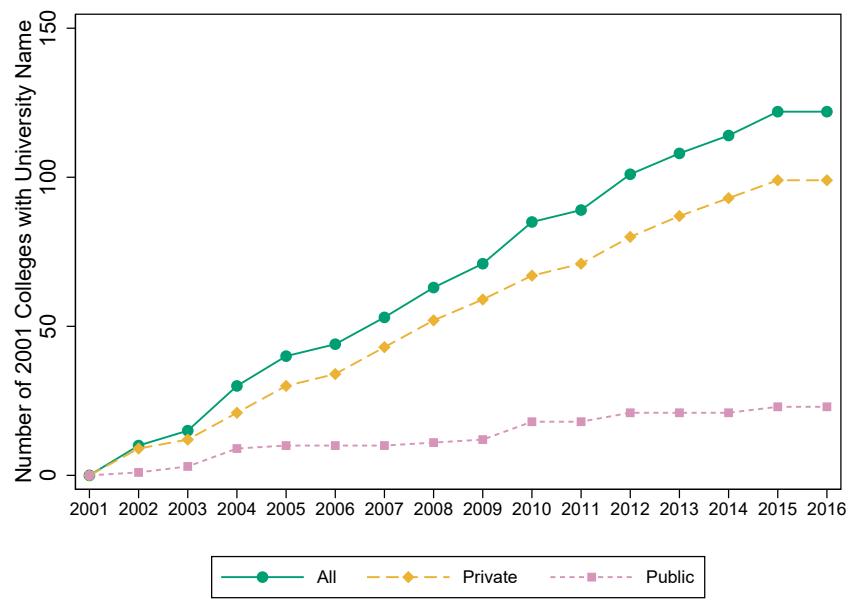
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Figure 1: College-to-University Conversions, 2002-2015

(a) Number of Conversions by Year



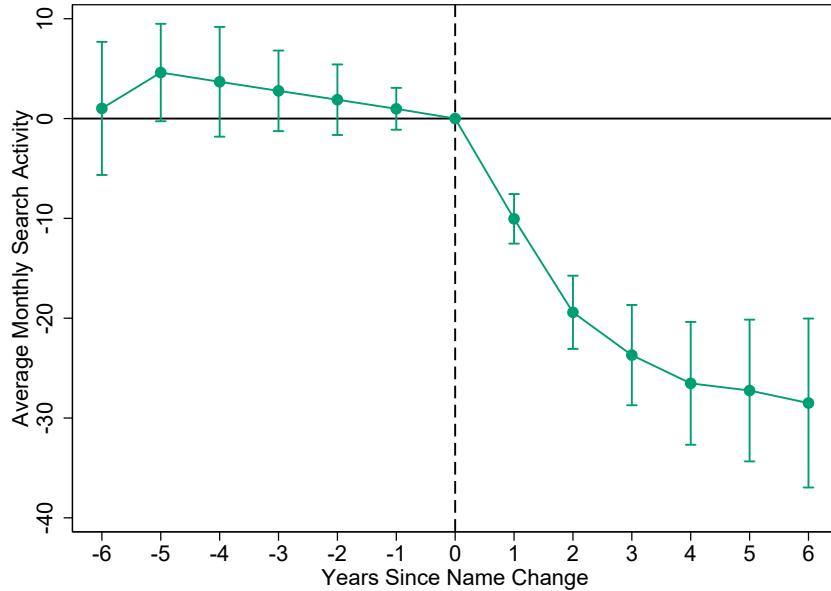
(b) Cumulative Conversions, 2001 Colleges



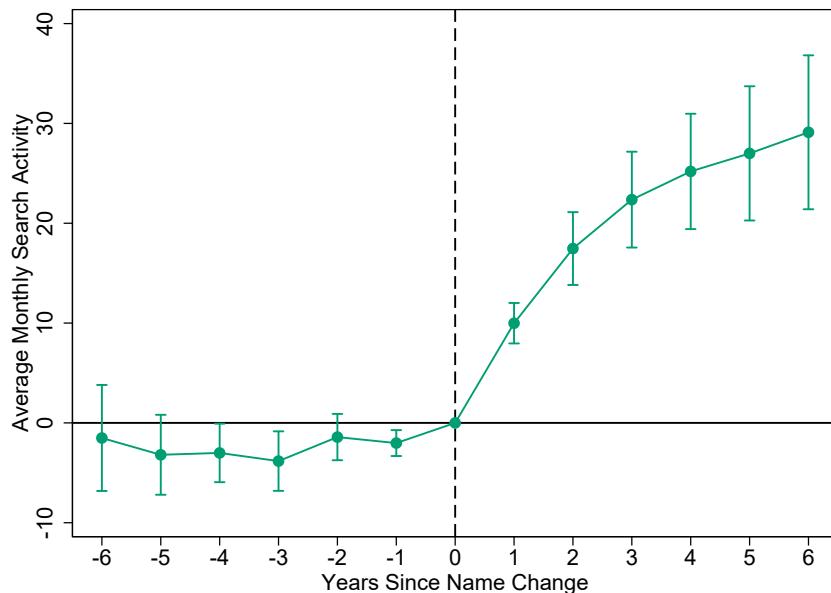
Notes: Panel A shows the number of colleges that converted to universities in each year between 2002 and 2015. Panel B shows the cumulative number of changes that have occurred by each year, separated by public and private institutions.

Figure 2: Changes in Search Activity Following College-to-University Conversions

(a) College Search Activity



(b) University Search Activity



Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector-by year fixed effects included. All standard errors are clustered at the institution level. Panel A shows changes in Google search activity for an institution's "college" name, while Panel B shows changes in search activity for the "university" name.

Figure 3: Changes in Undergraduate Enrollment Following College-to-University Conversions

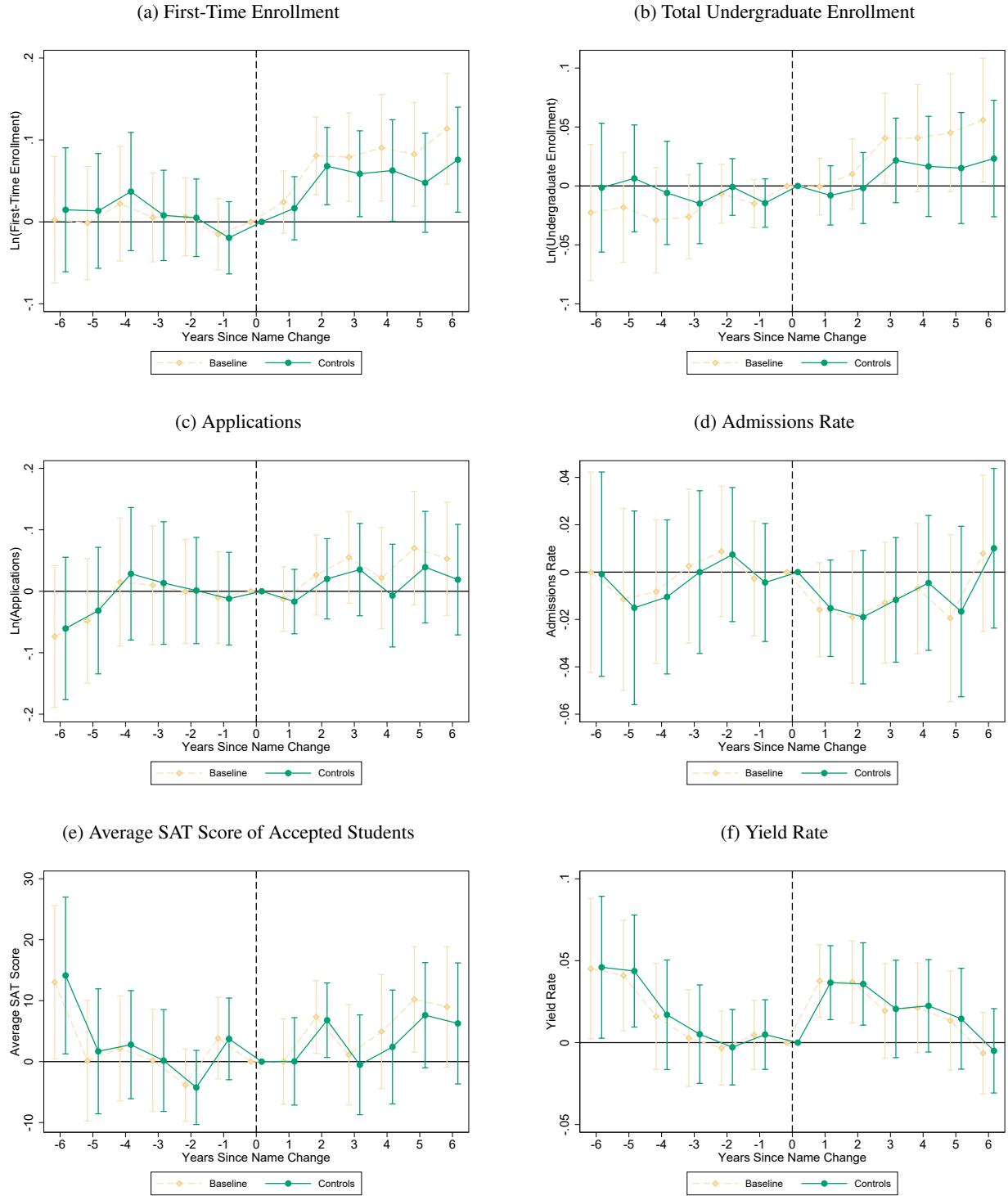
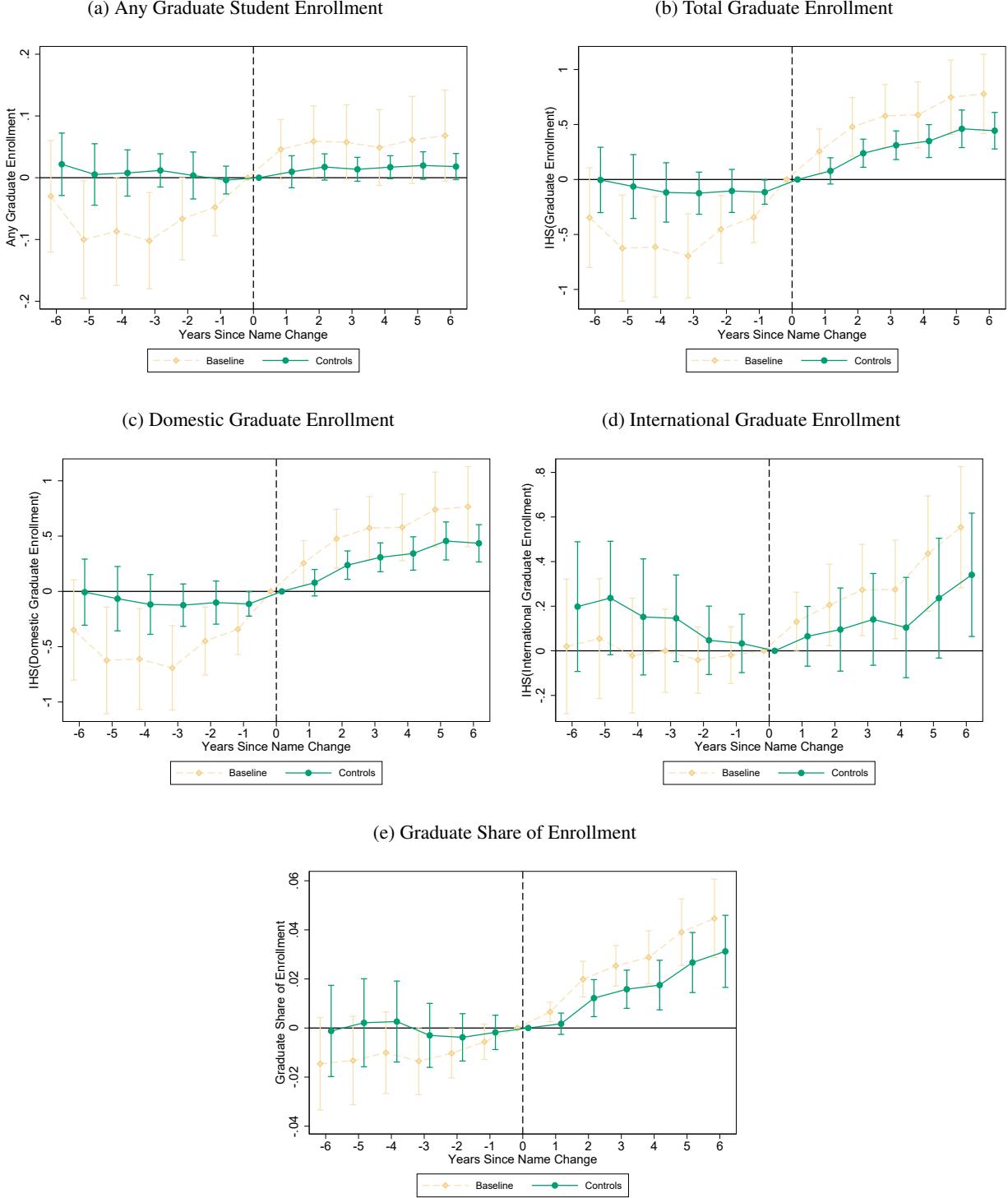


Figure 4: Changes in Graduate Enrollment Following College-to-University Conversions



Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1). All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level.

Figure 5: Changes in Awards Conferred Following College-to-University Conversions

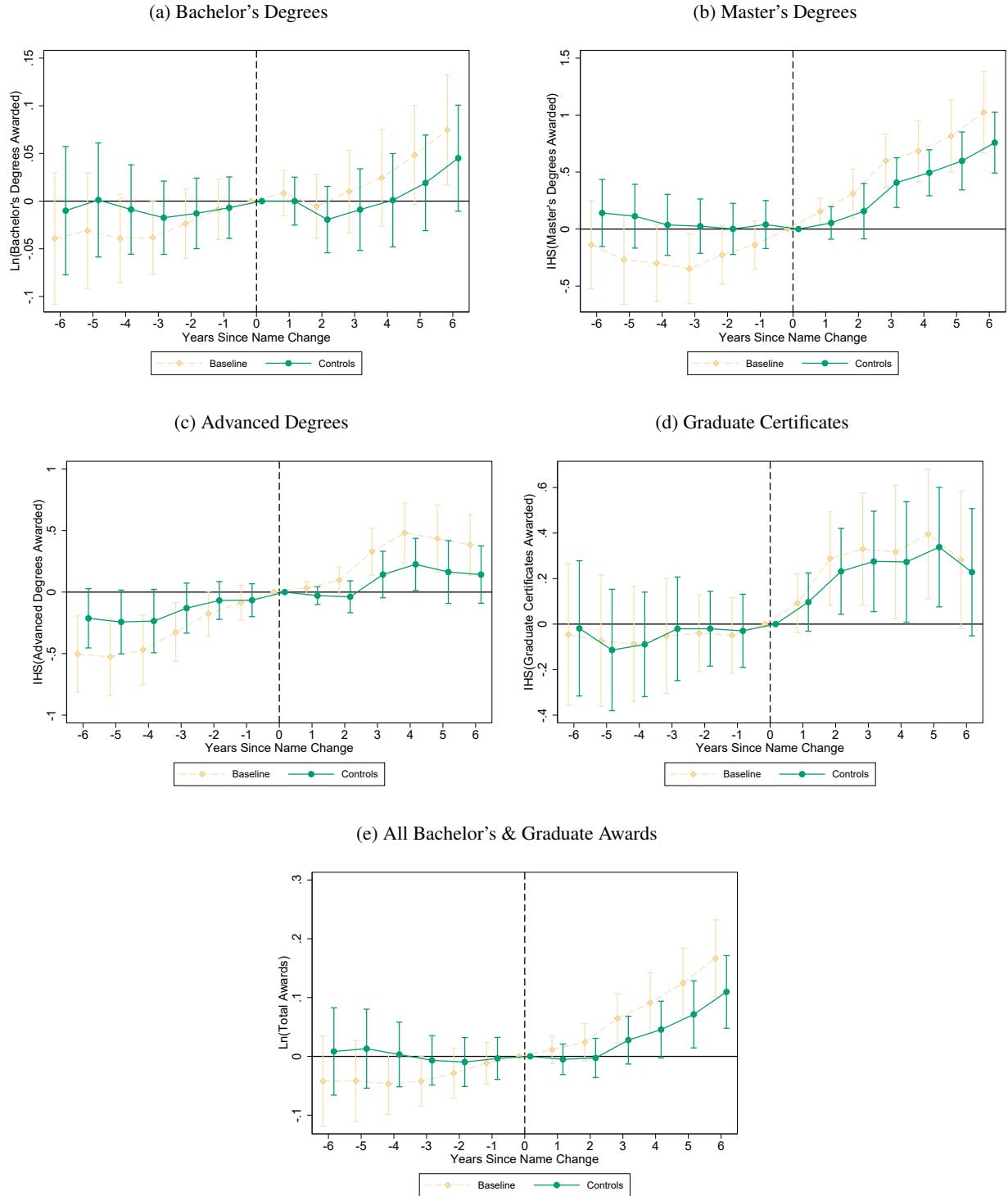


Figure 6: Changes in Institutional Revenues Following College-to-University Conversions

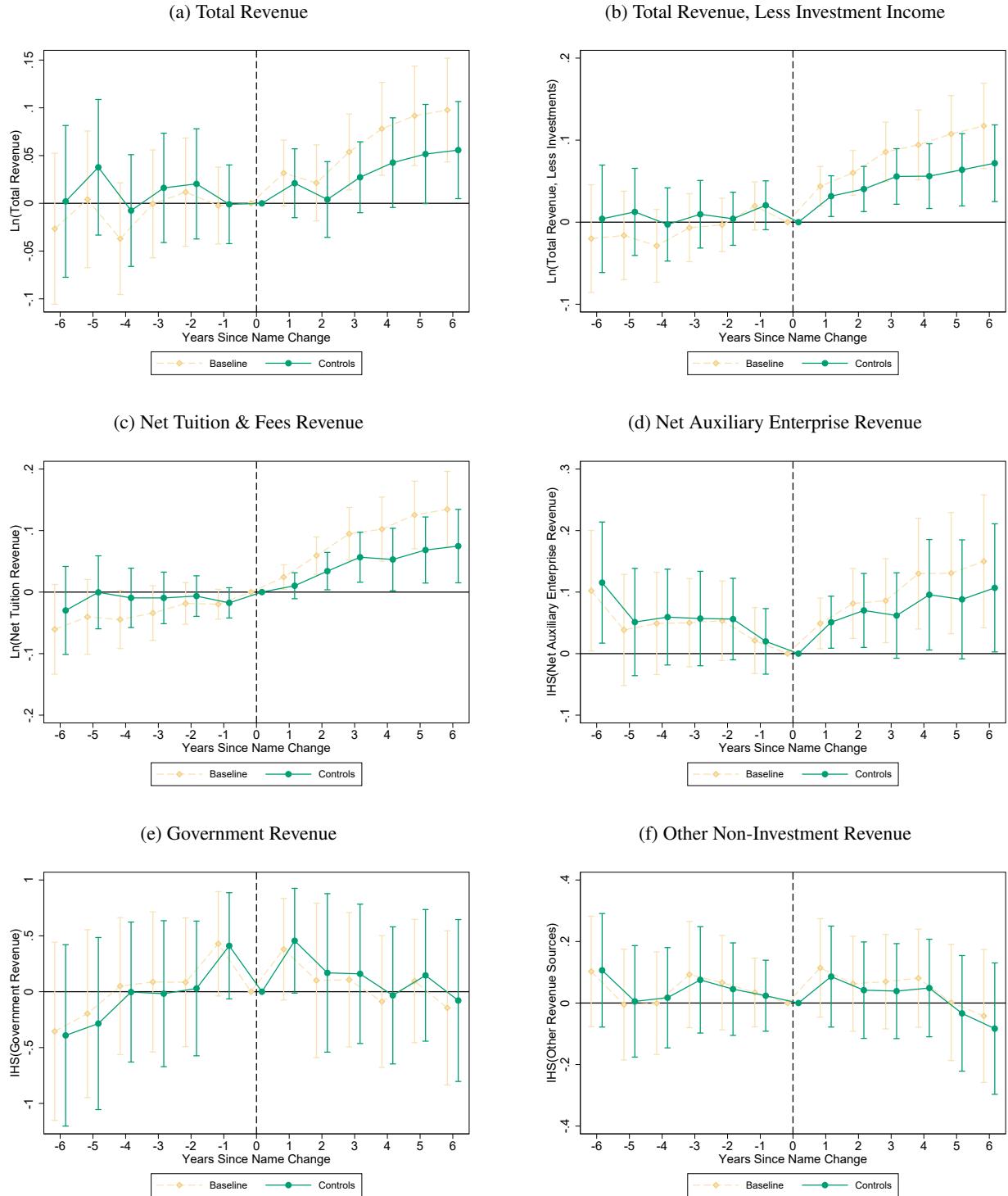
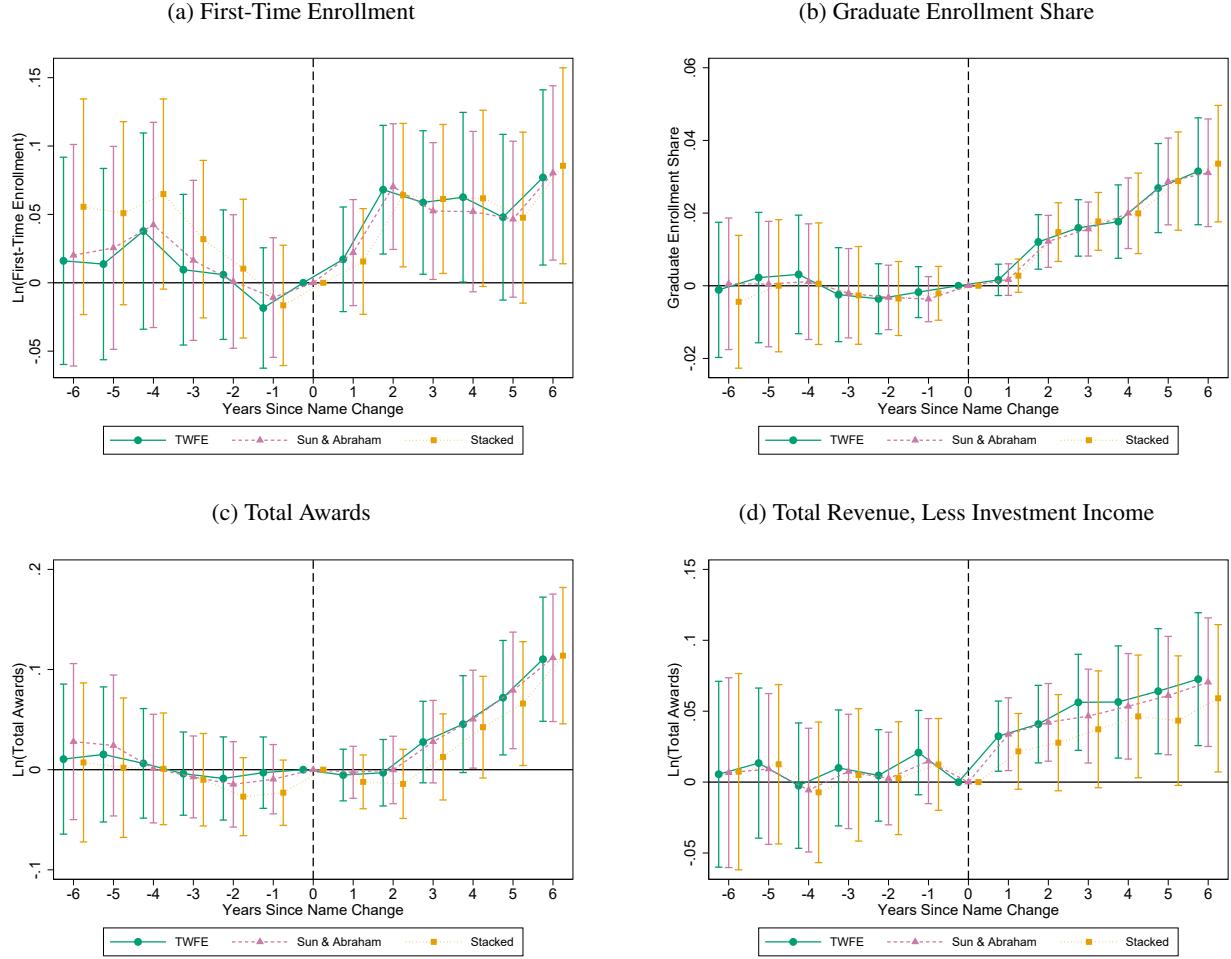


Figure 7: Alternative Event Study Estimators



Notes: Each figure shows how the π_k and ϕ_k estimates in equation (1) change when using the estimators proposed by Sun and Abraham (2020) or Cengiz et al. (2019). All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; and separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers. All standard errors are clustered at the institution level.

Table 1: Sample Summary Statistics

Variable:	At Baseline (2001)			At End of Period (2016)		
	All Colleges (1)	Changers (2)	Non-Changers (3)	All Colleges (4)	Changers (5)	Non-Changers (6)
First-Time Enrollment	408.1	418.3	404.9	451.2	477.2	443.1
Admit Rate	0.701	0.743	0.687	0.641	0.697	0.624
Average SAT Score	0.401	0.432	0.392	0.254	0.268	0.249
Yield Rate	1068	998	1092	1052	994	1073
Undergraduate Enrollment	2,079	2,435	1,968	2,312	2,797	2,160
Graduate Enrollment	307.2	371.1	287.2	396.4	641.3	319.7
Total Enrollment	2,386	2,806	2,255	2,709	3,439	2,480
Undergraduate Majors	29.02	29.17	28.98	40.36	42.03	39.84
Master's Programs	4.146	4.91	3.908	8.461	11.566	7.49
Advanced Degree Programs	0.188	0.066	0.226	0.637	0.967	0.533
Graduate Certificate Programs	0.641	1.098	0.497	2.658	3.41	2.423
Average Tuition Discount	0.282	0.251	0.292	0.405	0.35	0.422
Total Revenue per Student	16,881	12,683	18,195	36,671	21,932	41,282
Net Tuition Revenue per Student	8,894	6,760	9,588	14,340	11,685	15,171
Total Expenditures per Student	18,959	12,876	20,861	29,730	20,484	32,622
Instructional \$ per Student	6,411	4,437	7,023	10,435	7,261	11,420
Academic Support \$ per Student	1,599	1,018	1,780	2,581	1,628	2,880
Student Services \$ per Student	2,575	1,752	2,831	4,966	3,424	5,448
Institutions	512	122	390	512	122	390

Notes: Sample consists of all four-year institutions that included the word “college” in their names in 2001 and reported non-zero bachelor’s degree awards in every year from 2001 to 2016. Institutions that substantially changed their name over the time period are excluded from the sample.

Table 2: Effect of College-to-University Conversions on Undergraduate Enrollment

Time:	Ln(First-Time Enrollment) (1)	Ln(Undergrad Enrollment) (2)	Ln (Applicants) (3)	Admission Rate (4)	Average SAT Score (5)	Yield Rate (6)
Before	0.013 (0.026)	0.001 (0.018)	-0.007 (0.042)	-0.010 (0.036)	2.207 (3.363)	0.018* (0.011)
1-2 years after	0.043** (0.020)	-0.005 (0.014)	0.002 (0.027)	-0.020 (0.026)	3.475 (2.862)	0.037*** (0.010)
3-4 years after	0.062** (0.028)	0.021 (0.019)	0.015 (0.038)	0.010 (0.036)	1.191 (4.004)	0.023* (0.013)
5+ years after	0.067** (0.032)	0.037 (0.026)	0.003 (0.050)	0.009 (0.047)	6.732 (5.014)	0.013 (0.013)
Observations	7,875	7,885	7,298	7,298	6,511	7,297

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Effect of College-to-University Conversions on Graduate Enrollment

Time:	Any Graduate Enrollment (1)	IHS(Graduate Enrollment) (2)	IHS(Domestic Grad Enrollment) (3)	IHS (Intl. Grad Enrollment) (4)	Grad Enrollment Share (5)
Before	0.008 (0.013)	-0.117 (0.093)	-0.117 (0.094)	0.125 (0.088)	-0.005 (0.007)
1-2 years after	0.013 (0.011)	0.158*** (0.059)	0.158*** (0.059)	0.084 (0.073)	0.007** (0.003)
3-4 years after	0.015 (0.009)	0.326*** (0.069)	0.322*** (0.070)	0.136 (0.103)	0.016*** (0.004)
5+ years after	0.028** (0.013)	0.465*** (0.097)	0.454*** (0.098)	0.352** (0.137)	0.026*** (0.008)
Observations	7,885	7,885	7,885	7,885	7,885

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Effect of College-to-University Conversions on Awards Conferred

Time:	Ln(Bachelor's Degrees) (1)	IHS(Master's Degrees) (2)	IHS(Advanced Degrees) (3)	IHS(Graduate Certificates) (4)	Ln(Total Awards) (5)
Before	-0.009 (0.021)	0.019 (0.109)	-0.137 (0.085)	-0.009 (0.096)	-0.006 (0.024)
1-2 years after	-0.011 (0.013)	0.105 (0.088)	-0.038 (0.047)	0.163** (0.071)	-0.005 (0.013)
3-4 years after	-0.007 (0.022)	0.448*** (0.100)	0.168* (0.094)	0.272** (0.117)	0.033 (0.021)
5+ years after	0.048 (0.030)	0.620*** (0.132)	0.201* (0.114)	0.357*** (0.125)	0.106*** (0.033)
Observations	7,885	7,885	7,885	7,885	7,885

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Effect of College-to-University Conversions on Institution Revenues

Time:	Ln(Total Revenue)	Ln(Total Rev. Less Investments)	IHS(Net Tuition & Fees Rev.)	IHS(Net Auxiliary Enterprise Rev.)	IHS(Government Revenue)	IHS(Other Non-Investment Rev.)
	(1)	(2)	(3)	(4)	(5)	(6)
Before	0.011 (0.024)	0.008 (0.019)	-0.016 (0.023)	0.080*** (0.035)	0.025 (0.278)	0.051 (0.064)
1-2 years after	0.012 (0.017)	0.035*** (0.012)	0.022* (0.013)	0.062** (0.024)	0.301 (0.280)	0.061 (0.078)
3-4 years after	0.035* (0.019)	0.054*** (0.018)	0.053** (0.022)	0.084*** (0.038)	0.053 (0.302)	0.041 (0.075)
5+ years after	0.071*** (0.025)	0.087*** (0.026)	0.082** (0.035)	0.125*** (0.057)	0.069 (0.283)	0.033 (0.092)
Observations	7,625	7,625	7,625	7,625	7,625	7,625

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Robustness Checks for Long-Run Effects

	Main Specification (1)	Non-Interacted Year FEs (2)	Detailed Offerings (3)	President FEs (4)	Drop System-Wide Changes (5)
<i>Panel A. Ln(First-Time Enrollment)</i>					
5+ years after	0.067** (0.032)	0.036 (0.029)	0.057* (0.033)	0.067** (0.032)	0.069** (0.032)
Observations	7,875	8,032	7,875	7,875	7,648
<i>Panel B. Graduate Enrollment Share</i>					
5+ years after	0.026*** (0.008)	0.022*** (0.008)	0.022*** (0.007)	0.026*** (0.008)	0.026*** (0.008)
Observations	7,885	8,042	7,885	7,885	7,658
<i>Panel C. Ln(Total Awards)</i>					
5+ years after	0.106*** (0.033)	0.074** (0.029)	0.073** (0.033)	0.106*** (0.033)	0.105*** (0.035)
Observations	7,885	8,042	7,885	7,885	7,658
<i>Panel D. Ln(Total Revenue, Less Investment Income)</i>					
5+ years after	0.087*** (0.026)	0.072*** (0.022)	0.078*** (0.026)	0.087*** (0.026)	0.090*** (0.027)
Observations	7,625	7,775	7,625	7,625	7,418

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects, unless otherwise specified. All standard errors are clustered at the institution level.
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Heterogeneous Long-Run Effects

	Main (1)	Private (2)	Public (3)	Less Selective (4)	More Selective (5)	Smaller (6)	Larger (7)	Older (8)	Younger (9)
<i>Panel A. LnFirst-Time Enrollment</i>									
5+ years after	0.067*** (0.032)	0.075*** (0.033)	0.011 (0.132)	0.073* (0.043)	0.024 (0.055)	0.119** (0.055)	0.014 (0.035)	0.132*** (0.048)	0.019 (0.041)
Observations	7,875	6,979	896	3,265	3,213	3,895	3,859	3,700	3,693
<i>Panel B. Graduate Enrollment Share</i>									
5+ years after	0.026*** (0.008)	0.025*** (0.009)	0.039*** (0.013)	0.026*** (0.010)	0.043*** (0.014)	0.012 (0.011)	0.027*** (0.009)	0.016 (0.010)	0.028*** (0.012)
Observations	7,885	6,979	906	3,265	3,213	3,895	3,859	3,700	3,713
<i>Panel C. LnTotal Awards</i>									
5+ years after	0.106*** (0.033)	0.100*** (0.036)	0.131* (0.071)	0.077 (0.047)	0.163*** (0.054)	0.084 (0.058)	0.126*** (0.032)	0.213*** (0.059)	0.031 (0.043)
Observations	7,885	6,979	906	3,265	3,213	3,895	3,859	3,700	3,713
<i>Panel D. Ln>Total Revenue, Less Investment</i>									
5+ years after	0.087*** (0.026)	0.090*** (0.027)	0.042 (0.102)	0.078*** (0.036)	0.130*** (0.047)	0.103** (0.051)	0.052** (0.025)	0.187*** (0.050)	0.026 (0.032)
Observations	7,625	6,816	809	3,212	3,054	3,796	3,711	3,606	3,541

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution, the log value of an institution's buildings and land, separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Evidence of First-Mover Advantage

	Main	Region		Region/Sector		State		State/Sector	
	(1)	FM	Not FM						
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9)
<i>Panel A. $\ln(\text{First-Time Enrollment})$</i>									
5+ years after	0.067** (0.032)	0.104 (0.091)	0.052 (0.033)	0.073 (0.086)	0.058* (0.033)	0.1111** (0.047)	0.012 (0.037)	0.099*** (0.045)	0.022 (0.038)
Observations	7,875	6,110	7,687	6,174	7,591	6,807	7,006	6,951	6,830
<i>Panel B. Graduate Enrollment Share</i>									
5+ years after	0.026*** (0.008)	0.032* (0.017)	0.026*** (0.009)	0.029* (0.016)	0.027*** (0.009)	0.026** (0.011)	0.029*** (0.009)	0.025*** (0.011)	0.028*** (0.010)
Observations	7,885	6,110	7,697	6,174	7,601	6,807	7,016	6,961	6,830
<i>Panel C. $\ln(\text{Total Awards})$</i>									
5+ years after	0.106*** (0.033)	0.231*** (0.076)	0.084** (0.035)	0.208*** (0.071)	0.086** (0.035)	0.155*** (0.047)	0.043 (0.040)	0.133*** (0.045)	0.059 (0.042)
Observations	7,885	6,110	7,697	6,174	7,601	6,807	7,016	6,961	6,830
<i>Panel D. $\ln(\text{Total Revenue, Less Investment Income})$</i>									
5+ years after	0.087*** (0.026)	0.177*** (0.059)	0.073** (0.029)	0.172*** (0.054)	0.073*** (0.029)	0.133*** (0.036)	0.045 (0.036)	0.120*** (0.034)	0.058 (0.038)
Observations	7,625	5,896	7,437	5,956	7,347	6,578	6,769	6,709	6,608

Note: The coefficients in each column are estimated from a separate regression and represent variants of the β parameters in equation (2): the effect of converting to a university on the outcome of interest. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Spillover Effects on Competitors

	Region (1)	Region/Sector (2)	State (3)	State/Sector (4)
<i>Panel A. Total Enrollment</i>				
(Share of market converted)*College	-0.223 (0.189)	-0.400** (0.179)	-0.194* (0.115)	-0.191*** (0.070)
(Share of market converted)*University	0.151 (0.278)	-0.151 (0.135)	0.030 (0.089)	-0.013 (0.070)
Observations	17,532	17,532	17,516	17,468
<i>Panel B. Total Awards</i>				
(Share of market converted)*College	-0.199 (0.308)	-0.771*** (0.204)	-0.144 (0.149)	-0.171* (0.087)
(Share of market converted)*University	0.265 (0.191)	-0.481** (0.195)	0.102 (0.122)	-0.065 (0.118)
Observations	17,533	17,533	17,517	17,469
<i>Panel C. Total Revenue, Less Investment</i>				
(Share of market converted)*College	-0.081 (0.298)	-0.199 (0.141)	-0.242** (0.111)	-0.142** (0.055)
(Share of market converted)*University	0.143 (0.229)	0.080 (0.116)	-0.045 (0.103)	0.105 (0.079)
Observations	16,769	16,769	16,754	16,707

Notes: The coefficients in each column are estimated from a separate regression and represent variants of the β_1 and β_2 parameters in equation (3): the effects of conversions on non-converting institutions. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and year fixed effects. All standard errors are clustered at the market level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Online Appendix: Not for Publication

Figure A.1: Map of College-to-University Conversions

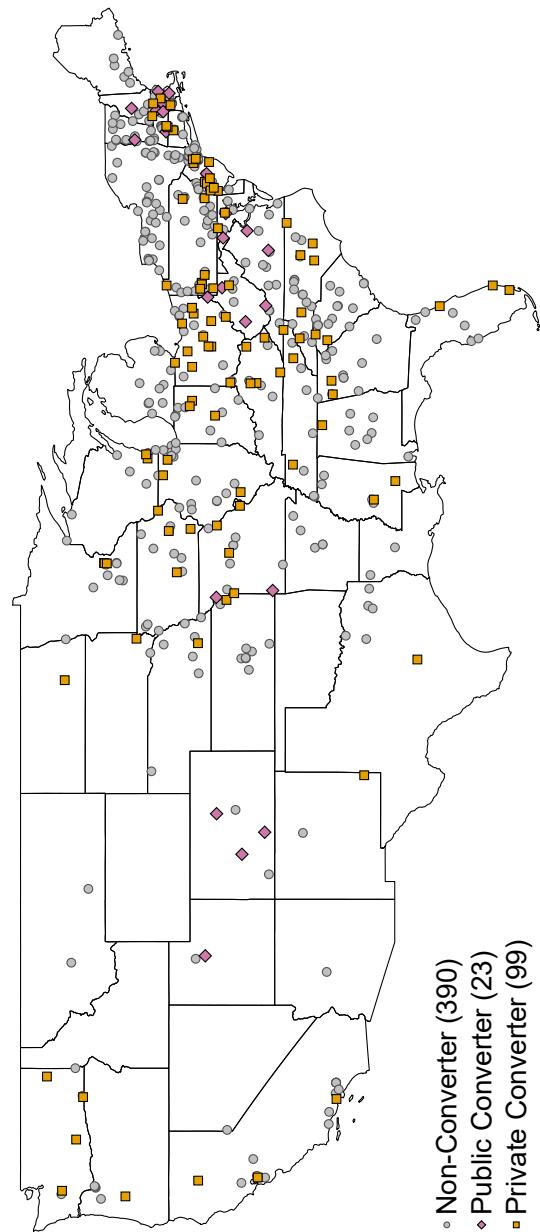


Figure A.2: Changes in Quarterly Search Activity Surrounding College-to-University Conversions

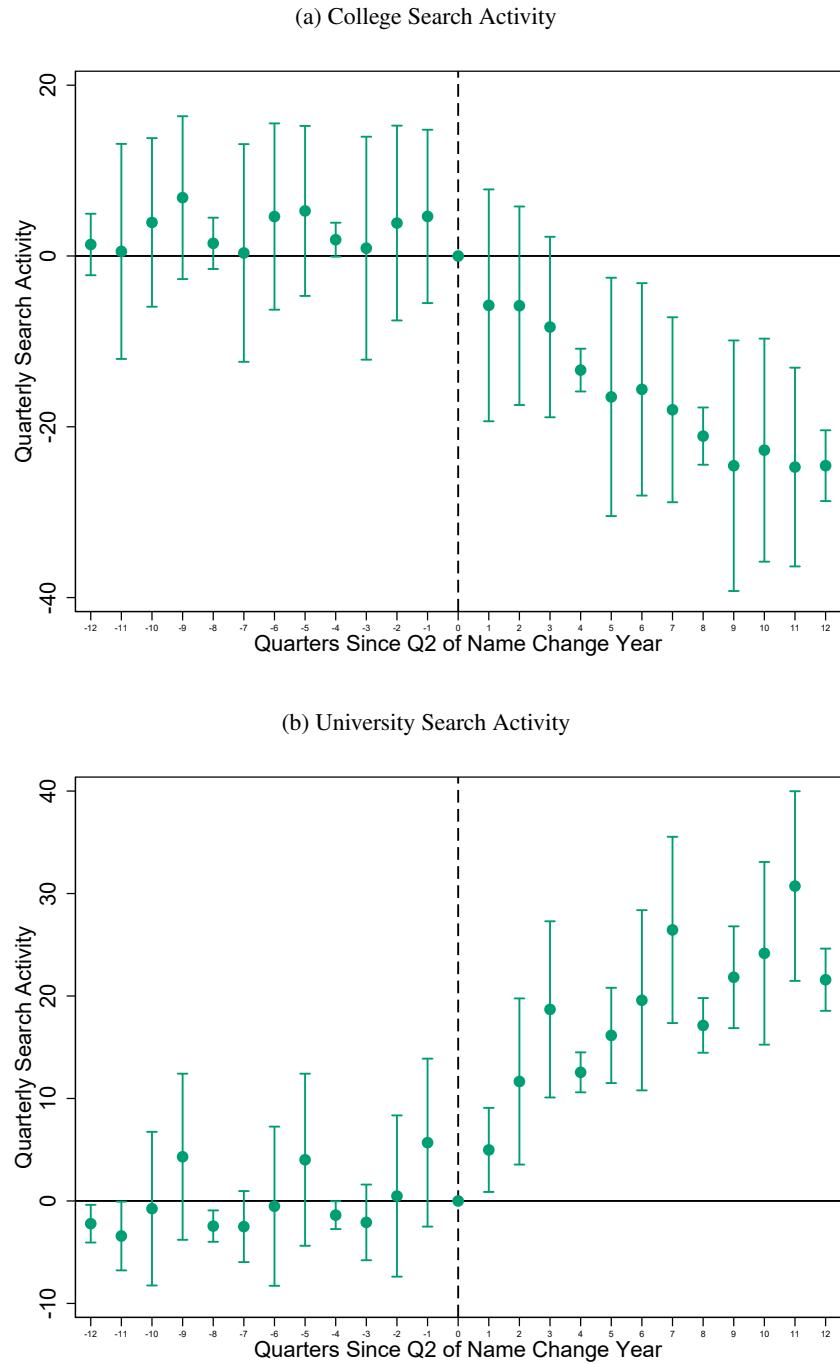
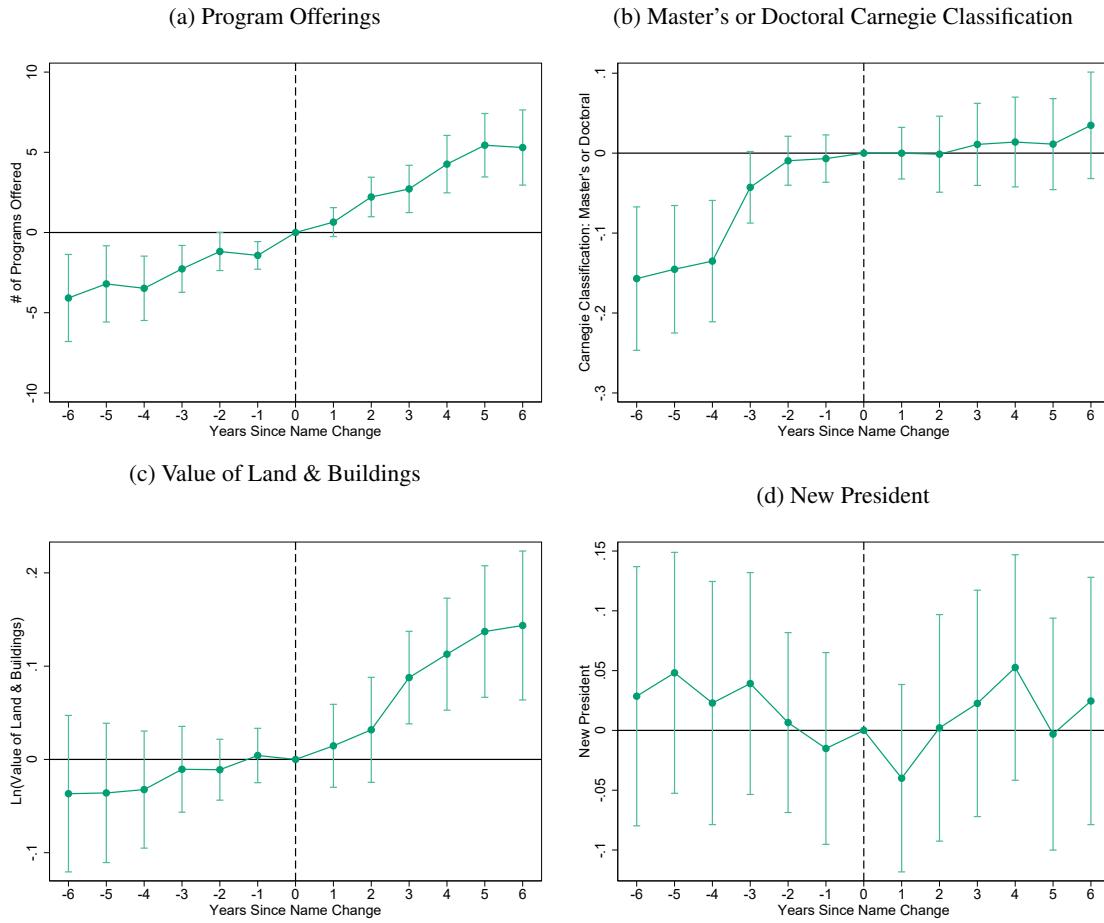
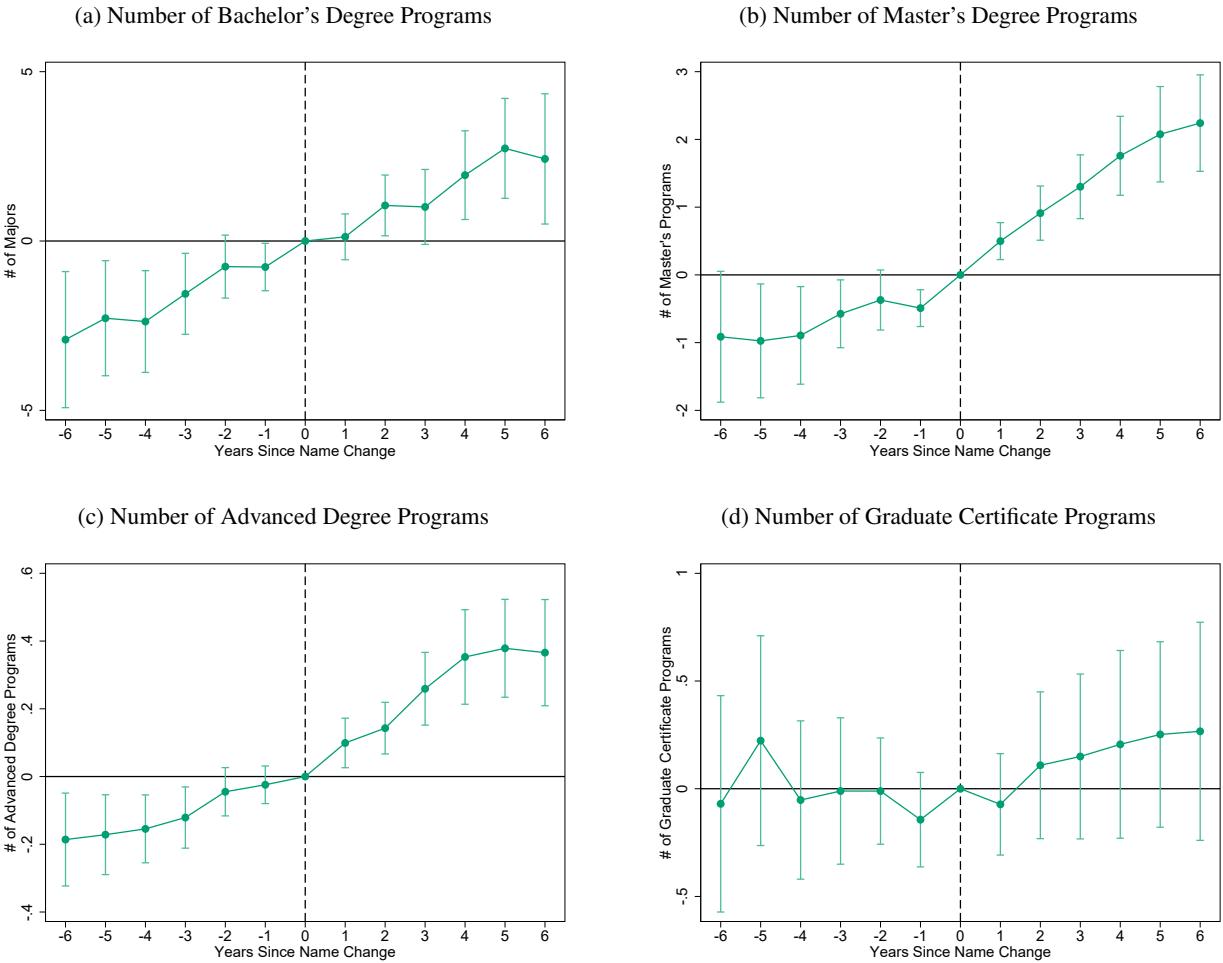


Figure A.3: Confounding Changes Surrounding College-to-University Conversions



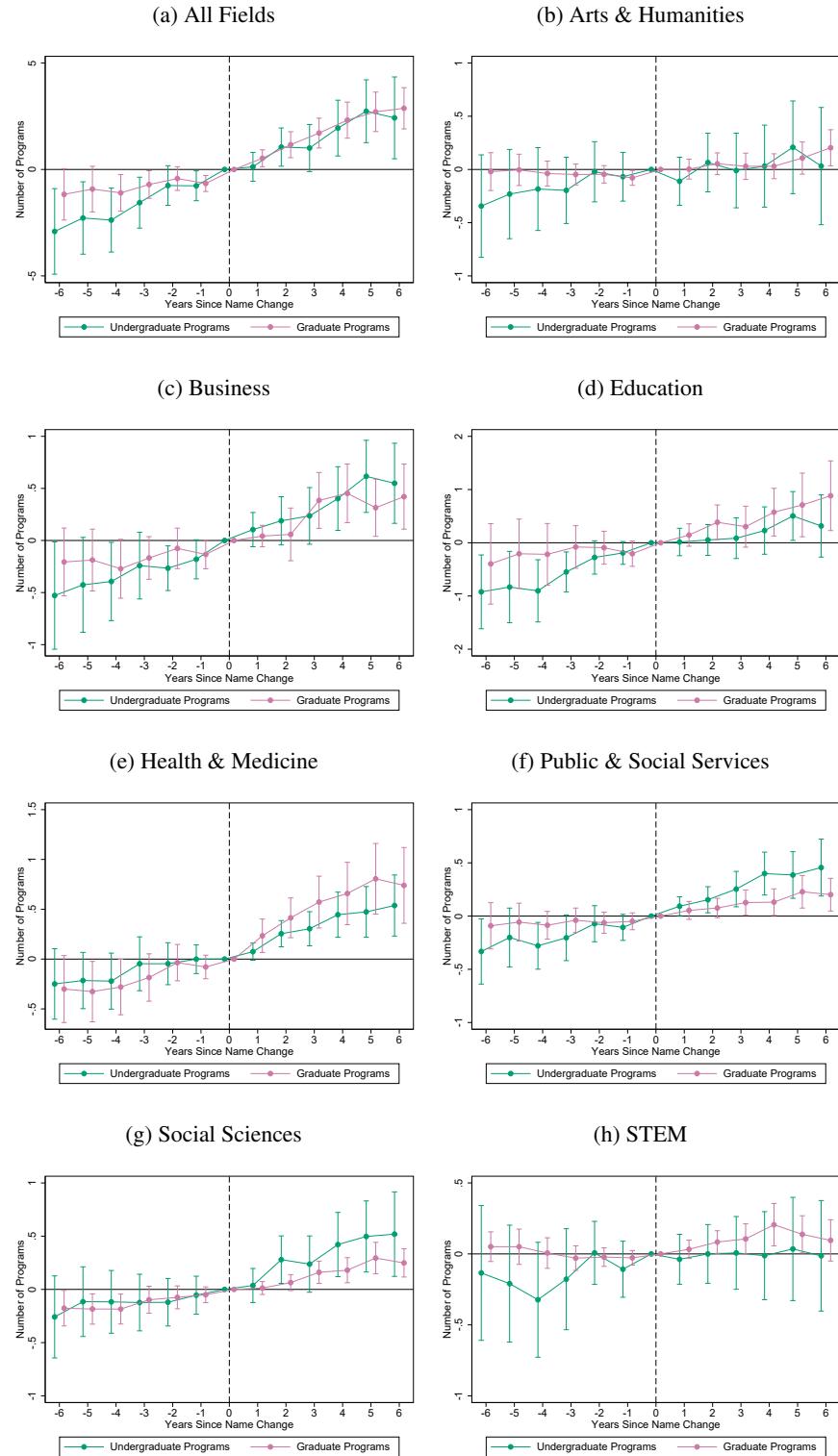
Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector-by year fixed effects included. All standard errors are clustered at the institution level.

Figure A.4: Changes in Program Offerings Surrounding College-to-University Conversions



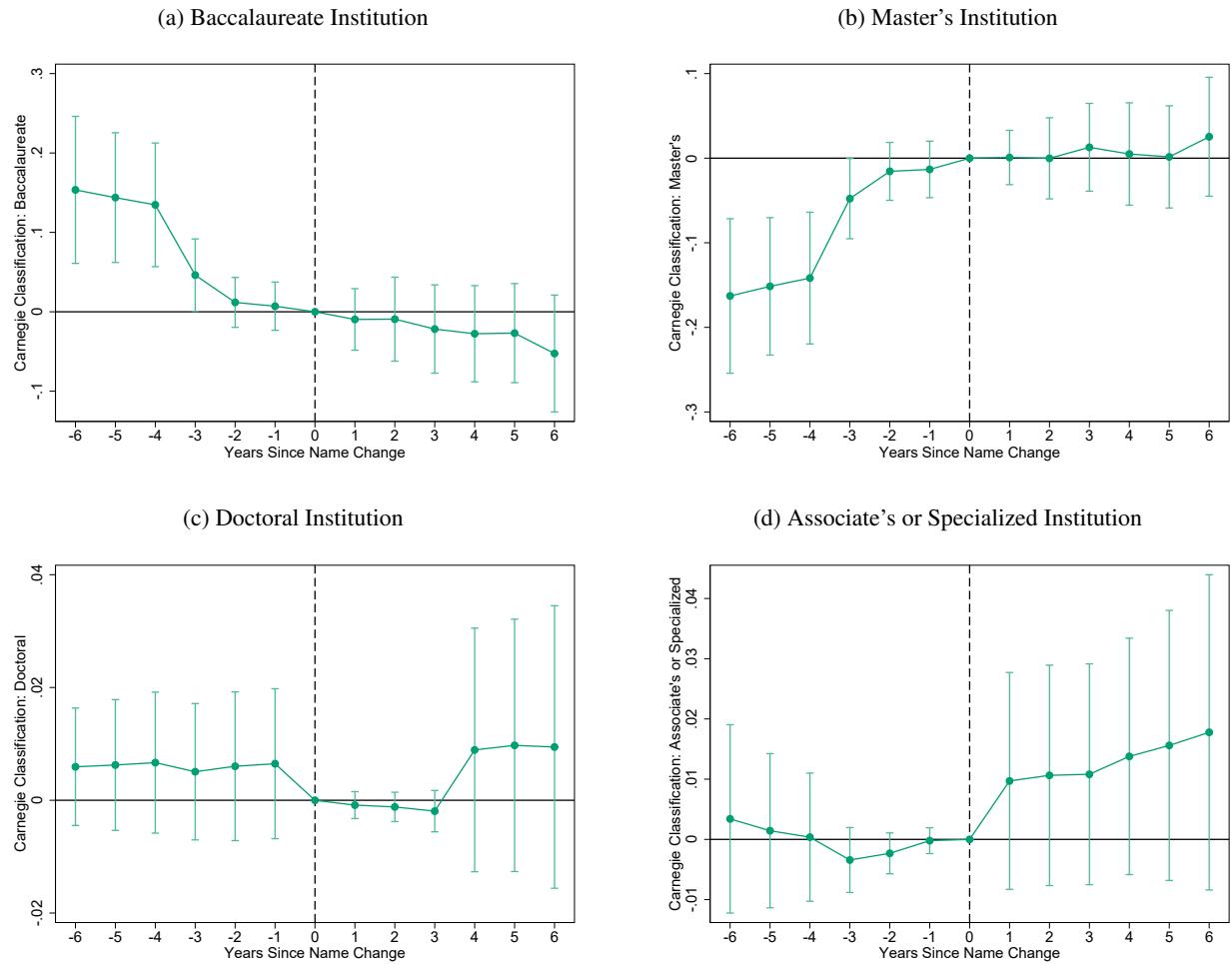
Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector-by year fixed effects included. All standard errors are clustered at the institution level.

Figure A.5: Changes in Fields of Study Surrounding College-to-University Conversions



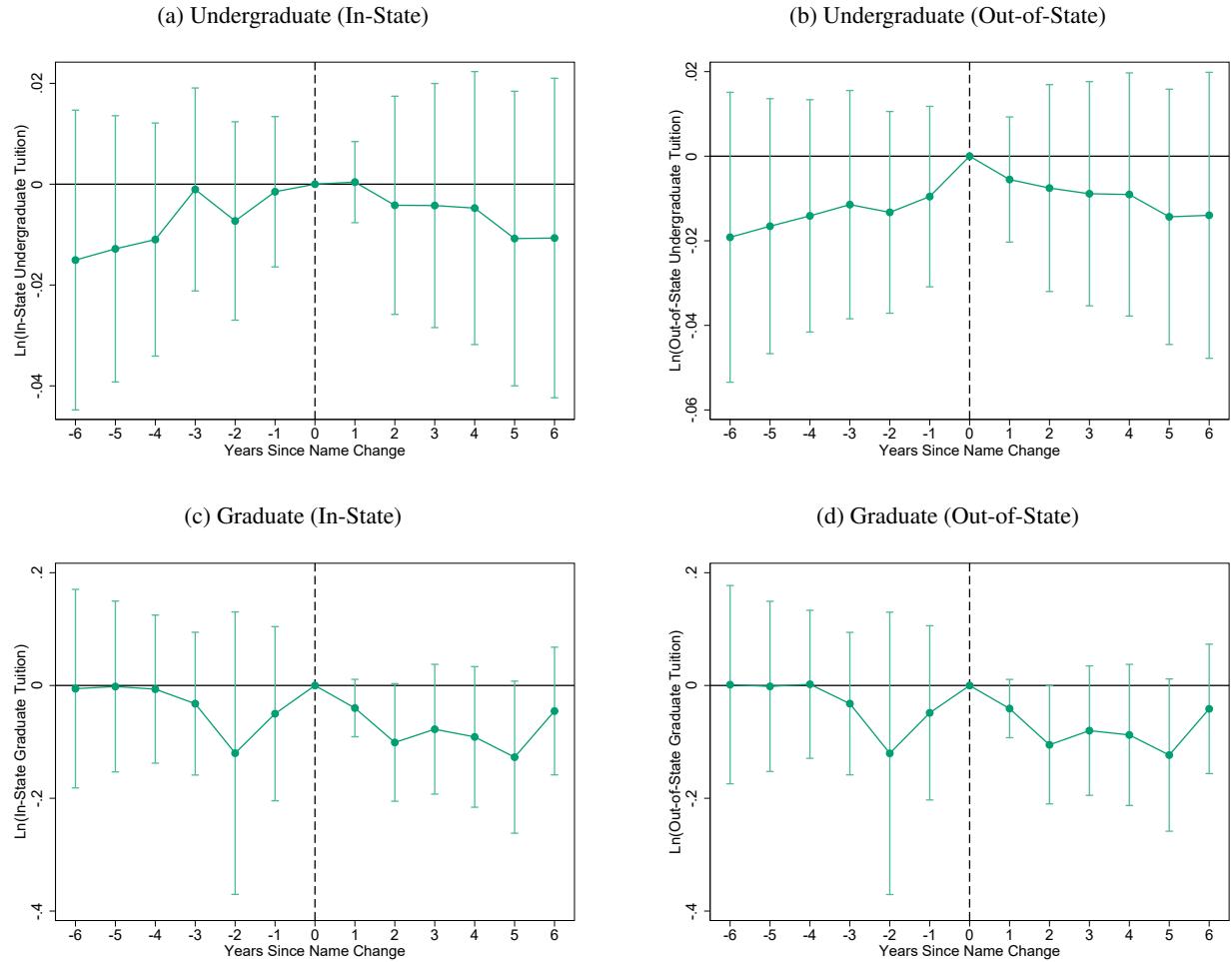
Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector fixed effects included. All standard errors are clustered at the institution level.

Figure A.6: Changes in Carnegie Classifications Surrounding College-to-University Conversions



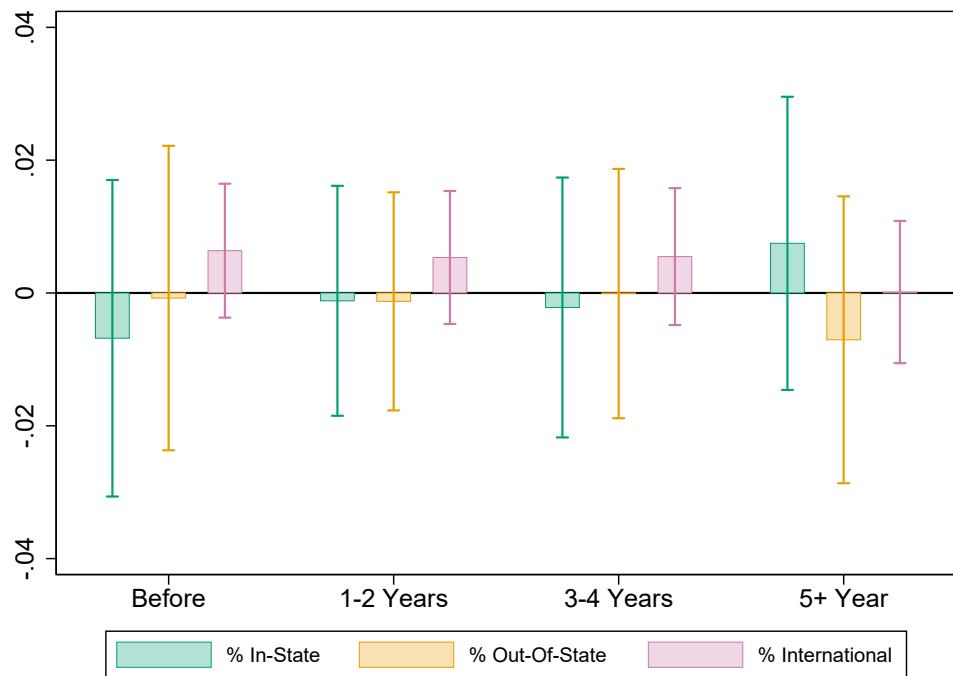
Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector-by year fixed effects included. All standard errors are clustered at the institution level.

Figure A.7: Changes in Tuition Rates Surrounding College-to-University Conversions



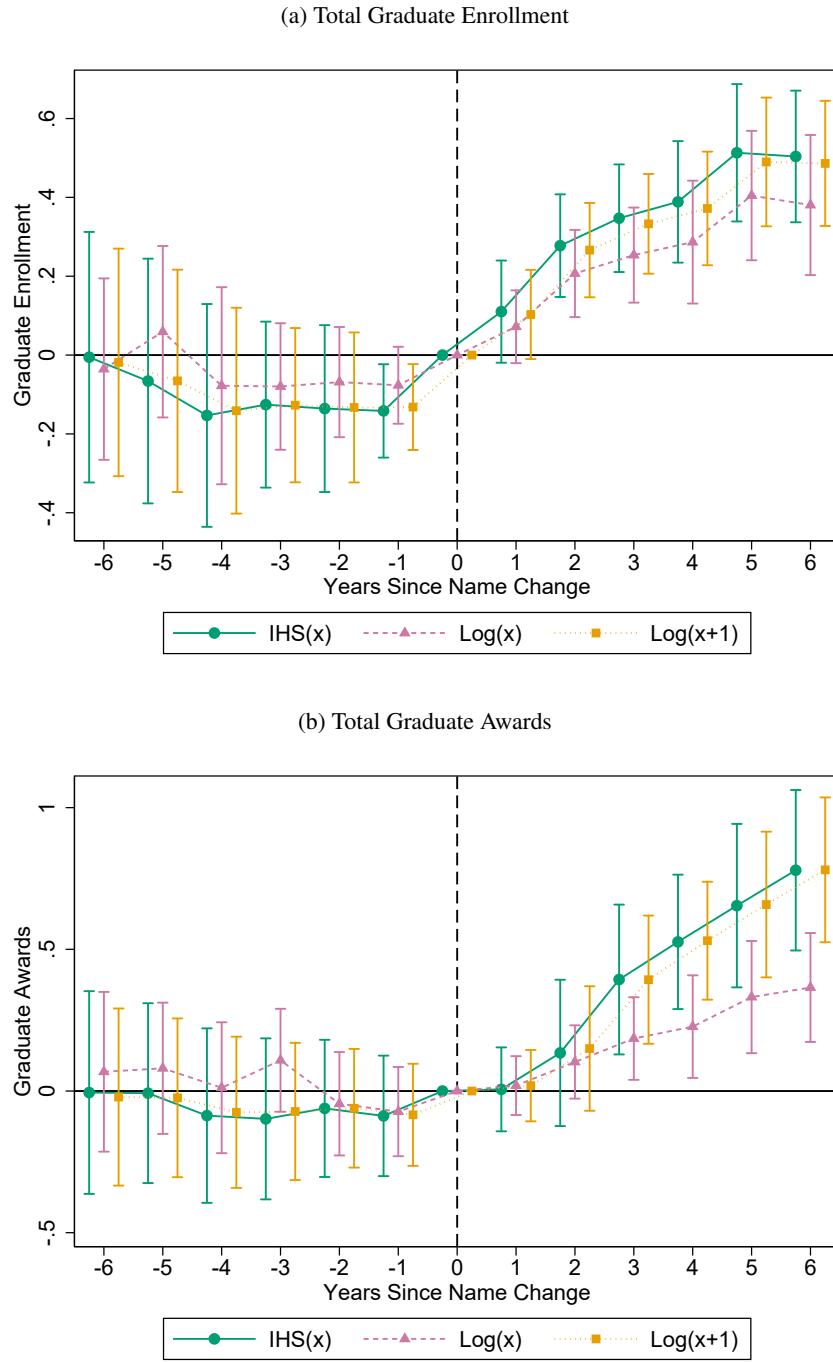
Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1), with only institution and state-by-sector-by year fixed effects included. All standard errors are clustered at the institution level.

Figure A.8: October 15th Freshmen Enrollment by Residency, Even Years



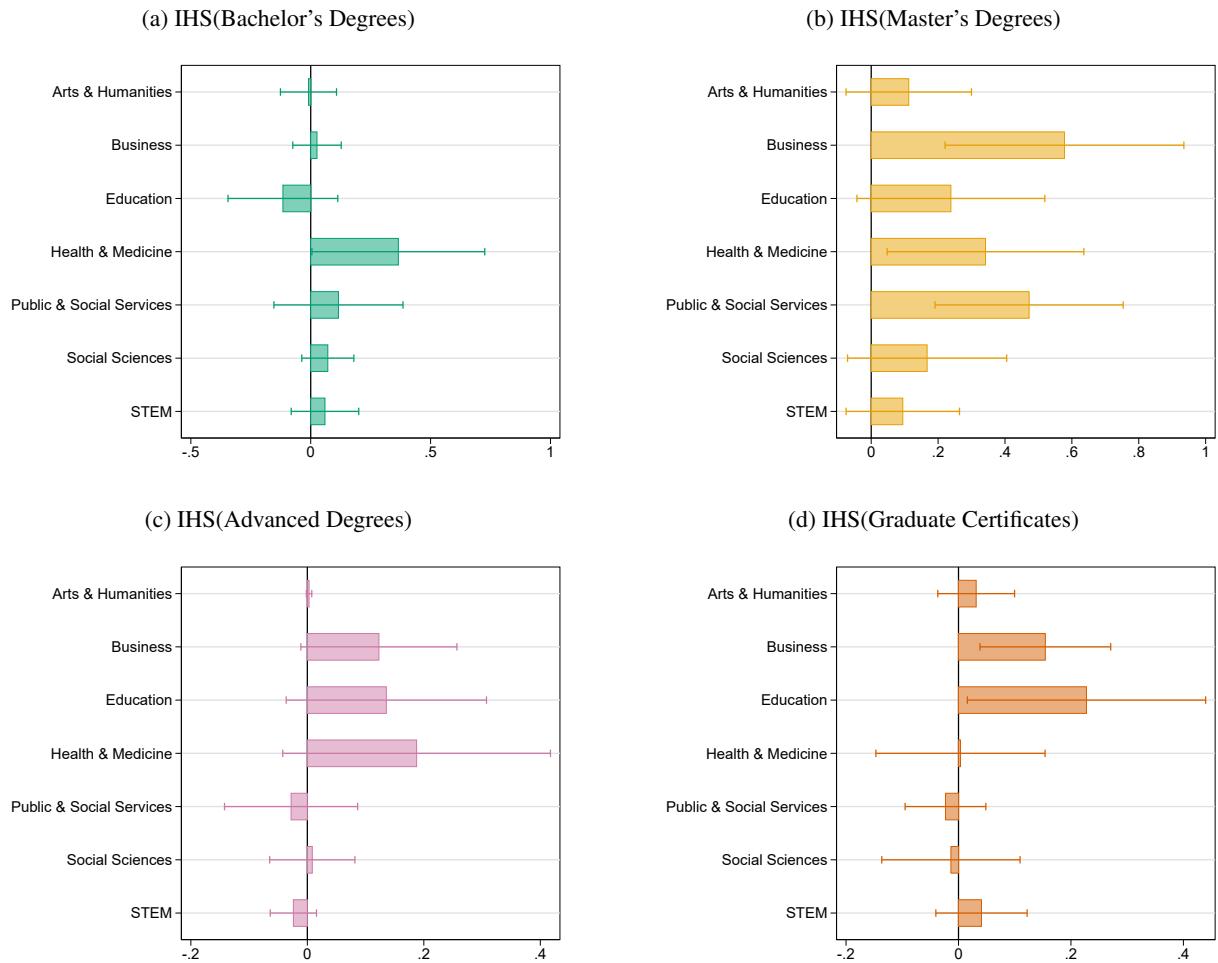
Notes: This figure presents estimates of the β coefficients in equation (2): the effect of converting to a university on the share of freshmen from the institution's state, from outside the institution's state but within the U.S., and from outside of the U.S. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level.

Figure A.9: Functional Form Comparisons for Graduate Outcomes



Notes: Each figure shows how the π_k and ϕ_k estimates in equation (1) change when using an inverse hyperbolic sine, log, or log(x+1) transformation of the dependent variable. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; and separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers. All standard errors are clustered at the institution level.

Figure A.10: Award Impacts by Field of Study, 5+ Years After Conversion



Notes: This figure presents estimates of the β_{5+} coefficient in equation (2): the effect of converting to a university five or more years following a conversion. All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level.

Figure A.11: Changes in Expenditures Following College-to-University Conversions

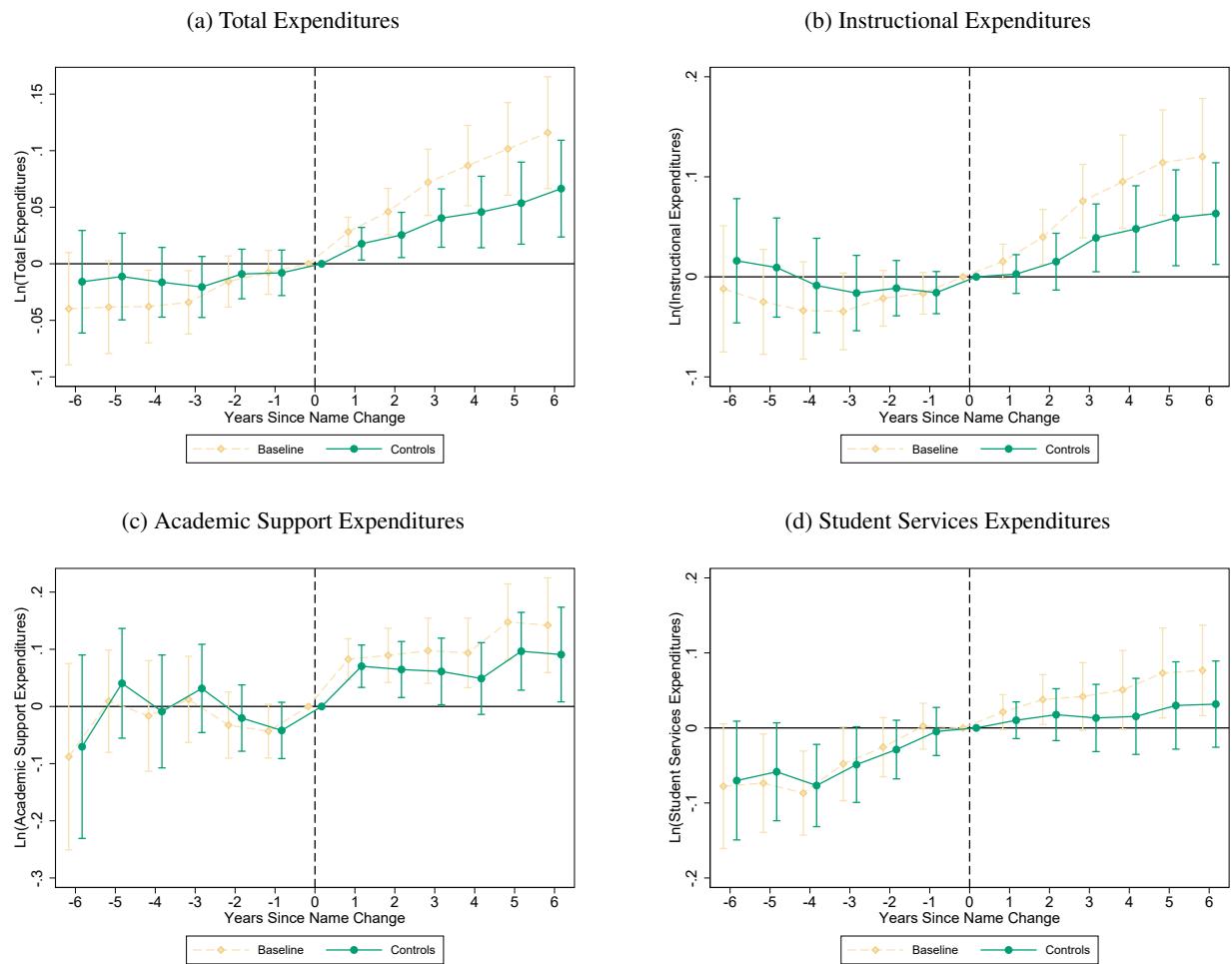


Figure A.12: Changes in Staffing Following College-to-University Conversions

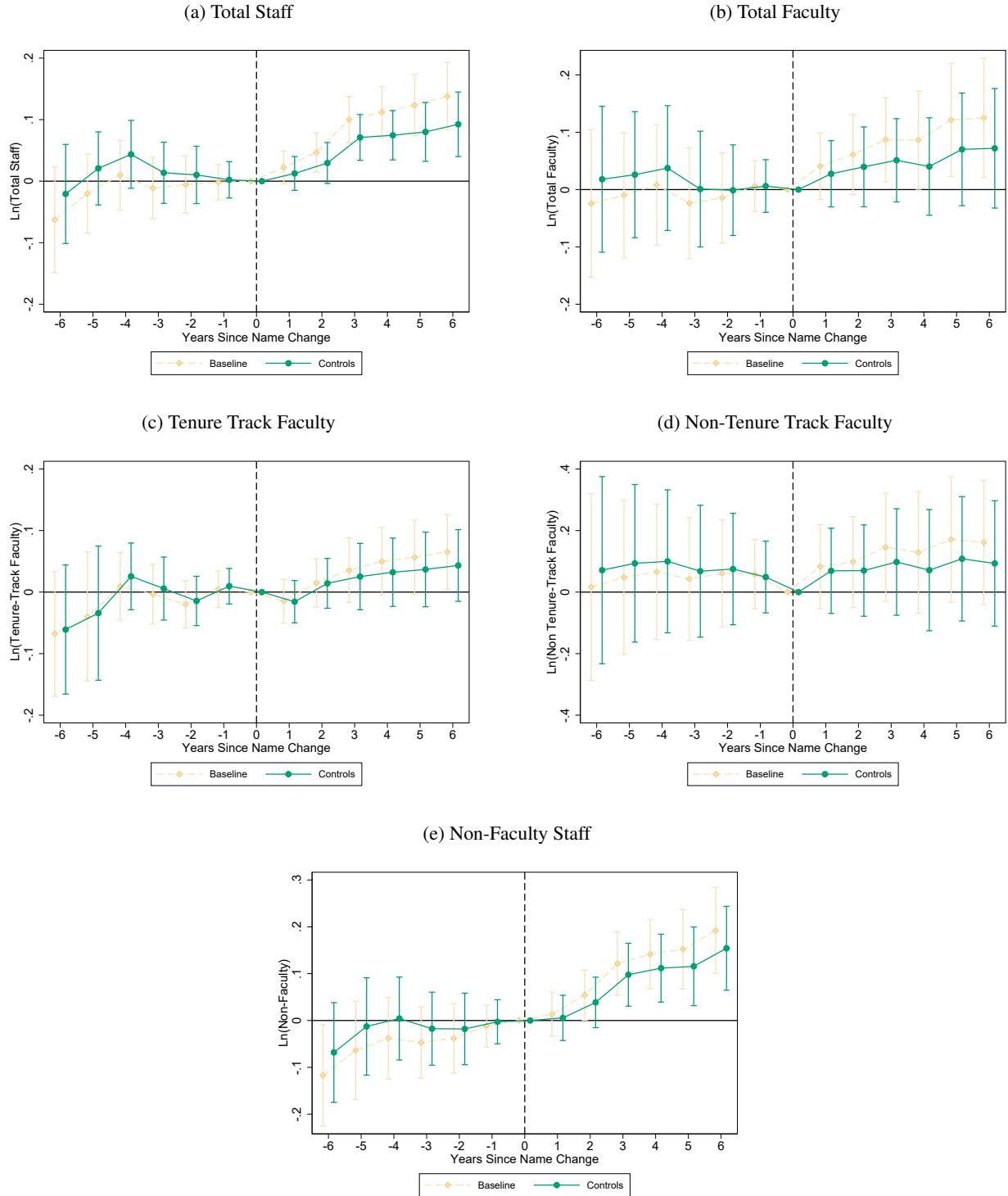
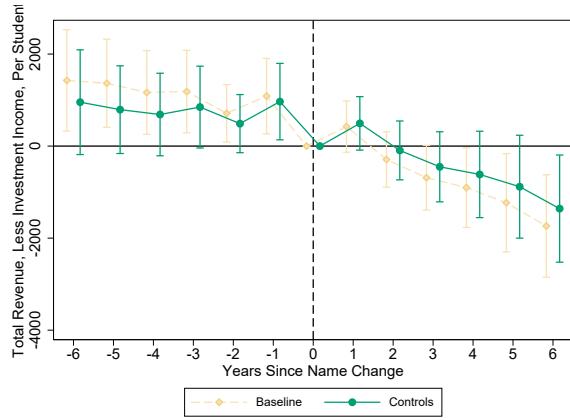
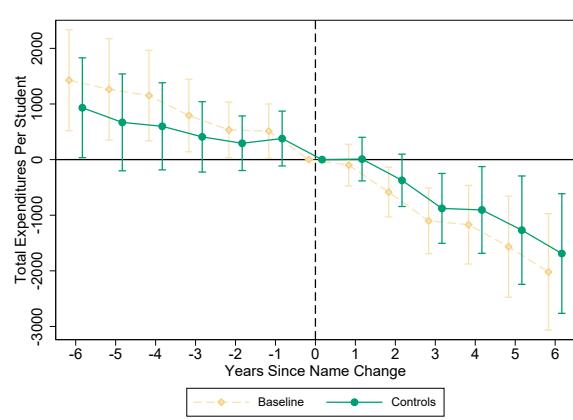


Figure A.13: Changes in Per-Student Finances and Staffing Following College-to-University Conversions

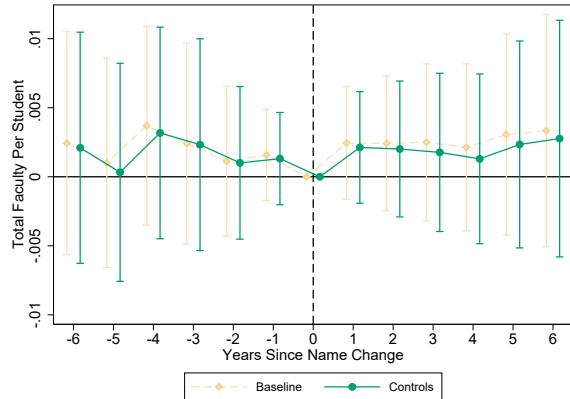
(a) Total Revenue, Less Investment Income, Per Student



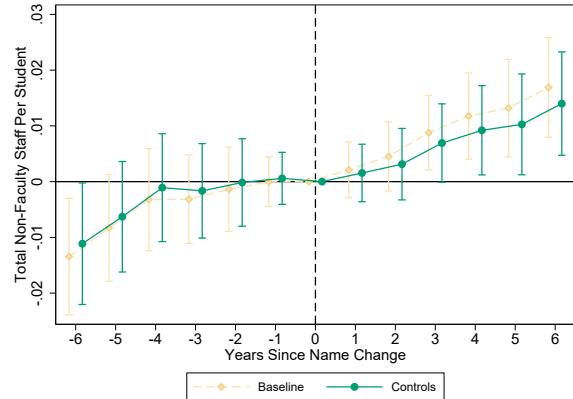
(b) Total Expenditure Per Student



(c) Total Faculty Per Student



(d) Total Non-Faculty Staff Per Student



Notes: Each figure presents estimates of the π_k and ϕ_k coefficients in equation (1). All regressions include controls for the highest degree offered by the institution; the log value of an institution's buildings and land; separate variables for the number of bachelor's, master's, advanced degree, and graduate certificate programs an institution offers; institution and state-by-sector-by-year fixed effects. All standard errors are clustered at the institution level.

Table A.1: College-to-University Conversions, 2002-2015

Pre-Change Name	Post-Change Name	State	Sector	Year
Oakwood College	Oakwood University	AL	Private	2008
Holy Names College	Holy Names University	CA	Private	2003
Simpson College	Simpson University	CA	Private	2004
Mount Saint Mary's College	Mount Saint Mary's University	CA	Private	2014
Adams State College	Adams State University	CO	Public	2012
Metropolitan State College Of Denver	Metropolitan State University Of Denver	CO	Public	2012
Western State College Of Colorado	Western State Colorado University	CO	Public	2012
Saint Joseph College	University Of Saint Joseph	CT	Private	2012
Wilmington College	Wilmington University	DE	Private	2007
Palm Beach Atlantic College	Palm Beach Atlantic University	FL	Private	2002
Everglades College	Everglades University	FL	Private	2004
Florida Memorial College	Florida Memorial University	FL	Private	2005
Bethune Cookman College	Bethune-Cookman University	FL	Private	2007
Reinhardt College	Reinhardt University	GA	Private	2010
Shorter College	Shorter University	GA	Private	2010
Grand View College	Grand View University	IA	Private	2008
Clarke College	Clarke University	IA	Private	2010
Mount Mercy College	Mount Mercy University	IA	Private	2010
Iowa Wesleyan College	Iowa Wesleyan University	IA	Private	2015
Judson College	Judson University	IL	Private	2007
Mckendree College	Mckendree University	IL	Private	2007
Rockford College	Rockford University	IL	Private	2012
Huntington College	Huntington University	IN	Private	2005
Marian College	Marian University	IN	Private	2009
Manchester College	Manchester University	IN	Private	2012
Saint Mary College	University Of Saint Mary	KS	Private	2003
Cumberland College	University Of The Cumberlands	KY	Private	2005
Kentucky Christian College	Kentucky Christian University	KY	Private	2005
Asbury College	Asbury University	KY	Private	2010
Pikeville College	University Of Pikeville	KY	Private	2011
Midway College	Midway University	KY	Private	2015
Bentley College	Bentley University	MA	Private	2008
Bridgewater State College	Bridgewater State University	MA	Public	2010
Fitchburg State College	Fitchburg State University	MA	Public	2010
Framingham State College	Framingham State University	MA	Public	2010
Salem State College	Salem State University	MA	Public	2010
Western New England College	Western New England University	MA	Private	2010
Westfield State College	Westfield State University	MA	Public	2010
Worcester State College	Worcester State University	MA	Public	2010
Bay Path College	Bay Path University	MA	Private	2014
Coppin State College	Coppin State University	MD	Public	2004
Mount St. Mary's College	Mount St. Mary's University	MD	Private	2004

College Of Notre Dame Of Maryland	Notre Dame Of Maryland University	MD	Private	2011
Bethel College	Bethel University	MN	Private	2004
College of St. Catherine	St. Catherine University	MN	Private	2009
Northwestern College	University Of Northwestern-St Paul	MN	Private	2013
Avila College	Avila University	MO	Private	2002
Missouri Baptist College	Missouri Baptist University	MO	Private	2002
Missouri Southern State College	Missouri Southern State University	MO	Public	2003
Central Methodist College	Central Methodist University	MO	Ptivate	2004
Missouri Western State College	Missouri Western State University	MO	Public	2005
Hannibal-Lagrange College	Hannibal-Lagrange University	MO	Private	2011
William Carey College	William Carey University	MS	Private	2006
Belhaven College	Belhaven University	MS	Private	2009
Chowan College	Chowan University	NC	Private	2006
Methodist College	Methodist University	NC	Private	2006
Lenoir-Rhyne College	Lenoir-Rhyne University	NC	Private	2008
Saint Augustine's College	Saint Augustine's University	NC	Private	2012
Mars Hill College	Mars Hill University	NC	Private	2013
Mount Olive College	University Of Mount Olive	NC	Private	2014
Jamestown College	University Of Jamestown	ND	Private	2013
Doane College	Doane University	NE	Private	2015
Plymouth State College	Plymouth State University	NH	Public	2003
Franklin Pierce College	Franklin Pierce University	NH	Private	2007
Rivier College	Rivier University	NH	Private	2012
Georgian Court College	Georgian Court University	NJ	Private	2004
Saint Peter's College	Saint Peter's University	NJ	Private	2012
Caldwell College	Caldwell University	NJ	Private	2014
Felician College	Felician University	NJ	Private	2015
Thomas Edison State College	Thomas Edison State University	NJ	Public	2015
College of the Southwest	University of the Southwest	NM	Private	2008
Mount Vernon Nazarene College	Mount Vernon Nazarene University	OH	Private	2002
Ohio Dominican College	Ohio Dominican University	OH	Private	2002
Bluffton College	Bluffton University	OH	Private	2004
Heidelberg College	Heidelberg University	OH	Private	2008
Malone College	Malone University	OH	Private	2008
Muskingum College	Muskingum University	OH	Private	2009
Mount Union College	University Of Mount Union	OH	Private	2010
Otterbein College	Otterbein University	OH	Private	2010
Lourdes College	Lourdes University	OH	Private	2011
Baldwin-Wallace College	Baldwin Wallace University	OH	Private	2012
College of Mount Saint Joseph	Mount Saint Joseph University	OH	Private	2014
Northwest Christian College	Northwest Christian University	OR	Private	2008
Holy Family College	Holy Family University	PA	Private	2002
Immaculata College	Immaculata University	PA	Private	2002
Robert Morris College	Robert Morris University	PA	Private	2002
Seton Hill College	Seton Hill University	PA	Private	2002
Point Park College	Point Park University	PA	Private	2003
Carlow College	Carlow University	PA	Private	2004

Chatham College	Chatham University	PA	Private	2006
College Misericordia	Misericordia University	PA	Private	2007
Waynesburg College	Waynesburg University	PA	Private	2007
Alvernia College	Alvernia University	PA	Private	2009
Neumann College	Neumann University	PA	Private	2009
Mercyhurst College	Mercyhurst University	PA	Private	2012
Gwynedd Mercy College	Gwynedd Mercy University	PA	Private	2013
Delaware Valley College	Delaware Valley University	PA	Private	2014
Cabriini College	Cabriini University	PA	Private	2015
Bryant College	Bryant University	RI	Private	2004
Anderson College	Anderson University	SC	Private	2005
North Greenville College	North Greenville University	SC	Private	2005
Augustana College	Augustana University	SD	Private	2015
Bethel College	Bethel University	TN	Private	2009
Carson-Newman College	Carson-Newman University	TN	Private	2012
King College	King University	TN	Private	2013
Huston-Tillotson College	Huston-Tillotson University	TX	Private	2005
Utah Valley State College	Utah Valley University	UT	Public	2008
Longwood College	Longwood University	VA	Public	2002
Mary Washington College	University Of Mary Washington	VA	Public	2004
Castleton State College	Castleton University	VT	Public	2015
Heritage College	Heritage University	WA	Private	2004
Saint Martin's College	Saint Martin's University	WA	Private	2005
Walla Walla College	Walla Walla University	WA	Private	2007
Whitworth College	Whitworth University	WA	Private	2007
Carroll College	Carroll University	WI	Private	2008
Mount Mary College	Mount Mary University	WI	Private	2013
Concord College	Concord University	WV	Public	2004
Fairmont State College	Fairmont State University	WV	Public	2004
Shepherd College	Shepherd University	WV	Public	2004
West Virginia State College	West Virginia State University	WV	Public	2004
Ohio Valley College	Ohio Valley University	WV	Private	2005
West Liberty State College	West Liberty University	WV	Public	2009
Alderson Broaddus College	Alderson Broaddus University	WV	Private	2013