In-State Tuition Policies and the College Decisions of Undocumented Students: Evidence from Colorado

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Abstract

We study the effects of a decrease in college tuition on college application and enrollment behavior. Specifically, we use student-level data to analyze a Colorado law that granted in-state tuition to undocumented students residing in Colorado. We find an increase in the credit hours and persistence of newly enrolled and likely undocumented students. We do not find evidence of changes in the persistence or credit hours of continuing students. Leveraging application-level data, we show suggestive evidence that the policy induced more students to enroll in college due to an increase in applications, rather than an increase in the acceptance rate or the enrollment rate.

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1 Introduction

College continues to be a worthwhile investment despite rising costs (Oreopoulos and Petronijevic, 2013), yet rates of postsecondary enrollment are disproportionately low for disadvantaged groups. African-American and Hispanic students are under-represented among college students, as are children of low-income families (Snyder, de Brey and Dillow, 2016; Kena et al., 2015). In addition to costs, a lack of information about financial aid and about the benefits of college make these students less likely to enroll in college. A growing body of research seeks to further understand the reasons for the under-representation of these groups, as well as to identify policies that can increase college-going (Hoxby and Turner, 2015, 2013; Carrell and Sacerdote, 2017).

Among disadvantaged groups, undocumented immigrants face particularly high barriers to college. Their legal status makes them ineligible for federal financial aid, and they are also ineligible for in-state tuition in many states. This group is relevant to current policy decisions, and the status of undocumented immigrants, especially those who arrived as children, has been at the forefront of public policy debates for many years. Undocumented immigrants also resemble other disadvantaged citizens in many dimensions related to college access. They tend to live in low-income families, have parents with low education levels, and are faced with many of the same financial barriers to attending college. Therefore, understanding access to education for undocumented immigrants is not only immediately relevant to discussions about the status of undocumented youth in the US, but also it can inform future policy to increase access to education for disadvantaged youth more generally. Despite a growing literature on the college access of undocumented immigrants, many gaps remain. In particular, understanding the channels through which targeted policies can increase college access, whether through encouraging students to apply to college, lowering costs to a point that they are able to enroll, or reducing the financial burden so that they can enroll full-time, is key to targeting effecting policy solutions.

In this paper, we study how a change in college tuition policy in Colorado affected the enrollment behavior of undocumented immigrants relative to other students with similar characteristics. The Advancing Students for a Stronger Tomorrow (ASSET) legislation (Colorado SB 13-033), passed in the spring of 2013, extends in-state tuition eligibility to students who graduated from high school in Colorado but are unable to provide proof of legal residence. We use a difference-in-differences

methodology to compare students likely to be affected by the policy change to those who were not. Using student-level data from the Colorado Department of Higher Education, we examine the extensive margin of enrollment in college as well as the intensive margin of the number of credit hours enrolled and whether students have full-time or part-time status. We also examine the composition of college applicants, the probability of an application being accepted, and the enrollment decision.

We focus on the impact of the tuition decrease on students who are likely to be undocumented, and we make several contributions to the literature. First, while previous studies on similar legislation have examined only a subset of universities in a state or have been limited to survey data, we consider the impact of a recent statewide tuition increase using detailed administrative data that covers all of the state's 31 public postsecondary institutions. Second, while the Colorado policy is similar to policies in other states, it has never been studied in a causal framework. Understanding the effects of the policy in Colorado—a state with a large undocumented population—represents an important contribution to evidence-based policy in Colorado and informs evaluations of the contributions of similar legislation in other states. Finally, we observe changes in applications of students who apply to college, which are a crucial margin in influencing the direction of policy effects. A change in tuition may leave application and enrollment rates unchanged or even lower if the marginal student has lower academic potential. For Colorado, we observe detailed information on each application, including whether it was accepted and whether the student enrolled. Although there are important limitations to this particular analysis, we are still able to make some progress to address a major gap in the literature by examining changes in applications, acceptances and enrollment.

We do not find evidence of increased persistence from freshman year to sophomore year students who enrolled prior to the policy change, and we see this as evidence that the tuition change had no effect on students who had already enrolled in college. However, we do find evidence that the tuition decrease had a strong effect on the intensity of enrollment of first-time students. Specifically, we find a 16 percent increase in credit hours and a 17 percent increase in the probability of full-time status among the 2013 cohort of students who enrolled for their first year following the tuition decrease. Following the implementation of the policy, these students are also more likely to re-enroll in college for a second year. This suggests that the ASSET legislation was

effective in improving access to higher education, and thus enrollment in college, among some of the targeted students.

To examine the mechanisms involved in these changes in the enrollment behavior of students likely to be eligible for reduced tuition, we examine the application margin. At which stage of the application process did the policy influence student decisions about college? Lowering tuition may induce more students to apply if they become aware of the lower tuition rate and would have been deterred from applying by high costs otherwise. Lower tuition may also change the composition of students applying to college. This would be reflected in an increase in the acceptance rate if more higher-ability students apply and a lower acceptance rate if more lower-ability students apply.[1]

Our results suggest an increase in applications from likely undocumented students, but no change in the probability that colleges accepted them. These results are, it should be noted, descriptive, since they rely on data from all applications, rather than all graduating high school students. This means there could be compositional effects on the sample of students applying to college, which we cannot observe in the data. In addition, undocumented students were exposed to other state and federal policy changes at the same time, including Deferred Action for Childhood Arrivals (DACA), which may have influenced education decisions. Nevertheless, the results suggest that the policy encouraged applicants with similar academic ability on the margin.

This paper proceeds as follows. Section 2 discusses the literature on the effects of tuition changes and about immigrant college decisions, and the policy environment in detail. Sections 3 and 4 describe the data and methods we use. Section 5 shows the results and robustness checks, and Section 6 concludes.

2 Background

2.1 College Costs and College Enrollment

Prior studies examining the effect of reductions in college costs, either due to financial aid or scholarship programs, find increases in enrollment and reductions in dropout rates (Bettinger, 2004; Dynarski, 2003; Abraham and Clark, 2006; Kane, 2006). However, evidence is mixed about

[1] We cannot rule out changes in the behavior of admissions committees; however, we do not have any reason to believe admissions committees were more or less likely to accept undocumented students following the policy change.

the size of the effect of financial assistance on intensive margin outcomes such as credit hours and full-time status (Goldrick-Rab et al., 2012; Cornwell, Mustard and Sridhar, 2006; Cornwell, Lee and Mustard, 2005). Reducing costs might increase credit hours if students have to work less and have more time and resources to devote to academics. On the other hand, if more marginal students are induced to enroll because of the reduced cost but choose to attend part-time, the net effect on credit hours could be negative.

2.2 Policy and Research on In-State Tuition for Undocumented Students

Recently, a vigorous national debate has revolved around undocumented youth, and in particular their access to public programs like public education. Over the past two decades, Congress has considered multiple versions of the Development, Relief, and Education for Alien Minors (DREAM) Act (2001, 2007, 2010), a legislative proposal for a pathway to permanent residency for young, undocumented U.S. residents. Though they failed to pass, components of the proposal would have extended higher education benefits to undocumented students, including access to in-state tuition rates. Protection of "Dreamers" became the focus of intense political back-and-forth in the beginning of the Trump administration, with no resolution as of 2020. Also prominent in policy debates, the Obama administration's Deferred Action for Childhood Arrivals (DACA) program, enacted in 2012, protects immigrants who arrive at a young age with their parents from the threat of deportation. While DACA does not directly impact higher education, it does provide work permits. An increase in job opportunities through work permits could decrease college enrollment due to the higher opportunity cost of education, or increase college enrollment by increasing the return to education.

Despite the repeated failure of DREAM Act initiatives at the national level, states and cities have made efforts to provide undocumented immigrant youth with support to pursue higher education. In 1996, the federal Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) prevented states from extending any benefits to undocumented immigrants that were not available to all US citizens. Thus, undocumented immigrants could not be eligible for in-state tuition benefits in their state of residence because citizens in other states were not eligible. However, in some states, the public university systems provided undocumented students with in-state tuition if they met certain requirements, such as living in the state for a certain number of

years. In response to IIRIRA, 18 state governments, beginning with Texas and California in 2001, enacted policies that effectively grant in-state tuition to undocumented students while, in keeping with the federal ban, not specifically targeting them.

Prior work has used national survey data to examine the enrollment effects of similar policies extending in-state tuition to undocumented immigrants. In general, these studies find positive effects on college enrollment and completion, particularly for women (Kaushal, 2008; Flores, 2010; Darolia and Potochnick, 2015), but no effect on the probability of dropping out (Chin and Juhn, 2011) or evidence for the crowding out of native students (Amuedo-Dorantes and Sparber, 2014; Ortega, Edwards and Hsin, 2018). In-state tuition may also lead undocumented students to enroll sooner after high school (Darolia and Potochnick, 2015). These factors suggest that the effects may be driven by compositional changes in the students choosing to attend college as a result of lower tuition, rather than an impact on students already enrolled. However, national survey data does not include the rich demographic characteristics and academic information of institutional data.

A smaller literature examines the effects of in-state tuition policies using more detailed institutional level data, confirming positive enrollment effects (Dickson and Pender, 2013). Most closely related to our paper, Conger and Turner (2015) examine a 2002 tuition increase for undocumented students in New York that was retracted one semester later. They find that the change led to students "stopping out", or putting their education on hold temporarily. In this paper, we conduct a similar exercise that measures the effect of the legislation on enrollment, but we focus on parsing out the difference between impacts on students already enrolled and effects on aggregate outcomes that are driven by compositional changes in the student body due to the policy. For example, if lower tuition induces more financially constrained students to apply, it is possible that these students are also more likely to drop out after their first year. Alternatively, if the marginal students who apply in the wake of the tuition reduction are less likely to drop out, we will see an increase in re-enrollment due to this compositional change.

While the literature tends to find that these policies increase enrollment, it is unclear whether this is due to more students applying, colleges accepting more of their applications, or more students choosing to enroll after they are accepted. The student decision depends on where the price change is the most salient: at the application stage or the enrollment stage. The policy implications vary depending on the stage at which the legislation affects students' decisions. Most

importantly, the application margin is crucial to understanding the response of students to tuition changes, since even in-state tuition may be too expensive for the target population of the policy. The only similar paper we are aware of that considers the enrollment decision among college applicants is Dickson and Pender (2013), but they limit their sample to admitted students, while we look at the total pool of applicants. This allows us to produce descriptive evidence to begin to answer these questions.

2.3 Colorado's ASSET Legislation

Undocumented immigrants are substantially less likely to graduate high school and to attend college than those in the country legally (Center for Migration Studies, 2018). In Colorado, home to approximately 180,000 undocumented immigrants in 2010, policies to address these gaps in educational attainment are a particularly important policy concern (Passel and D'Vera Cohn, 2011). An estimated 24 percent of undocumented immigrants in Colorado who moved to US before age 14 have some college education, compared to 60 percent for the rest of the population, and less than 8 percent of the likely undocumented population has a bachelor's degree (Center for Migration Studies, 2018).

Previous studies have shown that financial aid and scholarships affect the least advantaged students the most (Angrist et al., 2014), and while undocumented students are a small subset of the population of college students, this group resembles other disadvantaged students in lower income and educational attainment. Examining the impact of college tuition on undocumented students can provide insights into how tuition affects disadvantaged students in general.

In 2013, Colorado became the 15th state to pass a law implicitly granting in-state tuition eligibility to undocumented students. The law, formally titled Advancing Students for a Stronger Economy Tomorrow (ASSET), grants in-state tuition eligibility to students who attended at least three years of high school in Colorado immediately preceding their graduation or general equivalency diploma (GED). Additionally, students had to be admitted to college within twelve months of graduating from high school or show proof of physical presence in the state for the prior 18 months. Thus, the policy was an attempt to reach out to not only the latest cohort of high school graduates, but also to earlier graduates who might have applied in prior years but been deterred by the costs of out-of-state tuition.

Under ASSET, undocumented students are required to sign an affidavit stating that they have applied or plan to apply for lawful presence in the state.[2] Effective in the fall of 2013, the legislation extended in-state tuition eligibility as well as qualification for the College Opportunity Fund (COF), a $75 reduction in tuition per credit hour available to all low-income Colorado residents. The decrease in cost for a student moving from out-of-state to in-state tuition status is substantial. Across Colorado public 4-year universities during the 2011-2012 academic year, average in-state tuition for full-time undergraduates was $7,167 while out-of -state tuition was $13,659. At public 2-year institutions, in-state tuition as $3,491 and out-of-state tuition was $9,523 (U.S. Department of Education, 2011). The ASSET program also made many undocumented students eligible for certain types of university-specific financial aid or scholarships available only to residents.

3 Data

We use individual-level data from the Colorado Department of Higher Education (CDHE) on all of Colorado's 31 institutions of higher education, which enroll over 250,000 students each year. There are 14 four-year colleges and universities, as well as 17 technical and community colleges.

We compile two main student-level files. The first contains term-level information on all enrolled students at all Colorado public institutions, from the 2008 to 2014 academic years. This file contains information on each student's demographics, academic progress, and financial aid received. Academic information includes the number of credit hours the student enrolled in, as well as their GPA. The financial aid information includes whether the student was eligible for Pell grants, and whether the student received one. Demographic information include gender, age, race, and ethnicity. The data also contain two key variables on student characteristics that are key to our analysis: the high school from which the student graduated and tuition status. Tuition status indicates whether the student qualifies for in-state or out-of-state tuition and includes a flag for "non-resident aliens", or non-citizens who do not qualify as Colorado residents for tuition purposes.[3] We link these data to information on each degree and certificate awarded over the

[2] In theory, students with legal resident status could stand to gain from this law; for example, a student who moved to another state after graduating high school and decided to return some years later to enroll in a Colorado university. Still, the intention of the policy is to target undocumented youth with significant links to Colorado for in-state tuition.

[3] Students with out-of-state tuition can include students enrolling from other states outside Colorado, international students, as well as undocumented students who do not qualify for in-state tuition and may be affected by the ASSET

same time period. This includes the institution, date of award, type of award, as well as a detailed Classification of Instructional Programs (CIP) code, which describes the content of the award.

The second source of data is a list of each individual application to a Colorado institution of higher education between 2009 and 2013.[4] Each record has demographic information for the applicant as well as the tuition classification, as in the enrollment file. Each application record also shows whether the application was accepted and whether the student ultimately enrolled in that institution. The available data do not provide information about financial aid beyond Pell Grant eligibility and receipt. The application records also include the associated scores on the various ACT individual tests, the ACT composite score, and the SAT score. It is important to note that the data consist of all applicants, not all high school students.

To avoid bias from changes in out-of-state enrollment, which may increase due to changes in the applicant pool or the budgetary concerns of the universities, we restrict our sample to students who attended high school in Colorado. Due to data availability, we consider only students in entering cohorts from 2010-2015, and we further restrict our sample to first-year students enrolling as degree-seeking undergraduates for the first time. We cannot observe undocumented students directly, so we consider a treatment group of students who are likely to be affected by the policy based on race/ethnicity and tuition classification flags. Specifically, we define the treatment group as Hispanic students who are classified as "non-resident aliens" for tuition purposes. That is, while they may have attended high school in Colorado, they do not show proof of official residency (which would require a Social Security number, visa, or Green Card), and they are not citizens. By restricting the sample to students who graduated from high school in Colorado, this definition excludes international students as well as refugees, who are required to apply for Legal Permanent Resident Status within one year of arriving in the US. This flag is not a direct measure of whether the students pay in-state tuition or not; their tuition status can be either in-state or out-of-state. Therefore, the "non-resident alien" flag does not necessarily change mechanically with the policy as students become eligible for in-state tuition. Our control group is all other Hispanic enrollees. This approach is similar to other related papers (Amuedo-Dorantes and Sparber, 2014; Dickson and Pender, 2013). For simplicity, we refer to the treatment group as "Hispanic non-residents" and

policy change.

[4]Data from 2008 are incomplete and not included in the analysis.

the control group as "Hispanic residents," noting that both groups graduated from high school in Colorado.

Because we do not have information on the legal status of college applicants and enrollees, we rely on the assumption that Hispanic non-resident non-citizens are an adequate proxy for undocumented students. While this assumption may be inappropriate in some states, we argue that it is reasonable in Colorado, where estimates are that 76 percent of the undocumented population was Hispanic (Center for Migration Studies, 2018).[5]

Table 1 shows summary statistics for all Hispanic first-time enrollees in the 2012 and 2013 academic years. Because the ASSET legislation was passed and enacted in the summer of 2013, the table shows a cross-section of students in our sample immediately before and after the policy change. There is a clear increase in the share of students who qualify as non-resident aliens from 2011 to 2013, which triples from just over 1 percent to 3.6 percent. This is the first evidence that the ASSET legislation may have had an effect, since these students are the ones targeted by the policy. Approximately 63 percent of all students were Pell-eligible, and most of those students did receive Pell grants. Students took an average of just under 12 credit hours per term, and about 67 percent enrolled full-time, defined as enrollment in at least 12 credit hours in a semester. An important takeaway from this table is that, other than slight upticks in the share of Hispanic students who are non-resident aliens, there do not seem to be meaningful changes in the overall composition of students in our sample following the implementation of the policy. Similarly, Appendix Figure A1 shows the population by age group for the Hispanic population in Colorado, and shows no noticeable changes around the time of the policy.

4 Empirical Approach

4.1 Estimating Equation

We are interested in how the ASSET policy, passed in the spring of 2013, changed student behavior.[6] Following similar research in this literature (e.g. Conger and Turner, 2015) we use a difference-in-

[5] Appendix Table A1 shows a large increase in the share of non-resident Hispanic students who received in-state tuition from one year to the next, relative to no perceptible changes for resident Hispanic students.

[6] Although the legislation was passed in the spring, it was first effective in the summer of 2013. Because we exclude the summer term from our analysis, the first time students are affected in our sample is in the fall of 2013.

differences approach. The price of tuition changed abruptly for students targeted by the ASSET legislation from the 2012 school year to the 2013 school year, but did not change for other students. As discussed earlier, we consider non-resident Hispanic students to be the "treated" group in this policy context, and we consider all other Hispanic enrollees as the non-treated or "control" students.

We are interested in two main margins of student behavior. Figure 1 serves to illustrate how the difference-in-differences approach helps us explore these two margins. Each tick on the horizontal axis represents one calendar year quarter, starting in the first quarter of 2010. The horizontal lines represent the enrollment period of individual cohorts, starting with the 2010 cohort, which enrolled in the Fall of 2010.[7] The dashed lines show the quarters where students were not potentially eligible for ASSET, and the dark lines show when ASSET took effect. For example, the 2010 cohort had three full calendar years of enrollment prior to the Fall of 2013, the first year of ASSET. The first shows that some cohorts are partially treated, while others are fully treated. For example, the 2013 cohort is the first for which incoming first year students were eligible for ASSET.

The first margin of student behavior we are interested in is students who enrolled prior to the 2013 law change but were on the margin of dropping out (or "stopping out"). These students might, when faced with cheaper tuition, decide to re-enroll the following Fall semester. We would observe the effects of the policy along this margin through a differential increase in persistence from the 2012 school year to the 2013 school year among the treated group. Looking back at Figure 1, we would compare the transition from first to second year for the 2010-2011 cohorts relative to the 2012 cohort, whose second year was treated.

Second, new students might decide to attend college. The effect of the policy on new students can occur through two channels: enrollment decisions and application decisions. First, we might observe different enrollment behavior of incoming students depending on the timing of their first year and their immigration status. Second, we may see differences in application behavior for the treated group before and after the policy. Examining each of these two components uses different sources of data: enrollment information as well as application data. For both, we compare students whose first year was prior to the policy change to students whose first year happened after.

We explore each margin, the re-enrollment of current students and the behavior of students

[7] For ease of interpretation we represent enrollment as starting in the fourth quarter of the year.

who enroll after the policy, using variations of the same empirical design. We estimate equations of the following form:

$$y_{itc} = \beta_0 + \beta_1 Treat_i + \beta_2 PostASSET_t + \beta_3 (Treat_i * PostASSET_t) + X_i\gamma + \eta_c + u_{itc} \quad (1)$$

where y_{itc} is an outcome for student i in year t in college or university c. The variable $Treat_i$ takes a value of one if the student is in the treated group, and zero otherwise. The variable $PostASSET_t$ takes a value of one if the academic year occurs after the summer of 2013. Because we only have enrollment data through the 2013 academic year, only that year has a value of one in the enrollment regressions, and all prior years have a value zero. The coefficient of interest is β_3. We control for a set of individual characteristics X_i, such as test scores, an indicator for community colleges, and other demographics. We also control for college fixed effects η_c[8].

As mentioned previously, we are interested in two distinct margins: the behavior of previously enrolled students, and the behavior of new and prospective students. Below, we describe the outcomes and how we adapt the empirical approach in order to study each of these margins.

First, we limit the sample to students who had already enrolled prior to the policy change and consider only the 2010-2012 cohorts of first time students. We are interested in whether these first-time students enroll in any courses (i.e., persist) in the following academic year. In this case, the 2012 cohort is the treated cohort, since the ASSET policy was implemented in the summer between their first and second year[9]. We omit the 2013 cohort because these students are fully treated: they were subject to the new tuition policy during their first year in college. This is a similar margin as studied by Conger and Turner (2015). Given that ASSET legislation had been proposed in the past and failed, we do not think these students would have had high expectations that they would receive in-state tuition in the future. Therefore, the change in tuition price likely played no part in the initial decision to enroll in college of any students in this sample. While we are interested in the impacts on undocumented students who enrolled prior to the policy, these

[8]Note that we do not include college fixed effects when examining application behavior.

[9]While students in the 2010 and 2011 cohorts who remain enrolled also experienced a tuition decrease in 2013. However, this change occurred between sophomore and junior year for the 2011 cohort and between junior and senior year for the 2010 cohort. We focus on re-enrollment between freshman and sophomore year and do not pool results across grade-levels for simplicity. A benefit of this approach is that it avoids selection bias. For example, re-enrollment estimates for rising seniors would be affected by the attrition of students who had already dropped out after freshman or sophomore year.

findings may have limited external validity. As these students already enrolled in college prior to ASSET, without in-state tuition eligibility, they are not likely to represent the marginal student.

From a policy perspective, we are also interested in the outcomes of students pushed to enroll for the first time due to the policy. We first consider the enrollment behavior of new students before and after the policy. We examine three outcomes: full-time status in the first year, number of credits in the first year, and whether the students persisted to their second year. Here we limit the data to the 2010, 2011 and 2013 cohorts; we omit the 2012 cohort because they are partially treated when we examine persistence (i.e., they were eligible for in-state tuition in their second year, but not their first year). As a robustness check, in the appendix we show specifications that include this cohort for all the outcomes except persistence, and our findings are largely unchanged. Because the policy is relatively recent, and due to data constraints, we are not able to adequately measure subsequent student outcomes, such as completion and time to degree.

4.2 Threats to Identification

Because the analysis relies on a differences-in-differences design, the main identifying assumption is that the trends in the outcomes are similar in the period prior to the policy for both groups. Figure 2 shows means for the relevant groups for the main outcomes of interest. Panel a) shows the number of enrolled students who were Hispanic non-residents and Hispanic residents. Overall enrollment for Hispanic students remained flat, for both resident and non-residents. Panel b) of the figure shows persistence rates across Hispanic residents and non-residents. In the years prior to the passage of the ASSET legislation, persistence among Hispanic non-residents–the students targeted by the legislation–was slightly lower than persistence among other students. However, while the trends are similar between 2011 and 2013 trends, there is a noticeable increase in the persistence rate of Hispanic non-residents following the implementation of the ASSET legislation. There is a similar picture for full-time status, in panel c). While fewer Hispanic non-resident students enrolled full-time in the years prior to the policy change, the full-time status enrollment rate for this group jumps almost 20 percentage points following ASSET, while there is no perceptible discontinuity for other Hispanic students. The lower baseline may be due to a higher share of Hispanic non-residents attending community college. Over 50 percent of the treatment group enrolled in community college, compared to 36 percent of other Hispanic students. Unfortunately,

the sample is too small to examine heterogeneous effects across two-year and four-year institutions. Panel d) also shows a slight increase in annual credit hours for the treatment group relative to the control group, although average credit hours per student increases for both groups during this time period. The graphs show visual evidence that there are parallel trends in enrollment variables across the two types of students that we use in the analysis, and they also illustrate the difference-in-difference effects we document in the next section. Appendix Table A2 shows tests of the joint significance of the two pre-treatment coefficients we estimate for each outcome. For none of these is the joint significance statistically significant, which provides further evidence of the validity of the research design.

By only observing Colorado students, there is the potential that our estimates do not capture any effect of the policy on drawing students to and from institutions we cannot observe, such as private universities in the state, or universities out of the state. Using data from the American Community Survey, we do not see much change in the number of Hispanic students who enrolled in private schools in Colorado from 2010-2013, as shown in Appendix Figure A2. We also use the Integrated Postsecondary Education Data System (IPEDS) data to explore changes in the college-going behavior in and out of the state. Panel a) of Appendix Figure 3 shows the share of students at Colorado public institutions who were Colorado residents. There are no noticeable changes around the timing of the ASSET legislation. Similarly, panel b) of Appendix Figure 3 shows the share of Colorado resident students who attended a Colorado public institution. Here, too, there are no noticeable changes around the timing of the legislation.

Another potential concern is that student's may have anticipated the change in tuition, affecting their decisions prior to the policy implementation. The ASSET legislation passed in the spring of 2013; the first time the tuition decrease affected eligible students was the fall of 2013.[10] Students applying to college in the fall of 2012 made the decision to apply and choices about the institutions to which they applied without knowing that they would have in-state tuition eligibility. Thus, the potential concern is that students applying to college prior to the policy anticipated the change, and this expectation of lower tuition induced some students to apply who would not have applied otherwise. While we cannot account for potential bias from students anticipating the policy change,

[10] Undocumented students enrolling in courses in the summer of 2012 could also be eligible for in-state tuition; however, we are excluding students in summer terms from our analysis.

this is unlikely for two reasons: first, previous versions of the bill had failed to pass, and second, this bill went through the legislative process fairly quickly. The ASSET legislation was introduced in January of 2013 and signed into law just a few months later in April.

Relatedly, in the fall of 2012, Metropolitan State University (MSU) in Denver extended in-state tuition benefits to all Colorado high school graduates. Since this change occurred a year prior to the ASSET legislation, a potential concern is that eligible students at this college would have changed their behavior a year prior to 2013, which would bias our results. In Appendix Table A3, we exclude MSU from the sample and find similar results.

A final concern is that the introduction of DACA in the summer of 2012 is affecting our results.[11] While DACA did not imply in-state tuition eligibility, it did grant work permits to young undocumented residents, and there is substantial overlap in the groups eligible for DACA and ASSET. The bulk of previous literature does not find evidence that DACA increased college enrollment; in some cases, results suggests that it decreased college enrollment as eligible students took advantage of work permits and entered the labor force earlier (Pope, 2016; Amuedo-Dorantes and Antman, 2017; Hsin and Ortega, 2017). This also suggests that DACA alone may not be enough to induce students to attend and complete college if they are still faced with high out-of-state tuition costs. However, Kuka, Shenhav and Shih (2018) find a positive effect of DACA on college enrollment. They note that their results differ from the literature in also considering DACA's influence on motivating students to graduate from high school, a requirement for DACA eligibility. If the main channel through which DACA increases college enrollment is through raising expectations about future human capital, students applying to college in the fall of 2012 and enrolling in the fall of 2013 are less likely to be affected. These students would have only been exposed to DACA for their senior year of college, and would have had less time to alter their high school trajectory in response to a new incentive. While we cannot completely eliminate the possibility that the passage of DACA affects the decisions of students in our sample, we believe that our focus on earlier cohorts limits this concern.

[11] USCIS had begun approving DACA applications in the fall of 2012.

5 Results

We examine the effects of the ASSET legislation on two types of students. First, we focus on students who had already enrolled in a Colorado public university or college. This is similar to the approach taken by Conger and Turner (2015), who analyze the effects of a policy in New York on students who had already enrolled. A benefit of this method is that it is independent of issues of selection of new students into postsecondary education due to the policy. However, this selection is precisely one of the effects of the policy we are interested in measuring. So, as a second approach, we look specifically at these selection effects themselves. We focus on the enrollment behavior of first-time students in their first year. We also leverage information on applications and matriculations of prospective college students to observe how the college-going decision changed.

5.1 Results for Previously Enrolled Students

Table 2 shows the effect of the ASSET legislation on one-year persistence rates for first-year students. That is, we observe whether or not a student enrolled in any courses in their second year. We include data on students in the cohorts of the 2010, 2011, and 2012 academic years. Because the policy was enacted in the summer of 2013, the 2012 cohort is the only group of first-year students affected by the ASSET policy in their decisions about second-year courses but not in their application decisions: the policy took effect in the summer between their first and second years. The coefficient of interest is the interaction between being in the 2012 cohort and being in the group likely targeted by the policy. Here, we do not find a differential rate of persistence for Hispanic non-residents and Hispanic residents between the pre-2012 and 2012 cohorts. The coefficient is small and not statistically significant, indicating no evidence of an effect of the policy on the persistence of students who had already enrolled in college. This is a different conclusion than suggested from the graphs in Figure 2, which showed an uptick in persistence following 2012. This is because the figure conflates the persistence of already-enrolled students with the selection of new students into enrolling for the first time beginning in the 2013 academic year.

A lack of an effect here is perhaps not surprising: students who had already enrolled in college are not the marginal cases. These are students who had already enrolled in a year of college, and so their ability to re-enroll the following year would perhaps be less affected by the policy than

students who were on the margin of attending whatsoever. In results not shown, we find similar effects on the number of enrolled credits and full-time status for students in their second year. Of course, we do not expect any effect on this margin either because credits depend on persistence.

5.2 Results for New Students

Next we examine how the ASSET legislation affected the composition of new first-time students. The goal of the policy was to increase college attendance of undocumented students. If it worked, then we should observe heightened rates of credit accumulation, full-time status, and persistence among cohorts entering after the policy than those who entered before. On the other hand, if in-state tuition without access to federal loan and grant programs was still too high a cost for undocumented students, then the policy may have had a negligible effect. For these analyses, we include the 2010, 2011 and 2013 cohorts. Because the 2012 cohort is treated by the policy, which took effect after their first year, we do not include them in the sample for persistence. We also exclude this cohort from the sample for the other regressions in this subsection, in order to retain the same sample of students.[12]

Table 3 shows the effects of the policy on whether new students entered as full-time or part-time, measured as enrolling in at least 12 units per semester. We include the 2011 and 2013 cohorts. Here, we do find that Hispanic non-resident students were 8 percentage points more likely to enroll as full-time students in the 2013 cohort than in the pre-policy cohort, relative to Hispanic resident students. This result is robust to including controls for demographics and ACT scores. This is quite a large effect, about 12 percent relative to the overall full-time status rate of 68 percent. In fact, the increase in full-time status due to ASSET makes up more than half of the difference in the full-time status between Hispanic resident students and Hispanic non-resident students.

Table 3 shows a similar result, this time for the number of credits a student entered in the first year. Here we find that the ASSET legislation had a positive and substantial effect on the number of credit hours of new first-year students. The policy led to an increase of 2.7 credits in a student's first year, or about a 14 percent increase. As with full-time status, this increase made up more than half the difference in the pre-policy number of credits enrolled between the two groups.

[12] For full-time status and credit hours, the results are similar when we do include the 2012 cohort, as shown in Appendix Table A4.

The final row of Table 3 shows whether first-year students persisted to take any courses the following academic year. We find a similar pattern as for the other outcomes we examined in this section. The policy increased persistence rates of the targeted students by 20 percentage points, a substantial increase. Of course, these results combine community colleges and four-year colleges. Given substantial cost differences across these two types of institutions, ASSET may have different effects on two-year and four-year colleges.

5.3 Heterogeneity by Type of Institution

In addition to examining policy effects across all public colleges in Colorado, we are able to separately examine two-year institutions, or community colleges, and four-year colleges. College tuition varies substantially across institutions, and two-year institutions tend to be substantially less expensive to attend than four-year institutions. The difference between in-state and out-of-state tuition is also much larger in absolute terms at more expensive four-year colleges.[13]

As seen in Table 4 the effects of decreasing college tuition are much stronger for students 4-year colleges. Specifically, Hispanic non-resident students attending four-year colleges were almost 9 percentage points more likely to enroll as full-time students after ASSET, relative to Hispanic resident students. However, Hispanic non-residents at community colleges are only 7 percentage points more likely to enroll full-time, and this result is not statistically significant. Examining heterogeneity in the effects on credit hours, we find that ASSET led to an increase of 3.2 credits for Hispanic non-resident students at 4-year colleges, an increase of nearly 15 percent. At community colleges, the effect is not statistically significant, and suggests a much smaller increase of 1.4 credits, or 7.8 percent. Finally, while we find a statistically significant effect on re-enrollment for Hispanic non-resident students in both community colleges and four-year institutions, ASSET increased the average persistence rate by 24 percentage points at four-year colleges, but only 14 percentage points at community colleges. These results are not necessarily surprising. The average reduction

[13] Assuming full-time status, or 30 credit hours per academic year, tuition for Colorado residents at the University of Colorado, Boulder was $7018 in the 2011 academic year, and $28,000 for non-residents. This represents the highest tuition cost of any institution in Colorado, and out-of-state tuition was almost four times higher than in-state tuition. At the other end of the distribution, resident undergraduate tuition at Adams State College was $2,952 per academic year, nearly as low as tuition for the Colorado Community College System, which charged $2,888 for the year. Out-of-state tuition at Adams State College was $12,912, over four-times higher than in-state tuition, while non-resident tuition in the Colorado Community College System varied from $5,723 to $12,408 depending on the institution. While the exact pricing structure varies across colleges, some 4-year institutions cap tuition above a certain number of credit hours reflecting full-time status.

in tuition costs from ASSET was much larger at four-year colleges, and the change to a much lower in-state tuition likely enabled more students to attend. While tuition also decreased for undocumented students at community colleges, it is possible that it was already low enough that some students could afford it prior to ASSET, resulting in a smaller change due to the policy.

Together, the results on full-time status, the number of enrolled credits, and persistence suggest that the policy changed the enrollment intensity of new students. However, we also wish to understand the mechanisms involved in these changes. Was this substantial closing of the gap between non-resident Hispanic students and other students a result of a change in the composition of students entering colleges in Colorado, or was it a result of students who would otherwise have enrolled being able to enroll in more classes? The results are stable when controlling for ACT scores, suggesting that our results are not driven by changes in observable ability as measured by test scores. However, it is possible that admissions committees selected different students following the policy based on other characteristics.

5.4 Application Behavior

In this subsection we use data on the applications of all students to Colorado public colleges and universities to explore whether ASSET affected the composition and quality of candidates, and the matriculation behavior conditional on acceptance. We reiterate that these results should not necessarily be interpreted as causal, as there are potential changes in the composition of the applicant pool that we cannot observe. Despite this caveat, the descriptive results can shed new light on a relatively unexplored channel through which state DREAM acts may affect student outcomes.

Figure 3 shows the application behavior of Hispanic non-resident non-citizen students relative to other students. As seen in panel a), the share of applications that came from treated students increased dramatically following the ASSET policy, after a flat trend in the years prior. Not surprisingly, as shown in panel b), the increase in the number of applications comes from an increase in the number of applicants, as students previously ineligible for in-state tuition seek to apply. Along with an increase in applications comes an increase in the share of treated students whose applications are accepted and who ultimately enroll in college, relative to other students in our sample, as shown in panels c) and d). These bottom two panels do not show, however,

whether the composition of new applicant students changed relative to others. A null change in the acceptance and matriculation rates would still lead to increases in accepted and enrolled students due to the increase in applications. These graphs provide descriptive evidence that the ASSET policy induced new applications from students who previously would not have applied. In fact, as shown in Figure A4, we do not see a substantial change in the number of college applicants or the number of applications overall, since the treated students are such a small share of the overall pool. This alleviates concerns that other contemporaneous effects might have affected college application more broadly.

So far, we have shown that the number of applications and applicants grew disproportionately for treated students following ASSET. Table 5 shows estimates of equation 1 using the sample of all applicants[14]. Here, the variable $PostASSET_i$ takes a value of one if a student applied in the Fall of 2013, after the policy was announced. Students who applied in the Fall of 2012, to enter in the class of Fall 2013, did not know about the policy when they decided to apply. Panel A of Table 5 shows that, relative to other applicants, Hispanic non-residents were equally likely to have their applications accepted. This result is robust to controlling for ACT scores, which reflect the student's academic potential and are a key input to the admission decision. This suggests that, while the ASSET policy induced new applications, it did not likely have an effect on the observable academic quality of new applicants. Panel B shows that matriculation rates—enrollment conditional on acceptance— did not change more for the target students relative to other students following the policy.

Overall, the results from the application data suggest that the ASSET legislation had its intended effect. Some students who would otherwise likely not have applied to college were pushed to apply, but the quality of applicants did not change. We speculate that this may be because students were on the margin of applying because of financial considerations, not academic ones.

6 Conclusion

In this paper we explore how Colorado's ASSET legislation, which granted in-state tuition to many undocumented students in 2013, affected the college application and enrollment behavior of these

[14]However, we do not include institution fixed effects in these regressions because the choice of colleges to which students applied may be endogenous to the policy change.

students. We find that the policy did not significantly impact students who had already enrolled. However, we do find substantial changes in the enrollment behavior of new students entering college after the policy was implemented. The policy was able to close half the gap between non-resident Hispanic students and resident Hispanic students in terms of the number of college credits taken and persistence. Using data on applications, acceptances, and matriculation, we argue that the mechanism driving these results is the effect of the policy on inducing marginal students to enroll.

The results in our paper speak to short-term effects of the policy on college enrollment. However, there may well be longer-term effects as well. For example high school graduation may increase as a result of ASSET, which would likely then lead to increases in college enrollment later on, as well as potential changes in the composition of college applicants. We currently cannot observe high school outcomes, nor do we have enough years of post-policy data to estimate these later effects. In addition, we cannot completely control for the possibility that DACA , which was also implemented in 2012, also encouraged more students to enroll in college. However, given prior research on the effects of DACA on college enrollment, we believe that it is less likely to influence the 2013 cohort than later cohorts.

Our results inform two important policy areas. First, we find that the ASSET legislation, one of many similar "state DREAM acts", can increase college-going rates of students who would otherwise not have attended. As such, our results echo other findings in the literature that ask similar questions with different research designs or in different states. More generally, our findings speak to the larger literature on how college costs affect college attendance. Although undocumented students may have different returns to college than other Colorado residents due to less certain work opportunities or discrimination, documentation status is likely to have less of an impact on the returns for DACA-eligible students who can receive work permits upon graduation.The change in tuition granted by ASSET is a substantial one. For example, at Colorado State University in Fort Collins, the per-semester tuition for in-state students was $5,258 per semester compared to $13,005 for out-of-state. Other colleges and universities in the state have similar differences between the two statuses. It is likely that the difference in price tags reflects a true difference in cost faced by the targeted students, since they are ineligible for federal financial aid and, prior to ASSET, most types of state financial aid. Thus, our results show that tuition

changes for disadvantaged students on the margin of college attendance can have substantial effects on college-going.

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Figure 1: Schematic of Treated and Untreated Cohorts, 2010-2014

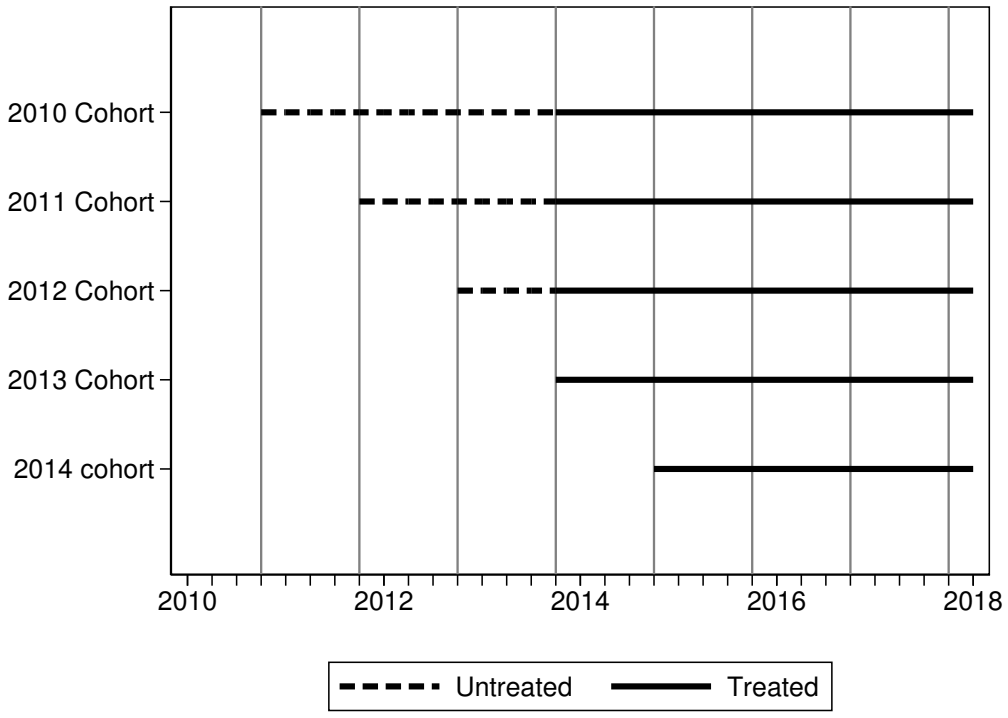
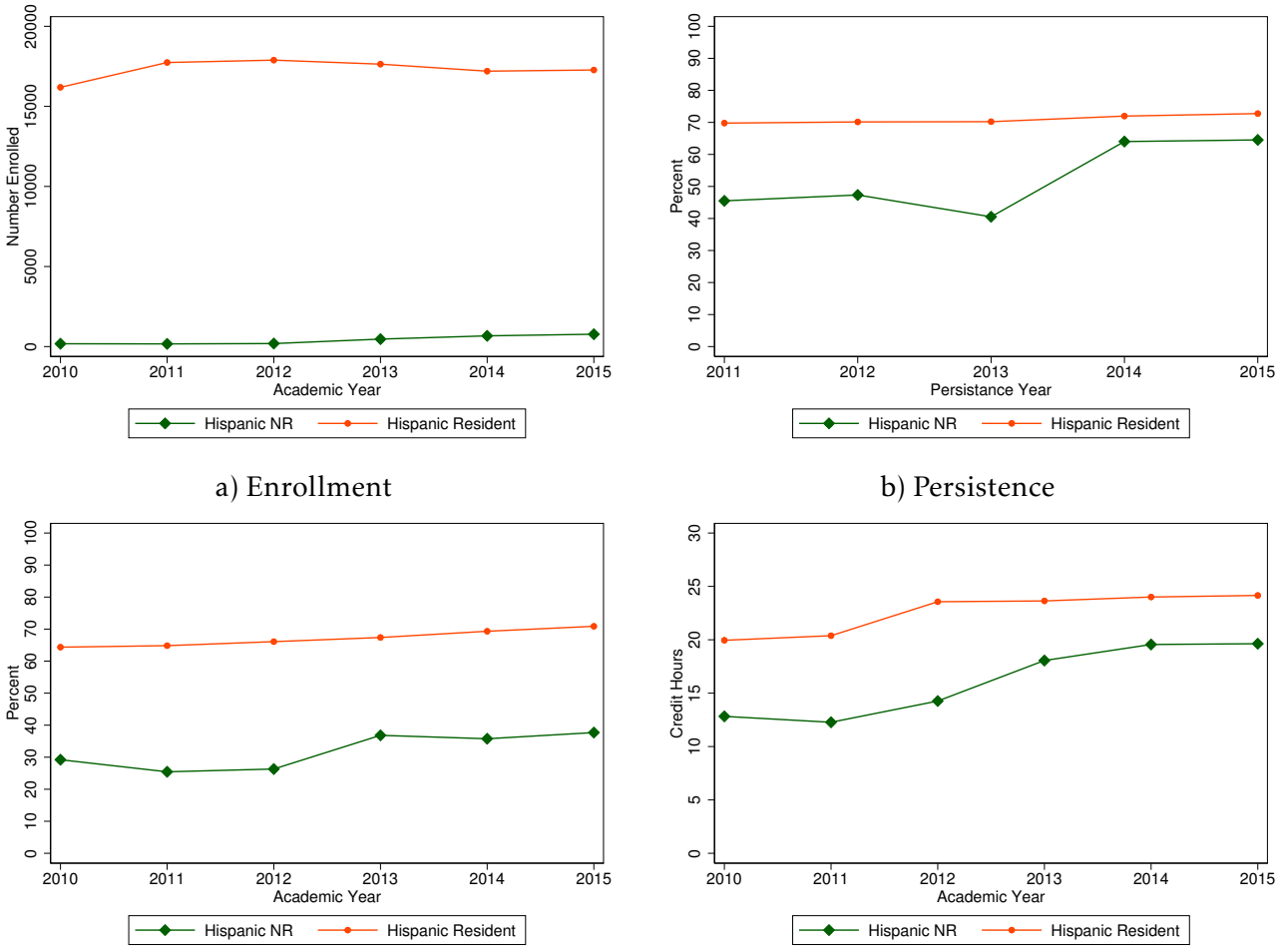


Figure 2: Enrollment and Persistence Trends, 2010-2015



a) Enrollment

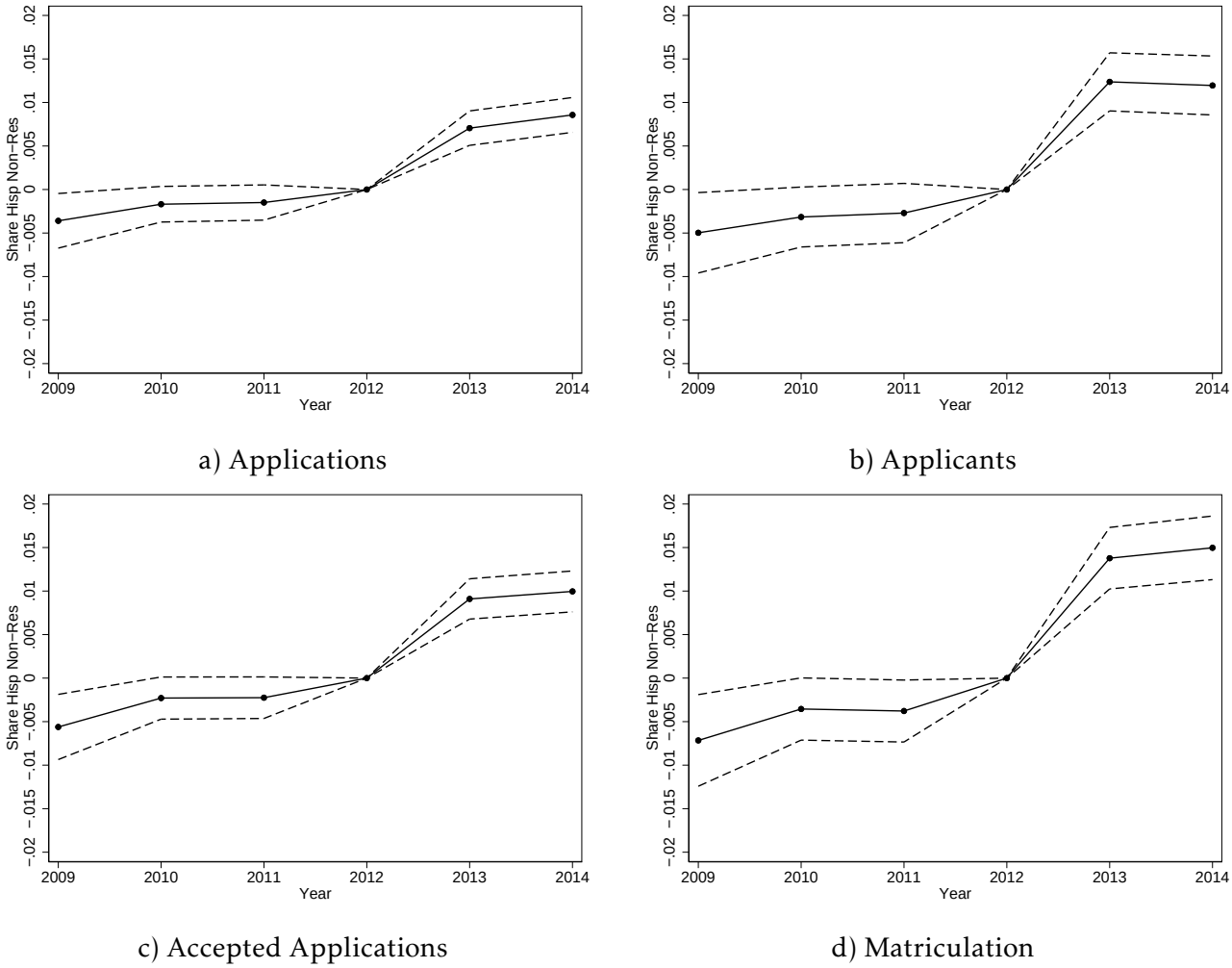
b) Persistence

c) Fulltime Status

d) Credit Hours

Notes. Figures show trends in enrollment, re-enrollment, full-time status, and credit hours of Hispanic non-resident non-citizen (treated) students relative to other Hispanic students who entered college as first-time Freshmen in the 2010-2015 cohorts. Panel a) displays total enrollment. Panel b) displays the percent of Freshmen who re-enroll in the following academic year. Panel c) shows the share of students who are enrolled full time, and panel d) shows the average number of credit hours for each group.

Figure 3: Application Shares of Treated Students Relative to Other Students, 2009-2014



a) Applications

b) Applicants

c) Accepted Applications

d) Matriculation

Notes. Figures show shares of Hispanic non-resident non-citizens (treated) relative to other Hispanic students, by year. The sample is applicants in 2009-2014, or students applying to enter college in the 2010-2015 cohorts. Panel a) shows the share of applications filed by treated students relative to other students. Panel b) shows the share of applicants who were treated relative to other students. Panel c) shows the share of treated individuals among accepted applications, and panel d) shows the share of treated students among acceptance offers that were taken up.

Table 1: Summary Statistics for Hispanic First-time Enrollees

	(1) 2012 Cohort	(2) 2013 Cohort
Male	0.441	0.446
	(0.497)	(0.497)
Age	21.20	20.60
	(6.595)	(5.762)
Nonresident Alien	0.0110	0.0361
	(0.104)	(0.186)
Pell receipt	0.589	0.541
	(0.492)	(0.498)
ACT English	19.92	19.99
	(5.385)	(5.263)
ACT Math	20.04	20.24
	(4.409)	(4.354)
Credit Hours	11.74	11.85
	(3.876)	(3.676)
Fulltime status	0.679	0.677
	(0.467)	(0.468)
Observations	6185	7433

Notes: Summary statistics for the 2012 and 2013 entering cohorts of Hispanic students. Sample limited to first-time enrollees in the fall semester who graduated from a Colorado high school.

Table 2: Re-Enrollment: Freshmen, 2010-2012 cohorts

	(1)	(2)	(3)
Hispanic NR NC x Post	-0.0322	-0.0249	-0.0259
	(0.0484)	(0.0490)	(0.0507)
Y Mean	0.672	0.672	0.672
R2	0.00339	0.0661	0.0765
Institution FE		X	X
ACT and Demographics			X

Notes: Includes 24,840 first-time students enrolling in 2010, 2011 and 2013. The dependent variable is a student-level indicator for re-enrollment in the second year. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001

Table 3: Freshmen: 2010, 2011 and 2013 cohorts

	(1)	(2)	(3)
A. Full-time Status			
Hispanic NR NC x Post	0.0397	0.0607	0.0812*
	(0.0376)	(0.0328)	(0.0320)
Y Mean	0.646	0.646	0.646
R2	0.00988	0.248	0.290
B. Credit Hours			
Hispanic NR NC x Post	1.823	2.316*	2.734**
	(1.017)	(0.979)	(0.965)
Y Mean	20.07	20.07	20.07
R2	0.0273	0.209	0.247
C. Re-Enrollment			
Hispanic NR NC x Post	0.184***	0.200***	0.204***
	(0.0430)	(0.0428)	(0.0450)
Y Mean	0.679	0.679	0.679
R2	0.00216	0.0663	0.0755
Institution FE		X	X
ACT and Demographics			X

Notes: Includes 25,246 first-time students enrolling in 2010, 2011 and 2013. The dependent variable in panel a) is an indicator for full-time status, defined as enrollment in at least 12 credit hours, and the the dependent variable in panel b) is number of credit hours per student. Panel c) regresses a student-level indicator for re-enrollment in the second year. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001

Table 4: Freshmen: 2010, 2011 and 2013 cohorts

	(1) Full-time	(2) Credit Hours)	(3) Re-Enrollment
A. Community College			
Hispanic NR NC x Post	0.0725	1.376	0.140**
	(0.0354)	(1.162)	(0.0396)
Y Mean	0.503	17.74	0.587
R2	0.110	0.154	0.0177
N	10262	10262	10262
B. Four-year college			
Hispanic NR NC x Post	0.0896*	3.221**	0.244***
	(0.0419)	(1.076)	(0.0368)
Y Mean	0.741	21.55	0.741
R2	0.371	0.317	0.0809
N	14663	14663	14663
Institution FE	X	X	X
ACT and Demographics	X	X	X

Notes: Includes first-time students enrolling in 2010, 2011 and 2013. The dependent variable in column (1) is an indicator for full-time status, defined as enrollment in at least 12 credit hours, and the the dependent variable in column (2) is number of credit hours per student. Column (3) regresses a student-level indicator for re-enrollment in the second year. Panel A. shows results for students enrolled in community colleges, and Panel B. shows results for students at four-year colleges. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001

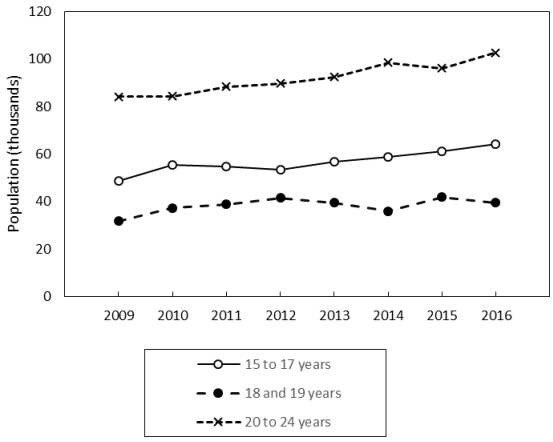
Table 5: Applications, Acceptances, and Enrollment

	(1)	(2)	(3)	(4)
A. Any Acceptance				
Hispanic NR NC x Post	0.0111	0.00709	0.00936	0.00672
	(0.0210)	(0.0219)	(0.0202)	(0.0212)
Y Mean	0.923	0.923	0.923	0.923
R2	0.00364	0.0475	0.0221	0.0543
B. Enroll in College				
Hispanic NR NC x Post	0.0000401	-0.00385	-0.00169	-0.00384
	(0.0422)	(0.0423)	(0.0410)	(0.0412)
Y Mean	0.815	0.815	0.815	0.815
R2	0.0117	0.0340	0.0282	0.0419
ACT Scores		X		X
Demographics			X	X

Notes: Includes 37,648 students applying between 2010 and 2014. The dependent variable in panel a) is a student-level indicator for whether any college accepted an application from that student, and in panel b) it an indicator for whether the student enrolled (not conditional on applying). Demographics include gender, years to application, and age at application. Standard errors clustered at the individual level. * p<0.05, ** p<0.01, *** p<0.001

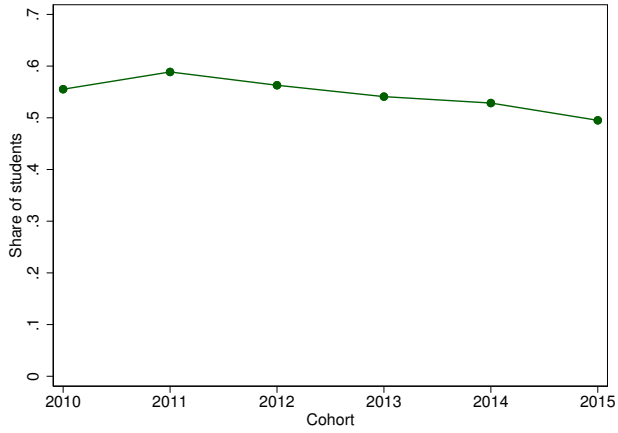
A Appendix Figure and Tables

Figure A1: Application Trends, 2009-2016



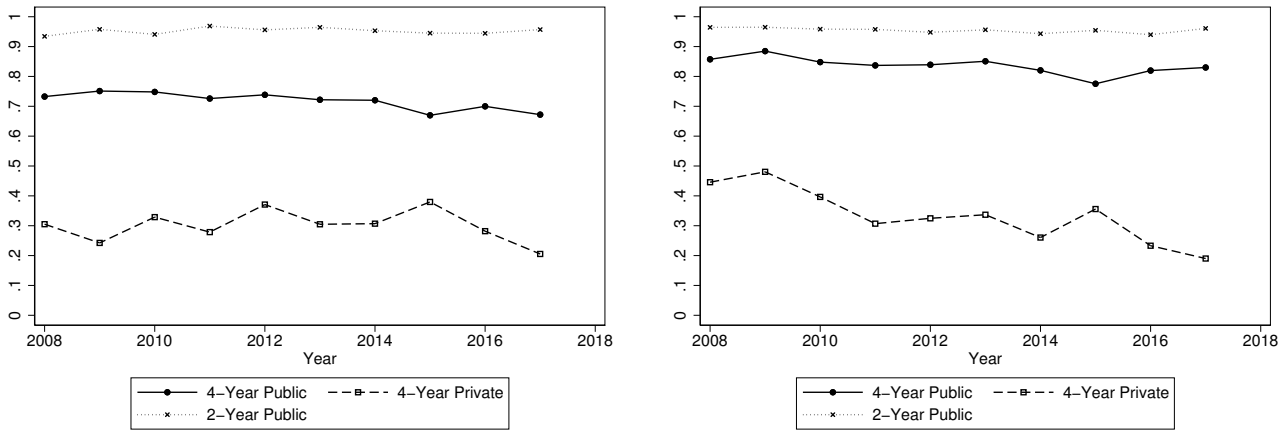
This figure shows the number of Hispanic individuals living in Colorado in the ACS 1-year estimates.

Figure A2: Private University Enrollment Trends, 2008-2016



This figure uses data from the American Community Survey. It shows the enrollment rates in private institutions among Hispanic individuals who had a high school diploma or GED but no bachelor's degree.

Figure A3: In-State and Out-of-State College-Going, 2008-2017

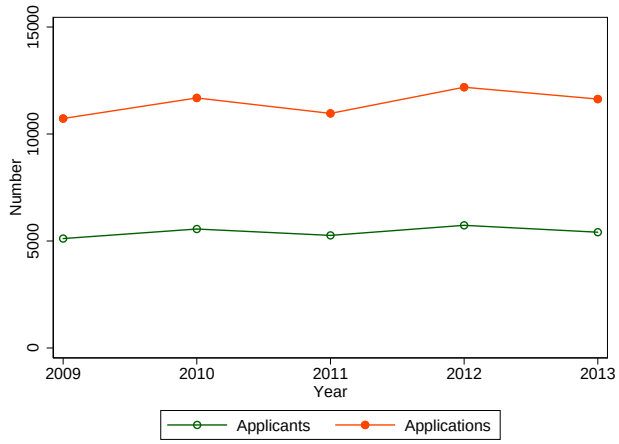


a) CO Students who are Residents

b) CO Residents who Attend In-State

Notes. Figures are based on IPEDS data. Panel a) shows the share of students who are Colorado residents among students who attend Colorado institutions. Panel b) shows the share of students who attend Colorado institutions among Colorado residents who enrolled in college.

Figure A4: Application Trends, 2009-2013



This figure shows the number of applicants and the number of individual applications for the 2009-2013 academic years in Colorado. Sample is restricted to Hispanic students, both resident and non-resident.

Table A1: Share of Hispanic First-time Enrollees with In-State Tuition Classification

	(1) 2011 Cohort	(2) 2013 Cohort
Hispanic Non-resident Alien	23.68%	92.16 %
Other Hispanic	97.86%	98.87%

Notes: Table describes changes in the share of students with "in-state" and "out-of-state" tuition classification for the 2011 and 2013 entering cohorts of Hispanic students.

Table A2: Joint Significance of Pre-Treatment Coefficients

	(1)	(2)	(3)	(4)
	2010-2012 Cohorts	2010, 2011, and 2013 Freshmen Cohorts		
	Re-Enrollment	Full-Time	Credit Hours	Re-Enrollment
F-Stat	2.46	2.45	1.89	.75
p-value	0.13	0.12	0.17	0.39
Y Mean	0.672	20.07	0.646	0.679
N	24840	25246	25246	25246
R2	0.0661	0.209	0.248	0.0664
Institution FE	X	X	X	X
ACT and Demographics	X	X	X	X

Notes: Panel 1 includes 24,840 first-time students enrolling in 2010, 2011 and 2013. Columns 2-4 include 25,246 first-time students enrolling in 2010, 2011, and 2013. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001

Table A3: Freshmen Enrollment: Excluding Metropolitan State University

	(1)	(2)	(3)
A. Re-Enrollment, 2010-2012 cohorts			
Hispanic NR NC x Post	-0.0384	-0.0282	-0.0303
	(0.0468)	(0.0476)	(0.0491)
Y Mean	0.674	0.674	0.674
R2	0.00367	0.0733	0.0837
B. Full-time Status, 2010, 2011, and 2013 cohorts			
Hispanic NR NC x Post	0.0266	0.0613	0.0806*
	(0.0368)	(0.0334)	(0.0323)
Y Mean	0.638	0.638	0.638
R2	0.0107	0.272	0.307
C. Credit Hours, 2010, 2011, and 2013 cohorts			
Hispanic NR NC x Post	1.261	1.958	2.374*
	(0.914)	(0.972)	(0.949)
Y Mean	20.21	20.21	20.21
R2	0.0363	0.228	0.260
D. Re-Enrollment, 2010, 2011, and 2013 cohorts			
Hispanic NR NC x Post	0.171***	0.193***	0.198***
	(0.0423)	(0.0429)	(0.0455)
Y Mean	0.676	0.676	0.676
R2	0.00247	0.0735	0.0835
Institution FE		X	X
ACT and Demographics			X

Notes: Includes 22,522 first-time students enrolling in 2010, 2011 and 2013. Excludes Metropolitan State University of Denver. The dependent variable in panel a) is an indicator for full-time status, defined as enrollment in at least 12 credit hours, and the the dependent variable in panel b) is number of credit hours per student. Panel c) regresses a student-level indicator for re-enrollment in the second year. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001

Table A4: Freshmen Enrollment: Including 2012 cohort

	(1)	(2)	(3)
A. Full-time Status			
Hispanic NR NC x Post	0.0488	0.0636	0.0814*
	(0.0371)	(0.0322)	(0.0320)
Y Mean	0.646	0.646	0.646
R2	0.00734	0.247	0.286
B. Credit Hours			
Hispanic NR NC x Post	1.932	2.232*	2.603*
	(1.009)	(1.045)	(1.044)
Y Mean	20.60	20.60	20.60
R2	0.0262	0.177	0.211
Institution FE		X	X
ACT and Demographics			X

Notes: Includes 33,238 first-time students enrolling between 2010 and 2013 (including the 2012 cohort). The dependent variable in panel a) is an indicator for full-time status, defined as enrollment in at least 12 credit hours, and the the dependent variable in panel b) is number of credit hours per student. Controls include ACT scores, community college status, gender, years to application, and age at application. Standard errors clustered at the institution level. * p<0.05, ** p<0.01, *** p<0.001