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# Educational “When,” “Where,” and “How” Implications of In- State Resident Tuition Policies for Latino Undocumented Immigrants

*Rajeev Darolia and Stephanie Potochnick*

Difficult economic conditions faced by U.S. states and their residents have drawn focus to the targeting of public expenditures and the efficient use of funds to encourage economic growth. Concurrently, states are evaluating how to best develop the productive resources in their communities by adopting immigration and education related policies. A policy area that resides at the nexus between these policy areas includes decisions about whether to use state funds to encourage college matriculation and degree attainment among undocumented immigrants. Between 2001 and 2013, 17 states adopted an in-state resident tuition (IRT) policy that allows undocumented immigrants to pay the relatively low tuition and fees available to citizen and legal permanent resident (LPR) state residents at public colleges.

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Rajeev Darolia is an Assistant Professor in the Truman School of Public Affairs and College of Education at the University of Missouri. Stephanie Potochnick is an Assistant Professor in the Truman School of Public Affairs and public health program at the University of Missouri. Authors are listed in alphabetical order and senior authorship is shared. We thank numerous seminar participants for useful feedback and Claire Donze for her research assistance on this project. Address queries to Rajeev Darolia, Truman School of Public Affairs, University of Missouri-Columbia, 234 Middlebush Hall, Columbia, MO 65211–6100. daroliar@missouri.edu.

Research on IRT policies to date has mostly focused on the decision of whether to enroll in college, and to a lesser extent, college completion. While not uniform, most research indicates that by making higher education more affordable, IRT policies positively affect college enrollment and associate degree completion among Mexican and Latino foreign-born non-citizens (FBNCs)—the strongest proxies for undocumented status (Conger, 2014; Flores, 2010a; 2010b; Kaushal, 2008).<sup>1</sup> Other research finds that IRT policies also motivate high school youth to graduate with the hope to enroll in college in the future (Bozick & Miller, 2014; Potochnick, 2014).

Financial and legal constraints associated with IRT policies, however, are also likely to affect when and where students go to college, and how they pay. While the size of the tuition discount associated with IRT policies is substantial (average reduction for a 4-year institution in 2005 was \$6,925; Kaushal, 2008), in-state tuition is still unaffordable for many undocumented young adults, 40% of whom live below the federal poverty line (Gonzales, 2009). Moreover, undocumented young adults are ineligible for federal financial aid and state aid in most states. Even if undocumented young adults can afford to attend college, upon graduation many of them find themselves in “legal limbo,” unable to obtain work because of their immigration status (Suárez-Orozco, Yoshikawa, Teranishi, & Suárez-Orozco, 2011). As a consequence, undocumented immigrant youth may make educational investment decisions that place high emphasis on limiting risk by focusing on short-term costs and minimizing debt.

The decisions related to the type of educational investment undocumented immigrant youth make, as well as how they finance their education, could have a lasting impact on their economic future and the economic growth of the state. Given that more than 11 million undocumented immigrants (30% of the foreign-born population) live in the U.S. and more than 80,000 of them reach college age each year (Passel & Cohn, 2008; Passel, 2003), understanding the college behaviors of this population is important for policy development. Encouraging postsecondary educational training is a key employment and economic development policy tool for states. While individuals benefit from the higher wages associated with some postsecondary training, states can benefit from a range of social returns, including higher tax revenues, more productive communities, and reductions in social service expenditures (Avery & Turner, 2012; Moretti, 2004; Wolfe & Haveman, 2003). Research, however, suggests that where students complete their post-secondary training (e.g., 2-year vs. 4-year colleges) will affect the size of the educational returns (Kane

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<sup>1</sup>Chin and Juhn (2011) do not find strong evidence that IRT policies increase college enrollment; they caution that their non-results may reflect small sample size challenges or the shortness of the pre-post time period examined (2000–2005).

& Rouse, 1995) and that the decisions students make during their educational careers, including when to start, how to attend (e.g., full-time or part-time), and how to finance college (e.g., via loans or work), can affect academic and post-school outcomes (e.g., Light, 2001; O'Toole, Stratton, & Wetzel, 2003).

Using two nationally representative data sources, the Current Population Survey (CPS) and the National Postsecondary Student Aid Study (NPSAS), we are among the first to examine how IRT policies affect Latino FBNCs' decisions on a range of intensive margin college decisions (i.e., when, where, and how). We follow a research approach akin to a difference-in-differences-in-differences method, in which we identify policy effects based on differences in pre- and post-policy educational outcomes between Latino FBNCs covered and not covered by the policy, net of the educational trends of citizens, and accounting for variation across states, over time, and within states over time. For robustness, we compare Latino FBNCs to two citizen comparison groups, Latino citizens and all citizens. We examine whether the adoption of IRT policies affects when students enroll in college (e.g., how soon after high school completion and age of enrollment) and where students enroll (e.g., 2-year vs. 4-year and associate's vs. bachelor's degree). Further, we examine how students finance their college education by assessing measures of student borrowing, work behavior, and course-taking intensity.

### STATES AND IRT POLICIES

The debate over college access for undocumented immigrants began to formalize in federal policy in 1996 with the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), which prohibited states from providing in-state resident tuition benefits to undocumented immigrants unless all U.S. citizens and nationals were eligible for the same benefits. Starting in 2001, however, 17 states have adopted (though two states later rescinded) an IRT policy that lowers undocumented immigrant students' costs associated with attending a public college<sup>2</sup> and five states have reduced costs even further by allowing undocumented immigrants access to state financial aid. Moreover, the Board of Regents (or Governor) in three states has adopted an internal policy similar to an IRT policy. In Table 1, we provide a list of the 17 IRT policies.

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<sup>2</sup>Undocumented immigrants must meet certain residency requirements. While the criteria varies for each state generally students must: 1) attend a school in the state for a certain number of years; 2) graduate from high school in the state or receive a state issued GED; and 3) sign an affidavit stating that they have either applied to legalize their status or will do so as soon as eligible (National Immigration Law Center [NILC], 2009).

**TABLE 1**  
**POLICY PROVISIONS FOR STATES THAT ALLOW UNDOCUMENTED STUDENTS TO GAIN RESIDENT TUITION STATUS AS OF 2013**

<i>State</i>	<i>Date Passed</i>	<i>Date Enacted</i>	<i>State Financial Aid for Undoc. Date Effective</i>	<i>Legislation Revoking Law: Enacted</i>	<i>Residency Requirement: Years of High School in State</i>
Texas	16-Jun-01	16-Jun-01	16-Jun-01	N/A	Reside in-state with a parent 3-years prior to graduation and graduate from a TX high school or GED program
California	12-Oct-01	1-Jan-02	1-Jan-13	N/A	Attend a CA high school for 3 or more years prior to graduation or GED
Utah	6-Mar-02	1-Jul-02	N/A	N/A	Attend a UT high school for 3 or more years prior to graduation or GED
New York <sup>a</sup>	25-Jun-02	1-Aug-03	N/A	N/A	Two or more years at an approved NY high school, graduate from NY HS or obtain a NY issued GED, and apply within 5 years
Washington	7-May-03	1-Jul-03	N/A	N/A	Complete a full senior year at a WA high school, live in WA at least 3 years immediately prior to diploma or equivalency
Oklahoma <sup>b</sup>	12-May-03	12-May-03	12-May-03	1-Nov-07	Live in state with a parent or legal guardian for 2 years prior to graduation or GED
Illinois	18-May-03	20-May-03	Revoked: Nov-07 1-Aug-11	N/A	Attend IL high school for 3 years prior to graduation or GED and reside with parent while attending IL high school
Kansas	20-May-04	1-Jul-04	N/A	N/A	Attend KS high school for 3 years prior to graduation or GED
New Mexico	5-Apr-05	5-Apr-05	5-Apr-05	N/A	Attend NM high school for 1 year prior to graduation or GED
Nebraska	14-Apr-06	13-Jul-06	N/A	N/A	Reside in NB 3-years prior to graduation or GED and live with a parent or guardian while attending high school
Wisconsin	26-Jun-09	29-Jun-09	N/A	26-Jun-11	Reside in WI 3 years prior to graduation or GED
Maryland	10-May-11	1-Jul-11	N/A	N/A	Attend MD high school for three years, prove parents filed taxes, and for the first two years students can only attend community colleges
Connecticut	1-Jun-11	1-Jul-11	N/A	N/A	Complete at least 4 years of high school level education in CT

Oregon <sup>c</sup>	2-Apr-13	1-Jul-13	N/A	N/A	Attend OR high school for three years, five years attendance in any U.S. elementary or secondary school, and receive diploma in OR within 3 years of enrolling in university
Colorado <sup>c</sup>	29-Apr-13	29-Apr-13	N/A	N/A	Attend high school for at least 3 years prior to graduation or GED; be admitted to a CO institution of higher learning within 12 months of graduating
Minnesota <sup>c</sup>	24-May-13	1-Jul-13	N/A	N/A	Attend MN high school for 3 years prior to graduation or GED
New Jersey <sup>c</sup>	20-Dec-13	20-Dec-13	N/A	N/A	Attend NJ high school for 3 years prior to graduation or GED

Note. While Rhode Island, Hawaii, and Michigan have not adopted an IRT policy, the Board of Regents and Governors in these states have adopted a similar internal policy. Sources: Flores (2007); NILC (2013); NCSL (2013)

<sup>a</sup> Prior to NY's policy, the State University of New York (SUNY) and the City University of New York (CUNY) provided in-state tuition to undocumented immigrants except for during the spring of 2002

<sup>b</sup> In 2007 OK passed another statute prohibiting undocumented immigrants from receiving in-state tuition but allowing the state's Board of Regents (which wrote a guideline memo in 2008) to award in-state tuition to undocumented students who attended an OK HS for at least two years. The legislation also made eligibility for financial aid more restrictive.

<sup>c</sup> Passed legislation outside of the sample period so treated as a non-policy state in analysis.

The adoption of IRT policies has been highly contentious, with some states eventually rescinding their policies and others facing legal challenges or immediate counter-legislation. Aside from the political and legal debates, states have incentives to encourage individuals to pursue postsecondary education in-state. Research consistently finds positive and growing average private returns to attending postsecondary education, including higher wages and lower unemployment rates, even after taking into account growing college costs (Avery & Turner, 2012). Importantly for policies that direct public funding for higher education, college also produces average outcomes that benefit society more broadly, with graduates associated with higher levels of civic participation and charitable giving, less criminal activity, and more productive communities among other social benefits (Moretti, 2004; Wolfe & Haveman, 2003). Because public returns can exceed private returns, public subsidies can ameliorate individual incentives to invest in one's education at a socially suboptimal level and therefore aid efficiency in the state economy by increasing the supply of productive workers.

These rationales result in a variety of state supports for higher education. While the federal government provides large financial aid programs such as Pell Grants and subsidized student loans, states typically provide funds that reduce public college tuition for residents of the state. IRT policies are a form of state support that allows undocumented immigrants to pay the lower in-state price. By reducing undocumented students' tuition, these states are agreeing to subsidize a portion of these students' educational expenses in an effort to encourage attendance at public colleges in the state. Extant research indicates that lower tuition costs can lead to increased enrollment for students generally (e.g., Dynarski, 2000; Heller, 1997) and that IRT policies specifically can increase college attendance among undocumented students (Flores, 2010a, 2010b; Kaushal, 2008).

For undocumented students, however, it is unlikely that postsecondary attendance has the same public and private returns. Descriptive evidence indicates that undocumented immigrants are often high-ability, but low-income (Conger & Chellman, 2013), such that removing barriers to education are likely to promote academic and vocational productivity. However, since undocumented immigrants cannot legally work in the U.S. and face the threat of deportation,<sup>3</sup> expected private benefits that turn into public benefits,

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<sup>3</sup>While the 2012 Deferred Action for Child Hood Arrivals (DACA) executive order granted undocumented immigrant youth a 2-year deportation waiver and work permit, it is unclear whether these youth will be able to retain these work permits long-term or how employers respond to these work permits. Moreover, the majority of IRT policies were adopted prior to DACA, and thus, most undocumented immigrant youth in this study still faced deportation and work limit challenges. While some undocumented immigrant youth are able to readjust their status (Kaushal, 2008), most will remain unauthorized unless federal reforms are adopted.

such as an augmented state tax base, might be limited by labor market barriers. Moreover, in order to pay for their educational investments, students may have to make sub-optimal finance and work decisions that hinder their likelihood of realizing their investment and lower public and private returns.

### UNDOCUMENTED IMMIGRANTS AND EDUCATIONAL DECISIONS

When making educational investment decisions, undocumented immigrants, like their authorized peers, are likely to weigh the present value of expected benefits, such as higher expected wages and better labor market outcomes, against the costs of such an investment, including direct tuition costs and forgone earnings, as predicted by human capital theory (e.g., Becker, 1964). This comparison is far from straightforward for the average student (who must be self-aware about their abilities and expected benefits and costs), but is even more complex for undocumented students, who face greater future uncertainty and potentially larger opportunity costs (e.g., choosing between paying for college and essential family needs; Greenman & Hall, 2013).

Moreover, the unique social, community, economic, and policy contexts facing undocumented immigrant youth shape the educational preferences and informational knowledge that guide college choices. The literature on college choice and immigrant assimilation emphasize the importance of context in college decision making and demonstrate how policies of governments can alter the cost-benefit calculation by defining economic and social opportunities (Perna, 2006; Portes & Rumbaut, 2006). These contextual factors help us to understand the many potential routes to undocumented immigrants' college decisions, which may not appear to reflect a rational cost-benefit decision since IRT policies do not reduce undocumented students' uncertainty of the benefits (i.e., obtaining a college degree does not provide permanent residency in the US or a legal right to work).

Uncertainty about future labor market prospects and residency in the U.S. deters some undocumented immigrants from pursuing higher education (Contreras, 2009). For others, though, a high level of resiliency, strong work ethic, and optimism motivates them to pursue a college degree despite their concerns about the future (Abrego, 2006, 2008; Contreras, 2009; Gonzales, 2009, 2012). An estimated 48% of the 65,000 undocumented students who graduate from high school each year pursue some postsecondary education (Passel, 2005), compared to 66% of high school graduates nationwide (U.S. Bureau of Labor Statistics, 2013). The adoption of IRT policies has been shown to push college enrollment levels among undocumented immigrants even higher by up to four percentage points (Flores, 2010a, 2010b; Kaushal, 2008).

Qualitative evidence on IRT policies, however, suggests that undocumented immigrants are making the decision to enroll in college with limited information about college in general and the benefits for them in particular. Because of their lower-economic status and fear of interacting with governmental institutions, undocumented immigrant families often lack information about the U.S. educational system and financial aid options (including the availability of IRT policies in their state; Abrego 2006, 2008; Gonzales, 2008). As a consequence, undocumented Latino immigrant youth typically have little institutional support and are forced to make investment decisions (e.g., enrolling in 2-year colleges and attending part-time in order to work) that have been shown to hinder college completion (Contreras, 2009; Perez & Malagon, 2006; Perez & Rodriguez, 2011; Teranishi, Suarez-Orozco, & Suarez-Orozco, 2011). For the few undocumented immigrant youth who graduate, research suggest that they are surprised and frustrated that their legal status forces them to return to the low-skilled jobs (e.g., cleaning offices, waiting tables, and working in factories) they had hoped to escape (Gonzalez, 2009, 2012; Perez & Malagon, 2006).

Concurrent with the decision to enroll, students must make several intensive margin decisions. One of the first is *when* to enroll. IRT policies may shorten the amount of time that elapses between high school graduation and college enrollment for students who delay college entry in order to save enough money to pay for college. Research suggests that delayed entry may lower students' future income according to a life-cycle model of earnings, since entering school earlier can allow students to more quickly accrue income gains associated with education (Ben-Porath, 1967). Delayed entry has also been found to be associated with college dropout (Stratton, O'Toole, & Wetzel, 2008), particularly among Latino students (Ganderton & Santos, 1995). Research on Latino youth finds that they are more likely to delay or pro-long their education (either by attending intermittently or attending part-time) and as a consequence attend college into their mid to late 20s—a time period when familial and work obligations can deter degree completion (Fry, 2002; Ganderton & Santos, 1995; Hagy & Staniec, 2002)

A second decision students must make is *where* to attend. With regards to 4-year vs. 2-year college choice, prior research on merit aid indicates that lowering the cost of education can induce new students at the margin of college entry to enroll in 2-year colleges and also push students from 2-year colleges into 4-year colleges (Dynarski, 2004). For undocumented immigrants, there are reasons to believe that the price reduction associated with IRT policies may have a larger effect on enrollment at 2-year colleges than 4-year colleges. Research indicates that the majority of Latino immigrants, particularly Mexican immigrants, attend community colleges because they cost less than 4-year colleges, offer more remedial coursework for English

language learners, and are more accessible (geographically and educationally) and accommodating (particularly for working students; Fry, 2002, Hagy & Staniec, 2002; Teranishi, Suarez-Orozco, & Suarez-Orozco, 2011). These trends are supported based on research from Texas, which finds that the state's IRT policy has had the largest effect on enrollments at community colleges (Texas Higher Education Coordinating Board, 2011) and less selective 4-year institutions (Dickson & Pender, 2013). While community colleges can be a valuable resource for Latino immigrant youth, particularly those seeking skills based education, the challenge is that many Latinos enroll in 2-year degrees with the intent to transfer but few end up doing so or even completing their 2-year degree (Gonzales, 2008; Perez & Malagon, 2006; Teranishi, Suarez-Orozco, Suarez-Orozco, 2011).

Lastly, students must determine *how* they will pay for their education. These decisions have the potential to affect students' patterns of enrollment, as well as expected benefits associated with college. Because they have few financial aid options and low familial resources, undocumented immigrants may either use private loans or work to finance their education. If they work, students may also have to adjust their enrollment intensity and only attend part-time in order to balance work and school. Since IRT policies lower the monetary investment associated with college enrollment, they may result in some undocumented students having to borrow less or work fewer hours—possibly enabling them to enroll full-time rather than part-time—in order to pay for college costs. On the other hand, if the policies induce financially constrained students to attend college, some of these students may not be able to independently afford even the lower costs, and without access to grants, these students may end up taking out burdensome student loan debt or have to work while in school.

Research on Latinos and undocumented immigrants suggest that they largely use work as a means to pay for their education and that the decision to work can negatively affect their chances for success. Qualitative research on undocumented immigrant college students find that many work burdensome hours to meet their financial needs, which reduces their ability to attend school full-time and to develop the supportive relationships that facilitate college completion (Contreras, 2009; Gonzales, 2008; Perez & Malagon, 2006). These trends are supported by quantitative assessments of undocumented students in New York, which finds that the absence of IRT and financial aid eligibility hinders students' ability to enroll full-time (Conger, 2014; Conger, & Chellman, 2013). Extant research on Latino college youth in general finds that they struggle to balance work and school and as result frequently choose to enroll part-time—a known risk factor noted by the U.S. Department of Education for dropping out (Fry, 2002; Ganderton & Santos, 1995; Hagy & Staniec, 2002). Moreover, research on the effect of working while in school in

general provides evidence that working more hours can lead to decreases in grades (Ehrenberg & Sherman, 1987; Stinebrickner & Stinebrickner, 2003), and may also extend time to program completion (Darolia, 2014).

Overall, the choices undocumented immigrants make for each of these intensive margin decisions related to when and where to enroll and how to finance their education are strongly shaped by the low economic resources of undocumented (and Latino) immigrant youth. Undocumented Latino youth are likely to delay entry into college, enroll in a 2-year institution, and work long hours (thus limiting their ability to enroll full-time) because they do not have the financial resources to pay for the high costs of college—especially in states that charge out of state tuition. IRT policies should reduce some of this financial burden and increase the likelihood that undocumented immigrant students can succeed in college. IRT policies, however, may not be sufficient given the limited information and lack of financial aid options available to undocumented immigrant youth.

### RESEARCH DESIGN

Our contribution to the literature is to analyze the effect of IRT policies on outcomes beyond enrollment by providing some of the first evidence for how IRT policies shape the “when,” “where,” and “how” educational behaviors at a national level. In terms of “when,” we assess the effect IRT policies have on the enrollment patterns of different age groups and the timing of enrollment (e.g., delayed entry). For “where,” we examine whether IRT policies are more likely to encourage 2-year vs. 4-year college enrollment. For “how,” we are interested in how students attend (part-time versus full-time) and how they finance their education (work behavior and private loans).

#### *Identification Strategy*

Our primary empirical approach is to identify the effect of IRT policies on undocumented student outcomes by comparing the differences in outcomes of Latino FBNCs (a proxy for undocumented status) covered by the policy to those not covered, while accounting for outcomes of their U.S. citizen peers and controlling for variation across states, time, and within states over time. Consider first the following framework to estimate individual level outcome  $y$ :

$$\gamma_{its} = \alpha + \beta I_{is} + \eta X_{its} + S_s + T_t + \lambda_{st} + e_{its} \quad (1)$$

Here,  $i$  indexes student,  $t$  indexes year,  $s$  indexes state,  $\alpha$  is the intercept, and  $e$  is the error term.  $I$  is a binary policy indicator equal to one for state  $s$  that offers in-state tuition to undocumented immigrants in year  $t$ . Vectors of covariates,  $X$ , are included, as well as dummy variables for states,  $S$ , to control for time invariant state characteristics (e.g., state-specific educational

policies or stagnant demographic composition) and years,  $T$ , to control for any national time trends that may affect both policy and non-policy states, such as nationwide changes in college enrollment and national educational policies (e.g., changes in Pell Grant maximums). State-by-year effects are captured through a state-year linear trend,  $\lambda_{st}$ , to control for effects specific to states that are associated with policy passage.

Estimation of equation (1) on the group of Latino FBNC individuals would allow us to measure the relative outcomes of undocumented students who have access to in-state tuition compared to those that do not based on the exogenous variation created by each state's IRT policy adoption, controlling for stagnant differences across states, national trends over time, and linear trends across states over time. However, since we are primarily interested in recovering estimates of the IRT policy effect on undocumented immigrants, interpretation of results based on equation (1) does not allow us to rule out that other unobserved factors (e.g., state-specific shocks or policy changes) generated outcomes observed by all students in the policy adopting states.

Therefore, we estimate an equation using a pooled sample of Latino FBNCs and U.S. citizen peers:

$$\gamma_{its} = \alpha + \beta_1 I_{is} + \beta_2 U_i + \delta(I_{is} \times U_i) + \eta X_{its} + S_s + T_t + \lambda_{st} + e_{its} \quad (2)$$

We add the following to equation (1):  $U$ , which is a binary indicator equal to one if the student is a Latino foreign born non-citizen, and the interaction of  $U$  and  $I$ . We estimate linear probability models for binary outcome variables (e.g., enrolled or not) for ease of interpretation and calculate robust standard errors clustered by state-year for all estimates.<sup>4</sup> We consider outcomes starting one year after the policy is enacted to account for the time delay between when institutions implement the change and students react (Abrego, 2008; Flores, 2010a, 2010b; Kaushal, 2008).

Our primary variable of interest is the estimated parameter  $\delta$ , which is akin to a difference-in-differences-in-differences estimate of the causal effect of the policy on undocumented immigrants, conditional on covariates. The policy effect can be interpreted as the effect of the IRT policy on undocumented immigrants covered by the IRT policy. In our identification strategy, we account for the outcomes of those not directly affected by the policy (citizens and undocumented immigrants not covered by the policy), and control for unobserved confounding factors across states, over time, and within states over time.

We present results in tables from separate estimates comparing the outcomes of Latino FBNCs against two comparison groups, Latino citizens

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<sup>4</sup>Results are robust to the use of logit models and are available upon request. The model is fit by ordinary least squares for continuous variables (e.g., private loan amount).

and all citizens (regardless of race/ethnicity). The use of these comparison groups allows us to isolate the IRT policy effect by accounting for the parallel educational trends of citizen students. We select the two comparison groups, each of which has its own strengths and limitations. Since they are U.S. citizens, neither the Latino citizen nor all citizen comparison groups should be affected by the IRT law. As members of the same state of residence, however, both groups should experience similar educational policies and economic conditions as those experienced by Latino FBNCs. An added strength of the Latino citizen comparison is that this population—about 60% of whom have an immigrant parent (Fry & Passel, 2009)—is likely to experience unique trends associated with race/ethnicity and immigrant status. A limitation of the Latino citizen comparison, however, is that this group may be affected by spillover effects. Many Latino citizens live in mixed status families (i.e., have undocumented siblings or parents) and thus may benefit from the IRT policy indirectly since it alters the family budget (Kaushal, 2008). Moreover, the Latino citizen comparison group may also include undocumented youth who fear identifying themselves as non-citizens. Given this measurement error and the potential spillover effects, the Latino citizen comparison may under-estimate the effect of IRT policies. Thus, we also include the all citizens comparison group, which should not be affected by spillover effects. In combination, the Latino citizen and all citizen comparison groups should provide a credible estimate for differencing out state-specific educational trends.

We display results from two different models, and draw primary conclusions from results that are robust across specifications. The first model includes just the indicators for having an IRT policy and the Latino undocumented student proxy, along with the interaction between them, and state and year controls. In the second, we add the state-year linear trend and a vector of covariates,  $X$ , with parameter vector,  $\eta$ . We include individual-level controls for age, gender, race/ethnicity, and marital status, and controls for state-level time varying characteristics that may be correlated with policy adoption, such as macroeconomic conditions measured by the unemployment rate, and educational trends (educational attainment levels of whites and Latinos).<sup>5</sup>

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<sup>5</sup>We strive to create similar models for comparability, but there are some differences between the models using CPS and NPSAS data because of data availability. Monthly unemployment rate is included in the CPS data analysis, while yearly unemployment rate is included in the NPSAS data analysis. In the models using CPS data, we also include month controls to account for variation in college enrollment across months (e.g., the lower likelihood of enrolling or graduating during the summer months) and the number of years individuals have been in the U.S.

## Data

We use two large nationally representative data sources in the paper. Similar with prior research on the effects of IRT policies on college behavior (Flores, 2010a, 2010b; Kaushal, 2008), we use the Merged Outgoing Rotation Group (MORG) file from the Current Population Survey (CPS), a nationally representative sample sponsored by the U.S. Census Bureau and U.S. Bureau of Labor Statistics. Using a multistage stratified sample, the CPS collects monthly demographic, employment, and enrollment information from about 60,000 housing units across the United States for the civilian population age sixteen and older. We focus on a sub-sample of high school completers, because to qualify for an IRT policy, an individual for most states has to complete high school in that state.

The second data source, the National Postsecondary Student Aid Study (NPSAS), is a nationally representative cross-section of college students who attend Title IV eligible postsecondary institutions. We use data on undergraduate students from four NPSAS waves to account for the time period when a number of states considered IRT policies, 2000, 2004, 2008, and 2012. NPSAS data include between approximately 60,000–114,000 records for each of these waves. In these data, we observe each student's demographic and enrollment characteristics, as well as measures of financial need and methods of college payment.

For both datasets we rely on a proxy to identify undocumented immigrants, Latino foreign-born, non-citizens (FBNC). Because no national research survey collects information on documentation status (Passel, 2005), researchers have relied on proxies for undocumented status (Bozick & Miller, 2014; Chin & Juhn, 2011; Dickson & Pender, 2013; Flores, 2010a; 2010b; Kaushal, 2008; Potochnick, 2014 ). Given that about 80% of undocumented immigrants are Latino (Passel & Cohn, 2008), FBNC Latino is one of the strongest proxies available.<sup>6</sup> Nevertheless, a limitation of using a proxy to identify undocumented status is that our estimates are likely to be downwardly biased since our estimate of the policy effect includes individuals unlikely to be affected by the policy (i.e., LPRs). Moreover, though both data sets are large in total observations, the relatively smaller samples of Latino FBNCs (~12,000 in CPS and ~5,500 in NPSAS), may limit our power when trying to precisely identify policy effects. Because measurement error and small sample sizes increase the variance of the estimate and the probability of a Type II error—failing to reject the null hypothesis of no effect when the policy actually has an effect (Wooldridge 2010)—we follow the convention

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<sup>6</sup>For CPS, we strengthen this proxy by excluding individuals who migrated to the U.S. before 1986 since these individuals likely received an adjustment of status under the 1986 federal immigration reform.

of prior research on IRT policies and report p-values at the .10 level (Flores 2010a; Kaushal 2008).

There are several important differences between the CPS and NPSAS datasets that may contribute to variation in results across the datasets. Given their different sampling frames, for instance, the two datasets differ in their likelihood of including labor migrants (i.e., individuals who come to the U.S. to work and never enter the school system; Oropesa & Landale, 2009) who are less likely to respond to educational policies. Because the NPSAS sample is based on college enrollees the labor migrant sample is likely to be less of a confounder than the sample in CPS, which may explain some of the variation in results across the datasets. Additionally, differences in survey frequency (monthly vs. every 4 years) and survey focus (labor vs. postsecondary trends) may also contribute to variation in results across the datasets.

In Table 2, we display summary statistics for Latino FBNCs, Latino citizens, and all citizens from NPSAS and CPS. We list summary statistics for the CPS sample for outcomes and controls used in the subsequent analyses, i.e., from the 18–24 year old sample we display summary statistics for enrollment and financing, and from the 26–28 year old sample we display averages related to the attainment analysis. There are key similarities and differences among Latino FBNCs, Latino citizens, and all citizens. In both age groups of CPS, Latino FBNCs are more likely to be male and married than Latino citizens and all citizens. Among 18–24 year olds, Latino FBNCs are less likely to be enrolled in college (21%) than Latino citizens (41%) and all citizens (40%)—particularly full-time (15% vs. 35% vs. 34%, respectively). In the NPSAS sample that includes college enrollees only, Latino FBNCs are actually more likely to be enrolled full-time (50%) than their Latino citizen (46%) and all citizen (42%) counterparts, but also more likely to be enrolled in a 2-year college (65% vs. 59% vs. 49%, respectively). In terms of work, we observe in both NPSAS and CPS that Latino FBNCs have similar employment levels compared to their citizen peers but that Latino FBNCs work more hours on average. Lastly, among the older CPS sample aged 26–28, we unsurprisingly see that academic attainment is lower among Latino FBNCs than their citizen counterparts.

## FINDINGS

### *When to Attend*

We begin with our findings related to whether the policies affect when students attend college in Table 3. In all tables, we display the coefficient on our policy effect variable (Latino FBNC X post-policy), which can be interpreted as the IRT policy effect on Latino FBNCs. Full regression output is available upon request, with coefficients on control variables generally

**TABLE 2**  
**WEIGHTED SAMPLE SUMMARY CHARACTERISTICS**

	<i>Latino FBNC</i>		<i>Latino Citizens</i>		<i>All Citizens</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
CPS Enrollment Sample, Age 18–24						
Age	21.51	(1.87)	21.24	(1.90)	21.23	(1.90)
Female	0.45	(0.50)	0.51	(0.50)	0.51	(0.50)
Average years in U.S.	7.23	(5.30)	21.08	(2.29)	21.03	(2.39)
Married	0.25	(0.44)	0.11	(0.31)	0.11	(0.32)
Enrolled in college	0.21	(0.40)	0.41	(0.49)	0.40	(0.49)
Enrolled part-time	0.05	(0.23)	0.06	(0.23)	0.06	(0.23)
Enrolled full-time	0.15	(0.36)	0.35	(0.48)	0.34	(0.48)
Employed	0.65	(0.48)	0.66	(0.47)	0.65	(0.48)
Hours worked <sup>1</sup>	37.29	(8.84)	33.71	(11.59)	33.73	(11.48)
N=	11,428				389,776	
CPS Attainment Sample, Age 26–28						
Age	27.00	(0.82)	27.00	(0.82)	27.00	(0.82)
Female	0.44	(0.50)	0.51	(0.50)	0.51	(0.50)
Average years in U.S.	7.28	(4.80)	26.63	(2.51)	26.53	(2.78)
Married	0.55	(0.50)	0.42	(0.49)	0.42	(0.49)
Obtained Associate's degree	0.03	(.17)	0.05	(.23)	0.05	(0.23)
Obtained Bachelor's degree	0.13	(.34)	0.36	(.48)	0.34	(0.47)
N=	12,797		164,765		358,426	
NPSAS Sample						
Age	25.70	(8.00)	25.30	(8.36)	26.37	(9.66)
Female	0.59	(0.49)	0.59	(0.49)	0.57	(0.49)
Married	0.26	(0.44)	0.20	(0.40)	0.22	(0.41)
Delayed Entry Years	2.59	(4.99)	1.80	(4.44)	2.05	(5.20)
Enrolled part-time	0.50	(0.50)	0.54	(0.50)	0.58	(0.49)
Enrolled full-time	0.50	(0.50)	0.46	(0.50)	0.42	(0.49)
Enrolled in a ≤2-yr college	0.65	(0.48)	0.59	(0.49)	0.49	(0.50)
Enrolled in a 4-yr college	0.35	(0.48)	0.41	(0.49)	0.51	(0.50)
Has a private loan <sup>a</sup>	0.23	(0.42)	0.35	(0.48)	0.39	(0.49)
Private loan amount	5,821	(5,317)	6,323	(5,981)	6,882	(5,944)
Employed	0.51	(0.50)	0.53	(0.50)	0.53	(0.50)
Hours worked <sup>b</sup>	31.03	(13.07)	30.45	(13.34)	29.75	(13.92)
N=	5,470		38,740		300,790	

Note. Unweighted NPSAS counts are rounded to the nearest 10. Survey weights used for sample characteristics. Source data: Current Population Survey 1998–2012 and the National Postsecondary Student Aid Study 2000, 2004, 2008, and 2012.

<sup>a</sup> Sample is only those with private loans

<sup>b</sup> Sample is only those employed.

**TABLE 3**  
**IMPACT OF IRT POLICIES ON “WHEN” DECISIONS, LATINO FOREIGN BORN NON-CITIZENS**

	<i>Compared to Latino Citizens</i>		<i>Compared to All Citizens</i>	
	(1)	(2)	(3)	(4)
<b>A. College Enrollment by Age Group</b>				
Enrolled in College (Age 18–24)	0.0194 (0.0121)	0.0151 (0.0115)	0.0235* (0.0135)	0.0217* (0.0113)
Enrolled in College (Age 18–20)	0.0554** (0.0207)	0.0357* (0.0199)	0.0608*** (0.0208)	0.0499*** (0.0187)
Enrolled in College (Age 21–24)	0.0040 (0.0116)	0.0023 (0.0118)	0.0022 (0.0125)	0.0059 (0.0117)
<b>B. Delayed Entry</b>				
Years Post-HS Before Entering College	-0.7905*** (0.2490)	-0.6090*** (0.1841)	-0.7464*** (0.2694)	-0.5923*** (0.2142)
State and Year Indicators	X	X	X	X
Additional Controls		X		X

Note. (1) Additional demographic and state controls include: age, female, marital status, race/ethnicity, unemployment rate, the proportion of non-Hispanic white adults with some college in the state, and the proportion of Hispanic adults with a high school diploma in the state, as well as state and year indicators and a state-year linear trend; The CPS sample also includes controls for month and average years in U.S.; (2) Standard errors are adjusted for clustering by state-year; (3) survey weights used; (4) Unweighted NPSAS counts are rounded to the nearest 10. Source data: Panel A: Current Population Survey 1998–2012 [Age 18–24 (N=50,456 in Latino FBNC & Latino citizen sample and 401,204 in Latino FBNC & all citizen sample), Age 18-20 (N=19,930 and 156,818), Age 21-24 (N=30,526 and 244,386)]; Panel B: the National Postsecondary Student Aid Study 2000, 2004, 2008, and 2012 waves (N=44,210 and 306,260).

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

indicating expected relationships. The first two columns include results from the two models using a sample of Latino FBNCs and Latino citizens, while the third and fourth columns display results from the same models using a sample of Latino FBNCs and all citizens.

For comparability against prior research, we first present estimates of the effect of IRT policies on college enrollment among students who are 18–24 years old. Our results are consistent with studies that find IRT policies increase the likelihood of college enrollment (Flores, 2010a, 2010b; Kaushal, 2008). For 18–24 year olds, we find point estimates of about two percentage points in models including both Latino and all citizens, though the effect is only statistically significant at the 90% confidence level (CL) when compared to the latter group. This increase appears to be driven by the enrollment of younger students, as we observe a larger effect when examining 18–20 year

olds, reaching four to six percentage points. A four to six percentage point effect indicates that the policies increase enrollment by about 19–29% off the Latino FBNC sample enrollment rate of about 21%. When examining older students (21–24 year olds), we do not detect a policy effect. This suggests, therefore, that IRT policies have a larger influence on the enrollment behavior of younger students.

Results in Panel B suggest one mechanism that leads to the younger student enrollment increase from Panel A. Here, we estimate IRT policy effects on the number of years students delay entry into college after completing high school. Though unsurprisingly Latino FBNC students have a longer average duration of delayed entry into college than their citizen peers (results not shown), we find that Latino FBNC students reduce the number of years they delay entry into college by about half to three-quarters of a year. All of these coefficients are statistically significant at the 99% CL. Therefore, IRT policies appear to encourage students to enter college earlier. This earlier entry could be because the lower costs of college allow students to enroll without first accumulating substantial savings. Another motivating factor could be changes to the higher education, school, or community contexts because of IRT policies. In response to the IRT policies, these communities may seek to provide more information to undocumented youth about how to attend and afford college—key factors in the college decision process (Perna, 2006)

### *Where to Attend*

We next consider whether IRT policies affect decisions about where to attend college. In Table 4, we display IRT policy effects on students' enrollment and credential receipt from 4-year or 2-year colleges. Negative point estimates provide weak directional evidence that students may be less likely to attend a 4-year college, as opposed to a 2-year or less college, but these effects are not precisely estimated.

We examine the 2-year versus 4-year college decision further by analyzing the effect of IRT policies on type of credential students obtained.<sup>6</sup> We find negative point estimates for an IRT effect on earning a bachelor's degree of almost 16 percentage points (as compared to earning an associate's degree, for those that obtain at least an associate's degree), when compared to all citizens in the third and fourth columns. This indicates that IRT policies are encouraging completion of an associate's degree at a higher rate than a bachelor's degree. This trend is consistent with the directional influence we found in our 2-year vs. 4-year assessment as well as descriptive research that

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<sup>6</sup>We examine outcomes related to program completion among 26–28 year olds. Because a large share of individuals in this age group are likely to be labor migrants, we exclude immigrants who arrived to the U.S. after age 15 (Oropesa & Landale, 2009).

**TABLE 4**  
**IMPACT OF IRT POLICIES ON “WHERE” DECISIONS, LATINO**  
**FOREIGN-BORN NON-CITIZENS**

	<i>Compared to Latino Citizens</i>		<i>Compared to All Citizens</i>	
	(1)	(2)	(3)	(4)
Enrolled in a 4-yr College vs. 2-yr College	0.0051	-0.0018	-0.0286	-0.0197
	(0.0248)	(0.0230)	(0.0358)	(0.0329)
Obtained Bachelor vs. Associate Degree	-0.0820	-0.0753	-0.155**	-0.1587**
	(0.0714)	(0.0712)	(0.0716)	(0.0707)
State and Year Indicators	X	X	X	X
Additional Controls		X		X

*Note.* (1) Additional demographic and state controls include: age, female, marital status, race/ethnicity, unemployment rate, the proportion of non-Hispanic white adults with some college in the state, and the proportion of Hispanic adults with a high school diploma in the state, as well month indicators and state and year linear trends; (2) Standard errors are adjusted for clustering by state-year; (3) survey weights used, (4) CPS sample excludes Latino FBNCs who arrived after age 15. Source data: 4-year vs. 2-year enrollment: the National Postsecondary Student Aid Study 2000, 2004, 2008, and 2012 waves (N=44,210 in Latino FBNC & Latino citizen sample and 306,260 in Latino FBNC & all citizen sample); Bachelor vs. associate degree: Current Population Survey 1998-2012, among those that obtained an associate degree or higher, ages 26-28 (N = 5,237 and N = 82,146).

\* p<.10, \*\* p<.05, \*\*\*p<.01.

suggests community colleges are the choice institution of IRT students and Latinos in general (Flores, 2010b; Teranishi et al., 2011). This result also aligns with Kaushal's (2008) assessment, which found that IRT policies have had a small impact on the likelihood of attaining an associate's degree, though she did not assess the impact on bachelor degree attainment. Overall, our results suggest that while IRT policies may increase educational enrollment, undocumented students still face barriers to completing a degree, especially at a bachelor's level.

### ***How to Attend and Finance***

Table 5 moves to analysis of how students finance college. Since the CPS and NPSAS data overlapped for some of these outcomes, we display results from both models where applicable. We begin with an examination of whether IRT policies affect whether enrolled college-goers attend part-time or full-time. All point estimates are approximately two to four percentage points, though results are only statistically significant (at the 90% CL) in one model, when compared to Latino citizens using the adjusted model with the NPSAS sample. An interpretation of these estimates is that IRT policies may

**TABLE 5**  
**IMPACT OF IRT POLICIES ON “HOW” DECISIONS, ENROLLED LATINO FOREIGN BORN NON-CITIZENS**

	<i>Compared to Latino Citizens</i>		<i>Compared to All Citizens</i>	
	(1)	(2)	(3)	(4)
<b>A. Enrollment Pattern</b>				
Full-Time vs. Part-Time (CPS) <sup>a</sup>	-0.0204 (0.0206)	-0.0251 (0.0224)	-0.0189 (0.0206)	-0.0220 (0.0208)
Full-Time vs. Part-Time (NPSAS) <sup>b</sup>	-0.0302 (0.0276)	-0.0387* (0.0218)	-0.0275 (0.0294)	-0.0315 (0.0235)
<b>B. Employment</b>				
Employed (CPS) <sup>c</sup>	-0.0200 (0.0253)	-0.0196 (0.0255)	-0.0193 (0.0241)	-0.0261 (0.0243)
Employed (NPSAS) <sup>d</sup>	0.0323* (0.0175)	0.0324* (0.0174)	0.0340* (0.0183)	0.0314* (0.0179)
Number of Hours Worked (CPS) <sup>e</sup>	-1.2123 (0.8312)	-1.1962 (0.8029)	-1.4321* (0.8556)	-1.5851* (0.8119)
Number of Hours Worked (NPSAS) <sup>f</sup>	-0.1756 (0.6881)	-0.1321 (0.6171)	-0.0218 (0.7452)	-0.1480 (0.6138)
<b>C. Private Loan Borrowing</b>				
Has a Private Loan <sup>d</sup>	0.0030 (0.0089)	0.0036 (0.0083)	0.0067 (0.0088)	0.0082 (0.0081)
Private Loan Amount <sup>g</sup>	884.5566 (879.7108)	361.1509 (859.0980)	799.1285 (742.4968)	381.2156 (685.5479)
State and Year Indicators	X	X	X	X
Additional Controls		X		X

Note. (1) Additional demographic and state controls include: age, female, marital status, race/ethnicity, unemployment rate, the proportion of non-Hispanic white adults with some college in the state, and the proportion of Hispanic adults with a high school diploma in the state, as well as state and year indicators and a state-year linear trend; The CPS sample also includes controls for month and average years in U.S.; (2) Standard errors are adjusted for clustering by state-year; (3) survey weights used; (4) Unweighted NPSAS counts are rounded to the nearest 10. Source data: Current Population Survey 1998-2012 and the National Postsecondary Student Aid Study 2000, 2004, 2008, and 2012.

<sup>a</sup> CPS sample (N=17,048 in Latino FBNC & Latino citizen sample and 158,954 in Latino FBNC & all citizen sample). <sup>b</sup> NPSAS sample ((N=44,210 and 306,260). <sup>c</sup> CPS sample, (N=18,160 and 164,658). <sup>d</sup> NPSAS sample (N=44,210 and 306,260). <sup>e</sup> If worked; CPS sample (N= 8,230 and 77,006). <sup>f</sup> If worked; NPSAS sample (N = 19,690 and 136,760). <sup>g</sup> If borrowed private loan money; NPSAS sample (N = 3,290 and 28,810). \* p<.10, \*\* p<.05, \*\*\*p<.01.

induce new part-time enrollment at a mildly higher rate than it encourages students to switch from part-time to full-time enrollment.

We next present results from models that examine how IRT policies affect how much students work and borrow. A concern is that financially constrained undocumented students will be induced to attend college because of the lower tuition associated with IRT policies, but these students may still have difficulty meeting all educational and non-educational costs accrued while attending college. Taken together, we find only suggestive evidence that enrolled Latino FBNCs are working or borrowing more post-policy. The lack of conclusive results may be because of difficulties undocumented immigrants confront in obtaining financial resources to pay for college expenses from external sources, such as employment or credit.

We find mixed evidence that IRT policies affect working behavior. We find no precisely estimated results using CPS, though all point estimates are negative. Results from NPSAS indicate that students are about three percentage points more likely to work after the passage of an IRT policy, though this result is statistically significant at only the 90% CL. This may be because the policies encourage working students to attend college, which corresponds with an increase in the proportion of part-time students. Both the CPS and NPSAS data samples point to fewer hours worked because of IRT policies, with the results using CPS data larger in magnitude and only the results comparing Latino FBNC students to all citizens are statistically significant (at the 90% CL, IRT policy effect of about 1.5 hours worked fewer in Panel C, columns 3 and 4). As shown at the bottom of Panel C, results point to students possibly being more likely to borrow private student loan money and of larger magnitudes, but these results are not statistically significant.

### *Alternative Non-Policy State Comparison*

We also run models where we include only states that considered an IRT policy but did not pass the policy (see Potochnick, 2014 for a full list) in the comparison group, since these states may be more similar to IRT policy states than states that did not consider the policy. The results presented in Table 6 indicate that our results are robust to the different state comparison group. The point estimates for all outcomes are similar (sometimes slightly larger and sometimes slightly smaller) to those of our original estimates for both comparison groups and both datasets. For example, when examining college enrollment in the CPS sample (Panel A), we still find point estimates of about four to six percentage points in the model including all citizens, and the result remains significant. The results for delayed entry continue to indicate a policy effect around 5.5 percentage points or greater across all comparison groups. The point estimate for full-time enrollment in models including Latino citizens using NPSAS data increased but is no longer significant.

The estimated change in probability of being employed increases by almost a percentage point using the NPSAS data, while the change in number of hours worked in the CPS sample is no longer significant at conventional levels (the point estimates for all citizens (column 4) remains comparable to our previous estimate). In terms of degree obtainment, our new point estimates are actually larger and more precisely estimated than our original estimates when comparing undocumented immigrants to Latino citizens – nearly a six percentage point increase in probability of obtaining at least an associate’s degree with the alternative state comparison group.

Overall, the results of this robustness check and the general consistency of our estimates across two different national samples (CPS and NPSAS) and three different comparison groups (Latino FBNCs in policy vs. non-policy states; Latino FBNCs vs. Latino citizens; Latino FBNCs vs. all citizens) provides strong evidence for the policy effects detected. These policy effects remained robust to the inclusion of state-specific linear trends and were consistent when using logit regression (for dichotomous outcomes) rather than a linear probability model (results available upon request). We also did not find notable differences among states that are new or traditional immigrant destinations.<sup>8</sup>

### *Limitations*

Nonetheless, our paper faces several limitations, many which were discussed throughout the text. We summarize the primary limitations here. First, because we rely on Latino FBNCs as a proxy for undocumented status the sample includes individuals not in the treatment group. Consequently, the policy effect estimates are likely to be attenuated. Second, each of the datasets used in this analysis have key limitations. NPSAS only include students enrolled in college, so results based on these data should be considered as the effect of the IRT policy conditional on enrollment. While CPS is not conditional on enrollment, it lacks detailed contextual information about other college choices. Lastly, if policy states adopted other policies in addition to the IRT policy to address educational needs of undocumented immigrants, our policy effect would be biased and confound the IRT policy effect with

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<sup>8</sup>Because the availability of information and support systems for the IRT policies may be greater in states with a longer migration history, we also ran our analysis separately for new and traditional immigrant destination states based on the work of Flores and Chapas (2009). Using their same classification of new and traditional states we did not find consistent evidence that there were differential effects between new and traditional states. In only a few instances (enrollment and employment) we found stronger effects for FBNCs in new destination states compared to traditional states. This analysis is available upon request. Because a larger share of the immigrant population in new destination states is undocumented (Passel & Cohn, 2008), these larger effects likely reflect the fact that our FBNC proxy is stronger in these states.

**TABLE 6**  
**IRT POLICIES IMPACT ON LATINO FBNCs, USING ONLY STATES**  
**THAT CONSIDERED THE POLICY**

	<i>Compared to Latino Citizens</i>		<i>Compared to All Citizens</i>	
	(1)	(2)	(3)	(4)
Enrolled in College (CPS)				
Age 18–24	0.0166 (0.0124)	0.0118 (0.0118)	0.0229 (0.0139)	0.0199* (0.0117)
Age 18–20	0.0502* (0.0212)	0.0301 (0.0206)	0.0601*** (0.0213)	0.0472** (0.0192)
Age 21–24	0.0032 (0.0121)	0.0007 (0.0123)	0.0012 (0.0131)	0.0042 (0.0122)
Delayed Entry (NPSAS)	-0.8299*** (0.3029)	-0.5792** (0.2493)	-0.7690** (0.3388)	-0.5555* (0.2918)
Enrolled Full-Time vs. Part-Time (CPS)	-0.0262 (0.0211)	-0.0302 (0.0231)	-0.0207 (0.0211)	-0.0243 (0.0214)
Enrolled Full-Time vs. Part-Time (NPSAS)	-0.0326 (0.0410)	-0.0441 (0.0303)	-0.0320 (0.0427)	-0.0329 (0.0316)
Enrolled in a 4-yr College (NPSAS)	0.0045 (0.0300)	0.0101 (0.0306)	-0.0389 (0.0474)	-0.0169 (0.0473)
Employed (CPS)	-0.0214 (0.0260)	-0.0221 (0.0264)	-0.0191 (0.0249)	-0.0255 (0.0250)
Employed (NPSAS)	0.0421* (0.0235)	0.0402* (0.0234)	0.0484** (0.0226)	0.0430* (0.0231)
Number of Hours Worked (if worked, CPS)	-0.8036 (0.8428)	-0.8473 (0.8131)	-1.0431 (0.8754)	-1.2426 (0.8310)
Number of Hours Worked (if worked, NPSAS)	-0.4984 (0.7954)	-0.2984 (0.6975)	-0.0287 (0.8903)	-0.1639 (0.6943)
Has a Private Loan (NPSAS)	0.0039 (0.0107)	0.0038 (0.0095)	0.0073 (0.0106)	0.0080 (0.0093)
Private Loan Amount (if has loan, NPSAS)	970.8093 (906.6271)	607.4896 (718.5916)	915.0578 (791.7054)	586.2558 (647.8818)
Bachelor's vs. Associate's Degree (if obtained degree, CPS)	-0.0582 (0.0748)	-0.0537 (0.0753)	-0.1246 (0.0756)	-.1261* (0.0745)
State and Year Indicators	X	X	X	X
Additional Controls		X		X

*Note.* (1) 20 States have considered IRT legislation. See Potochnick (2014) for a list of states. (2) Additional demographic and state controls include: age, female, marital status, race/ethnicity, unemployment rate, the proportion of non-Hispanic white adults with some college in the state, and the proportion of Hispanic adults with a high school diploma in the state, as well as state and year indicators and a state-year linear trend; The CPS sample also includes controls for month and average years in U.S.; (3) Standard errors are adjusted for clustering by state-year; (4) survey weights used; (5) Unweighted NPSAS counts are rounded to the nearest 10. Source data: Current Population Survey 1998–2012 and the National Postsecondary Student Aid Study 2000, 2004, 2008, and 2012.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

the effect of these other policies. Research on policy adoption as well as the falsification checks included in this study limit the plausibility of this threat (Reich & Barth 2010; Reich & Mendoza 2008).

## DISCUSSION

The labor market preparation of a state's undocumented citizenry is becoming an increasingly important issue given that federal action has already begun to reduce legal barriers for undocumented youth. Beginning in 2012, undocumented youth enrolled in school or who have received a high school diploma/GED certificate can apply for deportation waivers and work permits under the Deferred Action for Childhood Arrivals (DACA) executive order. Efforts to extend deportation protection to other undocumented immigrants via executive action are on-going (Shear, 2014). Additionally, the federal government continues to debate national immigration reforms that would provide a pathway to citizenship, particularly for college educated undocumented youth under the Federal DREAM Act.<sup>9</sup> As the federal landscape continues to change, states policymakers could benefit from a more comprehensive understanding of the effects of state adopted in-state resident tuition policies that reduce financial constraints for undocumented students.

This study builds on prior research that examines the effect of IRT policies on undocumented immigrant's college investment decision by providing the first in-depth assessment of when and where students enroll, and how they attend and finance their education. Given the financial obstacles and uncertain labor prospects that undocumented immigrant youth face, IRT policies may not produce the same private and public benefits typically associated with public subsidies for higher education. Thus, to assess whether IRT policies are likely to achieve optimal returns for the states that have adopted them we examine key indicators of the educational investment decision.

Taken together, our results, which are based on two large national datasets, suggest that while IRT policies increase enrollment of undocumented immigrants in postsecondary education, further consideration is needed

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<sup>9</sup>The Development, Relief, and Education for Alien Minors Act (known as the DREAM Act) has been under consideration in congress since 2001. If passed, it would enact two major changes to current federal law: 1) provide a pathway to citizenship for students who came to the U.S. at or before age 15 and who met certain criteria, and 2) eliminate the federal provision that penalizes states for providing in-state tuition without regard to immigration status (National Immigration Law Center, 2009). However, if adopted, the DREAM Act will not resolve the debate over whether undocumented immigrants should qualify for in-state tuition, because the bill does not require states to provide in-state tuition to undocumented immigrants.

beyond just whether more students attend. Our study corroborates prior studies (Flores, 2010a, 2010b; Kaushal, 2008) that IRT policies lead to increased enrollment among undocumented immigrant students but also finds that the policies affect the decision of *when* to enroll. We observe that IRT policies encourage students to enroll in college sooner after college, with the time between high school completion and college enrollment reduced by about half to three quarters of a year. Providing further evidence that IRT policies reduce delayed entry, we find that increases in enrollment related to IRT policies are driven by the enrollment of younger students. This can be an important improvement for many students. Extant research suggests that reductions in the amount of time undocumented students wait to enter college should increase their chances for college success (Ganderton & Santos, 1995; Stratton et al., 2008). Moreover, going to college sooner allows students to begin to earn the higher college degree wages sooner. This provides both immediate benefits because of augmented current income, but also benefits over workers' lifetimes due to the compounding nature of earnings increases.

In terms of *where* students are attending, our estimates provide only weak evidence that IRT policies have a stronger effect on enrollment in the 2-year vs. 4-year college sector. We find, however, that increased enrollment is primarily leading to associate's, rather than bachelor's, degree attainment. This is consistent with previous findings that Latinos in general are more likely to enroll in community colleges since these colleges are more affordable and accessible than 4-year colleges (Teranishi et al., 2011). Lowering the direct costs of 4-year colleges, however, may also lead new enrollees and 2-year college students to attend or transfer to 4-year programs. Research in Texas, for instance, suggests that while the states IRT policy has had a particularly strong influence on community college enrollment it has also increased attendance at more selective 4-year institutions (Dickson & Pender, 2013; Flores, 2010b). Thus, the evidence to date suggests that admission and financial aid policies affecting undocumented youth are relevant at both 2-year and 4-year institutions.

Our assessment of *how* students are financing their education indicates some potential limitations of IRT policies. For example, we find suggestive evidence that IRT policies may encourage non-enrollees to enroll part-time at a higher rate than it induces part-time enrollees to move to full-time study. This may be because the lower tuition associated with IRT policies may not be a sufficient financial benefit to allow many students to overcome the work and family obligations or resource constraints that prevent them from being able to attend full-time.

Our analysis of working and borrowing behavior provides further inference on this. In particular, if IRT policies induce financially constrained students into college, then the financial needs of this new student group need to

be considered as they may face unique challenges among students. We observe suggestive post-policy evidence from the NPSAS data that students are more likely to work while enrolled. The effect was not as strong as we expected, perhaps because undocumented students also face legal challenges to obtaining employment. We do not find evidence of changes in borrowing behavior because of IRT policies, which may in part be due to limited credit availability for the undocumented. Nevertheless, working behavior and borrowing needs need to be carefully monitored among undocumented students. Research on the effect of working while in school provide evidence that working more hours can potentially have adverse consequences to academic performance (Darolia, 2014; Ehrenberg & Sherman, 1987). Moreover, borrowing might be particularly burdensome on undocumented immigrants since they face uncertain job prospects due to their legal status (Suarez-Orozco et al., 2011) and are expected to make less than their authorized peers (Hall, Greenman, & Farkas, 2010).

Overall, our results give rise to concern that the adoption of an IRT policy may not be sufficient to ensure undocumented immigrant's success in higher education. Undocumented immigrants who are responding to the IRT policy and enrolling in college appear to be making both optimal and sub-optimal investment decisions that will affect their chances of college completion. On the positive side, undocumented immigrants are attending college at a younger age. On the negative side, they are enrolling part-time in less selective 2-year institutions and face competing work demands. These intensive margin educational investment decisions are likely shaped by the economic and legal constraints (Greenman & Hall, 2013) and limited informational knowledge (Teranishi et al., 2011) undocumented immigrants continue to face even in the wake of an IRT Policy. IRT policies only address part of the college choice by lowering tuition rates but do not address other contextual factors (e.g., access to knowledge, poverty, cultural preferences, and the broader policy context) that guide college choices (Perna, 2006; Portes & Rumbaut, 2006).

Addressing these other contextual factors could be beneficial for states as well. There is evidence of returns to going to college without completion, though completing degrees provides students with the most potential benefits from college attendance (Belfield & Bailey, 2011). Amplified enrollment comes at a cost to the state, including increased outlays to support the educational endeavors of publicly subsidized students. Therefore, if states that adopt an IRT policy want to fully maximize returns on their investment, our results suggest the need for further financial and academic assistance to help students finish associate's degrees and encourage bachelor's degree completion. One potential avenue is to extend access to state financial aid and private scholarships—a policy solution that has only been adopted by a few states but rapidly gaining traction in others.

Furthermore, to reap the full returns to their investment in IRT policies, policymakers should consider undocumented immigrants' employment options. In particular, these highly skilled workers need to have incentives to reside in-state post-college. Consequently, in conjunction with educational policies, states should consider policies that allow for these productive undocumented immigrant students to formally participate in labor markets and ease other barriers (such as allowing undocumented individuals to obtain driver's licenses so they can travel to and from work). When students leave the state after increasing their skills through publicly funded education, this leakage of enhanced productivity can diminish benefits associated with states' funding. Thus, as states continue to debate college access for undocumented students, our results suggest that they would benefit from taking a more comprehensive approach that addresses financial barriers beyond in-state tuition as well as future employment limitations that shape undocumented immigrants' educational investment decision.

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