12-2014

Educational Effects of State Actions Banning Access to In-State Resident Tuition Rates for Unauthorized Immigrant Students

Luis Alexander Villarraga Orjuela
University of Arkansas, Fayetteville

Educational Effects of State Actions Banning Access to In-State Resident Tuition Rates for Unauthorized Immigrant Students

Educational Effects of State Actions Banning Access to In-State Resident Tuition Rates for Unauthorized Immigrant Students

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Public Policy

by

Luis Villarraga Orjuela
Universidad Nacional de Colombia
Bachelor of Science in Economics, 1999
Universidad Nacional de Colombia
Master of Arts in Economics, 2003

December 2014
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____	_____
Dr. Brinck Kerr Dissertation Co-Chair	Dr. Thomas Smith Dissertation Co-Chair
_____	_____
Dr. Michael Miller Committee Member	Dr. Geoboo Song Committee Member

Abstract

This research studies the effects of state laws banning access to in-state resident tuition (ISRT) rates and other educational benefits for unauthorized immigrant students (UIS) in five states: Arizona, Colorado, Georgia, Indiana, and Ohio. It measures the overall effect of policies denying ISRT that were implemented between 2005-2012 in the United States.

Three potential effects are evaluated. First, the study estimates the policy effects on the college enrollment of UIS. Because the policy does not deny access to higher education institutions, the possibility exists for this population to attend public or private colleges. However, facing higher costs (i.e., out-of-state tuition) can deter them from continuing their educational plans. Second, considering the potential dynamic effects of policies banning access to ISRT for UIS, the research evaluates the policy effects on school drop out rates among unauthorized immigrants. The lack of real opportunities to attend higher education might demotivate secondary UIS, thus prompting them to drop out of school. Finally, the research estimates the effects of banning ISRT access for UIS on the enrollment of citizens and legal residents in higher education.

To answer the research questions a multivariate regression difference-in-differences identification strategy is advanced through the construction of a natural quasi-experiment using as the main data source the American Community Survey. The research finds significant negative policy effects on the college attendance rates of Hispanic foreign-born non-citizens who are highly likely to be unauthorized immigrants in policy states compared to their peers in non-policy states. The results also indicate that among the groups analyzed, policies have mainly affected recent high school graduates. With regard to dropping out of school, no-statistically significant evidence was found to support the hypothesis of dynamic effects of the policies on

the enrollment of unauthorized immigrants in secondary education. This research finds no evidence of college attendance benefits for U.S.-born citizens associated with the ISRT policy, save for suggestive evidence for a subgroup of Black men. Suggestive evidence of moderate benefits among two subgroups of naturalized citizens is also found.

Acknowledgements

Thank you to my dissertation committee. Dr. Brinck Kerr and Thom Smith, my dissertation co-chairs, guided and motivated me to do my best since I arrived to the University of Arkansas. They patiently revised multiple times my research drafts and pushed me to improve my research. Dr. Michael Miller and Dr. Geoboo Song made me see my research from different perspectives through their challenging questions and suggestions.

I am indebted to four institutions that provided the financial support to do my doctoral studies. The U.S. Fulbright Program, the University of Arkansas, the Colombia's Administrative Department of Science, Technology and Innovation—Colciencias, and the Universidad del Norte in Barranquilla, Colombia. Thank you for believing and investing in this project.

I am deeply grateful to my mother, Inés Orjuela Parra; my brothers, Wilson y Giovanny Villarraga Orjuela; and my nephew, Andrés Felipe Villarraga Torres. All of them have always supported me unconditionally and without their love for me, I would not have brought this dream to reality. Thank you to my spouse, Jesús Ramírez Ale. His love, company, and support during the last years of the program have enriched the experience of living in the United States.

Last but not the least, many thanks to my friends in Colombia and Northwest Arkansas with whom I shared my joys and sorrows during my years as a gradute student and who encouraged me to achieve my goal.

Dedication

To my family who has constantly supported and believed in me during this long journey, especially my mother, Inés Orjuela, who has always embraced her children's dreams, and my beloved spouse, Jesús Ramírez Ale, with whom I trust to keep sharing all our future dreams.

Table of Contents

Page

List of Tables

Page

List of Figures

Page

Chapter I

The purpose of this research is to study the effects of banning access to in-state resident tuition (ISRT) and other state financial benefits like scholarships and grants for unauthorized immigrant students (UIS).[1] Public policy providing or restricting access to (ISRT) and other higher education benefits for this group has been developed within a diverse and complex environment in the United States. Influenced by federal laws and ultimately defined by policymakers at the state level, legislation on this issue has been the product of a wide array of social, economic, and political conditions in each state. Not surprisingly, as a result of the differentiated conditions among states and the diverse nature of the relationship between the federal and state governments, a spectrum of policies have been adopted, which range from the total prohibition of access to public postsecondary institutions for UIS to the provision of not only ISRT, but also private and state-funded grants and scholarships to this population.

The ISRT theme has reached the federal and state government agendas on multiple occasions for more than a decade (Frum, 2007; National Conference of State Legislatures, 2011a, 2014b; Olivas, 2004, 2009). Although there are no federal laws that explicitly prohibit the admission of UIS to higher education, federal legislation makes them ineligible for federal financial aid and conditions their access to state financial aid. Therefore, under federal provisions, UIS wanting to pursue postsecondary studies have to pay out-of-state tuition no matter how long they have resided in the state and have no access to any state financial help unless the same state benefits are given to every other citizen even if they are non-state residents (IIRIRA, 1996; Olivas, 2004; PRWORA, 1996). In an extreme scenario, even the admission of UIS to higher education public

[1] "The unauthorized resident immigrant population is defined as all foreign-born non-citizens who are not legal residents. Most unauthorized residents either entered the United States without inspection or were admitted temporarily and stayed past the date they were required to leave" (U.S. Department of Homeland Security, 2012, p.2).

institutions can be declared illegal by the states or higher education institutions. This type of policy is in stark contrast with the treatment that must be provided by public institutions in the previous level of education to this group of people. In the case of K-12 education, unauthorized immigrants have a constitutional right to receive instruction at public institutions in the U.S. In *Plyler v. Doe* the Supreme Court ruled that public schools are prohibited from denying access to public education for immigrant students based on their immigration status ("*Plyler v. Doe,*" 1982). Also, schools are prohibited from charging them costs that are not charged to other students. To be sure, undocumented students must adhere to state laws governing compulsory school attendance. Regarding postsecondary education, however, UIS face very different conditions.

At the federal level, the issue was first framed within two bills dealing with broad topics, immigration and noncitizen eligibility for federal public assistance programs in 1996. The Illegal Immigration Reform and Immigration Responsibility Act (IIRIRA) indicates that states are not able to provide a higher education benefit based on residency to unauthorized immigrants unless the same benefit is provided to all U.S. citizens, regardless of residency (IIRIRA, 1996). Additionally, through the Personal Responsibility and Work Opportunity Act (PRWORA), Section 401, Congress conditioned the access to federal public benefits, including postsecondary education financial assistance, exclusively to those “qualified aliens” legally present in the country (PRWORA, 1996). Finally, in 2008, the U.S. Department of Homeland Security, Immigration and Customs Enforcement clarified that the enrollment of UIS in public postsecondary institutions does not violate federal law; it is a decision of the states, and a decision of the institutions if no state law exists (Olivas, 2009; Russell, 2011). Under this scenario, the possibility of unauthorized immigrants having access to ISRT and other state

educational benefits has depended on the state of residence and its interpretation of federal immigration legislation as well as the state regulation of the higher education system (Olivas, 2004, 2009).

Regardless of federal government legislation, unauthorized immigrants' access to higher education benefits funded with state resources varies across states. Table 1 presents the states that have advanced any type of measure on this topic. As of Summer 2014, sixteen states—California, Colorado, Connecticut, Florida, Illinois, Kansas, Maryland, Minnesota, Nebraska, New Jersey, New Mexico, New York, Oregon, Texas, Utah and Washington—allow access to ISRT for unauthorized immigrants through state legislation. Five of those states—California, Minnesota, New Mexico, Texas, and Washington—additionally allow unauthorized students to receive state financial aid in the form of scholarships and grants. Four states—Hawaii, Michigan, Oklahoma, and Rhode Island—through Board of Regents' decisions have also open the possibility for unauthorized immigrants to pay in-state tuition rates. On the other hand, six states—Arizona, Colorado, Georgia, Indiana, Montana, and Ohio—have enacted laws banning UIS from receiving ISRT and any other type of state financial aid: Two states, Arizona and Montana, approved ISRT prohibition by referendum, but the measure in Montana was later overturned by a District Court.[2] Finally, the most extreme measures have been taken by Alabama and South Carolina where the enrollment of unauthorized immigrants in state higher education institutions is prohibited (Education Commission of the States; Institute of Higher Education Law and Governance, 2014b; National Conference of State Legislatures, 2014b).

The intensity of debate is captured not only by the number of states that enacted laws on

[2] Colorado banned the access to ISRT for UIS in 2006 but revoked the measure in 2013.

Table 1
In-state Tuition Access for Unauthorized Immigrants by State as of Summer 2014

	State	Action	Year Adopted	Notes
Allow In-state tuition rates	California	A.B. 540	2001	Allow also state financial aid
	Texas	H.B. 1403	2001	Allow also state financial aid
	New York	S.B. 7784	2002	
	Utah	H.B. 144	2002	
	Illinois	H.B. 60	2003	
	Oklahoma	S.B. 546	2003	In 2007 the measure was revoked and left the decision of allowing or banning ISRT to the Board of Regents.
	Washington	H.B. 1079	2003	Allow also state financial aid
	Kansas	H.B. 2145	2004	
	New Mexico	S.B. 582	2005	Allow also state financial aid
	Nebraska	L.B. 239	2006	
	Wisconsin	A.B. 75	2009	Repealed in 2011
	Connecticut	H.B. 6390	2011	
	Maryland	S.B. 167	2011	Apply only for community colleges. Enacted on May 10, 2011 and suspended on July 22, 2011. Approved on November 6, 2012 by referendum.
	Rhode Island	S. 5.0	2011	Established by the Board of Governors for Higher Education
	Colorado	S.B. 13-033	2013	
	Hawaii	n.a.	2013	Established by Hawaii's Board of Regents
	Michigan	n.a.	2013	Established by University of Michigan's Board of Regents.
	Minnesota	S.F. 1236	2013	Allow also state financial aid
	New Jersey	S. 2479	2013	
	Oregon	H.B. 2787	2013	
	Florida	Fla. Stat. § 1009.26	2014	

Table 1 (Cont.)

	State	Action	Year Adopted	Notes
Ban In-state tuition rates	Arizona	Proposition 300	2006	Approved by referendum
	Colorado	H.B. 1023	2006	Revoked in 2013
	Georgia	S.B. 492	2008	Since 2011, UIS are not admitted to any institution in the University System of Georgia, which did not admit all academically qualified applicants during the two previous years.
	Indiana	H.B. 1402	2011	
	Ohio	H.B. 153	2011	
	Montana	H.B. 638 / L.R. 121	2012	Approved by referendum on November 6, 2012. Before the law went into effect, its constitutionality was challenged in the courts. Overturned by a District Court on June 2014.
Prohibit enrollment	South Carolina	H.B. 4400	2008	
	Alabama	H.B. 56	2011	

Sources. (Education Commission of the States; Institute of Higher Education Law and Governance, 2014a, 2014b; National Conference of State Legislatures, 2014a, 2014b).

the issue, but additionally by state legislatures that have considered legislation in recent years. During the 2010 legislative sessions, eight bills that would have allowed UIS to receive in-state tuition rates were considered in five states, but none passed. In the 2011 session, the number of bills introduced rose to 19 involving legislative bodies in at least 12 states. Only two of these bills became law. On the other hand, during 2010, 15 states discussed 26 bills banning access to in-state tuition for UIS, none of which passed. In 2011, 13 states considered 22 bills with the same purpose, four of which passed (National Conference of State Legislatures, 2011b). Updated information, offered by the National Immigration Law Center, shows that during 2013 state legislative sessions, 62 bills in 23 states were introduced seeking to improve access to higher education for UIS, making them eligible for ISRT, scholarships, and financial aid. During the same legislative year, however, 11 bills restricting UIS access to postsecondary education were introduced in 8 states (National Immigration Law Center, 2013).

The discussion around the eligibility of UIS to pay ISRT has become important, among other factors, because the number of people potentially affected by the measure. According to the most recent estimate available from the Pew Hispanic Center, 11.7 million unauthorized immigrants were living in the United States as of March 2012, a half million people less than in 2007 (Passel, Cohn, & Gonzalez-Barrera, 2013). Among this population is a group identified as the "1.5 immigrant generation"[3], which consists of foreign-born children that were brought by their parents to the United States and have grown up in the country. An estimation of the impact of this group of immigrants on the present and future demand for higher education in the U.S., projected by the Migration Policy Institute, showed that in 2012, 140,000 unauthorized

[3] First-generation immigrants are those who decide to migrate to U.S. and second-generation immigrants are the children of first-generation immigrants who born in this country.

immigrants were enrolled in college; 390,000 were high school graduates or had a GED; and 800,000 were enrolled in K-12 institutions (Batalova & Mittelstadt, 2012).

It is estimated that of the 65,000 UIS who annually graduate from high school, only about 5 to 10 percent enroll in postsecondary education (Russell, 2011) while the percent for U.S. recent high school completers was 66.2% in 2012 (National Center for Educational Statistics, 2014). UIS as a whole exhibit lower education attainments in comparison to other groups with different citizenship statuses. In 2008 40% of unauthorized immigrants ages 18-24 had not completed high school while among legal immigrants this category represented only 15% and just 8% among U.S.-born residents. Among those 18-24, unauthorized immigrants who graduated from high school, about a half (49%) were in college or had attended college; the percentage of legal immigrants was higher at 76% and for U.S.-born residents reached 71% (Passel & Cohn, 2009). Among the factors that explain low educational achievements of UIS are: (1) the unfavorable economic conditions facing their families (Fortuny, Capps, & Passel, 2007; López, 2010; Passel & Cohn, 2009); (2) the high costs of attending postsecondary education (Abrego & Gonzales, 2010; López, 2010); and (3) the undocumented status which prevents them from enrolling in higher education programs, being eligible for ISRT and other state financial aid, and qualifying for federally funded help (Biswas, 2005; Ruge & Iza, 2005; Salinas, 2006). The magnitude of the number of UIS graduating from high school and facing difficulties to continue in the education pipeline put the issue of college access for this population on the public policy agenda (Biswas, 2005; Dougherty, Nienhusser, & Vega, 2010; Olivas, 2004).

The relevance of the topic is clearly suggested by the intense debate in state legislatures and the number of people affected by the laws enacted, and yet the factual information available to guide policymakers' decisions is, at best, incomplete.

Statement of the Problem

Research on the empirical effects of state legislation that defines the access to ISRT and other higher education benefits for UIS is scarce. Existing works essentially focus on analyzing the effects of laws providing access to ISRT, rather than on those laws that forbid it (Chin & Juhn, 2011; Cojoc, 2010; Dickson & Pender, 2013; Flores, 2010a, 2010b; Flores & Horn, 2010; Kaushal, 2008; Nores, 2010; Potochnick, 2014). The short period of time that the legislation has been in effect (Chin & Juhn, 2011), which is even shorter for the group of laws limiting access to benefits, and the difficult identification of the undocumented population (Kaushal, 2008), largely explain the lack of empirical research. Because of these limitations, the policymaking process has been hindered by the lack of scientific analyses of the effects of UIS access to and restriction from ISRT. Research on this issue would inform policy and practice enriching the policy process and hopefully leading to data-driven decision-making by policymakers and voters as well.

Purpose of the Study

This research examines the effects of state laws banning access to ISRT and other educational benefits for UIS in five states: Arizona, Colorado, Georgia, Indiana, and Ohio. Chiefly, it measures the overall effect of denying ISRT policies implemented between 2005-2012.

Three potential effects are evaluated. First, the study estimates the policy effects on the enrollment of UIS in higher education. Because the policy does not deny access to higher

education institutions to unauthorized students but requires that they pay out-of-state tuition rates, the possibility exists for those students already enrolled to keep attending public or private colleges and universities. However, facing higher costs can deter students from continuing their educational plans.

Second, considering the potential dynamic effects of policies banning access to ISRT for UIS, the research evaluates the effects of ISRT policies on the school dropout behavior of UIS. The dynamic effects of the policy are based on the idea that the lack of real opportunities to attend higher education, among other factors, demotivates UIS from attending secondary schools, prompting them to drop out of school (Chin & Juhn, 2011).

Finally, the research estimates the effects of banning ISRT access for UIS on the enrollment of citizens and legal residents in higher education institutions. One of the arguments of opponents to ISRT initiatives is that giving UIS access to these benefits harms U.S. citizens and legal residents who have to face a greater competition for the limited places and financial aid at state universities and colleges constrained by state funding (Connolly, 2005; FAIR, 2003; National Conference of State Legislatures, 2014a). In plain words, the gains obtained by UIS would represent losses for U.S. citizens and legal residents producing a trade-off in terms of access between the two groups: undocumented vs. citizens and legal residents. Using the same logic but in the opposite direction, the study evaluates the impact of denying UIS access to in-state tuition on the enrollment of citizens and legal residents at higher education institutions.

Research Questions

This study seeks to answer three research questions.

Research question 1. How did the prohibition of access to ISRT and state financial aid to UIS affect their college-participation rates during the period analyzed (2005-2012)?

Research question 2. How did the prohibition of access to ISRT and state financial aid to UIS affect their school dropout behavior during the period analyzed (2005-2012)?

Research question 3. How did the prohibition of access to ISRT and state financial aid to UIS affect the college-participation rates of U.S citizens and legal residents during the period analyzed (2005-2012)?

Significance of the Study

The issue of access to ISRT and other publically funded higher education benefits for UIS has been framed by the distribution of powers between the federal government and the states under a federalist system of government. Under this arrangement, higher education policy has traditionally been a matter left to the states to decide. However, in the case of ISRT for UIS the topic is also intersected by immigration, primarily a federal government issue. This situation has created an environment of uncertainty for states' policy makers, in part because of the ambiguity of the federal government on the issue of access to ISRT for UIS.

In 2001 the Development, Relief, and Education for Alien Minors Act, known as the DREAM Act was introduced for first time in Congress. The bill's aim was to provide a pathway to citizenship and work authorization for 1.5 immigrant generation people (i.e., foreign-born children brought by their parents to the U.S. that have grown up in the country) identified also as DREAMers, who fulfill some requirements regarding age, educational attainments, time in the United States, and good moral character, among others ("DREAM Act," 2001). Despite the bipartisan support that the initiative has enjoyed the multiple times it has been introduced, it has failed to become federal law, regardless of which party controlled Congress (Olivas, 2009). The most recent version, DREAM Act 2013, was approved by the U.S. Senate as part of the Border Security, Economic Opportunity, and Immigration Modernization Act of 2013, a comprehensive

immigration reform introduced by a bipartisan group of eight senators (Gang of Eight), which also has received the support of President Barack Obama. As in previous versions of the bill, the DREAM Act 2013 keeps the decision of allowing or banning access to ISRT in the hands of states legislatures ("Border Security, Economic Opportunity, and Immigration Modernization Act," 2013).

As shown above, the topic of ISRT for UIS has been part of the policy agenda at both the federal and state levels, with multiple proposals having emerged, and some of them having been effectively adopted and implemented in different states. Policy research on every stage of the process has been conducted (Dougherty et al., 2010; Flores, 2010a, 2010b; Flores & Horn, 2010; Flores & Oseguera, 2009; McLendon, Mokher, & Flores, 2011; Reich & Mendoza, 2008; Sanders, 2010; Sponsler, 2011; Thangasamy, 2007; Vargas, 2011). However, the policy evaluation stage has only been partially studied since it has focused exclusively on the effects of the group of policies enacted for improving access of UIS to higher education. The evaluation of states' policies restricting or forbidding access to ISRT and other education benefits for UIS, conversely, has not received enough attention. In a scenario of continuous change where laws enacted to handle the policy problem, both those supporting and restraining access to ISRT, are threatened by the introduction of opposing bills or by challenges in the courts, and where some states have failed repeatedly to advance initiatives in either direction, the availability of information accounting for the educational effects of policies banning access to ISRT for UIS will contribute to the future development of the policy.

This research adds to the limited scholarship using quantitative methods to study the effects of ISRT policies for UIS. The results provide new knowledge to be used by decision makers, stakeholders, interest groups and policy researchers interested on the issue of ISRT for

UIS. In the case of ISRT policies restricting the access to higher education for UIS, but not prohibiting the enrollment of this group of people, there is an implied assumption: UIS could attend a postsecondary education institution without government-funded financial aid. Additionally, one of the common arguments of the supporters of these restrictive policies is that giving access to ISRT and other education benefits for UIS is detrimental to natives and naturalized citizens. This research provides new knowledge, based on systematic analysis, on how the group of policies banning access to ISRT for UIS, have affected the higher education enrollment of both unauthorized immigrants and citizens as well as the enrollment of the former group in secondary education.

The current political environment with the approval of the DREAM Act 2013 as part of the Border Security, Economic Opportunity, and Immigration Modernization Act by the Senate (S.744), the introduction of the House of Representatives version of the same Act (H.R.15), and the support of Obama administration to pass immigration reform, make it highly likely that the issue of access to in-state resident tuition and other education benefits for unauthorized immigrants will gain momentum in the states legislatures even if Congress fails to define a pathway to citizenship. In a scenario with immigration reform approval, those states that previously have used the lack of jurisdictional authority to legislate on the topic will have to resume the discussion and define if the newly registered provisional immigrants will have access to state education benefits (Olivas, 2009). Additionally, those states that have already implemented ISRT policies may be pressured to revise the current law. On the other hand, if Congress fails to pass immigration reform, current trends suggest that the issue will continue to appear on state legislative agendas. In any of these scenarios, the availability of unbiased, systematic, and reliable information about the effects of ISRT policies is fundamental for future

state decisions on the topic of access to education state benefits for unauthorized immigrant students.

This dissertation comprises of five chapters. Chapter II presents a review of scholarship on the effects of access to ISRT for unauthorized immigrants. The chapter also presents the theoretical framework as well as the hypotheses used for this research. Chapter III describes the research design, including a description of data sources, sample employed, analytical strategy, and the empirical model. Descriptive analysis, findings, and robustness tests are analyzed in Chapter IV. Finally, Chapter V presents the findings discussion, research limitations, and policy recommendations.

Chapter II

Review of the Literature and Theoretical Framework

The Scholarship on the Effects of ISRT for UIS Policy

This chapter discusses how the study of the effects of ISRT policies has been advanced, principal findings in the literature, and what gaps in the literature still remain. The studies presented below are classified into three categories according to the aggregation level of the effect analyzed: multiple states overall effect, differentiated state effects, and effects on particular institutions. The first category is formed of those studies that group several states that implemented ISRT policies and searched for average overall effects. The differentiated state effects category includes those studies that seek to identify particular effects for each state or for subgroups of states with common characteristics. Finally, those studies examining the effects on specific higher education institutions are reviewed in the last category. All the reviews highlight the quantitative methods technique, the data source, and the statistically significant findings of the studies.

Multiple states overall effect. Kaushal (2008) published the first scientific work studying the effects of ISRT policies on the educational outcomes of UIS. The study estimated the effects of policies implemented in ten states, on a national sample of Mexican young adults who exhibit a high probability of being undocumented and yet meet the conditions defined by state laws to receive benefits. Also, the research estimated the potential negative effects of the policy on the academic outcomes of U.S.-born students. The author used a subset of the Current Population Survey known as the Monthly Outgoing Rotation Group Files for the period 1997-2005. Using multivariate regression models with cluster-robust standard errors, the author found that access to ISRT rates for Mexican young adults, who were highly likely to be both

undocumented and beneficiaries of the policies, increased the college enrollment and education of this population. In short, using the sample of young Mexican adults, the policy was associated with a 31% increase in college enrollment, a 14% increase in the proportion with at least a high school diploma, a 37% increase in the proportion with at least some college education, and a 33% increase in the proportion with a college degree (Kaushal, 2008). Additionally, the study showed no-evidence of adverse effects of the policy on the educational outcomes of the U.S.-born college age population, and positive effects on the college enrollment of U.S. citizens of Mexican parentage.

Another early work on the effects of in-state tuition policies was Chin and Juhn (2011). The authors sought to determine the overall average effect of these laws on the probability of attending college and the probability of dropping out of high school for the young undocumented non-citizen population. Considering that only some states implemented these types of policies and also that they did it at different times, the authors calibrated a difference-in-differences model using Ordinary Least Squares. They used the group of states that adopted the law later or never adopted it as a control group to compare with those states with earlier adopting dates. They also used U.S.-born Hispanics as a comparison group for the undocumented people targeted by the policy. The sources of information used by Chin and Juhn (2011) were the American Community Survey for 2001-2005 and the 2000 U.S. Census. As in the Kaushal (2008) study, the authors had to work with a proxy variable for the policy's target population. The proxy is the group of foreign-born Hispanic individuals who were not citizens and were highly likely beneficiaries of the in-state tuition laws. The statistical results reported by Chin and Juhn (2011) were, in general, not significantly different from zero, meaning that the in-state tuition laws had no-effect on the probability of attending college and the probability of dropping

out of high school for UIS. The only significant result found was the effect of the policy on the probability of enrollment for older Mexican men, ages 22-24 years.

Unlike Chin and Juhn (2011), positive and statistically significant results were found by Flores (2010b), who sought to estimate the effect of ISRT policies on the higher education enrollment odds of Latino individuals likely to be undocumented who lived in the group of nine states that had implemented the law up until 2005—Texas, California, Utah, New York, Washington, Oklahoma, Illinois, Kansas, and New Mexico. The study also used the differences-in-differences, but the primary data source used by Flores (2010b) was the Merged Outgoing Rotation Group Files, a data subset from the Current Population Survey representative at the national and state levels. The period of analysis was 1998 to 2005 and the control group consisted of the foreign-born non-citizen Latino population in states without policies granting access to ISRT for UIS. The research found positive and statistically significant effects of the tuition policies on the odds of UIS being enrolled in an institution of higher education. The complete model showed that Latino individuals who are highly likely to be undocumented living in those states with in-state tuition for UIS were 1.54 times more likely than not of attending a higher education institution after the implementation of the policy compared to the same population in the rest of the states without that type of policy. Finally, the author found no statistically significant effects on the college enrollment of three underrepresented minority groups that were U.S. citizens—Latinos, African Americans, and Asians.

The last work analyzing an overall single effect of policies granting ISRT for UIS focused on effects on the likelihood of dropping out of high school among young Mexican foreign-born non-citizens. Following previous studies, Potochnick (2014) implemented a difference-in-differences strategy using data from the Current Population Survey (1998-2011).

The author found that the policy caused a statistically significant reduction of eight percentage points in the proportion of young Mexican (16-19 ages) unauthorized immigrants that drop out of high school.

Differentiated state effects. The four studies reviewed above relied on the assumption that the policy had the same effect across all states. Cojoc (2010) claimed that because of the large variation in the difference between resident and nonresident tuition rates charged by public higher education institutions, the effects of the ISRT policies for UIS differ across states. Using multivariate regression and monthly data from the Current Population Survey from 1997 to 2008 and working with a sample of young adult non-citizens from Mexico, the author confirmed his hypothesis of differentiated effects across states. Therefore, out of the nine states studied, the introduction of this policy had the largest impact on college enrollment of non-citizen Mexican immigrants in California (44% increase), Texas (29% increase), and Washington (89% increase). On the other hand, in Oklahoma and Nebraska the in-state tuition policy resulted in non-citizen Mexicans dropping out of college. The remaining states (Illinois, Kansas, New Mexico and Utah) exhibited negligible effects on the college enrollment of the target population. The findings obtained by Cojoc showed additional differences between other groups. The policy doubled the odds of college enrollment for older undocumented immigrants (ages 21 to 22) while the younger group (ages 18 to 20) was less responsive to the policy with a 15% increase. Differences by sex and marital status showed that the policy affected men's enrollment positively and women' negatively, and had higher impact on single than on married men. Finally, the author found that granting ISRT to UIS had no-effects on the college attendance of U.S. citizens except for those with Mexican parents, which exhibited a positive effect.

An additional two studies looking at state level effects are Flores (2010a) and Flores and Chapa (2009). Similar to Flores (2010b), both studies used logistic regression to estimate differences-in-differences models. Flores (2010a) focused on the Texas case while Flores and Chapa (2009) focused on the group of all states that implemented the policy before 2006. Both studies used as their primary data source the Merged Outgoing Rotation Group Files of the Current Population Survey, and Flores (2010a) complemented it with institutional data from the Texas Higher Education Coordinating Board.

In the study by Flores (2010a) the control or comparison group consisted of five states in the Southwest that shared with Texas some demographic, economic, and institutional characteristics relevant to the study of in-state tuition laws for UIS. Analyzing the period 1998-2004, the author found that Latino foreign-born non-citizen students, which were highly likely to be undocumented, were more likely to enroll in a higher education institution after Texas adopted the policy. The strongest effect of policy implementation was on older high school graduates (ages 21 to 24), reported to be 4.84 times more likely to be enrolled than those in the control group. The study also found that the population targeted by the policy tended to enroll more in community colleges rather than in four-year institutions. There were increasing yearly effects of the policy from 2001 to 2003, but no effect for 2004, and the effect of the policy on college enrollment odds was captured particularly by the target population, i.e., Latino UIS, and not by all Latinos or U.S.-citizen Latinos.

In another state level study, Flores and Chapa (2009) claimed that in-state tuition policies can differ among states depending on state-level settlement migration patterns. Therefore, the authors sought to study the effect of this policy in the ten states that had implemented it as of 2006, differentiating them by Latino migration settlement patterns. Three regions were

considered—traditional, new non-Southern, and Southern Latino destinations in the United States. Controlling for demographic and economic characteristics, the findings suggested that the policies implemented in those states seen as traditional settlements of Latino population had a significant impact on the enrollment of Latino foreign-born students. They were 1.69 times more likely to enroll in a higher education institution than their peers in states with similar Latino migration patterns, but without the policy.

On the other hand, states experiencing new Latino migration settlements (i.e. new non-Southern states) seemed to have no-significant effect on the enrollment of Latino foreign-born students after the implementation of the policy, as compared to similar states without the policy. Finally, after the implementation of the policy, the target population in the traditional Latino destination region had a higher probability of enrolling than did the same population in the Southern states without an ISRT policy. Thus, they were 1.79 times more likely to be enrolled in an institution of higher education.

Institutional case study effects. Dickson and Pender (2013) and Nores (2010) studied the effects of granting in-state tuition to non-citizens (including unauthorized immigrants) using administrative data from higher education institutions in Texas. Through a quasi-experimental design and using information from five public universities, the first study found that the reduction in the education cost generated by the law implemented in 2001 in Texas produced: (1) large and positive (11 and 18 percentage point increase) significant effects on the probability of enrollment of non-citizens accepted at two public institutions that already served a large number of Hispanics; (2) no significant effects on the enrollment probability of non-citizens accepted to state flagship universities; (3) significant but opposite results (+15 and -2 percentage points) at two universities when the sample was limited to Hispanic students. The authors tested the

robustness of their results using an alternative specification model (including fixed year effects) and a non-linear estimation technique (probit regression), finding no significant differences.

Like Dickson and Pender(2013), Nores (2010) also analyzed the effects of Texas' legislation, but focused on a different educational outcome. The author used administrative data from two public universities to evaluate if providing ISRT access for UIS affected students' first major choices. The results provided strong evidence that the policy affected not only the non-citizens students' decisions, but also those made by international students. In both of the institutions studied, international students significantly shifted away from science, engineering, and math towards social sciences fields, with usually lower private economic returns to investment in education.

Texas in 2001 and New York in 2002 were two of the first states passing laws giving access to ISRT rates for UIS; this fact makes it possible to advance the analysis of education issues that involve long periods of time. Flores and Horn (2010) and Conger and Chellman (2013) exploited this condition to compare the performance of UIS beneficiaries of ISRT policies to those of their legal immigrant and citizen peers. The first study examined the college persistence patterns among UIS paying ISRT rates after four years of enrollment in the most selective higher education institution in Texas, The University of Texas at Austin. Using institutional information from admitted and enrolled students in 2004 who were beneficiaries of the policy, and Latino peers who were legal residents or U.S. citizens, the authors sought to identify differences in college persistence between the two groups. The analytic strategy used in this study was a Cox proportional hazard regression, which is a variant of survival analysis. Flores and Horn (2010) found non-significant differences in the persistence patterns between

UIS granted with ISRT and their Latino legal or U.S. citizens peers—students in both groups exhibited similar retention rates during each one of seven semesters after enrollment.

In the second study, Conger and Chellman (2013) compared the academic achievements of undocumented students enrolled in the Urban College System in New York between 1999 and 2004 to those who were legal immigrants, permanent residents, and U.S. citizens. The results showed that even though undocumented students received on average less financial aid and exhibited a lower probability of full time enrollment, they earned higher GPAs and higher completion rates than resident U.S. citizens at associate degree programs. Undocumented students, however, had the worst record in terms of bachelor program completion rates. All the performance differences among the students based on their documentation status were statistically significant even when the authors control for demographic and academic characteristics.

Summary of the literature review. This review sought to achieve three goals: to determine how the study of the effects of policies granting in-state tuition rates for undocumented students has developed; to identify the main findings of these studies; and to define the gaps in the study of this public policy. To reach these objectives, the previous section provides the review of 11 studies classified in three categories according to the level of the policy effects analyzed—overall single effects among multiple states, differentiated state effects, and particular institutional effects. This section accomplishes the goals based on the above review and summarizes methodological issues, common findings, and gaps in the scholarship on ISRT policy effects.

Methods issues. Methodologically, a distinguishing characteristic of the studies analyzing the effects of giving access to in-state tuition rates for UIS has been to only merely

estimate the population targeted by the policy (i.e., UIS). Because no United States government agency directly registers undocumented migrant population (Passel, 2005), studies that have measured the overall effects of the policy on a group of states or on a state level of analysis have had to work with samples that are highly likely to be undocumented (Chin & Juhn, 2011; Cojoc, 2010; Flores, 2010a, 2010b; Flores & Chapa, 2009; Kaushal, 2008; Potochnick, 2014). On the other hand, three of the four studies that examined the policy effects at the institutional level precisely identified UIS through the use of specific administrative databases that report the students served by the policy (Conger & Chellman, 2013; Flores & Horn, 2010; Nores, 2010). Even though the remaining study also worked at the institutional level of analysis, it used an imperfect treatment group consisted of non-citizens which may include individuals who fulfill the policy requirements as well as individuals who are not covered by the measure (Dickson & Pender, 2013).

The most common source of information among the studies classified in the two first categories—multiple states overall effect and differentiated state effects—was the Merged Outgoing Rotation Groups Files version of the Current Population Survey. The complete monthly version of this survey was used by one of the studies. The American Community Survey, modeled after the Census of Population and Housing and fully implemented since 2005, was used as the primary data source for one study and as a complementary source of information in another one. The shared property of the databases employed is that they registered individual characteristics that permit the data to be combined in such a way as to approximately identify the study sample as close as possible to the undocumented population potentially served by the in-state tuition policy. Among characteristics common to all the studies is the origin of the

individuals potentially affected by the policy—Hispanic, Latino or Mexican non-citizens. This is because they are the ethnic groups with highest probability of being undocumented.

Regarding statistical methods, the difference-in-differences identification strategy was the most popular among being employed in six of the eleven studies reviewed (Chin & Juhn, 2011; Dickson & Pender, 2013; Flores, 2010a, 2010b; Flores & Chapa, 2009; Potochnick, 2014). Multivariate regression analysis was used in three studies (Cojoc, 2010; Kaushal, 2008; Nores, 2010) and it was also used to validate the findings of another (Conger & Chellman, 2013). Only one study used Cox proportional hazard regression, this because of the singular type of effects it sought to measure, college persistence differences between UIS beneficiaries of the in-state tuition policy and Latino peers who were legal residents or U.S. citizens (Flores & Horn, 2010).

Common significant measured effects. The main conclusion in terms of the effects of policies giving access to in-state tuition rates for UIS, based on the existing scholarship, is that this type of policy has produced positive and statistically significant effects on the educational outcomes of students highly likely to be undocumented. The enrollment probability of this population has been the most common indicator among the studies (Cojoc, 2010; Dickson & Pender, 2013; Flores, 2010a, 2010b; Flores & Chapa, 2009; Kaushal, 2008). Also, those studies that measured the effect of the policies on legal immigrants or U.S. citizens groups found, in general, no harmful effects on the enrollment odds of these individuals at postsecondary institutions (Cojoc, 2010; Flores, 2010a, 2010b; Kaushal, 2008). Focusing on more specific groups, however, Cojoc (2010) and Flores (2010a) found respectively, a positive effect on U.S. citizens with Mexicans parents and a negative, moderate effect on Black U.S. citizens.

The works that compared the academic performance between ISRT recipients and legal immigrants, permanent residents, and U.S. citizens find no major differences. Despite the harder

conditions faced by the UIS since their legal status, they performed similar and even better in the majority of indicators examined (Conger & Chellman, 2013; Flores & Horn, 2010).

It also follows from the literature review that there are multiple factors that make the effects of in-state tuition policy distinguishable to each state and institution. The variability in the amount of subsidy granted (i.e., the difference between out-of-state tuition and in-state tuition), the time that the population has been exposed to the policy, the undocumented migration settlement patterns, and institutional particularities, among other factors, play key roles in properly identifying the real impact of in-state tuition access for UIS at disaggregated units of analysis.

The gap in the literature. The evident gap in the study of the educational effects of in-state tuition policies is the lack of analysis of those state laws that ban the access to ISTR for UIS. Despite the significant number of undocumented population living in these states, the effects of the in-state tuition laws enacted in Arizona and Colorado in 2006, Georgia in 2008, and Indiana and Ohio in 2011 have not been studied.[4] Unlike the laws enacted in South Carolina in 2008 and Alabama in 2011, which prohibited UIS from enrolling in state's colleges or universities, the laws merely banning access to in-state tuition for UIS leave the higher education gates still open to this population, but at a higher cost. These costs can make higher education prohibitive for many UIS and produce the same results that those laws implemented in South Carolina and Alabama presumably sought (i.e., ban the entire access to higher education for this population). The real educational effects of banning access to ISRT for UIS on this population as well as on naturalized and native citizens are unknown. It is in the direction of measuring

[4] According to the Pew Research Center the estimated unauthorized immigrant populations in the five states summed around 1.2 million people in 2010 representing 11% of the total unauthorized population in the country (Passel & Cohn, 2011).

those effects, analyzing them, and studying their implications to guide informed public policy that this study adds to the current scholarship on this topic.

Theoretical Framework

Human capital theory indicates that investments in people produce economic benefits to individuals as well as society (Sweetland, 1996). Since the pioneering works of this theory during the early 1960s, education has been considered one of the most worthwhile investments in human capital along with health and job training (Becker, 1962, 1993; Shultz, 1963). According to human capital theory, these investments enhance individuals' "mental and physical abilities," which at the same time enhance their productivity. In a market economy, the productivity differentials of different human capital investment decisions result in lifetime earnings differentials where higher investments are rewarded through higher earnings (Becker, 1962).

In the study of schooling decisions where an individual is attempting to determine the appropriate level of education to acquire, the human capital model has been used extensively in both theoretical and empirical works (DesJardins & Toutkoushian, 2005). Basically, the human capital model assumes that students are rational decision makers who compare all monetary and non-monetary expected direct and indirect costs to all the monetary and non-monetary expected benefits associated to the educational alternatives viable to them in order to decide their education investments (DesJardins & Toutkoushian, 2005; Paulsen & Toutkoushian, 2008).

Authors studying the educational decisions of unauthorized immigrants have recognized that in addition to the usual factors involved in the college decisions of traditional groups, such as those presented above, unauthorized immigrants face particular conditions that must to be incorporated. For instance, in the analysis of unauthorized immigrants' educational decisions, incomplete information and uncertain conditions faced by undocumented students make the

decision to invest in college education even more complex. The lack of means to cover the payment of tuition and fees or to secure the access to financial aid, the deportation risk, and the fact that after finishing the educational program an undocumented student is not allowed to be legally hired in the labor market, are some of the uncertain conditions faced by unauthorized immigrants that should be added to the list of nonmonetary costs (Chin & Juhn, 2011; Cojoc, 2010; Flores, 2010a, 2010b; Kaushal, 2008).

In the context of the human capital model, the analysis of the effect of state policies banning access to ISRT for UIS would exhibit two potential scenarios depending on the pre-policy conditions faced by this group in terms of access to in-state tuition rates. The first scenario assumes that UIS did have access to ISRT before banning policies were implemented. The Illegal Immigration Reform and Immigrant Responsibility Act of 1996 banned states from providing public benefits to unauthorized immigrants based on residence criteria, but Stevenson (2004) claims that the practice of a "longstanding policy of 'don't ask, don't tell'" allowed UIS to have access to ISRT at public colleges even before some states started to enact policies regulating the issue (pp. 576-577). An additional argument supporting this assumption is the administrative arrangement present in some states where the lack of a definite state legislation has left the decision of access to ISRT for UIS at each institution on a case-by-case basis (Bell Policy Center, 2005, April) or to the potential active role of bureaucracies making progressive legislation a benefit to this group (Thangasamy, 2007).

Under the first scenario, the implementation of policies banning access to ISRT for UIS clearly would mean an increase in the monetary costs of postsecondary education paid by this group moving from paying the lower in-state resident tuition rates to higher out-of-state or

international student rates. This would make it even harder for unauthorized immigrants to pursue this level of education.

On the other hand, the second scenario assumes that previous to the enactment of state legislation banning access to ISRT for UIS, this group of people already had no access to this education benefit. This would reflect the fact that states interpret federal legislation as prohibiting them from providing in-state tuition to undocumented students as was the case across the country until late 1990s (Romero, 2002). Even though with California and Texas progressive legislation in favor of UIS enacted in 2001 some state legislators and governors have departed from the prohibiting unanimous position, there are still states that deny the access to ISRT based exclusively on the federal legislation (i.e., without the enactment of state laws) primarily because of section 505 of IIRIRA (1996).

At first glance, under this scenario it seems that the implementation of policies banning access to ISRT for UIS would have no-effects on the human capital investment decisions made by this group given that no-changes in the direct monetary costs would take place. The new policy would just confirm the previous conditions under which UIS have had to pay out-of-state tuition rates. However, the new policy actually increases both the non-monetary costs as well as the uncertainty associated with the possibility of acquiring a college education. For instance, the policy can be perceived by UIS as a signal of animadversion towards them on campuses, as an increase in the risk of deportation, or as a form of labeling and discrimination.

Therefore, according to the human capital model, irrespective of which of the two scenarios in terms of pre-policy access to ISRT for UIS is considered, the ultimate effect of implementing state policies banning that benefit is an increase of the expected costs associated with preparing for, enrolling in, persisting in, and graduating from college. Thus, it is projected

that the prohibition of giving access to ISRT for UIS increases the expected monetary and nonmonetary costs of attending higher education for this group, thus discouraging them from seeking postsecondary education. Also, negative policy side effects would be expected on the enrollment of UIS in secondary education since the ban would work as a disincentive for UIS to graduate from high school given the harder conditions they have to face to keep advancing in the education pipeline. On the other hand, because the policy has no effects on the monetary costs of higher education for citizens and naturalized citizens, it is expected that the effect of the policy on the higher education enrollment of this group is negligible. However, the possibility of effects on nonmonetary costs or benefits on citizens could potentially produce alternative results.

Based on the literature review and the theoretical considerations stated before, three hypotheses are proposed:

Hypothesis 1. There are statistically significant negative effects on the college-participation rate of UIS in the group of *policy states* as result of the prohibition of access to ISRT and state financial aid to this population.

Hypothesis 2. There are statistically significant positive effects on the school dropout rate of UIS in the group of *policy states* as result of the prohibition of access to ISRT and state financial aid to this population.

Hypothesis 3. There are no statistically significant effects on the college-participation rate of U.S citizens and legal resident students as result of the prohibition of access to ISRT and state financial aid to UIS in the group of *policy states*.

The following chapter presents the research design, including data and empirical strategy used to answer the research questions and test the hypotheses proposed.

Chapter III

Research Design

How did the prohibition of access to ISRT and state financial aid to UIS affect three educational outcomes?: (a) the college participation rate of UIS, (b) the school dropout rate among UIS, and (c) the college participation rate of native and naturalized citizens. Drawing mainly on the research designs of the multiple states overall studies presented in the literature review section (Chin & Juhn, 2011; Flores, 2010b; Kaushal, 2008; Potochnick, 2014) and building upon some elements of those studies focused on the estimation of differentiated state effects (Cojoc, 2010; Flores, 2010a; Flores & Chapa, 2009), the aim is to isolate the independent effects of policies prohibiting the access to ISRT for UIS on the three educational outcomes by controlling for individual and state factors. The following two sections discuss the data and methodology used in the research. The first of these sections presents the data requirements, sources, and sample criteria employed, while the latter describes the empirical strategy and defines the regression model and the variables included.

The Data

Analyzing the effects of ISRT policies on UIS at the state level through quantitative methods requires two main data properties. First, the data must offer the possibility of creating a proxy variable for the unauthorized immigrant population that overcomes the identification problem (i.e., that it is not possible to identify this group of people precisely because no direct questions about their legal status are included in any government's survey in the U.S. Census) (B. C. Baker & Rytina, 2013; Hoefer, Rytina, & Baker, 2011; Passel & Cohn, 2011; Passel et al., 2013; Passel & Cohn, 2012). And second, the data must assure statistical representation at the state level and provide enough observations on the population of interest (Chin & Juhn, 2011;

Cojoc, 2010; Flores, 2010a, 2010b; Flores & Chapa, 2009; Kaushal, 2008; Lofstrom, Bohn, & Raphael, 2011).

Data sources. The principal source of information for the present analysis is the American Community Survey (ACS) sponsored by the U.S. Census Bureau, which is considered a component of a "reengineered" decennial census, created to supply more current information. The ACS collects detailed information at the individual level on demographic, social, and economic issues as well as physical and financial characteristics of U.S housing. Based on a monthly rolling sample of 250,000 addresses nationwide, the sample design and the data collection process allows the Census Bureau to produce annual representative data for areas with a population of 65,000 or more; for areas with smaller populations, the survey estimates are based on three and five years periods. Since the purpose of this research is to determine the educational effects of ISRT policy at state level, the ACS annual version is employed. This version of the survey represents a one percent sample of the total U.S. population and has included about three million individual records annually since 2005, the year in which ACS full implementation began. Although the ACS has a smaller sample size (about 2.5%) than the decennial census (about 16.7%), it is approximately 40 times larger than the sample size used by the Annual Social and Economic Supplement (ASES) of the Current Population Survey (CPS) which produces the official statistics on poverty in the country (U.S. Census Bureau, 2009). Because the present analysis focuses on a very specific subpopulation group (i.e. unauthorized immigrants), the ACS, having a larger sample size, was preferred over the CPS, which has been commonly used in previous studies of ISRT policy effects, as shown in the literature review presented above.

Public Use Microdata Sample (PUMS) files containing individual survey records from the ACS were obtained from the Integrated Public Use Microdata Series (IPUMS-USA) project at the Minnesota Population Center (Ruggles et al., 2010). Additionally, complementary databases on state unemployment rates and minimum wages were obtained from the Bureau of Labor Statistics and the Wage and Hour Division at the U.S. Department of Labor, respectively (Bureau of Labor Statistics, 2014; U.S. Department of Labor, 2013). Finally, data on in-state tuition and fees rates at postsecondary education institutions was provided by the College Board.

Sample. The ACS provides two key variables with which to approximate the population of main interest in this research, unauthorized immigrants. First, the survey classifies all individuals according to the place of birth—native born and foreign-born. Second, those identified as foreign-born are asked about their citizen status, resulting three groups—born abroad of American parents, naturalized citizen, and not a citizen. The intersection of two characteristics, foreign-born and non-citizen, is the basis for construction of the proxy variable for unauthorized immigrants. Also, the ACS collects immigration variables like country of birth and year of immigration that contribute to the identification strategy of the unauthorized immigrant population.

In order to include in the analysis individuals who are highly likely unauthorized immigrants, this group consists of foreign-born non-citizens (FBNC) who: (a) entered the U.S. after 1981, (b) were self identified as Hispanics, (c) were 15 years old or younger at the moment of entrance, and (d) were 16-24 age when they were interviewed (Ruggles et al., 2010).

The first condition conforms with the Immigration Reform and Control Act (IRCA) of 1986, which offered the possibility of applying for legal status to unauthorized immigrants who could prove their continuous presence in the country since January 1, 1982 (S. Baker, 1997;

"IRCA," 1986). Therefore, limiting the sample to those immigrants who arrived in 1982 and later, it increases the likelihood of including unauthorized immigrants in the study. Condition (b) is supported by the fact that among unauthorized immigrants in the U.S., Hispanics represent a significant majority. Passel and Cohn (2008) estimated that 81% of unauthorized immigrants living in the U.S. in 2008 had come from Latin American countries. Also, based on estimates from the U.S. Department of Homeland Security (DHS), of the unauthorized population for years 2000 and 2005-2012, on average three quarters of unauthorized immigrants living in the U.S. were born in a Latin American country (B. C. Baker & Rytina, 2013).[5]

Condition (c) limits the sample to those individuals who arrived to the U.S. at school ages in order to increase the probability of UIS to attend at least high school or previous levels of education in the United States. This has three purposes. First, to focus the effect of the policy on UIS that have been previously served by the U.S. education system, either primary or secondary education or both. Second, to take into account one of the most common restrictions that states allowing access to ISRT for UIS have implemented in the past, which requires UIS beneficiaries to have graduated from a school in the state. Third, to emphasize the effect of the policy on those who may exhibit better language and academic capacities to enroll in a postsecondary program by having been exposed for a longer time to the U.S. culture and language.

Finally, condition (d) covers the age group typically defined for educational analyses of high school and postsecondary education issues (i.e., 16-17 and 18-24, respectively). Therefore, the group of 16-19 year-olds is used to answer the research question related to UIS dropping out of high school, while 18-24 year-olds, defines the sample to study the effects of the policy on the higher education participation. Another fact that supports the lower age limit of the second

[5] Figure calculated by the author based on Appendix 2 from Baker & Ritina (2013).

group is that individuals 16 or younger, less than 0.5% are enrolled in higher education, while among 17 year-olds the figure reaches only 2.5%.

The analysis covers the period 2005-2012 because the availability of information. The ACS was fully implemented in 2005 representing one percent of the total population making previous smaller sample issues not comparable to data released since 2005. As of this writing, the last year of Public Use Microdata Samples (PUMS) published by the Census Bureau is 2012.

Methodology

To answer the research questions a multivariate regression difference-in-differences identification strategy is advanced through the construction of a natural quasi-experiment (Cameron & Trivedi, 2005; Meyer, 1995). The research capitalizes on two facts. First, the enactment during years 2005-2012 of policies banning ISRT for UIS in five states: Arizona, Colorado, Georgia, Indiana, and Ohio, and second, the nonexistence of these types of state policies, policies neither allowing ISTR for UIS nor banning the enrollment of this population in public colleges in 29 states and the District of Columbia during the same period. The research exploits this state-time exogenous variability in the implementation of policies banning access to ISRT for UIS to estimate their effect on the three outcomes of interest.

Since the implementation of the ISRT policies has resulted mainly from political, economic, fiscal, and cultural factors rather than the response to changes in the state's higher educational outcomes of UIS or US-born people (Dougherty et al., 2010; McLendon et al., 2011; Reich & Mendoza, 2008; Sanders, 2010; Thangasamy, 2007; Vargas, 2011), the state laws prohibiting ISRT access for unauthorized immigrants are considered as an "exogenous source of variation in the explanatory variable that determine the treatment assignment" (Meyer, 1995, p. 151). Therefore, this policy intervention permits the configuration of a natural quasi-experiment.

The sample of FBNC Hispanics living in the states with ISRT restrictions or "policy states" (Arizona, Colorado, Georgia, Indiana, and Ohio) is used as the treatment group affected by the policy, while the comparison group consists of a similar population group living in the "non-policy states", i.e. states that never implemented the banning policy or any other state policy regulating the access to ISRT for UIS between 2005 and 2012.

An estimation of the type described above requires that the time trends of the outcome variable observed in both groups, treatment and control, would had been the same in the absence of the intervention; this condition is known as the parallel trend assumption (Abadie, 2005; Cameron & Trivedi, 2005; Li, Graham, & Majumdar, 2012). However, it is not possible to directly test this assumption because it will never be known what would have happened to the treatment group in a universe without the policy intervention, neither will it be known what would have happened to the comparison group if the policy had been implemented in their states simply because these two scenarios do not exist.

Fortunately, there are indirect alternatives to evaluate the validity of the parallel assumption. Chin and Juhn proposed using a sample of Hispanic legal residents, a group which in principle is not affected by the policy, to obtain an estimate of "the difference in outcome that would exist between [policy states] and [non-policy states] *even if there were no such laws at all*" [emphasis in original] (2011, p. 72) (i.e., an estimate of the differential trend between treatment and comparison groups). In this way, if the differential found is equal to zero, the parallel assumption would be valid while in the opposite case with a non-zero differential, the estimated differential can still be used to adjust the effect of the policy on the group of affected individuals (i.e., unauthorized immigrants).

In their study of the effects of state laws granting ISRT for undocumented students, Chin and Juhn (2011) exploited the mixed citizenship status of immigrant families in which unauthorized immigrant parents have children who are either unauthorized immigrants, U.S.-born citizens, or both (Fix & Zimmermann, 2001; Passel, Lopez, Cohn, & Rohal, 2014; Taylor, Lopez, Passel, & Motel, 2011). Passel et al. (2014) estimated that there were more than 1.6 million unauthorized children younger than 18 in 2005 while the number of U.S.-born children at those ages living with at least one unauthorized parent reached about 2.2 million in 2000. The authors found that this figure had changed considerably in the last years, passing the 2012 estimates of unauthorized and U.S.-born children of unauthorized immigrants to 775,000 and 4.5 million respectively (Passel et al., 2014, p. 8). The intuition of the strategy is that both groups, Hispanic unauthorized immigrants and U.S.-born Hispanic, share similar backgrounds and those living in a particular state also face in common the state's economic, social, cultural and political conditions. Given that the former group is affected by the policy while the later is not, then the U.S.-born Hispanics are an adequate comparison group to estimate the differential trend between policy and non-policy states for the group of unauthorized immigrants.[6]

The model. Adopting a similar strategy to the one proposed by Chin and Juhn (2011), a pooled sample of Hispanics, both unauthorized immigrants and Hispanic U.S.-citizens, is used to estimate the policy effect on the former group adjusted for trends differentials obtained from the later group. The sample is additionally limited to individuals living in any of the policy and non-policy states to estimate the following multivariate logistic regression model:

[6] Chin and Juhn (2011) used a cross section of young adults with U.S.-born Hispanics as comparison for foreign-born children of immigrants. They were not able to use the variation in legal status within families because of the lack of large enough data sets linking adult siblings in the U.S.

$$LOGISTIC(EDUC\_OUTCOME_{ist} = 1) = \beta_1 BAN\_STATE_{st} + \beta_2 FBNC_{ist} + \beta_3(BAN\_STATE_{st} \cdot FBNC_{ist}) + \beta_4 INDIVIDUAL\ CHARACTERISTICS_{ist} + \beta_5 STATE\ CONDITIONS_{st} + \beta_6 STATEDUMMIES_{st} + \beta_7 YEARDUMMIES_{st} + \beta_8(STATEDUMMIES_{st} \cdot FBNC_{ist}) + \beta_9(YEARDUMMIES_{st} \cdot FBNC_{ist}) + \varepsilon_{ist} \ . \quad (1)$$

The outcome variable $EDUC\_OUTCOME_{ist}$ varies in three dimensions: individual (*i*), state (*s*), and year (*t*). It is a binary variable equal to 1 if individual *i* living in state *s* presents the condition defined by the research question at hand in year *t*, 0 otherwise. The BAN_STATE_{st} is a binary variable equal to 1 if state *s* bans the access to ISRT for UIS at year *t*, 0 otherwise; $FBNC_{ist}$ is the indicator variable equal to 1 if an individual is in the category of foreign-born not-a-citizen defined as the group affected by the banning ISRT policy and consisted of individuals highly likely unauthorized immigrants, 0 otherwise. $BAN\_STATE_{st} \cdot FBNC_{ist}$ is the interaction term indicating the group targeted by the policy intervention living in those states that implemented the ISRT restriction after they effectively implemented it, 0 otherwise. The parameter associated with this variable (β_3) is the difference-in-differences regression estimate which is the main coefficient of interest in this study and measures the effect of the state laws on the education outcomes of unauthorized immigrants adjusted for the differential trend using the group of Hispanic U.S.-citizens. Individual- and state-level control variables that may affect the outcome variables are included as well as state and year fixed effects that respectively control for differences between states that remain over time and differences across time common to all states (Angrist & Pischke, 2009). Additionally, included are the interactions terms between state- and year-fixed effects with the FBNC variable "to allow for variance in immigration trends by state and year […] and to account for observable and un-observable characteristics among this population" (Flores, 2010b, p. 256); ε_{ist} represents the random error term.

Outcome variables. In the model presented in Equation (1), the outcome variable, $EDUC\_OUTCOME_{ist}$, is defined accordingly to each of the three research questions. Consequently, for the first and third research questions regarding the effects of the policy on the college participation rate of UIS and U.S. citizens, the outcome variable captures if an 18-24 year-old individual with a high school diploma or higher level of education but not a bachelor degree was or was not attending a higher education institution during the last three months before the survey interview. Concerning the first and third research questions, this outcome variable is defined in a counterintuitive way to facilitate the interpretation of the estimated coefficients of the logit model; therefore, the variable is equal to 1 if the individual is not attending college, 0 otherwise. For the second research question, the outcome variable registers if a 16-19 age individual had dropped out from school meaning that the individual was not attending high school three months prior to the survey interview and her education attainment was less than high school diploma.

Independent variables. The BAN_STATE_{st} variable is defined according to the date when ISRT policy took effect in each one of the five states that implemented it. Since the ACS has an annual periodicity, the BAN_STATE_{st} is coded 1 for those years where the policy went into effect for the entire year. Therefore, states where the policy started to be in effect during Fall of year *t*, the variable is coded 1 for period *t+1* onwards and states where the policy took effect on Spring year *t*, BAN_STATE_{st} is equal 1 for period *t* and all subsequent periods. In any other cases the variable is coded 0.

In order to assure the independence of treatment in the control group (Li et al., 2012), the states included in the comparison group are required to have not implemented any type of policy either granting or banning access to in-state tuition for undocumented students from 2005 to

2012. Consequently, Alabama and South Carolina are excluded from the analysis since in 2011 and 2008 respectively they implemented policies banning the enrollment of UIS in public postsecondary institutions. Also, the15 states that at some point during the period of analysis apply policies granting ISRT for UIS are also excluded (See Table 1).[7]

The indicator variable $FBNC_{ist}$ is equal to 1 when an individual fulfills all the following conditions: being foreign-born, not a citizen, self-identified as Hispanic, and entered the country after 1981 at age 15 or less; otherwise the variable is equal to 0.

Control variables. The method used controls for an individual's socio-demographic characteristics and for state-level factors that can affect educational outcomes; the former can contribute to the estimate's precision while the latter help to reduce omitted variable bias (Angrist & Pischke, 2009). Therefore, the vector $INDVIDUAL\ CHARACTERISTICS_{ist}$ includes sex (female); age (continous variable); marital status (being ever married); employment status (being employed); and English proficiency (dummies for four levels of proficiency). State economic variables include living in a metropolitan statistical area (MSA); annual state unemployment rate to control for state economic conditions; state real minimum wage as a proxy of the opportunity cost of attending college; and state's average in-state tuition and fees in two-year colleges to account differential cost of attending higher education among states (Cojoc, 2010).[8]

To control for state educational trends that can bias the effect of the policy, it is included the percentage of non-Hispanic Whites ages 30-54 with at least some college experience. Also,

[7] In addition to the 14 states reported in Table 1, North Carolina is also excluded because of the intermittent treatment that the state has given to UIS during the period of analysis; since 2001, the state's Community College System has change its position five times (National Conference of State Legislatures, 2014b).

[8] In those states that do not have minimum wage, the federal minimum wage is used.

the percentage of Hispanic ages 30-54 with a high school diploma is included to control for educational aspirations of this group (Cojoc, 2010; Kaushal, 2008; Potochnick, 2014).

Statistical regression model. Since the outcome variables, attending or not attending an education institution, are binary variables, logistic regression is employed. In a general binary outcome model the dependent variable is described by

$$y = \begin{cases} 1 & \text{with probability } p, \\ 0 & \text{with probability } (1-p). \end{cases}$$

The logistic regression model aims to explain the probability *p* to depend on a set of independent variables and the corresponding parameters. This conditional probability is given by

$$p \equiv \Pr[y = 1|\mathbf{x}] = F(\mathbf{x}'\beta) \ . \tag{2}$$

where, in the case of logit model, $F(\cdot)$ is the cumulative distribution function of the logistic distribution. Thus,

$$F(\mathbf{x}'\beta) = \frac{e^{\mathbf{x}'\beta}}{1+e^{\mathbf{x}'\beta}} \ . \tag{3}$$

A common interpretation of the logit model is to estimate the marginal impact of the independent variables on the odds ratio or relative risk. From Equations (2) and (3),

$$\begin{aligned} p &= \exp(\mathbf{x}'\beta)/(1+\exp(\mathbf{x}'\beta) \\ \Longrightarrow \frac{p}{1-p} &= \exp(\mathbf{x}'\beta) \\ \Longrightarrow \ln\frac{p}{1-p} &= \mathbf{x}'\beta \end{aligned} \tag{4}$$

where $p/(1-p)$ is the relative risk or the odds ratio and in the case of the logit model the log-odds ratio is a linear combination of the independent variables whose estimated parameters, $\hat{\beta}$, are obtained by maximum likelihood estimation (Cameron & Trivedi, 2005; Wooldridge, 2002). In the second and third equality in (4), any parameter β_j is a semi-elasticity that shows how a

marginal change in the independent variable x_j affects the odds ratio, which in the present research is the odds of not being enrolled in an education institution compared to being enrolled.

Chapter IV

Results

Descriptive Analysis

The first approximation that is advanced to analyze the effects of banning access to ISRT rates for UIS is to perform *t*-tests to evaluate if the education outcomes, individuals' characteristics, and state conditions differ before and after the policy is implemented in both policy and non-policy states distinguishing between the group of Hispanic FBNC and Hispanic U.S.-citizens.[9] For the group of non-policy states, the years 2005-2008 are used as pre-policy and 2009-2012 as post-policy coinciding the former period with the adoption of banning laws in two states while the remaining three policy states did so during the second period. Tables 2 and 3 present the results for variables at the level of individuals and states, respectively. In terms of outcome variables (attending college and dropping out of school) the individuals with the poorest indicators were those identified as Hispanic FBNC living in the group of policy states. Therefore, individuals in this group were on average 8.58 percentage points below the college enrollment rates of those Hispanic FBNC living in non-policy states and 17.59 and 27.09 percentage points away from Hispanic U.S.-citizens living in policy and non-policy states respectively. A similar pattern is found in the drop out rate from high school outcome where on average 21.09% Hispanic FBNC living in policy states drop out from school while 16.66% do so in non-policy states and only 9.39% and 6.91% of Hispanic U.S.-citizens left school at policy and non-policy states correspondingly.

In comparing the education outcomes before and after state laws banning access to ISRT rates for UIS were implemented, the results show that Hispanic FBNC living in the policy

[9] Each variable-group mean's estimate uses the full ACS data and "Survey data analysis" commands in Stata 12.

Table 2
Summary statistics: Educational Outcomes and Individual Characteristics by Policy and Non-policy States

	Policy states				Non-policy states			
	Hispanic FBNC		Hispanic U.S.-citizens		Hispanic FBNC		Hispanic U.S.-citizens	
	Pre-policy	Post-policy	Pre-policy	Post-policy	Pre-policy	Post-policy	Pre-policy	Post-policy
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Educational outcomes								
Attending college	0.2699	0.2319	0.4122	0.4239	0.3240	0.3354	0.4948	0.5289***
	(0.0200)	(0.0131)	(0.0100)	(0.0067)	(0.0106)	(0.0102)	(0.0060)	(0.0051)
Drop out of school [(a)]	0.2450	0.1890***	0.1030	0.0900*	0.1884	0.1465***	0.0869	0.0564***
	(0.0157)	(0.0116)	(0.0060)	(0.0037)	0.0083	0.0078	0.0036	0.0026
Individual characteristics								
Age	21.0060	21.0206	21.0024	20.9328	20.8318	20.9493**	20.8878	20.8541
	(0.0821)	(0.0574)	(0.0363)	(0.0242)	(0.0428)	(0.0376)	(0.0214)	(0.0181)
Female	0.4853	0.5072	0.5089	0.4987	0.4576	0.4461	0.5015	0.5047
	(0.0220)	(0.0150)	(0.0096)	(0.0063)	(0.0110)	(0.0105)	(0.0057)	0.0048
Married	0.2410	0.2193	0.1579	0.1404**	0.1906	0.1551***	0.1485	0.1129***
	(0.0189)	(0.0129)	(0.0074)	(0.0049)	(0.0095)	(0.0077)	(0.0043)	(0.0033)
Employed	0.6613	0.5706***	0.6614	0.6351**	0.6594	0.6163***	0.6603	0.6062***
	(0.0196)	(0.0150)	(0.0093)	(0.0064)	(0.0110)	(0.0104)	(0.0055)	(0.0049)
Speaks English								
Does not speak Eng.	0.0500	0.0373	0.0059	0.0024**	0.0585	0.0398**	0.0045	0.0024**
	(0.0101)	(0.0056)	(0.0013)	(0.0006)	(0.0057)	(0.0044)	(0.0008)	(0.0004)

Table 2 (Cont.)

	Policy states				Non-policy states			
	Hispanic FBNC		U.S.-born Hispanic		Hispanic FBNC		U.S.-born Hispanic	
	Pre-policy	Post-policy	Pre-policy	Post-policy	Pre-policy	Post-policy	Pre-policy	Post-policy
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Yes, but not well	0.1470	0.0718***	0.0212	0.0115***	0.0870	0.0861	0.0155	0.0127
	(0.0161)	(0.0079)	(0.0027)	(0.0014)	(0.0065)	(0.0061)	(0.0015)	(0.0011)
Yes, speaks very well	0.5552	0.6915***	0.3814	0.4367***	0.6518	0.6492	0.5566	0.5557
	(0.0231)	(0.0145)	(0.0101)	(0.0071)	(0.0115)	(0.0107)	(0.0061)	(0.0053)
Living in a MSA	0.8140	0.8358	0.8231	0.8437**	0.8984	0.8979	0.8454	0.8530
	(0.0179)	(0.0123)	(0.0080)	(0.0053)	(0.0076)	(0.0071)	(0.0047)	(0.0038)
Individual level *N*	908	1,600	4,295	9,746	2,957	3,454	11,743	17,183
N for dropouts [(a)]	1,303	1,869	4,699	10,325	4,030	3,808	12,444	16,375

Note. The sample consists of Hispanics (not including Puerto Ricans) ages 18-24 with high school diploma but not a bachelor degree living in policy and non-policy states in years 2005-2012.

[(a)] Dropout of high school is calculated using a sample of Hispanic (not including Puerto Ricans) ages 16-19. Standard errors in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1

states (Columns 1 and 2), i.e. the treatment group, experienced a reduction of 3.8 percentage points in the college enrollment rate while the control group living in non-policy states (Columns 5 and 6) exhibited a rise of 1.15 percentage points; these figures provide support for the hypothesis that the policies affect negatively the chances of attending higher education for UIS; the difference are not statistically significant though. On the other hand, the group of Hispanic citizens (Columns 3 and 4) shows a pre-post 1.17 percentage points non-significant increase in the policy states while in the non-policy states (Columns 7 and 8) this group presents a positive 3.41 percentage points significant change.

In regards to the second outcome, dropping out of school, all the pre-post differences are negative and statistically significant meaning better performance by both groups of Hispanics. The largest changes are for Hispanic FBNC with a reduction of 5.6 and 4.19 percentage points in policy and non-policy states correspondingly while Hispanic citizens showed reductions of 1.3 and 4.19 percentage point differences. These results are consistent with national trends showing a continuous reduction in the drop out rates of Hispanics falling from 30% at the end of the 90's to 13% in 2012 (U.S. Department of Education; National Center for Educational Statistics, 2014). First glance the pre-post year differences in this outcome indicate a relatively higher improvement of Hispanic FBNC in policy states, which would invalidate this study's second hypothesis (i.e., that making UIS ineligible for ISRT may discourage them to finish secondary education); however, as can be observed in the panel of individual characteristics in Table 2, there are differences among the groups and over time that must be incorporated for a more reliable estimate of the effects of the policy. Additionally, differences in state conditions over time and between the two groups of states must also be taken into account.

Table 3
Summary Statistics: State Conditions by Policy and Non-Policy States

	Policy states		Non-policy states[(a)]	
	Pre-policy	Post-policy	Pre-policy	Post-policy
State conditions				
State unemployment rate	0.0644	0.0802**	0.0466	0.0785***
	(0.0046)	(0.0050)	(0.0012)	(0.0018)
State real minimum wage	4.64	5.13**	4.87	5.42***
	(0.1445)	(0.1654)	(0.0596)	(0.0438)
In-state tuition and fees two-year	3,220	2,884	3,252	3,735***
	(152.4982)	(164.5911)	-100.135	(107.4898)
In-state tuition and fees four-year	7,379	7,561	6,954	8,229***
	(430.2706)	(353.5167)	(205.3152)	(239.2405)
%White adults w/ at least some college	0.6055	0.7033***	0.6313	0.6541*
	(0.0144)	(0.0155)	(0.0085)	(0.0083)
%Hispanic adults w/ high school diploma	0.2840	0.2702**	0.2654	0.2653
	(0.0045)	(0.0050)	(0.0076)	(0.0056)
State level *N*	22	18	120	120

Note. Years 2005-2012.
[(a)] For non-policy states, January 1, 2009 define pre-post years division
*** p<0.01, ** p<0.05, * p<0.1

Table 3 shows statistically significant positive pre-post policy changes in the mean of state unemployment rates and real minimum wage for both policy and non-policy states. The two variables that control for educational trends—percentage of White adults ages 30-54 with at least some college and the percentage of Hispanics ages 30-54 with high school diploma—exhibit positive and negative changes in the group of policy states and a marginally significant positive change in the first of the two variables in the non-policy states. Finally, the in-state tuition means for two- and four-year institutions are higher in post-policy years for the group of states where the policy was not implemented and the differences are statistically significant; in those states that banned ISRT for UIS, the pre-post year changes in tuition rates are not significant in statistical terms.

Restricting the focus to the attendance college outcome, Table 4 summarizes this indicator for three subgroups of Hispanics and two additional comparison groups differentiating between public and private institutions. Columns (1) and (2) report the estimations for Hispanics FBNC and non-Hispanics FBNC, respectively. The first group consists of individuals who are highly likely unauthorized immigrants affected by the ISRT policy. Columns (3) and (4) show the results for two groups that are expected to not be affected by the ISRT policy—naturalized Hispanics and U.S.-born Hispanics since they were eligible for ISRT rates before and after the policy was implemented. Column (5) presents the results for non-Hispanic Whites which is used only as a reference for comparison.

Panel A in Table 4 indicates that among the five groups, Hispanics FBNC presented the lowest enrollment rates nationally (31.9%) being about 15 and 16 percentage points bellow naturalized Hispanics and U.S.-born Hispanics, respectively, and quite far from non-Hispanic Whites (22 percentage points below). The group of FBNC non-Hispanic, which has a lower probability of being unauthorized immigrants since this group includes, for example, authorized international students, exhibited the highest enrollment rates (64.9%). Panels B and C in Table 4 show the enrollment rates for the same groups of people in policy and non-policy states respectively. In terms of the five groups of people reported, both groups of states maintain the same intra-group pattern found in panel A for the entire country. However, there are some differences between policy and non-policy states (i.e., inter-group differences).

The higher education enrollment rates for Hispanics, regardless of the citizenship status and the type of institution, are lower for the group of states with ISRT policy than for the group of non-policy states. The highest difference is found in the group of naturalized Hispanics with a 12 percentage points disparity, followed by the group of U.S.-born Hispanics with 9.6 percentage

Table 4
Summary Statistics: College Attendance by Sector in Policy and Non-Policy States

	Panel A - United States				
	Non-U.S.- Citizens		U.S. Citizens		
	Hispanic (1)	Non-Hispanic (2)	Naturalized Hispanic (3)	U.S.-born Hispanic (4)	Non-Hispanic White (5)
Attending public college/university	0.2790	0.5202	0.3844	0.4049	0.4126
	(0.0032)	(0.0047)	(0.0056)	(0.0016)	(0.0007)
Attending private colleg/university	0.0402	0.1292	0.0835	0.0757	0.1294
	(0.0013)	(0.0030)	(0.0030)	(0.0008)	(0.0004)
Attending college/university	0.3192	0.6493	0.4679	0.4806	0.5420
	(0.0033)	(0.0046)	(0.0057)	(0.0016)	(0.0007)
Observations	28,692	17,261	11,451	147,256	907,713
	Panel B - Policy States				
Attending public coll./university	0.2175	0.5149	0.3083	0.3586	0.4286
	(0.0101)	(0.0172)	(0.0197)	(0.0053)	(0.0017)
Attending private colleg/university	0.0271	0.1333	0.0844	0.0609	0.1037
	(0.0038)	(0.0111)	(0.0131)	(0.0027)	(0.0010)
Attending college/university	0.2447	0.6482	0.3927	0.4195	0.5322
	(0.0105)	(0.0168)	(0.0213)	(0.0055)	(0.0018)
Observations	2,508	1,364	810	12,991	127,378
	Panel C - Non-policy states				
Attending public college/university	0.2677	0.4829	0.4081	0.4003	0.3986
	(0.0067)	(0.0079)	(0.0100)	(0.0040)	(0.0010)

Table 4 (Cont.)

	Panel C – Non-policy states				
	Non-U.S.- Citizens		U.S. Citizens		
	Hispanic (1)	Non-Hispanic (2)	Naturalized Hispanic (3)	U.S.-born Hispanic (4)	Non-Hispanic White (5)
Attending private colleg/university	0.0628	0.1388	0.1046	0.1152	0.1358
	(0.0035)	(0.0051)	(0.0062)	(0.0025)	(0.0007)
Attending college/university	0.3305	0.6217	0.5127	0.5154	0.5344
	(0.0071)	(0.0078)	(0.0103)	(0.0041)	(0.0010)
Observations	6,411	6,249	3,627	24,440	407,268

Note. The sample consists of individuals age 18-24 with high school diploma but no bachelor degree, years 2005-2012.
Source: 1-year American Community Survey obtained from IPUMS-USA Project. Column (1) and (2) include foreign-born and not U.S.-citizens who entered the U.S after 1981 by age 15 or younger. Column (3) and (4) to (5) composite of U.S. citizens.

points difference, and finally the group of Hispanics FBNC with 8.6 percentage points difference. Additionally, the enrollment rate for Hispanics FBNC in policy states (24.47%) is 7.5 percentage points lower than the national figure for this population (31.92%) while the non-policy states exhibit a lower but positive difference of one percentage point compared to the national rate.

On the other hand, the two non-Hispanic groups, irrespective of the citizenship status, exhibit close enrollment rates between policy and non-policy groups. Therefore, non-Hispanic Whites enrollment rates present no-differences between policy and non-policy groups while FBNC non-Hispanics show a 2.7 percentage point differences in favor of policy states.

Focusing on the enrollment rates in public institutions, which are directly affected by the ISRT policy studied here, Hispanics FBNC living in policy states exhibit the lowest enrollment rate at this type of institutions (21.75%) resulting 5 percentage points lower than that exhibited by the same group of people but living in non-policy states. The differences found between policy and non-policy states for naturalized Hispanics and U.S.-born Hispanics at public institutions are of 10 and 4 percentage points, respectively in favor of the later. In contrast, the enrollment rates of non-Hispanic FBNC and non-Hispanic Whites in public institutions at policy states are higher than at no-policy states by three percentage points each.

Summarizing, Hispanics FBNC exhibit the lowest enrollment rates among the five groups of people reported and this pattern remains regardless of the type of institution (public or private) and the group of states (all states, policy states, and non-policy states). Also, the three groups of Hispanics (FBNC, naturalized, and U.S.-born) perform poorer in policy states than in non-policy states with Hispanic FBNC having the minimum difference. The opposite is found for the two

non-Hispanic groups who show higher postsecondary education enrollment rates in policy states as apposed to non-policy states.

The analysis provides a general idea of the differences in terms of higher education attendance among the groups of Hispanics the study is focused living in policy and non-policy states. However, it is necessary to incorporate a temporal dimension to get a first notion of how the implementation of policies banning ISRT's access to UIS has affected the college enrollment of Hispanic unauthorized immigrants living in policy states relative to those living in non-policy states. Figure 1 shows the average college attendance rates for Hispanic FBNC living in policy and non-policy states during the period of analysis. Policies took effect for whole years since 2007 in Arizona and Colorado, 2009 in Georgia, and 2012 in Indiana and Ohio.

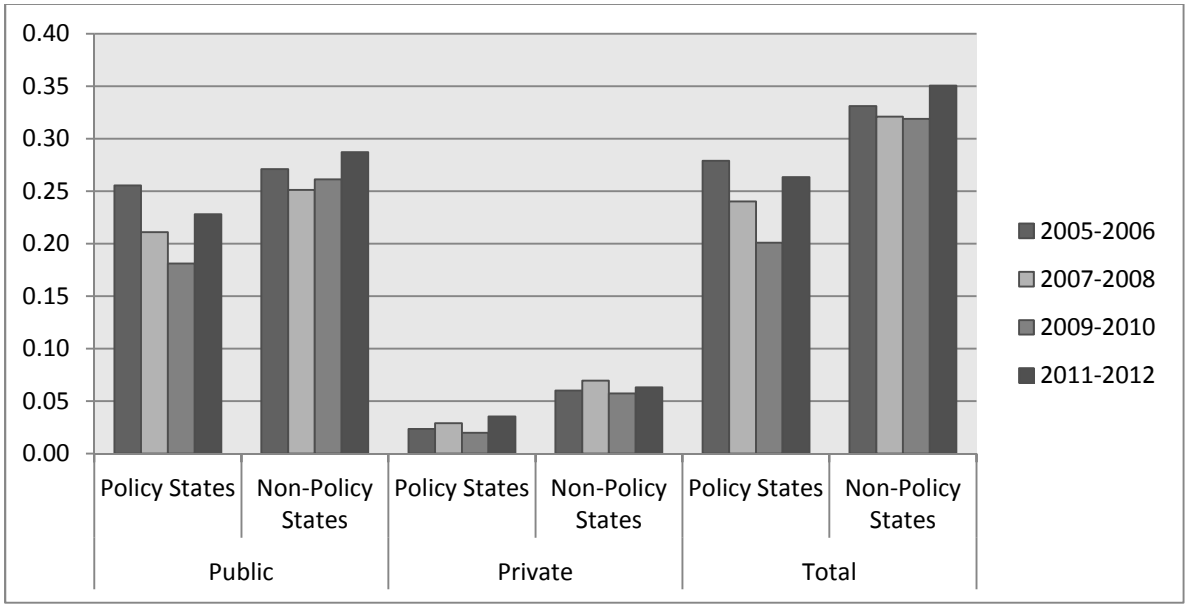

Figure 1. College Attendance Rates of Foreign-Born Not-Citizen Hispanics
Source: American Community Survey, 1-year samples.

According to Figure 1, the enrollment of Hispanic FBNC in those states that ban the access to ISRT for this group suffered a continuous decline during the three first periods presented. Thus, enrollment of Hispanic FBNC in public institutions in the group of policy states fell by 4.4 percentage points over the 2005-2006 and 2007-2008 periods and 3 additional

percentage points over 2007-2008 and 2009-2010. The last period, however, showed a 4.7 percentage point recovery from the previous period. On the other hand, Hispanic FBNC's enrollment in public institutions in non-policy states exhibited an initial decrease of 2 percentage points during 2005-2006 and 2007-2008 while the remaining three periods indicate a continuous growth of 3.6 percentage points from 2007-2008 to 2011-2012. The enrollment of Hispanic FBNC in private institutions in both policy and non-policy states show non-discernable trends. However, once public and private sector are examined together, policy states showed an even larger variability relative to non-policy states. Even though it is possible to identify trends differences in the enrollment of Hispanic FBNCs in public institutions, it is necessary to control for multiple factors in order to isolate the causal effect of policies banning the access to ISRT for UIS on this educational outcome as shown in the next section.

Multivariate Analysis

Policy effects on the college participation rate of unauthorized immigrants. To estimate the causal effect of banning ISRT rates for UIS over their college participation rate, logistic regression analysis is used. Table 5 presents the estimated odds ratios and robust standard errors of five different specifications of the model in Equation 1 using a sample of Hispanics ages 18-24 with educational attainment equal to or more than high school diploma but less than bachelor degree living in policy and non-policy states. The dependent variable is equal to 1 if an individual is not currently attending college; 0, otherwise. The baseline model in column (1) includes only the *FBNC* and *BAN_STATE* variables along with the interaction between these two variables whose estimated parameter measures the policy effect .

Table 5
Estimated Effects of State Laws Banning Access to ISRT Rates for Unauthorized Immigrants on the College Attendance of Hispanic FBNC Highly Likely Unauthorized Immigrants

VARIABLES	Basic Model (1)	Individual Characteristics (2)	State Characteristics (3)	State and year FE interaction with FBNC (4)	Final Model Clustered by State (5)
Not attending college					
Policy effect	1.108	1.242**	1.231**	1.596***	1.596***
	(0.0919)	(0.111)	(0.111)	(0.277)	(0.205)
FBNC	2.251***	1.845***	1.873***	3.851	3.851***
	(0.0776)	(0.0721)	(0.0739)	(3.920)	(0.334)
Banning policy (state-years)	0.932	0.994	0.914	0.870**	0.870***
	(0.0556)	(0.0633)	(0.0606)	(0.0612)	(0.0440)
Age		1.244***	1.304***	1.304***	1.304***
		(0.0135)	(0.00920)	(0.00920)	(0.0195)
Sex		0.608***	0.635***	0.634***	0.634***
		(0.0156)	(0.0157)	(0.0157)	(0.0152)
Married		2.721***	2.592***	2.603***	2.603***
		(0.112)	(0.106)	(0.106)	(0.155)
Employed		1.460***	1.453***	1.450***	1.450***
		(0.0371)	(0.0371)	(0.0371)	(0.0447)
Speaks English very well		0.935**	0.950*	0.948*	0.948
		(0.0266)	(0.0272)	(0.0273)	(0.0384)
Speaks English well		1.692***	1.709***	1.716***	1.716***
		(0.0888)	(0.0908)	(0.0915)	(0.0943)
Speaks English but not well		3.316***	3.364***	3.368***	3.368***
		(0.289)	(0.295)	(0.297)	(0.426)

Table 5 (Cont.)

VARIABLES	Basic Model (1)	Individual Characteristics (2)	State Characteristics (3)	State and year FE interaction with FBNC (4)	Final Model Clustered by State (5)
Does not speak English		9.504***	9.726***	9.970***	9.970***
		(1.998)	(2.047)	(2.102)	(2.397)
Metropolitan area		0.721***	0.739***	0.740***	0.740***
		(0.0296)	(0.0299)	(0.0300)	(0.0597)
State unemployment rate			0.941***	0.938***	0.938***
			(0.0155)	(0.0156)	(0.00946)
State real minimum wage			1.013	1.020	1.020
			(0.0467)	(0.0470)	(0.0441)
Tuition & Fees two-year college			1.177*	1.168*	1.168**
			(0.110)	(0.110)	(0.0742)
% White adults with some college			0.933***	0.934***	0.934***
			(0.00620)	(0.00630)	(0.00616)
% Hispanic adults with high school			1.002	1.001	1.001
			(0.00627)	(0.00636)	(0.00660)
Observations	51,886	51,886	51,727	51,727	51,727
State- and year- FE with FBNC interaction	No	No	No	Yes	Yes

Note. Robust SE in parentheses. Data weighted using "perwt" IPUMS weights. All models include state- and year-fixed effects. Models (3) to (5) exclude the District of Columbia because the lack of information on two-year college tuition and fees.
Source: American Community Survey 2005-2012, 1-year samples.
***p<0.01, **p<0.05, *p<0.1

Models in columns (2) and (3) add subsequently individual and state characteristics. State and year fixed effects interaction with the FBNC variable are added in column (4) while the "final model" in column (5) includes robust standard errors clustered by state of residence. All models include state- and year-fixed effects and were estimated using IPUMS weights for person-level analysis.

The final model, column (5), shows that after the banning policies were implemented, the odds of not being attending college for Hispanic FBNCs living in the group of policy states are 1.596 times greater than the odds of not attending college for the same group of individuals, living in non-policy states. In plain words, Hispanic FBNCs highly likely unauthorized immigrants living in policy states are 60% more likely to not attend postsecondary education after they became ineligible to pay ISRT in comparison to the same group of people living in non-policy states. The odds of not attending college also increase for those who have been ever married (2.6 times), those who are employed (1.45 times), those who speak English but not well (3.37 times); and those who live in states with higher average in-state tuition rates (1.17 times). On the other hand, being female (0.63 times); living in a metropolitan area (0.74 times); and living in states with a lower unemployment rate (0.94 times) reduce the odds of not attending college; all the estimated odds ratios are significant at $p<.01$, save for that on the average in-state tuition rates variable which is significant at $p<.05$.

As stated in the literature review section, part of previous research on the educational effects of ISRT policies has focused on unauthorized immigrants coming from Mexico since they are the group with highest probability of being unauthorized. For consistency with that scholarship, the final model is fit using the complete sample of Hispanics as well as a subsample consisting only of Mexicans, both samples including FBNCs and U.S.-citizens. Table 6 presents

the results by sex and by age range. Panel A with pooled samples of men and women shows that the effect of the policy is similar for all Hispanics FBNC and the subsample of Mexicans FBNCs in policy states. Irrespective of age group, they are respectively 1.60 and 1.58 times as likely to not attend college after laws banning ISRT took effect relative to the same groups in non-policy states. However, once discriminated by age range, the effect is significant only for the subgroup of younger individuals (ages 18-21), being higher among Mexicans FBNCs. Differentiating by sex, Panel B and C main result is that the largest effect of the policy is on Mexican younger men (2.99 times) and significant effects are found among women only in the group of all Hispanic women in the full range of age (1.57 times). Finally, for individuals with ages 21-24, only a marginal statistically significance ($p<.1$) is found among Hispanic women living in policy states; they are 50.4% more likely to not attend college after the policies were implemented than those in no-policy states.

Policy effects on dropping out of school. State policies banning access to ISRT for UIS may discourage unauthorized immigrant youths from finishing high school since for many of them, the possibility of advancing to the next level of education and having to pay out-of-state tuition are negligible, and thus, would make obtaining a high school diploma worthless. Estimates of the policy effects on dropping out for all Hispanics FBNC and Mexicans FBNC ages 16-19 using the model represented in Equation 1 are presented in Table 7. The coefficient estimates indicate that after banning ISRT policies were implemented, Hispanic FBNCs and Mexican FBNCs are respectively 5.5% and 10.5% more likely to drop out of school than not, compared to the same population in the group of non-policy states; however, the results are not statistically significant. Additionally, the covariates estimated odds ratios show that being a man, older, married, and not good at speaking English, increase the odds of dropping out of school;

Table 6
Estimated Effects of State Laws Banning Access to ISRT Rates for Unauthorized Immigrants on College Attendance of Hispanic and Mexican Unauthorized Immigrants

	Hispanics			Mexicans		
	Policy effect	(SE)	Observations	Policy effect	(SE)	Observations
A. Men and Women						
Ages 18-24	1.596***	(0.205)	51,727	1.579***	(0.257)	27,201
Ages 18-20	1.870***	(0.431)	24,132	2.036***	(0.468)	12,398
Ages 21-24	1.435	(0.336)	27,572	1.344	(0.291)	14,779
B. Only Men						
Ages 18-24	1.602*	(0.440)	25,916	1.804**	(0.521)	13,786
Ages 18-20	1.875**	(0.556)	11,873	2.988***	(0.922)	6,238
Ages 21-24	1.464	(0.486)	14,018	1.226	(0.398)	7,531
C. Only Women						
Ages 18-24	1.566**	(0.324)	25,799	1.304	(0.331)	13,396
Ages 18-20	1.739	(0.749)	12,252	1.216	(0.577)	6,138
Ages 21-24	1.504*	(0.339)	13,542	1.508	(0.416)	7,216

Note. Robust SE in parenthesis from clustering by state of residence. Data weighted. Each subgroup of estimates is from a separate logistic regression that controls for age, gender, marital status, employment status, English proficiency, metropolitan area, state unemployment rate, state real minimum wage, state average in-state tuition and fees in two-year colleges, proportion of non-Hispanic White adults with at least some college, and proportion of Hispanic with high school diploma; includes state and year fixed effects and the interaction of each one of them with the FBNC variable.
Source: American Community Survey 2005-2012, 1-year samples.
*** p<0.01, ** p<0.05, * p<0.1

Table 7
Estimated Effects of State Laws Banning Access to ISRT Rates for Unauthorized Immigrants on the Dropping Out from School for ages 16-19

VARIABLES	Hispanics (1)	Mexicans (2)
Drop out of school		
Policy effect	1.055	1.105
	(0.343)	(0.283)
FBNC	3.174***	2.267***
	(0.510)	(0.445)
Banning policy states (effective years)	1.014	0.970
	(0.125)	(0.100)
Age	1.479***	1.492***
	(0.0375)	(0.0367)
Sex	0.737***	0.794***
	(0.0309)	(0.0397)
Married	3.221***	2.983***
	(0.232)	(0.241)
Employed	1.059	1.057
	(0.0645)	(0.0697)
Speaks English very well	1.013	1.109
	(0.0583)	(0.0791)
Speaks English well	1.704***	1.575***
	(0.106)	(0.117)
Speaks English, but not well	5.393***	4.586***
	(0.715)	(0.516)
Does not speak English	13.01***	11.04***
	(1.117)	(1.678)
Metropolitan area	1.000	1.107
	(0.105)	(0.0942)
State unemployment rate	1.016	1.000
	(0.0161)	(0.0274)
Real minimum wage	1.012	1.056
	(0.0575)	(0.0785)
State tuition at 2-year college	0.690***	0.660**
	(0.0876)	(0.125)
% White adults with some college	0.889***	0.886***
	(0.00845)	(0.0115)
% Hispanic adults with high school	0.980**	0.981
	(0.00889)	(0.0118)
Observations	54,675	30,556

Robust SE in parentheses from clustering by state of residence.
Source: American Community Survey, 1-year samples. Data weighted using "perwt" IPUMS weights. All models include state- and year- fixed effects and the interaction of each one of them with FBNC variable. *** p<0.01, ** p<0.05, * p<0.1

these estimates are all significant at p<.01. Finally, a counterintuitive result is that higher average tuition at two-year colleges reduced the odds of dropping out of school for the group of all Hispanics and the subgroup of Mexicans 0.69 and 0.66 times, respectively.

Policy effects on U.S. citizens. The education effects of state laws making UIS ineligible to ISRT rates can extend beyond the target group. Having a reduced demand for post-secondary education from UIS, might mean that public institutions can serve more citizens and legal immigrants, generating a trade-off between the two groups. To evaluate this possibility, the complete model is fitted using a sample of non-Hispanic individuals to estimate the policy effects on three groups of citizens—Whites, Blacks, and Asians. Additionally, effects on Hispanic and Mexicans U.S.-born and naturalized citizens are evaluated. Table 8 presents the estimated odds ratios and robust standard errors by sex and age ranges. The results show that statistically significant effects are found only for three of the subgroups of citizens. Therefore, two groups of naturalized citizens (Hispanic men ages 18-20 and Mexican men ages 21-24), and one group of U.S.-born citizens (Black men ages 18-20) living in policy states are less likely to not attending college than do, compared to similar groups of people living in non-policy states after ISRT policies were implemented. However, the results in two of the cases are only marginally significant (p<.1). The remaining subgroups exhibit mixed policy effects, but none is statistically significant.

Table 8
Estimated Effects of State Laws Banning Access to ISRT Rates for Unauthorized Immigrants on College Attendance of U.S. Citizens

	Men		Women	
	18-20	21-24	18-20	21-24
	Hispanics			
Hispanic U.S.-born	1.103	1.027	1.001	1.002
	(0.183)	(0.192)	(0.236)	(0.174)
Hispanic naturalized	0.587**	0.872	0.876	0.945
	(0.138)	(0.146)	(0.159)	(0.188)
Observations	11,873	14,018	12,252	13,542
	Mexicans			
Mexican U.S.-born	0.915	1.239	1.180	1.031
	(0.229)	(0.272)	(0.385)	(0.185)
Mexican naturalized	0.615	0.662*	0.836	0.846
	(0.200)	(0.151)	(0.184)	(0.205)
Observations	6,238	7,531	6,138	7,216
	Non-Hispanics			
Whites	1.027	0.953	0.958	0.982
	(0.0893)	(0.0914)	(0.0633)	(0.0830)
Blacks	0.854*	1.007	0.941	0.894
	(0.0809)	(0.0759)	(0.0674)	(0.0715)
Asian	1.042	1.211	1.076	1.358
	(0.165)	(0.414)	(0.360)	(0.362)
Observations	157,968	185,939	165,566	174,273

Note. Robust SE in parenthesis from clustering by state of residence. Data weighted. Each subgroup of estimates is from a separate logistic regression that controls for age, gender, marital status, employment status, English proficiency, metropolitan area, state unemployment rate, state real minimum wage, state average in-state tuition and fees in two-year colleges, proportion of non-Hispanic White adults with at least some college, and proportion of Hispanic with high school diploma; includes state and year fixed effects and the interaction of each one of them with the FBNC variable.
Source: American Community Survey 2005-2012, 1-year samples.
*** p<0.01, ** p<0.05, * p<0.1

Robustness Tests

In order to test the possibility of bias in the results presented above, three falsifications tests are advanced. First, leaded and lagged placebo policies are used to estimate the full model (Model 5 from Table 5) in order to test the dynamics of the effects of the ISRT policy and the Granger causality, i.e., that causes happen before consequences; second, the final model is fitted including specific state linear trends; and third, the effect of the policy is estimated on an alternative group of non-citizens (Angrist & Pischke, 2009; Flores, 2010b; Kaushal, 2008; Meyer, 1995; Potochnick, 2014).

To determine if the ISRT happened before its effects take place, the BAN_STATE_{st} variable in Equation 1 is defined with one- and two-year leads, while to examine the behavior of the effects as time passes, the variable is defined with one-, two-, and three-year lags.[10] The estimated policy effects for the five placebo policies and the actual ISRT policy are plotted in Figure 2. The estimates indicate no changes in the odds of not attending colleges among UIS living in policy states in comparison to those in non-policy states during the two years prior to ISRT implementation. The largest effects of the policies are experienced during the year of adoption of the five state policies (*OR*=1.597; *S.E.*=0.204; $p<.01$; n=51,727). Decreasing, but positive effects in the subsequent three periods are found. The estimated effects for the two models with placebo leaded policies are not statistically significant while the lagged policies are all statistically significant, even thought the last one is significant at $p<.1$. The lack of

[10] Given the period of analysis, 2005-2007, and the years when the ISRT policies went into effect in each one of the five policy states, using placebo policies defined with two periods leads makes that Arizona and Colorado have no pre-treatment observations because the policy took effect in 2007. Also, Indiana and Ohio with 2012 as the year that the policy took effect are dropped from the group of policy states in the estimated using the three lagged placebo policies.

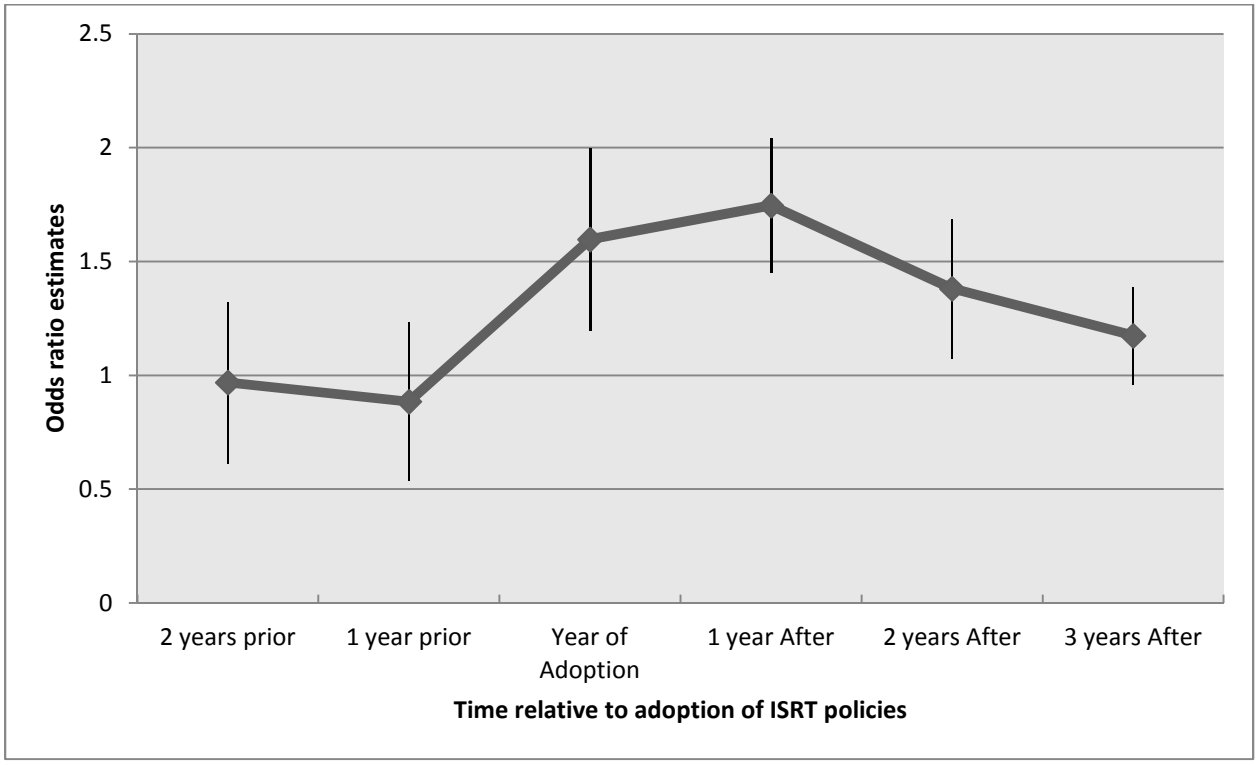

Figure 2. Estimated effects before, during, and after ISRT policies adoption. Each point in the figure is based on a separate regression of Model 5 from Table 5 using the sample of Hispanics and adjusting the timing of the policy. Vertical bands represent $\pm$ 1.96 times the standard error of each point estimate. Adapted from "Estimated impact of implied contract exception on log state temporary help supply industry employment for years before, during, and after adoption, 1979–95" by Autor (2003, p. 26).

statistically significance of the estimated odds ratios for the two leads indicates that the effect of the ISRT policy on Hispanic FBNC during the year of adoption is not confounded with previous state specific trends and suggests that the ISRT policy causes the changes in the attending college outcome and not vice versa (Angrist & Pischke, 2009; Kaushal, 2008). On the other hand, the estimated odds ratios with the placebo lagged policies show the dynamics of the post-policy effects. Therefore, the effects of the policy even though decrease two years after the policy adoption, the odds of not attending college for Hispanic FBNC are higher than they were

before the policies were implemented in comparison to the same group of people living in no-policy states.

The second robustness check is to incorporate state-specific linear trends to the full model to allow policy and non-policy states to follow differentiated trends. Nonetheless the model represented by Equation 1 includes some variables to control for state education trends as well as FBNC population, it is possible that unobserved state-specific time trends are confounding the results. If adding the new controls to the model changes the policy effects obtained by the main model, it would be an indication of the presence of bias (Angrist & Pischke, 2009; Kaushal, 2008). This robustness check suggest that the policy effects found by the main model (*OR*=1.596; *S.E.=0.204; p*=.000; *n*=51,727) are slightly modified by the inclusion of state-specific time trends (*OR*=1.625; *S.E.*=0.199*; p*=.000; *n*=51,689).

Finally, in order to build confidence that the findings are experienced by unauthorized immigrants and not by other groups of immigrants, the main model is fitted using a sample of Asian U.S. citizens and Asian FBNC. The later group fulfills the conditions of age (18-24), year of entrance to the U.S. (1982 or later), age at entrance to the U.S. (15 or younger), and education attainment (high school diploma but not bachelor degree) applied to the sample used to estimate the policy effects on Hispanic FBNC highly likely unauthorized immigrants. If it is found that policy effects using the sample of Asian people are statistically different from zero, it would indicate that banning ISRT policies can be correlated with other unobservable factors that affect all FBNC and not exclusively the unauthorized people. The final model indicates that Asian FBNC youths are not statistically significant affected by the ISRT policy (*OR*=0.542*; S.E.*=0.309*; p*=.283) which provides more confidence in the findings for Hispanics and Mexicans FBNC highly likely to be unauthorized in the U.S. This result adds to the previous

findings for the groups of non-Hispanic Whites, Blacks, and Asian citizens whose policy effects are not statistically significant (Table 8).

Summary of Results

College attendance and school retention rates are lower for Hispanic FBNC in policy states in comparison to non-policy states. Further, when comparing the case of Hispanic FBNC with Hispanic U.S. citizens it is found that the gaps in the attendance and retention rates widen placing the former at a relatively greater disadvantage. The pre-post policy *T*-tests indicate no statistically significant differences in the college participation rates of both Hispanic FBNC and Hispanic U.S. citizens in policy states and only a positive difference for the later group in the non-policy states. However, the direction of the changes in the indicator suggests an absolute and relative decline in this educational outcome among Hispanic FBNCs living in policy states as stated in the first hypothesis. The research indicates that for the output, dropping out of school, the *T*-test shows negative changes—that is, improvements in the indicator, among the two groups of people in both policy and non-policy states, contrary to the second hypothesis. Differences in individual characteristics as well as state conditions indicate the need to take into account those factors to identify the causal effects of the ISRT policies.

Therefore, the logistic multivariate analysis reveals that after the enactment of policies banning access to ISRT for UIS, Hispanic FBNC highly likely unauthorized immigrants living in policy states are 1.59 times more likely to not attend college than do it, compared to the same group of people living in non-policy states; this result is statistically significant ($p<.01$). Examining the results by age range irrespective of sex, the policy effects are significant only for the groups of Hispanics (*OR*=1.870; *S.E.*=0.431; $p<.01$; n=24,132); and Mexicans (*OR*=2.036; *S.E.*=0.468; $p<.01$; n=12,398) with ages 18-20; these are recent high school graduates. Further

disaggregation by sex shows that the largest effect of the policy has been on young Mexican FBNC men whose odds of not attending college are about three times higher for those in policy states compared to those in non-policy states after the implementation of the policies (*OR*=2.988; *S.E.*=0.922; $p<.01$; n=6,238). Significant effects are also found among the larger sample of Hispanic women, but not among Mexican women at any age range examined.

With regard to the dropping out of school, the logistic model found no-statistically significant evidence to support the hypothesis of dynamic effects of the policies on the enrollment of unauthorized immigrants in secondary education among Hispanic or Mexican FBNC. Finally, the evaluation of potential trade-offs in college enrollment between unauthorized immigrants and citizens because of the prohibition of access to ISRT for the former group indicates that after the prohibition, Hispanic naturalized men ages 18-20 in policy states had reduced the odds of not attending college compared to the same group in policy states; this result is significant at $p<.05$. Also, marginally statistically significant improvements in this outcome are found among Mexican naturalized men, ages 21-24, and Black men, ages 18-24.

The results of the three robustness checks (leaded and lagged placebo policies, state specific linear trends, and estimated effects on Asian FBNC) in addition to the individual and state covariates included in the final model, as well as the fixed effects and the cluster robust standard errors, support the validity of the findings. Nonetheless, the possibility still exists that policy states had also advanced other types of state policies at the same time that ISRT prohibitions were implemented, that confound the policy effects estimated in this study.

Chapter V

Summary and Conclusions

Unauthorized immigrants in the United States exhibit poor educational outcomes in both secondary and higher education (Passel & Cohn, 2009). This research seeks to estimate the effects of state policies that create an additional barrier to this group of students by making them ineligible to pay in-state tuition rates in public colleges and universities and ineligible for state financial aid. Three hypotheses were proposed. First, the implementation of state policies prohibiting access to ISRT for UIS has a negative effect in the college participation rate of UIS. Second, the policy discourages UIS from finishing high school which results in higher school dropout rates among this population. Third, since the policy does not change the access to ISRT for U.S. citizens, no policy effects are expected on their college participation rates. To test the research hypotheses, a multivariate regression difference-in-differences strategy was employed using the American Community Survey 2005-2012 as the main data source and identifying the population of most interest as Hispanic FBNC highly likely unauthorized immigrants.

Findings and Interpretation

Policies that promote not-attending college. The policies analyzed in this research were implemented in Arizona and Colorado in 2006, Georgia in 2008, and Indiana and Ohio in 2011. None of them completely close the door to higher education for unauthorized immigrants because this population is welcome to enroll in public institutions in those states as long as they pay out-of-state tuition rates. However, the trinity of difficult economic conditions (Fortuny et al., 2007; López, 2010; Passel & Cohn, 2009), high costs of attending higher education (Abrego & Gonzales, 2010; López, 2010), and immigration status that makes them ineligible for federally funded aid and in some states for education benefits funded with public resources (Biswas, 2005;

Ruge & Iza, 2005; Salinas, 2006) prevent most of them from enrolling in post-secondary education. How do state policies that explicitly ban the access to ISRT for UIS affect the odds of not attending college among this population?

This research found very strong evidence ($p<.01$) that supports the first research hypothesis. Therefore, after state laws making UIS ineligible to pay ISRT rates were implemented, Hispanic FBNC highly likely unauthorized immigrants with ages 18-24 are 1.6 times more likely to not attend college than do, compared to the same group of people living in states without these policies. The results also indicate that the policies hurt mainly the group of younger students (18-20 year-olds) whose estimated odds of not attending college are 1.87 times those of their peers in non-policy states after the implementation of state laws. Restricting focus on Mexican FBNC, the group most affected by the ISRT prohibition consists of men 18-20 years old; this group is about three times more likely to not attend college as result of the policies. Also, moderate evidence ($p<.05$) for the first hypothesis is found among the group of Hispanic women in the full age range as well as suggestive evidence ($p<.1$) among the 21-24 range. However, no statistically significant evidence is found for Mexican women in any of the age ranges. Nonetheless, the direction of the effects on all subgroups of FBNC highly likely unauthorized immigrants is in the expected direction. Why are the effects of the policies larger for the group of younger individuals?

Having restricted the population of interest in this research—the highly likely unauthorized immigrants—to those Hispanics FBNC with a high school diploma that came to the U.S. at age 15 or younger, the results on the younger group indicate that ISRT banning policies have affected mainly U.S. high schools' recent graduates. Chin and Juhn (2011) offered insights to explain these differences by age ranges. First, between the two groups of students, assuming

both of them having the same desire to attend college, the older group would face less credit constraints since they have had the opportunity to work and save for college while the younger group depends mainly on their parents' resources which are usually low. Therefore, human capital theory would predict that state policies making UIS ineligible to ISRT would have larger effects on younger students through higher monetary cost and larger credit constraints relative to older students. Second, the group of younger individuals may exhibit higher nonmonetary costs associated with the risk of deportation than the older group. Since recent high school graduates are more likely to live with their parents, they are more reluctant to share information with a government agency like colleges and universities about both, their immigration status and information that can link them to their families.

In addition to the explanations based on Chin and Juhn (2011) study, a third reason for the dissimilar effects by age range is proposed here. Younger and older individuals may value present and future consumption differently. Coming from poor families, Hispanic FBNC highly likely unauthorized immigrants at college ages are usually first generation students without a role model within their families to follow. Furthermore, economic pressures can lead recent high school graduates to participate in the labor market rather than to enroll in higher education (i.e., present consumption is value more than future consumption). However, at older ages, individuals may realize the value of education and the future benefits it would bring, encouraging them to return to school. If this were the case, those individuals who value more future consumption would be less affected by policies that make them to pay higher prices for education because they would exhibit a higher willingness to pay.

No dynamic policy effects. No real evidence is found to support the second research hypothesis—the presence of dynamic effects of banning ISRT state policies on the dropping out

behavior of UIS. Even though the estimated odds ratios for Hispanic and Mexican FBNC ages 16-19 suggest that after the polices were implemented they are 5.5% and 10.5% more likely to drop out of school than do not, compared to their counterparts in non-policy states, the results are not statistically significant. An explanation of the lack of dynamic effects may be that during the school years unauthorized immigrants are not fully aware of their immigration status and its implications in terms of access to college education. Also, it is possible that the effects of other state education policies seeking to reduce school dropout rates are confounded with the effects of ISRT banning policies. Since the model fitted in this research has no-control for the presence of other contemporaneous policies, these policies might offset the actual effect of ISRT prohibitions on unauthorized immigrants at school ages.

Small tradeoffs if any. Supporters of state policies making UIS ineligible for ISRT rates would find support in one of their arguments if U.S.-born citizens would benefit in terms of access to college education with these restrictive measures. However, this research finds no policy effects on the non attendance of Whites, Blacks, Asians, Hispanics and Mexicans who are U.S.-born citizens save for suggestive evidence ($p<.1$) for a subgroup of Black men ages 18-20 who after ISRT policies were implemented were 0.85 times more likely to not attend college than do, in comparison to the same group in non-policy states. With regard to the effects on naturalized citizens, moderate evidence is found for the presence of college attendance benefits associated with the ISRT policy for Hispanic men in the 18-20 age range as well as suggestive evidence for the group of Mexican men ages 21-24. These improvements may be explained because the new policies can make this population more aware of and value more the higher education benefits available for them, inducing them to enroll in postsecondary education.

Limitations of the Research

Despite the methodological strategies implemented in this research, in order to isolate the causal policy effects on the three outcomes studied, a few limitations remain. First, the inability to accurately identify the population of most interest, unauthorized immigrants, indicates that the results may be downwardly biased. Since Hispanic FBNC highly likely unauthorized immigrants data also included legal immigrants who are not affected by the ISRT banning policies, it is difficult to find significant effects. However, the overall effects, using the complete sample of Hispanics and the subsample of Mexicans, are highly significant. Second, the lack of control for other contemporaneous state policies that could affect unauthorized immigrants (for instance, drivers license, access to health benefits, and law enforcement measures) may indirectly affect the education outcomes of interest, and consequently, the effects detected here can be confounded with these other policies. Third, the period of analysis determined by the availability of data from the main source of information, the ACS, limits the research to only two pre-policy years of information for the first two states with ISRT prohibitions (Arizona and Colorado), and only one post-policy year of data for the last two states implementing the policy (Indiana and Ohio). The policy effects may vary depending on how long the policies have been effectively in use, as the placebo policy analysis showed. However, the analysis itself can be contaminated by the restriction in the availability of more pre- and post-policy observations.

Policy Recommendations

Comparing the effects of states' legislative actions prohibiting UIS' access to ISRT, on the Hispanic FBNC (who are highly likely to be unauthorized immigrants) and U.S.-born citizens, the research indicates that the effects were negative for the former group while there were no gains for the latter group. Since federal laws (IIRIRA, 1996; PRWORA, 1996) already

made unauthorized immigrants ineligible for in-state tuition save for the cases in which the states themselves advance laws to provide that benefit, the banning policies implemented in Arizona, Colorado, Georgia, Indiana, and Ohio seem to have no purpose, at least not one in terms of the availability of this benefit for UIS. However, the results show important negative effects on the college attendance chances for this population. Therefore, the policies implemented in the five states not only increase tuition prices for unauthorized immigrants but also increase the nonmonetary costs associated with higher education for this group, like for example the risk of deportation, discrimination because of their immigration status, and animosity towards UIS in colleges and universities. In addition, the cost of the banning ISRT policies has been born mainly by recent high school graduates ages 18-20, as the research showed. On average, the total expenditure per student in public elementary and secondary schools was $12,672 between 2005 and 2009 school years. ISRT banning policies have helped to become part of these resources inefficient public spending since the policies truncate the education aspirations of some of those who have been previously served by the U.S. public education system.

This research informs policy and practice not only for those states that have effectively implemented the ISRT restrictions, but also for those states that are considering the adoption of such measures. Unauthorized immigrants exhibit the poorest education outputs studied here, college attendance and school dropout rates, around the country. They do even worse in the group of policy states after ISRT prohibitions were implemented. In an era characterized by fast technological changes, increasing demand for skilled labor, and global competition, states would benefit from having a more educated population, including unauthorized immigrants who would not move anywhere. Facilitating the access to higher education by at least reevaluating and

revoking previous state decisions as those taken by the five policy states examined in this research would be a first step towards more efficient and fairer states education systems.

Colorado, one of the five banning policy states, took ten years and six bills to finally join the group of states that provide access to ISRT for UIS. The Advancing Students for a Stronger Economy Tomorrow (ASSET) bill was supported by a bipartisan group of legislators, a broad-based state coalition of organizations and individuals, and was signed by a Democratic governor in 2013 (Martinez, 2014; "Tuition aid for Undocumented," 2013). Colorado's experience and Arnold's (1990) theory on the rationality of policymakers in legislatures highlight the political implications of change in policy direction regarding ISRT access for UIS. The theory sustained that Congress members' main motivation is reelection and their actions are highly influenced by citizens' "potential policy preferences" and their capability of incorporating their policy preferences into the evaluation of candidates in election or reelection decisions. Citizens' potential preferences are determined by the perception of policy effects—costs and/or benefits, which depends on their magnitude, timing, proximity, and the action of an instigator (Arnold, 1990).

As the findings indicate, considerable "early-order" costs (i.e., there are no intermediary steps between policy implementation and the effects) in terms of college attendance are associated with states' banning ISRT policies; however, these costs are concentrated on the group of high school recent graduates who are unauthorized immigrants. Also, no early-order policy benefits were found among the groups of U.S.-born citizens. These results indicate the probability of citizens noticing the policy effects of banning ISRT access for UIS is small. On the other hand, the potential general benefits—higher education positive externalities—of changing the orientation of states ISRT policies towards more progressive legislative actions are

of later-order (i.e., intermediary steps between policy implementation and effects are required), while the early-order benefits—access to college education—would be concentrated on the group of UIS. However, later-order benefits like higher salaries earned by UIS in the future are not assured because of the impossibility of unauthorized immigrants to work legally. Again, these features of the policy contribute to the lack of citizens' awareness on the effects of state policies regulating the access to ISRT for UIS, and ultimately, on the state policies that currently govern the issue.

Strategies taken by supporters of the ASSET bill in Colorado suggest that they were aware of the circumstances mentioned above. For instance, the acronym employed and what it stands for—Advancing Students for a Stronger Economy Tomorrow—indicate the positive externalities of the initiative in terms of its effects on the state's labor force and economic conditions. Also, the policy was framed in terms of general rather than group benefits, as the director of The Bell Policy Center, one of the main supporters, declared: "We believe that all qualified students who graduate from high school in Colorado deserve the chance to go to college for the lower tuition paid by residents of this state" ("Tuition aid for Undocumented," 2013). Finally, the future benefits in terms of obtaining better-paid jobs by UIS were justified through the Deferred Action for Childhood Arrivals (DACA) federal program that provides, among other benefits, the possibility of working legally to individuals who came to U.S. while under the age of 16 and fulfill other requirements ("DACA," 2013).

Future policy decisions related to the access to ISRT for UIS not only concern those states that have made this group of people ineligible. States that have never implemented any type of formal action to regulate the issue, such as those in the non-policy states group, will have to make a decision in the event that an immigration reform or other federal action provides a

pathway to permanent legal status for thousands of previously UIS or revokes current federal laws that constrain state policymakers from advancing progressive policies for youths DREAMers. Finally, states that have already advanced progressive policies still face threats since repeal bills are constantly introduced and current law is in the courts. This research provides new insights on the debate on issues of access to ISRT for UIS that will hopefully contribute to the future development of state policies on this matter.

References

Abadie, A. (2005). Semiparametric difference-in-differences estimators. *The Review of Economic Studies, 72*(1), 1-19. doi: 10.2307/3700681

Abrego, L. J., & Gonzales, R. G. (2010). Blocked paths, uncertain futures: The postsecondary education and labor market prospects of undocumented Latino youth. *Journal of Education for Students Placed at Risk, 15*(1), 144-157.

Angrist, J. D., & Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.

Arnold, R. D. (1990). *The Logic of Congressional Action*. New Haven: Yale University Press.

Autor, D. H. (2003). Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing. *Journal of Labor Economics, 21*(1), 1-42. doi: 10.1086/344122

Baker, B. C., & Rytina, N. (2013). *Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2012.* Retrieved from the Department of Homeland Security website: http://www.dhs.gov/sites/default/files/publications/ois_ill_pe_2012_2.pdf.

Baker, S. (1997). The "Amnesty" aftermath: current policy issues stemming from the legalization programs of the 1986 Immigration Reform and Control Act. *International Migration Review, 31*(1), 5-27. doi: 10.2307/2547255

Batalova, J., & Mittelstadt, M. (2012). *Relief from deportation: Demographic profile of the DREAMers potentially elligible under Deferred Action Policy*. Washington, DC: Migration Policy Institute.

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy, 70*(5), 9-49.

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education* (3rd ed.). Chicago: The University of Chicago Press.

Bell Policy Center. (2005, April). *Undocumented immigrant students and access to higher education: An overwiew of federal and state policy* (Issue Brief). Denver, CO: Bell Policy Center.

Biswas, R. (2005). *Access to community college for undocumented immigrants: A guide for state policymakers*. Boston, MA: Jobs for the Future.

Border Security, Economic Opportunity, and Immigration Modernization Act, S744, U.S. Senate (2013).

Bureau of Labor Statistics. (2014). Local Area Unemployment Statictics. Retrieved May 5, 2014, from http://www.bls.gov/lau/lauov.htm

Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and Applications*. Cambridge: Cambridge University Press.

Chin, A., & Juhn, C. (2011). Does reducing college costs improve educational outcomes for undocumented immigrants? Evidence from state laws permitting undocumented immigrants to pay in-state tuition at state colleges and universities. In D. L. Leal & S. J. Trejo (Eds.), *Latinos and the Economy: Integration and Impact in Schools, Labor Markets, and Beyond* (pp. 63-94): Immigrants and Minorities, Politics and Policy series. New York and Heidelberg: Springer.

Cojoc, A. E. (2010). *Essays in public economics.* (Ph.D. 3419262), Clemson University, United States -- South Carolina. Retrieved from http://0-search.proquest.com.library.uark.edu/docview/755288575?accountid=8361 ProQuest Dissertations & Theses (PQDT) database.

Conger, D., & Chellman, C. C. (2013). Undocumented college students in the United States: In-state tuition not enough to ensure four-year degree completion. *Education Finance and Policy, 8*(3), 364-377. doi: 10.1162/EDFP_a_00101

Connolly, K. A. (2005). Comment: In search of the American dream: An examination of undocumented students, in-state tuition, and the Dream Act. *The Catholic Law Review, 55*(1), 193-225.

Deffered Action for Childhood Arrivals. (2013). Retrieved October 8, 2014, from http://www.dhs.gov/deferred-action-childhood-arrivals

DesJardins, S., & Toutkoushian, R. (2005). Are students really rational? The development of rational thought and its application to student choice. In J. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 20, pp. 191-240): Springer Netherlands.

Development, Relief, and Education for Alien Minors Act, S.1291, Senate (2001).

Dickson, L., & Pender, M. (2013). Do in-state tuition benefits affect the enrollment of non-citizens? Evidence from universities in Texas. *Economics of Education Review, 37*(0), 126-137. doi: http://dx.doi.org/10.1016/j.econedurev.2013.08.006

Dougherty, K. J., Nienhusser, H. K., & Vega, B. E. (2010). Undocumented immigrants and state higher education policy: The politics of in-state tuition eligibility in Texas and Arizona. *Review of Higher Education, 34*(1), 123-173.

Education Commission of the States. Postsecondary Affordability-Tuition/Fees- Undocumented Immigrants. Available from Education Commission of the States State Policy Database (ECS). Retrieved July 2, 2014 http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Postsecondary+Affordability--Tuition/Fees--Undocumented+Immigrants

FAIR. (2003). Taxpayers subsidizing college for illegal aliens. Retrieved on April 7, 2012, from http://www.fairus.org/issue/taxpayers-subsidizing-college-for-illegal-aliens

Fix, M., & Zimmermann, W. (2001). All under one roof: Mixed-status families in an era of reform. *The International Migration Review, 35*(2), 397-419.

Flores, S. M. (2010a). The first state Dream Act: In-state resident tuition and immigration in Texas. *Educational Evaluation and Policy Analysis, 32*(4), 435-455.

Flores, S. M. (2010b). State Dream Acts: The effect of in-state resident tuition policies and undocumented Latino students. *Review of Higher Education, 33*(2), 239-283.

Flores, S. M., & Chapa, J. (2009). Latino immigrant access to higher education in a bipolar context of reception. *Journal of Hispanic Higher Education, 8*(1), 90-109.

Flores, S. M., & Horn, C. L. (2010). College persistence among undocumented students at a selective public university: A quantitative case study analysis. *Journal of College Student Retention: Research, Theory & Practice, 11*(1), 57-76.

Flores, S. M., & Oseguera, L. (2009). The community college and undocumented immigrant students across state contexts: Localism and public policy. *Yearbook of the National Society for the Study of Education, 108*(1), 63-85.

Fortuny, K., Capps, R., & Passel, J. S. (2007). *The characteristics of unauthorized immigrants in California, Los Angeles County, and the United States*. Washington, DC: Urban Institute.

Frum, J. (2007). Postsecondary educational access for undocumented students: Opportunities and constraints. *American Academic, 3*(1), 81-108.

Hoefer, M., Rytina, N., & Baker, B. C. (2011). Estimates of the unauthorized immigrant population residing in the United States: January 2010. *Population Estimates, Office of Immigration Statistics, Department of Homeland Security, 4*.

IIRIRA. (1996). *Illegal Immigration Reform and Immigrant Responsibility Act*. Pub. L. No 104-208, div. C, 110 Stat. 3009-546-3009-724.

Immigration Reform and Control Act, S.1200 (1986).

Institute of Higher Education Law and Governance. (2014a). Table one: State laws allowing undocumented college students to establish residency, 2014. https://http://www.law.uh.edu/ihelg/documents/Statute-TableOne.html.

Institute of Higher Education Law and Governance. (2014b). Table two: States restricting access to postsecondary education, 2014. https://http://www.law.uh.edu/ihelg/documents/Statute-TableTwo.html.

Kaushal, N. (2008). In-state tuition for the undocumented: Education effects on Mexican young adults. *Journal of Policy Analysis & Management, 27*(4), 771-792. doi: Article

Li, H., Graham, D. J., & Majumdar, A. (2012). The effects of congestion charging on road traffic casualties: A causal analysis using difference-in-difference estimation. *Accident Analysis & Prevention, 49*(0), 366-377. doi: http://dx.doi.org/10.1016/j.aap.2012.02.013

Lofstrom, M., Bohn, S., & Raphael, S. (2011). *Technical Appendices: Lessons from the 2007 Legal Arizona Workers Act*. San Francisco: Public Policy Institute of California.

López, J. (2010). *Undocumented students and the politics of wasted potential*. New York: LFB Scholarly Publishing.

Martinez, L. M. (2014). Dreams deferred: The impact of legal reforms on undocumented Latino youth. *American Behavioral Scientist*. doi: 0002764214550289

McLendon, M. K., Mokher, C. G., & Flores, S. M. (2011). Legislative agenda setting for in-state resident tuition policies: Immigration, representation, and educational access. *American Journal of Education, 117*(4), 563-602.

Meyer, B. D. (1995). Natural and quasi-experiments in economics. *Journal of Business & Economic Statistics, 13*(2), 151.

National Center for Educational Statistics. (2014). Digest of Education Statistics 2013: Table 302.20, Percentage of recent high school completers enrolled in 2- and 4-year colleges, by race/ethnicity: 1960 through 2012. Retrieved 09/28/2014 from http://nces.ed.gov/programs/digest/d13/tables/dt13_302.20.asp

National Conference of State Legislatures. (2011a, May). Undocumented Student Tuition: Federal Action. Retrieved on June 16, 2013, from http://www.ncsl.org/research/education/undocumented-student-tuition-federal-action.aspx

National Conference of State Legislatures. (2011b). Undocumented student tuition: State action. Retrieved on April 6, 2012, from http://www.ncsl.org/issues-research/educ/undocumented-student-tuition-state-action.aspx

National Conference of State Legislatures. (2014a). Undocumented Student Tuition: Overview. Retrieved on June 17, 2014, from http://www.ncsl.org/issues-research/educ/undocumented-student-tuition-overview.aspx

National Conference of State Legislatures. (2014b, May). Undocumented Student Tuition: State Action. Retrieved on June 16, 2014, from http://www.ncsl.org/issues-research/educ/undocumented-student-tuition-state-action.aspx

National Immigration Law Center. (2013). *State Bill on Access to Education for Immigrants - 2013*. Los Angeles: National Immigration Law Center.

Nores, M. (2010). Differences in college major choice by citizenship status. *The Annals of the American Academy of Political and Social Science, 627*(1), 125-141. doi: 10.1177/0002716209348748

Olivas, M. A. (2004). IIRIRA, the Dream Act, and undocumented college student residency. *Journal of College & University Law, 30*(2), 435-464.

Olivas, M. A. (2009). The political economy of the DREAM Act and the legislative process: a case study of comprehensive immigration reform. *The Wayne Law Review, 55*(4), 1757-1810.

Passel, J. S. (2005). *Estimates of the Size and Characteristics of the Undocumented Population*. Washington, DC: The Pew Hispanic Center.

Passel, J. S., & Cohn, D. (2008). *Trends in Unauthorized Immigration: Undocumented Inflow Now Trails Legal Inflow*. Washington, D.C.: Pew Hispanic Center.

Passel, J. S., & Cohn, D. (2011). *Unauthorized Immigrant Population: National and State Trends, 2010*. Washington, D.C.: Pew Hispanic Center.

Passel, J. S., Cohn, D., & Gonzalez-Barrera, A. (2013). *Population Decline of Unauthorized Immigrants Stalls, May Have Reversed*. Washington, D.C.: Pew Research Center.

Passel, J. S., & Cohn, D. v. (2009). *A protrait of unauthorized immigration: Undocumented inflow now trails legal inflow*. Washington, DC: Pew Hispanic Center.

Passel, J. S., & Cohn, D. v. (2012). *Unauthorized Immigrants: 11.1 Million in 2011*. Washington, D.C.: Pew Hispanic Center.

Passel, J. S., Lopez, M. H., Cohn, D., & Rohal, M. (2014). *As growth stalls, unauthorized immigrant population becomes more settled*. Washington, D.C.: Pew Research Center.

Paulsen, M., & Toutkoushian, R. (2008). Economic models and policy analysis in higher education: A diagrammatic exposition. In J. Smart (Ed.), *Higher Education* (Vol. 23, pp. 1-48): Springer Netherlands.

Plyler v. Doe, 457 U.S. 202 (1982).

Potochnick, S. (2014). How states can reduce the dropout rate for undocumented immigrant youth: The effects of in-state resident tuition policies. *Social Science Research, 45*(0), 18-32. doi: http://dx.doi.org/10.1016/j.ssresearch.2013.12.009

PRWORA. (1996). *Personal Responsibility and Work Opportunity Act*. Pub. L. No 104-193, 110 Stat. 2105.

Reich, G., & Mendoza, A. A. (2008). 'Educating kids' versus 'coddling criminals': Framing the debate over in-state tuition for undocumented students in Kansas. *State Politics and Policy Quarterly, 8*(2), 177-197.

Romero, V. C. (2002). Postsecondary school education benefits for undocumented immigrants: Promises and pitfalls. *North Carolina Journal of International Law & Commercial Regulation, 27*(3), 393-418.

Ruge, T. R., & Iza, A. D. (2005). Higher education for undocumented students: The case for open admission and in-state tuition rates for students without lawful immigration status. *Indiana International & Comparative Law Review, 15*(2), 257-278.

Ruggles, S., Alexander, J. T., Genadek, K., Goeken, R., Schroeder, M. B., & Sobek, M. (2010). Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor].

Russell, A. (2011). State policies regarding undocumented college students: A narrative of unresolved issues, ongoing debate and missed opportunities. *Policy Matters*. Washington, D.C.: American Association of State Colleges and Universities.

Salinas, V. J. s. a. (2006). You can be whatever you want to be when you grow up, unless your parents brought you to this country illegally: The struggle to grant instate tuition to undocumented immigrant students. *Houston Law Review, 43*(3), 847-877.

Sanders, M. S. (2010). Hope, opportunity, and access: The in-state tuition debate in North Carolina. *Journal of Latinos & Education, 9*(2), 108-125. doi: Article

Shultz, T. W. (1963). *The economic value of education*. New York: Columbia University Press.

Sponsler, B. A. (2011). *State Adoption of Undocumented Student Tuition Policy: An Event History Analysis.* (3449219), The George Washington University, United States -- District of Columbia. Retrieved from http://0-search.proquest.com.library.uark.edu/docview/861914800?accountid=8361 ProQuest Dissertations & Theses (PQDT) database.

Stevenson, A. (2004). Dreaming of an equal future for immigrant children: federal and state initiatives to improve undocumented students' access to postsecondary education. *Arizona Law Review, 46*(3), 551-580.

Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. *Review of Educational Research, 66*(3), 341-359. doi: 10.2307/1170527

Taylor, P., Lopez, M. H., Passel, J. S., & Motel, S. (2011). *Unauthorized immigrants: Length of residency, patterns of parenthood*. Washington, D.C.: Pew Hispanic Center.

Thangasamy, A. (2007). *Explaining policy making for undocumented immigrants in the United States states, 1998--2005.* (AAI3284405). Retrieved from http://0-search.proquest.com.library.uark.edu/docview/59866649?accountid=8361 Worldwide Political Science Abstracts database.

Tuition aid for undocumented college students hailed in Colorado. (2013). *Fox News Latino*. Retrieved from http://latino.foxnews.com/index.html

U.S. Census Bureau. (2009). *A Compas for Understanding and Using American Community Survey Data: What Researchers Need to Know*. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Education; National Center for Educational Statistics. (2014). *The Condition of Education 2014*. (NCES 2014-083), Status dropout rates.

U.S. Department of Labor. (2013). *Changes in basic minimum wages in non-farm employment under state law: Selected years 1968 to 2013*. Retrieved on May 3, 2014 from http://www.dol.gov/whd/state/stateMinWageHis.htm

Vargas, E. D. (2011). In-state tuition policies for undocumented youth. *Harvard Journal of Hispanic Policy, 23*, 43-58.

Wooldridge, J. M. (2002). *Introductory Econometrics: A Modern Approach* (2nd ed.): South-Western Publishing Co.

Appendix A

IRB Approval Letter

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

February 26, 2014

MEMORANDUM

TO:	Luis Villarraga Orjuela J. Brinck Kerr
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	14-02-515
Protocol Title:	*Education Effects of Banning Unauthorized Immigrant Students' Access to Higher Education State Benefits*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 02/26/2014 Expiration Date: 02/25/2015

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (http://vpred.uark.edu/210.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

If you wish to make *any* modifications in the approved protocol, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

210 Administration Building • 1 University of Arkansas • Fayetteville, AR 72701
Voice (479) 575-2208 • Fax (479) 575-3846 • Email irb@uark.edu