Parents' Legal Status and Children's Health Insurance: Evidence from DACA

Nhan Tran
University of Pittsburgh*

Abstract

Fear of immigration enforcement may deter undocumented parents from enrolling their US citizen children in public health insurance. This paper examines the effect of providing legal status to parents through the Deferred Action for Childhood Arrivals (DACA) program for health insurance coverage among US-born children. Using a regression discontinuity design, I find that DACA eligibility among likely undocumented mothers increases Medicaid enrollment for their US-born children by five percentage points; however, I do not find an overall change in health insurance coverage, potentially due to a substitution effect between Medicaid and private insurance. Additionally, I do not find evidence to support a similar effect among US-born children with likely undocumented fathers.

Keywords: DACA; undocumented immigrants; US-born children; health insurance; regression discontinuity design.
Classification codes: I13; I18; J18.

*I am thankful for comments from Solomon Polachek, David Slichter, Sulagna Mookerjee, and participants in the 93rd SEA annual meeting and the labor meeting at Binghamton University. This paper has been proofread by a professional editing service. All errors are mine.
Email: ngt18@pitt.edu

1 Introduction

In 2016, there were approximately five million US-born children under the age of 18 living with at least one undocumented parent [1]. These mixed-status families face disproportionate economic hardships due to limited access to a wide range of job opportunities, federal benefits, and employee benefits (Guelespe et al., 2023). As a result, US-born children in these families are more likely to be eligible for social benefits than children born to documented or citizen parents. Although these children have full access to social benefits like Medicaid, the Children's Health Insurance Program (CHIP), Temporary Assistance for Needy Families (TANF), and the Supplemental Nutrition Assistance Program (SNAP) regardless of their parent's immigration status, fear of exposure to authorities or lack of awareness of those programs may prevent parents from enrolling their children. Therefore, many eligible children miss out on these crucial benefits, including health insurance. Specifically, US-citizen children born to undocumented parents are three times more likely to be uninsured compared to children born to documented parents despite being eligible for Medicaid or CHIP [2]. This gap may reflect either the causal effects of legal status or simply differences in demographic characteristics. To determine whether a parent's legal status imposes costs on US citizen children, we need to assess the extent to which this relationship is causal.

Health insurance among children is associated with a decline in child mortality, a reduction in disparities in the number of healthcare visits, and a narrowing of racial differences in mortality rates (Currie and Gruber, 1996). Public health insurance programs for children increase high school and college completion (Cohodes et al., 2016). They also affect mortality, disability reduction, and long-term effects of employment (Goodman-Bacon, 2018, 2021). Despite those benefits, it can be challenging to expand health coverage to children living with undocumented parents since these parents may fear exposure to authorities and the potential risk of deportation. To address this issue, we need to understand how parental legal status affects children's health insurance; however, research on this specific topic remains unexplored.

In this paper, I attempt to disentangle correlation from causation in the rela-

[1] https://www.pewresearch.org/short-reads/2018/11/01/the-number-of-u-s-born-babies-with-unauthorized-immigrant-parents-has-fallen-since-2007/

[2] Gusmano, Garrison, NY: The Hastings Center, 2012

tionship between a parent's legal status and US-born children's health insurance (hereafter referred to as children) [3] by studying the effects of the Deferred Action for Childhood Arrivals (DACA) program. The DACA program, initiated by the Obama administration in 2012, granted temporary legal status to undocumented immigrants who were brought into the US as minors. The DACA program allows me to have quasi-experimental variation in legal status, which then enables me to assess whether the correlation that I observed earlier has any causal component.

I measure the intention-to-treat effects of DACA eligibility using a parametric regression discontinuity (RDD) framework. I use micro-data from the American Community Survey spanning from 2013 to 2019. Due to the unavailability of data on DACA recipients, it is not feasible to directly measure the treatment effects of DACA status among undocumented parents on their children's health insurance coverage. I instead focus on a sample of children with non-citizen Mexican parents. Specifically, my main analysis measures the effects of DACA eligibility among non-citizen Mexican parents on their children's health insurance. These parents were just under or over 31 years old in 2012 and meet all other observable DACA requirements. Going forward, I refer to this sample as children with likely undocumented parents though not all non-citizen Mexican parents are necessarily undocumented because they may have legal status through non-immigrant visas or with permanent residency. However, there are two key reasons to look at non-citizen Mexicans. First, approximately one in every two Mexicans residing in the United States is undocumented, according to the Pew Research Center in 2019. By examining non-citizen Mexicans, I focus closely on a group of the population with a higher likelihood of being undocumented than general non-citizens. Second, undocumented Mexican immigrants constitute almost 80 percent of DACA status holders. In Section 6, I discuss in detail a variety of methods to address a potential bias caused by the imputation of legal status.

I have four main findings. First, children with DACA-eligible mothers are five percentage points (ppts) more likely to enroll in Medicaid compared to children with DACA-ineligible mothers. Second, there is evidence indicating that mothers may opt to move their children from private insurance to Medicaid, suggesting a substitution effect between private insurance and Medicaid insurance. This leads to no overall effect on health insurance coverage among children with DACA-eligible moth-

[3] In this paper, I focus on US-born children only because non US-born children usually have the same immigration status of their parents, so they may not qualify for public insurance (e.g.: Medicaid)

ers. Third, there is no appreciable effect among children with likely undocumented fathers who are DACA-eligible. However, using my preferred specification for the sample of fathers, the confidence interval (CI) permits potential effects on children's Medicaid enrollment of up to five ppts. Lastly, my results suggest that an increase in children's Medicaid coverage cannot be attributed to a corresponding change in parental Medicaid insurance.

This paper is closely related to two lines of research. The first line of research studies the effects of DACA on a variety of outcomes among likely undocumented immigrants, including labor market outcomes (Amuedo-Dorantes and Antman, 2017; Pope, 2016; Tran, 2023), educational outcomes (Amuedo-Dorantes and Antman, 2017; Kuka et al., 2020), health outcomes (Giuntella and Lonsky, 2020; Giuntella et al., 2021), and health insurance (Bae, 2020; Garcia-Perez, 2019; Giuntella and Lonsky, 2020). In particular, Bae (2020) and Giuntella and Lonsky (2020) found that DACA increases the health insurance rate among likely undocumented immigrants by three ppts to five ppts. As discussed later in this paper, I do not find the effects of DACA on likely undocumented parents. However, this paper is not comparable to theirs (Bae, 2020; Giuntella and Lonsky, 2020) because it estimates a local average treatment effect among a generally older group of DACA recipients who have children in their household. Thus, they may have different characteristics than the entire group of DACA recipients. This particular group is also documented to be less likely to benefit from DACA in terms of education or labor market outcomes (Henderson et al., 2023; Tran, 2023). The second line of literature relates to immigration policies and children's health. This literature shows that uncertain immigration policies may worsen children's health outcomes (Patler et al., 2019; Vargas and Ybarra, 2017); heighten immigration enforcement may decrease children's insurance due to a chilling effect (Watson, 2014); or DACA is associated with improvement in birth outcomes among Mexican immigrant mothers (Hamilton et al., 2021). For instance, Patler et al. (2019) found that children's health had improved during the early years of DACA but worsened after 2015 due to the political climate of the 2016 presidential election.

Building on the existing literature, this paper explores the novel research question of how parental legal status affects children's health insurance, an area that has received limited attention in previous studies.

This paper proceeds as follows. Section 2 describes the DACA program and health insurance among immigrants and children. Section 3 discusses data and summary

statistics. Section 4 details the econometric strategy. Section 5 reports and discusses the results. Section 6 presents several robustness checks. Section 7 concludes.

2 Deferred Action for Childhood Arrivals and Health Insurance

2.1 Deferred Action for Childhood Arrivals

In 2012, the Deferred Action for Childhood Arrivals program, also known as DACA was implemented through an Executive Order by President Obama. The DACA program offers work permits and removes the constant danger of deportation from undocumented immigrants, who had been brought to the US as minors. To be eligible for DACA status, an immigrant must: a) be undocumented as of June 15, 2012; b) have entered the US before their 16th birthday; c) be under 31 as of June 15, 2012; d) have constantly resided in the US since June 15, 2007; e) be either enrolled in school, must have obtained a high school diploma or General Education Development or be an honorably discharged veteran of the Coast Guard or Armed Forces of the United States; f) have no record of either a felony or significant misdemeanors.

Although there is no precise number of DACA-eligible individuals, it was estimated that there were approximately 1.3 million DACA-eligible individuals in the US when DACA was introduced[4]. Nonetheless, this estimate is likely high because there are unobserved DACA requirements, such as if an individual commits a felony or significant misdemeanor. DACA has provided temporary legal status to over 800,000 undocumented immigrants since 2012[5]. They reside throughout the US; however, nearly half live in California and Texas. Many DACA recipients have built their lives in the US, have married, and have had US citizen children. More than 250,000 children who were born in the US live with at least one DACA-recipient parent, and about 1.5 million people share a home with a DACA recipient. DACA recipients and their households pay annually approximately nine billion US dollars in federal, state, and local taxes and pay about three billion dollars in annual rental and mortgage

[4]https://www.migrationpolicy.org/sites/default/files/datahub/State%20Estimates%20of%20DACA-Eligible%20Population_Dec%202020.xlsx

[5]Chishti and Gelatt (2022). At Its 10th Anniversary, DACA Faces a Tenuous Future Despite Societal Benefits, *Migration Policy*

payments[6]. Despite the significant contributions that DACA recipients make to the economy, the program has faced multiple legal challenges, which have resulted in uncertain circumstances for the lives of DACA recipients. As a result, the number of initial DACA applications has significantly dropped over time due to the suspension during the Trump administration. As of 2024, DACA renewals are still open while initial DACA applications stay in limbo and will not be processed.

2.2 Health Insurance among Children

Although many children are covered by private insurance through their parents' plans, a considerable portion of them rely on public health insurance programs such as Medicaid or CHIP. These public health insurance programs play a vital role in ensuring access to healthcare for children from low-income families as well as those with disabilities or complex health needs. CHIP provides health coverage to eligible children based on income, encompassing both citizen children and qualified immigrant children. It serves as a safety net for families whose income is too high to qualify for Medicaid but is still insufficient to afford private insurance. In general, these programs target children in low-income households.

To be eligible for Medicaid or CHIP, children typically need to meet certain criteria: 1) be under 19 years of age (for CHIP); 2) be uninsured; 3) either be citizens or meet immigration requirements; 4) be residents of the state; 5) fall within the state's income range determined by family income and other state-specific rules.

It is estimated that more than 44 million children had ever enrolled in either Medicaid or CHIP as of 2020[7].

2.3 DACA and Health Insurance among Immigrants and Children

Legal status is associated with health insurance coverage, including private and public options ((Goldman et al., 2005; Vargas and Ybarra, 2017)), as undocumented immigrants are less likely to afford private insurance and more likely to work in smaller employment settings that do not offer employment-based insurance. Regarding public insurance, while US citizens and permanent residents generally have

[6]https://www.federalregister.gov/documents/2022/08/30/2022-18401/deferred-action-for-childhood-arrivals

[7]Medicaid.gov: 2020 Statistical Enrollment Report

access to public insurance, undocumented immigrants are ineligible for them. This disparity not only hinders their access to healthcare but also complicates dynamics in mixed-status families in which their children are US citizen. The inconsistent healthcare access within these families highlights the broader challenges of navigating the US healthcare system

When DACA was introduced, it was anticipated to enhance the lives of undocumented immigrants in various areas such as education and labor. Although research on DACA's benefits has been mixed, most studies have shown positive effects; however, regarding health insurance, even with temporary legal status under DACA, these undocumented immigrants still encounter significant challenges in obtaining public insurance. Currently, only California, New York, Minnesota, Washington D.C., and Massachusetts offer Medicaid to DACA recipients [8]. Recently, several papers have used DACA as a quasi-experiment to investigate the causal effects of legal status on health insurance ((Bae, 2020; Giuntella and Lonsky, 2020). Despite the limitations in health insurance access, research indicates that legal status through DACA likely benefits undocumented immigrants through private and public insurance, particularly in states that offer Medicaid insurance to DACA-eligible immigrants. Consequently, it is possible that the children of these DACA recipients also benefit from their parents' legal status. Several mechanisms may contribute to these effects among children:

1. Health insurance among children is directly influenced by their parent's health insurance or by various social and economic factors tied to their parents, including parental immigration and citizenship status (Brown et al., 1999; Nguyen et al., 2022). Therefore, a change in a parent's legal status may affect their children's health insurance coverage. Furthermore, DACA can influence household income and the labor supply, which can indirectly affect children's health insurance.

2. The legal status of DACA may eliminate the fear of exposure to authorities and disclosing their immigration status. Thus, parents are more willing to enroll their children in Medicaid insurance.

I explore these mechanisms further in Section 5.2, which demonstrates that the first mechanism is unlikely. This is because legal status from DACA does not benefit the older cohort of recipients, a finding that aligns with existing literature (Tran, 2023; Henderson et al., 2023).

[8] https://www.nccp.org/wp-content/uploads/2021/07/DACA-Health-Insurance$_7$.6.21.*pdf*

3 Data and Summary Statistics

3.1 Data

I use data from the American Community Survey (ACS). ACS is a nationally representative survey conducted on a continuous basis. ACS data is released yearly and provides vital information about demographics, economic status, and housing characteristics. There is a concern regarding the presence of undocumented immigrants in ACS data and their willingness to respond. However, existing literature suggests that these concerns are unlikely to pose significant issues (Pope, 2016; Tran, 2023).

My main analysis in this paper utilizes ACS data from 2013 to 2019. The data begins in 2013 because the majority of DACA applications were accepted from late 2012.

For my analysis, I match children who were born in the US and were 0 to less than 18 years old with their parents' characteristics. Then, based on parents' characteristics, I identify individuals who were likely to have DACA-eligible parents.

In ACS, data on legal status is not available, so I focus on a group of children with non-citizen Mexican parents. In my robustness checks, I also use Hispanic parents and follow a method proposed by Borjas (2017) to impute the legal status of non-citizen parents. Moreover, one of the key variables in my analysis is the parental age in 2012. However, ACS is surveyed year-round, which makes it difficult to know the exact individual ages in 2012. For example, a person who was 30 in 2012 and was born in Quarter 1, was recorded as being born in 1982. In fact, this individual may have been born in either 1981 Quarter 1 or 1982 Quarter 1. To deal with that, I rely on age and quarter of birth to construct my sample and drop observations when the classification is ambiguous.

I examine three relevant outcome variables for children: whether they were covered by any kind of insurance, whether they were covered by private insurance, or whether they were covered by Medicaid insurance.

3.2 Summary Statistics

Table 1 reports the descriptive statistics of children living with at least one likely undocumented Mexican parent. Children with parents under 31 years old in 2012 were generally younger (6.31 versus 11.13 years old), more likely to be covered by

insurance (92 percent versus 89 percent), and more likely to enroll in Medicaid insurance (71 percent versus 55 percent) than children with parents over 31 years old in 2012.

Table 1: Summary Statistics

	Parents over 31 in 2012		Parents under 31 in 2012	
Variables	Mean	SD	Mean	SD
Age	11.13	4.78	6.31	4.38
Male	0.51	0.50	0.51	0.50
Years of education	5.53	4.02	1.93	2.86
Any insurance	0.89	0.31	0.92	0.27
Private insurance	0.37	0.48	0.24	0.43
Medicaid insurance	0.55	0.50	0.71	0.45
Observations	19627		24497	

Note. This table includes all children aged 0 to 18. Those children have either non-citizen Mexican mothers or non-citizen Mexican fathers who have entered the US before their 16th birthday, have obtained high-school diplomas, and have continuously lived in the US since 2007. The treatment group (Control group) includes children who have either parents under (over) 31 as of June 15, 2012.

4 Econometric Strategies

To examine the impact of parental legal status on children's health coverage, I employ the eligibility criteria of the DACA program for non-citizen Mexican parents.

The DACA program has six eligibility requirements. First, the individual must be undocumented. Second, they should be under 31 years of age as of June 15, 2012. Third, they must have entered the United States before their 16th birthday. Fourth, they should have earned a high school diploma or be currently enrolled in school. Fifth, they must have resided continuously in the U.S. since June 15, 2007. Lastly, they should have no record of felony or significant misdemeanor.

However, the legal status of immigrant parents is not directly observed, so I instead use a sample of children with non-citizen Mexican parents, as non-citizen Mexicans are more likely to be undocumented. This may introduce potential bias in my findings since the impact on documented Mexicans, regardless of their other DACA eligibility, would be null. Nonetheless, I also use various means to impute legal status as my robustness checks. Since I lack information on whether an immigrant has a record of felony or significant misdemeanor, I do not incorporate this condition

into my analysis.

Specifically, I restrict the sample to all children aged 0 to 18 with non-citizen Mexican parents. Those non-citizen Mexican parents must have met all observed DACA criteria: They must have entered the US before turning 16, obtained a high school diploma, and entered the US before 2007. To establish my RDD identification of the effects of DACA eligibility on health coverage outcomes, I use the parent's age in 2012 as a running variable to define the treatment status. Specifically, an individual is considered treated if their parents were under 31 years old in 2012 (i.e.: DACA-eligible), and untreated otherwise (i.e.: DACA-ineligible). This econometric strategy offers three key advantages.

1. First, the literature shows that DACA may increase the probability of high school completion and, possibly, college enrollment (Kuka et al., 2020). Thus, it may affect the selection into treatment as a response to the program. However, Henderson et al. (2023) confirm that the effects of DACA on education among DACA-eligible individuals aged 23-30 years old are barely significant or insignificant. Additionally, in Appendix D, where I analyze the impact of DACA on non-citizen Mexican immigrants' education who were around 31 years old in 2012, I find no statistically significant effects. Thus, by focusing on a generally older group of DACA recipients who may have already completed their education, I could reduce the bias from selection by education.

2. Second, it generates comparable treatment and control groups, with the only difference being the age of individuals in 2012. This paper does not consider age at arrival as does Bae (2020) as a running variable because there are a considerable number of studies showing that age at arrival is correlated with human capital (Bleakley and Chin, 2004, 2010; Gonzalez, 2003). Furthermore, using age at arrival with a cutoff of 16 may be problematic due to limited extrapolation power beyond this point. This is because there is another natural cutoff at age 18 when individuals who arrived in the U.S. as adults are more likely to be independent and have various reasons for being in the country beyond migration. In contrast, those who arrived as minors are generally more likely to have migrated with their families. This distinction in choosing an appropriate variable highlights a unique advantage of this paper compared to existing literature and explains why my study is not entirely comparable to theirs.

3. Third, this strategy focuses on an older group of DACA-eligible individuals who are more likely to have children compared to a younger group.

This paper employs a parametric discontinuity design, which relies mostly on the functional form (Lee and Card, 2008). I consider three functional forms in this study, which are linear, quadratic, and cubic. However, there is an additional concern that estimates from cubic functional form usually yield different estimates from linear and quadratic functions. Gelman and Imbens (2019) argue that higher-order polynomials can cause several major problems, which make results with higher-order polynomials less reliable than those with linear or quadratic functional forms. In this paper, my preferred functional form is linear.

In the scope of this study, I consider the following main specification:

$$Y_{ist} = \alpha + \beta * \mathrm{D}_{ist} + \sum_1^n \gamma_n * \mathrm{R}_{ist}^n + \sum_1^n \delta_n * \mathrm{R}_{ist}^n * \mathrm{D}_{ist} + \mathrm{X}_{ist} + \sigma_t + \omega_s + \epsilon_{ist} \quad (1)$$

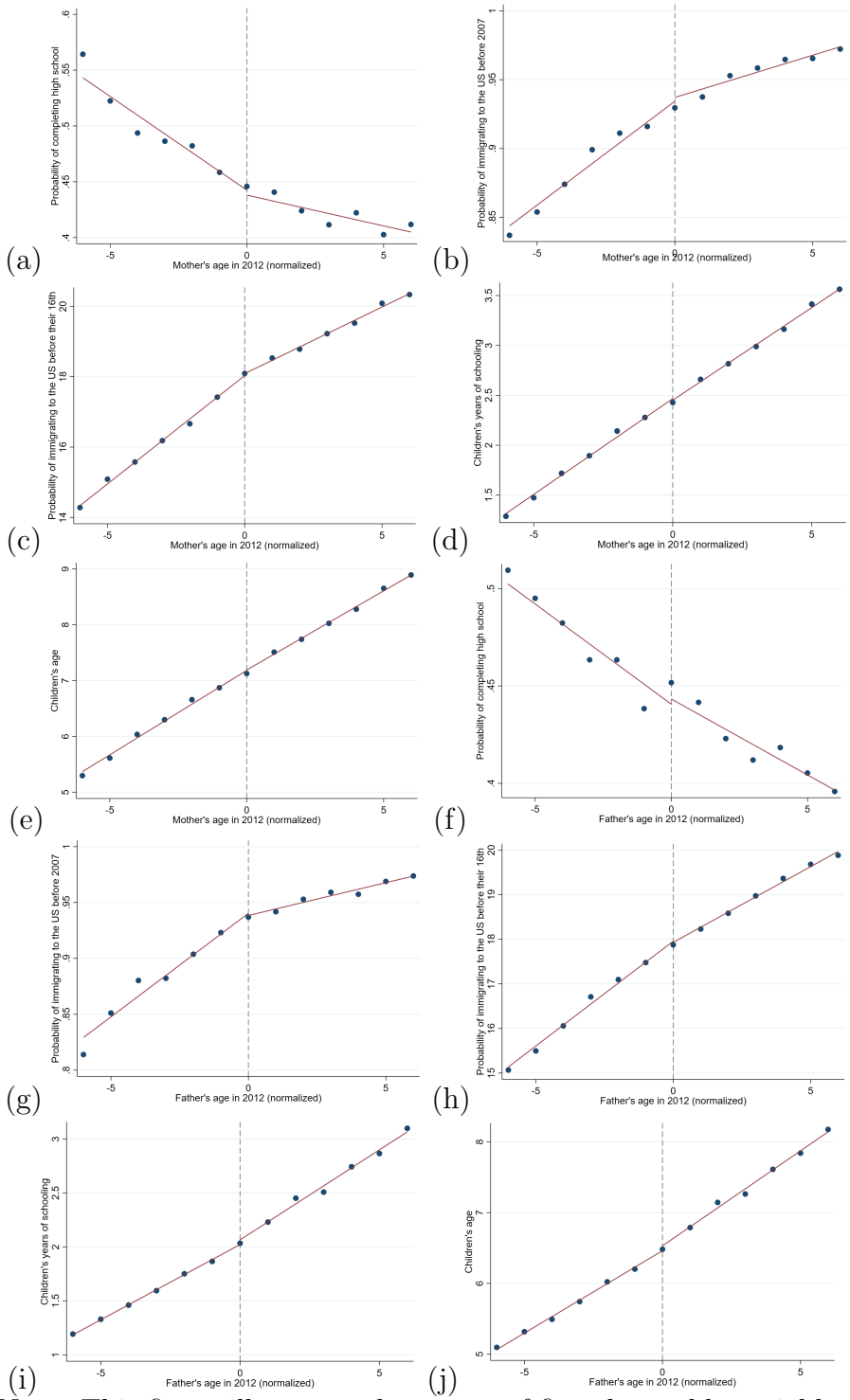
in which: Y_{ist} refers to the outcome variables of children of parent i living in state s at time t; X_{ist} is the vector of control variables, which includes age, sex, parental education, and race;[9] σ_t is the year fixed effect and ω_s is the state fixed effect. In this model, n indicates the order of the polynomial function, where $n = 1, 2, 3$ are linear, quadratic and cubic functions respectively. I normalize R_{ist} = non-citizen parent's age in 2012 - 31 and $\mathrm{D}_{ist} = \begin{cases} 0 & \text{if } R_{ist} \geq 0 \\ 1 & \text{if } R_{ist} < 0 \end{cases}$ is defined as a binary treatment variable. Specifically, children are treated if either their mother or their father is DACA-eligible.

The RDD method relies on a key assumption that observations around the threshold are comparable, and there is no manipulation to sort them into the desired group. To examine this assumption, I construct a sample of all children with likely undocumented Mexican parents and plot the means of several observable variables separately for mothers and fathers. The first three observable variables are the probability of parents who have obtained high school diplomas, were under 16 years old when immigrating to the US, had entered the US by 2007. The fourth observable variable is the number of years of schooling for children while the last variable is the age of children. Those variables are depicted in Figure 1. In general, they exhibit smooth patterns across the threshold. This finding supports the fundamental assumption of

[9]The results remain consistent even after adding more control variables, such as ethnicity, number of years in the US for parents, English proficiency, etc.

the RDD method, indicating that observations on either side of the threshold are comparable and not subject to manipulation for group assignment.

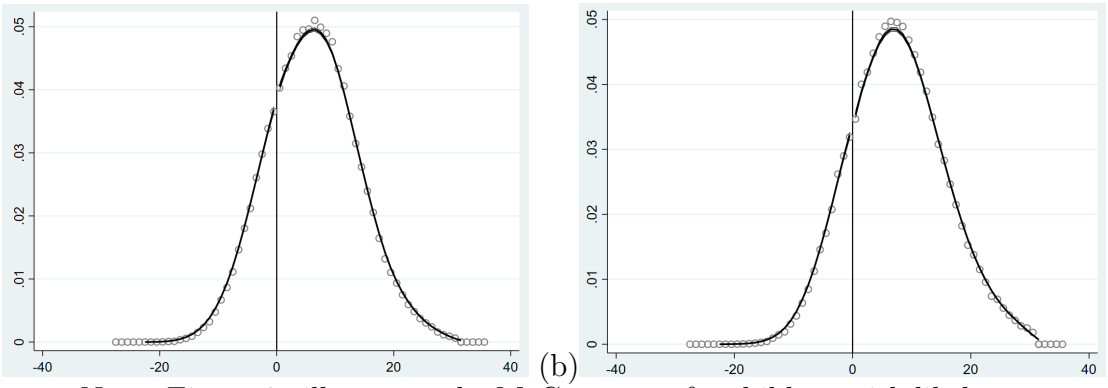
Figure 1: Balance Check of Covariates



Note: This figure illustrates the means of five observable variables, along with linear lines of fit, for children with likely undocumented mothers (Figures 1a, 1b, 1c, 1d, and 1e) and likely undocumented fathers (Figures 1f, 1g, 1h, 1i, and 1j). The sample includes children of non-citizen Mexican mothers or fathers.

Additionally, I perform a formal manipulation test based on a methodology proposed by McCrary (2008). Figure 2 illustrates the results of the McCrary test for two groups: children with likely undocumented Mexican mothers (Figure 2a) and children with likely undocumented Mexican fathers (Figure 2b). The statistics are 0.016 (with a standard error of 0.012) and -0.008 (with a standard error of 0.014) respectively. These test results indicate that we do not have sufficient evidence to reject the null hypothesis of continuity in the density of the covariates. In other words, there is no significant abnormal trend observed around the threshold, suggesting that manipulation is not detected within the sample. This supports the validity of the assumption that observations near the threshold are comparable and free from manipulation.

Figure 2: McCrary (2008) Test



Note: Figure 2a illustrates the McCrary test for children with likely undocumented Mexican mothers, while Figure 2b shows the McCrary test for children with likely undocumented Mexican fathers. The samples in these figures include non-citizen mothers or non-citizen fathers. The statistics fail to reject the null hypothesis of continuity in both cases.

5 Results and Discussion

5.1 Results

I present the findings for children aged 0 to 18 years old with DACA-eligible mothers or fathers. I consider three relevant outcome variables for these children: 1) whether they were covered by insurance, 2) whether they were covered by private

insurance, and 3) whether they were covered by Medicaid or any type of government assistance plans.

To analyze those outcomes using a parametric RDD, it is essential to determine functional forms and bandwidth selection. In my main analysis, I use a linear functional form with a bandwidth of six. However, I use different functional forms and bandwidths to ensure robustness and present the results in Section 6.2.

Table 2 presents the results for children with potential DACA-eligible mothers and potential DACA-eligible fathers[10]. There is a noticeable distinction between the observations in the mother sample and the father sample, primarily because a greater number of children are inclined to reside with their mothers in single-parent households[11]. In the second column, the likelihood of being covered by any insurance among children with DACA-eligible mothers increases by two ppts, although these changes are not statistically significant. While the probability of being covered by private insurance decreases by over two ppts, it remains statistically insignificant. Notably, the effect on Medicaid insurance shows an increase of approximately five percentage points and is statistically significant at a five percent significance level. To provide a comprehensive evaluation of the magnitude of these effects, Figures 3a, 3b, and 3c present the means of the three outcome variables along with linear lines of fit. Figure 3c exhibits a clear discontinuity around the threshold. Moreover, the linear lines of fit also seem to fit my data better than the quadratic lines of fit[12]. In summary, DACA eligibility among likely undocumented mothers suggests an increase in Medicaid enrollment for their children by approximately five ppts.

In the third column, the results indicate that there is no comparable effect observed among potential DACA-eligible fathers. To further support this conclusion, Figures 3d, 3e, and 3f visually depict the outcome variables with linear lines of fit. The plot confirms the absence of any discernible discontinuities around the threshold for likely undocumented fathers[13]. These estimates imply that DACA eligibility among likely undocumented fathers does not lead to a significant impact on the health insurance coverage of their children. I explain in detail the difference between

[10]I also narrow my samples to only places CA, NY, MA, MN,and DC, where DACA-eligible parents get access to public health insurance. The magnitudes of my coefficients are almost unchanged. However, most of them are underpowered and statistically insignificant due to the small sample size.

[11]This difference is particularly pronounced in my sample, where there are approximately 4000 more children living with single, separated, divorced mothers in mother-led households.

[12]I also plot quadratic lines of fit in Appendix A

[13]I also plot quadratic lines of fit in Appendix A

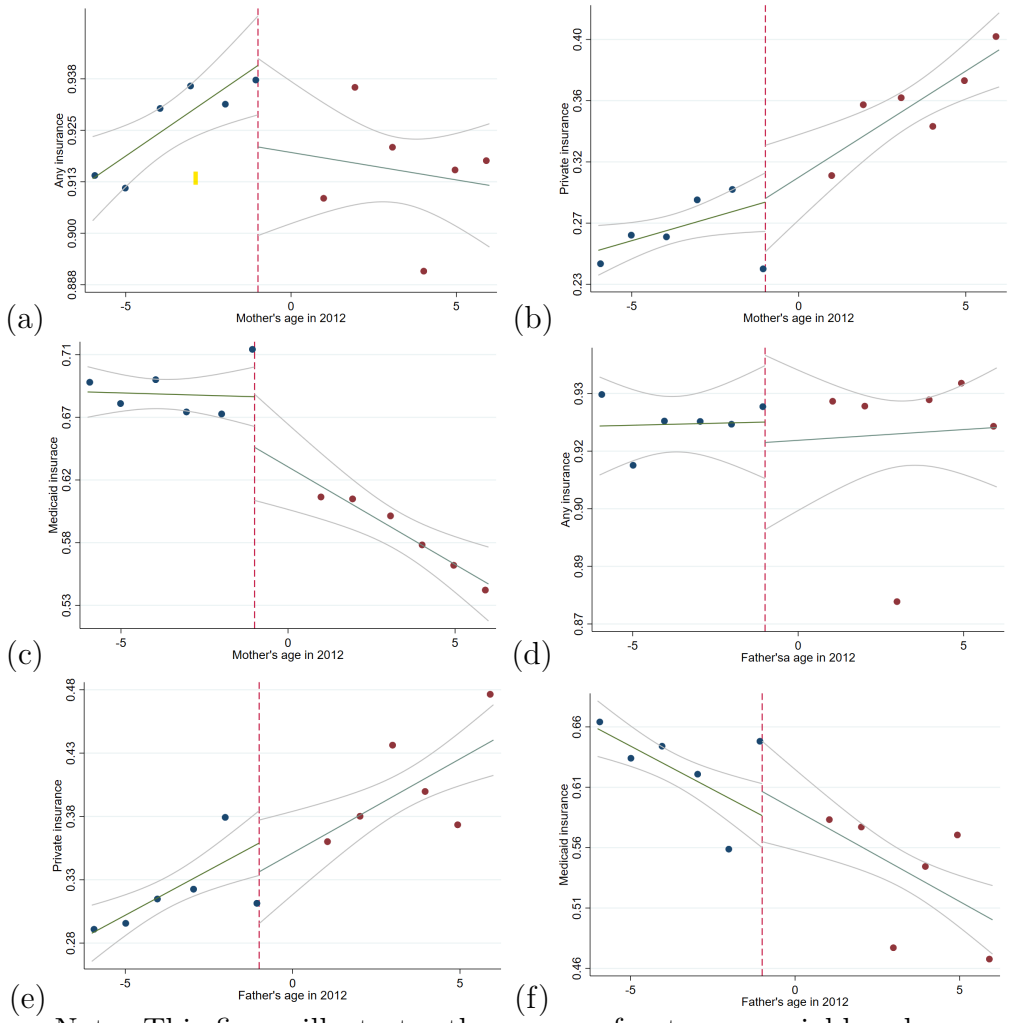
the effects of mothers and fathers in the following section.

Table 2: The Effects of Parents' DACA Eligibility on Children's Health Insurance

	Mexican mothers	Mexican fathers
Any insurance	0.018	0.006
	(0.016)	(0.019)
Private insurance	-0.024	0.027
	(0.030)	(0.040)
Medicaid insurance	0.054**	-0.021
	(0.026)	(0.037)
State & Year FEs	Yes	Yes
Functional form	Linear	Linear
Bandwidth	6	6
Observations	12231	9317

Standard errors are clustered at state level.
Note. This table shows the effects of DACA on health insurance coverage among children with DACA-eligible Mexican mothers or DACA-eligible Mexican fathers. The sample includes US-born children aged 0 to 18 to non-citizen Mexican mothers/Mexican fathers who have obtained high-school diplomas, entered the US before their 16th birthday, and immigrated to the US before 2007.
* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 3: Health Insurance Coverage among Children with DACA-eligible Parents



Note: This figure illustrates the means of outcome variables along with linear lines of fit and 95% confidence intervals for children with likely undocumented mothers (Figures 3a, 3b, and 3c) and children with likely undocumented fathers (Figures 3d, 3e, and 3f). I drop all observations at 0 due to potential non-compliers.

5.2 Discussion

Differential Effects of Parents' Legal Status on Children's Medicaid insurance

My results suggest that providing legal status to undocumented mothers increases Medicaid coverage among children. However, it is puzzling that there are differential

effects between mothers and fathers. Even though I cannot definitively explain this difference, I offer two possible explanations. First, one possibility is that there is an effect on Medicaid insurance among children with DACA-eligible fathers, which is masked due to sampling errors. In fact, the CI for the father's sample allows for a maximum effect of five ppts on their children's Medicaid insurance, which partly overlaps the CI of the mother's sample. Second, mothers generally spend more time with their children than fathers do, according to Craig (2006), Li and Guo (2023), and the Bureau of Labor Statistics[14]. Therefore, this trend leads to the asymmetric effect that mothers are more important than fathers in decisions related to children's health (Case and Paxson, 2001; Nyqvist and Jayachandran, 2017). To further support this assertion, I conduct an additional analysis focusing solely on single-parent households, separately between children raised by single mothers and those by single fathers. Despite the limited sample size, the findings are similar to those of my primary analysis[15]. Thus, even in the absence of spouses, mothers exhibit a greater likelihood of shouldering responsibility for their children's health insurance compared to fathers.

Income Effect of DACA Eligibility on Medicaid Enrollment

There is a possibility that an increase in Medicaid among children could be due to a negative income effect of DACA. This means that DACA eligibility could make people worse off in terms of income, leading to their children being more likely to be eligible for Medicaid and CHIP. However, this explanation is unlikely because the literature shows that DACA has no appreciable effect on income (Pope, 2016; Amuedo-Dorantes and Antman, 2017; Tran, 2023).

Substitution Effect between Private Insurance and Medicaid Insurance

Even though I do not find a statistically significant decrease on the probability of private insurance, my results suggest that there may be a substitution effect between private insurance and Medicaid insurance when mothers are given legal status. The evidence is consistent with the literature that expanding the eligibility of public insurance has a crowd-out effect on private insurance (Blumberg et al., 2000; Rask and Rask, 2000; Shore-Sheppard, 2000)

Effects of DACA Eligibility on Likely Undocumented Parents

Most children are covered through their parent's health insurance. Therefore,

[14]https://www.bls.gov/opub/ted/2022/how-parents-used-their-time-in-2021.htm

[15]I do not present the results here. The effects observed are smaller and lack statistical significance, likely due to the constraints of small sample sizes.

there is a possibility that any changes in health insurance among DACA-eligible parents can explain an increase in Medicaid enrollment among children. I empirically test this hypothesis by examining the effects of DACA eligibility on health insurance among likely undocumented parents. I restrict my sample to non-citizen parents who met all observed DACA criteria, i.e.: they must have entered the US before turning 16, obtained a high school diploma, and entered the US before 2007. Individuals are treated if they were under 31 years old in 2012 and are untreated otherwise.

I examined three relevant outcome variables. The first variable is whether they had any form of insurance. The second variable is whether they had Medicaid insurance while the third variable is whether they had employment-based insurance.

Table A1 in Appendix B presents the results for DACA-eligible parents. Panel A reports the results for all states. Panel B reports the results for California, New York, Massachusetts, Minnesota, and the District of Columbia, where they allow DACA recipients to purchase public health insurance. In Panel A, results are close to zero and are statistically insignificant. In Panel B, the results are almost consistent with the results in Panel A despite the smaller sample size.

One important aspect of these results is that I cannot definitively rule out positive effects on DACA-eligible parents. To evaluate the highest intention-to-treat effects on DACA-eligible parents, I use my point estimates and standard errors from Panel A in Table A1 to evaluate the upper end of my CIs. In Table A2 in Appendix B, I present the point estimates with CIs.

Although my sample is not comparable to the samples from Giuntella and Lonsky (2020) and Bae (2020), I present their estimates in Table A2 for reference. Despite focusing on non-citizen parents around 31 years old in 2012, my estimates on Medicaid and employment-based insurance are consistent with theirs. My CIs suggest that DACA eligibility may increase health insurance enrollment among eligible parents by at most two ppts. This finding is consistent with the fact that most states do not allow DACA holders to enroll in Medicaid insurance. Furthermore, it is in line with the existing literature that the older group of DACA holders do not generally benefit from the program (Henderson et al., 2023; Tran, 2023) My finding does not negate the positive effects of DACA on overall health insurance coverage as documented by Bae (2020) or Giuntella and Lonsky (2020) because my paper apparently estimates a different sample which examines how parents' legal status affect children's health insurance. Thus, the limited effects among this specific group of DACA recipients cannot be extrapolated to all DACA recipients.

The limited effects among parents show that the fist mechanism discussed in Section 2.3 is unlikely. One potential explanation for an increase in Medicaid enrollment among children could be the elimination of fear associated with interacting with authorities due to DACA status. This may encourage parents to transition their children from private insurance to Medicaid enrollment; however, it is challenging to empirically test this potential mechanism.

In short, the differential effects between mothers and fathers are likely due to sampling errors. The CI allows a modest effect on Medicaid enrollment among children with DACA-eligible fathers. Furthermore, the existing literature supports the idea that mothers may be more likely to be responsible for children's health, which may also partly explain those differences. Second, it is unlikely that the income effect of DACA eligibility makes children more likely to be eligible for Medicaid. Lastly, it is not possible to directly empirically test the effects of parents' health insurance on children's health insurance, so I cannot draw a definitive conclusion. Based on empirical evidence regarding the effects of DACA eligibility on likely undocumented parents, however, it is unlikely that an increase in children's Medicaid enrollment can be solely attributed to an increase in Medicaid enrollment among DACA-eligible parents.

6 Robustness Checks

In this section, I perform a battery of robustness checks to ensure that my main analysis remains valid. First, I present the RDD estimates derived from various specification choices, using specification curves. Second, I perform a placebo test utilizing a sample of naturalized citizens. Third, I use the ACS data from 2008 to 2012 (pre-DACA policy) to examine the effects of DACA on non-citizen Mexicans. If the effect of parents' DACA status on children is causal, we would expect null effects in my last two robustness checks.

6.1 Specification Curves

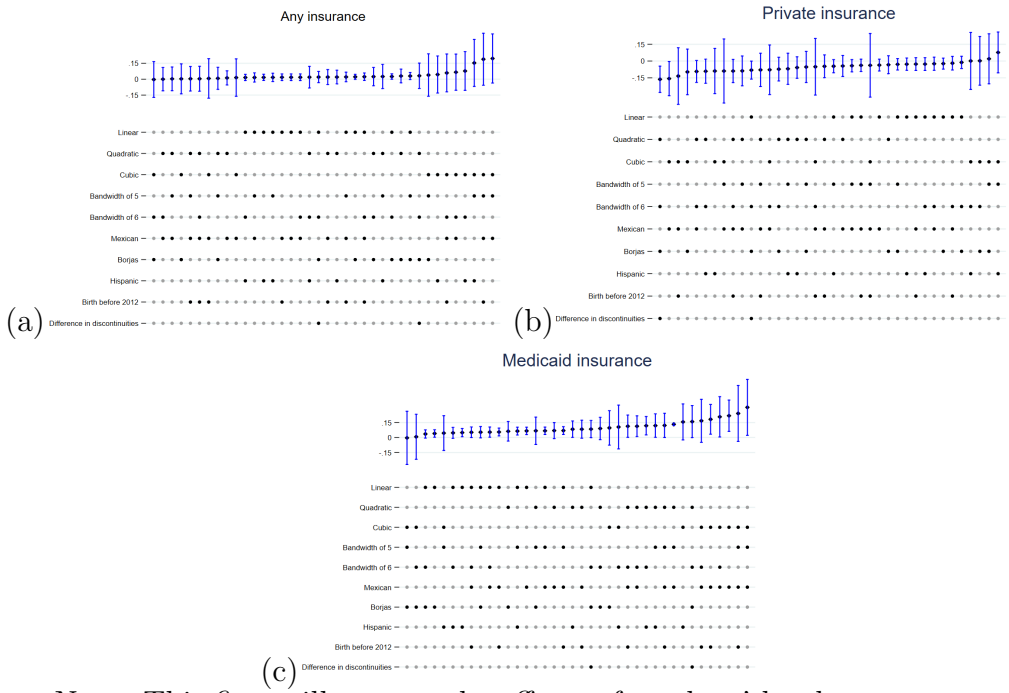
In Figures 4 and 5 below, I present the effects of parents' legal status on health insurance among children using different functional forms, bandwidths, methods to impute legal status, and a different quasi-experimental method in the form of specification curves, following Simonsohn et al. (2020).

- **Functional forms:** In addition to the linear functional form in my main analysis, I also employ quadratic and cubic functional forms.
- **Bandwidths:** In addition to the bandwidth of six in my main analysis, I also use different bandwidths, specifically five and seven.
- **Methods to impute legal status:** In my primary analysis, my focus is on non-citizen Mexicans. However, in these specification curves, I also examine non-citizen Hispanics and a sample of likely undocumented immigrants constructed using the method proposed by Borjas (2017). [16]
- **Children born before 2012**: There is concern about selection bias among children born after 2012 to parents receiving DACA. To address this, I restrict my sample to children born before 2012 to reduce this potential bias.
- **Quasi-experimental method:** In addition to my regression discontinuity design, I follow Bae (2020) and run a regression-in-discontinuities design.

Figure 4 shows the effects of mothers' legal status on children's health insurance. A few key observations stand out from this figure. First, there is no clear increase in overall health insurance coverage among children with likely DACA mothers. Second, a discernible trend emerges, indicating that DACA eligibility among likely undocumented mothers leads them to opt out of private insurance. However, it is important to note that most of these coefficients are not statistically significant. Third, the coefficients on Medicaid enrollment are largely positive, with many being statistically significant. Fourth, when employing the cubic functional form, the coefficients exhibit extreme values and wide confidence intervals. This reaffirms that higher-order functional forms did not perform well in the regression discontinuity design (Gelman and Imbens, 2019)

[16] Refer to Appendix C for details on how to construct the sample using Borjas (2017)

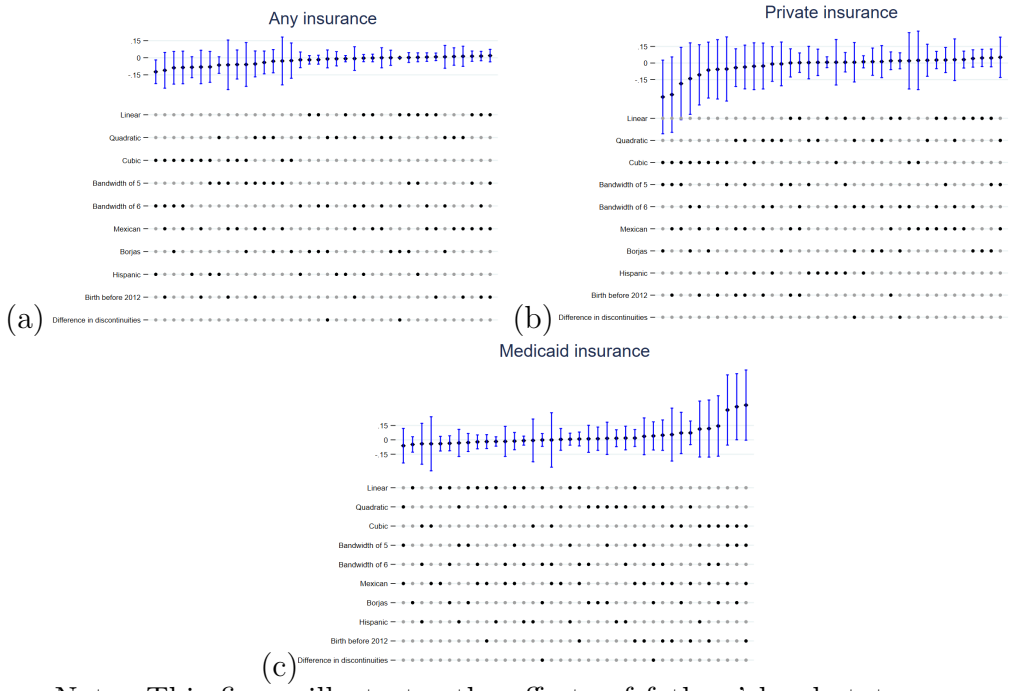
Figure 4: The Effects of Mothers' Legal Status on Children's Health Insurance



Note: This figure illustrates the effects of mothers' legal status on children's health insurance. The top halves show the coefficients of interest and 95% confidence intervals. The bottom panels show the choices in each specification.

Figure 5 depicts the impact of fathers' legal status on children's health insurance. Contrary to the findings in Figure 4, the evidence for health insurance is not as large across different specifications. Most coefficients are close to zero and lack statistical significance. Furthermore, the coefficients derived from the cubic functional form display extreme values, as previously explained.

Figure 5: The Effects of Fathers' Legal Status on Children's Health Insurance



Note: This figure illustrates the effects of fathers' legal status on children's health insurance. The top halves show the coefficients of interest and 95% confidence intervals. The bottom panels show the choices in each specification.

6.2 Naturalized Citizens

In this section, I restrict the sample to children of naturalized citizens. These naturalized citizen parents are not eligible under the DACA program. Consequently, I do not anticipate observing any positive effects on health insurance coverage for this group. I construct a sample that includes children born to naturalized citizens who met all observed DACA requirements. I also restricted my sample to children whose parents were naturalized before 2012 to not contaminate my sample with individuals who had been DACA recipients and were naturalized later on. By focusing exclusively on this sample, I aim to examine the absence of any causal effects related to DACA eligibility within this specific subgroup.

Table 3 presents the results for children with naturalized citizen mothers and naturalized citizen fathers. All coefficients indicate that the effects of DACA eligibility among naturalized citizen mothers on their children's health insurance coverage are

close to zero. Furthermore, these coefficients are statistically insignificant, indicating the absence of a causal effect. Likewise, the results confirm no statistically significant effects of DACA eligibility among naturalized citizen fathers on their children's health insurance coverage. These coefficients are close to zero, reinforcing the conclusion that there is no causal relationship between DACA eligibility among naturalized citizen fathers and their children's health insurance outcomes. [17]

Table 3: Naturalized Parents' DACA Eligibility and Children's Health Insurance

	Naturalized mothers	Naturalized fathers
Any insurance	-0.003	0.014*
	(0.006)	(0.007)
Private insurance	-0.011	0.006
	(0.016)	(0.013)
Medicaid insurance	0.009	0.007
	(0.015)	(0.014)
State & Year FEs	Yes	Yes
Functional form	Linear	Linear
Bandwidth	6	6
Observations	49355	31724

Standard errors are clustered at state level.
Note. This table shows the effects of DACA on health insurance coverage among children with naturalized mothers or naturalized fathers. The sample includes children aged 0 to 18 to non-citizen mothers/ fathers who have obtained high-school diplomas, entered the US before their 16th birthday, immigrated to the US before 2007,and became naturalized citizens before 2012.
* $p < .10$, ** $p < .05$, *** $p < .01$

6.3 ACS 2008-2012

If the causal effects observed in my main analysis are due to the legal status provided by DACA, we would not expect to see any effects using pre-policy data. To verify this, I re-run my main analysis using ACS data from 2008 to 2012. This period is selected because the ACS only began surveying health insurance in 2008.

[17] I run this sample across different functional forms and bandwidths and the results are all close to zero and statistically insignificant.

Specifically, I analyze children of non-citizen Mexican parents (either mothers or fathers) who were around 31 years old in 2012, had completed high school, arrived in the US before 2007, and arrived before their 16th birthdays.

This analysis serves as a placebo test because we would not expect statistically significant effects before DACA.

Table 4: The Effects of Parents' DACA Eligibility on Children's Health Insurance using ACS 2008-2012

	Mexican mothers	Mexican fathers
Any insurance	- 0.015	0.014
	(0.040)	(0.032)
Private insurance	0.041	0.015
	(0.028)	(0.060)
Medicaid insurance	-0.038	0.005
	(0.034)	(0.032)
State & Year FEs	Yes	Yes
Functional form	Linear	Linear
Bandwidth	6	6
Observations	7680	5445

Standard errors are clustered at state level.
Note. This table shows the effects of DACA on health insurance coverage among children with DACA-eligible Mexican mothers or DACA-eligible Mexican fathers using the placebo dataset of ACS from 2008-2012. The sample includes US-born children aged 0 to 18 to non-citizen Mexican mothers/Mexican fathers who have obtained high-school diplomas, entered the US before their 16th birthday, and immigrated to the US before 2007.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4 shows that there are no statistically significant effects for all outcome variables among both mothers and fathers. This affirms that my main findings are indeed due to the causal effects of legal status from DACA on children's health insurance.

7 Conclusion

This paper investigates the effects of parents' legal status on children's health insurance. Having a deeper understanding of how parents' legal status impacts children's health coverage is crucial for government agencies to develop more effective

immigration policies for undocumented parents. Using the DACA program, I find that DACA eligibility among likely undocumented mothers increases Medicaid enrollment for children by five ppts. There is suggestive evidence indicating that DACA eligibility among likely undocumented mothers may lead to a substitution effect between private insurance and Medicaid. Consequently, the overall insurance rate remains unchanged. My point estimate suggests a null effect on Medicaid insurance among children with DACA-eligible fathers, which could be due to a sampling error. The CI indicates that the maximum effect on children's Medicaid enrollment with DACA-eligible fathers could be up to five ppts. This paper does not find strong evidence to support that DACA eligibility leads to an increase in children's insurance coverage through their parents' insurance.

This paper contributes to the broader literature on parents' legal status and children's human capital (Hainmueller et al., 2017). The findings in this paper are relevant and of interest to a variety of audiences. First, parents and families of children want to ensure that their children have access to affordable and comprehensive healthcare services, including preventive care, regular check-ups, vaccinations, and treatment for illnesses or injuries. Second, government agencies develop policies, administer programs such as Medicaid and CHIP, and work toward expanding coverage and improving healthcare access for children. Third, numerous advocacy organizations, both at the national and community levels, focus on children's health and advocate for improved access to health insurance as well as advocacy for DACA recipients. Fourth, educational institutions are concerned about children's health insurance because it directly impacts students' well-being and ability to participate in educational activities. Lastly, it may be of interest to society as a whole because healthy children are more likely to grow up to become healthy adults.

This paper is the first to examine the effects of parents' legal status on children's health insurance. However, it is essential to acknowledge several limitations and thereby identify areas for future research. First, due to data constraints, this paper can only estimate the effect of DACA eligibility, not the treatment effects of DACA. Second, while this paper offers two possible explanations for differential effects between mothers and fathers, it cannot exhaustively address this concern. Lastly, this paper does not directly assess whether eliminating the fear of interacting with authorities among undocumented parents plays a central role in driving the observed increase in children's Medicaid enrollment.

References

Amuedo-Dorantes, C. and Antman, F. (2017). Schooling and labor market effects of temporary authorization: Evidence from daca. *Journal of population economics*, 30(1):339–373.

Bae, J. (2020). Immigration relief and insurance coverage: Evidence from deferred action for childhood arrivals. *The BE Journal of Economic Analysis & Policy*, 20(3).

Bleakley, H. and Chin, A. (2004). Language skills and earnings: Evidence from childhood immigrants. *Review of Economics and statistics*, 86(2):481–496.

Bleakley, H. and Chin, A. (2010). Age at arrival, english proficiency, and social assimilation among us immigrants. *American Economic Journal: Applied Economics*, 2(1):165–192.

Blumberg, L. J., Dubay, L., and Norton, S. A. (2000). Did the medicaid expansions for children displace private insurance? an analysis using the sipp. *Journal of health economics*, 19(1):33–60.

Borjas, G. J. (2017). The labor supply of undocumented immigrants. *Labour Economics*, 46:1–13.

Brown, E. R., Wyn, R., Yu, H., Valenzuela, A., and Dong, L. (1999). Access to health insurance and health care for children in immigrant families. *Children of immigrants: Health, adjustment, and public assistance*, pages 126–86.

Case, A. and Paxson, C. (2001). Mothers and others: Who invests in children's health? *Journal of health economics*, 20(3):301–328.

Cohodes, S. R., Grossman, D. S., Kleiner, S. A., and Lovenheim, M. F. (2016). The effect of child health insurance access on schooling: Evidence from public insurance expansions. *Journal of Human Resources*, 51(3):727–759.

Craig, L. (2006). Does father care mean fathers share? a comparison of how mothers and fathers in intact families spend time with children. *Gender & society*, 20(2):259–281.

Currie, J. and Gruber, J. (1996). Health insurance eligibility, utilization of medical care, and child health. *The Quarterly Journal of Economics*, 111(2):431–466.

Garcia-Perez, M. (2019). Daca recipients and their health insurance dream: Employment, schooling, and health coverage. *Journal of Economics, Race, and Policy*, 2(1):77–108.

Gelman, A. and Imbens, G. (2019). Why high-order polynomials should not be used in regression discontinuity designs. *Journal of Business & Economic Statistics*, 37(3):447–456.

Giuntella, O. and Lonsky, J. (2020). The effects of daca on health insurance, access to care, and health outcomes. *Journal of Health Economics*, 72:102320.

Giuntella, O., Lonsky, J., Mazzonna, F., and Stella, L. (2021). Immigration policy and immigrants' sleep. evidence from daca. *Journal of Economic Behavior & Organization*, 182:1–12.

Goldman, D. P., Smith, J. P., and Sood, N. (2005). Legal status and health insurance among immigrants. *Health Affairs*, 24(6):1640–1653.

Gonzalez, A. (2003). The education and wages of immigrant children: the impact of age at arrival. *Economics of education review*, 22(2):203–212.

Goodman-Bacon, A. (2018). Public insurance and mortality: evidence from medicaid implementation. *Journal of Political Economy*, 126(1):216–262.

Goodman-Bacon, A. (2021). The long-run effects of childhood insurance coverage: Medicaid implementation, adult health, and labor market outcomes. *American Economic Review*, 111(8):2550–2593.

Guelespe, D., Echave, P., and Gonzalez, D. (2023). *Mixed-Status Immigrant Families Disproportionately Experienced Material Hardships in 2021*. Urban Institute.

Hainmueller, J., Lawrence, D., Martén, L., Black, B., Figueroa, L., Hotard, M., Jiménez, T. R., Mendoza, F., Rodriguez, M. I., Swartz, J. J., et al. (2017). Protecting unauthorized immigrant mothers improves their children's mental health. *Science*, 357(6355):1041–1044.

Hamilton, E. R., Langer, P. D., and Patler, C. (2021). Daca's association with birth outcomes among mexican-origin mothers in the united states. *Demography*, 58(3):975–985.

Henderson, D. J., Sperlich, S., et al. (2023). A complete framework for model-free difference-in-differences estimation. *Foundations and Trends® in Econometrics*, 12(3):232–323.

Kuka, E., Shenhav, N., and Shih, K. (2020). Do human capital decisions respond to the returns to education? evidence from daca. *American Economic Journal: Economic Policy*, 12(1):293–324.

Lee, D. S. and Card, D. (2008). Regression discontinuity inference with specification error. *Journal of Econometrics*, 142(2):655–674.

Li, D. and Guo, X. (2023). The effect of the time parents spend with children on children's well-being. *Frontiers in Psychology*, 14:1096128.

Liang, X. (2021). Labor market impacts of state-level professional licensing of undocumented immigrants. *Available at SSRN 3937668*.

McCrary, J. (2008). Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of econometrics*, 142(2):698–714.

Nguyen, K. H., Wilson, I. B., Wallack, A. R., and Trivedi, A. N. (2022). Children's health insurance coverage and parental immigration status: 2015–2019. *Pediatrics*, 150(3).

Nyqvist, M. B. and Jayachandran, S. (2017). Mothers care more, but fathers decide: Educating parents about child health in uganda. *American Economic Review*, 107(5):496–500.

Patler, C., Hamilton, E., Meagher, K., and Savinar, R. (2019). Uncertainty about daca may undermine its positive impact on health for recipients and their children. *Health Affairs*, 38(5):738–745.

Pope, N. G. (2016). The effects of dacamentation: The impact of deferred action for childhood arrivals on unauthorized immigrants. *Journal of Public Economics*, 143:98–114.

Rask, K. N. and Rask, K. J. (2000). Public insurance substituting for private insurance: new evidence regarding public hospitals, uncompensated care funds, and medicaid. *Journal of Health Economics*, 19(1):1–31.

Shore-Sheppard, L. D. (2000). The effect of expanding medicaid eligibility on the distribution of children's health insurance coverage. *ILR Review*, 54(1):59–77.

Simonsohn, U., Simmons, J. P., and Nelson, L. D. (2020). Specification curve analysis. *Nature Human Behaviour*, 4(11):1208–1214.

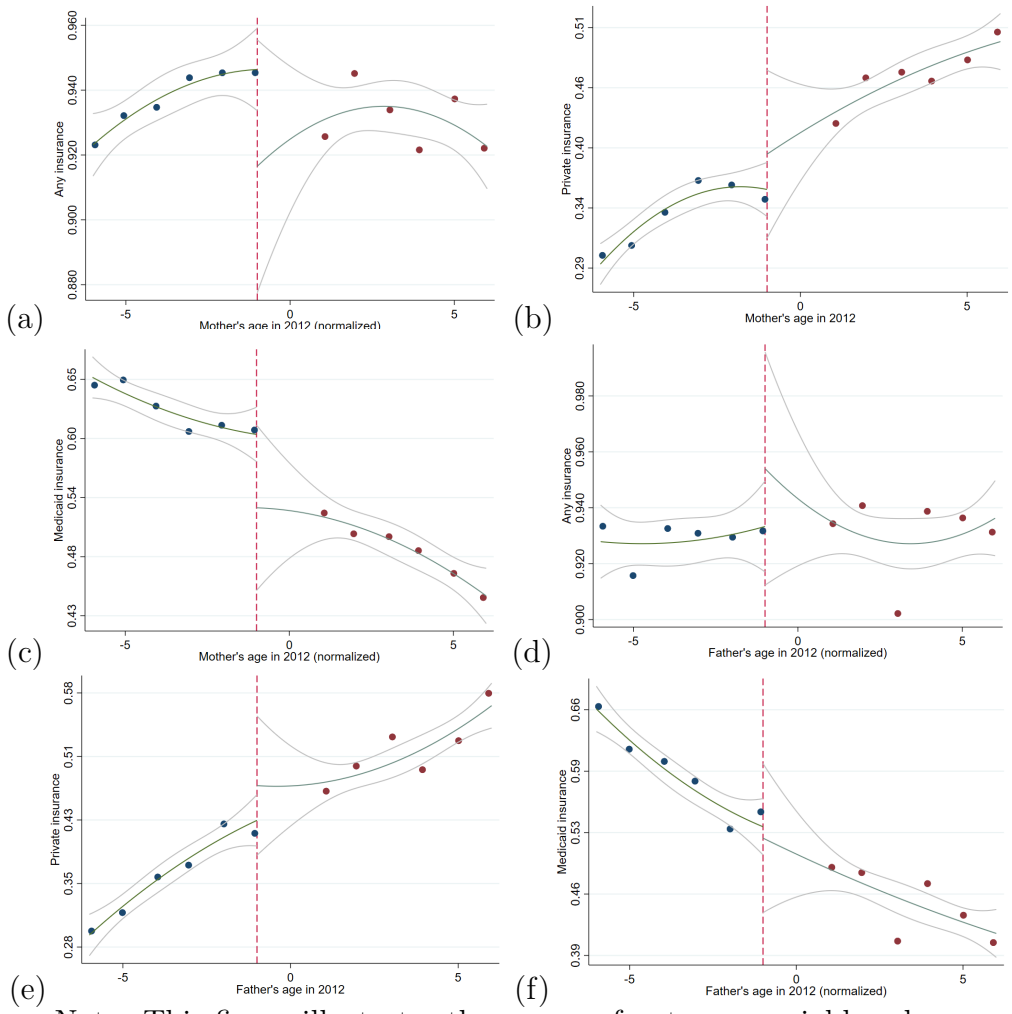
Tran, N. (2023). The effects of deferred action for childhood arrivals on labor market outcomes.

Vargas, E. D. and Ybarra, V. D. (2017). Us citizen children of undocumented parents: The link between state immigration policy and the health of latino children. *Journal of immigrant and minority health*, 19:913–920.

Watson, T. (2014). Inside the refrigerator: Immigration enforcement and chilling effects in medicaid participation. *American Economic Journal: Economic Policy*, 6(3):313–338.

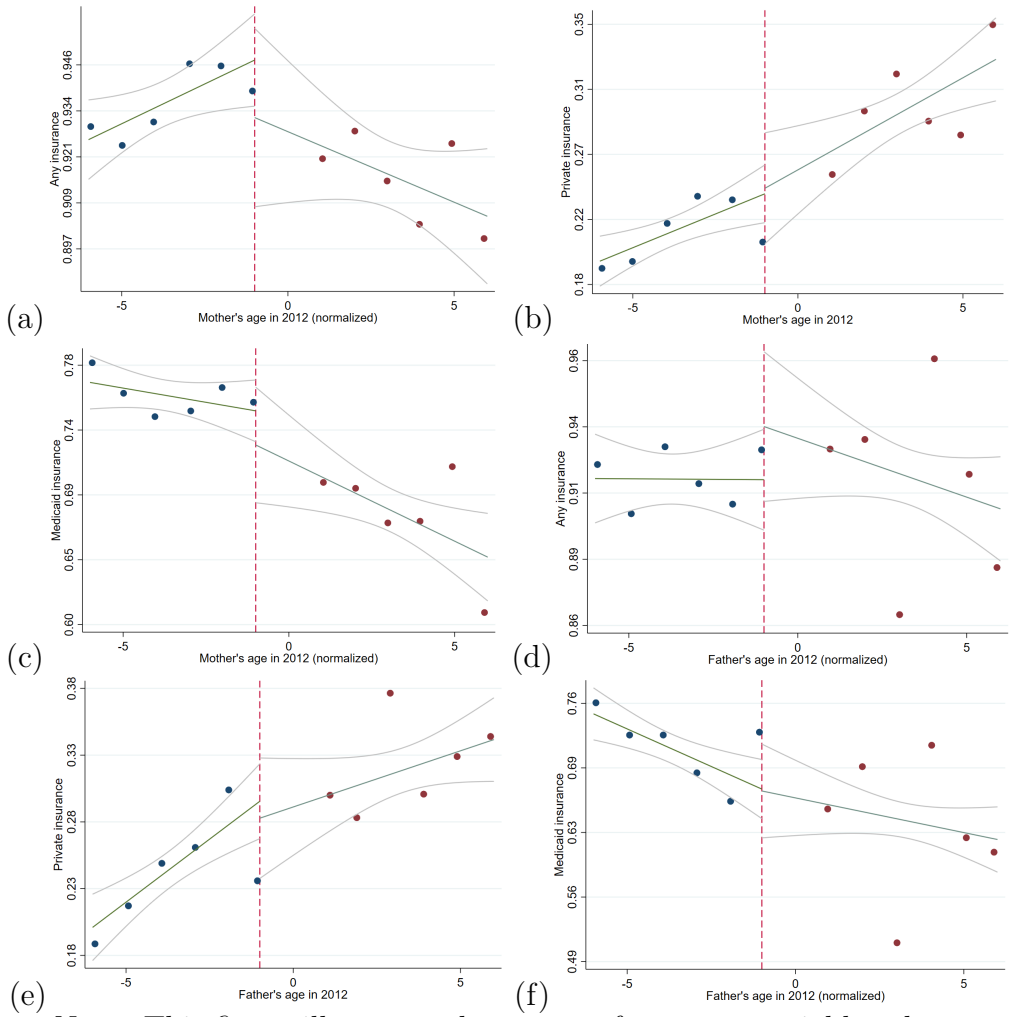
Appendix A

Figure 6: Health Insurance Coverage among Children by Parents' Age in 2012



Note: This figure illustrates the means of outcome variables along with quadratic lines of fit and 95% confidence interval for children with likely undocumented mothers (Figures 4a and 4b) or children with likely undocumented fathers (Figures 4c and 4d).

Figure 7: Health Insurance Coverage among Children by Parents' Age in 2012



Note: This figure illustrates the means of outcome variables along with quadratic lines of fit and 95% confidence interval for children with likely undocumented mothers (Figures 5a and 5b) or children with likely undocumented fathers (Figures 5c and 5d). However, it does not necessarily change the results with linear lines of fit. In this figure, I follow Borjas (2017) to impute legal status.

Appendix B

Table A1: Effects of DACA Eligibility on Health Insurance among Likely Undocumented Parents

Panel A: All states		Linear	
Bandwidth	5	6	7
Any insurance	-0.000	-0.007	-0.015
	(0.015)	(0.015)	(0.014)
Medicaid insurance	0.000	-0.005	-0.002
	(0.010)	(0.013)	(0.015)
Employment-based insurance	-0.012	-0.007	-0.019
	(0.015)	(0.014)	(0.016)
Year & State FEs	Yes	Yes	Yes
Observations	13485	16277	19070
Panel B: CA, NY, MA, MN, DC			
		Linear	
Bandwidth	5	6	7
Any insurance	-0.001	-0.012	-0.014
	(0.025)	(0.019)	(0.016)
Medicaid insurance	-0.002	-0.006	-0.005
	(0.015)	(0.028)	(0.032)
Employment-based insurance	-0.007	-0.018	-0.022
	(0.023)	(0.013)	(0.019)
Year & State FEs	Yes	Yes	Yes
Observations	5559	6716	7859

Standard errors are clustered at state level.

Note. Panel A shows the effects of DACA on health insurance coverage among non-citizen parents who have obtained high-school diplomas, have entered the US before their 16th birthday, and have immigrated to the US before 2007. Panel B restricts to only non-citizen parents who reside in California, New York, Massachusetts, Minnesota and, Washington D.C.

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

Table A2: Estimates on Health Insurance among DACA-eligible Individuals across Different Studies

Giuntella &Lonsky (2020)				**Bae (2020)**				**This paper**			
Non-citizens from 18-35 with high-school degree	Point estimates	95% conf.	interval	**Non-citizen Mexicans with high-school degree**	Point estimates	95% conf.	interval	**Non-citizens with high-school degree enter the US before 16 and before 2007**	Point estimates	95% conf.	interval
Any coverage	0.022	0.007	0.038	Any coverage	0.043	0.011	0.021	Any insurance	-0.007	-0.036	0.022
Medicaid	0.008	-0.005	0.022					Medicaid	-0.005	-0.030	0.020
Employment-based insurance	0.006	-0.006	0.018					Employment-based insurance	-0.007	-0.034	0.020

Note. This table compares the intention-to-treat effects of DACA on health insurance among likely DACA-eligible individuals between this paper and two other papers: Giuntella & Lonsky (2020) and Bae (2017).

Appendix C

I employ a method proposed by Borjas (2017) to impute the legal status of non-citizen parents. In this method, a foreign-born individual is classified as a documented immigrant if any of following conditions are met:

- that person arrived before 1980;
- that person is a citizen;
- that person receives welfare benefits such as Social Security, SSI, Medicaid, Medicare, or military insurance;
- that person is a veteran or is currently in the Armed Forces;
- that person works in the government sector;
- that person resides in public housing or receive rental subsidies, or that person is a spouse of someone who resides in public housing or receive rental subsidies;[18]
- that person was born in Cuba;
- that person's occupation requires some form of licensing;
- that person's spouse is a legal immigrant or citizen.

I make some adjustments to this method to avoid potentially dropping DACA recipients. First, I do not include the welfare benefit because it is directly related to my outcome variables, which can bias my results. Second, DACA recipients can also work in local and state government positions, so I classify only those individuals who work in federal government positions as legal immigrants. Third, certain states implemented laws granting professional licenses to DACA recipients (Liang, 2021). So, I classify individuals working in occupations requiring professional licenses as documented immigrants only if those individuals had worked in those states before those laws came into effect. I assume undocumented immigrants are those who are not classified as documented immigrants. Then, I construct the sample, assign treatment status as discussed in my main analysis, and re-run the econometric model.

[18]There is no information on public housing in ACS data, so I did not consider this condition in my analysis.

Appendix D

Table A3: Effects of DACA Eligibility on Educational Attainment

		Linear	
Bandwidth	5	6	7
Years of schooling	-0.020	-0.027	-0.008
	(0.117)	(0.095)	(0.079)
High-school completion	0.020	0.014	0.007
	(0.015)	(0.012)	(0.008)
Year & State FEs	Yes	Yes	Yes
Observations	29243	35752	42424

Standard errors are clustered at state level.
Note. This table shows the effects of DACA on educational attainment among non-citizen Mexican immigrants who entered the US before their 16th birthday, and immigrated to the US before 2007.
* $p < .10$, ** $p < .05$, *** $p < .01$