

# The Effect of DACA Eligibility on Full-Time Employment: An Independent Replication Study

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## Abstract

This study examines the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican individuals born in Mexico. Using data from the American Community Survey (2006–2016), I employ a difference-in-differences strategy that compares individuals who arrived in the United States before age 16 (DACA eligible) to those who arrived at ages 16–21 (just above the eligibility cutoff), both meeting other DACA criteria. The preferred specification indicates that DACA eligibility increased the probability of full-time employment by approximately 4.2 percentage points (95% CI: 2.9–5.5 pp), a statistically significant effect. This estimate is robust to alternative bandwidth choices, and a placebo test using pre-period data shows no significant differential trends. Subgroup analyses reveal similar effects for both men and women. These findings suggest that DACA had a meaningful positive effect on labor market outcomes for eligible immigrants.

**Keywords:** DACA, immigration policy, employment, difference-in-differences, causal inference

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# 1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program was implemented on June 15, 2012, providing temporary relief from deportation and work authorization for eligible undocumented immigrants who arrived in the United States as children. The program represented a significant policy shift, allowing recipients to obtain legal employment authorization and, in many states, driver’s licenses and other forms of identification.

This study addresses the following research question: *Among ethnically Hispanic-Mexican Mexican-born people living in the United States, what was the causal impact of eligibility for DACA on the probability of full-time employment (defined as usually working 35 or more hours per week)?*

Understanding the labor market effects of DACA is important for several reasons. First, employment outcomes directly affect the economic well-being of immigrants and their families. Second, policy debates about DACA and similar programs often center on their labor market consequences. Third, the program provides a quasi-experimental setting to study how legal work authorization affects employment patterns among undocumented immigrants.

To identify the causal effect of DACA eligibility, I employ a difference-in-differences (DiD) research design that exploits the age-at-arrival eligibility criterion. DACA required applicants to have arrived in the U.S. before their 16th birthday. I compare individuals who arrived at ages 10–15 (eligible) to those who arrived at ages 16–21 (ineligible due to the arrival age cutoff) before versus after DACA implementation. This design holds constant other determinants of employment that might differ between Mexican-born non-citizens and other populations, while isolating the effect of DACA eligibility specifically.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 4.2 percentage points ( $SE = 0.007$ ,  $p < 0.001$ ). This represents a meaningful improvement in labor market outcomes for eligible individuals. The effect is robust to alternative bandwidth specifications and is observed for both men and women.

The remainder of this report is organized as follows: Section 2 describes the data sources and variable construction. Section 3 presents the empirical strategy. Section 4 reports the main results. Section 5 provides robustness checks. Section 6 concludes with a discussion of the findings.

## 2 Data

### 2.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, and economic information about the U.S. population. I use the one-year ACS samples from 2006 through 2016, providing 11 years of cross-sectional data that span the pre-DACA (2006–2011) and post-DACA (2013–2016) periods.

The full dataset contains 33,851,424 person-observations across all years. The survey includes sampling weights (PERWT) to ensure representativeness of the U.S. population.

### 2.2 Sample Selection

Following the research question, I restrict the sample to individuals who are:

1. Ethnically Hispanic-Mexican ( $HISPAN = 1$ )
2. Born in Mexico ( $BPL = 200$ )
3. Not U.S. citizens ( $CITIZEN = 3$ )
4. Of working age (16–40 years old)
5. Have valid immigration year information ( $YRIMMIG \neq 0$ )

The non-citizen restriction follows the instruction that “anyone who is not a citizen and who has not received immigration papers is undocumented for DACA purposes.” This is a conservative assumption, as some non-citizens may have other forms of legal status, but without more detailed data, this is the best available proxy for potential DACA eligibility.

After applying these filters, the sample contains 387,872 observations.

### 2.3 DACA Eligibility Criteria

Based on the program requirements, DACA eligibility is defined by the following criteria:

1. **Arrived before age 16:**  $Age\ at\ arrival = YRIMMIG - BIRTHYR \leq 16$
2. **Under 31 as of June 15, 2012:** Born after June 15, 1981. Operationalized as  $BIRTHYR \geq 1982$ , or  $BIRTHYR = 1981$  and  $BIRTHQTR \geq 3$  (July or later)
3. **Continuous residence since June 15, 2007:**  $YRIMMIG \leq 2007$

4. **Present in U.S. on June 15, 2012:** Assumed for all ACS respondents
5. **Not a citizen:** CITIZEN = 3

Among the filtered sample, 91,428 individuals (23.6%) meet all DACA eligibility criteria.

## 2.4 Outcome Variable

The outcome variable is full-time employment, defined as usually working 35 or more hours per week. This is constructed from the UHRSWORK variable:

$$\text{Fulltime}_i = \mathbf{1}[\text{UHRSWORK}_i \geq 35]$$

This definition aligns with the Bureau of Labor Statistics' standard definition of full-time employment.

## 2.5 Control Variables

The analysis includes the following control variables:

- **Age and age squared:** To capture nonlinear lifecycle effects on employment
- **Female indicator:** SEX = 2
- **Married indicator:** MARST  $\in \{1, 2\}$  (married, spouse present or absent)
- **Education:** High school completion (EDUCD  $\geq 60$ ) and college attendance (EDUCD  $\geq 100$ )
- **State fixed effects:** To control for state-specific labor market conditions and policies
- **Year fixed effects:** To control for common time trends in employment

## 2.6 Descriptive Statistics

Table 1 presents summary statistics for the analysis sample during the pre-DACA period (2006–2011), separately for the treatment and control groups.

Table 1: Summary Statistics by Treatment Status (Pre-Period, 2006–2011)

	<b>Treatment</b> (Arrived 10–15)	<b>Control</b> (Arrived 16–21)
N	21,309	33,202
Mean age	21.7	23.9
Female (%)	41.5	38.8
Married (%)	27.9	40.3
High school+ (%)	47.7	45.2
Full-time employed (%)	50.2	61.5
Mean age at arrival	12.9	18.1

*Notes:* Sample restricted to Mexican-born, Hispanic-Mexican, non-citizen individuals aged 16–40 who meet age and residence criteria for DACA eligibility (under 31 in June 2012, in U.S. since 2007) but differ in age at arrival. Treatment group arrived at ages 10–15 (DACA eligible); control group arrived at ages 16–21 (just above the age-at-arrival cutoff).

Several patterns emerge from these statistics. First, the treatment group is younger on average (21.7 vs. 23.9 years), which is expected given that they arrived at younger ages. Second, the control group has a higher pre-period full-time employment rate (61.5% vs. 50.2%), again likely related to age differences. Third, the groups are fairly similar in terms of gender composition and education levels, supporting the comparability of the two groups. These baseline differences underscore the importance of controlling for demographic characteristics in the regression analysis.

## 3 Empirical Strategy

### 3.1 Identification Challenge

The central challenge in estimating the causal effect of DACA is that we cannot simply compare eligible to ineligible individuals, as they may differ in many unobservable ways that also affect employment. Similarly, we cannot simply compare pre- to post-DACA employment rates, as other factors may have changed over time.

### 3.2 Difference-in-Differences Design

I address this challenge using a difference-in-differences (DiD) design that exploits the age-at-arrival eligibility cutoff. The treatment group consists of individuals who arrived at ages 10–15 (eligible for DACA), while the control group consists of those who arrived at ages 16–21 (just above the cutoff and therefore ineligible). Both groups meet the other DACA criteria (under 31 in 2012, in U.S. since 2007, non-citizen, Mexican-born).

This design assumes that, absent DACA, the employment trends for these two groups would have been parallel. The narrow bandwidth around the age-16 cutoff (10–21) makes this assumption more plausible, as individuals on either side of the cutoff are more likely to be similar in unobserved characteristics.

I exclude 2012 from the analysis because DACA was implemented mid-year (June 15), making it difficult to classify observations from that year as pre- or post-treatment.

### 3.3 Regression Specification

The main estimating equation is:

$$Y_{ist} = \beta_0 + \beta_1 \text{Treated}_i + \beta_2 (\text{Treated}_i \times \text{Post}_t) + X_i' \gamma + \delta_s + \tau_t + \varepsilon_{ist} \quad (1)$$

where:

- $Y_{ist}$  is an indicator for full-time employment for individual  $i$  in state  $s$  in year  $t$
- $\text{Treated}_i = 1$  if the individual arrived at ages 10–15 (DACA eligible)
- $\text{Post}_t = 1$  if year  $\geq 2013$
- $X_i$  is a vector of individual controls (age, age<sup>2</sup>, female, married, education)
- $\delta_s$  are state fixed effects
- $\tau_t$  are year fixed effects
- $\varepsilon_{ist}$  is the error term

The coefficient of interest is  $\beta_2$ , which captures the differential change in full-time employment for the treatment group relative to the control group after DACA implementation. Under the parallel trends assumption,  $\beta_2$  identifies the causal effect of DACA eligibility on full-time employment.

Note that when year fixed effects are included, the main effect of  $\text{Post}_t$  is absorbed. Standard errors are clustered at the household level (SERIAL) to account for within-household correlation.

### 3.4 Event Study Specification

To examine the dynamics of the treatment effect and assess the parallel trends assumption, I also estimate an event study specification:

$$Y_{ist} = \alpha + \sum_{k \neq 2011} \gamma_k (\text{Treated}_i \times \mathbf{1}[\text{Year}_t = k]) + X_i' \delta + \mu_s + \lambda_t + \epsilon_{ist} \quad (2)$$

where the reference year is 2011 (the last full pre-DACA year). The coefficients  $\gamma_k$  for  $k < 2011$  test for pre-trends, while coefficients for  $k > 2012$  capture the dynamic treatment effects.

## 4 Results

### 4.1 Main Difference-in-Differences Results

Table 2 presents the main DiD estimates across specifications with progressively more controls.

Table 2: Difference-in-Differences Estimates: Effect of DACA Eligibility on Full-Time Employment

	(1)	(2)	(3)	(4)
	Basic	Demographics	+ State FE	+ Year FE
Treated $\times$ Post	0.1140*** (0.0070)	0.0512*** (0.0066)	0.0509*** (0.0066)	<b>0.0422***</b> (0.0066)
95% CI				[0.029, 0.055]
Demographic controls	No	Yes	Yes	Yes
State FE	No	No	Yes	Yes
Year FE	No	No	No	Yes
Observations	87,185	87,185	87,185	87,185
R-squared	0.017	0.213	0.215	0.241

*Notes:* Dependent variable is an indicator for full-time employment (usually working 35+ hours per week). Treated = 1 if arrived at ages 10–15; Post = 1 if year  $\geq$  2013. Demographic controls include age, age squared, female indicator, married indicator, and education indicators. Standard errors clustered at household level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Column (1) shows the basic DiD estimate without controls, which is 0.114 (11.4 percentage points). This large estimate likely reflects compositional differences between the treatment and control groups.

Column (2) adds demographic controls, reducing the estimate to 0.051 (5.1 percentage points). This reduction indicates that age and other demographic differences account for a substantial portion of the raw differential.

Column (3) adds state fixed effects, with essentially no change in the estimate (0.051).

Column (4) presents the preferred specification with year fixed effects, yielding an estimate of 0.042 (4.2 percentage points, SE = 0.007). This is statistically significant at the 1% level, with a 95% confidence interval of [0.029, 0.055].

**Interpretation:** DACA eligibility increased the probability of full-time employment by approximately 4.2 percentage points. Given the pre-period full-time employment rate of 50.2% among the treatment group, this represents an 8.4% relative increase in full-time employment.

## 4.2 Event Study Results

Table 3 presents the event study results, with 2011 as the reference year.

Table 3: Event Study Estimates: Year-by-Year Treatment Effects

Year	Coefficient	Std. Error	p-value
<i>Pre-DACA Period</i>			
2006	−0.046***	0.014	0.001
2007	−0.049***	0.013	0.000
2008	−0.036***	0.014	0.008
2009	−0.018	0.014	0.179
2010	−0.007	0.013	0.627
2011	(Reference)		
<i>Post-DACA Period</i>			
2013	0.013	0.014	0.357
2014	0.012	0.014	0.370
2015	0.027*	0.014	0.051
2016	0.020	0.014	0.157

*Notes:* Estimates from event study regression with 2011 as reference year. All specifications include demographic controls, state FE, and year FE. Standard errors clustered at household level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

The event study reveals several important patterns:

1. **Pre-trend pattern:** The coefficients for 2006–2008 are negative and statistically significant, suggesting that the treatment group was on a different trend relative to the control group in the early pre-period. However, the coefficients become smaller and statistically insignificant in 2009–2010, indicating convergence toward parallel trends just before DACA.
2. **Post-DACA effects:** The coefficients become positive after DACA implementation, with the largest effects in 2015 and 2016 (2.7 and 2.0 percentage points, respectively). The 2015 coefficient is marginally significant at the 10% level.
3. **Gradual effect:** The pattern suggests a gradual increase in the treatment effect over time, consistent with program take-up increasing as more individuals applied for and received DACA status.

The presence of some pre-trends in the early years warrants caution in interpreting the main DiD results. However, the convergence to parallel trends in 2009–2011 (immediately before DACA) and the subsequent divergence after DACA provide supportive evidence for a causal effect.

## 5 Robustness Checks

### 5.1 Alternative Bandwidth Specifications

Table 4 examines the sensitivity of results to the bandwidth around the age-16 cutoff.

Table 4: Robustness: Alternative Arrival Age Bandwidths

Bandwidth	Effect	Std. Error	N
[13, 18]	0.051***	0.008	52,275
[12, 19]	0.049***	0.007	65,994
[10, 21] (preferred)	0.042***	0.007	87,185
[8, 23]	0.036***	0.006	102,997
[5, 26]	0.027***	0.006	120,147

*Notes:* All specifications include demographic controls, state FE, and year FE. Standard errors clustered at household level. \*\*\*  $p < 0.01$ .

The estimates are positive and statistically significant across all bandwidths. As expected, the effect is larger for narrower bandwidths (where groups are more comparable) and smaller for wider bandwidths (where greater compositional differences may attenuate the effect). The preferred bandwidth [10, 21] balances comparability with sample size.

### 5.2 Heterogeneity by Gender

Table 5 examines whether the effect differs by gender.

Table 5: Heterogeneity: Effect by Gender

Subgroup	Effect	Std. Error	N
Male	0.039***	0.008	51,461
Female	0.044***	0.011	35,724

*Notes:* All specifications include demographic controls (excluding female for subgroup regressions), state FE, and year FE. Standard errors clustered at household level. \*\*\*  $p < 0.01$ .

The effect is statistically significant for both men and women, with similar magnitudes (3.9 pp for men, 4.4 pp for women). A test for equality of coefficients cannot reject that the effects are the same across genders.

### 5.3 Placebo Test

To further assess the parallel trends assumption, I conduct a placebo test using only pre-DACA data, with a “placebo” treatment beginning in 2009.

Table 6: Placebo Test: Pre-Period Analysis (2006–2011)

	Placebo DiD
Treated $\times$ Placebo Post (2009+)	0.012 (0.008)
p-value	0.139
Observations	54,511

*Notes:* Placebo test compares 2006–2008 to 2009–2011 within the pre-DACA period. Standard errors clustered at household level.

The placebo estimate is small (1.2 percentage points) and not statistically significant ( $p = 0.139$ ). This provides some reassurance that the main results are not driven by differential pre-trends, though the point estimate is not zero.

### 5.4 Alternative Control Group

As an additional robustness check, I use an alternative control group: individuals who arrived before age 16 (like the treatment group) but were born in 1977–1981, making them 31–35 years old in June 2012 and thus too old for DACA.

Table 7: Alternative Control: Birth Cohort Comparison

	Cohort DiD
Treated $\times$ Post	−0.139*** (0.010)
Observations	91,808

*Notes:* Treatment = born 1982–1995 (DACA eligible); Control = born 1977–1981 (too old for DACA). Both groups arrived before age 16 and in U.S. since 2007. Standard errors clustered at household level. \*\*\*  $p < 0.01$ .

This alternative specification yields a negative estimate (−13.9 pp), which is the opposite sign of the main results. This likely reflects strong age and lifecycle effects: the treatment group (born 1982–1995) is aging into prime working years during the post-period, while the control group (born 1977–1981) is aging into their mid-30s and may be experiencing different employment dynamics. This underscores why the arrival-age-based comparison in the main specification is preferable—it compares groups of similar age but different DACA eligibility status.

## 6 Discussion and Conclusion

### 6.1 Summary of Findings

This study examined the effect of DACA eligibility on full-time employment among Mexican-born non-citizens in the United States. Using a difference-in-differences design that exploits the age-at-arrival eligibility cutoff, I find that DACA eligibility increased full-time employment by approximately 4.2 percentage points (95% CI: 2.9–5.5 pp).

This effect is:

- Statistically significant at conventional levels ( $p < 0.001$ )
- Robust to alternative bandwidth choices around the cutoff
- Similar in magnitude for both men and women
- Supported by a placebo test showing no significant pre-trends in the immediate pre-period

## 6.2 Interpretation

The estimated effect represents an 8.4% relative increase in full-time employment from the baseline rate of 50.2%. This is a meaningful economic effect, suggesting that legal work authorization has substantial positive impacts on labor market outcomes.

The mechanism likely operates through several channels:

1. **Legal work authorization:** DACA provides recipients with Employment Authorization Documents, allowing them to work legally in the formal labor market.
2. **Reduced fear of deportation:** Deferred action reduces the risk associated with employment, potentially encouraging recipients to seek better job opportunities.
3. **Access to identification:** In many states, DACA recipients can obtain driver's licenses, expanding employment possibilities.

## 6.3 Limitations

Several limitations should be noted:

1. **Intent-to-treat interpretation:** The estimates capture the effect of DACA eligibility, not actual DACA receipt. Not all eligible individuals applied for DACA, so the effect of actual DACA status would be larger.
2. **Pre-trends in early years:** The event study shows some negative coefficients for 2006–2008, though trends converge by 2009–2011. This warrants some caution in interpretation.
3. **Measurement of undocumented status:** Non-citizen status is an imperfect proxy for undocumented status, as some non-citizens may have legal status other than citizenship.
4. **Repeated cross-section:** The ACS is not a panel, so I cannot track individuals over time or control for individual fixed effects.

## 6.4 Comparison with Prior Literature

The findings of this study are broadly consistent with the existing literature on DACA's labor market effects. Several prior studies have found positive effects of DACA on employment outcomes using various identification strategies and data sources.

Studies using similar difference-in-differences approaches have generally found positive effects ranging from 2 to 7 percentage points, depending on the specific outcome measure, sample definition, and time period examined. The estimate of 4.2 percentage points falls within this range and is consistent with the notion that legal work authorization has meaningful positive effects on employment.

Some key differences from prior studies include:

- **Outcome definition:** This study focuses specifically on full-time employment (35+ hours/week), while other studies have examined overall employment rates, labor force participation, or wages.
- **Control group:** The use of the arrival-age cutoff provides a particularly clean comparison, as both treatment and control groups consist of Mexican-born non-citizens who meet other DACA criteria.
- **Time period:** This analysis covers 2006–2016, capturing effects up to four years post-DACA implementation.

## 6.5 Policy Implications

These findings have several policy implications:

1. **Economic contributions:** The increase in full-time employment suggests that DACA recipients contribute more to the formal labor market, with implications for tax revenue and economic output.
2. **Labor market integration:** Legal work authorization appears to facilitate integration into the formal labor market, reducing reliance on informal employment.
3. **Program design:** The positive effects suggest that programs providing work authorization, even temporary, can have meaningful labor market benefits for eligible populations.
4. **Future policy:** These findings are relevant to ongoing debates about immigration reform and the potential effects of providing legal status to undocumented immigrants more broadly.

## 6.6 Future Research Directions

Several avenues for future research emerge from this study:

1. **Longer-term effects:** As more years of data become available, researchers can examine whether the positive effects persist or grow over time.
2. **Mechanisms:** Future work could examine specific channels through which DACA affects employment, such as changes in occupation, industry, or job quality.
3. **Spillover effects:** Research could examine whether DACA has effects on the broader labor market, including on non-DACA workers or employers.
4. **Heterogeneous effects:** More detailed analysis of how effects vary by education, state of residence, or other characteristics could inform policy targeting.

## 6.7 Conclusion

This independent replication study provides evidence that DACA eligibility had a positive and statistically significant effect on full-time employment among Mexican-born non-citizens. The preferred estimate of 4.2 percentage points represents a meaningful improvement in labor market outcomes, equivalent to an 8.4% relative increase from baseline.

The analysis employs a difference-in-differences design that compares individuals who arrived before age 16 (DACA eligible) to those who arrived at ages 16–21 (just above the eligibility cutoff). This design provides plausible identification under the assumption that these groups would have had parallel employment trends absent DACA.

Several robustness checks support the main finding: the effect is stable across different bandwidth choices, similar for men and women, and not driven by pre-existing differential trends in the immediate pre-period. While some pre-trends are observed in the early years (2006–2008), trends converge by 2009–2011, and the post-DACA divergence is consistent with a causal effect.

These findings contribute to our understanding of how immigration policies that provide legal work authorization affect employment outcomes. They suggest that DACA achieved one of its primary goals: improving labor market outcomes for eligible young immigrants who arrived in the United States as children.

## A Appendix A: Variable Definitions

Table 8: IPUMS Variable Definitions

Variable	Definition
YEAR	Census/survey year
HISPAN	Hispanic origin; 1 = Mexican
BPL	Birthplace; 200 = Mexico
CITIZEN	Citizenship status; 3 = Not a citizen
YRIMMIG	Year of immigration to U.S.
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth (1 = Jan–Mar, 2 = Apr–Jun, 3 = Jul–Sep, 4 = Oct–Dec)
AGE	Age at time of survey
SEX	Sex; 1 = Male, 2 = Female
MARST	Marital status; 1 = Married spouse present, 2 = Married spouse absent
EDUCD	Educational attainment (detailed)
UHRSWORK	Usual hours worked per week
STATEFIP	State FIPS code
SERIAL	Household serial number (for clustering)
PERWT	Person weight

## B Appendix B: DACA Eligibility Criteria Implementation

DACA eligibility was determined as follows:

### 1. Arrived before age 16:

```
age_at_arrival = YRIMMIG - BIRTHYR
arrived_before_16 = (age_at_arrival < 16)
```

### 2. Under 31 as of June 15, 2012:

```
under_31_june2012 = (BIRTHYR >= 1982) |
                    ((BIRTHYR == 1981) & (BIRTHQTR >= 3))
```

### 3. Continuous residence since June 15, 2007:

```
in_us_since_2007 = (YRIMMIG <= 2007)
```

### 4. Full eligibility:

```
daca_eligible = arrived_before_16 & under_31_june2012 &
                in_us_since_2007 & (CITIZEN == 3)
```

## C Appendix C: Full Regression Output

The preferred model (Model 4) includes the following covariates:

- Treated (arrived at ages 10–15)
- Treated  $\times$  Post
- Age (linear)
- Age squared
- Female indicator
- Married indicator
- High school education indicator ( $\text{EDUCD} \geq 60$ )
- College attendance indicator ( $\text{EDUCD} \geq 100$ )
- State fixed effects (51 categories)
- Year fixed effects (10 categories, excluding 2012)

R-squared: 0.241

Standard errors are clustered at the household level (SERIAL) to account for within-household correlation in employment outcomes.

## D Appendix D: Additional Robustness Analysis

### D.1 Sensitivity to Age Restrictions

The main analysis restricts the sample to working-age individuals (ages 16–40). This restriction ensures comparability between treatment and control groups and focuses on the population most relevant for employment outcomes. Table 9 shows how results vary with different age restrictions.

Table 9: Sensitivity to Age Restrictions

Age Range	Effect	Sample Size
16–35	0.044	72,461
16–40 (baseline)	0.042	87,185
16–45	0.040	94,823
18–40	0.041	82,156

*Notes:* All specifications use the preferred model with full controls. Effects are statistically significant at the 1% level in all cases.

The results are robust to alternative age restrictions, with point estimates ranging from 0.040 to 0.044. This stability suggests that the findings are not driven by the particular age range chosen for the analysis.

### D.2 State-Level Heterogeneity

Given that states vary in their policies toward undocumented immigrants and DACA recipients (e.g., driver’s license eligibility, in-state tuition), we might expect heterogeneous effects across states. While a full state-by-state analysis is beyond the scope of this study, I note that the inclusion of state fixed effects in the preferred specification controls for time-invariant state-level differences.

States with larger Mexican immigrant populations (California, Texas, Arizona, Illinois, New York) contribute disproportionately to the sample. The main results are robust to excluding any single large state from the analysis, suggesting that the findings are not driven by any particular state’s experience.

## D.3 Timing of Effects

The event study analysis reveals that effects emerge gradually after DACA implementation. This pattern is consistent with program take-up dynamics:

- Applications began August 15, 2012
- Processing time varied (weeks to months)
- Not all eligible individuals applied immediately
- Some may have faced barriers to application (costs, documentation)

The largest effects are observed in 2015–2016, approximately 3–4 years after implementation. This lag is consistent with the time needed for program awareness to spread, applications to be processed, and recipients to find new employment opportunities.

## E Appendix E: Data Quality Considerations

### E.1 Measurement Error in Key Variables

Several key variables may be measured with error:

1. **Year of immigration (YRIMMIG):** Respondents may misremember their year of arrival, particularly if it occurred in childhood. This measurement error would likely attenuate the estimated treatment effect if it causes some individuals to be misclassified between treatment and control groups.
2. **Citizenship status (CITIZEN):** The ACS relies on self-reports, and some undocumented immigrants may misreport their status. However, the direction of any bias is unclear.
3. **Hours worked (UHRSWORK):** The variable measures “usual” hours worked, which may differ from actual hours in any given week. This measurement error in the outcome variable would increase standard errors but should not bias point estimates.

### E.2 Sample Selection Considerations

The ACS samples the residential population, which may miss some undocumented immigrants who:

- Live in non-traditional housing arrangements
- Are less likely to respond to government surveys
- Have recently arrived and are not well-established

To the extent that DACA recipients are more integrated into mainstream society (by virtue of meeting the program requirements), they may be better represented in the ACS than the broader undocumented population. This could limit the generalizability of findings to less-integrated immigrant populations.

### E.3 Weighting Considerations

The main analysis presents unweighted regression estimates. The ACS provides person weights (PERWT) to produce nationally representative statistics. Weighted and unweighted analyses may differ if:

- Treatment effects vary with characteristics associated with the weights
- Certain subgroups are over- or under-sampled

Auxiliary analysis using person weights yields similar but somewhat larger estimates, suggesting that the unweighted estimates may be conservative.

## F Appendix F: Analytical Decisions and Justifications

This appendix documents key analytical decisions made during the study:

1. **Choice of control group:** The arrival-age-based control group (ages 16–21) was chosen because it:
  - Provides a clean identification of the age-at-arrival cutoff
  - Consists of individuals with similar backgrounds (Mexican-born, non-citizen)
  - Meets other DACA criteria, isolating the arrival age requirement
2. **Bandwidth selection:** The baseline bandwidth of 10–21 was chosen to balance:
  - Comparability (narrower is better)
  - Statistical power (wider provides more observations)
  - Results are robust to alternative choices (Table 7)

3. **Exclusion of 2012:** The transition year was excluded because:
  - DACA was implemented June 15, mid-year
  - ACS does not indicate month of interview
  - Observations from 2012 cannot be classified as pre- or post-treatment
4. **Standard error clustering:** Clustering at the household level accounts for:
  - Within-household correlation in employment outcomes
  - Multiple observations from the same household
  - Conservative standard errors compared to robust (unclustered) SEs
5. **Full-time employment threshold:** The 35-hour threshold follows:
  - Bureau of Labor Statistics standard definition
  - Common practice in the labor economics literature
  - Results are similar using alternative thresholds (30, 40 hours)