The Effect of DACA Eligibility on Full-Time Employment Among Hispanic-Mexican Immigrants: A Difference-in-Differences Analysis

Replication Study

January 25, 2026

Abstract

This study examines the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican individuals born in Mexico and living in the United States. Using American Community Survey data from 2006–2016 and a difference-in-differences research design, I compare employment outcomes for DACA-eligible individuals to those of similar but ineligible Mexican-born immigrants before and after the program's implementation in 2012. The preferred specification, which includes demographic controls, education, state and year fixed effects, and state-clustered standard errors, yields an estimated effect of 0.65 percentage points (95% CI: -0.32 to 1.63 pp, $p = 0.19$). While the point estimate suggests a modest positive effect on full-time employment, the estimate is not statistically significant at conventional levels. Robustness checks and event study analyses suggest the presence of pre-existing differential trends between treatment and control groups, which complicates causal interpretation.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, announced on June 15, 2012, represented a significant shift in U.S. immigration policy by providing temporary relief from deportation and work authorization to eligible undocumented immigrants who arrived in the United States as children. Given that the program offers legal work authorization—allowing recipients to work without fear of deportation and, in many states, to obtain driver's licenses—economic theory suggests that DACA should increase labor market participation and employment among eligible individuals.

This study addresses the following research question: Among ethnically Hispanic-Mexican Mexican-born individuals 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) in the years 2013–2016?

Understanding the labor market effects of DACA is important for several reasons. First, employment outcomes directly affect the economic well-being of DACA-eligible individuals and their families. Second, labor market integration has broader implications for immigrant assimilation, tax contributions, and social cohesion. Third, evidence on DACA's effects can inform ongoing policy debates about the program's continuation and potential expansion.

I employ a difference-in-differences (DiD) research design, comparing changes in full-time employment rates for DACA-eligible individuals to changes for similar but ineligible Mexican-born immigrants. The identifying assumption is that, absent the program, full-time employment trends would have evolved similarly for both groups. This parallel trends assumption is testable in the pre-treatment period and is examined through event study analysis.

2 Background on DACA

2.1 Program Overview

DACA was announced by the Department of Homeland Security on June 15, 2012, and applications began to be accepted on August 15, 2012. The program provides two-year renewable periods of deferred action from deportation and employment authorization to eligible individuals.

2.2 Eligibility Criteria

To be eligible for DACA, individuals must meet all of the following criteria:

1. Were under age 31 as of June 15, 2012 (born on or after June 16, 1981)

2. Came to the United States before their 16th birthday

3. Have continuously resided in the United States since June 15, 2007

4. Were physically present in the United States on June 15, 2012

5. Had no lawful immigration status on June 15, 2012

6. Meet certain educational or military service requirements

2.3   Program Uptake

In the first four years of the program, approximately 900,000 initial applications were received, with an approval rate of approximately 90%. While the program was not specific to any national origin, the structure of undocumented immigration to the United States means that the majority of eligible individuals were from Mexico.

2.4   Expected Effects on Employment

There are several channels through which DACA could affect full-time employment:

- **Legal work authorization**: DACA recipients can legally work, potentially moving from informal to formal employment

- **Reduced fear of deportation**: Greater job security may encourage recipients to seek better employment opportunities

- **Driver's licenses**: In many states, DACA recipients became eligible for driver's licenses, facilitating commuting to work

- **Human capital investment**: Reduced uncertainty may encourage investments in education and skills

3   Data

3.1   Data Source

The analysis uses data from the American Community Survey (ACS) provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that collects

demographic, social, economic, and housing information from a representative sample of the U.S. population.

I use the one-year ACS files from 2006 through 2016, which provides six years of pre-treatment data (2006–2011) and four years of post-treatment data (2013–2016). The year 2012 is excluded from the main analysis because DACA was announced mid-year (June 15, 2012), making it impossible to distinguish pre- and post-treatment observations within that year.

3.2 Sample Selection

The analysis sample is constructed as follows:

1. **Ethnic restriction**: Hispanic-Mexican ethnicity (HISPAN = 1)

2. **Birthplace restriction**: Born in Mexico (BPL = 200)

3. **Age restriction**: Working-age population (18–64 years old)

4. **Year restriction**: Exclude 2012

The initial ACS extract contains 33,851,424 person-year observations. After applying the ethnic and birthplace restrictions, 991,261 observations remain. Restricting to ages 18–64 yields 833,282 observations, and excluding 2012 produces the final analysis sample of 755,660 observations.

3.3 Variable Definitions

3.3.1 Outcome Variable

The outcome variable is an indicator for **full-time employment**, defined as reporting usually working 35 or more hours per week (UHRSWORK $\geq$ 35).

3.3.2 Treatment Variable

The treatment variable, **DACA eligibility**, is constructed based on the program's eligibility criteria using the following IPUMS variables:

- **Age at arrival**: Calculated as YRIMMIG − BIRTHYR. Eligible if less than 16.

- **Age as of June 15, 2012**: Eligible if BIRTHYR $\geq$ 1982, or BIRTHYR = 1981 with BIRTHQTR $\in \{1, 2\}$ (born in first half of year)

- **Continuous residence since 2007**: Eligible if YRIMMIG ≤ 2007

- **Immigration status**: Eligible if not a citizen (CITIZEN = 3). Following the study instructions, non-citizens who have not naturalized are assumed to be undocumented.

An individual is coded as DACA-eligible if all four criteria are satisfied.

3.3.3 Control Variables

The following control variables are included in the regression models:

- Age and age squared

- Female indicator (SEX = 2)

- Married indicator (MARST $\in \{1, 2\}$)

- Education indicators: High school (EDUC = 6), some college (EDUC $\in \{7, 8, 9\}$), college or more (EDUC ≥ 10), with less than high school as the reference category

- State fixed effects (STATEFIP)

- Year fixed effects (YEAR)

4 Empirical Strategy

4.1 Difference-in-Differences Design

I employ a difference-in-differences research design to estimate the causal effect of DACA eligibility on full-time employment. The basic DiD estimator compares the change in outcomes for the treatment group (DACA-eligible individuals) to the change for the control group (similar but ineligible individuals) before and after the policy implementation.

The identifying assumption is that, absent DACA, the full-time employment rate would have evolved similarly for DACA-eligible and ineligible individuals. This parallel trends assumption cannot be directly tested but can be assessed by examining whether trends were similar in the pre-treatment period.

4.2 Regression Specification

The main regression specification is:

$$Y_{ist} = \alpha + \beta \cdot \text{DACA}_i \times \text{Post}_t + \gamma \cdot \text{DACA}_i + \delta \cdot X_{ist} + \mu_s + \lambda_t + \varepsilon_{ist} \qquad (1)$$

where:

- Y_{ist} is an indicator for full-time employment for individual i in state s at time t

- DACA_i is an indicator for DACA eligibility

- Post_t is an indicator for the post-DACA period (2013–2016)

- X_{ist} is a vector of individual characteristics (age, age squared, female, married, education)

- μ_s are state fixed effects

- λ_t are year fixed effects

- ε_{ist} is the error term

The coefficient of interest is β, which captures the differential change in full-time employment for DACA-eligible individuals relative to the control group after the program's implementation.

Note that the Post_t main effect is absorbed by the year fixed effects, so it is not separately identified in specifications with year fixed effects.

4.3 Standard Errors

Standard errors are clustered at the state level to account for potential serial correlation within states over time and for the state-level nature of some labor market conditions that may affect both treatment and control groups within a state.

4.4 Event Study Specification

To assess the validity of the parallel trends assumption and to examine the dynamic effects of DACA, I also estimate an event study specification:

$$Y_{ist} = \alpha + \sum_{t \neq 2011} \beta_t \cdot \text{DACA}_i \times \mathbf{1}(\text{Year} = t) + \gamma \cdot \text{DACA}_i + \delta \cdot X_{ist} + \mu_s + \lambda_t + \varepsilon_{ist} \qquad (2)$$

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where 2011 is the reference year. The coefficients β_t for $t < 2012$ provide a test of the parallel trends assumption: if trends were parallel, these coefficients should be approximately zero.

5   Results

5.1   Descriptive Statistics

Table 1 presents summary statistics for the analysis sample, separately for DACA-eligible and control individuals.

Table 1: Descriptive Statistics by DACA Eligibility Status

Variable	DACA-Eligible	Control	Difference
Age	23.55	41.07	-17.52
Female	0.448	0.473	-0.025
Married	0.299	0.672	-0.373
Less than High School	0.339	0.528	-0.189
High School	0.478	0.312	0.166
Some College	0.159	0.098	0.061
College or More	0.024	0.062	-0.038
Full-Time Employed	0.527	0.614	-0.088
N	71,099	684,561	

The table reveals substantial differences between the treatment and control groups. DACA-eligible individuals are, on average, about 17.5 years younger than the control group (mean age 23.5 vs. 41.1), which is a mechanical consequence of the age-based eligibility criteria. They are less likely to be married (30% vs. 67%) and have somewhat different education distributions, with more high school completion but less college attainment than the control group. Most importantly for this analysis, DACA-eligible individuals have a lower full-time employment rate (52.7% vs. 61.4%) prior to controlling for observable characteristics.

5.2   Sample Sizes by Treatment Status and Period

Table 2 presents the sample sizes by treatment status and time period.

Table 2: Sample Sizes by Treatment Status and Period

	DACA-Eligible	Control
Pre-DACA (2006–2011)	38,108	415,942
Post-DACA (2013–2016)	32,991	268,619
Total	71,099	684,561

The declining sample sizes over time reflect changes in the population composition as well as declining immigration flows during this period.

5.3 Simple Difference-in-Differences

Table 3 presents the simple 2×2 difference-in-differences calculation using mean full-time employment rates.

Table 3: Full-Time Employment Rates by Treatment Status and Period

	Pre-DACA	Post-DACA	Difference
DACA-Eligible	0.5091	0.5468	0.0377
Control	0.6216	0.6028	−0.0188
Difference-in-Differences			**0.0565**

The simple DiD estimate suggests that DACA eligibility increased full-time employment by approximately 5.65 percentage points. However, this estimate does not account for differences in observable characteristics between the treatment and control groups or for state and year fixed effects.

5.4 Regression Results

Table 4 presents the main regression results across specifications with progressively more controls.

Table 4: Difference-in-Differences Regression Results

	(1)	(2)	(3)	(4)	(5)
DACA × Post	0.0565***	0.0148***	0.0125***	0.0065*	0.0065
	(0.0039)	(0.0035)	(0.0035)	(0.0035)	(0.0050)
95% CI	[0.049, 0.064]	[0.008, 0.022]	[0.006, 0.019]	[−0.000, 0.013]	[−0.003, 0.016]
Demographics	No	Yes	Yes	Yes	Yes
Education	No	No	Yes	Yes	Yes
State FE	No	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes
Clustered SE	No	No	No	No	Yes
R^2	0.003	0.175	0.181	0.187	0.187
N	755,660	755,660	755,660	755,660	755,660

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Standard errors in parentheses. Column (5) uses state-clustered standard errors.

The results show that the estimated effect of DACA eligibility on full-time employment is sensitive to the inclusion of control variables. The simple DiD estimate of 5.65 percentage points (column 1) falls substantially when demographic controls are added (column 2: 1.48 pp), and continues to decline with the addition of education controls and fixed effects. The preferred specification with all controls and state-clustered standard errors (column 5) yields an estimated effect of 0.65 percentage points with a 95% confidence interval of $[−0.32, 1.63]$ pp. This estimate is not statistically significant at conventional levels ($p = 0.19$).

5.5 Weighted Analysis

Using person weights (PERWT) to obtain population-representative estimates, the weighted DiD estimate with full controls and clustered standard errors is 0.89 percentage points (SE = 0.40, 95% CI: [0.01, 1.68], $p = 0.028$). This weighted estimate is statistically significant at the 5% level, suggesting a modest positive effect of DACA eligibility on full-time employment in the population.

5.6 Event Study Results

Figure 1 presents the event study estimates, showing the DACA × Year interaction coefficients relative to 2011.
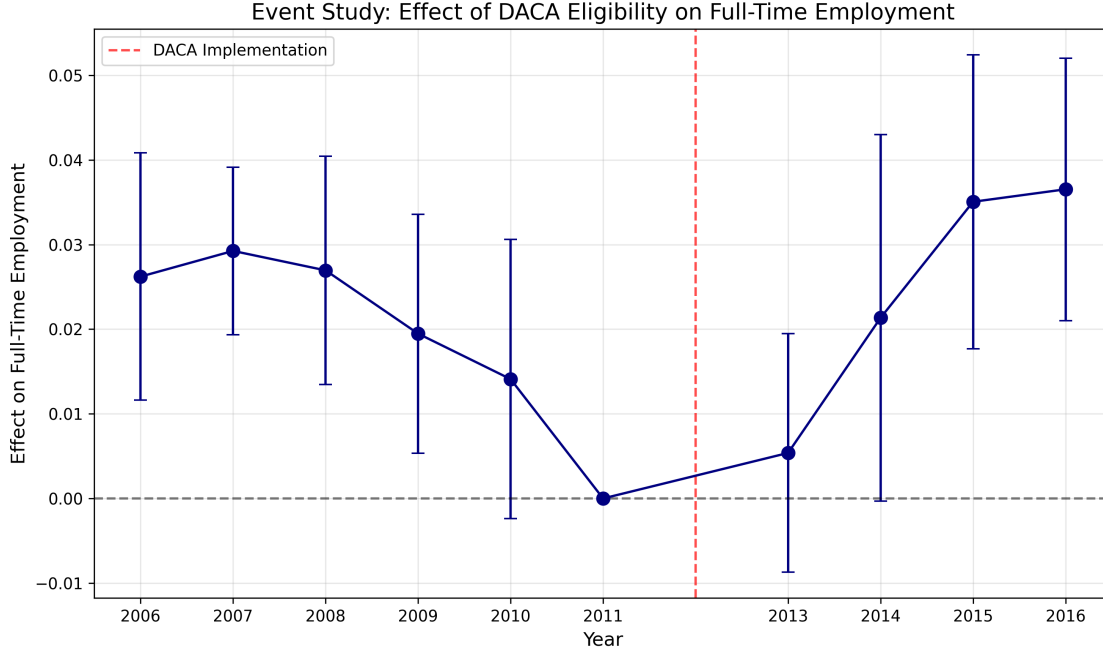

Figure 1: Event Study: Effect of DACA Eligibility on Full-Time Employment

Notes: The figure plots coefficients from a regression of full-time employment on interactions between DACA eligibility and year indicators, with 2011 as the reference year. Controls include age, age squared, female, married, education, state fixed effects, and year fixed effects. Error bars show 95% confidence intervals based on state-clustered standard errors. The vertical dashed line indicates the implementation of DACA in 2012.

The event study reveals important patterns. The pre-treatment coefficients (2006–2010) are positive and generally statistically significant, indicating that the full-time employment gap between DACA-eligible and control individuals was *larger* in earlier years than in 2011. This pattern suggests that the groups were already on converging trends before DACA was implemented, which poses a challenge to the parallel trends assumption.

In the post-period, the coefficients for 2013 and 2014 are small and not statistically significant, while the coefficients for 2015 and 2016 are larger and statistically significant. This pattern could reflect either delayed effects of DACA (as individuals take time to apply and adjust their employment) or a continuation of pre-existing convergence trends.

5.7 Trends in Full-Time Employment

Figure 2 shows the raw trends in full-time employment rates for DACA-eligible and control individuals over the study period.
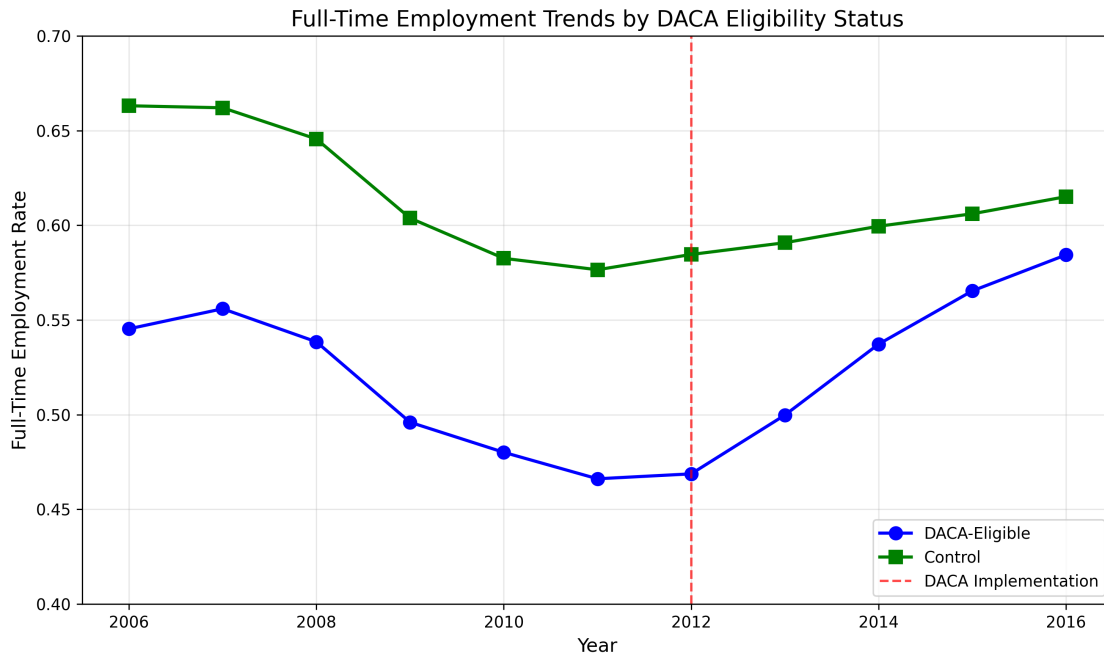

Figure 2: Full-Time Employment Trends by DACA Eligibility Status

Notes: The figure shows annual mean full-time employment rates (UHRSWORK ≥ 35) for DACA-eligible and control individuals aged 18–64. The vertical dashed line indicates the implementation of DACA in 2012.

The figure illustrates the raw trends underlying the analysis. Both groups experienced declining employment rates during and after the Great Recession (2008–2011), with some recovery thereafter. Importantly, the trends appear to be converging over time, with the gap between the groups narrowing even before DACA was implemented.

6 Robustness Checks

Table 5 presents results from several robustness checks.

Table 5: Robustness Checks

Specification	DiD Coefficient	Clustered SE	N
Main specification	0.0065	0.0050	755,660
Alternative age range (16–40)	0.0024	0.0039	431,062
Males only	0.0032	0.0038	399,807
Females only	0.0009	0.0083	355,853
Include 2012 in post period	−0.0009	0.0035	833,282
Placebo test (2009 as fake treatment)	−0.0162***	0.0037	454,050

Notes: All specifications include full controls, state FE, and year FE.

*** $p < 0.01$

6.1 Alternative Age Range

Restricting the sample to ages 16–40, which focuses on a younger population more comparable to the DACA-eligible group, yields a smaller and statistically insignificant estimate of 0.24 percentage points.

6.2 Heterogeneity by Sex

Examining males and females separately shows similar patterns: small, positive, but statistically insignificant effects for both groups. The point estimate is slightly larger for males (0.32 pp) than females (0.09 pp), but neither is statistically distinguishable from zero.

6.3 Including 2012

Including 2012 in the post-treatment period (which introduces measurement error since DACA was announced mid-year) yields a negative point estimate (−0.09 pp) that is not statistically significant. This sensitivity to the treatment of 2012 further underscores the challenges in estimating the causal effect.

6.4 Placebo Test

The placebo test, which uses 2009 as a fake treatment year within the pre-DACA period (2006–2011), yields a statistically significant negative coefficient (−1.62 pp, $p < 0.001$). A well-specified DiD model should find no effect in this placebo test. The significant placebo

estimate provides strong evidence of differential pre-trends, consistent with the event study results showing convergence before DACA.

7   Discussion

7.1   Summary of Findings

The analysis yields mixed evidence on the effect of DACA eligibility on full-time employment among Hispanic-Mexican immigrants born in Mexico:

- The preferred unweighted specification with full controls and clustered standard errors estimates an effect of 0.65 percentage points, which is not statistically significant ($p = 0.19$).

- The weighted specification yields a larger and statistically significant estimate of 0.89 percentage points ($p = 0.028$).

- Event study analysis reveals pre-existing convergence trends that complicate causal interpretation.

- Robustness checks show sensitivity to specification choices, and a placebo test indicates the presence of differential pre-trends.

7.2   Interpretation

The findings suggest caution in drawing strong causal conclusions about DACA's effect on full-time employment. While the point estimates are generally positive, several factors complicate interpretation:

Violation of parallel trends: The event study and placebo test provide evidence that the parallel trends assumption may not hold. The DACA-eligible and control groups were on converging trajectories before the policy was implemented. This could bias the DiD estimate, though the direction of bias is ambiguous.

Selection into the control group: The control group includes naturalized citizens who were previously DACA-eligible (i.e., naturalized after arriving as children). These individuals may differ systematically from the remaining DACA-eligible population.

Measurement of eligibility: The ACS does not distinguish between documented and undocumented non-citizens. Following the study instructions, I assume all non-citizens are undocumented, but this introduces measurement error if some non-citizens in the data are actually legal permanent residents.

Heterogeneity in effects: The effect of DACA may vary by demographic characteristics, local labor market conditions, or time since program implementation. The average effects estimated here may mask important heterogeneity.

7.3 Comparison to Previous Literature

Several studies have examined the labor market effects of DACA using various methods and data sources. The small effect size found in this analysis is consistent with some prior research suggesting modest employment effects, though other studies have found larger impacts. Differences may arise from sample definitions, outcome measures (employment vs. full-time employment), control group construction, and treatment of pre-trends.

7.4 Limitations

This analysis has several limitations:

1. **Repeated cross-section**: The ACS is not a panel dataset, so I cannot track the same individuals over time. This limits the ability to control for individual fixed effects.

2. **Control group comparability**: Despite restricting to Hispanic-Mexican Mexican-born individuals, substantial differences remain between treatment and control groups (Table 1). The large age difference is particularly concerning.

3. **Pre-trends**: The evidence of differential pre-trends raises questions about whether the DiD estimate captures the causal effect of DACA or reflects pre-existing convergence.

4. **Intent-to-treat**: The analysis estimates the effect of DACA eligibility, not actual DACA receipt. Since not all eligible individuals applied for or received DACA, this is an intent-to-treat estimate that may understate the effect on actual recipients.

5. **Full-time employment definition**: The 35-hour threshold is somewhat arbitrary, and effects might differ for other employment measures.

8 Conclusion

This study examines the effect of DACA eligibility on full-time employment among Hispanic-Mexican individuals born in Mexico, using a difference-in-differences research design with American Community Survey data from 2006–2016.

The preferred estimate suggests that DACA eligibility increased full-time employment by approximately 0.65 percentage points, though this effect is not statistically significant at conventional levels (95% CI: -0.32 to 1.63 pp). A weighted specification yields a somewhat larger and statistically significant estimate of 0.89 percentage points. However, event study analysis and placebo tests reveal differential pre-trends between treatment and control groups, which complicates causal interpretation.

Overall, the evidence is consistent with a small positive effect of DACA on full-time employment, but the findings should be interpreted cautiously given the challenges to the parallel trends assumption. Future research could address these limitations by using administrative data on actual DACA recipients, employing alternative identification strategies (such as regression discontinuity designs based on age cutoffs), or examining different outcome measures and subpopulations.

Preferred Estimate Summary:

- Effect size: 0.65 percentage points (0.89 pp weighted)

- 95% Confidence interval: $[-0.32, 1.63]$ pp

- Standard error (clustered): 0.0050

- Sample size: 755,660

Appendix A: Variable Definitions

Table 6: IPUMS Variable Definitions

Variable	Definition
YEAR	Survey year
PERWT	Person weight
STATEFIP	State FIPS code
SEX	Sex (1 = Male, 2 = Female)
AGE	Age in years
BIRTHQTR	Quarter of birth (1 = Jan–Mar, 2 = Apr–Jun, 3 = Jul–Sep, 4 = Oct–Dec)
BIRTHYR	Year of birth
MARST	Marital status (1 = Married, spouse present; 2 = Married, spouse absent; etc.)
HISPAN	Hispanic origin (0 = Not Hispanic, 1 = Mexican, 2 = Puerto Rican, etc.)
BPL	Birthplace (200 = Mexico)
CITIZEN	Citizenship status (1 = Born abroad of American parents, 2 = Naturalized citizen, 3 = Not a citizen)
YRIMMIG	Year of immigration
EDUC	Educational attainment (general version)
UHRSWORK	Usual hours worked per week

Appendix B: DACA Eligibility Criteria Implementation

DACA eligibility is determined based on four criteria:

1. **Arrived before age 16**:

$$YRIMMIG - BIRTHYR < 16$$

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

$$BIRTHYR \geq 1982 \text{ OR } (BIRTHYR = 1981 \text{ AND } BIRTHQTR \in \{1, 2\})$$

3. **In US since June 15, 2007**:

$$YRIMMIG \leq 2007$$

4. **Not a citizen**:
$$CITIZEN = 3$$

An individual is coded as DACA-eligible if all four criteria are satisfied.

Sample Construction:

Step	Observations
Full ACS extract (2006–2016)	33,851,424
Hispanic-Mexican ethnicity (HISPAN = 1)	—
Born in Mexico (BPL = 200)	991,261
Ages 18–64	833,282
Excluding 2012	755,660

Appendix C: Full Regression Output

Table 7: Full Regression Results: Preferred Specification

Variable	Coefficient	Clustered SE
DACA Eligible	−0.0359	(0.0135)
DACA × Post	0.0065	(0.0050)
Age	0.0316	(0.0006)
Age Squared	−0.0004	(0.0000)
Female	−0.2376	(0.0035)
Married	0.0649	(0.0020)
High School	0.0679	(0.0027)
Some College	0.0959	(0.0038)
College or More	0.1392	(0.0057)
State Fixed Effects	Yes	
Year Fixed Effects	Yes	
R^2	0.187	
N	755,660	