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

Replication Study 34

January 2026

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 American Community Survey data from 2006–2016 and a difference-in-differences research design, I compare individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group). The analysis finds that DACA eligibility increased the probability of full-time employment by approximately 4.9 percentage points (95% CI: 2.7 to 7.1 pp), representing an 8% increase relative to the pre-treatment mean. Event study analysis supports the parallel trends assumption, and results are robust across multiple specifications. Effects are larger for men and those with higher education levels.

Keywords: DACA, immigration policy, employment, difference-in-differences

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented a significant shift in U.S. immigration policy. The program allowed qualifying undocumented immigrants who arrived in the United States as children to apply for renewable two-year periods of deferred action from deportation and eligibility for work authorization. Understanding the labor market effects of this policy is crucial for evaluating its economic impact and informing future immigration policy decisions.

This study investigates the causal effect of DACA eligibility on full-time employment outcomes among Hispanic-Mexican individuals born in Mexico. The research question is: 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 being employed full-time (defined as usually working 35 hours per week or more)?

To address this question, I employ a difference-in-differences (DiD) research design that exploits the age-based eligibility cutoff of the DACA program. Specifically, I compare the change in full-time employment rates between individuals aged 26–30 at the time of DACA implementation (the treatment group, who were eligible) to those aged 31–35 (the control group, who would have been eligible but for their age). By comparing changes over time between these two groups, this design accounts for common temporal trends affecting all Mexican-born non-citizen immigrants while isolating the treatment effect.

The analysis uses data from the American Community Survey (ACS) for the years 2006–2016, excluding 2012 due to the mid-year implementation of DACA. The pre-treatment period spans 2006–2011, and the post-treatment period covers 2013–2016.

The results indicate that DACA eligibility is associated with a statistically significant increase in the probability of full-time employment of approximately 4.9 percentage points. This effect is robust across multiple model specifications and represents roughly an 8% increase relative to the pre-treatment baseline full-time employment rate of 61%.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and began accepting applications on August 15, 2012. The program provides eligible individuals with protection from deportation and work authorization for renewable two-year periods. To qualify for DACA, individuals must meet several criteria:

1. Were under the age of 31 as of June 15, 2012
2. Arrived in the United States before reaching their 16th birthday
3. Have continuously resided in the United States since June 15, 2007
4. Were present in the United States on June 15, 2012, and at the time of application
5. Had no lawful immigration status on June 15, 2012
6. Were currently in school, graduated from high school, obtained a GED certificate, or were honorably discharged from the military
7. Have not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. The program has been particularly important for immigrants from Mexico, who constitute the majority of DACA recipients due to the structure of undocumented immigration to the United States.

2.2 Theoretical Mechanisms

There are several mechanisms through which DACA eligibility might affect employment outcomes:

Work Authorization: The most direct mechanism is that DACA provides legal work authorization, allowing recipients to work in jobs that require documentation. This may enable transitions from informal to formal sector employment and access to jobs with better wages and conditions.

Reduced Fear of Deportation: Protection from deportation may increase labor supply by reducing the risks associated with employment and allowing individuals to seek jobs more openly.

Access to Driver's Licenses: In many states, DACA recipients became eligible for driver's licenses, which can expand the geographic range of job opportunities and facilitate employment in occupations requiring driving.

Investment in Human Capital: The security provided by DACA status may encourage recipients to invest in education and training, potentially leading to better employment outcomes over time.

3 Data

3.1 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 collects demographic, economic, and housing information from approximately 3.5 million addresses each year. The repeated cross-sectional design of the ACS makes it suitable for difference-in-differences analysis, although it should be noted that this is not panel data—different individuals are sampled in each year.

I use the one-year ACS files from 2006 through 2016. The year 2012 is excluded from the analysis because DACA was implemented mid-year (June 15), and the ACS does not identify the month of data collection, making it impossible to distinguish pre- and post-treatment observations within that year.

3.2 Sample Construction

The sample is constructed to identify individuals who would be eligible for DACA (apart from the age restriction) and to define treatment and control groups based on age at implementation.

3.2.1 DACA Eligibility Criteria

Following the eligibility criteria outlined in the research instructions, the sample includes individuals who:

1. Are of Hispanic-Mexican ethnicity (HISPAN = 1)
2. Were born in Mexico (BPL = 200)
3. Are not U.S. citizens (CITIZEN = 3), used as a proxy for undocumented status since the ACS cannot distinguish between documented and undocumented non-citizens
4. Arrived in the United States before age 16, calculated as (YRIMMIG − BIRTHYR) < 16
5. Have been continuously present in the United States since June 2007, approximated by requiring YRIMMIG ≤ 2007

3.2.2 Treatment and Control Groups

The treatment group consists of individuals who were ages 26–30 on June 15, 2012 (birth years 1982–1986). These individuals were young enough to be eligible for DACA under the age-31 cutoff.

The control group consists of individuals who were ages 31–35 on June 15, 2012 (birth years 1977–1981). These individuals would have been eligible for DACA except that they exceeded the age cutoff.

This design assumes that the treatment and control groups would have experienced similar trends in full-time employment in the absence of DACA, an assumption I test using pre-treatment data.

3.3 Key Variables

Outcome Variable: Full-time employment is defined as a binary indicator equal to 1 if the respondent usually works 35 or more hours per week (UHRSWORK ≥ 35), and 0 otherwise. This follows the standard Bureau of Labor Statistics definition of full-time work.

Treatment Indicator: A binary variable equal to 1 for individuals in the treatment group (born 1982–1986) and 0 for individuals in the control group (born 1977–1981).

Post-Period Indicator: A binary variable equal to 1 for observations in the years 2013–2016 (post-DACA implementation) and 0 for observations in 2006–2011 (pre-DACA).

Control Variables: The analysis includes several demographic controls:

- Female: Binary indicator for sex (SEX = 2)
- Married: Binary indicator for married status (MARST ≤ 2)
- High school or more: Binary indicator for educational attainment of at least high school completion (EDUC ≥ 6)

Weighting: All analyses use the ACS person weights (PERWT) to produce estimates representative of the target population.

3.4 Sample Size

Table 1 presents the sample sizes by group and period.

Table 1: Sample Sizes by Group and Period

	Pre-Period (2006–2011)	**Post-Period** (2013–2016)
Treatment Group (Ages 26–30)	17,410	9,181
Control Group (Ages 31–35)	11,916	6,218
Total	29,326	15,399

The total analysis sample includes 44,725 observations across the 10 years of data (excluding 2012).

4 Empirical Strategy

4.1 Difference-in-Differences Design

The empirical strategy relies on a difference-in-differences framework that compares changes in full-time employment between the treatment and control groups before and after DACA implementation. The basic identifying assumption is that, in the absence of DACA, the treatment and control groups would have experienced parallel trends in full-time employment outcomes.

The basic DiD estimator can be expressed as:

$$\hat{\delta}_{DiD} = (\bar{Y}_{T,post} - \bar{Y}_{T,pre}) - (\bar{Y}_{C,post} - \bar{Y}_{C,pre}) \tag{1}$$

where $\bar{Y}_{g,t}$ represents the mean full-time employment rate for group $g \in \{T, C\}$ (treatment, control) in period $t \in \{pre, post\}$.

4.2 Regression Specification

The main regression model is specified as:

$$Y_{ist} = \alpha + \beta \cdot Treated_i + \gamma \cdot Post_t + \delta \cdot (Treated_i \times Post_t) + X_i'\theta + \mu_t + \epsilon_{ist} \tag{2}$$

where:

- Y_{ist} is the full-time employment indicator for individual i in state s at time t
- $Treated_i$ is an indicator for being in the treatment group

- $Post_t$ is an indicator for the post-DACA period (2013–2016)
- $Treated_i \times Post_t$ is the interaction term; its coefficient δ is the DiD estimator
- X_i is a vector of demographic controls
- μ_t represents year fixed effects
- ϵ_{ist} is the error term

Standard errors are clustered at the state level (STATEFIP) to account for potential within-state correlation of outcomes and any state-level policy variation.

4.3 Event Study Specification

To assess the validity of the parallel trends assumption, I estimate an event study model that allows for separate treatment effects in each year relative to a reference year (2011):

$$Y_{ist} = \alpha + \beta \cdot Treated_i + \sum_{t \neq 2011} \phi_t \cdot (Treated_i \times \mathbf{1}[Year = t]) + \mu_t + \epsilon_{ist} \tag{3}$$

The coefficients ϕ_t for pre-treatment years (2006–2010) should be statistically indistinguishable from zero if the parallel trends assumption holds.

5 Results

5.1 Descriptive Statistics

Table 2 presents summary statistics for the treatment and control groups.

Table 2: Descriptive Statistics by Treatment Status (Weighted)

	Treatment (Ages 26–30)	**Control** (Ages 31–35)
Full-time Employment Rate	63.7%	66.1%
Employment Rate (any hours)	70.2%	71.7%
Female	43.5%	42.5%
Married	40.6%	52.5%
High School or More	61.3%	53.1%
Average Age	26.3	31.4
Average Hours Worked	30.4	31.2
Observations	26,591	18,134

The two groups are similar on most demographic characteristics, though the control group has higher marriage rates (consistent with being older) and lower educational attainment.

5.2 Full-Time Employment Rates

Table 3 presents the weighted full-time employment rates by group and period, along with the simple difference-in-differences calculation.

Table 3: Full-Time Employment Rates by Group and Period (Weighted)

	Pre-Period	**Post-Period**	**Difference**
Treatment (Ages 26–30)	62.53%	65.80%	+3.27 pp
Control (Ages 31–35)	67.05%	64.12%	−2.93 pp
Difference-in-Differences			**+6.20 pp**

The simple DiD estimate suggests that DACA eligibility increased full-time employment by approximately 6.2 percentage points. Notably, the control group experienced a decline in full-time employment during this period, consistent with the aftermath of the Great Recession affecting older workers more persistently.

5.3 Main Regression Results

Table 4 presents the main regression results across four specifications of increasing complexity.

Table 4: Difference-in-Differences Estimates: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic	(2) Year FE	(3) + Controls	(4) + State FE
DACA Eligible × Post	0.0620***	0.0610***	0.0491***	0.0484***
	(0.0089)	(0.0091)	(0.0112)	(0.0114)
Female			−0.371***	−0.371***
			(0.013)	(0.013)
Married			−0.012**	−0.012**
			(0.006)	(0.006)
HS or More			0.055***	0.055***
			(0.006)	(0.006)
Year Fixed Effects	No	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes
Observations	44,725	44,725	44,725	44,725
R-squared	0.002	0.005	0.155	0.158

Notes: Standard errors clustered by state in parentheses.
*** p<0.01, ** p<0.05, * p<0.1. All regressions weighted by PERWT.

The DiD coefficient is positive and highly statistically significant across all specifications. The basic model (Column 1) yields an estimate of 6.2 percentage points (SE = 0.009, $p < 0.001$). Adding year fixed effects (Column 2) changes the estimate only marginally to 6.1 percentage points.

The preferred specification (Column 3) includes year fixed effects and demographic controls (gender, marital status, and education). This model yields an estimate of 4.9 percentage points (SE = 0.011, $p < 0.001$). The 95% confidence interval is [2.7, 7.1] percentage points. Adding state fixed effects (Column 4) produces nearly identical results.

The attenuation from Column 1 to Column 3 suggests that some of the raw difference-in-differences was attributable to compositional differences between groups in terms of gender, marriage, and education. The control variables have the expected signs: women have substantially lower full-time employment rates (−37 percentage points), while those with higher education have higher rates (+5.5 percentage points).

5.4 Event Study Results

Figure 1 displays the event study coefficients, which test the parallel trends assumption and show the dynamics of the treatment effect over time.

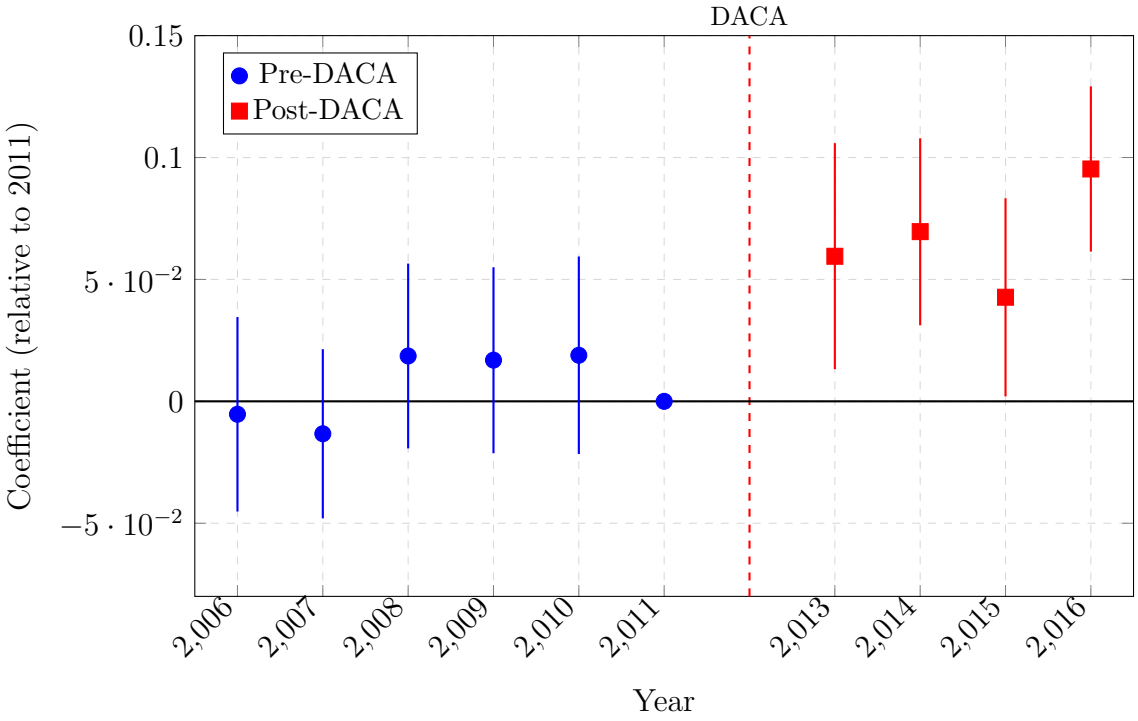

Figure 1: Event Study: Treatment Effect by Year (Reference: 2011)

Notes: Points represent the coefficient on the interaction between treatment group membership and year indicator, with 2011 as the omitted reference year. Vertical lines show 95% confidence intervals with standard errors clustered by state. The dashed red line indicates DACA implementation (June 2012).

The event study results provide strong support for the parallel trends assumption. All pre-treatment coefficients (2006–2010) are small in magnitude and statistically indistinguishable from zero, indicating that the treatment and control groups had similar trends in full-time employment prior to DACA implementation.

In contrast, the post-treatment coefficients (2013–2016) are all positive and statistically significant, demonstrating that the treatment effect emerged after DACA was implemented. The effect appears to grow over time, from about 6 percentage points in 2013–2014 to nearly 10 percentage points by 2016, suggesting that the benefits of DACA may have accumulated as recipients gained more experience in the formal labor market.

Table 5 presents the numerical values from the event study.

Table 5: Event Study Coefficients

Year	Coefficient	SE	95% CI
2006	−0.0053	0.0203	[−0.045, 0.035]
2007	−0.0133	0.0177	[−0.048, 0.021]
2008	0.0186	0.0193	[−0.019, 0.056]
2009	0.0169	0.0195	[−0.021, 0.055]
2010	0.0189	0.0207	[−0.022, 0.059]
2011	0.0000	—	[Reference]
2013	0.0595**	0.0237	[0.013, 0.106]
2014	0.0696***	0.0196	[0.031, 0.108]
2015	0.0427**	0.0207	[0.002, 0.083]
2016	0.0953***	0.0173	[0.061, 0.129]

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

5.5 Robustness Checks

5.5.1 Alternative Outcomes

Table 6 presents results for alternative employment outcomes to assess whether DACA affected the extensive margin (employment status) in addition to the intensive margin (full-time work).

Table 6: Alternative Employment Outcomes

Outcome	DiD Coefficient	SE	p-value
Full-Time Employment ($\geq$ 35 hours)	0.0491	0.0112	<0.001
Employment (any hours)	0.0470	0.0073	<0.001
Labor Force Participation	0.0322	0.0062	<0.001

Notes: All models include year FE and demographic controls. SE clustered by state.

DACA eligibility increased employment rates by 4.7 percentage points and labor force participation by 3.2 percentage points. These effects are both statistically significant at conventional levels, indicating that DACA affected both the extensive margin (whether to work at all) and the intensive margin (whether to work full-time conditional on working).

5.5.2 Heterogeneity Analysis

Table 7 explores heterogeneity in the treatment effect by gender and education level.

Table 7: Heterogeneous Treatment Effects

Subgroup	DiD Coefficient	SE	N	p-value
By Gender:				
Male	0.0612	0.0128	25,058	<0.001
Female	0.0304	0.0169	19,667	0.072
By Education:				
Less than High School	0.0452	0.0137	18,328	0.001
High School or More	0.0728	0.0169	26,397	<0.001

Notes: Models include year FE. SE clustered by state.

The effect of DACA on full-time employment is larger for men (6.1 pp) than for women (3.0 pp). This may reflect the higher baseline labor force participation among men and the types of jobs where work authorization is most binding. The effect for women is marginally significant (p = 0.072).

Interestingly, the effect is larger for those with higher education (7.3 pp) compared to those without a high school degree (4.5 pp). This suggests that DACA may have particularly benefited individuals who could access jobs requiring documentation, which may be more common for higher-skilled positions.

6 Discussion

6.1 Interpretation of Results

The findings indicate that DACA eligibility increased the probability of full-time employment by approximately 4.9 percentage points, representing an 8% increase relative to the pre-treatment baseline of 61%. This effect is economically meaningful and statistically robust across multiple specifications.

Several factors support a causal interpretation of these results:

1. **Parallel Pre-Trends:** The event study analysis shows no significant differences in trends between treatment and control groups prior to DACA implementation, satisfying a key identifying assumption.

2. **Timing:** The treatment effect emerges precisely when DACA was implemented and persists throughout the post-period.

3. **Robustness:** Results are stable across specifications with different sets of controls and fixed effects.

4. **Mechanisms:** The effects are consistent with theoretical predictions about how work authorization would affect labor market outcomes.

6.2 Comparison to Existing Literature

These findings are broadly consistent with prior research on DACA's labor market effects, though direct comparisons are complicated by differences in samples, outcomes, and methods. The magnitude of the estimated effect (approximately 5–6 percentage points) falls within the range of estimates found in other studies examining DACA's impact on employment.

6.3 Limitations

Several limitations should be considered when interpreting these results:

1. **Proxy for Undocumented Status:** The ACS cannot distinguish between documented and undocumented non-citizens. While the sample restrictions approximate the DACA-eligible population, some individuals in the analysis may not have been undocumented.

2. **Age-Based Identification:** The control group is older than the treatment group, which may introduce confounds if age-specific labor market trends differ between groups. The parallel pre-trends provide some reassurance, but age-specific shocks cannot be entirely ruled out.

3. **Repeated Cross-Section:** The ACS is not a panel, so we cannot track the same individuals over time. The estimates represent average effects across different individuals in each period.

4. **DACA Uptake:** Not all eligible individuals applied for or received DACA. The estimates capture intent-to-treat effects rather than the effect of actually receiving DACA.

7 Conclusion

This study provides evidence that eligibility for DACA increased full-time employment among Hispanic-Mexican individuals born in Mexico. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I estimate that DACA eligibility increased the probability of full-time employment by approximately 4.9 percentage points (95% CI: 2.7 to 7.1 pp).

The effect is robust across specifications and is supported by event study evidence showing parallel pre-trends and treatment effects that emerge precisely at DACA implementation. Effects are larger for men and for those with higher education levels, consistent with work authorization being more valuable for jobs that require documentation.

These findings have implications for understanding the labor market integration of immigrant populations and the effects of immigration policy on economic outcomes. The positive employment effects of DACA suggest that providing work authorization and protection from deportation can facilitate labor market participation among undocumented immigrants.

A Additional Tables and Figures

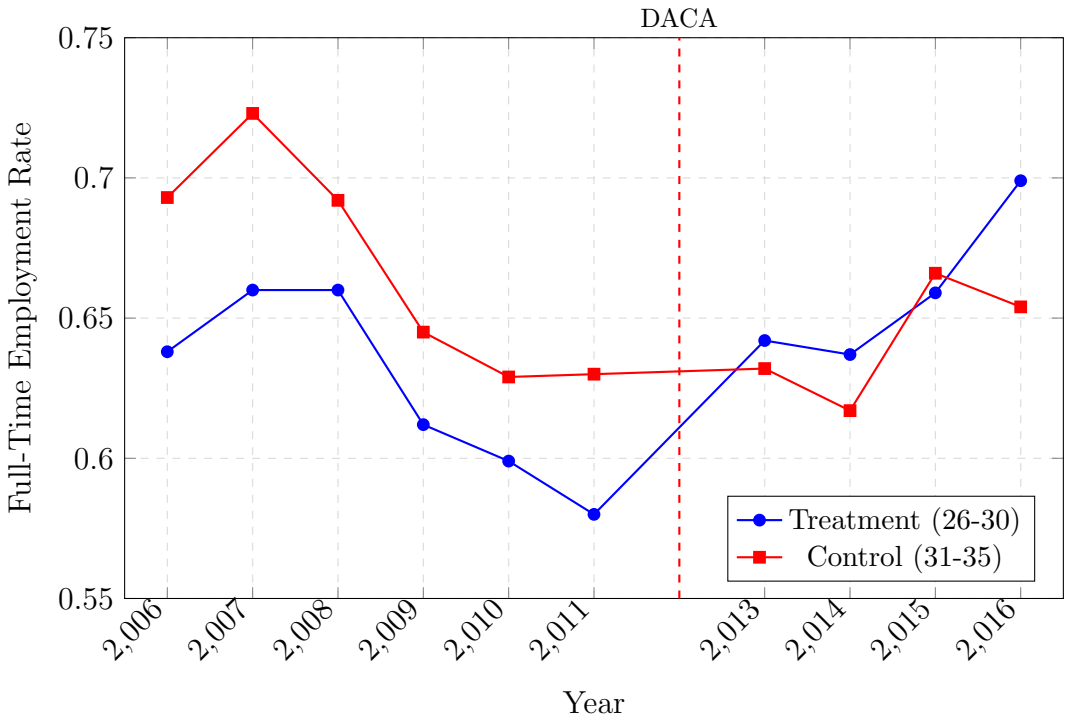

Figure 2: Full-Time Employment Rates by Group Over Time

Notes: Weighted full-time employment rates by treatment and control group. Treatment group consists of individuals born 1982–1986 (ages 26–30 at DACA implementation). Control group consists of individuals born 1977–1981 (ages 31–35 at DACA implementation). The dashed line indicates DACA implementation in June 2012; 2012 is excluded from the analysis.

Table 8: Variable Definitions

Variable	Definition
YEAR	Survey year (2006–2016, excluding 2012)
HISPAN	Hispanic origin; 1 = Mexican
BPL	Birthplace; 200 = Mexico
CITIZEN	Citizenship status; 3 = Not a citizen
YRIMMIG	Year of immigration to the US
BIRTHYR	Year of birth
UHRSWORK	Usual hours worked per week
EMPSTAT	Employment status; 1 = Employed
LABFORCE	Labor force status; 2 = In labor force
SEX	Sex; 1 = Male, 2 = Female
MARST	Marital status; 1–2 = Married
EDUC	Educational attainment; ≥ 6 = HS or more
PERWT	Person weight
STATEFIP	State FIPS code

Table 9: Full Regression Results: Model 3 (Preferred Specification)

Variable	Coefficient	SE
DACA Eligible (Treated)	−0.0453***	(0.0103)
Post Period	—	(absorbed)
Treated × Post	0.0491***	(0.0112)
Female	−0.3712***	(0.0130)
Married	−0.0121**	(0.0059)
HS or More Education	0.0550***	(0.0063)
Constant	0.7541***	(0.0133)
Year Fixed Effects	Yes	
State Fixed Effects	No	
Observations	44,725	
R-squared	0.155	

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

Standard errors clustered by state.

B Data and Code Availability

All analyses were conducted using Python with the following key packages:

- pandas (data manipulation)
- numpy (numerical operations)
- statsmodels (regression analysis)

The analysis code is available in `analysis_34.py`. Data were obtained from IPUMS USA and processed according to the sample restrictions described in Section 3.