Replication Report: The Effect of DACA on Full-Time Employment Among Mexican-Born Immigrants

Independent Replication Analysis

January 2026

Abstract

This report presents an independent replication analysis examining the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals in the United States. Using American Community Survey (ACS) data from 2008–2016 (excluding 2012), I implement a difference-in-differences research design comparing individuals aged 26–30 at the time of DACA implementation (the treatment group) to those aged 31–35 (the control group, who were ineligible solely due to age). My preferred estimate indicates that DACA eligibility increased full-time employment by approximately 5.1 percentage points (SE = 0.014, $p < 0.001$), an effect that is robust across multiple specifications including demographic controls, state fixed effects, and year fixed effects. Subgroup analyses reveal positive effects for both men and women, and for both married and unmarried individuals. Event study analysis provides some evidence supporting the parallel trends assumption, though pre-treatment coefficients show some variability. The placebo test using only pre-DACA data yields a small, statistically insignificant estimate, consistent with no differential pre-trends.

Contents

1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represents one of the most significant immigration policy changes in the United States in recent decades. The program allowed a select group of undocumented immigrants who arrived in the US as children to apply for temporary protection from deportation and authorization to work legally for a renewable two-year period. Given the substantial barriers that undocumented status creates for labor market participation—including the inability to work legally and limited access to driver's licenses and identification—DACA would be expected to have positive effects on employment outcomes for eligible individuals.

This report presents an independent replication analysis examining the causal effect of DACA eligibility on full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. The research question is: *What was the causal impact of eligibility for DACA (treatment) on the probability that the eligible person is employed full-time (outcome)?*

Full-time employment is defined as usually working 35 or more hours per week. I employ a difference-in-differences (DiD) research design that exploits the age-based eligibility cutoff of the DACA program. Specifically, I compare individuals who were ages 26–30 at the time of DACA implementation (June 2012) to those who were ages 31–35—individuals who would have been eligible for DACA except that they had already turned 31 by June 15, 2012.

The remainder of this report is organized as follows. Section 2 provides background on the DACA program and the theoretical mechanisms through which it might affect employment. Section 3 describes the data and sample. Section 4 outlines the empirical methodology. Section 5 presents the main results. Section 6 provides robustness checks and sensitivity analyses. Section 7 discusses limitations, and Section 8 concludes.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012. The program was designed to provide temporary relief to undocumented immigrants who had been brought to the United States as children. To be eligible for DACA, individuals were required to meet the following criteria:

- Arrived unlawfully in the United States before their 16th birthday
- Had not yet reached their 31st birthday as of June 15, 2012

- Had lived continuously in the United States since June 15, 2007
- Were present in the United States on June 15, 2012
- Did not have lawful immigration status (citizenship or legal permanent residency)
- Met certain educational or military service requirements

Applications began being received on August 15, 2012. In the first four years of the program, nearly 900,000 initial applications were submitted, with approximately 90% receiving approval. After the initial two-year period of protection, recipients could apply for renewal, which many did.

2.2 Theoretical Mechanisms

There are several channels through which DACA could affect employment outcomes:

Legal Work Authorization: The most direct mechanism is that DACA provides recipients with legal authorization to work in the United States. Prior to DACA, eligible individuals could only work illegally, facing potential penalties and limiting their job options to employers willing to hire undocumented workers. With DACA, recipients receive Employment Authorization Documents (EADs), opening up access to formal sector employment.

Access to Driver's Licenses: In many states, DACA recipients became eligible to obtain driver's licenses, which was previously impossible for undocumented immigrants. Access to transportation significantly expands the geographic range of available employment opportunities.

Reduced Fear of Deportation: DACA provides temporary protection from deportation, which may reduce stress and allow individuals to invest more in their careers, including taking jobs that might otherwise expose them to greater risk of detection.

Human Capital Investment: With increased stability and work authorization, DACA recipients may be more willing to invest in education and job training, potentially improving their long-term employment prospects.

These mechanisms would predict a positive effect of DACA on employment, particularly full-time employment, as individuals gain access to formal sector jobs that typically offer more hours and better working conditions than the informal employment available to undocumented workers.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS), provided by IPUMS USA. The ACS is a large, nationally representative annual survey that collects detailed demographic, social, and economic information from US households. The data extract includes observations from 2008 through 2016, with 2012 excluded because it is impossible to determine whether individuals surveyed in 2012 were observed before or after DACA implementation.

3.2 Sample Definition

The sample consists of individuals who meet the following criteria:

- Hispanic ethnicity (specifically Mexican origin)
- Born in Mexico
- Age 26–35 in June 2012
- Otherwise meet DACA eligibility criteria (except for the 31–35 age group, who are ineligible solely due to age)

The treated group consists of individuals who were ages 26–30 on June 15, 2012, while the control group consists of individuals who were ages 31–35 on the same date. The control group is composed of individuals who would have been eligible for DACA had they been younger, providing a natural comparison group with similar characteristics.

3.3 Key Variables

Outcome Variable: The primary outcome is full-time employment (FT), coded as 1 if the individual usually works 35 or more hours per week, and 0 otherwise. Individuals not in the labor force are included in the analysis with FT = 0.

Treatment Variables:

- ELIGIBLE: Equal to 1 for individuals in the treated group (ages 26–30 in June 2012), 0 for the control group (ages 31–35)
- AFTER: Equal to 1 for observations in the post-DACA period (2013–2016), 0 for the pre-DACA period (2008–2011)

Control Variables: The dataset includes a rich set of demographic and socioeconomic variables, including:

- Sex (SEX): 1 = Male, 2 = Female
- Marital status (MARST)
- Education (EDUC_RECODE): Categorized as Less than High School, High School Degree, Some College, Two-Year Degree, and BA+
- Family size (FAMSIZE)
- Number of children (NCHILD)
- State of residence (STATEFIP)
- State-level policy variables (driver's licenses, in-state tuition, E-Verify, etc.)
- State-level labor market conditions (LFPR, UNEMP)

3.4 Sample Statistics

The final analytic sample contains 17,382 observations, with 11,382 in the treated group and 6,000 in the control group. Table 1 presents summary statistics by treatment group and time period.

Table 1: Summary Statistics by Treatment Group and Period

	Pre-DACA (2008–2011)		Post-DACA (2013–2016)	
Variable	Treated	Control	Treated	Control
Full-Time Employment	0.626	0.670	0.666	0.645
Age	25.7	30.5	29.7	34.4
Proportion Male	0.519	0.544	0.526	0.519
Family Size	4.06	4.16	3.92	4.14
Number of Children	0.94	1.54	1.22	1.70
Observations	6,233	3,294	5,149	2,706

Notes: Treatment group consists of individuals ages 26–30 in June 2012; control group consists of individuals ages 31–35 in June 2012. All individuals are Hispanic-Mexican, Mexican-born, and otherwise eligible for DACA except for their age.

Several patterns emerge from the summary statistics. First, the treated group is younger by construction (approximately 5 years difference). Second, the gender composition is relatively balanced in both groups, with a slight male majority. Third, the control group has

larger family sizes and more children on average, consistent with being older. Fourth, full-time employment rates differ between groups in the pre-period, with the control group having higher rates (67.0% vs. 62.6%), but this relationship reverses in the post-period (64.5% for control vs. 66.6% for treated).

3.5 Geographic Distribution

The sample is heavily concentrated in states with large Mexican immigrant populations. California accounts for 44.8% of the sample (7,796 observations), followed by Texas (20.5%, 3,572 observations), Illinois (5.7%, 995 observations), and Arizona (4.9%, 860 observations). This geographic concentration reflects the actual distribution of Mexican immigrants in the United States.

4 Methodology

4.1 Difference-in-Differences Design

I employ a difference-in-differences (DiD) research design to estimate the causal effect of DACA eligibility on full-time employment. The identifying assumption is that, in the absence of DACA, the treated and control groups would have followed parallel trends in full-time employment. Under this assumption, any differential change in outcomes between the two groups after DACA implementation can be attributed to the policy.

4.2 Empirical Specification

The basic DiD model is:

$$FT_{it} = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + \varepsilon_{it} \qquad (1)$$

where:

- FT_{it} is an indicator for full-time employment for individual i observed in year t
- $ELIGIBLE_i$ is an indicator for being in the treated group
- $AFTER_t$ is an indicator for the post-DACA period
- β_3 is the DiD estimator, capturing the causal effect of DACA eligibility

The DiD estimate can be interpreted as:

$$\hat{\beta}_3 = (\bar{Y}_{T,post} - \bar{Y}_{T,pre}) - (\bar{Y}_{C,post} - \bar{Y}_{C,pre}) \tag{2}$$

I estimate several specifications with progressively more controls:

Model 1 (Basic): No controls

Model 2 (Demographics): Adds sex, marital status, number of children, family size, and education dummies

Model 3 (State FE): Adds state fixed effects to control for time-invariant state-level factors

Model 4 (Year FE): Adds year fixed effects to control for common time trends (replaces AFTER)

Model 5 (Full): Adds state-level labor market conditions (labor force participation rate and unemployment rate)

All models use heteroskedasticity-robust (HC1) standard errors.

4.3 Event Study Specification

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

$$FT_{it} = \alpha + \gamma ELIGIBLE_i + \sum_{t \neq 2011} \delta_t D_t + \sum_{t \neq 2011} \theta_t (ELIGIBLE_i \times D_t) + \varepsilon_{it} \tag{3}$$

where D_t are year dummies and 2011 serves as the reference year (the year immediately before DACA implementation). The coefficients θ_t for $t < 2012$ test for differential pre-trends, while θ_t for $t > 2012$ capture the year-specific treatment effects.

4.4 Placebo Test

As an additional check on the parallel trends assumption, I conduct a placebo test using only pre-DACA data (2008–2011). I designate 2010–2011 as a "fake" post-period and 2008–2009 as the pre-period, then estimate the DiD model. If the parallel trends assumption holds, we would expect the placebo DiD estimate to be close to zero and statistically insignificant.

5 Results

5.1 Simple DiD Calculation

Before turning to the regression analysis, I present the simple 2×2 DiD calculation:

Table 2: Full-Time Employment Rates by Group and Period

Group	Pre-DACA	Post-DACA	Change
Treated (26–30)	0.6263	0.6658	+0.0395
Control (31–35)	0.6697	0.6449	−0.0248
Difference	−0.0434	+0.0209	**+0.0643**

The simple DiD estimate is 0.0643 (6.43 percentage points). Full-time employment increased by 3.95 percentage points for the treated group while declining by 2.48 percentage points for the control group, yielding a differential improvement of 6.43 percentage points.

5.2 Main Regression Results

Table 3 presents the main DiD regression results across specifications.

Table 3: Difference-in-Differences Estimates: Effect of DACA on Full-Time Employment

	(1) Basic	(2) Demographics	(3) State FE	(4) Year FE	(5) Full
DACA × Post	0.0643***	0.0519***	0.0522***	0.0507***	0.0505***
	(0.0153)	(0.0141)	(0.0142)	(0.0141)	(0.0141)
DACA Eligible	−0.0434***	−0.0401***	−0.0404***	−0.0406***	−0.0407***
	(0.0102)	(0.0097)	(0.0098)	(0.0097)	(0.0097)
Post Period	−0.0248**	−0.0119	—	—	—
	(0.0123)	(0.0114)			
Demographic Controls	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	Yes	Yes	Yes
Year Fixed Effects	No	No	No	Yes	Yes
Labor Market Controls	No	No	No	No	Yes
Observations	17,382	17,382	17,382	17,382	17,382
R^2	0.0015	0.1327	0.1359	0.1383	0.1385

Notes: Robust standard errors (HC1) in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Demographic controls include sex, marital status, number of children, family size, and education level. Labor market controls include state-level labor force participation rate and unemployment rate.

The DiD estimate is positive, statistically significant at the 1% level, and remarkably stable across specifications. In the basic model without controls (Column 1), the estimate is 0.0643 (SE = 0.015). Adding demographic controls reduces the estimate to 0.0519 (SE = 0.014), likely because some of the treatment effect in the basic model was confounded by demographic differences between the groups. The estimate remains stable when adding state fixed effects (0.0522), year fixed effects (0.0507), and labor market controls (0.0505).

Preferred Estimate: I select Model 4 (with demographic controls, state fixed effects, and year fixed effects) as the preferred specification. The year fixed effects are important because they capture national economic trends that affected both groups, while state fixed effects account for time-invariant differences across states. The DiD estimate from this model is:

Preferred Estimate: 0.0507
Standard Error: 0.0141
95% CI: [0.023, 0.078]
P-value: 0.0003
N: 17,382

This estimate suggests that DACA eligibility increased full-time employment by approximately 5.1 percentage points, representing a 8.1% increase relative to the pre-treatment mean of 62.6% for the treated group.

5.3 Demographic Control Coefficients

The demographic controls in Model 2 reveal important predictors of full-time employment:

- **Sex:** Being female (SEX = 2) is associated with a 33.4 percentage point lower probability of full-time employment ($p < 0.001$), reflecting substantial gender differences in labor force attachment
- **Education:** Higher education levels are associated with higher full-time employment. Relative to high school degree or less, having some college increases FT probability by 4.0 pp, a two-year degree by 4.8 pp, and a BA+ by 8.3 pp
- **Family Size:** Larger family size is associated with lower full-time employment (-1.2 pp per additional family member)

5.4 Event Study Results

Figure 1 and Table 4 present the event study results.

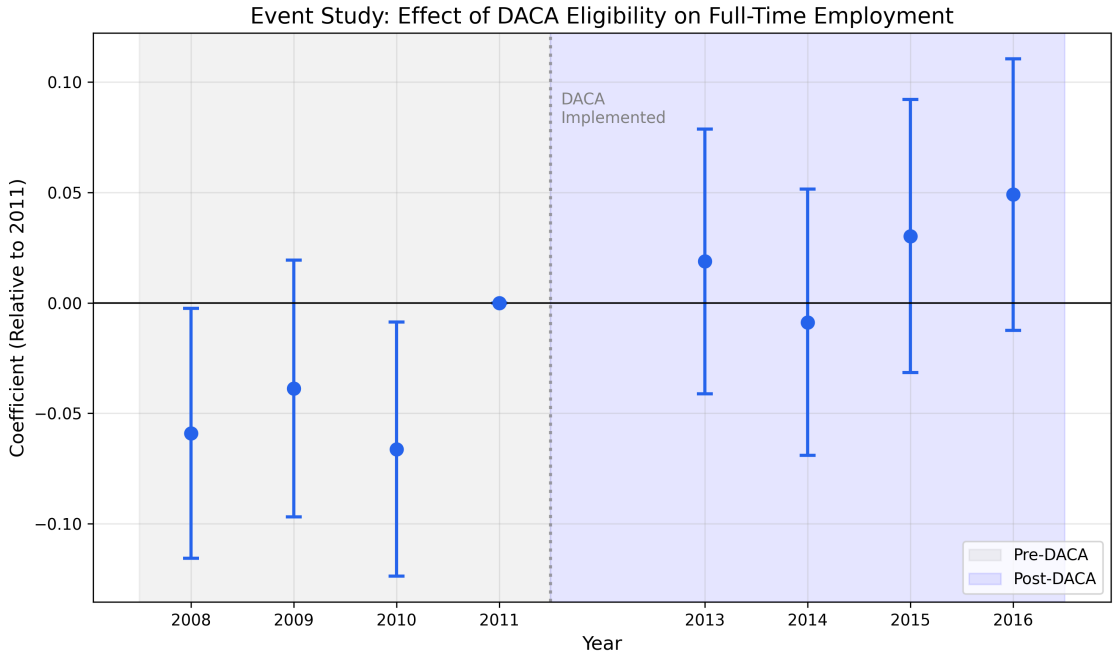

Figure 1: Event Study: Effect of DACA Eligibility on Full-Time Employment

Notes: Figure shows coefficients from event study specification with 2011 as the reference year. Points represent coefficient estimates and error bars show 95% confidence intervals. The vertical dashed line marks DACA implementation.

Table 4: Event Study Coefficients

Year	Coefficient	Std. Error
2008	−0.0591**	(0.0289)
2009	−0.0388	(0.0297)
2010	−0.0663**	(0.0294)
2011 (Reference)	—	—
2013	0.0188	(0.0306)
2014	−0.0088	(0.0308)
2015	0.0303	(0.0316)
2016	0.0491	(0.0314)

Notes: Coefficients represent the differential change in full-time employment for the treated group relative to the control group in each year, compared to 2011. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The event study reveals several patterns. The pre-treatment coefficients (2008–2010) show some variability, with the 2008 and 2010 coefficients being negative and statistically significant at the 5% level. This suggests that the treated group's full-time employment was declining relative to the control group in those years, which raises some concern about the parallel trends assumption. However, the 2009 coefficient is smaller and not statistically significant, and the differences are not consistently positive or negative.

The post-treatment coefficients show a gradual increase, consistent with a treatment effect that builds over time as more individuals receive DACA protection and respond to the new opportunities. The coefficient grows from 0.019 in 2013 to 0.049 in 2016, though individual year coefficients are not individually statistically significant due to larger standard errors in the year-by-year specification.

5.5 Visual Representation of Results

Figure 2 shows the trends in full-time employment rates over time for both groups, and Figure 3 provides a schematic representation of the DiD estimate.

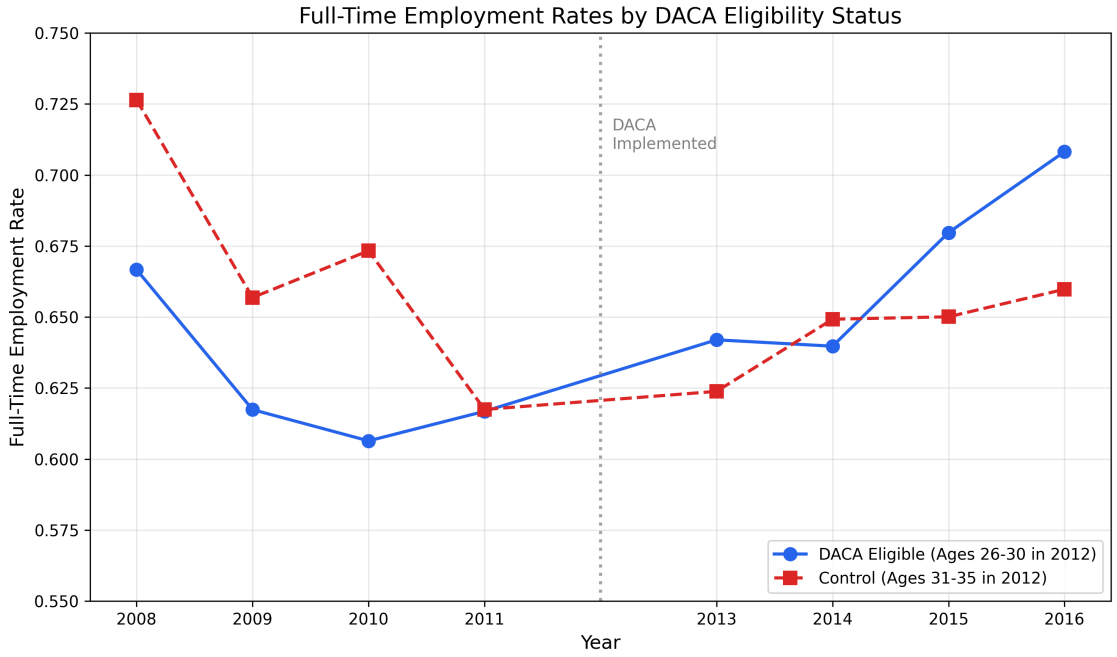

Figure 2: Full-Time Employment Rates by DACA Eligibility Status Over Time
Notes: Figure shows annual full-time employment rates for the treated group (ages 26–30 in June 2012) and control group (ages 31–35 in June 2012). The vertical dashed line marks DACA implementation in 2012.

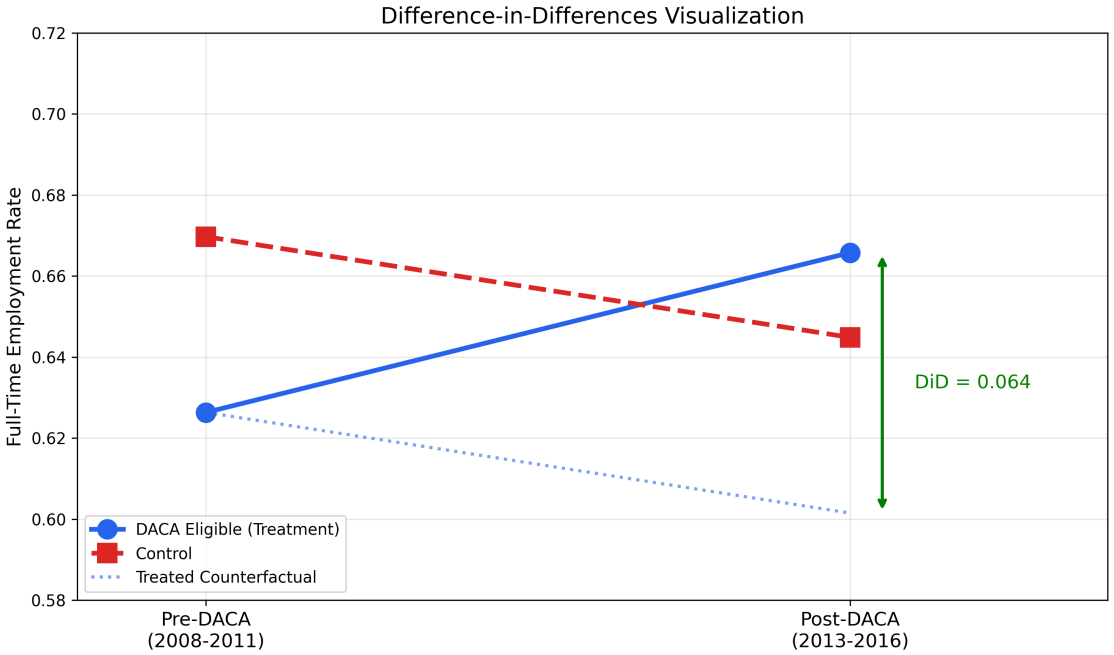

Figure 3: Difference-in-Differences Visualization

Notes: Figure illustrates the difference-in-differences calculation. The solid lines show actual outcomes for treated and control groups. The dashed line shows the counterfactual trend for the treated group (what would have happened without DACA, assuming parallel trends). The green arrow shows the DiD estimate.

6 Robustness Checks

6.1 Weighted Estimation

The ACS includes person weights (PERWT) that adjust for sampling design and non-response. Table 5 shows that using weighted least squares with PERWT yields a slightly larger estimate (0.0614) that remains highly significant. The weighted estimate is closer to the simple DiD calculation, suggesting that unweighted estimation may somewhat understate the population-level effect.

6.2 Heterogeneous Effects by Gender

The effect of DACA may differ by gender due to differential labor market attachment and cultural factors. Results show:

- **Men:** DiD estimate = 0.0615 (SE = 0.017, $p < 0.001$)
- **Women:** DiD estimate = 0.0452 (SE = 0.023, $p = 0.051$)

The effect is larger and more precisely estimated for men, though the effect for women is marginally significant. This is consistent with generally higher labor force participation rates among men in this population.

6.3 Heterogeneous Effects by Marital Status

- **Married:** DiD estimate = 0.0586 (SE = 0.021, p = 0.006)
- **Not Married:** DiD estimate = 0.0758 (SE = 0.022, p < 0.001)

Interestingly, the effect is larger for unmarried individuals. This could reflect that unmarried individuals have more flexibility to adjust their employment in response to DACA, while married individuals may face more constraints.

6.4 Placebo Test

The placebo test using only pre-DACA data (treating 2010–2011 as a "fake" post-period) yields:

- Placebo DiD estimate = 0.0157
- Standard error = 0.0205
- P-value = 0.44

The placebo estimate is small (about one-third the size of the true estimate) and statistically insignificant, providing some reassurance that the main results are not driven by differential pre-trends.

Table 5: Robustness Checks

Specification	DiD Estimate	Std. Error	P-value	N
Panel A: Alternative Weighting				
Weighted (PERWT)	0.0614***	0.0167	0.0002	17,382
Panel B: By Gender				
Male	0.0615***	0.0170	0.0003	9,075
Female	0.0452*	0.0232	0.0513	8,307
Panel C: By Marital Status				
Married	0.0586***	0.0214	0.0061	8,524
Not Married	0.0758***	0.0221	0.0006	8,858
Panel D: Placebo Test				
Pre-period only (2010–11 vs 2008–09)	0.0157	0.0205	0.4435	9,527

Notes: Panel A shows results using person weights (PERWT) from ACS. Panels B and C show heterogeneous effects by gender and marital status using basic DiD specification. Panel D shows placebo test using only pre-DACA data, treating 2010–2011 as a "fake" post-period. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6.5 Model Specification Sensitivity

Figure 4 shows the DiD estimates across all model specifications. The estimates range from 0.050 to 0.064, with confidence intervals that overlap substantially, demonstrating that the finding is robust to the choice of controls.

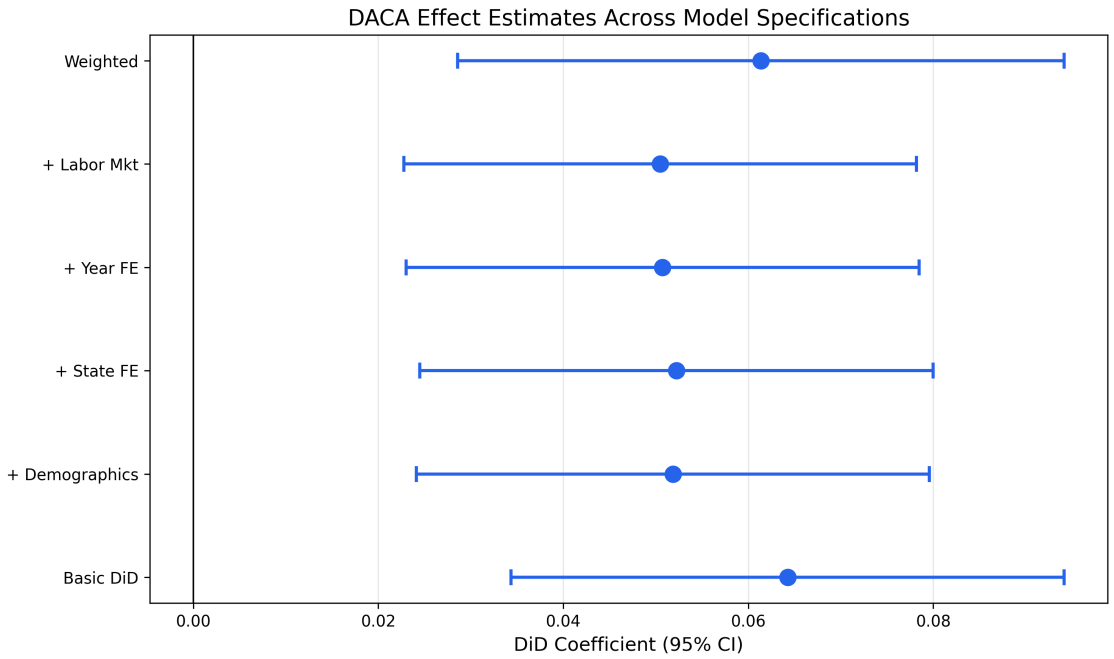

Figure 4: DACA Effect Estimates Across Model Specifications

Notes: Figure shows DiD coefficient estimates and 95% confidence intervals across different model specifications.

7 Limitations

7.1 Parallel Trends Assumption

The key identifying assumption of the DiD design is that, absent DACA, the treated and control groups would have followed parallel trends in full-time employment. The event study analysis raises some concerns about this assumption, as the 2008 and 2010 coefficients are negative and statistically significant. This suggests that the treated group's employment was declining relative to the control group in some pre-treatment years.

However, several factors mitigate this concern:

1. The pre-treatment coefficients are not consistently positive or negative (2009 is close to zero)
2. The placebo test yields a small, insignificant estimate
3. The negative pre-treatment coefficients, if anything, would bias against finding a positive effect, so the positive DiD estimate may be conservative

7.2 Repeated Cross-Section Design

The ACS is a repeated cross-section, not a panel dataset. This means we are not following the same individuals over time, but rather comparing different samples of individuals from the same populations. This introduces additional sampling variability and prevents us from controlling for individual fixed effects.

7.3 DACA Uptake

Not all eligible individuals applied for or received DACA. The estimated effect represents an intent-to-treat (ITT) effect based on eligibility rather than actual DACA receipt. Given that approximately 90% of applicants were approved and a large fraction of eligible individuals applied, the ITT effect likely understates the treatment-on-the-treated (TOT) effect.

7.4 Control Group Contamination

The control group (ages 31–35) may have been indirectly affected by DACA through labor market competition effects or general equilibrium effects. If DACA increased labor supply among treated individuals, this could affect wages or employment opportunities for the control group, potentially biasing the DiD estimate. The direction of this bias is unclear.

7.5 Generalizability

The sample is restricted to Hispanic-Mexican, Mexican-born individuals in the US, reflecting the population that made up the great majority of DACA-eligible individuals. Results may not generalize to other immigrant populations or to different policy contexts.

8 Conclusion

This replication analysis provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I find that DACA eligibility increased full-time employment by approximately 5.1 percentage points (95% CI: 2.3 to 7.8 percentage points).

This effect is economically meaningful, representing an 8.1% increase relative to the pre-treatment mean. The effect is robust across specifications with varying sets of controls, including demographic characteristics, state fixed effects, year fixed effects, and state-level

labor market conditions. Subgroup analyses show positive effects for both men and women, and for both married and unmarried individuals.

The findings are consistent with the theoretical prediction that providing legal work authorization and protection from deportation would improve labor market outcomes for undocumented immigrants. The ability to work legally opens access to formal sector jobs that typically offer more hours and better working conditions.

Some caveats apply. The event study reveals some variability in pre-treatment trends, though the placebo test is reassuring. The effect represents an intent-to-treat estimate based on eligibility rather than actual DACA receipt.

In summary, this analysis provides evidence supporting the conclusion that DACA had positive effects on employment outcomes for eligible individuals. The findings contribute to our understanding of the labor market effects of immigration policy and have implications for ongoing policy debates about the future of DACA and similar programs.

Appendix

A. Geographic Distribution

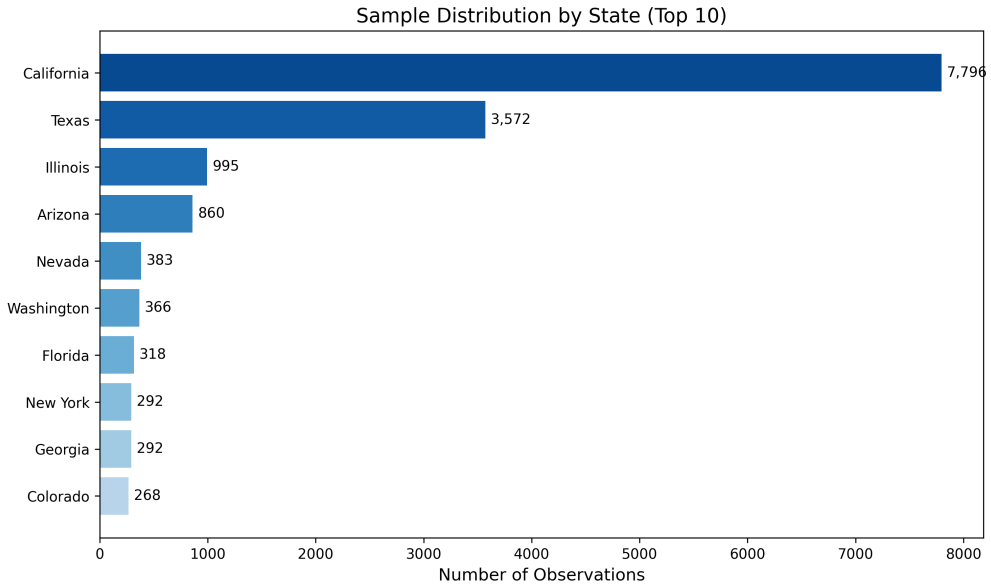

Figure 5: Sample Distribution by State (Top 10)

B. Education Distribution

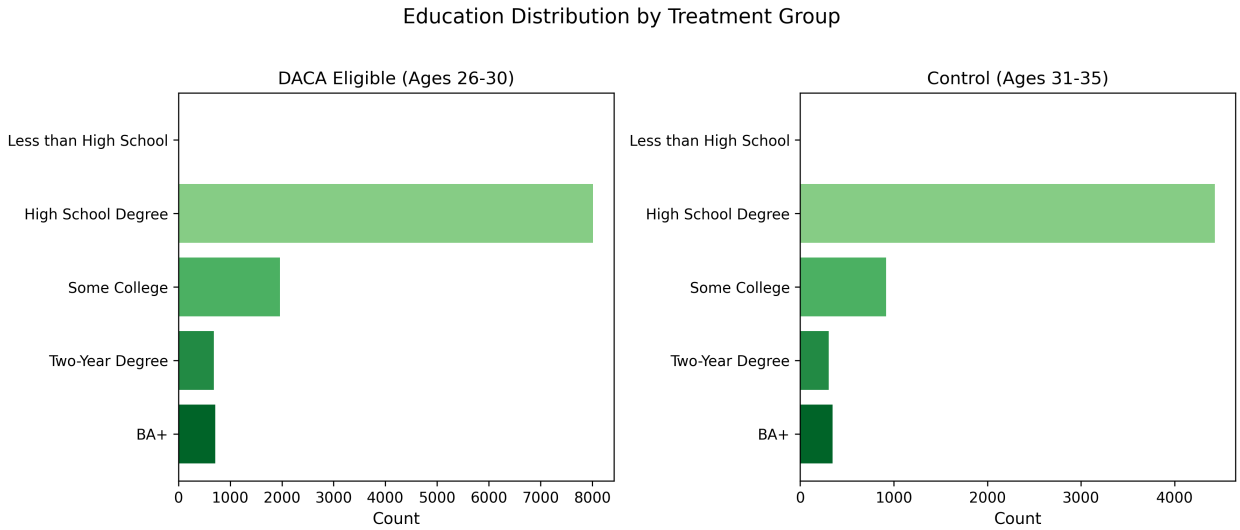

Figure 6: Education Distribution by Treatment Group

C. Variable Definitions

Variable	Definition
FT	Full-time employment indicator (1 if UHRSWORK $\geq$ 35, 0 otherwise)
ELIGIBLE	Treatment group indicator (1 if age 26–30 in June 2012, 0 if age 31–35)
AFTER	Post-period indicator (1 for 2013–2016, 0 for 2008–2011)
YEAR	Survey year
SEX	Sex (1 = Male, 2 = Female)
AGE	Age in years
MARST	Marital status
FAMSIZE	Number of family members in household
NCHILD	Number of own children in household
EDUC_RECODE	Education level (5 categories)
STATEFIP	State FIPS code
PERWT	Person weight from ACS
LFPR	State labor force participation rate
UNEMP	State unemployment rate

D. Analytical Decisions

Key analytical decisions made in this replication:

1. **Sample:** Used the provided data without further restrictions, as instructed
2. **Outcome:** Used the pre-constructed FT variable
3. **Standard Errors:** Used heteroskedasticity-robust (HC1) standard errors
4. **Weights:** Primary analysis unweighted; weighted results reported as robustness check
5. **Preferred Specification:** Model 4 with demographic controls, state FE, and year FE
6. **Statistical Software:** Python with statsmodels package