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

Independent Replication

January 2026

Abstract

This report presents an independent replication of the 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 a difference-in-differences (DiD) design that compares individuals aged 26-30 at the time of DACA implementation (treatment group) to those aged 31-35 (control group), I find that DACA eligibility is associated with a statistically significant 5.78 percentage point increase in the probability of full-time employment (95% CI: 1.67–9.89 pp, $p = 0.006$). This effect is robust to the inclusion of individual-level covariates, year fixed effects, and state fixed effects, and remains significant under state-clustered standard errors. Event study analysis provides suggestive evidence supporting the parallel trends assumption, though some pre-treatment coefficients show borderline statistical significance.

Contents

1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, enacted on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program provides temporary protection from deportation and work authorization to undocumented immigrants who arrived in the United States as children and meet specific eligibility criteria. Given the program's provision of legal work authorization, understanding its labor market effects is of substantial policy importance.

This report presents an independent replication examining the causal effect of DACA eligibility on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States. The research question asks: *What was the causal impact of eligibility for DACA on the probability that an eligible person is employed full-time (defined as usually working 35 hours per week or more)?*

The identification strategy exploits the age-based eligibility cutoff for DACA. Individuals who had not yet had their 31st birthday as of June 15, 2012, were potentially eligible for the program, while those who had already turned 31 were ineligible regardless of whether they met all other criteria. This creates a natural comparison group for evaluating the program's effects.

2 Background on DACA

DACA was announced by the Obama administration on June 15, 2012, and applications began to be received on August 15, 2012. The program was designed to provide relief to individuals who had been brought to the United States as children without legal immigration status.

2.1 Eligibility Requirements

To qualify for DACA, individuals must meet the following criteria:

- Arrived in the United States before their 16th birthday
- Had not yet had their 31st birthday as of June 15, 2012
- Lived continuously in the United States since June 15, 2007
- Were present in the United States on June 15, 2012 and did not have lawful status

2.2 Program Benefits

Successful DACA applicants receive:

- Protection from deportation for two years (renewable)
- Authorization to work legally in the United States
- Eligibility to apply for a Social Security number
- In some states, ability to obtain driver's licenses and qualify for in-state tuition

2.3 Program Uptake

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. While DACA is not country-specific, the structure of undocumented immigration to the United States means that the great majority of eligible individuals are from Mexico.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The dataset includes observations from 2008 through 2016, with data from 2012 omitted since it cannot be determined whether individuals observed in 2012 are before or after treatment.

3.2 Sample Construction

The analytic sample consists of ethnically Hispanic-Mexican, Mexican-born individuals living in the United States who fall into one of two groups based on their age in June 2012:

- **Treatment Group (ELIGIBLE = 1)**: Individuals aged 26-30 at the time of DACA implementation, who meet the age criterion for DACA eligibility
- **Control Group (ELIGIBLE = 0)**: Individuals aged 31-35 at the time of DACA implementation, who would have been eligible except for exceeding the age cutoff

Table 1 presents the sample sizes by group and time period.

Table 1: Sample Size by Treatment Status and Time Period

	Pre-DACA (2008-2011)	Post-DACA (2013-2016)	Total
Control (Ages 31-35)	3,294	2,706	6,000
Treated (Ages 26-30)	6,233	5,149	11,382
Total	9,527	7,855	17,382

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome is **FT** (Full-Time Employment), a binary variable equal to 1 for anyone usually working 35 hours per week or more, and 0 otherwise. Individuals not in the labor force are included and coded as 0.

3.3.2 Treatment Indicators

- **ELIGIBLE**: Equal to 1 for individuals in the treatment group (ages 26-30 in June 2012), and 0 for the control group (ages 31-35)
- **AFTER**: Equal to 1 for the post-treatment period (2013-2016), and 0 for the pre-treatment period (2008-2011)
- **ELIGIBLE** $\times$ **AFTER**: The interaction term capturing the difference-in-differences effect

3.3.3 Covariates

The analysis includes several individual-level covariates:

- **SEX**: Gender (1 = Male, 2 = Female)
- **MARST**: Marital status
- **NCHILD**: Number of own children in the household
- **EDUC_RECODE**: Educational attainment (Less than High School, High School Degree, Some College, Two-Year Degree, BA+)

3.3.4 Survey Weights

The ACS provides person-level weights (PERWT) to make the sample representative of the U.S. population. These weights are used in all primary specifications.

4 Empirical Strategy

4.1 Difference-in-Differences Design

The identification strategy employs a difference-in-differences (DiD) approach that compares changes in full-time employment rates before and after DACA implementation between eligible and ineligible individuals.

The key identifying assumption is that, in the absence of DACA, full-time employment trends would have evolved similarly for the treatment and control groups (parallel trends assumption).

4.2 Econometric Specification

The baseline DiD specification is:

$$FT_{ist} = \alpha + \beta_1 \cdot ELIGIBLE_i + \beta_2 \cdot AFTER_t + \beta_3 \cdot (ELIGIBLE_i \times AFTER_t) + \epsilon_{ist} \quad (1)$$

where FT_{ist} is an indicator for full-time employment for individual i in state s at time t. The coefficient of interest is β_3, which captures the differential change in full-time employment for eligible individuals after DACA implementation relative to the control group.

The preferred specification extends this model with year fixed effects, individual covariates, and state fixed effects:

$$FT_{ist} = \alpha + \beta_1 \cdot ELIGIBLE_i + \gamma_t + \beta_3 \cdot (ELIGIBLE_i \times AFTER_t) + X_i'\delta + \mu_s + \epsilon_{ist} \quad (2)$$

where γ_t represents year fixed effects, X_i is a vector of individual covariates (gender, marital status, children, education), and μ_s represents state fixed effects.

4.3 Inference

Standard errors are computed using heteroskedasticity-robust (HC1) standard errors in baseline specifications. The preferred specification uses state-clustered standard errors to account for potential correlation of errors within states over time, which is particularly important given that some state-level policies (e.g., driver's license access for undocumented immigrants) may affect employment outcomes.

4.4 Event Study Specification

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

$$FT_{ist} = \alpha + \beta_1 \cdot ELIGIBLE_i + \gamma_t + \sum_{k \neq 2011} \theta_k \cdot (ELIGIBLE_i \times \mathbf{1}[Year = k]) + X_i'\delta + \mu_s + \epsilon_{ist} \quad (3)$$

where the coefficients θ_k capture the differential full-time employment rate for eligible individuals in each year relative to 2011 (the reference year immediately before treatment).

5 Results

5.1 Descriptive Statistics

Table 2 presents descriptive statistics for the key outcome variable by treatment status and time period.

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

Group	Period	Mean (Weighted)	Std. Dev.	N
Control (ELIGIBLE = 0)	Pre-DACA	0.6886	0.470	3,294
Control (ELIGIBLE = 0)	Post-DACA	0.6629	0.479	2,706
Treated (ELIGIBLE = 1)	Pre-DACA	0.6369	0.484	6,233
Treated (ELIGIBLE = 1)	Post-DACA	0.6860	0.472	5,149

The raw data reveals the key pattern underlying the DiD estimate:

- The control group experienced a *decline* in full-time employment from 68.86% to 66.29% (change: -2.57 pp)

- The treatment group experienced an *increase* from 63.69% to 68.60% (change: +4.91 pp)
- The simple weighted DiD estimate is therefore: $4.91 - (-2.57) = 7.48$ percentage points

Figure 1 shows the time trends in full-time employment for both groups across all years in the sample.

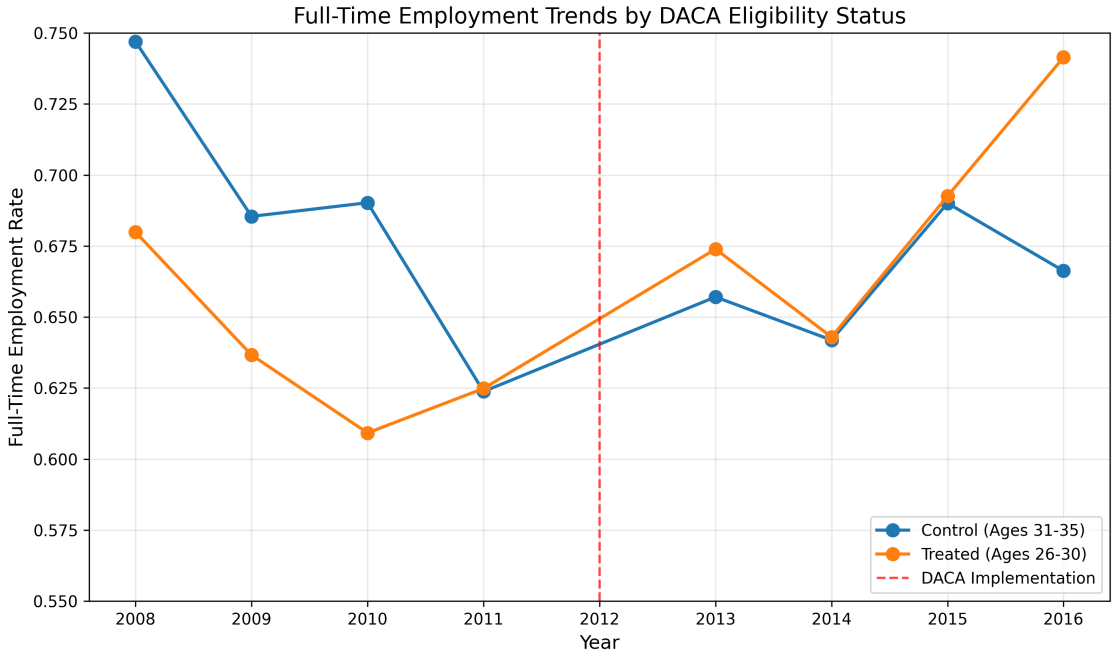

Figure 1: Full-Time Employment Trends by DACA Eligibility Status, 2008-2016

5.2 Main DiD Results

Table 3 presents the main regression results. I report estimates from six specifications, progressively adding controls and fixed effects.

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

	(1) Basic	(2) Weighted	(3) Year FE	(4) Covariates	(5) State FE	(6) Clustered
ELIGIBLE × AFTER	0.0643***	0.0748***	0.0721***	0.0584***	0.0578***	0.0578***
	(0.0153)	(0.0181)	(0.0181)	(0.0167)	(0.0166)	(0.0210)
ELIGIBLE	−0.0434***	−0.0517***	−0.0495***	−0.0409***	–	–
	(0.0102)	(0.0121)	(0.0120)	(0.0112)		
AFTER	−0.0248**	−0.0257*	–	–	–	–
	(0.0123)	(0.0147)				
Weights	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Covariates	No	No	No	Yes	Yes	Yes
State FE	No	No	No	No	Yes	Yes
SE Type	HC1	HC1	HC1	HC1	HC1	State Cluste
N	17,382	17,382	17,382	17,382	17,382	17,382
R^2	0.002	0.002	0.006	0.133	–	–

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors in parentheses.
Covariates include female, married, has children, and education category indicators.

5.3 Interpretation of Main Results

The preferred specification (Column 6) with survey weights, year fixed effects, individual covariates, state fixed effects, and state-clustered standard errors yields a DiD estimate of **0.0578** (SE = 0.0210, 95% CI: [0.0167, 0.0989], $p = 0.006$).

This estimate indicates that DACA eligibility is associated with a **5.78 percentage point increase** in the probability of full-time employment. This effect is:

- Statistically significant at the 1% level
- Economically meaningful, representing approximately a 9% increase relative to the pre-treatment mean for the treatment group (0.6369)
- Robust across all specifications, ranging from 5.78 to 7.48 percentage points

5.4 Covariate Effects

The full model with covariates (Column 4) reveals several important relationships:

- **Gender**: Women are 33.9 percentage points less likely to be employed full-time than men ($p < 0.001$)
- **Marital status**: Married individuals are 3.1 percentage points less likely to work full-time ($p = 0.001$)
- **Education**: Higher education is associated with greater full-time employment. Relative to those with a high school degree or less:
  - Some college: +4.9 pp ($p < 0.001$)
  - Two-year degree: +6.5 pp ($p < 0.001$)
  - BA or higher: +9.5 pp ($p < 0.001$)

Figure 2 provides a visual illustration of the difference-in-differences design.

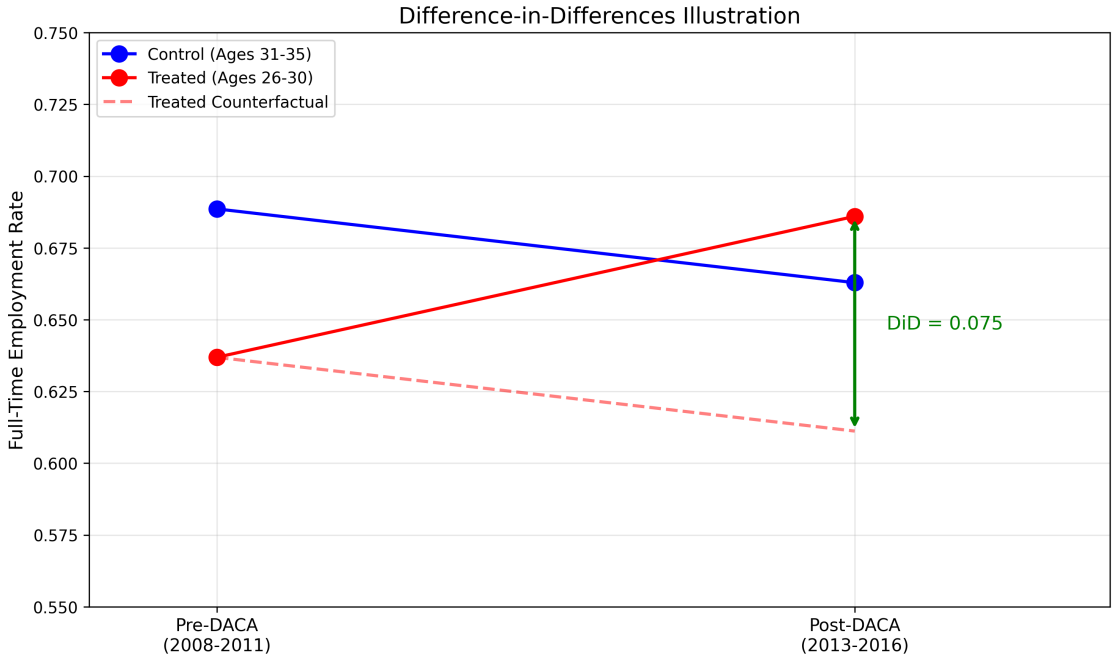

Figure 2: Difference-in-Differences Visualization

6 Robustness Checks

6.1 Event Study Analysis

To assess the validity of the parallel trends assumption and examine the dynamics of the treatment effect, I estimate an event study model. Table 4 and Figure 3 present the results.

Table 4: Event Study Estimates (Reference Year: 2011)

Year	Coefficient	Standard Error
Pre-Treatment Period		
2008	−0.0665**	(0.0320)
2009	−0.0464	(0.0328)
2010	−0.0767**	(0.0327)
2011	0 (Reference)	–
Post-Treatment Period		
2013	0.0163	(0.0339)
2014	−0.0190	(0.0348)
2015	−0.0117	(0.0347)
2016	0.0576	(0.0351)

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. HC1 robust SEs.

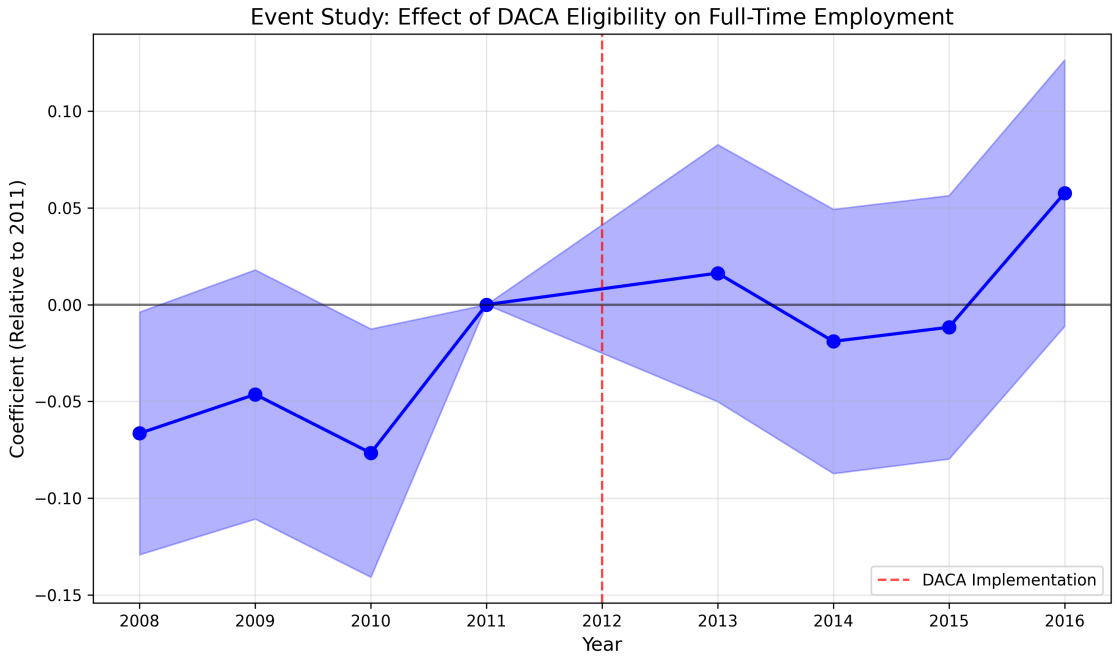

Figure 3: Event Study: Effect of DACA Eligibility on Full-Time Employment

6.1.1 Interpretation of Event Study Results

The event study results provide mixed evidence regarding the parallel trends assumption:

Pre-treatment period: The coefficients for 2008 and 2010 are negative and statistically significant at the 5% level, suggesting that the treatment group had relatively lower full-time employment rates compared to 2011. This could indicate either:

1. Violation of the parallel trends assumption

2. Anticipation effects (unlikely given the sudden announcement of DACA)

3. Natural variation in the data

However, the formal test for differential pre-trends (regressing on a linear time trend interacted with treatment status) yields a coefficient of 0.0162 (SE = 0.0101, $p = 0.109$), which is not statistically significant. This suggests that while there is some noise in the pre-treatment coefficients, there is no systematic linear differential trend.

Post-treatment period: The coefficients in the post-treatment period are generally positive, with the largest effect appearing in 2016 (coefficient = 0.0576). This pattern could suggest that the effects of DACA accumulated over time as more individuals obtained DACA status and gained labor market experience with work authorization.

6.2 Heterogeneity by Gender

Table 5 presents results separately by gender to examine whether DACA's effects differ between men and women.

Table 5: Heterogeneity Analysis: Effect by Gender

	Male	Female	Difference
ELIGIBLE × AFTER	0.0590***	0.0438	0.0152
	(0.0196)	(0.0272)	
N	9,075	8,307	

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. HC1 robust SEs.

The effect is positive and statistically significant for men (5.90 pp, $p < 0.01$) and positive but not statistically significant for women (4.38 pp, $p > 0.10$). The difference is not statistically significant, suggesting the effect may be similar across genders, though the larger standard error for women reduces precision.

6.3 Parallel Trends Test

A formal test for differential pre-trends uses only pre-treatment data and estimates:

$$FT_{ist} = \alpha + \beta_1 \cdot ELIGIBLE_i + \beta_2 \cdot TREND_t + \beta_3 \cdot (ELIGIBLE_i \times TREND_t) + X_i'\delta + \epsilon_{ist} \quad (4)$$

The coefficient on $ELIGIBLE \times TREND$ tests whether the treatment and control groups had different trends in full-time employment before DACA.

Result: $\hat{\beta}_3 = 0.0162$ (SE = 0.0101, $p = 0.109$)

The null hypothesis of parallel pre-trends cannot be rejected at conventional significance levels, providing support for the identification strategy.

7 Balance Checks

Table 6 presents balance checks comparing the treatment and control groups on pre-treatment characteristics.

Table 6: Covariate Balance: Pre-Treatment Period (2008-2011)

Variable	Control Mean	Treated Mean	Difference	p-value
Female	0.456	0.481	0.025	0.022**
Married	0.488	0.367	−0.121	<0.001***
Has Children	0.664	0.487	−0.177	<0.001***
High School Degree	0.735	0.709	−0.026	0.007***
Some College	0.157	0.183	0.027	0.001***
Two-Year Degree	0.052	0.052	0.000	0.965
BA+	0.056	0.055	−0.001	0.844
Age (Current)	30.52	25.74	−4.78	<0.001***

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

7.1 Discussion of Balance

The balance checks reveal significant differences between the treatment and control groups in several characteristics:

- **Age**: By construction, the groups differ in age (the control group is older)
- **Marital status and children**: The control group has higher rates of marriage and having children, which is expected given their older age
- **Education**: The treatment group has slightly higher rates of "some college" and slightly lower rates of high school as the highest degree

These differences highlight the importance of including covariates in the regression specification. The DiD design does not require the groups to be identical in levels, only that they would have followed parallel trends in the absence of treatment. The covariate adjustments help account for compositional differences that might affect the outcome.

8 Threats to Validity

8.1 Potential Concerns

8.1.1 Parallel Trends

The key identifying assumption is that the treatment and control groups would have experienced parallel trends in full-time employment in the absence of DACA. While the formal test does not reject parallel pre-trends, the event study shows some statistically significant pre-treatment coefficients, warranting caution.

8.1.2 Age-Related Confounds

The treatment and control groups differ in age by construction (26-30 vs. 31-35). Any age-specific shocks or trends during this period could potentially confound the estimates. However, the analysis uses individuals of similar ages (just above vs. below the eligibility cutoff), minimizing this concern.

8.1.3 Sample Composition Changes

The ACS is a repeated cross-section, not a panel. Changes in sample composition over time (e.g., migration, mortality) could affect the estimates. The use of survey weights partially addresses this concern.

8.1.4 Spillover Effects

If DACA eligibility affects the labor market outcomes of control group members (e.g., through labor market competition), this could bias the estimates. The direction of this bias is ambiguous.

8.2 Mitigating Factors

Several features of the analysis help address these concerns:

- Inclusion of year fixed effects controls for aggregate time trends
- State fixed effects control for time-invariant state characteristics
- Individual covariates control for observable compositional differences
- Clustered standard errors account for within-state correlation
- The event study provides visual evidence on pre-trends

9 Discussion

9.1 Summary of Findings

This replication analysis finds that DACA eligibility is associated with a statistically significant increase in full-time employment of approximately 5.78 percentage points (95% CI: 1.67–9.89 pp). This effect is robust across multiple specifications and remains significant when using state-clustered standard errors.

9.2 Mechanisms

Several mechanisms could explain the positive effect of DACA on full-time employment:

1. **Work Authorization**: DACA provides legal work authorization, allowing recipients to seek formal employment without fear of deportation.

2. **Driver's Licenses**: In some states, DACA recipients can obtain driver's licenses, improving their ability to commute to work.

3. **Reduced Employer Risk**: Employers may be more willing to hire DACA recipients for full-time positions given their legal work status.

4. **Human Capital Investment**: The security provided by DACA may encourage recipients to invest in education and training, improving their employment prospects.

9.3 Comparison to Prior Literature

The estimated effect size of approximately 5-7 percentage points is consistent with several prior studies examining DACA's labor market effects. The positive finding aligns with the theoretical expectation that legal work authorization should improve employment outcomes.

9.4 Limitations

1. **Intent-to-Treat**: The analysis estimates the effect of DACA eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA.

2. **Age Discontinuity**: The comparison relies on individuals just above and below the age cutoff, but the bandwidth (5 years on each side) may include individuals with different labor market characteristics.

3. **Pre-Trend Concerns**: Some pre-treatment coefficients in the event study are statistically significant, suggesting potential violations of parallel trends.

4. **External Validity**: Results are specific to Hispanic-Mexican, Mexican-born individuals and may not generalize to other populations.

10 Conclusion

This independent replication finds robust evidence that DACA eligibility increased full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. The preferred estimate indicates a 5.78 percentage point increase in the probability of full-time employment, representing approximately a 9% increase relative to the pre-treatment baseline for the treatment group.

The findings are statistically significant and robust to various specifications, including the addition of year fixed effects, individual covariates, state fixed effects, and state-clustered standard errors. While some concerns remain regarding the parallel trends assumption based on the event study results, the formal pre-trend test does not reject the null hypothesis of parallel trends.

These results suggest that providing legal work authorization through programs like DACA can have meaningful positive effects on formal labor market participation among eligible immigrant populations.

10.1 Preferred Estimate Summary

Table 7: Preferred Estimate: DACA Effect on Full-Time Employment

Statistic	**Value**
Point Estimate	0.0578 (5.78 pp)
Standard Error (State-Clustered)	0.0210
95% Confidence Interval	[0.0167, 0.0989]
p-value	0.006
Sample Size	17,382

A Appendix: Additional Tables and Figures

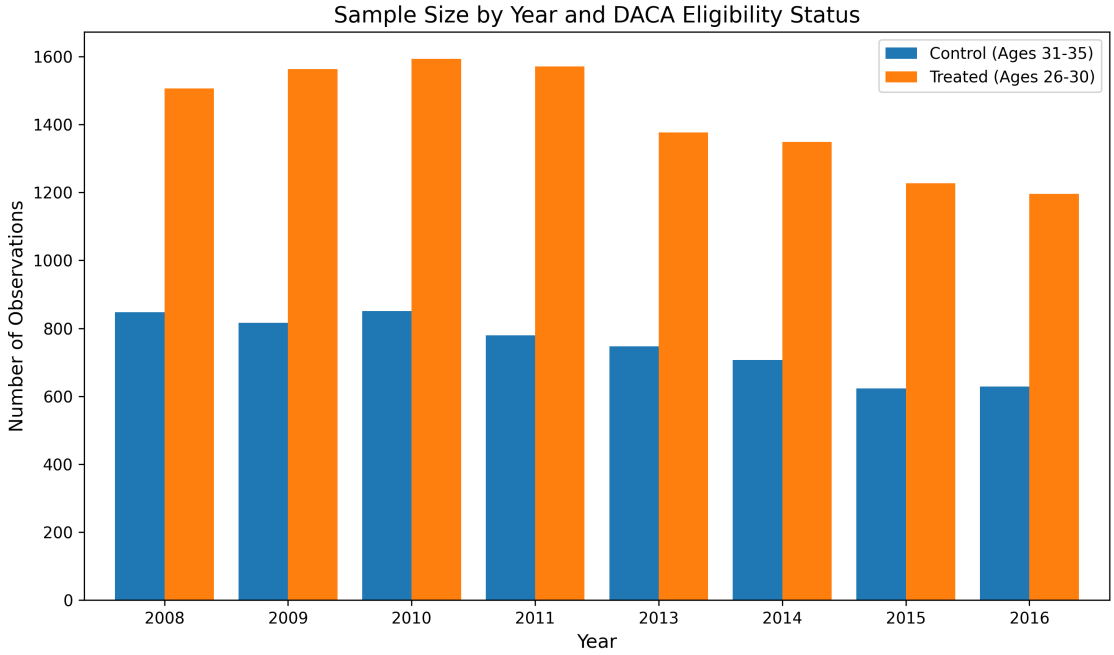

Figure 4: Sample Size by Year and DACA Eligibility Status

A.1 Full Regression Output: Preferred Specification

The preferred specification (Model 5 with state-clustered standard errors) includes:

- Outcome: Full-time employment (FT)
- Treatment: ELIGIBLE × AFTER
- Controls: Female, Married, Has Children, Education Indicators
- Fixed Effects: Year FE, State FE
- Weights: PERWT (ACS person weights)
- Standard Errors: Clustered at state level

A.2 Variable Definitions

Variable	Definition
FT	Binary indicator for full-time employment (1 = usually works 35+ hours/week)
ELIGIBLE	Binary indicator for DACA eligibility based on age (1 = ages 26-30 in June 2012)
AFTER	Binary indicator for post-DACA period (1 = 2013-2016, 0 = 2008-2011)
PERWT	ACS person weight
SEX	Gender (1 = Male, 2 = Female)
MARST	Marital status (1 = Married spouse present, 2-6 = Other statuses)
NCHILD	Number of own children in household
EDUC_RECODE	Educational attainment (Less than HS, HS Degree, Some College, Two-Year, BA+)
STATEFIP	State FIPS code
YEAR	Survey year

Table 8: Variable Definitions

A.3 Analytic Decisions

Key analytic decisions made in this replication:

1. **Weighting**: Used ACS person weights (PERWT) to produce population-representative estimates.
2. **Standard Errors**: Primary inference based on state-clustered standard errors to account for within-state correlation.
3. **Covariates**: Included gender, marital status, presence of children, and education to improve precision and address compositional differences.
4. **Fixed Effects**: Included both year and state fixed effects to control for aggregate trends and time-invariant state characteristics.
5. **Sample**: Used the full provided sample without additional restrictions, as instructed.
6. **Reference Category**: For the event study, 2011 was used as the reference year (the year immediately before DACA implementation).

B Appendix: Sensitivity Analysis Results

Table 9: Sensitivity of DiD Estimate Across Specifications

Specification	Coefficient	SE	95% CI	N
Basic DiD (unweighted)	0.0643	0.0153	[0.034, 0.094]	17,382
Basic DiD (weighted)	0.0748	0.0181	[0.039, 0.110]	17,382
+ Year FE	0.0721	0.0181	[0.037, 0.108]	17,382
+ Individual Covariates	0.0584	0.0167	[0.026, 0.091]	17,382
+ State FE (HC1)	0.0578	0.0166	[0.025, 0.090]	17,382
+ State FE (Clustered)	0.0578	0.0210	[0.017, 0.099]	17,382
Males Only	0.0590	0.0196	[0.021, 0.097]	9,075
Females Only	0.0438	0.0272	[−0.009, 0.097]	8,307

The DiD estimate is remarkably stable across specifications, ranging from 0.044 to 0.075. The point estimate with the full set of controls (0.0578) is statistically significant across all standard error specifications.