The Effect of DACA Eligibility on Full-Time Employment

A Difference-in-Differences Analysis

Independent Replication Study

Replication Report 04

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, Mexican-born individuals in the United States. Using American Community Survey data from 2008–2016 (excluding 2012), I employ a difference-in-differences design comparing individuals aged 26–30 at the time of DACA implementation (treatment group) to those aged 31–35 (control group). The preferred specification, which includes year and state fixed effects along with demographic controls, indicates that DACA eligibility increased full-time employment by 6.41 percentage points (SE = 0.0167, 95% CI: [3.14, 9.67]). This effect is statistically significant at the 1% level and robust to alternative specifications. However, evidence of differential pre-trends suggests caution in interpreting these results as purely causal.

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

JEL Codes: J15, J61, J68

Contents

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 obtain temporary protection from deportation and work authorization for two-year renewable periods. Given that DACA explicitly provided legal work authorization, understanding its effects on labor market outcomes is of substantial policy interest.

This replication study examines whether DACA eligibility affected full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Full-time employment, defined as usually working 35 or more hours per week, represents a meaningful indicator of labor market attachment and economic integration. Prior to DACA, eligible individuals faced legal barriers to formal employment, potentially limiting them to informal work arrangements or underemployment.

The identification strategy exploits the age-based eligibility cutoff of the program. Individuals who had not yet reached their 31st birthday as of June 15, 2012, were potentially eligible for DACA (conditional on meeting other requirements), while otherwise similar individuals just above this age threshold were categorically ineligible. This creates a natural comparison between treatment and control groups that differ primarily in their DACA eligibility status.

The remainder of this report is organized as follows: Section 2 describes the policy background and DACA eligibility requirements. Section 3 details the data and sample construction. Section 4 presents the empirical methodology. Section 5 reports the main results and robustness checks. Section 6 discusses limitations and threats to identification. Section 7 concludes.

2 Policy Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and applications began to be accepted on August 15, 2012. The program was designed to provide temporary relief to undocumented immigrants who had been brought to the United States as children and met specific criteria.

2.2 Eligibility Requirements

To be eligible for DACA, individuals must have:

1. Arrived in the United States before their 16th birthday
2. Not yet had their 31st birthday as of June 15, 2012
3. Lived continuously in the United States since June 15, 2007
4. Been present in the United States on June 15, 2012
5. Not had lawful immigration status (citizenship or legal residency) at that time

2.3 Program Benefits

Approved DACA recipients received:

- Deferred action status (protection from deportation) for two years
- Employment authorization documents (EADs) allowing legal work
- Eligibility for driver's licenses in most states
- Ability to apply for renewal after the initial two-year period

2.4 Program Uptake

In the first four years of the program, approximately 900,000 initial applications were received, with approximately 90% approved. Given the demographic composition of undocumented immigration to the United States, the majority of eligible individuals were of Mexican origin.

3 Data and Sample

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided through IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, economic, and housing information for approximately 3.5 million households per year.

3.2 Sample Construction

The provided dataset covers the years 2008–2016, with 2012 excluded because it cannot be determined whether observations from that year occur before or after DACA implementation (June 15, 2012). The sample is restricted to:

- Ethnically Hispanic-Mexican individuals
- Born in Mexico
- Living in the United States
- Meeting other DACA eligibility criteria (except age)

The final analytic sample contains 17,382 observations, with pre-constructed variables identifying treatment status and time periods.

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome is `FT`, a binary indicator equal to 1 if the individual usually works 35 or more hours per week, and 0 otherwise. Those not in the labor force are coded as 0 (not in full-time employment).

3.3.2 Treatment and Time Variables

- `ELIGIBLE`: Binary indicator equal to 1 for individuals aged 26–30 as of June 15, 2012 (treatment group), and 0 for those aged 31–35 (control group)
- `AFTER`: Binary indicator equal to 1 for years 2013–2016 (post-DACA), and 0 for years 2008–2011 (pre-DACA)

3.3.3 Control Variables

The analysis includes several demographic controls:

- `SEX`: Gender (1 = Male, 2 = Female)
- `MARST`: Marital status (categorical)
- `NCHILD`: Number of children in household
- `STATEFIP`: State of residence (for fixed effects)
- `YEAR`: Survey year (for fixed effects)

3.3.4 Survey Weights

The analysis uses person-level survey weights (`PERWT`) to produce population-representative estimates that account for the complex sampling design of the ACS.

3.4 Sample Characteristics

Table 1 presents summary statistics for the analytic sample.

Table 1: Sample Summary Statistics

	Treatment (Ages 26–30)		Control (Ages 31–35)	
	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
N (observations)	6,233	5,149	3,294	2,706
Full-time employed (%)	63.69	68.60	68.86	66.29
Female (%)	48.2	—	47.1	—
Mean age at June 2012	28.1	—	32.9	—

Notes: Statistics for full-time employment are weighted by PERWT. Treatment group defined as ages 26–30 at June 15, 2012; control group defined as ages 31–35.

The treatment group has a lower full-time employment rate in the pre-period (63.69% vs. 68.86%) but a higher rate in the post-period (68.60% vs. 66.29%). This crossing pattern provides the foundation for the difference-in-differences analysis.

4 Empirical Methodology

4.1 Difference-in-Differences Framework

The core identification strategy is a difference-in-differences (DiD) design that compares changes in full-time employment over time between the treatment group (DACA-eligible) and the control group (DACA-ineligible due to age).

The simple 2×2 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 $\bar{Y}$ represents the mean full-time employment rate, subscripts T and C denote treatment and control groups, and *pre* and *post* denote the pre- and post-DACA periods.

4.2 Regression Specification

The regression-based DiD model takes the form:

$$FT_{ist} = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \delta(ELIGIBLE_i \times AFTER_t) + \gamma X_{ist} + \lambda_s + \theta_t + \varepsilon_{ist} \tag{2}$$

where:

- FT_{ist} is the full-time employment indicator for individual i in state s at time t
- $ELIGIBLE_i$ is the treatment group indicator
- $AFTER_t$ is the post-DACA period indicator
- δ is the coefficient of interest (the DiD estimator)
- X_{ist} is a vector of individual-level controls
- λ_s represents state fixed effects
- θ_t represents year fixed effects
- ε_{ist} is the error term

4.3 Estimation Details

4.3.1 Weighting

All models are estimated using weighted least squares (WLS) with person-level survey weights (`PERWT`) from the ACS. This produces estimates that are representative of the underlying population and accounts for the complex sampling design.

4.3.2 Standard Errors

The primary specification uses heteroskedasticity-robust (HC1) standard errors. As a robustness check, I also report results with standard errors clustered at the state level to account for potential within-state correlation of errors.

4.3.3 Fixed Effects

The preferred specification includes:

- **Year fixed effects**: Control for common time trends affecting both groups (e.g., macroeconomic conditions, national policy changes)
- **State fixed effects**: Control for time-invariant state-level differences (e.g., local labor markets, state immigration policies)

4.4 Identifying Assumptions

The key identifying assumption for the DiD estimator is the *parallel trends assumption*: in the absence of DACA, the treatment and control groups would have experienced the same change in full-time employment over time. While this assumption is fundamentally untestable, I examine pre-treatment trends to assess its plausibility.

5 Results

5.1 Simple Difference-in-Differences

Table 2 presents the simple 2×2 DiD calculation using weighted means.

Table 2: Simple 2×2 Difference-in-Differences (Weighted)

	Pre-DACA	Post-DACA	Difference
Control (Ages 31–35)	0.6886	0.6629	−0.0257
Treatment (Ages 26–30)	0.6369	0.6860	+0.0491
Difference	−0.0517	+0.0231	
DiD Estimate			**0.0748**

Notes: Cell entries are weighted mean full-time employment rates. DiD calculated as $(0.6860 - 0.6369) - (0.6629 - 0.6886) = 0.0748$.

The simple DiD estimate suggests that DACA eligibility increased full-time employment by approximately 7.48 percentage points. The treatment group showed an increase of 4.91 percentage points in full-time employment after DACA, while the control group showed a decrease of 2.57 percentage points over the same period.

5.2 Regression Results

Table 3 presents regression results across multiple specifications.

Table 3: Difference-in-Differences Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)
ELIGIBLE × AFTER	0.0643***	0.0748***	0.0721***	0.0710***	0.0642***	0.0641***
	(0.0153)	(0.0181)	(0.0181)	(0.0180)	(0.0167)	(0.0167)
ELIGIBLE	−0.0434***	−0.0517***	−0.0495***	−0.0519***	−0.0441***	−0.0432**
	(0.0102)	(0.0121)	(0.0120)	(0.0120)	(0.0113)	(0.0113)
AFTER	−0.0248**	−0.0257*	—	—	−0.0151	—
	(0.0123)	(0.0147)			(0.0135)	
FEMALE					−0.3262***	−0.3252**
					(0.0084)	(0.0084)
Weights	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
State FE	No	No	No	Yes	No	Yes
Demographics	No	No	No	No	Yes	Yes
N	17,382	17,382	17,382	17,382	17,382	17,382
R^2	0.004	0.004	0.005	0.016	0.131	0.137

Notes: Robust (HC1) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Columns (2)–(6) weigh by PERWT. Demographics include marital status and number of children. Column (6) is the preferred specifi tion.

5.3 Preferred Specification

The preferred specification (Column 6 of Table 3) includes:

- Survey weights (PERWT)
- Year fixed effects

- State fixed effects
- Demographic controls (sex, marital status, number of children)
- Robust (HC1) standard errors

5.3.1 Main Result

Preferred Estimate: DACA eligibility increased full-time employment by **6.41 percentage points**.

- Standard Error: 0.0167
- 95% Confidence Interval: [3.14, 9.67] percentage points
- t-statistic: 3.85
- p-value: < 0.001
- Sample Size: 17,382

5.3.2 Interpretation

The coefficient on ELIGIBLE $\times$ AFTER represents the causal effect of DACA eligibility on full-time employment under the parallel trends assumption. The estimate of 0.0641 indicates that individuals in the treatment group (ages 26–30) experienced a 6.41 percentage point larger increase in full-time employment relative to the control group (ages 31–35) following DACA implementation.

Relative to the pre-DACA full-time employment rate of the treatment group (63.69%), this represents approximately a 10% increase in the probability of full-time employment.

The coefficient on ELIGIBLE (-0.0432) indicates that, on average, the treatment group had lower full-time employment than the control group, controlling for other factors. This is consistent with the younger age of the treatment group, as younger workers typically have lower full-time employment rates.

The coefficient on FEMALE (-0.3252) indicates that women have substantially lower full-time employment rates than men, reflecting broader gender differences in labor market participation patterns.

5.4 Robustness Checks

5.4.1 Alternative Standard Errors

Table 4 compares results using different approaches to inference.

Table 4: Robustness to Alternative Standard Error Calculations

Standard Error Type	Coefficient	SE	t-statistic	p-value
HC1 (Robust)	0.0641	0.0167	3.85	<0.001
Clustered by State	0.0641	0.0207	3.10	0.003

Notes: Results from preferred specification. Clustering by state accounts for potential within-state correlation of errors across observations.

Clustering standard errors by state increases the standard error from 0.0167 to 0.0207, but the effect remains statistically significant at the 1% level.

5.4.2 Heterogeneity by Gender

Table 5 presents results separately by gender.

Table 5: Heterogeneity by Gender

Subsample	DACA Effect	SE	N
Full Sample	0.0641	0.0167	17,382
Men Only	0.0613	0.0196	9,075
Women Only	0.0560	0.0273	8,307

Notes: Results from preferred specification estimated separately by gender. All effects are positive and statistically significant.

The effect of DACA eligibility is similar for both men and women, though slightly larger for men (6.13 pp vs. 5.60 pp). Both effects are statistically significant.

5.4.3 Sensitivity Across Specifications

Table 6 shows that the DiD estimate is stable across different model specifications, ranging from 0.0583 to 0.0748.

Table 6: Sensitivity of DiD Estimate to Specification

Specification	Coefficient	95% CI
Basic DiD (Unweighted)	0.0643	[0.034, 0.094]
Basic DiD (Weighted)	0.0748	[0.039, 0.110]
Year FE	0.0721	[0.037, 0.108]
State FE	0.0737	[0.038, 0.109]
Two-way FE	0.0710	[0.036, 0.106]
+ Demographics	0.0642	[0.031, 0.097]
+ Education	0.0583	[0.026, 0.091]
Preferred	**0.0641**	**[0.031, 0.097]**

Notes: All specifications except "Basic DiD (Unweighted)" use survey weights. "Two-way FE" includes both year and state fixed effects. "+ Demographics" adds sex, marital status, and number of children. "+ Education" further adds educational attainment (not included in preferred due to potential endogeneity).

All specifications yield positive and statistically significant effects, with point estimates ranging from 5.83 to 7.48 percentage points.

5.5 Pre-Trends Analysis

A key assumption of the difference-in-differences design is that treatment and control groups would have followed parallel trends in the absence of treatment. While this assumption is fundamentally untestable, examining pre-treatment trends can provide suggestive evidence.

Table 7 reports coefficients from a model interacting ELIGIBLE with year indicators (reference year: 2011).

Table 7: Event Study: Year-Specific Treatment Effects

Year	Coefficient	SE	p-value
Pre-DACA Period			
2008	−0.0660	0.0321	0.040
2009	−0.0496	0.0330	0.132
2010	−0.0732	0.0329	0.026
2011	—	(reference)	—
Post-DACA Period			
2013	0.0208	0.0340	0.541
2014	−0.0124	0.0350	0.723
2015	−0.0052	0.0348	0.881
2016	0.0662	0.0354	0.062

Notes: Coefficients represent ELIGIBLE × YEAR interactions, with 2011 as the reference year. Negative coefficients in pre-period suggest treatment group had relatively lower full-time employment than control group before DACA.

5.5.1 Interpretation of Pre-Trends

The pre-trend analysis reveals a concerning pattern: coefficients for 2008 and 2010 are statistically significant and negative, suggesting the treatment group was on a different trajectory than the control group prior to DACA. This raises questions about whether the parallel trends assumption holds.

However, it is worth noting that:

1. The negative pre-period coefficients suggest the treatment group was *falling behind* the

control group before DACA

2. The post-DACA coefficients are generally positive or near zero

3. If the pre-trend continued, we might expect continued negative coefficients post-DACA; instead, we see a reversal

This pattern could be consistent with DACA having a genuine positive effect that reversed a pre-existing negative trend. However, it could also reflect regression to the mean or other confounding factors. This limitation is discussed further in Section 6.

6 Discussion and Limitations

6.1 Summary of Findings

This analysis finds that DACA eligibility is associated with a 6.41 percentage point increase in full-time employment among Hispanic-Mexican, Mexican-born individuals. This effect is:

- Statistically significant at the 1% level
- Robust to alternative specifications
- Similar across genders
- Economically meaningful (approximately 10% relative to baseline)

6.2 Mechanisms

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

1. **Legal work authorization**: DACA provided work permits, enabling recipients to seek formal employment without fear of deportation

2. **Driver's licenses**: In most states, DACA recipients became eligible for driver's licenses, expanding commuting options and job accessibility

3. **Reduced uncertainty**: Protection from deportation may have encouraged greater investment in job search and career development

4. **Employer demand**: With legal work authorization, employers may have been more willing to hire DACA recipients for full-time positions

6.3 Limitations and Threats to Validity

6.3.1 Parallel Trends

The most significant threat to the causal interpretation is the potential violation of parallel trends. The pre-trends analysis revealed statistically significant differences between treatment and control groups prior to DACA. While the pattern of results suggests a possible reversal of a negative pre-trend after DACA, this finding warrants caution.

6.3.2 Age-Related Confounds

The treatment and control groups differ by construction in their age. Age is associated with many factors that affect employment, including:

- Family formation (marriage, children)
- Career progression
- Health
- Immigration-related factors (years in U.S., English proficiency)

While demographic controls help address some of these concerns, residual confounding cannot be ruled out.

6.3.3 Compositional Changes

The analysis uses repeated cross-sections rather than panel data. If the composition of the treatment or control groups changed differently over time (e.g., due to selective migration or

mortality), this could bias the results.

6.3.4 Measurement of Full-Time Employment

The outcome variable captures "usual hours worked per week," which may not perfectly align with current employment status. Additionally, individuals not in the labor force are coded as not full-time employed, which may conflate unemployment with labor force non-participation.

6.3.5 External Validity

The sample is limited to Hispanic-Mexican, Mexican-born individuals who met specific DACA eligibility criteria (except age). Results may not generalize to:

- DACA-eligible individuals from other countries
- Individuals at different ages
- Other labor market outcomes

6.4 Comparison with Related Literature

This estimate of approximately 6.4 percentage points is broadly consistent with other studies examining DACA's labor market effects, which have generally found positive effects on employment and earnings. However, specific magnitudes vary depending on the sample, methodology, and outcome measure employed.

7 Conclusion

This replication study examines the effect of DACA eligibility on full-time employment using a difference-in-differences design. The analysis finds a statistically significant positive

effect of approximately 6.41 percentage points, suggesting that DACA increased full-time employment among eligible individuals.

The preferred specification includes:

- Survey weights for population representativeness
- Year fixed effects for common time trends
- State fixed effects for time-invariant state differences
- Demographic controls (gender, marital status, children)
- Robust standard errors

However, several important caveats apply:

1. Evidence of differential pre-trends raises questions about the parallel trends assumption
2. The age-based identification strategy introduces potential confounds related to lifecycle factors
3. This is an intent-to-treat estimate based on eligibility, not actual DACA receipt

Despite these limitations, the consistent finding of positive and significant effects across multiple specifications suggests that DACA likely had beneficial effects on the labor market outcomes of eligible individuals. The program's provision of legal work authorization appears to have facilitated greater full-time employment among this population.

Future research could address some of these limitations by:

- Using administrative data on actual DACA receipt
- Employing alternative identification strategies (e.g., regression discontinuity at the age threshold)
- Examining longer-term effects as more post-DACA data becomes available
- Investigating mechanisms through which DACA affected employment

A Additional Tables and Figures

Table 8: Variable Definitions

Variable	Definition
FT	Binary: 1 if usually works $\geq$35 hours/week, 0 otherwise
ELIGIBLE	Binary: 1 if age 26–30 at June 15, 2012, 0 if age 31–35
AFTER	Binary: 1 for years 2013–2016, 0 for years 2008–2011
PERWT	Person-level survey weight from ACS
SEX	1 = Male, 2 = Female
MARST	Marital status (categorical: married spouse present, married spouse absent, separated, divorced, widowed, never married)
NCHILD	Number of own children in household
STATEFIP	State FIPS code
YEAR	Survey year

Table 9: Sample Distribution by Year

Year	N	Weighted N	Period
2008	2,354	302,843	Pre-DACA
2009	2,379	306,065	Pre-DACA
2010	2,444	323,139	Pre-DACA
2011	2,350	307,879	Pre-DACA
2013	2,124	296,025	Post-DACA
2014	2,056	287,890	Post-DACA
2015	1,850	300,268	Post-DACA
2016	1,825	292,240	Post-DACA
Total	17,382	2,416,349	

Table 10: Top 10 States by Sample Size

Rank	State (FIPS)	Weighted Population	FT Rate
1	California (6)	1,005,543	64.4%
2	Texas (48)	493,683	68.5%
3	Illinois (17)	161,575	70.7%
4	Arizona (4)	125,228	63.1%
5	Washington (53)	53,898	68.2%
6	Nevada (32)	51,906	67.9%
7	New York (36)	51,146	69.5%
8	Georgia (13)	47,304	69.7%
9	Florida (12)	46,530	71.2%
10	Colorado (8)	41,565	67.1%

B Analytical Decisions

This section documents key analytical decisions made during the replication:

1. **Model choice**: Linear probability model (OLS/WLS) chosen over logit/probit for ease of interpretation of DiD coefficients as percentage point changes.

2. **Weighting**: Survey weights (PERWT) used to obtain population-representative estimates. This is standard practice for ACS data.

3. **Standard errors**: HC1 robust standard errors used for main results. State-clustered standard errors provided as robustness check.

4. **Fixed effects**: Both year and state fixed effects included in preferred specification to control for common time trends and time-invariant state differences.

5. **Controls**: Included sex, marital status, and number of children. Did NOT include education as it may be endogenous (DACA could affect educational decisions).

6. **Sample**: Used full provided sample without additional restrictions, per study instructions.

C Replication Code

The analysis was conducted using Python 3 with the following packages:

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

The main analysis script (`analysis.py`) and all output files are available in the replication package.