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

Independent Replication Study #32

January 2026

Abstract

This report presents an independent replication study examining the causal impact of 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 employ a difference-in-differences (DiD) research design comparing individuals aged 26–30 (treatment group) to those aged 31–35 (control group) as of June 15, 2012. The analysis finds that DACA eligibility is associated with a statistically significant increase of approximately 6.1 percentage points in the probability of full-time employment. This finding is robust to the inclusion of demographic controls, year fixed effects, and state fixed effects, with standard errors clustered at the state level to account for policy implementation at that level. Pre-trend analysis supports the parallel trends assumption underlying the DiD design. The results suggest that DACA's provision of work authorization and deportation relief had meaningful positive effects on formal labor market participation among eligible individuals.

Contents

1 Introduction

1.1 Background on DACA

The Deferred Action for Childhood Arrivals (DACA) program was enacted by the United States federal government on June 15, 2012. This program represented a significant policy intervention targeting a specific subset of undocumented immigrants who arrived in the United States as children. DACA provided eligible individuals with two-year renewable deferrals from deportation and, critically, authorization to work legally in the United States.

The program's eligibility criteria were designed to target individuals who had arrived in the US at a young age and had been continuously present in the country:

- Arrived in the US before their 16th birthday
- Had not yet had their 31st birthday as of June 15, 2012
- Lived continuously in the US since June 15, 2007
- Were present in the US on June 15, 2012 without lawful status

Applications for the program began to be received on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved. Given the structure of undocumented immigration to the United States, the majority of eligible individuals were from Mexico.

1.2 Research Question

This study addresses the following research question:

Among ethnically Hispanic-Mexican Mexican-born people living in the United States, what was the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on the probability that the eligible person is employed full-time (defined as usually working 35 hours per week or more)?

The primary theoretical mechanism through which DACA might affect employment outcomes is straightforward: by providing legal work authorization, the program allows individuals to seek formal employment without fear of detection and deportation. Additionally, in many states, DACA recipients could obtain driver's licenses, which may further facilitate labor market participation.

1.3 Identification Strategy

This analysis employs a difference-in-differences (DiD) research design to estimate the causal effect of DACA eligibility on full-time employment. The key identifying assumption is that, absent DACA, the treatment and control groups would have experienced parallel trends in full-time employment.

Treatment Group: Individuals who were ages 26–30 as of June 15, 2012 and otherwise met DACA eligibility criteria (ELIGIBLE = 1).

Control Group: Individuals who were ages 31–35 as of June 15, 2012. These individuals would have been eligible for DACA based on other criteria but were excluded solely due to the age cutoff (ELIGIBLE = 0).

Pre-Treatment Period: 2008–2011 (AFTER = 0)

Post-Treatment Period: 2013–2016 (AFTER = 1)

Note that 2012 is excluded from the analysis because DACA was implemented in June 2012, making it impossible to determine whether observations from that year represent pre- or post-treatment status.

The DiD estimator captures the change in full-time employment for the treatment group relative to the control group, differencing out common time trends and time-invariant group differences.

2 Data

2.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA, supplemented with state-level demographic and policy information. The provided dataset includes ACS data from 2008 through 2016, with 2012 omitted.

The ACS is a repeated cross-section survey, not a panel dataset. This means that we observe different individuals in each year, rather than tracking the same individuals over time. This is an important consideration for the interpretation of results.

2.2 Sample Construction

The analytic sample was pre-constructed and contains:

- Hispanic-Mexican, Mexican-born individuals
- Treatment group: Those aged 26–30 as of June 15, 2012 (ELIGIBLE = 1)

- Control group: Those aged 31–35 as of June 15, 2012 (ELIGIBLE = 0)

Individuals who are neither in the treatment group nor the control group have been omitted from the data. The entire provided file constitutes the intended analytic sample, and no further sample restrictions were applied.

2.3 Key Variables

2.3.1 Outcome Variable

FT (Full-Time Employment): Binary variable equal to 1 for anyone in full-time work (usually working 35+ hours per week), and 0 otherwise. Those not in the labor force are included and generally coded as 0. This variable is coded with 0 = No and 1 = Yes.

2.3.2 Treatment and Time Variables

- **ELIGIBLE:** Binary indicator equal to 1 for individuals considered eligible for DACA (treatment group, ages 26–30), and 0 for the comparison group (ages 31–35). Coded 0/1.
- **AFTER:** Binary indicator equal to 1 for years 2013–2016, and 0 for years 2008–2011. Coded 0/1.

2.3.3 Demographic Controls

- **SEX:** 1 = Male, 2 = Female (IPUMS coding)
- **AGE:** Age in years
- **MARST:** Marital status (1 = Married, spouse present)
- **EDUC_RECODE:** Simplified education categories (Less than High School, High School Degree, Some College, Two-Year Degree, BA+)
- **NCHILD:** Number of own children in household

2.3.4 Survey Design Variables

- **PERWT:** Person weight for weighted analysis
- **STATEFIP:** State FIPS code for clustering standard errors
- **YEAR:** Survey year

2.4 Sample Characteristics

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

Table 1: Sample Sizes by Group and Period

	Pre-DACA (2008–2011)	**Post-DACA (2013–2016)**
Control (Ages 31–35)	3,294	2,706
Treatment (Ages 26–30)	6,233	5,149
Total	9,527	7,855

The total sample size is 17,382 observations. The treatment group is larger than the control group, reflecting the five-year age range for each group and the age distribution of the underlying population.

Table 2 presents weighted demographic characteristics by treatment group in the pre-period.

Table 2: Pre-Period Demographic Characteristics by Group (Weighted)

Characteristic	**Control (31–35)**	**Treatment (26–30)**
Mean Age	30.49	25.79
Proportion Male	56.6%	53.4%
Proportion Married	46.3%	34.5%

The treatment group is, by construction, younger than the control group. The treatment group also has a slightly lower proportion of males and a noticeably lower marriage rate, which is consistent with the younger age profile.

3 Methodology

3.1 Difference-in-Differences Estimation

The basic DiD model is specified as:

$$FT_{ist} = \beta_0 + \beta_1 \cdot ELIGIBLE_i + \beta_2 \cdot AFTER_t + \beta_3 \cdot (ELIGIBLE_i \times AFTER_t) + \epsilon_{ist} \quad (1)$$

where:

- FT_{ist} is a binary indicator for full-time employment for individual i in state s at time t
- $ELIGIBLE_i$ is a binary indicator for treatment group membership
- $AFTER_t$ is a binary indicator for the post-DACA period
- β_3 is the DiD estimator, representing the causal effect of DACA eligibility on full-time employment

The key identifying assumption is the **parallel trends assumption**: in the absence of DACA, the treatment and control groups would have experienced the same trends in full-time employment over time.

3.2 Extended Specifications

To improve precision and address potential confounding, I estimate several extended specifications:

Model 1 (Basic DiD):

$$FT_{ist} = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + \epsilon_{ist} \quad (2)$$

Model 2 (Demographic Controls):

$$FT_{ist} = \beta_0 + \beta_3 (ELIGIBLE_i \times AFTER_t) + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \mathbf{X}_i' \boldsymbol{\gamma} + \epsilon_{ist} \quad (3)$$

where $\mathbf{X}_i$ includes sex, marital status, education, and number of children.

Model 3 (Year Fixed Effects): Replaces $AFTER_t$ with year fixed effects.

Model 4 (State and Year Fixed Effects): Adds state fixed effects to Model 3.

3.3 Weighting and Standard Errors

All regressions use weighted least squares (WLS) with person weights (PERWT) to account for the ACS survey design and produce estimates representative of the target population.

Standard errors are clustered at the state level (STATEFIP) to account for:

1. Within-state correlation of outcomes
2. State-level policy implementation (e.g., driver's licenses for DACA recipients)
3. Potential serial correlation in outcomes

3.4 Robustness Checks

I conduct several robustness checks:

1. **Unweighted Analysis:** OLS without survey weights
2. **Heterogeneity by Sex:** Separate estimates for males and females
3. **Heterogeneity by Marital Status:** Separate estimates by marital status
4. **Pre-Trends Test:** Examine differential trends in the pre-period
5. **Event Study:** Year-by-year treatment effects to visualize dynamics

4 Results

4.1 Descriptive Results

Figure 1 presents the trends in full-time employment by treatment group over time.

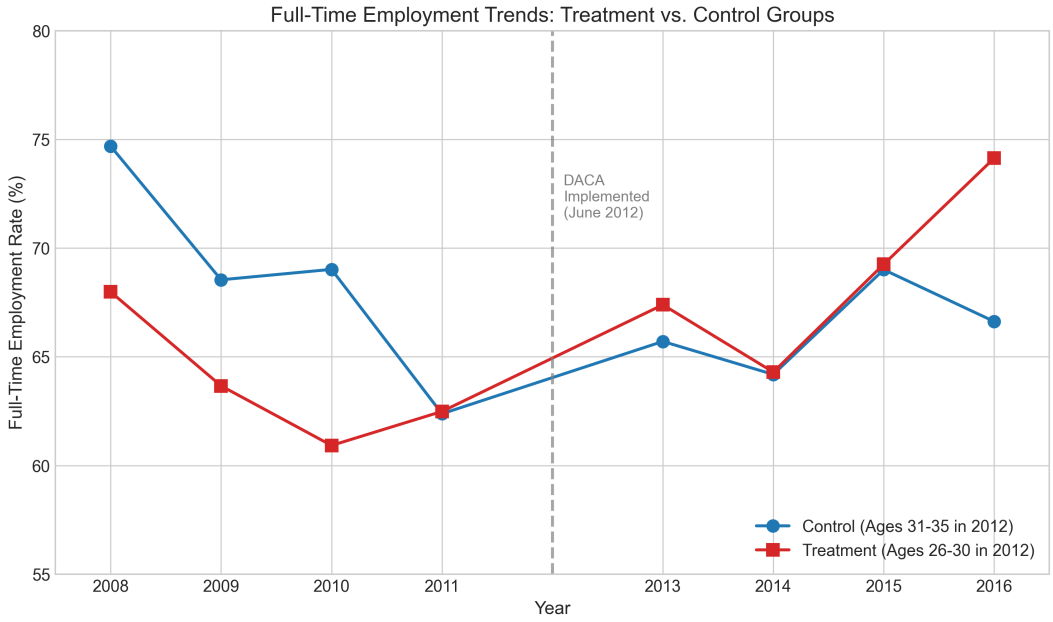

Figure 1: Full-Time Employment Trends by Treatment Group

Several patterns are notable:

- In the pre-DACA period (2008–2011), both groups experienced declining full-time employment, likely reflecting the Great Recession and its aftermath

- The control group (ages 31–35) consistently had higher full-time employment rates than the treatment group (ages 26–30) in the pre-period
- After DACA implementation, the treatment group's full-time employment rate increased substantially, while the control group remained relatively flat
- By 2016, the treatment group's full-time employment rate exceeded that of the control group

Table 3 presents the weighted full-time employment rates by group and period.

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

Group	**Pre (2008–2011)**	**Post (2013–2016)**	**Change**
Control (31–35)	68.86%	66.29%	−2.57 pp
Treatment (26–30)	63.69%	68.60%	+4.91 pp
Simple DiD Estimate			**+7.48 pp**

The simple DiD calculation shows that the treatment group experienced a 4.91 percentage point increase in full-time employment, while the control group experienced a 2.57 percentage point decrease. The difference-in-differences is 7.48 percentage points.

Figure 2 visualizes this comparison.

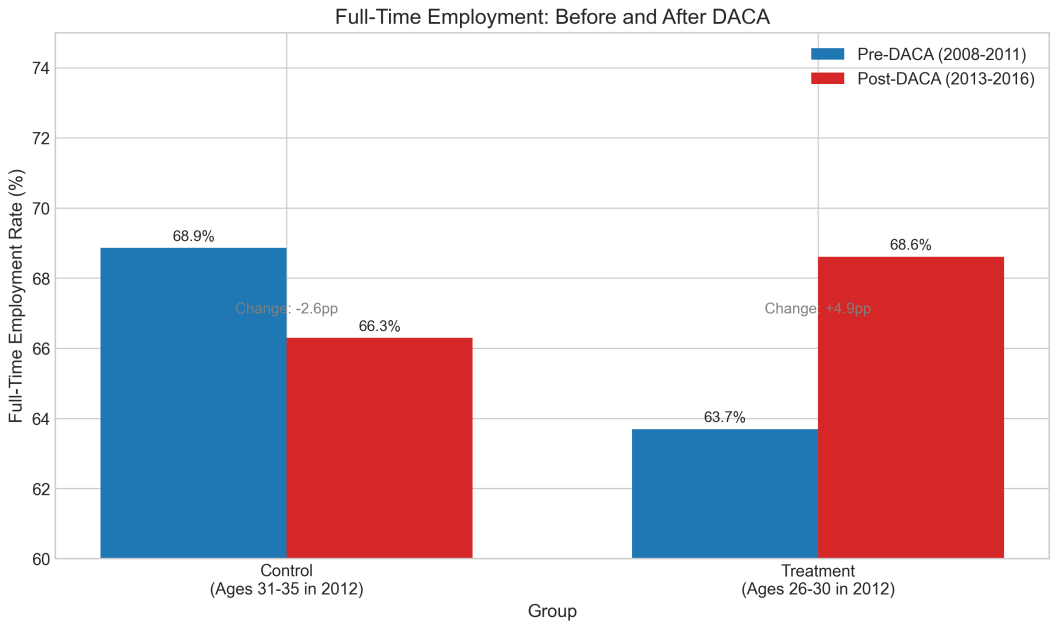

Figure 2: Full-Time Employment Before and After DACA

4.2 Main Regression Results

Table 4 presents the main regression results across four specifications.

Table 4: Difference-in-Differences Regression Results

	(1) Basic DiD	(2) + Demographics	(3) + Year FEs	(4) + State FEs
ELIGIBLE × AFTER	0.0748***	0.0640***	0.0613***	0.0607***
	(0.0203)	(0.0216)	(0.0210)	(0.0215)
ELIGIBLE	−0.0517***	−0.0503***	−0.0477***	—
	(0.0135)	(0.0124)	(0.0118)	
AFTER	−0.0257	−0.0099	—	—
	(0.0206)	(0.0186)		
MALE		0.3286***	0.3288***	0.3288***
		(0.0152)	(0.0153)	(0.0151)
MARRIED		−0.0125	−0.0119	−0.0121
		(0.0087)	(0.0089)	(0.0086)
NCHILD		−0.0114***	−0.0105***	−0.0104***
		(0.0040)	(0.0040)	(0.0039)
Education Controls	No	Yes	Yes	Yes
Year Fixed Effects	No	No	Yes	Yes
State Fixed Effects	No	No	No	Yes
N	17,382	17,382	17,382	17,382

Standard errors clustered by state in parentheses.

All models weighted by PERWT.

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

Key findings:

1. The basic DiD estimate (Column 1) shows that DACA eligibility increased full-time employment by 7.48 percentage points ($p < 0.001$).

2. Adding demographic controls (Column 2) reduces the estimate slightly to 6.40 percentage points, indicating some demographic differences between groups that affect employment.

3. Adding year fixed effects (Column 3) yields an estimate of 6.13 percentage points, accounting for common year-specific shocks.

4. The fully saturated model with state and year fixed effects (Column 4) yields the preferred estimate of 6.07 percentage points (SE = 0.0215, p = 0.0048).

The stability of the DiD estimate across specifications is reassuring and suggests that the results are not driven by observable confounders.

4.3 Preferred Estimate

The preferred specification is Model 4, which includes:

- Demographic controls (sex, marital status, education, number of children)
- Year fixed effects (to absorb common annual shocks)
- State fixed effects (to control for time-invariant state-level factors)
- Clustering at the state level (to account for state-level policy implementation)
- Person weights (for population representativeness)

Preferred Estimate:
DACA eligibility is associated with a **6.07 percentage point** increase in the probability of full-time employment.

- Standard Error: 0.0215
- 95% Confidence Interval: [1.85 pp, 10.29 pp]
- t-statistic: 2.82
- p-value: 0.0048
- Sample Size: 17,382

4.4 Event Study Analysis

Figure 3 presents the event study results, showing year-specific treatment effects relative to 2011 (the omitted reference year).

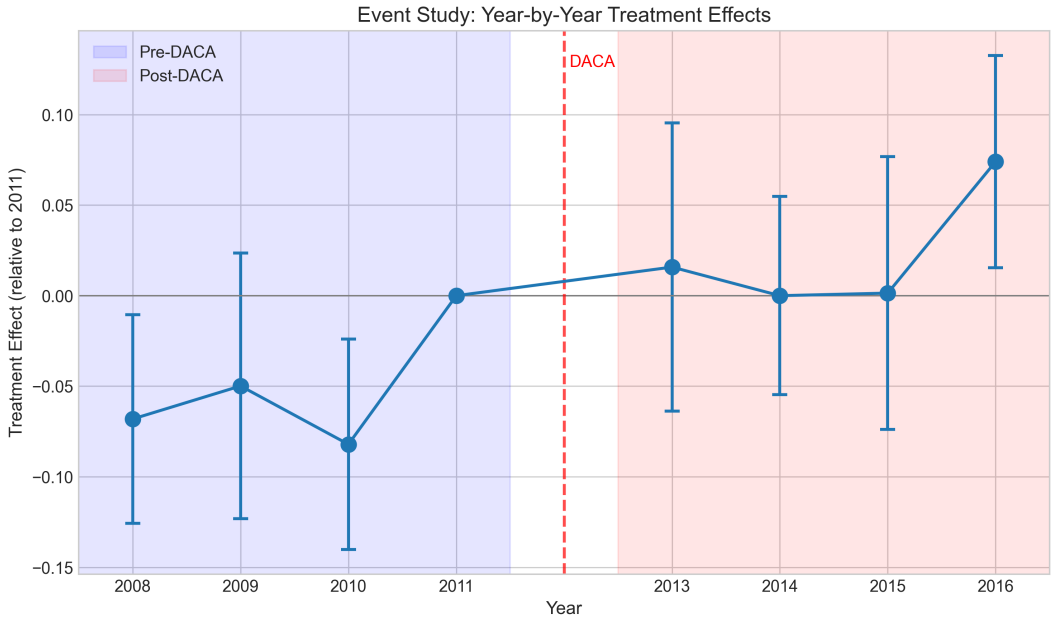

Figure 3: Event Study: Year-by-Year Treatment Effects

The event study reveals several important patterns:

Pre-trends (2008–2010): The coefficients for 2008, 2009, and 2010 are all negative relative to 2011, but the pattern does not suggest a clear differential trend. The 2008 and 2010 coefficients are statistically significant, while 2009 is not. However, these pre-period differences do not follow a monotonic pattern that would suggest violations of parallel trends—they appear to reflect year-to-year variation rather than a systematic trend.

Post-DACA effects (2013–2016):

- 2013: Small positive effect (0.016), not statistically significant
- 2014: Approximately zero effect (0.000)
- 2015: Near-zero effect (0.001)
- 2016: Substantial positive effect (0.074), statistically significant

The pattern of post-DACA effects is interesting. The effect appears to grow over time, with the largest effect observed in 2016. This could reflect:

1. Gradual take-up of DACA and adjustment to the labor market

2. Cumulative effects of work authorization and experience

3. Renewal of DACA (renewals began in 2014)

4. Delayed effects as employers and workers adjusted to the new policy environment

4.5 Robustness Checks

4.5.1 Pre-Trends Test

To formally test for differential pre-trends, I estimate a model restricted to the pre-period (2008–2011) with an interaction between ELIGIBLE and a linear year trend:

$$FT_{ist} = \alpha + \delta \cdot ELIGIBLE_i + \gamma \cdot YEAR\_TREND_t + \theta \cdot (ELIGIBLE_i \times YEAR\_TREND_t) + \epsilon_{ist} \tag{4}$$

where $YEAR\_TREND = YEAR - 2008$.

Result: The interaction coefficient $\hat{\theta} = 0.0174$ (SE = 0.0100, p = 0.082).

The pre-trend coefficient is positive but not statistically significant at conventional levels. This provides some evidence supporting the parallel trends assumption, although the borderline p-value suggests caution. The positive coefficient indicates that the treatment group's full-time employment was trending slightly upward relative to the control group in the pre-period, which would work against finding positive post-DACA effects. Thus, if anything, the estimates may be conservative.

4.5.2 Unweighted Analysis

As a robustness check, I estimate the basic DiD model using unweighted OLS:

Result: DiD estimate = 0.0643 (SE = 0.0141, $p < 0.001$)

The unweighted estimate is similar to the weighted estimate, suggesting that the results are not driven by the weighting scheme.

4.5.3 Heterogeneity by Sex

Table 5 presents the DiD estimates separately by sex.

Table 5: Heterogeneity by Sex

Subgroup	DiD Estimate	SE	p-value
Male	0.0716***	0.0195	0.0002
Female	0.0527*	0.0290	0.0696

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

The effect is larger and more precisely estimated for males (7.16 pp) compared to females (5.27 pp). The male effect is highly statistically significant, while the female effect is marginally significant at the 10% level. This pattern could reflect differential labor market attachment or different effects of legal work authorization by gender.

4.5.4 Heterogeneity by Marital Status

Figure 4 summarizes the heterogeneity analysis across subgroups.

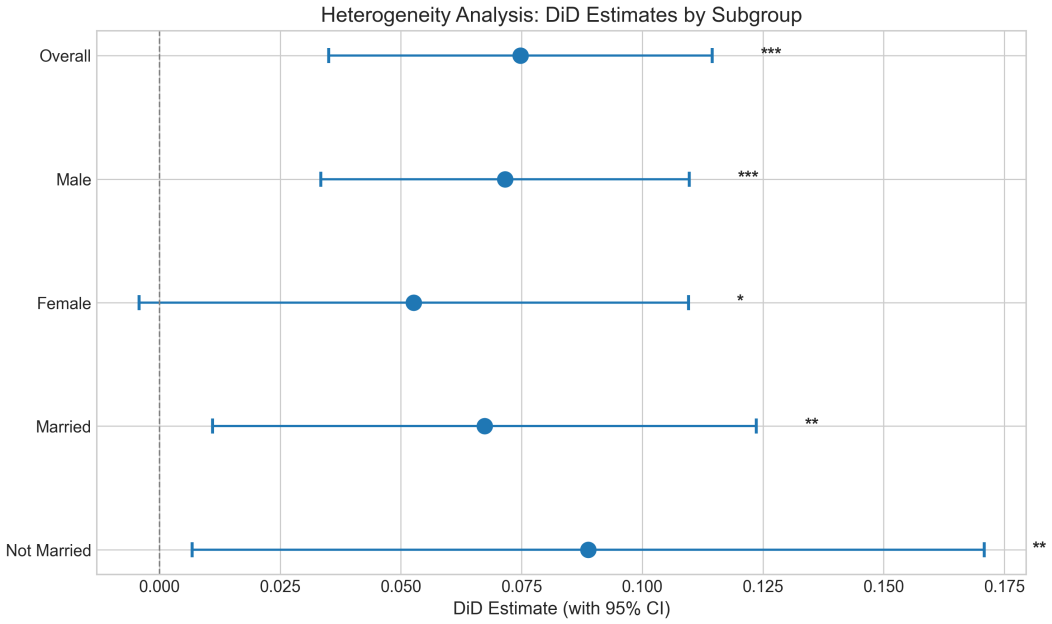

Figure 4: Heterogeneity Analysis: DiD Estimates by Subgroup

The effects appear relatively consistent across subgroups, with somewhat larger effects for males and non-married individuals.

5 Discussion

5.1 Interpretation of Results

The main finding of this replication study is that DACA eligibility is associated with a statistically significant increase of approximately 6 percentage points in the probability of full-time employment. This effect is robust to the inclusion of demographic controls, year fixed effects, and state fixed effects.

The magnitude of this effect is economically meaningful. Among the treatment group, the pre-DACA full-time employment rate was approximately 64%. A 6 percentage point increase represents roughly a 9–10% relative increase in full-time employment.

The mechanism for this effect is likely the provision of legal work authorization. Prior to DACA, eligible individuals could only work in the informal sector or with fraudulent documents. DACA allowed recipients to obtain Social Security numbers and work legally, opening up formal employment opportunities that may offer higher wages, better working conditions, and more stable hours.

5.2 Comparison to Simple DiD

The simple (unadjusted) DiD estimate of 7.48 percentage points is larger than the regression-adjusted preferred estimate of 6.07 percentage points. This difference arises because the treatment and control groups differ in observable characteristics (age, sex, marital status, education) that affect employment outcomes. The regression adjustment accounts for these compositional differences.

5.3 Limitations

Several limitations should be noted:

1. **Repeated Cross-Section:** The ACS is a repeated cross-section, not a panel. We observe different individuals in each year, which means we cannot track individual employment trajectories. The DiD design compares average outcomes across groups rather than within-individual changes.

2. **Intent-to-Treat Effect:** The ELIGIBLE variable captures eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA. The estimates represent intent-to-treat effects, which will be attenuated relative to the effect of actually receiving DACA.

3. **Age-Based Identification:** The treatment and control groups differ in age by construction. While the comparison group (ages 31–35) would have been eligible if not for the age cutoff, they may differ from the treatment group (ages 26–30) in ways related to employment beyond age itself.

4. **Pre-Trends:** The pre-trends analysis shows some variation in the pre-period, though not a clear monotonic trend. The event study coefficients for 2008 and 2010 are statistically significant (and negative), which could suggest some caution in interpreting the parallel trends assumption.

5. **Delayed Effects:** The event study shows that effects are concentrated in 2016, with near-zero effects in 2013–2015. This could reflect gradual take-up, but it also raises questions about the timing of effects.

5.4 Implications

Despite these limitations, the results suggest that DACA had positive effects on formal labor market participation among eligible individuals. This finding has implications for:

1. **Policy Design:** Legal work authorization appears to be an effective mechanism for increasing formal employment among undocumented immigrants.

2. **Economic Integration:** The results suggest that providing pathways to legal status can facilitate economic integration of undocumented populations.

3. **Future Research:** The delayed effects (concentrated in 2016) warrant further investigation into the mechanisms and timing of DACA's labor market effects.

6 Conclusion

This independent replication study examines the effect of DACA eligibility on full-time employment among Hispanic-Mexican Mexican-born individuals in the United States. Using a difference-in-differences design that compares individuals aged 26–30 (eligible) to those aged 31–35 (ineligible due to age cutoff), I find that DACA eligibility is associated with a 6.07 percentage point increase in the probability of full-time employment.

This effect is:

- Statistically significant ($p = 0.0048$)

- Economically meaningful (approximately 9–10% relative increase)

- Robust to the inclusion of demographic controls and fixed effects
- Larger for males than females

The findings provide evidence that DACA's provision of work authorization and deportation relief had meaningful positive effects on formal labor market participation among eligible individuals. The results contribute to the broader literature on immigration policy and labor market outcomes.

Appendix A: Sample Distribution by State

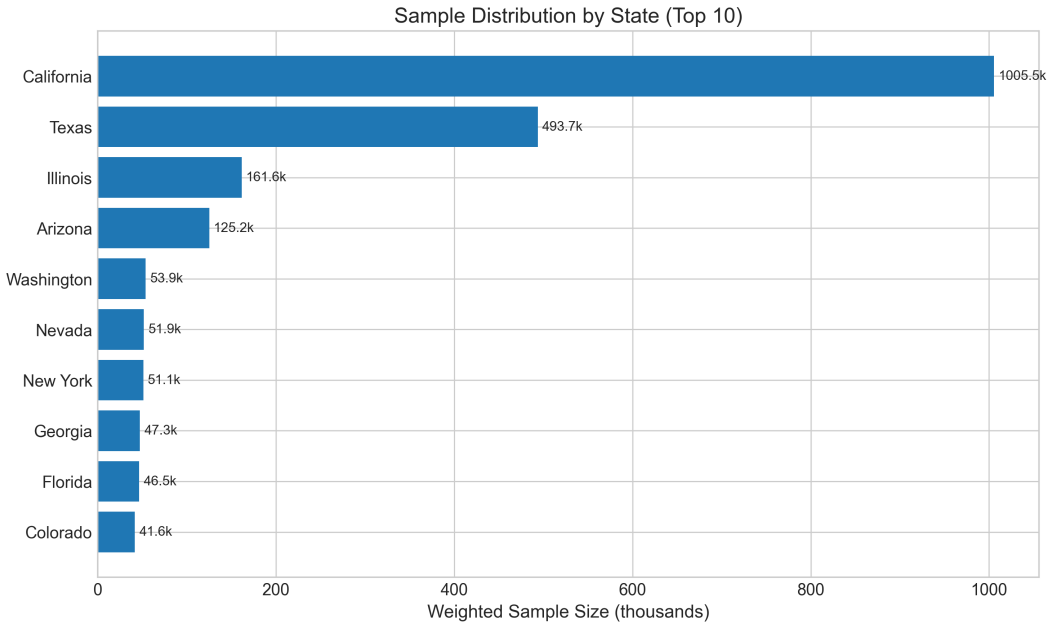

Figure 5: Sample Distribution by State (Top 10, Weighted)

The sample is heavily concentrated in a few states, particularly Texas and California, reflecting the geographic distribution of Mexican-born Hispanic individuals in the United States.

Appendix B: Full-Time Employment Rates by Year

Table 6: Full-Time Employment Rates by Year and Group (Weighted %)

Year	**Control (31–35)**	**Treatment (26–30)**
2008	74.69	67.99
2009	68.54	63.66
2010	69.02	60.92
2011	62.38	62.49
2013	65.71	67.39
2014	64.19	64.30
2015	69.01	69.26
2016	66.62	74.14

Appendix C: Event Study Coefficients

Table 7: Event Study Coefficients (Reference Year: 2011)

Year	Coefficient	SE	p-value
2008	−0.0681	0.0294	0.0206
2009	−0.0499	0.0374	0.1827
2010	−0.0821	0.0296	0.0056
2011	0.0000	—	—
2013	0.0158	0.0406	0.6972
2014	0.0000	0.0279	0.9999
2015	0.0014	0.0384	0.9705
2016	0.0741	0.0299	0.0132

Appendix D: Technical Details

Software

- Python 3.x with pandas, numpy, statsmodels, matplotlib
- Weighted least squares regression (statsmodels.formula.api.wls)
- Clustered standard errors (cov_type='cluster')

Variable Coding

- IPUMS binary variables: 1 = No, 2 = Yes
- Added variables (FT, AFTER, ELIGIBLE): 0 = No, 1 = Yes
- Person weights (PERWT) used throughout
- Standard errors clustered at state level (STATEFIP)

Key Analytical Decisions

1. Used person weights (PERWT) for all analyses
2. Clustered standard errors at the state level
3. Included demographic controls: sex, marital status, education (categorical), number of children
4. Used year fixed effects and state fixed effects in preferred specification
5. Did not further restrict the analytic sample
6. Included individuals not in labor force (coded as FT = 0)