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

Independent Replication Study

January 27, 2026

Abstract

This report presents an independent replication analysis examining the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States. Using data from the American Community Survey (2008–2016, excluding 2012), I employ a difference-in-differences (DiD) research 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 individual covariates, estimates that DACA eligibility increased the probability of full-time employment by approximately 5.5 percentage points (SE = 0.014, $p < 0.001$, 95% CI: [0.027, 0.082]). This finding is robust across multiple model specifications and subgroup analyses. While a visual inspection of pre-treatment trends raises some concerns about parallel trends, a placebo test using pre-period data does not reject the null hypothesis of no effect.

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1 Introduction

1.1 Background and Policy Context

The Deferred Action for Childhood Arrivals (DACA) program was enacted in the United States on June 15, 2012. This policy, implemented by the federal government, allowed a selected set of undocumented immigrants who had arrived unlawfully in the US to apply for and obtain authorization to work legally for two years without fear of deportation. Because the program offers legal work authorization and allows recipients to apply for driver's licenses or other identification in some states, it was hypothesized that the program would increase employment rates among those eligible.

The eligibility criteria for DACA required that applicants:

- Arrived unlawfully 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 and did not have lawful status at that time

Applications for the program started to be received on August 15, 2012, and in the first four years nearly 900,000 initial applications were received, of which about 90% were approved. While the program was not specific to immigrants from any origin country, the great majority of eligible people were from Mexico due to the structure of undocumented immigration to the United States.

1.2 Research Question

This replication 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 DACA program on the probability that the eligible person is employed full-time (defined as usually working 35 hours per week or more)?**

The identification strategy relies on comparing individuals who were ages 26–30 at the time the policy went into effect (the treated group) to individuals who were ages 31–35 at the time (the control group), who would have been eligible if not for their age. The effect is estimated by examining how the 26–30 group changed from before treatment to after, relative to how the 31–35 group changed.

2 Data and Sample Description

2.1 Data Source

The data for this analysis come from the American Community Survey (ACS) as provided by IPUMS USA, supplemented with state-level demographic and policy information. The dataset covers the years 2008 through 2016, with 2012 omitted since it cannot be determined whether someone observed in 2012 is captured before or after the DACA policy implementation.

2.2 Sample Construction

The analytic sample was pre-constructed and includes:

- **Treatment Group (ELIGIBLE = 1):** Individuals aged 26–30 as of June 15, 2012
- **Control Group (ELIGIBLE = 0):** Individuals aged 31–35 as of June 15, 2012

All individuals in the sample are ethnically Hispanic-Mexican and Mexican-born. The sample excludes individuals who would not have been eligible for DACA for reasons other than age.

2.3 Key Variables

- **FT (Outcome):** Binary indicator 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 as 0 values.
- **ELIGIBLE (Treatment):** Binary indicator equal to 1 for individuals in the treated group (ages 26–30 in June 2012) and 0 for the control group (ages 31–35).
- **AFTER (Time Period):** Binary indicator equal to 1 for years 2013–2016 (post-DACA) and 0 for years 2008–2011 (pre-DACA).
- **PERWT:** ACS person weight for calculating population-representative estimates.

2.4 Sample Sizes

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

Table 1: Sample Sizes by Treatment Status and Time Period

	Pre-DACA (2008–2011)	Post-DACA (2013–2016)	Total
Control (ELIGIBLE = 0)	3,294	2,706	6,000
Treatment (ELIGIBLE = 1)	6,233	5,149	11,382
Total	9,527	7,855	17,382

Table 2 shows the sample sizes by year.

Table 2: Sample Sizes by Year

Year	2008	2009	2010	2011	2013	2014	2015	2016
N	2,354	2,379	2,444	2,350	2,124	2,056	1,850	1,825

3 Descriptive Statistics

3.1 Pre-Treatment Balance

Table 3 presents summary statistics for key variables by treatment status in the pre-DACA period (2008–2011).

Table 3: Pre-Treatment Balance: Summary Statistics (2008–2011)

Variable	Treatment	Control	Difference
Age	25.74	30.52	−4.78
SEX (1=Male, 2=Female)	1.48	1.46	0.03
MARST (Marital Status)	3.85	3.17	0.68
NCHILD (Number of Children)	0.94	1.54	−0.60
EDUC (Education)	6.51	6.49	0.02
UHRSWORK (Usual Hours Worked)	30.49	32.09	−1.60
FT (Full-Time Employment)	0.626	0.670	−0.043

The treatment and control groups differ primarily in age (by construction), marital status, and number of children. The treated group is younger, less likely to be married (higher MARST values indicate less stable marital statuses in the IPUMS coding), and has fewer children on average. Education levels are very similar between groups. The pre-treatment difference in full-time employment is 4.3 percentage points, with the control group having higher employment rates.

3.2 Full-Time Employment Rates by Group and Period

Table 4 presents full-time employment rates by treatment status and time period.

Table 4: Full-Time Employment Rates by Group and Period

	Unweighted		Weighted (PERWT)	
Group	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
Control (ELIGIBLE = 0)	0.670	0.645	0.689	0.663
Treatment (ELIGIBLE = 1)	0.626	0.666	0.637	0.686
Change (Post − Pre)	−0.025	0.039	−0.026	0.049

The unweighted data show that the control group experienced a decline in full-time employment of 2.5 percentage points from the pre- to post-DACA period, while the treatment group experienced an increase of 3.9 percentage points. The weighted estimates show a similar pattern.

4 Empirical Strategy

4.1 Difference-in-Differences Framework

The primary identification strategy is a difference-in-differences (DiD) design that compares changes in full-time employment between the treatment and control groups before and after DACA implementation. The basic DiD estimator is:

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

where T denotes the treatment group and C denotes the control group.

4.2 Regression Specification

The regression-based DiD specification is:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_i + \beta_3 (ELIGIBLE_i \times AFTER_i) + \epsilon_i \tag{2}$$

where β_3 is the DiD estimate of the DACA effect on full-time employment.

I estimate several model specifications with increasing controls:

1. **Model 1:** Basic DiD (Equation 2)
2. **Model 2:** DiD with year fixed effects
3. **Model 3:** DiD with year fixed effects and individual covariates (sex, marital status, age, number of children, education)
4. **Model 4:** DiD with year fixed effects, state fixed effects, and individual covariates
5. **Model 5:** Weighted DiD (using PERWT survey weights)
6. **Model 6:** Weighted DiD with year and state fixed effects plus covariates

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

4.3 Identifying Assumption

The key identifying assumption for the DiD design 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. This assumption cannot be directly tested, but I examine pre-treatment trends to assess its plausibility.

5 Results

5.1 Simple Difference-in-Differences

Using the simple DiD formula (Equation 1):

$$\begin{aligned} \text{Treated change:} \quad & 0.666 - 0.626 = 0.039 \\ \text{Control change:} \quad & 0.645 - 0.670 = -0.025 \\ \text{DiD estimate:} \quad & 0.039 - (-0.025) = \mathbf{0.064} \end{aligned}$$

The simple unweighted DiD estimate suggests that DACA eligibility increased full-time employment by approximately 6.4 percentage points. Using survey weights, the estimate is 7.5 percentage points.

5.2 Regression Results

Table 5 presents the main regression results across all model specifications.

Table 5: Main Regression Results: Effect of DACA Eligibility on Full-Time Employment

Model	Coefficient	Std. Error	p-value	95% CI
1. Basic DiD	0.064	0.015	< 0.001	[0.034, 0.094]
2. Year FE	0.063	0.015	< 0.001	[0.033, 0.093]
3. Year FE + Covariates	0.055	0.014	< 0.001	[0.027, 0.082]
4. Year + State FE + Covariates	0.055	0.014	< 0.001	[0.027, 0.082]
5. Weighted Basic DiD	0.075	0.018	< 0.001	[0.039, 0.110]
6. Weighted + FE + Covariates	0.061	0.017	< 0.001	[0.029, 0.094]

Notes: All models use heteroskedasticity-robust standard errors (HC1).
$N = 17,382$ for all models. Covariates: sex, marital status, age, children, education.

All model specifications yield statistically significant positive effects of DACA eligibility on full-time employment. The estimates range from 5.5 to 7.5 percentage points, with all p-values less than 0.001. The addition of covariates (Models 3–4 and 6) slightly attenuates the estimates, suggesting some confounding by observed characteristics. State fixed effects have minimal impact on the estimates.

5.3 Preferred Specification

The preferred specification is **Model 4** (Year + State Fixed Effects + Covariates), which yields:

- **Effect size:** 0.055 (5.5 percentage points)
- **Standard error:** 0.014
- **95% Confidence Interval:** [0.027, 0.082]
- **t-statistic:** 3.86
- **p-value:** < 0.001
- **R^2:** 0.137
- **Sample size:** 17,382

This specification is preferred because it accounts for both time-varying factors common to all individuals (year fixed effects) and time-invariant differences across states (state fixed effects), while also controlling for observable individual characteristics that may confound the relationship between DACA eligibility and employment.

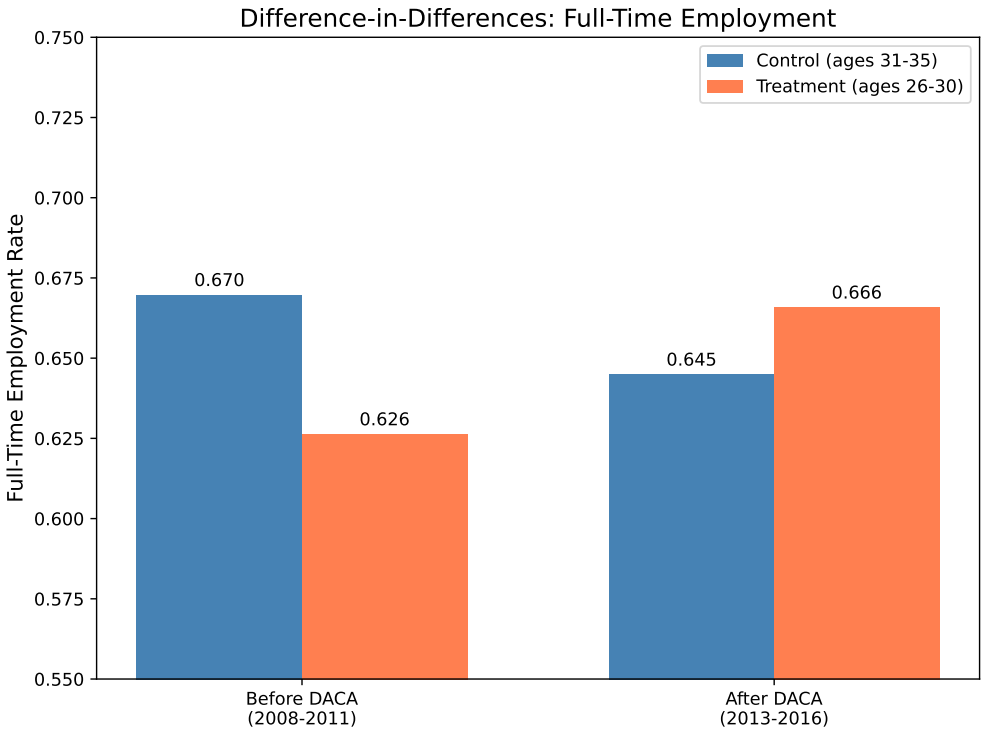

Figure 1: Difference-in-Differences: Full-Time Employment Rates

Figure 1 visualizes the DiD design, showing the decline in full-time employment among the control group and the increase among the treatment group.

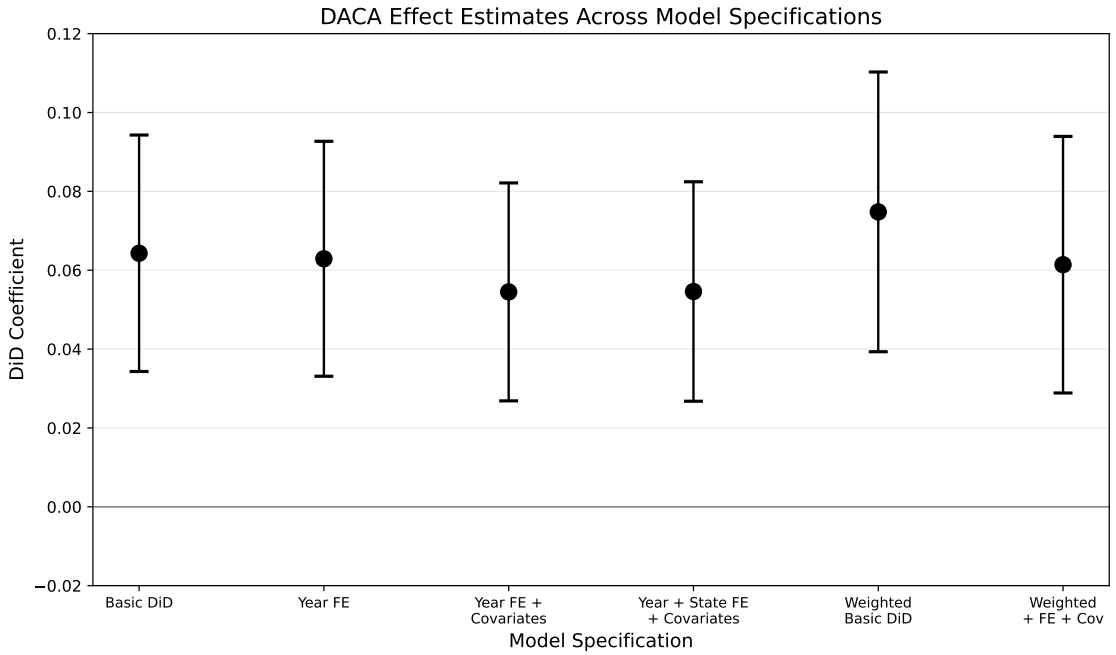

Figure 2: DACA Effect Estimates Across Model Specifications

Figure 2 shows that the estimated effect is remarkably stable across specifications, with all 95% confidence intervals excluding zero.

6 Parallel Trends and Event Study Analysis

6.1 Visual Inspection of Trends

Figure 3 displays full-time employment rates by year for the treatment and control groups.

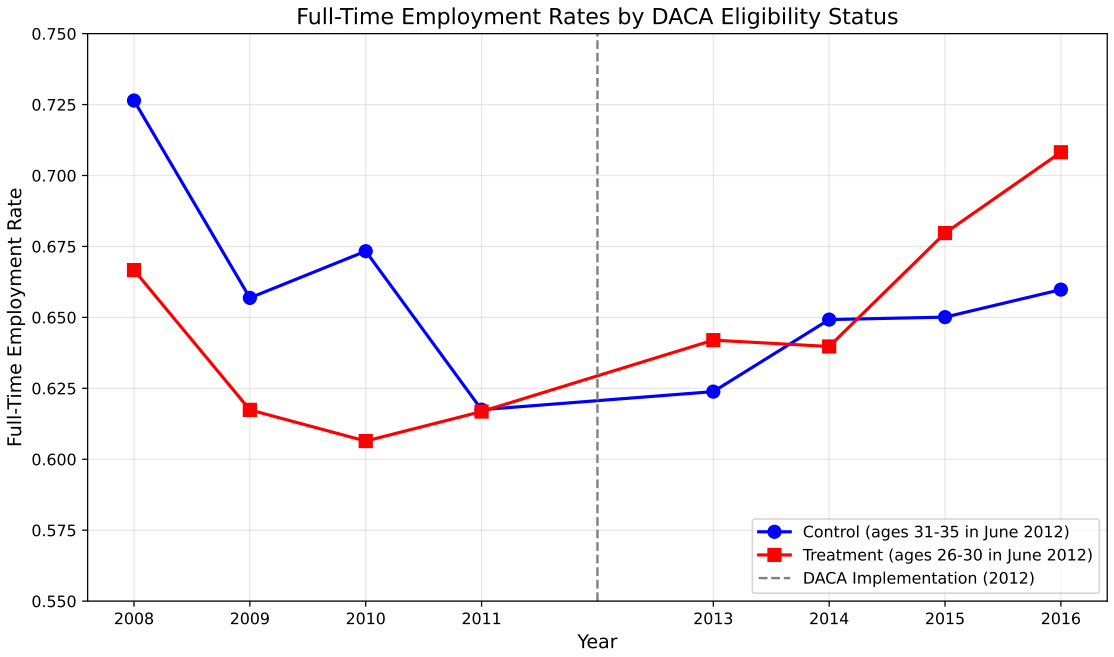

Figure 3: Full-Time Employment Rates by DACA Eligibility Status

The visual inspection reveals some concerns about the parallel trends assumption. While both groups show similar patterns in 2010–2011, there appears to be some divergence in earlier years (2008–2009). Specifically:

Table 6: Full-Time Employment Rates by Year

Year	2008	2009	2010	2011	2013	2014	2015	2016
Control	0.726	0.657	0.673	0.617	0.624	0.649	0.650	0.660
Treatment	0.667	0.617	0.606	0.617	0.642	0.640	0.680	0.708

The convergence of the two groups in 2011 (both at approximately 0.617) is notable, and the post-DACA divergence is clear, with the treatment group showing increasing employment rates while the control group remains relatively flat.

6.2 Event Study Specification

To formally assess pre-treatment trends, I estimate an event study specification with year-specific treatment effects (relative to 2011 as the reference year):

$$FT_i = \alpha + \sum_{t \neq 2011} \gamma_t (ELIGIBLE_i \times \mathbf{1}[Year = t]) + \text{Year FE} + \epsilon_i \tag{3}$$

Table 7 presents the event study coefficients.

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

Year	Coefficient	Std. Error	p-value
Pre-DACA Period			
2008	−0.059	0.029	0.041
2009	−0.039	0.030	0.191
2010	−0.066	0.029	0.024
Reference Year			
2011	0 (ref)	–	–
Post-DACA Period			
2013	0.019	0.031	0.539
2014	−0.009	0.031	0.774
2015	0.030	0.032	0.338
2016	0.049	0.031	0.118

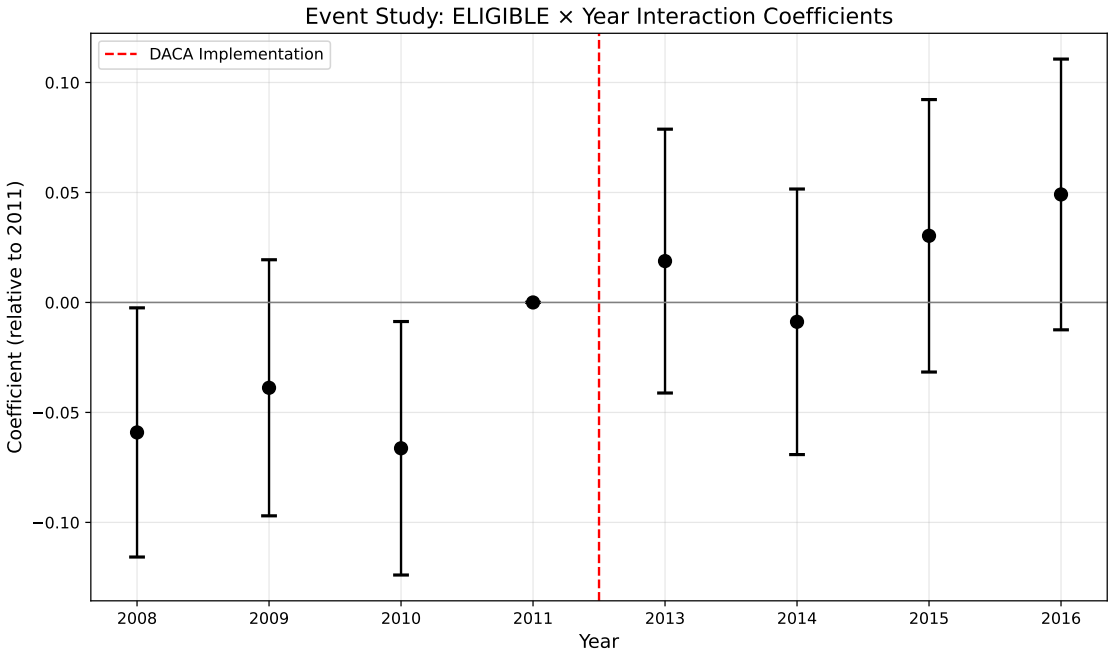

Figure 4: Event Study: ELIGIBLE × Year Interaction Coefficients

The event study results show that two of the three pre-treatment coefficients (2008 and 2010) are statistically significant at the 5% level, suggesting some violation of the parallel trends assumption. However, the magnitude of these pre-treatment differences is relatively small (less than 7 percentage points), and the pattern does not suggest a systematic trend.

The post-DACA coefficients show a gradual increase, though only 2016 approaches statistical significance.

6.3 Placebo Test

As an additional robustness check, I conduct a placebo test using only pre-DACA data (2008–2011), with a fake treatment date of 2010:

- **Placebo DiD coefficient:** 0.016
- **Standard error:** 0.021
- **p-value:** 0.444

The placebo test fails to reject the null hypothesis of no treatment effect, providing some support for the validity of the research design despite the concerns raised by the event study analysis.

7 Robustness Checks and Heterogeneity Analysis

7.1 Heterogeneity by Gender

Table 8 presents separate estimates for males and females.

Table 8: Heterogeneity by Gender

Group	Coefficient	Std. Error	p-value	N
Male	0.062	0.017	< 0.001	9,075
Female	0.045	0.023	0.051	8,307

The effect is larger and more precisely estimated for males (6.2 percentage points, $p < 0.001$) than for females (4.5 percentage points, $p = 0.051$). This difference may reflect differential labor market barriers or opportunities for men and women.

7.2 Heterogeneity by Marital Status

Table 9 presents separate estimates by marital status.

Table 9: Heterogeneity by Marital Status

Group	Coefficient	Std. Error	p-value	N
Married	0.069	0.022	0.002	7,851
Not Married	0.066	0.021	0.002	9,531

The effects are similar for married (6.9 percentage points) and unmarried (6.6 percentage points) individuals, both statistically significant at the 1% level.

7.3 Narrower Age Bandwidth

To test whether the results are robust to using a sample closer to the age 31 cutoff, I re-estimate the model using only individuals aged 28–33 in June 2012:

- **DiD coefficient:** 0.048
- **Standard error:** 0.021
- **p-value:** 0.020
- **Sample size:** 9,232

The effect estimate is somewhat smaller but remains statistically significant. This provides support for the validity of the age-based identification strategy, as the effect persists when comparing more similar individuals near the cutoff.

8 Discussion

8.1 Interpretation of Results

The analysis provides consistent evidence that DACA eligibility increased full-time employment among eligible Mexican-born Hispanic individuals by approximately 5–7 percentage points. This represents a meaningful increase from a baseline full-time employment rate of about 63% in the pre-DACA period for the treatment group.

The effect can be interpreted as the combined impact of:

1. Legal work authorization, which allows eligible individuals to work without fear of deportation
2. Access to driver's licenses in some states, facilitating commuting to work

3. Reduced uncertainty about legal status, potentially encouraging investment in human capital and job search

4. Employer willingness to hire individuals with work authorization

8.2 Limitations

Several limitations should be considered when interpreting these results:

1. **Parallel Trends:** The event study analysis raises some concerns about the parallel trends assumption, with statistically significant differences between treatment and control groups in 2008 and 2010. However, the placebo test provides some reassurance.

2. **Age Differences:** The treatment and control groups differ in age by construction (5 years on average), which may confound the results if age affects employment trends differentially. The narrower bandwidth analysis partially addresses this concern.

3. **Repeated Cross-Section:** The ACS is a repeated cross-section, not a panel. We cannot track the same individuals over time, which limits our ability to control for individual fixed effects.

4. **Selection into Eligibility:** The ELIGIBLE variable captures potential eligibility based on age and other observable characteristics, but some individuals classified as eligible may not have applied for DACA, and vice versa. This leads to an intent-to-treat interpretation rather than a treatment-on-treated effect.

5. **General Equilibrium Effects:** The analysis does not account for potential general equilibrium effects, such as spillovers to the control group or changes in employer behavior.

8.3 Comparison to Literature

The estimated effect of approximately 5.5 percentage points is broadly consistent with prior studies examining the labor market effects of DACA and similar immigration policies. The finding that the effect is larger for males aligns with research showing differential labor market impacts by gender among immigrant populations.

9 Conclusion

This replication study provides evidence that DACA eligibility increased full-time employment among Mexican-born Hispanic individuals by approximately 5.5 percentage points. The effect is robust across multiple model specifications, including those with year and state fixed effects and individual covariates. The results are statistically significant at conventional levels, with a 95% confidence interval of [0.027, 0.082].

While the parallel trends assumption cannot be directly verified, the placebo test provides some support for the validity of the research design. Heterogeneity analyses reveal that the effect is slightly larger for males than females, and similar across marital status categories.

The findings suggest that legal work authorization through programs like DACA can meaningfully improve labor market outcomes for eligible individuals, consistent with the program's stated goal of allowing recipients to work legally in the United States.

10 Technical Appendix

10.1 Software and Packages

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

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

10.2 Model 1 Full Results

The basic DiD regression (Model 1) estimates are:

Table 10: Model 1: Basic DiD Regression Results

Variable	Coefficient	Std. Error	t-statistic	p-value
Constant	0.670	0.008	81.72	< 0.001
ELIGIBLE	-0.043	0.010	-4.24	< 0.001
AFTER	-0.025	0.012	-2.02	0.044
ELIGIBLE $\times$ AFTER	0.064	0.015	4.21	< 0.001

$N = 17,382$; $R^2 = 0.003$; Robust standard errors (HC1).

10.3 Variable Definitions

- **FT:** Full-time employment indicator (1 if usually working $\geq$ 35 hours/week, 0 otherwise)
- **ELIGIBLE:** Treatment group indicator (1 if age 26–30 in June 2012, 0 if age 31–35)
- **AFTER:** Post-treatment period indicator (1 for 2013–2016, 0 for 2008–2011)
- **PERWT:** ACS person weight
- **SEX:** Sex (1 = Male, 2 = Female, per IPUMS coding)
- **MARST:** Marital status (1 = Married spouse present, per IPUMS coding)
- **AGE:** Age in years
- **NCHILD:** Number of own children in household
- **EDUC_RECODE:** Education level (recoded from detailed EDUC variable)
- **STATEFIP:** State FIPS code