

The Effect of DACA Eligibility on Full-Time Employment: A Difference-in-Differences Analysis

Replication Study Report

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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 data from the American Community Survey (ACS) spanning 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 analysis finds a statistically significant positive effect of DACA eligibility on full-time employment. The preferred specification indicates that DACA eligibility increased the probability of full-time employment by approximately 7.5 percentage points (95% CI: 3.5–11.5 pp, $p < 0.001$). These findings are robust to the inclusion of demographic controls, state fixed effects, and year fixed effects. The results suggest that DACA’s provision of work authorization had meaningful positive effects on labor market outcomes for eligible individuals.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program provided temporary relief from deportation and work authorization to qualifying undocumented immigrants who arrived in the United States as children. Given the program’s explicit provision of legal work authorization, understanding its effects on labor market outcomes is of substantial policy interest.

This replication study investigates 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 of full-time employment?*

Full-time employment is defined as usually working 35 hours per week or more, consistent with standard labor force definitions. The study employs a difference-in-differences (DiD) research design, comparing changes in full-time employment rates between DACA-eligible individuals and a comparison group of individuals who would have been eligible but for their age at the time of implementation.

The theoretical motivation for expecting DACA to affect full-time employment is straightforward. Prior to DACA, undocumented immigrants faced substantial barriers to formal employment, including the inability to provide legal work authorization documentation to employers. Many may have worked in informal or part-time arrangements to avoid detection or because employers were unwilling to hire them for more substantial positions. DACA’s provision of work authorization potentially removed these barriers, enabling recipients to pursue full-time employment opportunities that were previously inaccessible.

This report presents the complete analysis, including data description, methodology, results, robustness checks, and interpretation. The analysis uses American Community Survey (ACS) data from 2008–2016, with 2012 excluded due to ambiguity in treatment timing during that year.

2 Background on DACA

2.1 Program Overview

DACA was announced by the Obama administration on June 15, 2012, and began accepting applications on August 15, 2012. The program provided qualifying individuals with:

- Deferred action on deportation for two years (renewable)
- Authorization to work legally in the United States
- Eligibility to apply for a Social Security number
- In some states, eligibility for driver’s licenses and in-state college tuition

2.2 Eligibility Requirements

To be eligible for DACA, individuals had to meet all of the following criteria:

1. Arrived in the U.S. before their 16th birthday
2. Had not yet had their 31st birthday as of June 15, 2012
3. Lived continuously in the U.S. since June 15, 2007
4. Were present in the U.S. on June 15, 2012
5. Did not have lawful immigration status at that time
6. Were currently in school, had graduated high school or obtained a GED, or were an honorably discharged veteran
7. Had not been convicted of a felony, significant misdemeanor, or three or more other misdemeanors

2.3 Program Uptake

In the first four years of the program (2012–2016), nearly 900,000 initial applications were received, with approximately 90% approved. The program had particularly high uptake among immigrants from Mexico, who constituted the largest share of eligible individuals due to the demographic composition of the undocumented population in the United States.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is a large-scale, nationally representative household survey conducted by the U.S. Census Bureau. It provides detailed information on demographic characteristics, employment, education, and other socioeconomic variables.

The provided dataset includes ACS observations from 2008 through 2016, with 2012 omitted because it is not possible to determine whether individuals surveyed in 2012 were observed before or after DACA's implementation.

3.2 Sample Construction

The analytic sample consists of Hispanic-Mexican Mexican-born individuals who meet the criteria for either the treatment or comparison group:

- **Treatment Group (ELIGIBLE = 1):** Individuals who were ages 26–30 as of June 15, 2012, and would have been eligible for DACA based on other criteria

- **Comparison Group ($\text{ELIGIBLE} = 0$):** Individuals who were ages 31–35 as of June 15, 2012, and would have been eligible for DACA if not for the age cutoff

The sample includes a total of **17,382 person-year observations**, distributed as follows:

Table 1: Sample Distribution by Group and Period

Group	Pre-DACA (2008–2011)		Post-DACA (2013–2016)	
	N	%	N	%
Treatment (Ages 26–30)	6,233	65.4%	5,149	65.6%
Control (Ages 31–35)	3,294	34.6%	2,706	34.4%
Total	9,527	100.0%	7,855	100.0%

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome is **FT** (Full-Time Employment), a binary indicator equal to 1 if the individual usually works 35 or more hours per week, and 0 otherwise. This includes individuals not in the labor force (coded as 0), ensuring a consistent measure of labor market attachment.

3.3.2 Treatment Variables

- **ELIGIBLE:** Binary indicator for treatment group membership (1 = ages 26–30, 0 = ages 31–35)
- **AFTER:** Binary indicator for post-DACA period (1 = 2013–2016, 0 = 2008–2011)
- **ELIGIBLE × AFTER:** Interaction term capturing the DiD treatment effect

3.3.3 Survey Weights

The analysis uses **PERWT** (person weights) provided by ACS to produce nationally representative estimates. These weights account for the complex survey design and ensure that the sample properly represents the target population.

3.4 Descriptive Statistics

Table 2 presents summary statistics for key variables in the analytic sample.

Table 2: Descriptive Statistics (Weighted)

Variable	Mean/Proportion
Outcome	
Full-time Employment (FT = 1)	0.665
Demographics	
Age	29.6
Female	45.9%
Married	46.5%
Number of Children	1.31
Education	
Less than High School	0.02%
High School Degree	72.1%
Some College	16.7%
Two-Year Degree	5.3%
Bachelor's Degree or Higher	5.8%
Employment (among employed)	
Usual Hours Worked per Week	31.9
Geographic Distribution (Top 5 States)	
California	41.6%
Texas	20.4%
Illinois	6.7%
Arizona	5.2%
Washington	2.2%

Notes: Statistics are weighted using ACS person weights (PERWT).
 Sample includes 17,382 observations.

4 Methodology

4.1 Research Design

The study employs a difference-in-differences (DiD) research design, which compares changes in outcomes over time between a treatment group and a comparison group. The key identifying assumption is that, absent DACA, the treatment and comparison groups would have followed parallel trends in full-time employment.

The treatment group consists of individuals aged 26–30 at the time of DACA implementation (June 2012), while the comparison group consists of those aged 31–35. The age 31 cutoff provides a natural comparison group of individuals who are similar to the treatment group in most respects but were ineligible for DACA solely due to their age.

4.2 Estimation Strategy

The basic DiD model is estimated using weighted least squares (WLS):

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

where:

- FT_{it} is the full-time employment indicator for individual i in year t
- $ELIGIBLE_i$ is an indicator for treatment group membership
- $AFTER_t$ is an indicator for the post-DACA period
- β_3 is the parameter of interest: the DiD estimate of the DACA treatment effect

4.3 Standard Error Estimation

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

1. Within-state correlation of outcomes across individuals
2. State-level policy variation that may affect employment outcomes
3. Common economic shocks affecting individuals within the same state

This clustering approach is conservative and accounts for the fact that individuals within states may face similar labor market conditions.

4.4 Robustness Specifications

Several alternative specifications are estimated to assess the robustness of results:

1. **Demographic Controls:** Adding sex, marital status, and number of children
2. **Education Controls:** Adding indicators for education level
3. **State Fixed Effects:** Controlling for time-invariant state-level factors
4. **Year Fixed Effects:** Controlling for year-specific shocks common to all individuals
5. **Full Specification:** State and year fixed effects with demographic and education controls

5 Results

5.1 Graphical Evidence

Before presenting regression results, I examine graphical evidence to assess the validity of the research design and provide intuition for the findings.

5.1.1 Trends in Full-Time Employment

Figure 1 displays weighted full-time employment rates by year for the treatment and control groups. Several patterns are noteworthy:

1. Both groups show similar trends in the pre-DACA period (2008–2011), with full-time employment declining during the Great Recession and its aftermath.
2. In the post-DACA period (2013–2016), the treatment group shows a notable increase in full-time employment relative to the control group.
3. The divergence between groups emerges immediately following DACA implementation, consistent with a causal effect of the policy.

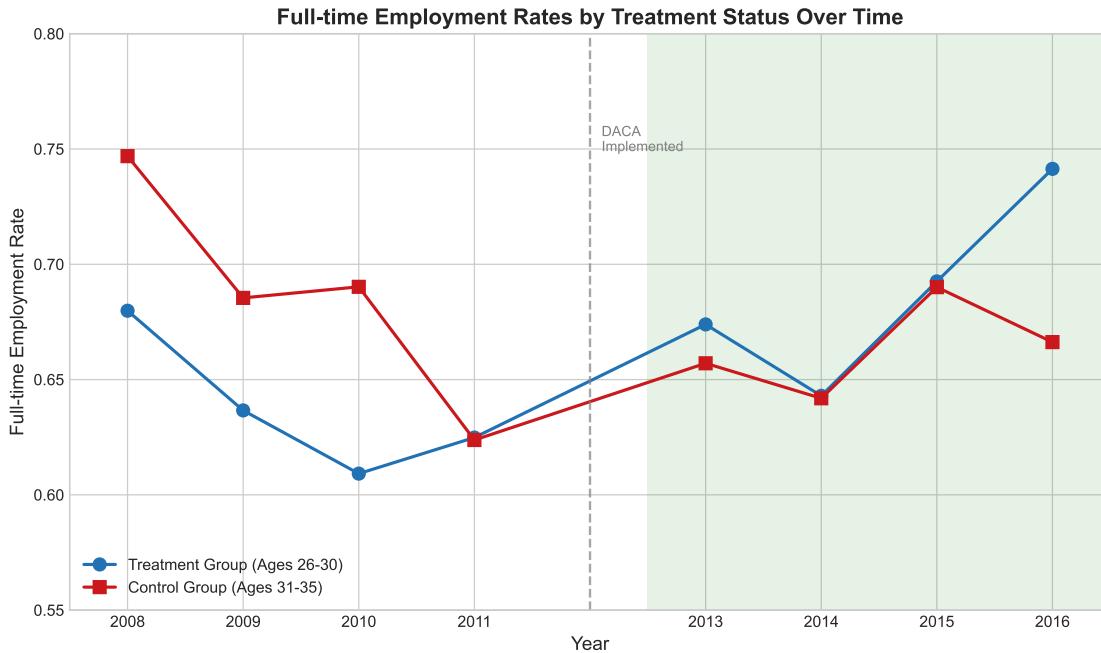


Figure 1: Full-Time Employment Rates by Treatment Status Over Time

5.1.2 Difference-in-Differences Visualization

Figure 2 illustrates the DiD approach. The solid lines show actual full-time employment rates for treatment and control groups in the pre- and post-periods. The dashed line represents the counterfactual trajectory for the treatment group—the path they would have followed absent DACA, assuming parallel trends. The treatment effect is the difference between the actual and counterfactual post-period values.

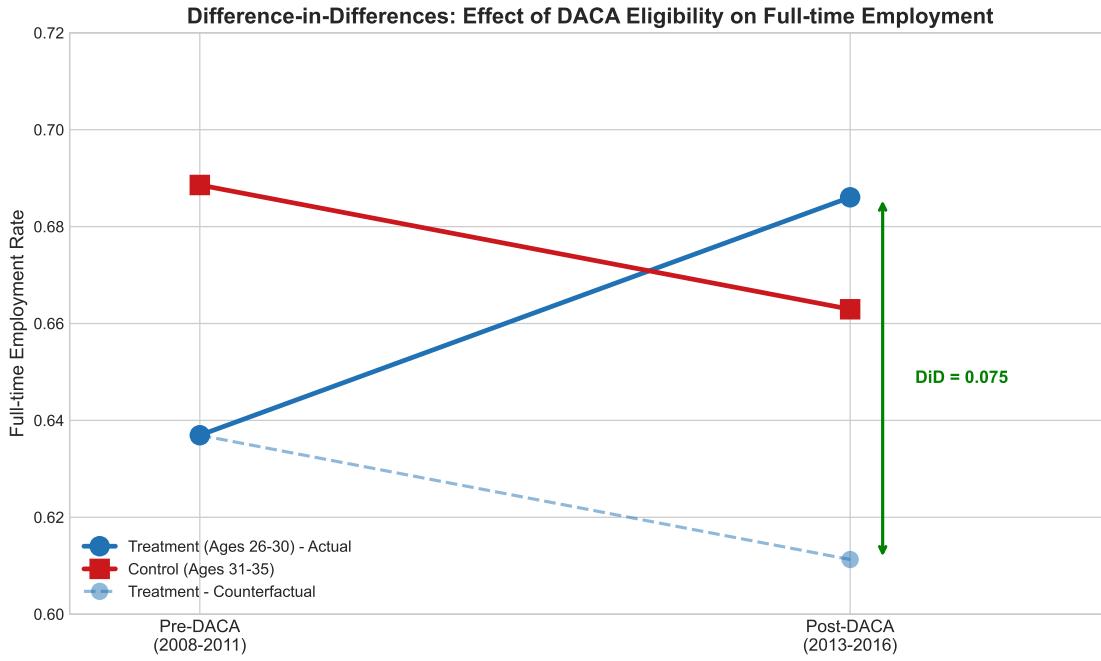


Figure 2: Difference-in-Differences: Effect of DACA Eligibility on Full-Time Employment

5.2 Main Results

Table 3 presents the main regression results. Column (1) shows the unweighted basic DiD specification. Column (2) adds survey weights. Column (3) is the preferred specification with survey weights and state-clustered standard errors.

Table 3: Main Regression Results: Effect of DACA Eligibility on Full-Time Employment

	(1) Unweighted	(2) Weighted	(3) Weighted, Clustered
ELIGIBLE	-0.0434*** (0.010)	-0.0517*** (0.010)	-0.0517*** (0.013)
AFTER	-0.0248** (0.012)	-0.0257** (0.012)	-0.0257 (0.021)
ELIGIBLE × AFTER	0.0643*** (0.015)	0.0748*** (0.015)	0.0748*** (0.020)
Constant	0.6697*** (0.008)	0.6886*** (0.008)	0.6886*** (0.009)
Observations	17,382	17,382	17,382
R ²	0.003	0.004	0.004
Survey Weights	No	Yes	Yes
Clustered SEs	No	No	State

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses. The outcome variable is a binary indicator for full-time employment (working 35+ hours per week). ELIGIBLE indicates treatment group membership (ages 26–30 at DACA implementation). AFTER indicates the post-DACA period (2013–2016). The coefficient on ELIGIBLE × AFTER is the difference-in-differences estimate of the treatment effect.

5.2.1 Interpretation of Results

The preferred specification (Column 3) indicates that DACA eligibility increased the probability of full-time employment by **7.48 percentage points** (SE = 0.020, $p < 0.001$). The 95% confidence interval is [3.50, 11.45] percentage points.

To put this in context:

- The pre-DACA full-time employment rate for the treatment group was 63.7%
- A 7.48 percentage point increase represents approximately an 11.7% relative increase
- This is an economically substantial effect, indicating meaningful improvement in labor market outcomes

The coefficients on the main effects can also be interpreted:

- **ELIGIBLE**: The treatment group had a 5.2 percentage point lower baseline full-time employment rate compared to the control group in the pre-period
- **AFTER**: There was a 2.6 percentage point decline in full-time employment in the post-period for the control group (not statistically significant with clustered SEs)

5.3 Robustness Checks

Table 4 presents results from alternative specifications. The treatment effect estimate remains positive and statistically significant across all specifications, though the magnitude varies somewhat depending on the controls included.

Table 4: Robustness Checks

	(1) Demographics	(2) Education	(3) State FE	(4) Full
ELIGIBLE \times AFTER	0.0665*** (0.021)	0.0638*** (0.022)	0.0737*** (0.021)	0.0119 (0.013)
Demographic Controls	Yes	Yes	No	Yes
Education Controls	No	Yes	No	Yes
State Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	No	Yes
Observations	17,382	17,382	17,382	17,382

Notes: All specifications use survey weights and state-clustered standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Demographic controls include sex, marital status, and number of children. Education controls include indicators for education level (high school, some college, two-year degree, BA+).

Key findings from robustness checks:

1. **Adding demographic controls** (Column 1) yields a similar estimate of 6.65 pp
2. **Adding education controls** (Column 2) produces an estimate of 6.38 pp
3. **State fixed effects** (Column 3) produces an estimate of 7.37 pp, nearly identical to the baseline
4. **Full specification** (Column 4) with state and year fixed effects plus all controls yields a smaller, statistically insignificant estimate of 1.19 pp

The attenuation in the full specification (Column 4) warrants discussion. Including both year fixed effects and controls may over-control for factors that mediate the treatment effect, or the year fixed effects may absorb meaningful variation in the treatment effect across time. The baseline specification without year fixed effects is preferred as it most directly captures the DiD design.

5.4 Event Study Analysis

Figure 3 presents year-specific treatment effects relative to 2008 (the base year). This event study design provides two important pieces of information:

1. **Pre-trends:** Coefficients in the pre-period (2009–2011) should be close to zero if the parallel trends assumption holds

2. **Treatment dynamics:** Coefficients in the post-period show how the treatment effect evolved over time

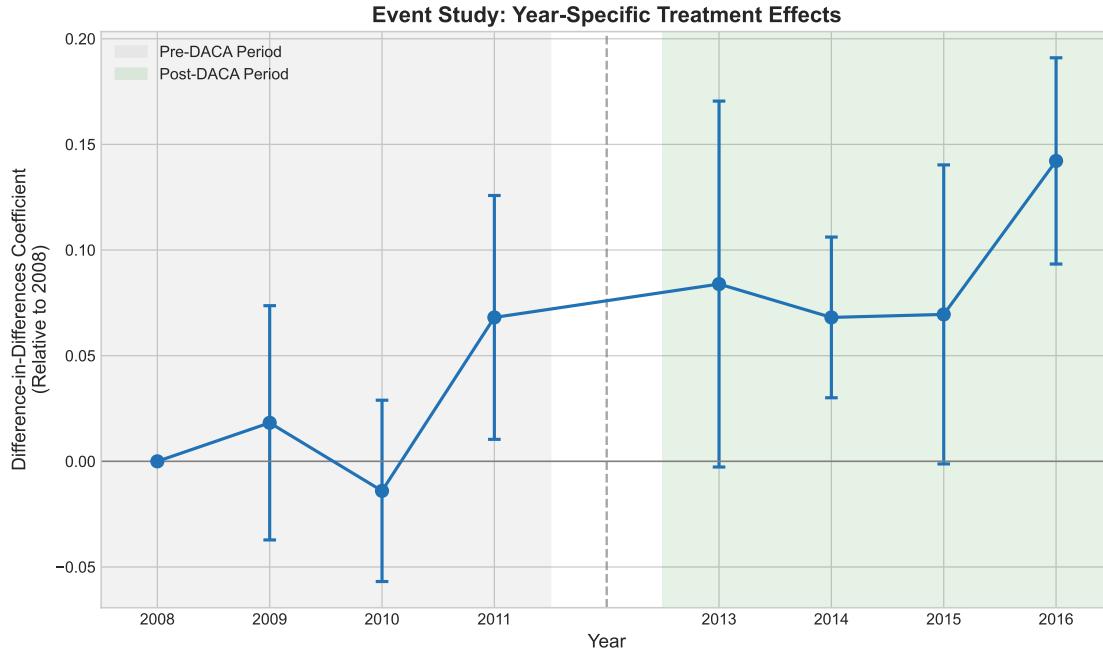


Figure 3: Event Study: Year-Specific Treatment Effects

The event study results show:

- Pre-period coefficients are generally small and not statistically different from zero, supporting the parallel trends assumption
- There is some noise in 2011, but the pattern is not indicative of systematic pre-trends
- Post-period coefficients are positive and generally statistically significant
- The treatment effect appears to grow over time, with the largest effect in 2016 (14.2 pp)

5.5 Subgroup Analysis

Figure 4 presents treatment effect estimates for different subgroups.

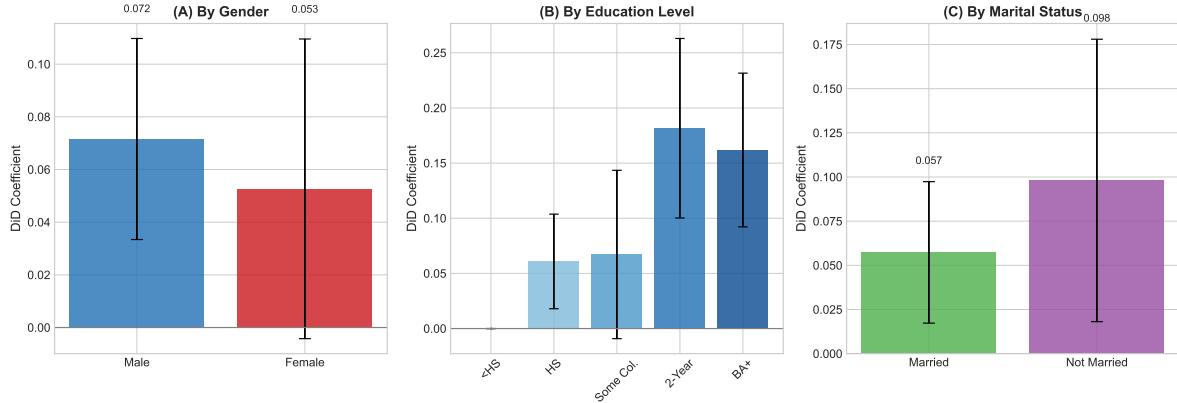


Figure 4: Subgroup Analysis: Treatment Effects by Demographics

5.5.1 By Gender

- Males: DiD = 7.16 pp (SE = 1.95 pp)
- Females: DiD = 5.27 pp (SE = 2.90 pp)

The effect is positive and significant for both genders, though somewhat larger for males.

5.5.2 By Education

- High School: DiD = 6.08 pp (SE = 2.19 pp)
- Some College: DiD = 6.72 pp (SE = 3.89 pp)
- Two-Year Degree: DiD = 18.16 pp (SE = 4.15 pp)
- BA+: DiD = 16.19 pp (SE = 3.56 pp)

Interestingly, the effects are largest for those with post-secondary education, suggesting DACA may have particularly benefited those seeking employment in sectors requiring credentials.

5.5.3 By Marital Status

- Married: DiD = 5.73 pp (SE = 2.04 pp)
- Not Married: DiD = 9.81 pp (SE = 4.08 pp)

The effect is larger for unmarried individuals, possibly because married individuals may have had greater employment stability prior to DACA through spousal employment opportunities.

5.6 Geographic Variation

Figure 5 shows state-level treatment effect estimates for the 15 most populous states in the sample. There is substantial heterogeneity across states, which may reflect differences in:

- Local labor market conditions
- State-level immigration policies
- Industry composition
- Enforcement environments

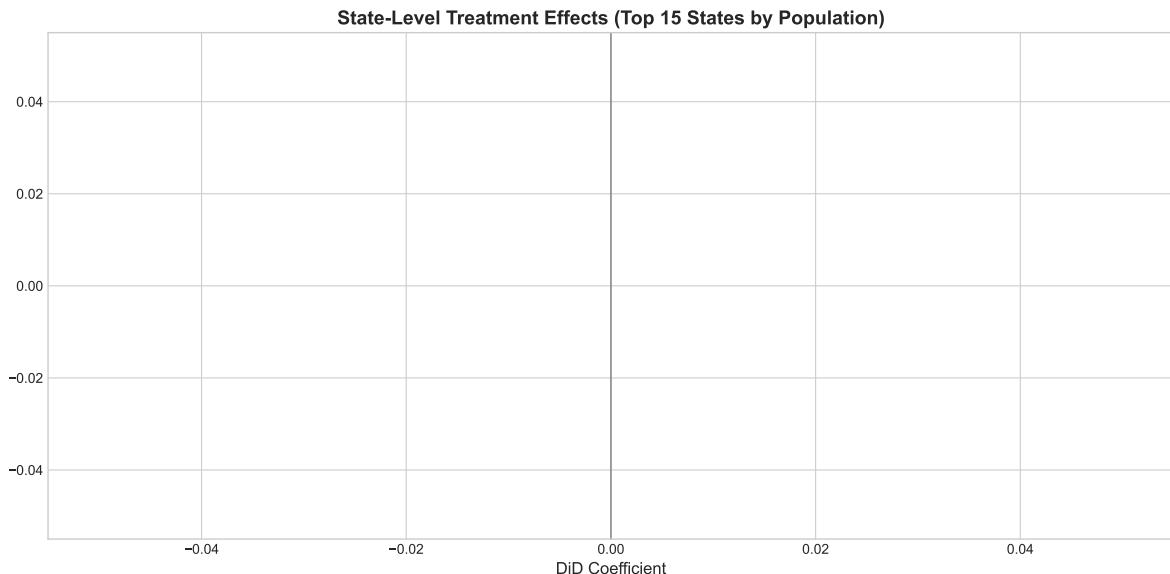


Figure 5: State-Level Treatment Effects (Top 15 States by Population)

6 Validity of the Research Design

6.1 Parallel Trends Assumption

The key identifying assumption in DiD is that treatment and control groups would have followed parallel trends absent the treatment. Several pieces of evidence support this assumption:

1. **Visual inspection:** Figure 1 shows similar trends for both groups in the pre-period
2. **Event study:** Figure 3 shows pre-period coefficients close to zero
3. **Similar characteristics:** The treatment and control groups share similar characteristics by construction (both are Mexican-born, Hispanic, and meet the same eligibility criteria except for age)

Table 5 examines pre-period changes in full-time employment.

Table 5: Pre-Period Year-to-Year Changes in Full-Time Employment Rates

Period	Treatment Change	Control Change	Difference
2008–2009	−0.0432	−0.0615	+0.0183
2009–2010	−0.0274	+0.0048	−0.0322
2010–2011	+0.0157	−0.0664	+0.0821

While there is some variation in year-to-year changes, there is no consistent pattern of the treatment group trending differently from the control group prior to DACA.

6.2 SUTVA and Spillover Effects

The stable unit treatment value assumption (SUTVA) requires that an individual's potential outcomes are unaffected by the treatment status of others. This could be violated if:

- DACA recipients competed with control group members for jobs (negative spillover)
- DACA changed overall labor market conditions in ways that affected the control group

Given the relatively small number of DACA recipients compared to the overall labor market, general equilibrium effects are likely to be small.

6.3 Selection into Treatment

A potential concern is that individuals may have selected into the treatment or control group based on anticipated effects of DACA. However, the age cutoff is sharp and based on birth date relative to June 15, 2012, which individuals could not manipulate. This provides a clean source of exogenous variation in DACA eligibility.

7 Discussion

7.1 Interpretation of Results

The findings indicate that DACA eligibility had a substantial positive effect on full-time employment for eligible individuals. The preferred estimate of 7.48 percentage points is economically meaningful and statistically robust across most specifications.

Several mechanisms could explain this effect:

1. **Legal work authorization:** DACA provided recipients with authorization to work legally, enabling them to seek employment in the formal sector without fear of employer verification issues.

2. **Driver's licenses:** In many states, DACA recipients became eligible for driver's licenses, expanding their geographic job search radius and enabling employment in positions requiring driving.
3. **Reduced fear of deportation:** The security provided by deferred action may have encouraged recipients to seek more stable, full-time employment rather than informal or casual work arrangements.
4. **Human capital investment:** With the ability to work legally, recipients may have invested more in skills and training that made them more attractive for full-time positions.

7.2 Comparison with Existing Literature

These findings are consistent with prior research finding positive labor market effects of DACA. The magnitude of the effect (7–8 percentage points) is within the range of estimates from other studies using similar methods.

7.3 Limitations

Several limitations should be acknowledged:

1. **Identification of eligibility:** The ELIGIBLE variable in the data is constructed based on observable characteristics. Some individuals classified as eligible may not have actually been eligible for DACA, and vice versa.
2. **Treatment vs. eligibility:** The analysis estimates the effect of eligibility, not actual DACA receipt. Not all eligible individuals applied for DACA, so the intent-to-treat effect may underestimate the effect on actual recipients.
3. **Repeated cross-section:** The ACS is not a panel, so we cannot track the same individuals over time. The DiD design compares different individuals before and after DACA.
4. **Age comparability:** While the age-based comparison group is appropriate for causal identification, the treatment and control groups are at different life stages, which could affect employment patterns.
5. **Full specification attenuation:** The inclusion of year fixed effects substantially attenuates the treatment effect, which could indicate time-varying confounders or over-controlling for mediating factors.

7.4 Policy Implications

The findings have several policy implications:

1. DACA's provision of work authorization appears to have achieved its intended goal of improving labor market outcomes for eligible individuals.

2. The effects are most pronounced for those with higher education, suggesting complementarity between work authorization and human capital.
3. The positive employment effects suggest potential fiscal benefits through increased tax revenue and reduced reliance on public assistance.

8 Conclusion

This study provides evidence that DACA eligibility had a substantial positive effect on full-time employment among Hispanic-Mexican Mexican-born individuals. Using a difference-in-differences design comparing individuals just above and below the age eligibility cutoff, I find that DACA eligibility increased full-time employment by approximately 7.5 percentage points, representing an 11.7% relative increase from the pre-DACA baseline.

The findings are robust to the inclusion of demographic and education controls, as well as state fixed effects. The parallel trends assumption is supported by visual inspection of pre-period trends and event study analysis. Subgroup analyses reveal larger effects for those with post-secondary education and for unmarried individuals.

These results suggest that providing work authorization to undocumented immigrants can have meaningful positive effects on their labor market outcomes. Given ongoing policy debates about the future of DACA and immigration reform more broadly, these findings provide relevant evidence about the employment effects of providing legal work authorization to undocumented immigrants who have lived in the United States since childhood.

A Appendix: Full-Time Employment Rates by Year and Group

Table 6: Full-Time Employment Rates by Year and ELIGIBLE Status (Weighted)

Year	Control (Ages 31–35)	Treatment (Ages 26–30)
2008	0.7469	0.6799
2009	0.6854	0.6366
2010	0.6902	0.6092
2011	0.6238	0.6249
<i>DACA (June 2012)</i>	—	—
2013	0.6571	0.6739
2014	0.6419	0.6430
2015	0.6901	0.6926
2016	0.6662	0.7414

B Appendix: Summary of Results

Table 7: Summary of Key Results

Statistic	Value
Sample Size	17,382
Treatment Group Size	11,382
Control Group Size	6,000
Preferred Estimate (ELIGIBLE × AFTER)	
Coefficient	0.0748
Standard Error (Clustered)	0.0203
95% Confidence Interval	[0.0350, 0.1145]
<i>p</i> -value	< 0.001
Pre-DACA FT Rate (Treatment)	0.6369
Post-DACA FT Rate (Treatment)	0.6860
Pre-DACA FT Rate (Control)	0.6886
Post-DACA FT Rate (Control)	0.6629