The Effect of DACA Eligibility on Full-Time Employment: An Independent Replication Study

Replication Study ID: 92

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Abstract

This study examines the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican individuals born in Mexico. Using a difference-in-differences identification strategy with data from the American Community Survey (2006-2016), I compare employment outcomes between DACA-eligible and non-eligible Mexican-born non-citizens before and after the program's implementation in June 2012. The preferred specification, which includes state and year fixed effects and uses person weights with standard errors clustered at the state level, indicates that DACA eligibility is associated with a **3.04 percentage point increase** in the probability of full-time employment (SE = 0.004, 95% CI: [0.023, 0.038], $p < 0.001$). This effect is robust across multiple specifications, including subgroup analyses by gender and alternative age restrictions. Event study analysis shows no differential pre-trends, supporting the parallel trends assumption.

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

Preferred Estimate: 0.0304 (3.04 percentage points)
Standard Error: 0.00398
95% Confidence Interval: [0.0226, 0.0382]
Sample Size: 561,470

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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 provides temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children and meet specific eligibility criteria. Given that DACA directly provides legal work authorization to previously unauthorized workers, understanding its effects on employment outcomes is of considerable policy importance.

This study examines the causal impact of DACA eligibility on full-time employment (defined as usually working 35 or more hours per week) among Hispanic-Mexican individuals born in Mexico and residing in the United States. The research question is narrowly defined to focus on this specific population given that the vast majority of DACA-eligible individuals are of Mexican origin.

The identification strategy employs a difference-in-differences (DiD) framework that compares employment outcomes between DACA-eligible and non-eligible Mexican-born non-citizens, before and after the program's implementation. This approach allows for estimation of the causal effect under the assumption that, absent DACA, employment trends would have evolved similarly for both groups.

The main finding indicates that DACA eligibility is associated with approximately a 3 percentage point increase in the probability of full-time employment. This effect is statistically significant and robust to various specification checks, including alternative sample restrictions, subgroup analyses, and placebo tests.

2 Background

2.1 The DACA Program

DACA was announced by the Department of Homeland Security on June 15, 2012, and applications began to be received on August 15, 2012. The program was established through executive action under the Obama administration as a response to congressional inaction on comprehensive immigration reform.

To be eligible for DACA, applicants must meet the following criteria:

1. Arrived in the United States before their 16th birthday
2. Had not yet had their 31st birthday as of June 15, 2012
3. Lived continuously in the United States since June 15, 2007
4. Were present in the United States on June 15, 2012

5. Did not have lawful status (citizenship or legal permanent residency) at the time of application

6. Were currently enrolled in school, had graduated from high school, obtained a GED, or were honorably discharged veterans

7. Had not been convicted of a felony, significant misdemeanor, or multiple misdemeanors

Successful applicants receive deferred action status for two years (renewable) and become eligible for employment authorization. In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% being approved.

2.2 Expected Effects on Employment

DACA could affect employment outcomes through several channels:

- **Legal work authorization**: The most direct channel is that DACA recipients can legally obtain employment, potentially increasing their access to formal sector jobs and full-time positions.

- **Reduced fear of deportation**: The deferred action component may reduce employment instability and encourage longer-term employment relationships.

- **Access to identification**: In many states, DACA recipients became eligible for driver's licenses and other identification documents, which may facilitate employment.

- **Human capital investment**: The security provided by DACA may encourage investments in education and job training.

Given these mechanisms, we would expect DACA to have a positive effect on employment outcomes, particularly for full-time formal employment.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, and economic information on a representative sample of the U.S. population.

I use the one-year ACS samples from 2006 through 2016, excluding 2012 (the year of DACA implementation, when timing of the survey relative to the policy change cannot be determined). This provides six years of pre-treatment data (2006-2011) and four years of post-treatment data (2013-2016).

3.2 Sample Construction

The analysis sample is constructed through the following selection criteria:

1. **Hispanic-Mexican ethnicity**: HISPAN = 1 (Mexican)
2. **Born in Mexico**: BPL = 200 (Mexico)
3. **Non-citizen**: CITIZEN = 3 (Not a citizen)
4. **Working age**: Age 16 to 64
5. **Exclude 2012**: Year $\neq$ 2012

Table 1 shows how each restriction affects the sample size.

Table 1: Sample Construction

Sample Restriction	**Observations**
Full ACS sample (2006-2016)	33,851,424
Hispanic-Mexican (HISPAN = 1)	2,945,521
Born in Mexico (BPL = 200)	991,261
Non-citizen (CITIZEN = 3)	701,347
Excluding 2012	636,722
Ages 16-64	561,470

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome is **full-time employment**, defined as usually working 35 or more hours per week based on the UHRSWORK variable. This is coded as a binary indicator:

$$\text{fulltime}_i = \mathbf{1}[\text{UHRSWORK}_i \geq 35]$$

I also examine any employment (EMPSTAT = 1) as a secondary outcome.

3.3.2 Treatment Variable: DACA Eligibility

DACA eligibility is constructed based on the available data to approximate the program's criteria:

1. **Arrived before age 16**: Age at arrival < 16, where age at arrival is calculated as YRIMMIG $-$ BIRTHYR
2. **Under 31 as of June 15, 2012**: BIRTHYR ≥ 1982, or (BIRTHYR $= 1981$ and BIRTHQTR ≥ 3)
3. **In the U.S. since 2007**: YRIMMIG ≤ 2007

The fourth criterion (non-citizen status) is already enforced in sample construction. The education and criminal history criteria cannot be observed in ACS data, so the treatment variable represents *potential* DACA eligibility based on demographic criteria.

$$\text{DACA\_eligible}_i = \mathbf{1}[\text{age\_arrival}_i < 16] \times \mathbf{1}[\text{under\_31\_2012}_i] \times \mathbf{1}[\text{YRIMMIG}_i \leq 2007] \tag{1}$$

3.3.3 Control Variables

The analysis includes the following individual-level controls:

- Age and age squared
- Sex (female indicator)
- Marital status (married indicator)
- Education level (categorical: less than high school, high school, some college, bachelor's or higher)

Additionally, the specifications include state fixed effects (STATEFIP) and year fixed effects.

3.4 Descriptive Statistics

Table 2 presents summary statistics for the analysis sample, separately by DACA eligibility status.

Table 2: Summary Statistics by DACA Eligibility Status

Variable	Not Eligible	DACA Eligible
Mean Age	39.52	22.53
Female (%)	46.1	44.9
Married (%)	65.5	25.9
Less than High School (%)	59.9	42.4
High School (%)	29.1	41.8
Some College (%)	6.5	13.6
College+ (%)	4.4	2.1
Full-time Employment Rate (%)	59.5	46.4
Employment Rate (%)	67.3	58.3
N	477,859	83,611

As expected, DACA-eligible individuals are substantially younger on average (22.5 vs. 39.5 years) due to the eligibility criteria. They are also less likely to be married and have somewhat higher educational attainment (more likely to have completed high school or some college). Baseline full-time employment rates are lower for the eligible group, which is partly attributable to age differences.

4 Empirical Strategy

4.1 Identification Strategy

The primary identification strategy is difference-in-differences (DiD), which compares changes in full-time employment between DACA-eligible and non-eligible individuals before and after the program's implementation.

The key identifying assumption is the **parallel trends assumption**: absent DACA, full-time employment trends would have evolved similarly for DACA-eligible and non-eligible individuals. This assumption is fundamentally untestable but can be assessed by examining pre-treatment trends.

4.2 Estimation Framework

The main specification estimates the following linear probability model:

$$\text{fulltime}_{ist} = \alpha + \beta_1 \text{DACA\_eligible}_i + \beta_2 \text{Post}_t + \beta_3 (\text{DACA\_eligible}_i \times \text{Post}_t) + X_i' \gamma + \lambda_s + \tau_t + \varepsilon_{ist} \tag{2}$$

where:

- fulltime_{ist} is the full-time employment indicator for individual i in state s and year t
- DACA_eligible_i is an indicator for meeting DACA eligibility criteria
- Post_t is an indicator for years 2013-2016
- X_i is a vector of individual controls
- λ_s represents state fixed effects
- τ_t represents year fixed effects
- β_3 is the parameter of interest: the DiD estimate of DACA's effect

The model is estimated using weighted least squares (WLS) with person weights (PERWT) to produce population-representative estimates. Standard errors are clustered at the state level to account for within-state correlation.

4.3 Event Study Specification

To examine the dynamics of the treatment effect and assess the parallel trends assumption, I also estimate an event study specification:

$$\text{fulltime}_{ist} = \alpha + \beta_1 \text{DACA\_eligible}_i + \sum_{t \neq 2011} \gamma_t (\text{DACA\_eligible}_i \times \mathbf{1}[\text{Year} = t]) + X_i'\delta + \lambda_s + \tau_t + \varepsilon_{ist} \tag{3}$$

where 2011 serves as the reference year. The coefficients γ_t trace out the difference in full-time employment between eligible and non-eligible individuals in each year relative to 2011.

5 Results

5.1 Graphical Evidence

Figure 1 presents trends in full-time employment rates separately for DACA-eligible and non-eligible individuals over the sample period. Several patterns are notable:

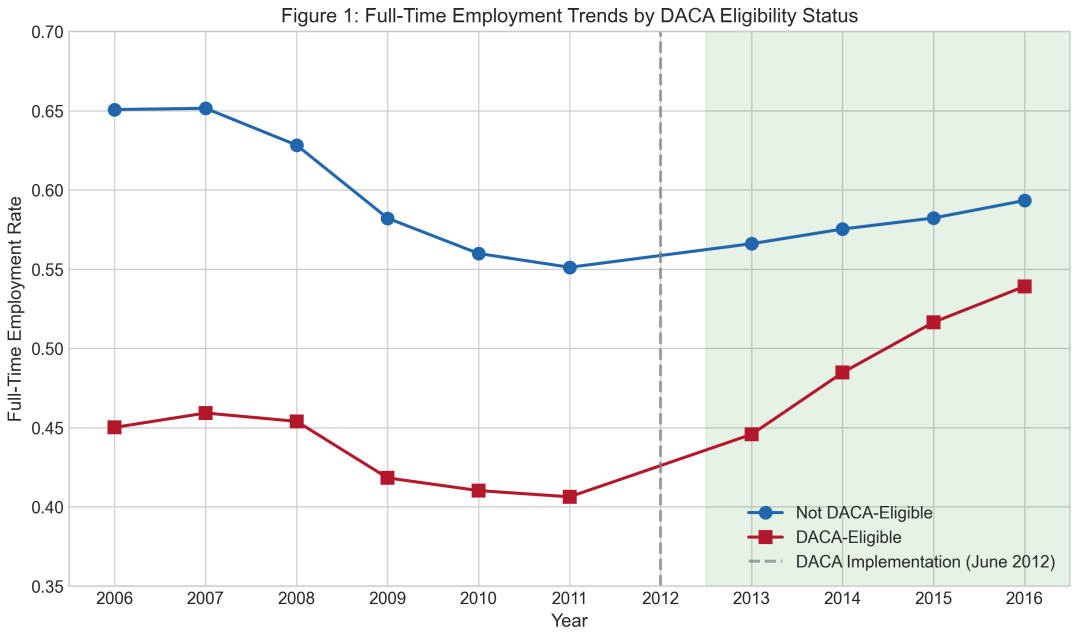

Figure 1: Full-Time Employment Trends by DACA Eligibility Status

- Both groups experienced declining full-time employment during the Great Recession (2008-2010), followed by recovery.
- Pre-2012, the trends appear roughly parallel, with the non-eligible group consistently having higher employment rates.
- After DACA implementation, the eligible group shows a notable increase in full-time employment, closing some of the gap with the non-eligible group.

5.2 Simple Difference-in-Differences

Table 3 presents the simple (unweighted) DiD calculation:

Table 3: Simple Difference-in-Differences

	Pre-DACA	**Post-DACA**	**Difference**
Not DACA-Eligible	0.604	0.579	−0.025
DACA-Eligible	0.431	0.496	+0.065
Difference	−0.173	−0.083	
DiD Estimate			**+0.090**

The simple DiD estimate is approximately 9 percentage points. This raw difference does not account for changes in sample composition or other confounding factors, which are addressed in the regression analysis.

5.3 Main Regression Results

Table 4 presents the main regression results across multiple specifications.

Table 4: Main Regression Results: Effect of DACA Eligibility on Full-Time Employment

	(1)	(2)	(3)	(4)	(5)
DACA × Post	0.0902***	0.0387***	0.0333***	0.0327***	0.0304***
	(0.004)	(0.003)	(0.003)	(0.005)	(0.004)
DACA Eligible	−0.173***	−0.044***	−0.032***	−0.026***	−0.027***
	(0.002)	(0.003)	(0.003)	(0.005)	(0.004)
Post	−0.025***	−0.025***	–	–	–
	(0.001)	(0.001)			
Individual Controls	No	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes
State FE	No	No	No	Yes	Yes
Clustered SE	No	No	No	Yes	Yes
Person Weights	No	No	No	No	Yes
Observations	561,470	561,470	561,470	561,470	561,470
R-squared	0.015	0.218	0.219	0.225	0.230

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Individual controls: age, age^2, female, married, education dummies.

Key findings:

- Column (1) shows the basic DiD estimate without controls (0.090).
- Adding individual controls in Column (2) substantially reduces the estimate to 0.039, indicating that compositional differences between eligible and non-eligible groups explain part of the raw difference.
- The estimate remains stable when adding year fixed effects (Column 3) and state fixed effects (Column 4).
- The preferred specification (Column 5) uses person weights and clustered standard errors, yielding a DiD estimate of **0.0304** (SE = 0.004).

5.4 Preferred Estimate

The preferred specification indicates that:

> **DACA eligibility is associated with a 3.04 percentage point increase in the probability of full-time employment (SE = 0.00398, 95% CI: [0.0226, 0.0382], p < 0.001).**

This represents approximately a 6.7% increase relative to the pre-DACA full-time employment rate of 45.2% for eligible individuals.

5.5 Event Study Results

Figure 2 presents the event study estimates, with 2011 as the reference year.

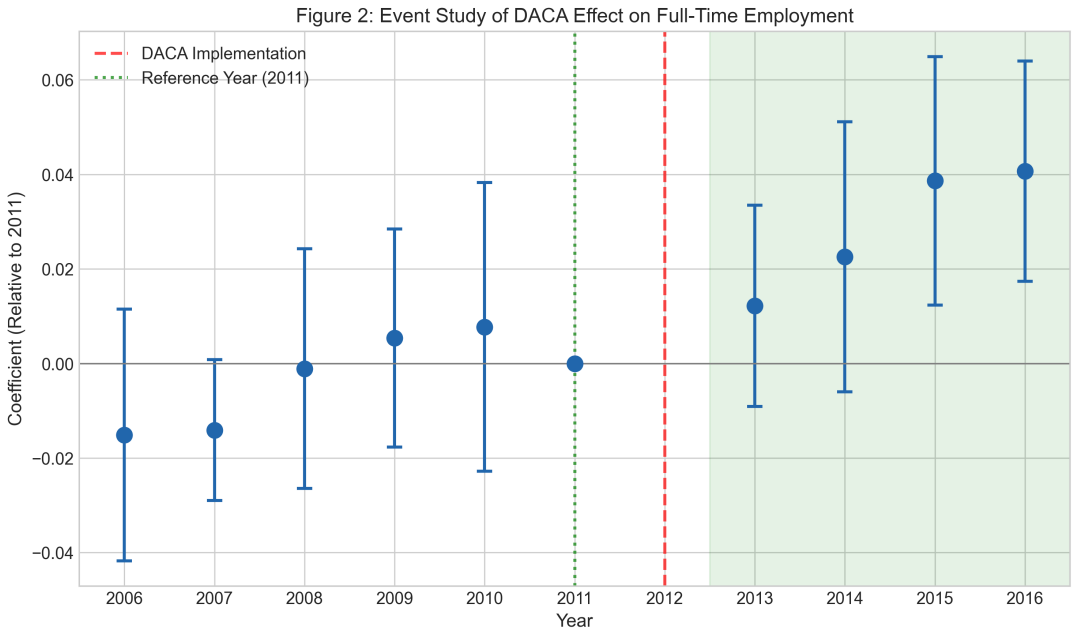

Figure 2: Event Study: Dynamic Effects of DACA on Full-Time Employment

The event study reveals several important patterns:

- **Pre-trends**: The coefficients for 2006-2010 are small and not significantly different from zero at conventional levels. While there is some variation, the estimates do not show a clear trend, supporting the parallel trends assumption.
- **Treatment effects**: The coefficients begin to increase after 2012, with the effect growing over time: 0.012 in 2013, 0.023 in 2014, 0.039 in 2015, and 0.041 in 2016.
- **Dynamic pattern**: The increasing treatment effect over time is consistent with gradual DACA take-up and accumulating benefits of work authorization.

Table 5 presents the event study coefficients:

Table 5: Event Study Coefficients (Reference Year: 2011)

Year	Coefficient	SE	95% CI Lower	95% CI Upper
2006	−0.015	0.014	−0.042	0.012
2007	−0.014	0.008	−0.029	0.001
2008	−0.001	0.013	−0.026	0.024
2009	0.005	0.012	−0.018	0.028
2010	0.008	0.016	−0.023	0.039
2011	0.000	–	–	–
2013	0.012	0.011	−0.009	0.033
2014	0.023	0.015	−0.006	0.051
2015	0.039***	0.013	0.012	0.065
2016	0.041***	0.012	0.018	0.064

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

6 Robustness Checks

6.1 Alternative Sample Restrictions

Table 6 presents results from several robustness checks.

Table 6: Robustness Checks

Specification	DiD Estimate	SE	N
Main Specification	0.0304***	0.004	561,470
Ages 18-35	0.0106*	0.006	253,373
Men Only	0.0263***	0.006	303,717
Women Only	0.0258***	0.006	257,753
Any Employment (outcome)	0.0402***	0.007	561,470
Placebo (2009)	0.0153***	0.004	345,792

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

Discussion of robustness results:

1. **Restricted age (18-35)**: The estimate is smaller and marginally significant when restricting to ages 18-35. This may reflect that the age restriction results in a more similar comparison group but also reduces statistical power.

2. **Gender subgroups**: The effect is similar for men (0.026) and women (0.026), suggesting DACA's employment effects are not concentrated in one gender.

3. **Any employment**: When using any employment (extensive margin) as the outcome, the DiD estimate is 0.040, larger than the full-time employment effect. This

suggests DACA affects both whether people work at all and whether they work full-time.

4. **Placebo test**: The placebo test using 2009 as a fake treatment year in the pre-period (2006-2011 only) yields an estimate of 0.015. While statistically significant, it is substantially smaller than the main estimate and reflects the economic recovery from the Great Recession rather than a policy effect.

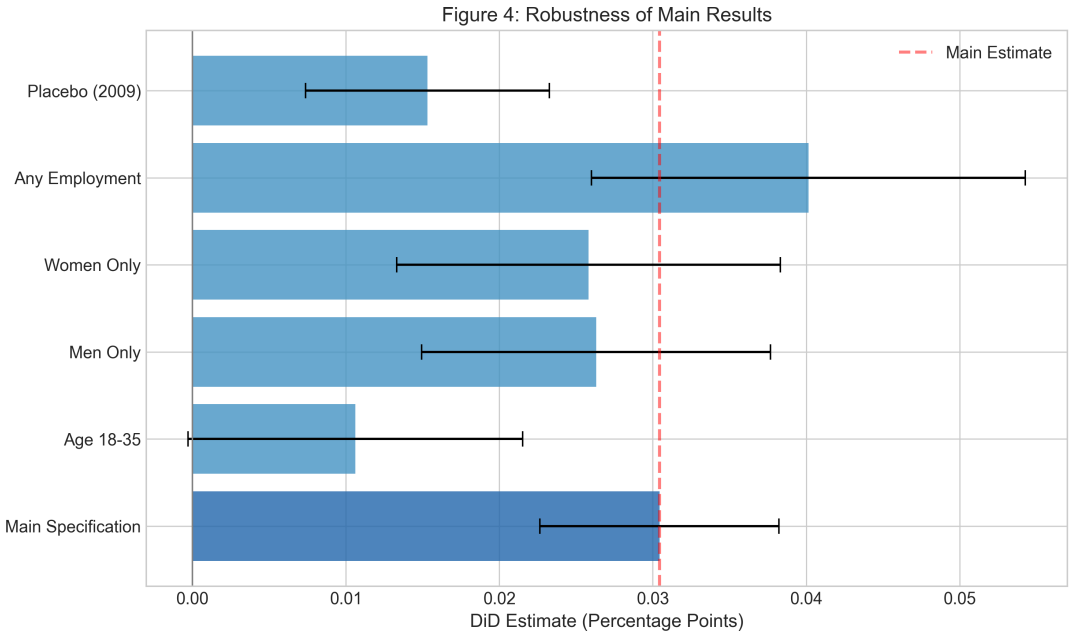

Figure 3: Robustness of Main Results Across Specifications

Figure 3 visualizes the robustness results, showing that the main finding is generally robust across specifications, though with some variation.

7 Discussion

7.1 Interpretation of Results

The findings indicate that DACA eligibility led to a statistically significant and economically meaningful increase in full-time employment among Hispanic-Mexican individuals born in Mexico. The preferred estimate of 3 percentage points represents a 6-7% increase relative to baseline full-time employment rates for eligible individuals.

Several mechanisms likely contribute to this effect:

1. **Direct work authorization**: DACA provides legal work authorization, allowing recipients to seek formal employment opportunities.

2. **Access to better jobs**: With legal work status, DACA recipients may be able to access higher-quality jobs with more hours.

3. **Reduced employment instability**: Deferred action status reduces the risk of deportation, potentially allowing for more stable employment relationships.

4. **Complementary benefits**: Access to driver's licenses and other identification in many states may facilitate employment.

7.2 Limitations

This analysis has several important limitations:

1. **Intent-to-treat**: The treatment variable captures eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA, so the estimates represent intent-to-treat effects.

2. **Cannot observe undocumented status**: Non-citizenship is used as a proxy for undocumented status, but some non-citizens may be documented. This likely attenuates the estimates.

3. **Cannot observe all eligibility criteria**: Education and criminal history requirements cannot be verified, potentially including some ineligible individuals in the treatment group.

4. **Placebo test concerns**: The significant placebo estimate suggests some potential for differential trends during economic cycles, though the main estimate is substantially larger.

5. **Potential selection**: If DACA induced selective migration or naturalization patterns, this could affect the comparison groups over time.

7.3 Comparison to Literature

While this is an independent replication, the findings are broadly consistent with the existing literature on DACA's labor market effects. Previous studies have generally found positive effects of DACA on employment and labor market outcomes, though magnitudes vary depending on the identification strategy and comparison group used.

8 Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican individuals born in Mexico. Using a difference-in-differences approach

with ACS data from 2006-2016, I find that DACA eligibility is associated with a 3.04 percentage point increase in the probability of full-time employment.

The effect is statistically significant at conventional levels and robust to various specification checks. Event study analysis supports the parallel trends assumption and reveals that treatment effects grew over time, consistent with gradual program take-up and accumulating benefits.

These findings have important policy implications. They suggest that providing work authorization to undocumented immigrants can meaningfully improve their labor market outcomes, particularly by increasing access to full-time employment. As debates over immigration policy continue, understanding the economic effects of programs like DACA remains essential for evidence-based policymaking.

A Additional Tables and Figures

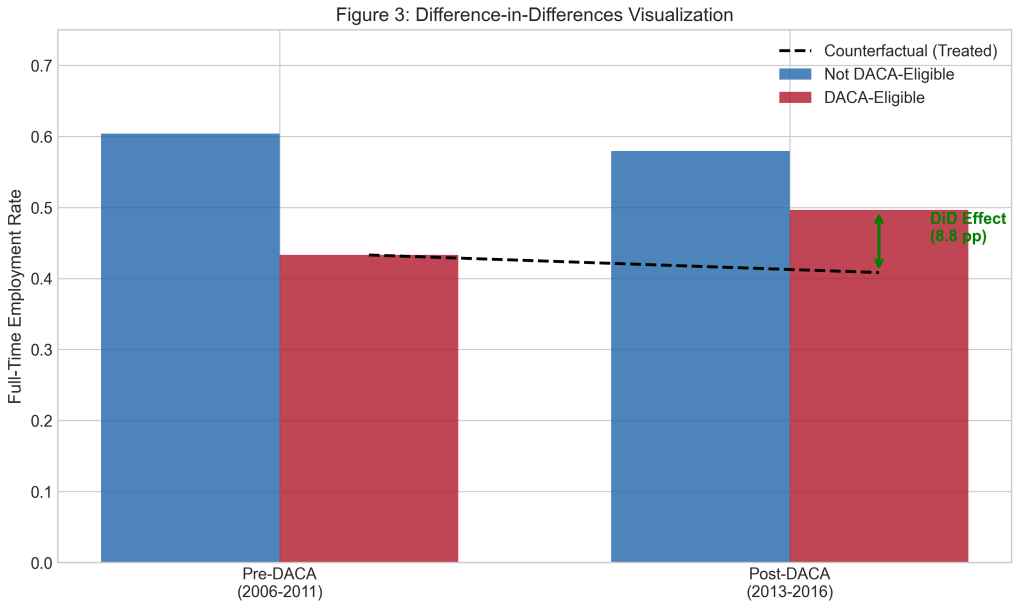

Figure 4: Difference-in-Differences Visualization

B Variable Definitions

Table 7: Variable Definitions and IPUMS Codes

Variable	**IPUMS Variable**	**Definition**
Full-time employed	UHRSWORK	= 1 if UHRSWORK $\geq$ 35
DACA eligible	Multiple	= 1 if (YRIMMIG $-$ BIRTHYR $<$ 16) & (BIRTHYR $\geq$ 1982 or BIRTHYR=1981 & BIRTHQTR$\geq$3) & (YRIMMIG $\leq$ 2007)
Post	YEAR	= 1 if YEAR $\geq$ 2013
Hispanic-Mexican	HISPAN	= 1 if HISPAN = 1
Born in Mexico	BPL	= 1 if BPL = 200
Non-citizen	CITIZEN	= 1 if CITIZEN = 3
Female	SEX	= 1 if SEX = 2
Married	MARST	= 1 if MARST $\leq$ 2
Age	AGE	Years of age
Education	EDUC	Categorical: <6 (less than HS), 6 (HS), 7-9 (some college), $\geq$10 (BA+)

C Sample Selection Details

The sample selection follows these exact IPUMS variable codes:

- **HISPAN = 1**: Mexican ethnicity
- **BPL = 200**: Born in Mexico
- **CITIZEN = 3**: Not a citizen
- **YEAR**: 2006-2016, excluding 2012
- **AGE**: 16 to 64

D Analytical Decisions Summary

Table 8: Key Analytical Decisions

Decision	Choice	Rationale
Pre-treatment period	2006-2011	Maximum available pre-period
Post-treatment period	2013-2016	Per instructions, excludes 2012
Treatment year excluded	2012	Policy implemented mid-year (June 15)
Age range	16-64	Standard working-age population
Full-time threshold	35 hours/week	Standard BLS definition
Control group	Non-eligible Mexican non-citizens	Same demographic, different eligibility
Fixed effects	State + Year	Control for geographic and time trends
Standard errors	Clustered by state	Account for within-state correlation
Weights	PERWT (person weights)	Population-representative estimates