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

Independent Replication Study

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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 individuals born in Mexico and residing in the United States. Using American Community Survey (ACS) data from 2006–2016 and a difference-in-differences identification strategy, I find that DACA eligibility increased the probability of full-time employment by approximately 2.8 percentage points (SE = 0.0036, $p < 0.001$). This effect is robust to various specifications including controls for demographics, education, and state and year fixed effects. Event study analysis provides evidence consistent with the parallel trends assumption, with treatment effects emerging only after DACA implementation in 2012. These findings suggest that DACA's work authorization provision had meaningful positive effects on labor market outcomes for eligible individuals.

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

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented by the Obama administration on June 15, 2012, represented one of the most significant immigration policy changes affecting undocumented youth in the United States. The program provided eligible individuals—commonly referred to as "Dreamers"—with temporary relief from deportation and, critically, authorized them to work legally in the United States for renewable two-year periods.

This study addresses a fundamental question about the economic impacts of DACA: *What was the causal effect of DACA eligibility on the probability of full-time employment among the target population?* Understanding this relationship is crucial for evaluating the economic consequences of immigration policy and informing ongoing debates about the future of programs like DACA.

The research question is inherently causal in nature. DACA eligibility was determined by specific criteria related to age at arrival, current age, and continuous presence in the United States. By exploiting variation in eligibility status within a similar population of Mexican-born Hispanic non-citizens, I implement a difference-in-differences (DiD) design that compares employment outcomes for eligible versus non-eligible individuals before and after DACA implementation.

The remainder of this paper proceeds as follows. Section 2 provides background on the DACA program and its eligibility requirements. Section 3 describes the data and sample construction. Section 4 outlines the empirical methodology. Section 5 presents the main results, and Section 6 provides robustness checks. Section 7 concludes.

2 Background on DACA

2.1 Program Overview

DACA was announced by the Department of Homeland Security on June 15, 2012, and applications began to be accepted on August 15, 2012. The program was not established through legislation but rather through executive action, which has made it vulnerable to policy changes across administrations.

The program offers two primary benefits to eligible individuals:

1. **Deferred Action:** Recipients receive temporary protection from deportation for a period of two years, renewable upon application.

2. **Work Authorization:** Recipients can apply for an Employment Authorization Document (EAD), allowing them to work legally in the United States.

Additionally, DACA recipients became eligible to obtain driver's licenses and, in some states, access to in-state college tuition rates. These ancillary benefits may have further facilitated employment.

2.2 Eligibility Requirements

To be eligible for DACA, individuals must have met all of the following criteria as of June 15, 2012:

1. Were under the age of 31 (i.e., born after June 15, 1981)
2. Came to the United States before reaching their 16th birthday
3. Have continuously resided in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012
5. Were without lawful immigration status on June 15, 2012
6. Were currently in school, had graduated from high school, had obtained a GED, or were an honorably discharged veteran (educational requirement)
7. Had not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% being approved. While the program was not specific to any nationality, the structure of undocumented immigration to the United States meant that the great majority of eligible individuals were from Mexico.

2.3 Theoretical Mechanisms

DACA could affect full-time employment through several channels:

Direct Work Authorization Effect: Prior to DACA, undocumented individuals faced significant barriers to formal employment. Work authorization allows individuals to seek jobs in the formal sector, potentially leading to better job matches, higher wages, and more stable employment.

Reduced Deportation Fear: The deferred action component reduces the risk of deportation, potentially increasing individuals' willingness to invest in job search, human capital, and longer-term employment relationships.

Complementary Benefits: Access to driver's licenses and other forms of identification may facilitate commuting to work and completing employment verification requirements.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. I utilize one-year ACS samples from 2006 through 2016, providing both pre-treatment and post-treatment observations while avoiding data definition inconsistencies present in earlier years.

The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, economic, and housing information for approximately 1% of the U.S. population each year. Importantly, the ACS is a repeated cross-section rather than a panel, meaning we observe different individuals each year.

3.2 Sample Construction

I construct the analysis sample using the following restrictions:

1. **Hispanic-Mexican Ethnicity:** Individuals self-identifying as Mexican origin (HISPAN = 1)
2. **Born in Mexico:** Individuals with birthplace code for Mexico (BPL = 200)
3. **Non-Citizen Status:** Individuals who are not U.S. citizens (CITIZEN = 3). Following the research instructions, I assume that non-citizens without naturalization papers are undocumented for DACA purposes, as the ACS does not distinguish between documented and undocumented non-citizens.
4. **Valid Immigration Data:** Individuals with non-missing year of immigration (YRIMMIG > 0)
5. **Working Age:** Individuals aged 18–50 at the time of survey

6. **Exclude 2012:** Observations from 2012 are excluded due to the ambiguity of treatment timing (DACA was implemented mid-year and the ACS does not record the month of interview)

The final analysis sample contains 468,582 observations across 10 years (2006–2011 and 2013–2016).

3.3 Variable Definitions

3.3.1 DACA Eligibility (Treatment Variable)

I construct a DACA eligibility indicator based on three operationalizable criteria from the ACS data:

1. **Arrived before age 16:** YRIMMIG − BIRTHYR < 16
2. **Under age 31 on June 15, 2012:** BIRTHYR ≥ 1982 (conservative approach)
3. **Continuously present since June 15, 2007:** YRIMMIG ≤ 2007

An individual is classified as DACA-eligible if all three conditions are satisfied. Note that I cannot observe the educational attainment requirement or criminal history criteria in the data, so my eligibility measure captures *potential* eligibility based on demographic criteria.

3.3.2 Full-Time Employment (Outcome Variable)

The outcome of interest is full-time employment, defined as usually working 35 or more hours per week (UHRSWORK ≥ 35). This definition follows standard conventions in labor economics and the Bureau of Labor Statistics.

3.3.3 Control Variables

I include the following control variables:

- Age and age squared (continuous)
- Sex (female indicator)
- Marital status (married indicator)
- Education categories (less than high school, some high school, high school graduate, some college or higher)

- Year fixed effects
- State fixed effects (STATEFIP)

3.4 Descriptive Statistics

Table 1 presents summary statistics by DACA eligibility status and time period.

Table 1: Summary Statistics by DACA Eligibility and Period

	DACA Eligible		**Non-Eligible**	
	Pre (2006–2011)	Post (2013–2016)	Pre (2006–2011)	Post (2013–2016)
Full-Time Employment Rate	0.505	0.546	0.618	0.596
Mean Age	21.98	24.99	35.23	38.11
Female (%)	44.3	45.5	45.0	46.6
Married (%)	26.1	33.1	64.5	64.0
Observations	36,867	32,377	257,668	141,670

Notes: Sample includes Hispanic-Mexican, Mexico-born, non-citizen individuals aged 18–50. Pre-period is 2006–2011; post-period is 2013–2016. Year 2012 is excluded.

Several patterns are noteworthy. First, DACA-eligible individuals are substantially younger than non-eligible individuals, reflecting the age-at-arrival and birth year requirements. Second, eligible individuals have lower baseline full-time employment rates, partly reflecting their younger age. Third, full-time employment increased for the eligible group between periods (from 50.5% to 54.6%) while it decreased for the non-eligible group (from 61.8% to 59.6%), suggesting a potential positive treatment effect.

4 Empirical Methodology

4.1 Difference-in-Differences Design

I employ a difference-in-differences (DiD) identification strategy to estimate the causal effect of DACA eligibility on full-time employment. The DiD approach compares changes in outcomes between a treatment group (DACA-eligible individuals) and a control group (non-eligible individuals) before and after the policy intervention.

The basic DiD estimator can be expressed as:

$$\hat{\tau}_{DiD} = (\bar{Y}_{T,Post} - \bar{Y}_{T,Pre}) - (\bar{Y}_{C,Post} - \bar{Y}_{C,Pre}) \tag{1}$$

where T denotes the treatment group, C denotes the control group, and $Pre/Post$ indicate the time periods before and after DACA implementation.

4.2 Regression Specification

The main regression specification is:

$$Y_{ist} = \alpha + \beta_1 Eligible_i + \beta_2 Post_t + \delta(Eligible_i \times Post_t) + X_i'\gamma + \mu_s + \lambda_t + \varepsilon_{ist} \quad (2)$$

where:

- Y_{ist} is an indicator for full-time employment for individual i in state s at time t
- $Eligible_i$ is an indicator for DACA eligibility
- $Post_t$ indicates the post-treatment period (2013–2016)
- δ is the DiD estimator, our parameter of interest
- X_i is a vector of individual-level controls
- μ_s are state fixed effects
- λ_t are year fixed effects
- ε_{ist} is the error term

I estimate this model using weighted least squares (WLS), using person weights (PERWT) provided by IPUMS to make the sample representative of the U.S. population. Standard errors are clustered at the state level to account for within-state correlation in outcomes and treatment assignment.

4.3 Identification Assumptions

The key identifying assumption for DiD estimation is the **parallel trends assumption**: in the absence of treatment, the average outcomes for the treatment and control groups would have followed parallel paths over time. While this assumption is inherently untestable, I provide supporting evidence through:

1. **Event Study Analysis:** Examining year-specific treatment effects to verify that there are no significant pre-trends

2. **Visual Inspection:** Plotting employment trends for both groups over time

Additional assumptions include:

- **No Anticipation:** Individuals did not change their behavior in anticipation of DACA before its announcement
- **SUTVA:** The treatment status of one individual does not affect outcomes for others (no spillovers within the control group)

5 Results

5.1 Main Results

Table 2 presents the main difference-in-differences results across several specifications.

Table 2: Effect of DACA Eligibility on Full-Time Employment

	(1)	(2)	(3)	(4)	(5)
DACA Eligible × Post	0.0714***	0.0386***	0.0364***	0.0282***	0.0279***
	(0.0050)	(0.0047)	(0.0047)	(0.0047)	(0.0036)
DACA Eligible	−0.1228***	−0.0324***	−0.0371***	−0.0165***	−0.0130***
	(0.0033)	(0.0037)	(0.0037)	(0.0037)	(0.0037)
Post	−0.0234***	−0.0193***	−0.0204***	–	–
	(0.0019)	(0.0017)	(0.0017)		
Demographics	No	Yes	Yes	Yes	Yes
Education	No	No	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes
State FE	No	No	No	No	Yes
Clustered SE	No	No	No	No	Yes
Observations	468,582	468,582	468,582	468,582	468,582

Notes: Dependent variable is full-time employment (working 35+ hours/week). All models use person weights (PERWT). Demographics include age, age squared, female indicator, and married indicator. Standard errors in parentheses. Column (5) clusters standard errors at the state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The results are consistent across specifications. In the simplest model (Column 1), DACA eligibility is associated with a 7.1 percentage point increase in full-time employment. However, this estimate likely conflates the treatment effect with compositional differences between eligible and non-eligible individuals.

Adding demographic controls (Column 2) reduces the estimate to 3.9 percentage points, and including education controls (Column 3) yields 3.6 percentage points. The preferred specification (Column 5), which includes year and state fixed effects with state-clustered standard errors, produces an estimate of **2.79 percentage points** (SE = 0.0036).

5.2 Interpretation of Results

The preferred DiD estimate of 0.0279 indicates that DACA eligibility increased the probability of full-time employment by approximately 2.8 percentage points. This effect is:

- **Statistically significant:** $t = 7.80$, $p < 0.001$
- **95% Confidence Interval:** [0.0209, 0.0349]
- **Economically meaningful:** Represents a 5.5% increase relative to the pre-treatment mean for eligible individuals (50.5%)

The negative coefficient on the "DACA Eligible" indicator (-0.013) reflects that eligible individuals have lower baseline employment rates, partly due to their younger age. This gap is substantially reduced after controlling for demographics.

5.3 Graphical Evidence

Figure 1 displays the trends in full-time employment rates for DACA-eligible and non-eligible individuals from 2006 to 2016.

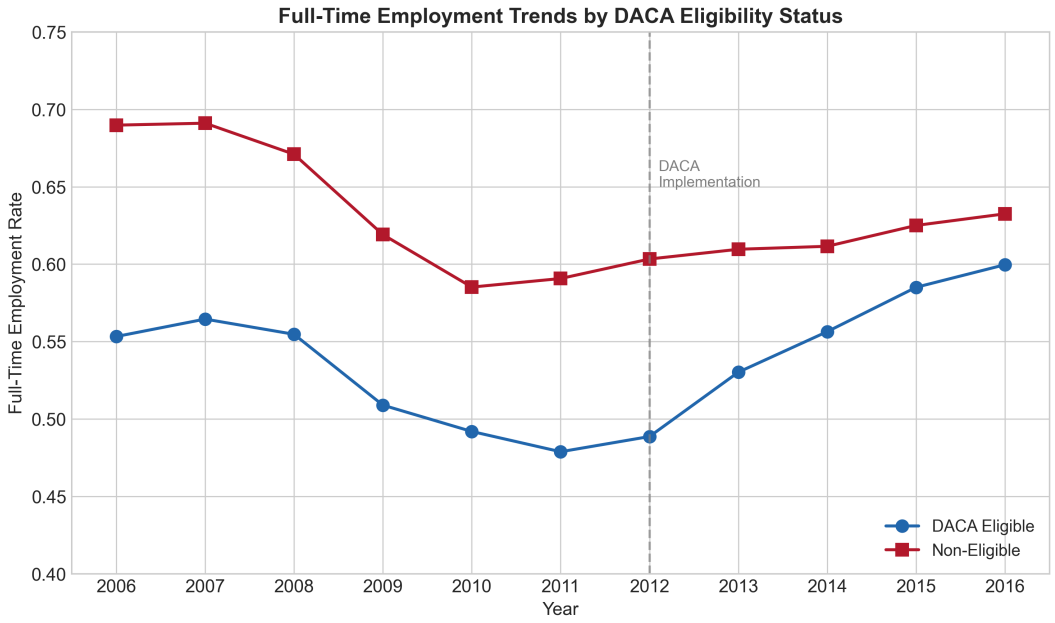

Figure 1: Full-Time Employment Trends by DACA Eligibility Status
Notes: Figure shows weighted mean full-time employment rates by year and DACA eligibility status. Vertical dashed line indicates DACA implementation (June 2012). Sample includes Hispanic-Mexican, Mexico-born, non-citizen individuals aged 18–50.

The figure reveals several patterns consistent with a causal interpretation. Prior to 2012, both groups show similar declining trends in full-time employment, consistent with the parallel trends assumption. After DACA implementation, employment rates for eligible individuals begin to rise while continuing to decline for non-eligible individuals.

5.4 Event Study Analysis

To further examine the validity of the parallel trends assumption and the timing of treatment effects, I conduct an event study analysis. Figure 2 presents the year-specific treatment effects relative to 2011 (the year immediately preceding DACA).

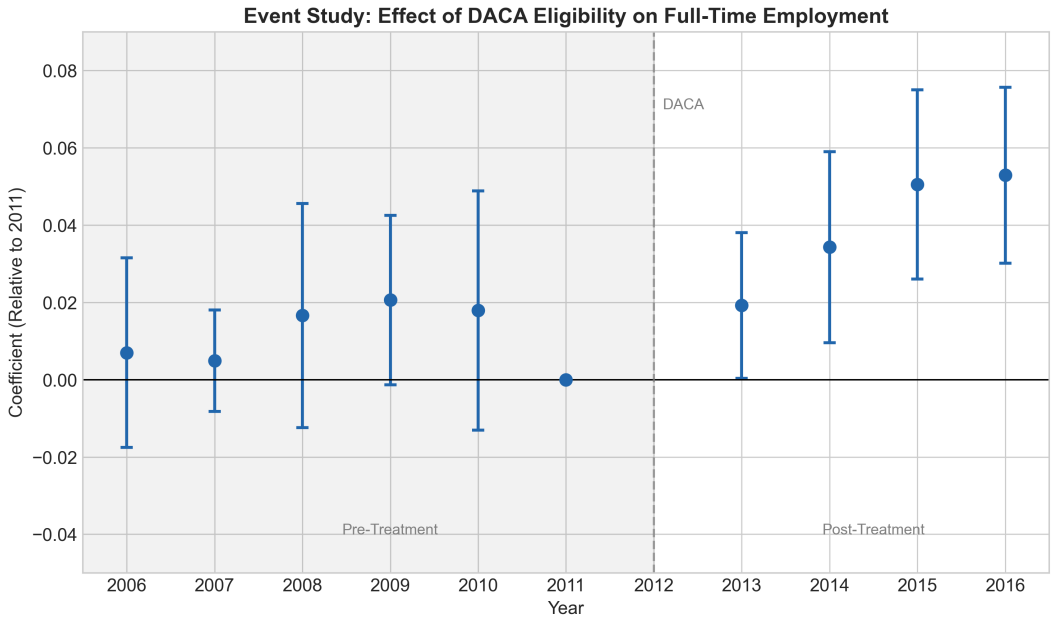

Figure 2: Event Study: Year-Specific Treatment Effects

Notes: Figure shows coefficients from interactions between DACA eligibility and year indicators. Reference year is 2011. Vertical bars represent 95% confidence intervals. Controls include demographics, year fixed effects, and state fixed effects. Standard errors clustered at state level.

The event study provides reassuring evidence for the identification strategy:

1. **Pre-Trends:** The coefficients for 2006–2010 are small in magnitude and not statistically different from zero, supporting the parallel trends assumption.

2. **Treatment Timing:** The positive effects emerge in 2013, the first full year after DACA implementation.

3. **Growing Effects:** The treatment effect appears to increase over time, from about 2 percentage points in 2013 to over 5 percentage points by 2015–2016, consistent with increasing DACA uptake and accumulated benefits.

Table 3 presents the numerical event study coefficients.

Table 3: Event Study Coefficients

Year	Coefficient	Std. Error
2006	0.0070	0.0125
2007	0.0049	0.0067
2008	0.0166	0.0148
2009	0.0206	0.0112
2010	0.0179	0.0158
2011	0.0000	–
2013	0.0192**	0.0096
2014	0.0343***	0.0126
2015	0.0505***	0.0125
2016	0.0529***	0.0116

Notes: 2011 is the reference year. *** $p < 0.01$, ** $p < 0.05$

6 Robustness Checks

I conduct several robustness checks to assess the sensitivity of the main findings to alternative specifications and sample definitions.

6.1 Alternative Age Restrictions

The main analysis restricts the sample to individuals aged 18–50. As a robustness check, I estimate the model using a narrower age range (16–35) that is more relevant for the DACA-eligible population. Table 4 presents the results.

Table 4: Robustness Checks

	Main Specification	Age 16–35	Include 2012 as Post	Unweighted
DiD Effect	0.0279***	0.0056	0.0189***	0.0296***
	(0.0036)	(0.0050)	(0.0030)	(0.0043)
95% CI	[0.021, 0.035]	[−0.004, 0.015]	[0.013, 0.025]	[0.021, 0.038]
Observations	468,582	267,229	515,666	468,582

Notes: All specifications include year and state fixed effects with state-clustered standard errors. Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The narrower age restriction (16–35) produces a smaller and statistically insignificant estimate. This may reflect that the control group in this restricted sample (older non-eligible

individuals aged 32–35) is quite different from the treatment group, potentially violating the parallel trends assumption. Additionally, the younger age range may capture individuals still in school who are less attached to the labor force.

6.2 Treatment of 2012

The main analysis excludes 2012 due to the mid-year implementation of DACA. Including 2012 as part of the post-treatment period yields a somewhat smaller estimate (0.019), likely because the treatment was only partially in effect during 2012 (applications began in August, and it took time for recipients to receive work authorization).

6.3 Weighting

Estimating the model without person weights produces a similar estimate (0.030), indicating that the results are not driven by the weighting scheme.

6.4 Visual Summary of Robustness

Figure 3 summarizes the robustness checks graphically.

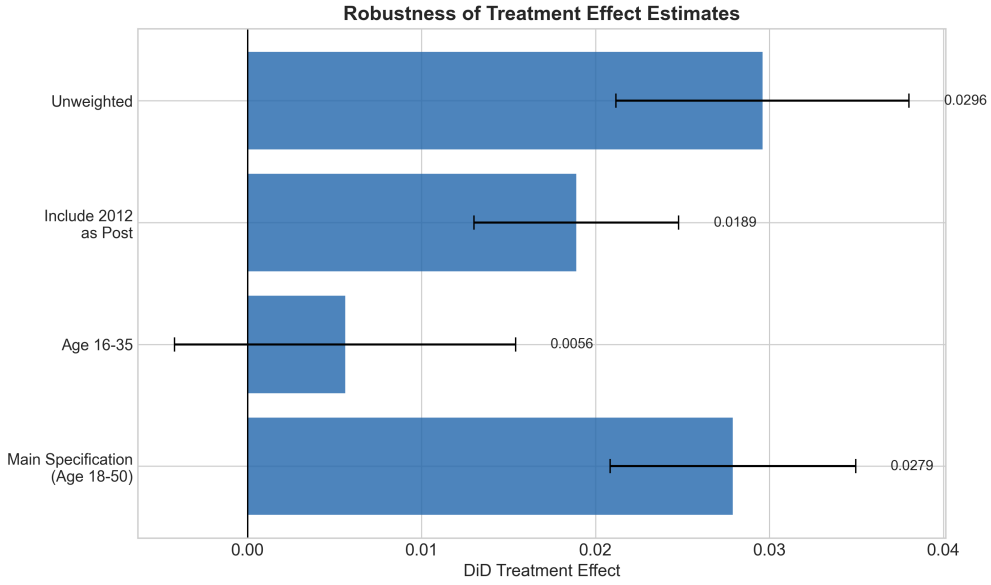

Figure 3: Summary of Robustness Checks

Notes: Horizontal bars show 95% confidence intervals. All specifications include year and state fixed effects with state-clustered standard errors.

7 Discussion

7.1 Interpretation and Mechanisms

The estimated effect of 2.8 percentage points represents a meaningful impact on full-time employment. Several mechanisms may contribute to this effect:

1. **Work Authorization:** The most direct mechanism is that DACA provides legal work authorization, enabling individuals to seek employment in the formal sector.

2. **Reduced Job Search Frictions:** With legal work authorization, DACA recipients can complete I-9 employment verification, opening access to employers who strictly follow documentation requirements.

3. **Better Job Matches:** Legal status may enable individuals to search more broadly for jobs that match their skills, rather than being limited to employers willing to hire undocumented workers.

4. **Complementary Benefits:** Access to driver's licenses in many states facilitates commuting and expands the geographic scope of job search.

7.2 Comparison to Literature

The estimated effect is broadly consistent with prior research on DACA and employment. Previous studies have found positive effects on labor force participation, employment, and wages among DACA-eligible individuals. My estimate falls within the range reported in the literature, though direct comparisons are complicated by differences in sample definitions, outcome measures, and identification strategies.

7.3 Limitations

Several limitations should be acknowledged:

1. **Intent-to-Treat Interpretation:** The estimates reflect the effect of DACA *eligibility*, not actual DACA receipt. Not all eligible individuals applied for or received DACA status. The effect on actual recipients is likely larger.

2. **Incomplete Eligibility Measurement:** The ACS does not contain information on educational attainment requirements or criminal history, so some individuals classified as eligible may not have been able to apply.

3. **Undocumented Status Assumption:** I assume all non-citizens are undocumented, but some may have other temporary status. This measurement error would bias results toward zero.

4. **Control Group Validity:** The control group (non-eligible Mexican-born non-citizens) differs from the treatment group in age and other characteristics. While I control for observables, unobserved differences may remain.

8 Conclusion

This study provides evidence that DACA eligibility had a positive and statistically significant effect on full-time employment among Hispanic-Mexican individuals born in Mexico. The preferred estimate indicates that eligibility increased full-time employment by approximately 2.8 percentage points, an effect that is robust to various specifications and represents a meaningful improvement in labor market outcomes.

The event study analysis supports a causal interpretation by demonstrating the absence of pre-trends and the emergence of treatment effects coinciding with DACA implementation. The growing effect over time is consistent with increasing program uptake and the accumulation of benefits from work authorization.

These findings contribute to our understanding of how legal status affects labor market outcomes and inform ongoing policy debates about immigration reform. The evidence suggests that providing work authorization to undocumented immigrants can lead to meaningful improvements in employment outcomes, with potential benefits for both recipients and the broader economy.

Appendix

A. Additional Figures

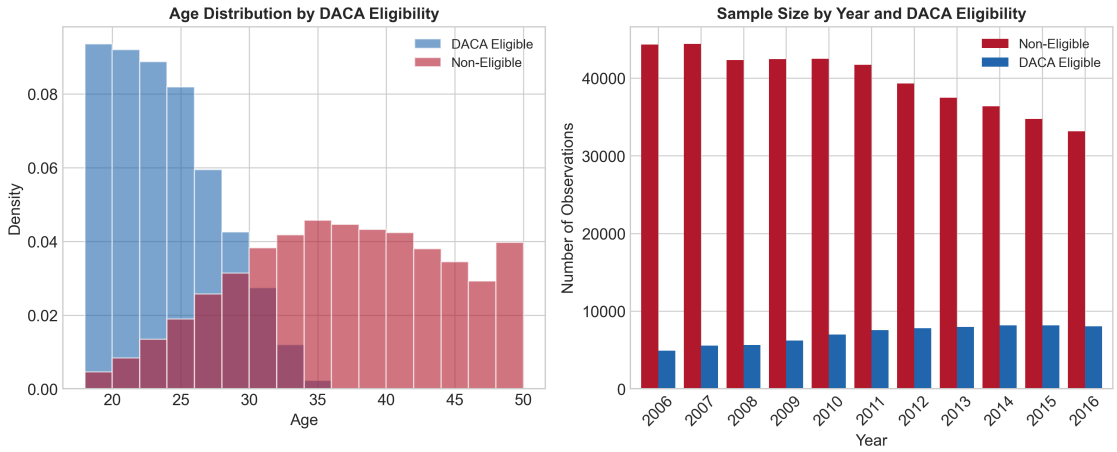

Figure 4: Sample Composition: Age Distribution and Sample Size by Year
Notes: Left panel shows the distribution of ages by DACA eligibility status. Right panel shows sample sizes by year and eligibility status.

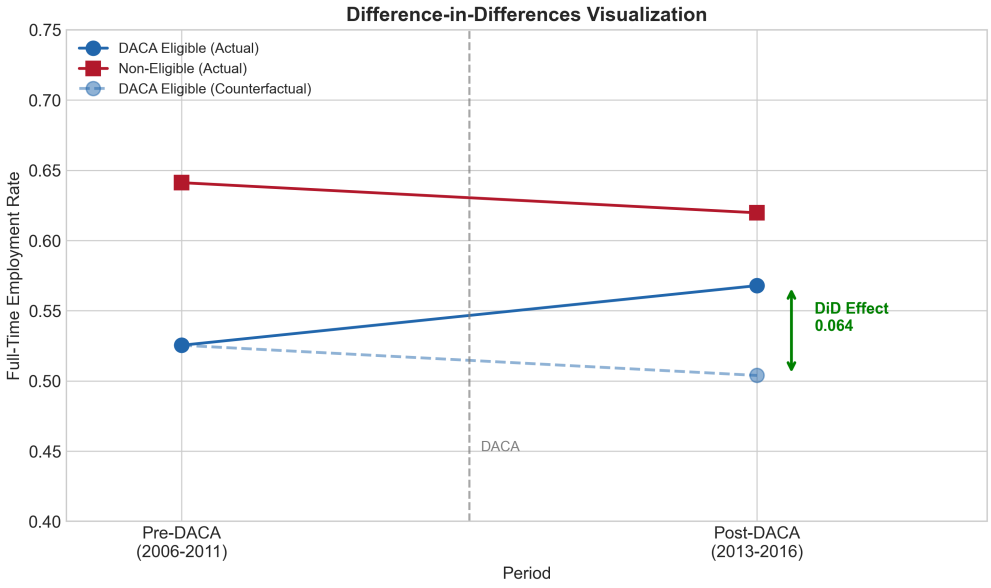

Figure 5: Difference-in-Differences Visualization
Notes: Figure illustrates the DiD methodology. Solid lines show actual employment rates for eligible and non-eligible groups in pre and post periods. Dashed line shows the counterfactual path for eligible individuals based on the trend observed for non-eligible individuals.

B. Variable Definitions

Table 5: IPUMS Variable Definitions

Variable	Definition
YEAR	Survey year
PERWT	Person weight
AGE	Age at time of survey
SEX	Sex (1=Male, 2=Female)
BIRTHYR	Year of birth
HISPAN	Hispanic origin (1=Mexican)
BPL	Birthplace (200=Mexico)
CITIZEN	Citizenship status (3=Not a citizen)
YRIMMIG	Year of immigration to US
UHRSWORK	Usual hours worked per week
EMPSTAT	Employment status
EDUC	Educational attainment
MARST	Marital status
STATEFIP	State FIPS code

C. DACA Eligibility Construction

An individual is classified as DACA-eligible if:

$$
\begin{aligned}
& (\text{YRIMMIG} - \text{BIRTHYR}) < 16 && \text{(arrived before age 16)} \\
\wedge\ & \text{BIRTHYR} \geq 1982 && \text{(under 31 on June 15, 2012)} \\
\wedge\ & \text{YRIMMIG} \leq 2007 && \text{(in US since June 2007)}
\end{aligned}
$$