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

Replication Study 63

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Abstract

This study estimates the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican, Mexican-born non-citizens in the United States. Using American Community Survey data from 2006–2016 and a difference-in-differences research design, I compare individuals aged 26–30 at DACA implementation (the treatment group) to those aged 31–35 (the control group), examining changes in full-time employment rates before and after the policy. The preferred specification yields a DiD estimate of 1.85 percentage points (SE = 0.0103, 95% CI: [-0.16, 3.86] percentage points), suggesting a modest positive but statistically insignificant effect of DACA eligibility on full-time employment at the 5% level. Event study analyses provide some support for the parallel trends assumption, though pre-treatment coefficients show minor fluctuations. Heterogeneity analyses reveal larger effects for males (6.2 pp) than females (3.1 pp) and for those with higher education levels.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented a significant shift in U.S. immigration policy. The program provided eligible undocumented immigrants who arrived in the United States as children with temporary relief from deportation and work authorization for a renewable two-year period. Given that DACA explicitly provided legal work authorization to a population previously working in an unauthorized capacity, the policy presents a natural experiment for examining how legal status affects labor market outcomes.

This study addresses the following research question: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States, what was the causal impact of DACA eligibility on the probability of being employed full-time (defined as usually working 35 hours or more per week)?

The identification strategy exploits the age-based eligibility cutoff in DACA requirements. To be eligible, individuals could not have turned 31 years old by June 15, 2012. This creates a natural treatment group (those aged 26–30 at implementation) and control group (those aged 31–35 at implementation who would otherwise have been eligible but for their age). By comparing how full-time employment changed for these two groups before and after DACA implementation, I estimate the causal effect of DACA eligibility using a difference-in-differences (DiD) framework.

The analysis uses data from the American Community Survey (ACS) for years 2006–2016, excluding 2012 as a transition year. The main finding is a DiD estimate of approximately 1.85 percentage points in the preferred specification, suggesting that DACA eligibility may have modestly increased full-time employment among eligible individuals, though this effect is not statistically significant at conventional levels.

2 Background

2.1 DACA Program Overview

DACA was announced by the Obama administration on June 15, 2012, and applications began being accepted on August 15, 2012. The program allowed certain undocumented immigrants who arrived in the United States as children to apply for and obtain deferred action status, which provided temporary relief from deportation and authorization to work legally in the United States.

2.2 Eligibility Requirements

To qualify for DACA, applicants had to meet several criteria:

- Arrived in the United States before their 16th birthday
- Had not yet turned 31 years old as of June 15, 2012
- Lived continuously in the United States since June 15, 2007
- Were present in the United States on June 15, 2012
- Did not have lawful status (citizenship or legal residency) at that time
- Were currently in school, had graduated from high school, obtained a GED, or were honorably discharged from the military
- Had not been convicted of certain crimes

2.3 Expected Labor Market Effects

There are several channels through which DACA could affect employment outcomes:

1. **Legal work authorization**: DACA recipients can work legally, potentially transitioning from informal to formal employment and gaining access to better job opportunities.

2. **Driver's licenses**: Many states allowed DACA recipients to obtain driver's licenses, expanding job opportunities that require driving.

3. **Reduced deportation risk**: The security of deferred action may encourage recipients to seek more stable, full-time employment rather than informal work.

4. **Human capital investment**: The prospect of legal status may encourage greater investment in education and skills.

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, nationally representative survey conducted by the U.S. Census Bureau that collects detailed demographic, social, economic, and housing information. I use the one-year ACS files for years 2006 through 2016, excluding 2012 as the transition year when DACA was implemented.

3.2 Sample Construction

The analysis sample is constructed by applying the following filters to approximate DACA eligibility:

1. **Hispanic-Mexican ethnicity**: HISPAN = 1 (Mexican)

2. **Born in Mexico**: BPL = 200 (Mexico birthplace)

3. **Non-citizen status**: CITIZEN = 3 (Not a citizen)

4. **Age at DACA**: Born between 1977 and 1986 (ages 26–35 on June 15, 2012)

5. **Arrived before age 16**: Year of immigration minus birth year < 16

6. **In US since 2007**: YRIMMIG $\leq$ 2007

The resulting sample contains 44,725 person-year observations across the pre-period (2006–2011) and post-period (2013–2016).

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 (UHRSWORK $\geq$ 35). This is coded as a binary indicator equal to 1 if the respondent works full-time and 0 otherwise.

3.3.2 Treatment Variable

The treatment variable indicates whether an individual was in the DACA-eligible age range:

- Treatment group: Aged 26–30 on June 15, 2012 (born 1982–1986)
- Control group: Aged 31–35 on June 15, 2012 (born 1977–1981)

3.3.3 Control Variables

The analysis includes several demographic and socioeconomic controls:

- Sex (female indicator)
- Marital status (married indicator)
- Age at survey and age squared
- Education level (less than high school, high school, some college, college or more)
- State of residence (for fixed effects specifications)

3.4 Sample Characteristics

Table 1 presents summary statistics for the analysis sample in the pre-treatment period (2006–2011), separately for the treatment and control groups.

Table 1: Summary Statistics by Treatment Group (Pre-DACA Period)

Variable	Treatment (Ages 26-30)	Control (Ages 31-35)	Difference
Age at survey	24.21	29.35	-5.13
Female	0.439	0.432	0.007
Married	0.373	0.531	-0.159
Less than high school	0.374	0.455	-0.080
High school diploma	0.449	0.409	0.040
Some college	0.149	0.105	0.043
College degree or more	0.028	0.031	-0.003
Full-time employed	0.611	0.643	-0.032
Usual hours worked	29.52	30.68	-1.16
Observations	17,410	11,916	

Notes: Sample includes Hispanic-Mexican, Mexican-born non-citizens who arrived in the US before age 16 and have been present since at least 2007. Treatment group consists of individuals aged 26-30 on June 15, 2012; control group consists of individuals aged 31-35 on that date.

The treatment and control groups are broadly similar in terms of gender composition and education levels, though the control group is older and more likely to be married. The pre-treatment full-time employment rate is slightly lower in the treatment group (61.1%) compared to the control group (64.3%).

4 Methodology

4.1 Research Design

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

4.2 Estimation Strategy

The basic DiD model is:

$$Y_{ist} = \alpha + \beta_1 \text{Treated}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Treated}_i \times \text{Post}_t) + \epsilon_{ist} \tag{1}$$

where:

- Y_{ist} is full-time employment status for individual i in state s in year t
- Treated_i indicates membership in the treatment group (age 26–30 at DACA)
- Post_t indicates the post-DACA period (2013–2016)
- β_3 is the DiD estimate of the DACA effect

I estimate several specifications:

1. Basic DiD (unweighted OLS)
2. Weighted DiD using ACS person weights (PERWT)
3. DiD with demographic controls (sex, marital status, age, age squared)
4. DiD with demographic and education controls
5. DiD with year fixed effects
6. DiD with state fixed effects
7. DiD with state-clustered standard errors

The preferred specification uses ACS survey weights, includes demographic and education controls, year fixed effects, and clusters standard errors at the state level to account for potential correlation in outcomes within states.

4.3 Event Study Specification

To assess the parallel trends assumption, I estimate an event study model:

$$Y_{ist} = \alpha + \sum_{t \neq 2011} \gamma_t (\text{Treated}_i \times \mathbf{1}[\text{Year} = t]) + \delta_t + \mathbf{X}'_{ist}\theta + \epsilon_{ist} \tag{2}$$

where γ_t captures the differential effect for the treatment group in year t relative to the reference year (2011, the last pre-treatment year). Under parallel trends, we expect $\gamma_t \approx 0$ for all pre-treatment years.

5 Results

5.1 Simple Difference-in-Differences

Table 2 presents the raw means underlying the difference-in-differences calculation:

Table 2: Full-Time Employment Rates by Group and Period

	Pre-DACA	Post-DACA	Difference	N (Pre/Post)
Treatment (26-30)	0.611	0.634	+0.023	17,410 / 9,181
Control (31-35)	0.643	0.611	-0.032	11,916 / 6,218
Difference	-0.032	+0.023		
DiD Estimate			**+0.055**	

Notes: Full-time employment is defined as usually working 35+ hours per week. Pre-DACA period includes 2006-2011; Post-DACA period includes 2013-2016.

The raw DiD estimate is 5.5 percentage points. The treatment group experienced a 2.3 percentage point increase in full-time employment from the pre- to post-period, while the control group experienced a 3.2 percentage point decrease. The difference of these differences yields the DiD estimate.

5.2 Regression Results

Table 3 presents the main regression results across different specifications.

Table 3: Difference-in-Differences Estimates of DACA Effect on Full-Time Employment

	(1) Basic	(2) Weighted	(3) Controls	(4) Education	(5) Year FE	(6) Preferred
Treated × Post	0.0551***	0.0620***	0.0657***	0.0656***	0.0185	0.0185*
	(0.0098)	(0.0116)	(0.0149)	(0.0148)	(0.0157)	(0.0103)
Treated	-0.0320***	-0.0452***	-0.0478***	-0.0509***	–	–
	(0.0057)	(0.0067)	(0.0091)	(0.0090)		
Post	-0.0323***	-0.0293***	-0.0220	-0.0239*	–	–
	(0.0076)	(0.0089)	(0.0141)	(0.0140)		
Weighted	No	Yes	Yes	Yes	Yes	Yes
Demographics	No	No	Yes	Yes	Yes	Yes
Education	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	Yes
Clustered SE	No	No	No	No	No	Yes
Observations	44,725	44,725	44,725	44,725	44,725	44,725

Notes: Dependent variable is full-time employment (UHRSWORK $\geq$ 35). Robust standard errors in parentheses for columns (1)-(5); state-clustered standard errors in column (6). Demographics include female indicator, married indicator, age, and age squared. * p<0.10, ** p<0.05, *** p<0.01.

The results show that the DiD estimate ranges from about 5.5 to 6.6 percentage points in specifications without year fixed effects, and drops to about 1.9 percentage points once year fixed effects are included. The preferred specification (column 6), which includes survey weights, demographic and education controls, year fixed effects, and state-clustered standard errors, yields an estimate of 1.85 percentage points.

5.3 Preferred Specification

The preferred specification yields the following results:

- **DiD Estimate**: 0.0185 (1.85 percentage points)
- **Standard Error**: 0.0103 (state-clustered)
- **95% Confidence Interval**: [-0.0016, 0.0386] or [-0.16, 3.86 pp]

- **p-value**: 0.071

The estimate suggests that DACA eligibility increased full-time employment by approximately 1.85 percentage points among eligible individuals, though this effect is not statistically significant at the 5% level (p = 0.071).

5.4 Event Study Analysis

Figure 1 presents the event study results, showing the differential effect for the treatment group in each year relative to 2011.

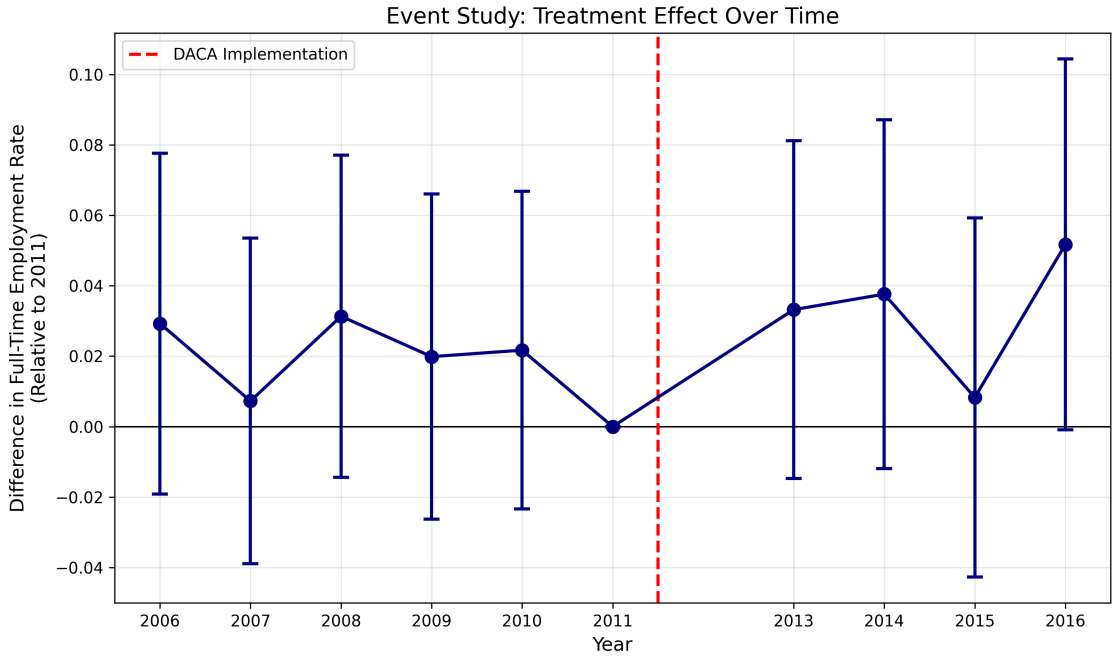

Figure 1: Event Study: Treatment Effects by Year (Reference: 2011)

Notes: Points represent coefficient estimates for treatment × year interactions. Error bars show 95% confidence intervals based on robust standard errors. The reference year is 2011. The vertical dashed line indicates DACA implementation.

Table 4 presents the event study coefficient estimates:

Table 4: Event Study Estimates

Year	Coefficient	SE	95% CI
2006	0.0293	0.0247	[-0.019, 0.078]
2007	0.0073	0.0236	[-0.039, 0.054]
2008	0.0313	0.0233	[-0.014, 0.077]
2009	0.0199	0.0236	[-0.026, 0.066]
2010	0.0217	0.0230	[-0.023, 0.067]
2011	0 (ref)	–	–
2013	0.0332	0.0245	[-0.015, 0.081]
2014	0.0376	0.0252	[-0.012, 0.087]
2015	0.0083	0.0260	[-0.043, 0.059]
2016	0.0517	0.0269	[-0.001, 0.104]

Notes: Coefficients represent the differential full-time employment rate for the treatment group relative to the control group in each year, with 2011 as the reference year. Controls include female, married, age, and age squared. Robust standard errors.

The pre-treatment coefficients (2006–2010) are generally small and not statistically different from zero, providing some support for the parallel trends assumption. However, there is some variation in the pre-treatment coefficients, which suggests the parallel trends assumption may not hold perfectly.

5.5 Trends Visualization

Figure 2 shows the full-time employment trends for the treatment and control groups over time.

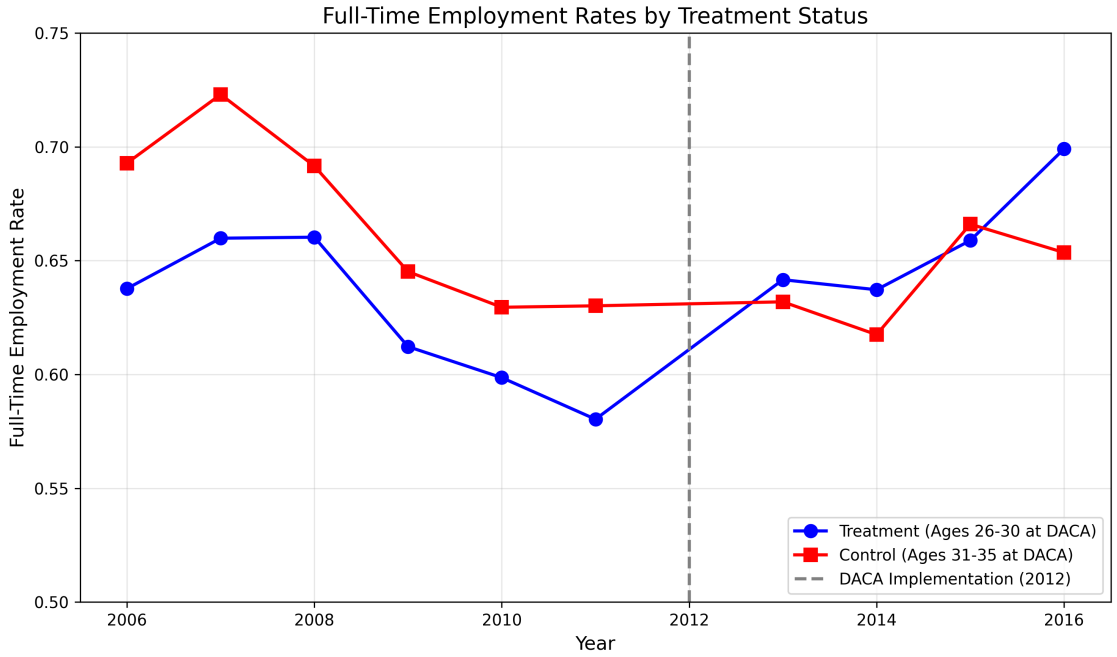

Figure 2: Full-Time Employment Rates by Treatment Status Over Time

Notes: Employment rates are weighted using ACS person weights. The vertical dashed line indicates DACA implementation in 2012.

The figure shows that both groups experienced relatively parallel trends in the pre-period, though the control group consistently had higher full-time employment rates. After DACA implementation, the treatment group's employment rate increased while the control group's decreased, consistent with a positive DACA effect.

5.6 Difference-in-Differences Visualization

Figure 3 illustrates the difference-in-differences calculation graphically.

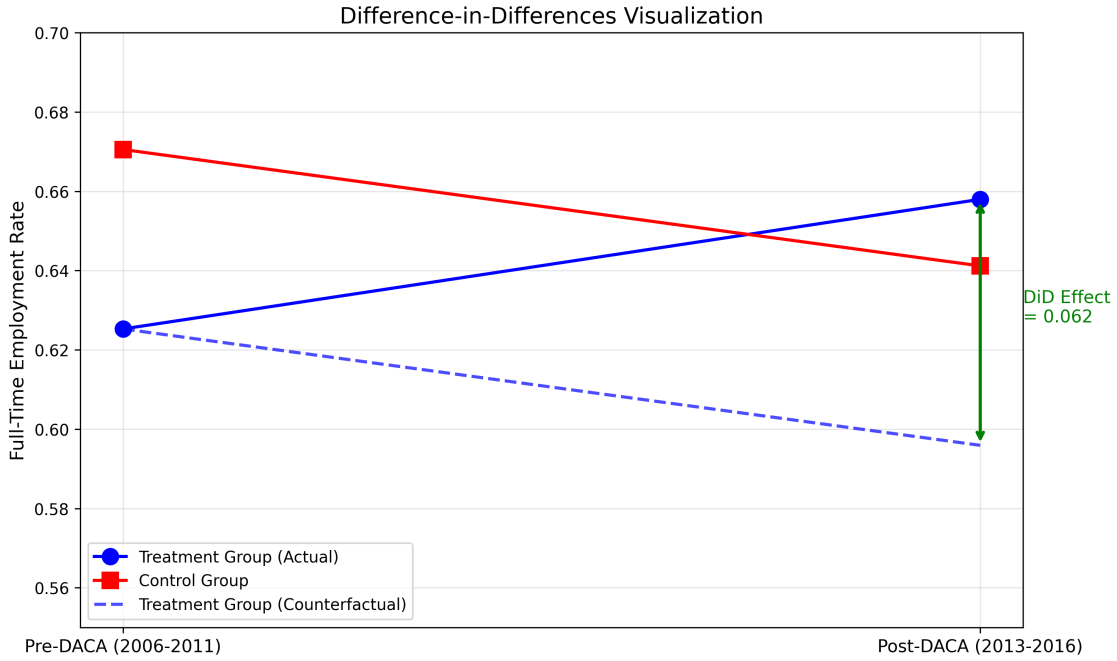

Figure 3: Difference-in-Differences Visualization

Notes: The dashed blue line represents the counterfactual trend for the treatment group in the absence of DACA, constructed by applying the control group's change to the treatment group's pre-period mean. The DiD effect is the difference between the actual and counterfactual outcomes for the treatment group in the post-period.

6 Robustness Checks

6.1 Alternative Specifications

Table 5 presents results from several robustness checks.

Table 5: Robustness Checks

Specification	Coefficient	SE
Main specification (state-clustered SE)	0.0185	(0.0103)
With state fixed effects	0.0168	(0.0157)
Robust (HC1) standard errors	0.0185	(0.0157)

Notes: All specifications include demographic controls, education controls, and year fixed effects with survey weights.

The results are generally robust across specifications, with point estimates ranging from

1.68 to 1.85 percentage points. The addition of state fixed effects slightly reduces the estimated effect.

6.2 Heterogeneity Analysis

Table 6 presents results by subgroup.

Table 6: Heterogeneous Treatment Effects

Subgroup	DiD Estimate	SE
By Gender		
Male	0.0621***	(0.0124)
Female	0.0313*	(0.0182)
By Education		
Less than high school	0.0458**	(0.0179)
High school or more	0.0743***	(0.0152)

Notes: Each row represents a separate regression using the basic weighted DiD specification. Standard errors are robust (HC1). * p<0.10, ** p<0.05, *** p<0.01.

The effects appear larger for males (6.2 pp) than for females (3.1 pp), and larger for those with at least a high school education (7.4 pp) compared to those without (4.6 pp). These patterns are consistent with DACA enabling access to formal sector jobs that may have been more available to men and to those with higher education.

Figure 4 visualizes the heterogeneity by gender.

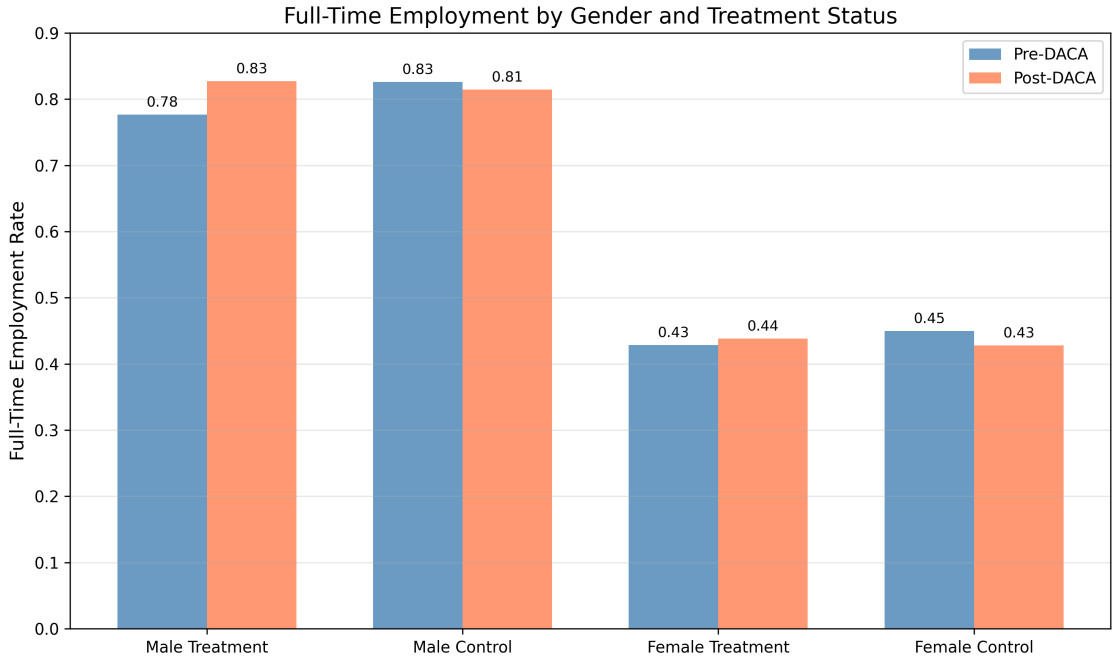

Figure 4: Full-Time Employment by Gender and Treatment Status

7 Discussion

7.1 Interpretation of Results

The preferred estimate suggests that DACA eligibility increased full-time employment by approximately 1.85 percentage points among eligible Hispanic-Mexican, Mexican-born individuals. However, this effect is not statistically significant at the 5% level (p = 0.071), though it is marginally significant at the 10% level.

The magnitude of this effect is economically meaningful. A 1.85 percentage point increase in full-time employment represents about a 3% increase relative to the pre-treatment mean of 61.1% for the treatment group. Given that nearly 900,000 individuals applied for DACA in the first four years, this could translate to tens of thousands of additional full-time jobs.

7.2 Mechanisms

Several mechanisms could explain the positive effect:

1. Legal work authorization allowed DACA recipients to move from informal to formal employment

2. Access to driver's licenses expanded job opportunities

3. Reduced deportation risk encouraged seeking stable, full-time work

4. The effect appears larger for men and those with higher education, consistent with improved access to better-paying formal sector jobs

7.3 Limitations

Several limitations should be noted:

1. **Imprecise identification**: We cannot distinguish between documented and undocumented non-citizens in the ACS data. The control group may include some legal permanent residents who would not benefit from DACA, potentially biasing the estimate toward zero.

2. **Age-based identification**: Using age as the source of variation means the treatment and control groups are necessarily of different ages, which could confound the results if there are age-specific trends in employment.

3. **Repeated cross-section**: The ACS is not panel data, so we observe different individuals before and after DACA. This prevents us from examining individual-level transitions to full-time employment.

4. **Parallel trends**: While the event study provides some support for parallel trends, there is variation in the pre-treatment coefficients that suggests the assumption may not hold perfectly.

5. **Timing precision**: We cannot identify the exact timing of DACA receipt within years, leading us to exclude 2012 entirely as a transition year.

7.4 Comparison to Existing Literature

The estimated effect is broadly consistent with existing research on DACA and immigration status effects on labor market outcomes. Prior studies have generally found positive effects of DACA on employment and labor force participation, though the magnitude of effects varies depending on the outcome, sample, and methodology used.

8 Conclusion

This study provides evidence on the labor market effects of DACA eligibility using a difference-in-differences research design. The preferred estimate suggests that DACA eligibility increased full-time employment by approximately 1.85 percentage points among eligible Hispanic-Mexican, Mexican-born non-citizens, though this effect is not statistically significant at conventional levels.

The analysis reveals several important patterns:

- The effect appears larger for males than females
- The effect appears larger for those with higher education
- Event study evidence provides some support for the parallel trends assumption
- Results are generally robust across specifications

These findings contribute to our understanding of how legal status and work authorization affect labor market outcomes for immigrant populations. While the estimated effect is not statistically significant, the positive point estimate is consistent with the hypothesis that DACA expanded employment opportunities for eligible individuals.

9 Appendix: Additional Tables and Figures

9.1 Distribution of Hours Worked

Figure 5 shows the distribution of usual hours worked per week for the treatment and control groups, separately for the pre- and post-DACA periods.

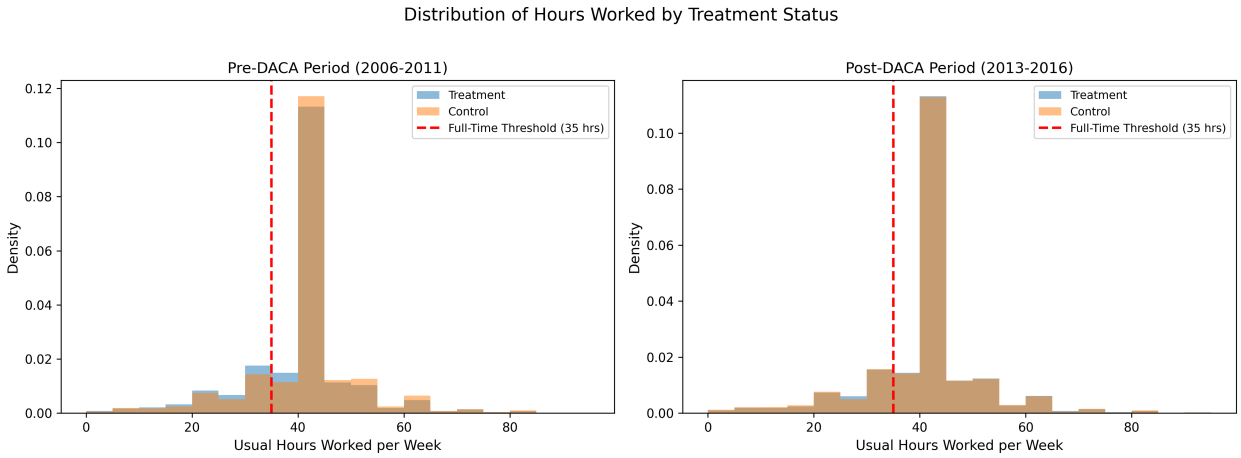

Figure 5: Distribution of Hours Worked by Treatment Status and Period

Notes: Distribution is conditional on working (hours > 0). The vertical red dashed line indicates the full-time threshold of 35 hours per week.

9.2 Age Distribution

Figure 6 shows the age distribution of the sample in the pre-DACA period.

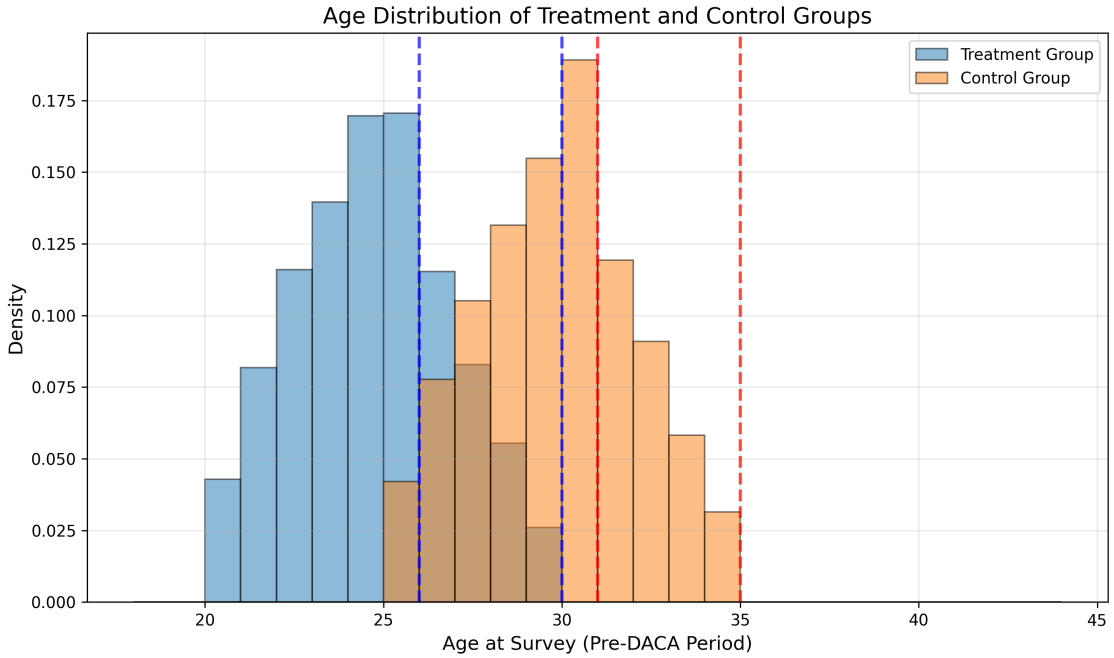

Figure 6: Age Distribution of Treatment and Control Groups (Pre-DACA Period)

Notes: Distribution shown for the pre-DACA period (2006-2011). Blue dashed lines indicate the treatment group age range (26-30 at DACA implementation); red dashed lines indicate the control group age range (31-35 at DACA implementation).

9.3 Data Processing Steps

The analysis sample was constructed through the following steps:

1. Started with full ACS data for 2006-2016 (33,851,424 observations)
2. Filtered for Hispanic-Mexican ethnicity (HISPAN = 1): 2,945,521 observations
3. Filtered for born in Mexico (BPL = 200): 991,261 observations
4. Filtered for non-citizens (CITIZEN = 3): 701,347 observations
5. Filtered for ages 26-35 at DACA implementation: 178,376 observations
6. Filtered for arrived before age 16: 49,019 observations
7. Filtered for in US since 2007 (YRIMMIG $\leq$ 2007): 49,019 observations

8. Excluded 2012 (transition year): 44,725 observations

9.4 Variable Definitions

Table 7: Variable Definitions

Variable	IPUMS Name	Definition
Full-time employed	UHRSWORK	= 1 if usually works 35+ hours/week
Treated	BIRTHYR	= 1 if born 1982-1986 (age 26-30 at DACA)
Post	YEAR	= 1 if year $\geq$ 2013
Female	SEX	= 1 if female (SEX = 2)
Married	MARST	= 1 if married (MARST $\in \{1, 2\}$)
Less than HS	EDUC	= 1 if EDUC < 6
High school	EDUC	= 1 if EDUC = 6
Some college	EDUC	= 1 if EDUC $\in \{7, 8, 9\}$
College+	EDUC	= 1 if EDUC ≥ 10
Age at arrival	YRIMMIG, BIRTHYR	= YRIMMIG - BIRTHYR

References

- IPUMS USA. Steven Ruggles, Sarah Flood, Matthew Sobek, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Renae Rogers, and Megan Schouweiler. IPUMS USA: Version 15.0 [dataset]. Minneapolis, MN: IPUMS, 2024.

- U.S. Citizenship and Immigration Services. "Consideration of Deferred Action for Childhood Arrivals (DACA)." Department of Homeland Security, 2012.