

The Effect of DACA Eligibility on Full-Time Employment:

A Difference-in-Differences Analysis

Replication Study 77

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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 living in the United States. Using American Community Survey (ACS) data from 2006–2016, I employ a difference-in-differences research design comparing individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group). The preferred specification estimates that DACA eligibility increased the probability of full-time employment by approximately 6 percentage points (95% CI: 4.1–7.8 pp, $p < 0.001$). This effect is robust across multiple specifications and is supported by parallel pre-trends. The findings suggest that legal work authorization through DACA 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 granted temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Understanding the labor market effects of DACA is crucial for informing ongoing policy debates about immigration reform and the economic integration of undocumented immigrants.

This study investigates a specific research question: Among ethnically Hispanic-Mexican individuals born in Mexico and living in the United States, what was the causal impact of DACA eligibility on the probability of full-time employment? Full-time employment is defined as usually working 35 or more hours per week, a standard definition in labor economics research.

The identification strategy exploits the age-based eligibility cutoff for DACA. Individuals who had not yet turned 31 as of June 15, 2012 were eligible for the program (conditional on other requirements), while those 31 and older were not eligible solely due to their age. This creates a natural comparison group of individuals who are similar in observable and likely unobservable characteristics but differ in their eligibility for legal work authorization.

The key findings indicate that DACA eligibility increased full-time employment by approximately 6 percentage points, representing a roughly 10% increase relative to the pre-DACA mean. This effect is statistically significant, robust to alternative specifications, and supported by evidence of parallel pre-trends between treatment and control groups.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and began accepting applications on August 15, 2012. The program provided two key benefits to eligible individuals: (1) temporary relief from deportation for two years, renewable, and (2) eligibility for work authorization. Additionally, DACA recipients could obtain driver's licenses and other forms of identification in many states.

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

1. Arrived in the United States before their 16th birthday
2. Had not yet reached their 31st birthday as of June 15, 2012
3. Had lived continuously 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. Had not been convicted of a felony, significant misdemeanor, or multiple misdemeanors
7. Were currently in school, had graduated from high school, obtained a GED, or were honorably discharged veterans

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. While DACA was not specific to any nationality, the majority of recipients were from Mexico, reflecting the composition of the undocumented immigrant population in the United States.

2.2 Theoretical Mechanisms

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

Direct work authorization effect: Prior to DACA, undocumented immigrants faced legal barriers to formal employment. With work authorization, DACA recipients could legally work for any employer, potentially shifting from informal to formal employment or from part-time to full-time work.

Reduced fear of deportation: The deportation relief provided by DACA may have encouraged recipients to seek more stable employment arrangements, including full-time positions that require longer-term commitments.

Access to better jobs: With legal work authorization and identification documents, DACA recipients could access jobs that were previously unavailable, potentially including higher-quality positions with full-time hours.

Human capital investment: DACA's renewable nature may have encouraged recipients to invest in education and skills, potentially leading to better employment outcomes over time.

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, economic, and housing information for approximately 3 million households each year.

I use the one-year ACS samples from 2006 through 2016, excluding 2012 from the analysis because DACA was implemented mid-year (June 15, 2012), making it impossible to distinguish pre- and post-treatment observations within that year. This provides six pre-treatment years (2006–2011) and four post-treatment years (2013–2016).

3.2 Sample Construction

The analytic sample is constructed by applying the following restrictions sequentially:

1. **Hispanic-Mexican ethnicity:** Using the HISPAN variable, I restrict to individuals coded as Mexican ($HISPAN = 1$). This identifies individuals who self-report Mexican ethnicity.
2. **Born in Mexico:** Using the BPL (birthplace) variable, I restrict to individuals born in Mexico ($BPL = 200$). This ensures the sample consists of Mexican immigrants rather than U.S.-born individuals of Mexican descent.
3. **Non-citizen status:** Using the CITIZEN variable, I restrict to non-citizens ($CITIZEN = 3$). Since the ACS does not distinguish between documented and undocumented non-citizens, I assume that non-citizens who have not received naturalization papers are potentially undocumented for DACA purposes.
4. **Arrived before age 16:** Using YRIMMIG (year of immigration) and BIRTHYR (birth year), I calculate age at immigration and restrict to individuals who arrived before turning 16, as required for DACA eligibility.
5. **Age at DACA implementation:** I restrict to individuals who were ages 26–35 as of June 15, 2012, corresponding to birth years 1977–1986. This creates the treatment group (ages 26–30, born 1982–1986) and control group (ages 31–35, born 1977–1981).
6. **Exclude 2012:** Observations from 2012 are excluded due to mid-year implementation.

Table 1 presents the sample construction process with observation counts at each step.

Table 1: Sample Construction

Step	Restriction	Observations	% of Previous
0	Total ACS data (2006–2016)	33,851,424	—
1	Hispanic-Mexican (HISPAN = 1)	2,945,521	8.7%
2	Born in Mexico (BPL = 200)	991,261	33.7%
3	Non-citizen (CITIZEN = 3)	701,347	70.8%
4	Arrived before age 16	205,327	29.3%
5	Age 26–35 in 2012 (born 1977–1986)	49,019	23.9%
6	Exclude 2012	44,725	91.2%

Notes: Sample restrictions applied sequentially. Final analytic sample consists of 44,725 person-year observations representing approximately 6.2 million weighted individuals.

3.3 Variables

3.3.1 Outcome Variable

The primary outcome is **full-time employment**, defined as an indicator equal to one if the individual usually works 35 or more hours per week ($UHRSWORK \geq 35$). This follows the standard Bureau of Labor Statistics definition of full-time work.

3.3.2 Treatment and Control Groups

The **treatment group** consists of individuals who were ages 26–30 as of June 15, 2012, corresponding to birth years 1982–1986. These individuals met the age requirement for DACA eligibility.

The **control group** consists of individuals who were ages 31–35 as of June 15, 2012, corresponding to birth years 1977–1981. These individuals would have been eligible for DACA if not for exceeding the age cutoff.

3.3.3 Time Periods

The **pre-period** consists of survey years 2006–2011, before DACA implementation.

The **post-period** consists of survey years 2013–2016, after DACA implementation.

3.3.4 Covariates

Several demographic covariates are included in some specifications:

- Gender (female indicator)
- Marital status (married indicator)
- Education level (categorical: less than high school, high school, some college, college or more)
- Age at time of survey
- State of residence (STATEFIP)

4 Empirical Strategy

4.1 Difference-in-Differences Design

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

The key identifying assumption is the **parallel trends assumption**: in the absence of DACA, full-time employment would have evolved similarly for the treatment and control groups. Under this assumption, any differential change in outcomes for the treatment group relative to the control group can be attributed to DACA eligibility.

The basic DiD estimating equation is:

$$Y_{it} = \alpha + \beta_1 \text{Treated}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Treated}_i \times \text{Post}_t) + \varepsilon_{it} \quad (1)$$

where Y_{it} is full-time employment for individual i in year t , Treated_i indicates membership in the treatment group (ages 26–30 in 2012), Post_t indicates the post-DACA period

(2013–2016), and β_3 is the DiD coefficient of interest representing the causal effect of DACA eligibility.

4.2 Regression Specifications

I estimate several specifications of increasing complexity:

Model 1 (Basic DiD): Unweighted OLS with no covariates.

Model 2 (Weighted DiD): Weighted least squares using person weights (PERWT) from the ACS.

Model 3 (With Covariates): Adds demographic controls including gender, marital status, education, and age.

Model 4 (State and Year Fixed Effects): Adds state fixed effects and year fixed effects to control for time-invariant state characteristics and common time trends.

Model 5 (Full Model): Includes covariates, state fixed effects, and year fixed effects.

All regressions use heteroskedasticity-robust standard errors clustered at the state level to account for potential within-state correlation in the error terms.

4.3 Event Study Specification

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

$$Y_{it} = \alpha + \sum_{k \neq 2006} \gamma_k (\text{Treated}_i \times \mathbf{1}[\text{Year}_t = k]) + \lambda_t + \mu_s + \varepsilon_{it} \quad (2)$$

where γ_k represents the differential effect for the treatment group in year k relative to the base year 2006. The pre-treatment coefficients (γ_{2007} through γ_{2011}) test for pre-existing differential trends, while the post-treatment coefficients (γ_{2013} through γ_{2016}) capture the dynamic treatment effects.

5 Results

5.1 Descriptive Statistics

Table 2 presents summary statistics for the analytic sample. The sample consists of 44,725 person-year observations, representing approximately 6.2 million weighted individuals. The overall full-time employment rate is 64.7%, with an employment rate of 70.8%. The sample is 43% female and 45% married, with a mean age of about 28 years.

Table 2: Sample Characteristics

Variable	Mean/Count
Observations (unweighted)	44,725
Observations (weighted)	6,205,755
Full-time employment rate	0.647
Employment rate	0.708
Female (%)	43.1
Married (%)	45.5
Mean age (years)	28.4
Treatment group (ages 26–30)	26,591
Control group (ages 31–35)	18,134
Pre-period (2006–2011)	29,326
Post-period (2013–2016)	15,399

Notes: Sample includes Hispanic-Mexican non-citizens born in Mexico who arrived before age 16 and were ages 26–35 as of June 15, 2012. Statistics weighted by PERWT except where noted.

5.2 Simple Difference-in-Differences

Table 3 presents the simple DiD calculation using weighted means. Before DACA (2006–2011), the treatment group had a full-time employment rate of 62.5%, while the control group had a rate of 67.1%. After DACA (2013–2016), the treatment group’s rate increased to 65.8%, while the control group’s rate decreased to 64.1%.

The treatment group experienced an increase of 3.3 percentage points, while the

control group experienced a decrease of 2.9 percentage points. The simple DiD estimate is therefore 6.2 percentage points ($0.033 - (-0.029) = 0.062$).

Table 3: Simple Difference-in-Differences

Group	Pre-DACA	Post-DACA	Difference
Treatment (ages 26–30)	0.625	0.658	+0.033
Control (ages 31–35)	0.671	0.641	-0.029
DiD Estimate	+0.062		

Notes: Cell means are weighted by PERWT. Pre-DACA period is 2006–2011; post-DACA period is 2013–2016.

5.3 Main Regression Results

Table 4 presents the main regression results across five specifications. All models yield positive and statistically significant DiD coefficients, ranging from 4.7 to 6.2 percentage points.

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

	(1) Basic	(2) Weighted	(3) +Covariates	(4) +State/Year FE	(5) Full Model
DiD Coefficient	0.055*** (0.007)	0.062*** (0.009)	0.048*** (0.011)	0.060*** (0.009)	0.047*** (0.011)
95% CI	[0.042, 0.068]	[0.044, 0.080]	[0.027, 0.070]	[0.041, 0.078]	[0.024, 0.069]
Observations	44,725	44,725	44,725	44,725	44,725
Weights	No	Yes	Yes	Yes	Yes
Covariates	No	No	Yes	No	Yes
State FE	No	No	No	Yes	Yes
Year FE	No	No	No	Yes	Yes

Notes: Dependent variable is an indicator for full-time employment ($\text{UHRSWORK} \geq 35$). Covariates include gender, marital status, education, and age. Standard errors clustered at state level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The preferred specification is Model 4, which includes state and year fixed effects and uses survey weights. This specification estimates that DACA eligibility increased full-time

employment by 6.0 percentage points ($SE = 0.009$, 95% CI: [0.041, 0.078], $p < 0.001$).

The effect is robust across specifications. The unweighted basic model (Column 1) yields an estimate of 5.5 percentage points. Adding survey weights (Column 2) increases the estimate to 6.2 percentage points. Including individual covariates (Column 3) reduces the estimate to 4.8 percentage points, suggesting some compositional differences between groups. Adding state and year fixed effects (Column 4) yields an estimate of 6.0 percentage points. The full model with all controls (Column 5) estimates 4.7 percentage points.

5.4 Robustness Checks

5.4.1 Alternative Outcomes

Table 5 presents results for alternative outcome measures. The effect on overall employment ($EMPSTAT = 1$) is 5.5 percentage points, suggesting that part of the full-time employment effect operates through the extensive margin of labor supply. The effect on usual hours worked is 2.4 hours per week, consistent with the increase in full-time employment.

Table 5: Robustness: Alternative Outcomes

Outcome	Coefficient	SE	<i>p</i> -value	N
Full-time employment (main)	0.060	0.009	<0.001	44,725
Employment (any)	0.055	0.008	<0.001	44,725
Usual hours worked	2.42	0.34	<0.001	44,725

Notes: All specifications include state and year fixed effects and use survey weights. Standard errors clustered at state level.

5.4.2 Heterogeneity by Gender

Table 6 presents results separately by gender. The effect is larger for men (5.9 percentage points, $SE = 0.013$) than for women (2.7 percentage points, $SE = 0.018$), though both are positive. The smaller effect for women may reflect gender differences in labor force participation patterns or the types of jobs affected by work authorization.

Table 6: Heterogeneity by Gender

Subgroup	Coefficient	SE	<i>p</i> -value	N
Male	0.059	0.013	<0.001	25,420
Female	0.027	0.018	0.131	19,305

Notes: Specifications include state and year fixed effects and use survey weights. Standard errors clustered at state level.

5.5 Pre-Trends Analysis

A crucial test for the validity of the difference-in-differences design is whether the treatment and control groups exhibited parallel trends in full-time employment prior to DACA implementation. Table 7 presents the pre-trend coefficients from the event study specification, with 2006 as the reference year.

Table 7: Pre-Trends Test

Year	Coefficient	SE	<i>p</i> -value
2006	(reference)	—	—
2007	-0.007	0.020	0.739
2008	0.022	0.019	0.239
2009	0.024	0.020	0.232
2010	0.021	0.020	0.289
2011	0.004	0.021	0.838

Notes: Coefficients represent the interaction between treatment group indicator and year indicators, with 2006 as the reference year. None of the pre-trend coefficients are statistically significant at conventional levels, supporting the parallel trends assumption.

None of the pre-trend coefficients are statistically significant at conventional levels (all $p > 0.20$). This provides support for the parallel trends assumption underlying the difference-in-differences design.

5.6 Event Study Results

Figure ?? and Table 8 present the full event study results. The pattern shows relatively flat and statistically insignificant coefficients in the pre-period, followed by positive and statistically significant coefficients after DACA implementation.

Table 8: Event Study Results

Year	Coefficient	SE	95% CI	<i>p</i> -value
<i>Pre-DACA Period</i>				
2006	(reference)	—	—	—
2007	−0.007	0.020	[−0.046, 0.033]	0.732
2008	0.022	0.019	[−0.015, 0.058]	0.254
2009	0.023	0.020	[−0.016, 0.063]	0.246
2010	0.020	0.020	[−0.019, 0.058]	0.319
2011	0.005	0.021	[−0.036, 0.045]	0.828
<i>Post-DACA Period</i>				
2013	0.064*	0.027	[0.012, 0.116]	0.016
2014	0.071***	0.021	[0.030, 0.112]	0.001
2015	0.046*	0.020	[0.007, 0.084]	0.021
2016	0.099***	0.020	[0.061, 0.137]	<0.001

Notes: Coefficients from event study regression with state and year fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The post-DACA coefficients are all positive and range from 4.6 to 9.9 percentage points. The effect appears to strengthen over time, with the largest effect observed in 2016 (9.9 pp). This pattern is consistent with a gradual take-up of DACA benefits, as applications were processed over time and recipients gained experience navigating the formal labor market.

6 Discussion

6.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 6 percentage points among Hispanic-Mexican non-citizen immigrants who arrived in the U.S. before age 16. This represents a roughly 10% increase relative to the pre-DACA full-time employment rate of 62.5% in the treatment group.

The effect is economically meaningful. Full-time employment is associated with higher wages, better benefits, and greater job security compared to part-time work. The shift toward full-time employment likely improved the economic well-being of DACA-eligible individuals and their families.

The finding that the effect is larger for men than women is consistent with patterns observed in the broader labor market, where men tend to have higher labor force participation and full-time employment rates. The smaller effect for women may also reflect that women are more likely to work part-time for family-related reasons that work authorization alone may not address.

6.2 Mechanisms

Several mechanisms could explain the observed increase in full-time employment:

Direct work authorization: The most direct mechanism is that work authorization allowed DACA recipients to legally work full-time in the formal economy. Prior to DACA, undocumented workers often faced barriers to full-time employment due to employer verification requirements.

Job quality improvements: With work authorization, DACA recipients may have been able to access better jobs with more hours. Employers may have been more willing to offer full-time positions to workers with legal documentation.

Reduced labor market frictions: Legal status may have reduced job search fric-

tions, allowing DACA-eligible individuals to find and maintain full-time employment more easily.

6.3 Limitations

Several limitations should be noted:

Identification of undocumented status: The ACS does not directly identify undocumented immigrants. I use non-citizen status as a proxy, which includes both documented and undocumented non-citizens. This likely introduces measurement error that attenuates the estimated effects.

Repeated cross-sections: The ACS is a repeated cross-section, not a panel. I cannot follow the same individuals over time, which means the estimates reflect population-level changes rather than individual-level changes.

Age-based identification: The identification relies on the age cutoff for DACA eligibility. While this provides a clean source of exogenous variation, there may be concerns about comparability between slightly younger and slightly older cohorts.

Other DACA benefits: The analysis cannot distinguish the effect of work authorization from other benefits of DACA, such as reduced fear of deportation or access to driver's licenses, which may also affect employment.

6.4 Comparison to Prior Literature

The findings are broadly consistent with prior research on DACA and immigration policy. Studies using similar identification strategies have found positive effects of DACA on labor market outcomes, educational attainment, and economic well-being.

The magnitude of the effect (approximately 6 percentage points) is within the range of estimates from prior research, though direct comparisons are complicated by differences in sample definitions, outcome measures, and time periods studied.

7 Conclusion

This study provides evidence that eligibility for the Deferred Action for Childhood Arrivals (DACA) program increased full-time employment among Hispanic-Mexican non-citizen immigrants in the United States. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I estimate that DACA eligibility increased the probability of full-time employment by approximately 6 percentage points.

The findings are robust across multiple specifications and are supported by evidence of parallel pre-trends between treatment and control groups. The effect appears to be driven primarily by men, with a smaller and less precisely estimated effect for women.

These results suggest that legal work authorization can have meaningful positive effects on labor market outcomes for undocumented immigrants. The findings are relevant for ongoing policy debates about immigration reform and the economic integration of immigrants in the United States.

Appendix A: Additional Tables and Figures

A.1 Variable Definitions

Table 9: Variable Definitions

Variable	Definition
YEAR	Survey year (2006–2016, excluding 2012)
HISPAN	Hispanic origin; = 1 for Mexican
BPL	Birthplace; = 200 for Mexico
CITIZEN	Citizenship status; = 3 for non-citizen
YRIMMIG	Year of immigration to the United States
BIRTHYR	Year of birth
UHRSWORK	Usual hours worked per week
EMPSTAT	Employment status; = 1 for employed
PERWT	Person weight
SEX	Sex; = 2 for female
MARST	Marital status; = 1, 2 for married
EDUC	Education level
STATEFIP	State FIPS code
fulltime	Indicator for UHRSWORK ≥ 35
treated	Indicator for birth year 1982–1986 (ages 26–30 in 2012)
post	Indicator for YEAR ≥ 2013
treated_post	treated \times post (DiD coefficient)

A.2 Full Regression Output

Table 10: Full Regression Results: Preferred Specification

Variable	Coefficient	SE
Treated	-0.044***	(0.007)
Treated \times Post	0.060***	(0.009)
Constant	0.585***	(0.012)
Year Fixed Effects	Yes	
State Fixed Effects	Yes	
Weights	PERWT	
Clustered SE	State	
Observations	44,725	
R-squared	0.043	

Appendix B: Sensitivity Analyses

B.1 Alternative Age Windows

The main analysis uses ages 26–30 for the treatment group and ages 31–35 for the control group. Alternative specifications using narrower or wider age windows yield similar results, suggesting the findings are not sensitive to the exact definition of the comparison groups.

B.2 Excluding Specific States

Results are robust to excluding individual states with large Hispanic-Mexican populations (e.g., California, Texas), suggesting the findings are not driven by any single state.

B.3 Placebo Test

A placebo test using the 2006–2011 data with a “fake” treatment year of 2009 yields a DiD coefficient close to zero and statistically insignificant, providing additional support for the identification strategy.

Appendix C: Data and Code

C.1 Data Source

Data are from the American Community Survey (ACS) as provided by IPUMS USA. The extract includes the following samples:

- 2006 ACS
- 2007 ACS
- 2008 ACS
- 2009 ACS
- 2010 ACS
- 2011 ACS
- 2012 ACS (excluded from analysis)
- 2013 ACS
- 2014 ACS
- 2015 ACS
- 2016 ACS

C.2 Replication Files

The following files are provided for replication:

- `analysis.py`: Python script for data cleaning and analysis
- `results_main.csv`: Main regression results

- `results_event_study.csv`: Event study coefficients
- `results_descriptive.csv`: Descriptive statistics
- `run_log_77.md`: Log of analysis decisions and commands