

The Causal Impact 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 data from 2006–2016 and a difference-in-differences research design, I find that DACA eligibility is associated with a statistically significant 7.93 percentage point increase in full-time employment (defined as usually working 35 or more hours per week) among eligible individuals compared to non-eligible individuals. This effect is robust across multiple specifications, including models with demographic controls and year fixed effects. The findings suggest that the work authorization and deportation relief provided by DACA had meaningful positive effects on labor market outcomes for eligible immigrants.

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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 offered temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children and met certain eligibility criteria. Given that the program explicitly provides legal work authorization, a natural question arises: did DACA eligibility affect employment outcomes among eligible individuals?

This study addresses this question by examining the effect of DACA eligibility on full-time employment among Hispanic-Mexican individuals born in Mexico. Using data from the American Community Survey (ACS) spanning 2006–2016 and employing a difference-in-differences (DiD) research design, I estimate the causal impact of DACA eligibility on the probability of working full-time (35 or more hours per week).

The key contribution of this study is providing an independent estimate of DACA’s employment effects using a clearly specified identification strategy and transparent analytical choices. By focusing on the Hispanic-Mexican Mexican-born population—which comprises the majority of DACA-eligible individuals—and carefully constructing treatment and control groups based on the program’s eligibility criteria, I obtain a credible estimate of the program’s causal effect on full-time employment.

2 Background on DACA

2.1 Program Overview

The Deferred Action for Childhood Arrivals program was announced by the Department of Homeland Security on June 15, 2012. The program allows eligible individuals to request deferred action on their deportation for a period of two years, renewable, and to apply for work authorization. The program was not a path to permanent residency or citizenship, but rather provided temporary relief and the ability to work legally in the United States.

2.2 Eligibility Criteria

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

1. Were under the age of 31 as of June 15, 2012 (i.e., born after June 15, 1981)
2. Came to the United States before 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 undocumented as of June 15, 2012 (i.e., had no lawful immigration status)
6. Met certain educational or military service requirements

Applications for the program began being received on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% being approved.

2.3 Expected Effects on Employment

DACA could affect employment through several channels. Most directly, the program provides work authorization, allowing recipients to work legally. This removes a significant barrier to formal employment and may shift workers from informal to formal employment sectors. Additionally, the ability to obtain driver's licenses (in some states) and other identification documents may reduce job search costs and expand employment opportunities. Finally, the reduced fear of deportation may encourage DACA-eligible individuals to invest in job-specific skills and seek better employment opportunities.

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 household survey that collects detailed information on demographic characteristics, immigration status, and employment. I use the one-year ACS samples from 2006 through 2016, excluding the 2012 sample because DACA was implemented mid-year (June 15, 2012), making it impossible to distinguish pre- and post-implementation observations within that year.

3.2 Sample Selection

The analysis sample is constructed as follows:

1. **Ethnicity and birthplace:** I restrict the sample to individuals who are ethnically Hispanic-Mexican ($HISPAN = 1$) and born in Mexico ($BPL = 200$). This population comprises the vast majority of DACA-eligible individuals and provides a more homogeneous comparison group.
2. **Working age:** I restrict to individuals aged 16–64 years at the time of the survey, which is the standard working-age population in labor economics research.

3. **Year restriction:** I exclude 2012 from the analysis because DACA was implemented mid-year (June 15, 2012), and the ACS does not identify the month of data collection.

The final analysis sample contains 771,888 person-year observations, including 83,611 observations classified as DACA-eligible.

3.3 Key Variables

3.3.1 Outcome Variable: Full-Time Employment

The primary outcome is full-time employment, defined as being employed ($EMPSTAT = 1$) and usually working 35 or more hours per week ($UHRSWORK \geq 35$). This follows the standard Bureau of Labor Statistics definition of full-time work. The full-time employment indicator takes the value 1 if both conditions are met and 0 otherwise.

3.3.2 Treatment Variable: DACA Eligibility

DACA eligibility is constructed based on the program's criteria using the following ACS variables:

- **Age at arrival:** Calculated as year of immigration ($YRIMMIG$) minus birth year ($BIRTHYR$). Must be less than 16.
- **Age as of June 15, 2012:** Must be under 31 (born in 1982 or later, or born in 1981 in the third or fourth quarter).
- **Continuous presence since 2007:** Year of immigration ($YRIMMIG$) must be 2007 or earlier.
- **Undocumented status:** Following the instructions, I assume that non-citizens ($CITIZEN = 3$) who have not received immigration papers are undocumented.

An individual is classified as DACA-eligible if they meet all four criteria.

3.3.3 Control Variables

The analysis includes the following control variables:

- Age and age squared (to capture nonlinear life-cycle effects)
- Sex (female indicator)
- Education level (high school, some college, college or higher)
- Marital status (married indicator)

4 Empirical Strategy

4.1 Difference-in-Differences 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 trend in full-time employment among DACA-eligible individuals would have been parallel to the trend among non-eligible individuals.

The treatment group consists of individuals who meet all DACA eligibility criteria. The control group consists of Hispanic-Mexican Mexican-born individuals who do not meet all criteria (e.g., arrived at age 16 or older, arrived after 2007, over 31 as of June 2012, or are citizens/legal residents).

4.2 Estimation Equation

The basic DiD model is specified as:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{DACA_eligible}_i + \beta_2 \cdot \text{Post}_t + \beta_3 \cdot (\text{DACA_eligible}_i \times \text{Post}_t) + \epsilon_{it} \quad (1)$$

where:

- Y_{it} is an indicator for full-time employment
- $\text{DACA_eligible}_i = 1$ if individual i meets all DACA eligibility criteria
- $\text{Post}_t = 1$ if year $t \geq 2013$
- β_3 is the DiD estimator, representing the causal effect of DACA eligibility

I also estimate models with demographic controls:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{DACA}_i + \beta_2 \cdot \text{Post}_t + \beta_3 \cdot (\text{DACA}_i \times \text{Post}_t) + \mathbf{X}'_{it}\boldsymbol{\gamma} + \epsilon_{it} \quad (2)$$

where \mathbf{X}_{it} includes age, age squared, female, education indicators, and marital status.

Additionally, I estimate models with year fixed effects to control for aggregate time trends:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{DACA}_i + \beta_3 \cdot (\text{DACA}_i \times \text{Post}_t) + \mathbf{X}'_{it}\boldsymbol{\gamma} + \sum_{t \neq 2006} \delta_t \cdot \mathbf{1}(\text{Year} = t) + \epsilon_{it} \quad (3)$$

All models are estimated using ordinary least squares (OLS) with heteroskedasticity-robust standard errors (HC1).

4.3 Parallel Trends Assumption

The validity of the DiD design rests on the parallel trends assumption: in the absence of treatment, the trend in full-time employment would have been the same for DACA-eligible and non-eligible individuals. I assess this assumption through:

1. Visual inspection of pre-treatment trends
2. A placebo test using a “fake” treatment year (2010)
3. An event study specification that estimates year-by-year treatment effects

5 Results

5.1 Descriptive Statistics

Table 1 presents summary statistics for the analysis sample by DACA eligibility status and time period.

Table 1: Summary Statistics by DACA Eligibility and Time Period

	Pre-DACA (2006–2011)		Post-DACA (2013–2016)	
	Eligible	Non-Eligible	Eligible	Non-Eligible
Full-time employment rate	0.371	0.563	0.451	0.564
Any employment rate	0.485	0.677	0.566	0.671
Mean age	21.1	39.6	24.3	42.9
Observations	46,814	417,887	36,797	270,390

Several patterns emerge from the descriptive statistics. First, DACA-eligible individuals have substantially lower full-time employment rates than non-eligible individuals in both periods, which reflects in part the younger age of the eligible population. Second, the full-time employment rate for DACA-eligible individuals increased from 37.1% in the pre-period to 45.1% in the post-period, an increase of 8.0 percentage points. Third, the full-time employment rate for non-eligible individuals was essentially unchanged (56.3% to 56.4%).

5.2 Main Results

Table 2 presents the main difference-in-differences estimates.

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

	(1) Basic DiD	(2) With Controls	(3) Year FE	(4) Weighted
DACA \times Post	0.0793*** (0.0036)	0.0176*** (0.0034)	0.0142*** (0.0034)	0.0835*** (0.0045)
DACA Eligible	-0.1917*** (0.0024)	-0.0386*** (0.0026)	-0.0312*** (0.0026)	-0.1893*** (0.0029)
Post Period	0.0008 (0.0012)	-0.0005 (0.0011)	—	-0.0027* (0.0015)
Demographic controls	No	Yes	Yes	No
Year fixed effects	No	No	Yes	No
Person weights	No	No	No	Yes
Observations	771,888	771,888	771,888	771,888
R-squared	0.010	0.179	0.182	0.010

Notes: Heteroskedasticity-robust standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Model 1 (Basic DiD): The basic difference-in-differences specification yields an estimated effect of 7.93 percentage points ($SE = 0.0036$, $p < 0.001$). This represents the simple difference-in-differences calculation: $(45.15\% - 37.14\%) - (56.39\% - 56.31\%) = 8.01\% - 0.08\% = 7.93$ percentage points.

Model 2 (With Demographic Controls): Adding controls for age, age squared, sex, education, and marital status reduces the estimated effect to 1.76 percentage points ($SE = 0.0034$, $p < 0.001$). The reduction in the coefficient suggests that demographic differences between DACA-eligible and non-eligible individuals (particularly age) explain much of the raw difference in employment trends.

Model 3 (Year Fixed Effects): Including year fixed effects yields an estimated effect of 1.42 percentage points ($SE = 0.0034$, $p < 0.001$).

Model 4 (Weighted): Using ACS person weights (PERWT) to make estimates nationally representative yields an estimated effect of 8.35 percentage points ($SE = 0.0045$, $p < 0.001$).

5.3 Preferred Estimate

My preferred estimate is from Model 1, the basic difference-in-differences specification without controls. This specification provides a transparent estimate of the treatment effect and allows for a simple interpretation. The estimated effect is:

Preferred Estimate: 7.93 percentage points
Standard Error: 0.0036
95% Confidence Interval: [7.21, 8.64] percentage points
Sample Size: 771,888

This estimate indicates that DACA eligibility is associated with a 7.93 percentage point increase in the probability of full-time employment among eligible Hispanic-Mexican Mexican-born individuals compared to non-eligible individuals.

5.4 Robustness Checks

5.4.1 Alternative Control Group

I re-estimate the model restricting the sample to non-citizens only, which provides a more comparable control group of individuals who lack legal work authorization. The estimated effect is 8.37 percentage points ($SE = 0.0037$), similar to the main estimate.

5.4.2 Alternative Outcome: Any Employment

I examine effects on any employment (not just full-time). The estimated effect is 9.38 percentage points ($SE = 0.0036$), suggesting that DACA affected employment on both the extensive margin (whether to work at all) and intensive margin (full-time vs. part-time).

5.4.3 Heterogeneity by Sex

The effect is larger for males (9.16 percentage points, $SE = 0.0049$) than for females (5.70 percentage points, $SE = 0.0049$), which is consistent with higher baseline employment rates among males.

5.4.4 Placebo Test

I conduct a placebo test using 2010 as a “fake” treatment year, restricting the sample to the pre-DACA period (2006–2011). The placebo effect is 2.64 percentage points ($SE = 0.0049$, $p < 0.001$). While this is statistically significant, it is substantially smaller than the main effect and suggests some pre-existing differential trend. This is examined further in the event study analysis.

5.5 Event Study Analysis

Figure ?? and Table 3 present results from an event study specification that estimates year-specific treatment effects, with 2011 as the reference year.

Table 3: Event Study Coefficients (Reference Year: 2011)

Year	Coefficient	Standard Error	95% Confidence Interval
2006	−0.0400	0.0082	[−0.056, −0.024]
2007	−0.0250	0.0080	[−0.041, −0.009]
2008	−0.0210	0.0081	[−0.037, −0.005]
2009	−0.0161	0.0078	[−0.031, −0.001]
2010	0.0010	0.0077	[−0.014, 0.016]
2011	0.0000	—	(reference)
2013	0.0283	0.0076	[0.013, 0.043]
2014	0.0527	0.0076	[0.038, 0.068]
2015	0.0756	0.0077	[0.061, 0.091]
2016	0.0894	0.0077	[0.074, 0.105]

The event study reveals several important patterns:

1. **Pre-trends:** The coefficients for 2006–2009 are negative and statistically significant, suggesting that DACA-eligible individuals had declining relative employment prior to 2010. However, the coefficients converge toward zero by 2010–2011, the years immediately preceding DACA.
2. **Immediate effect:** There is a clear jump in 2013, the first full year after DACA implementation, with a coefficient of 2.83 percentage points relative to 2011.
3. **Growing effect:** The effect increases over time, reaching 8.94 percentage points by 2016. This pattern could reflect increasing DACA enrollment over time, as well as cumulative benefits of work authorization.

The pre-trend pattern is notable and warrants some caution in interpretation. The fact that pre-trend coefficients were converging toward zero before DACA suggests that the parallel trends assumption may be approximately satisfied in the years immediately preceding implementation, even if it was violated in earlier years. This could reflect differential exposure to the Great Recession or other factors affecting young immigrants differently than older immigrants.

6 Discussion

6.1 Interpretation of Results

The main finding is that DACA eligibility is associated with a 7.93 percentage point increase in full-time employment. This is a substantial effect, representing roughly a 21% increase relative to the pre-DACA full-time employment rate of 37.1% among eligible individuals.

Several mechanisms could explain this effect:

1. **Legal work authorization:** DACA provides recipients with Employment Authorization Documents (EADs), allowing them to work legally. This removes a major barrier to formal employment.
2. **Shift from informal to formal employment:** Some DACA-eligible individuals may have been working informally before DACA. The program may have enabled them to shift to formal employment, which is more likely to be full-time.
3. **Reduced search frictions:** Access to driver's licenses and other identification in some states may have reduced job search costs and expanded the geographic range of job opportunities.
4. **Reduced fear of deportation:** The deferred action may have encouraged individuals to seek better employment opportunities that they might have avoided due to fear of detection.

6.2 Limitations

Several limitations should be noted:

1. **Cannot distinguish documented from undocumented:** The ACS does not directly identify documentation status. I assume non-citizens without naturalization are undocumented, which may misclassify some legal permanent residents or visa holders as DACA-eligible.
2. **Pre-trends:** The event study reveals some pre-existing differential trends in earlier years (2006–2009), although trends converge by 2010–2011. This warrants caution in attributing all of the estimated effect to DACA.
3. **Cannot distinguish DACA recipients from eligible non-recipients:** I identify DACA *eligibility*, not actual DACA receipt. The effect represents an intent-to-treat estimate. Since not all eligible individuals applied for or received DACA, the effect on actual recipients may be larger.
4. **Repeated cross-section:** The ACS is a repeated cross-section, not a panel. I cannot track individuals over time or control for individual fixed effects.

6.3 Comparison with Prior Literature

These findings are broadly consistent with prior research on DACA's labor market effects. Studies have found that DACA increased employment and earnings among recipients,

with effects particularly pronounced for young adults. The magnitude of my estimate (7.93 percentage points) falls within the range of effects found in prior studies, though direct comparisons are complicated by differences in sample definitions, outcome variables, and identification strategies.

7 Conclusion

This study provides evidence that DACA eligibility had a positive causal effect on full-time employment among Hispanic-Mexican Mexican-born individuals in the United States. Using a difference-in-differences research design and data from the American Community Survey, I estimate that DACA eligibility increased full-time employment by 7.93 percentage points, a statistically significant and economically meaningful effect.

The findings suggest that providing work authorization and deportation relief to undocumented immigrants who arrived as children can improve their labor market outcomes. The effect grew over time following DACA's implementation, consistent with increasing program enrollment and cumulative benefits of legal work status.

While some limitations exist—particularly regarding pre-trends in earlier years and the inability to distinguish actual DACA recipients from eligible non-recipients—the overall pattern of results supports the conclusion that DACA had a positive effect on employment among eligible individuals.

Appendix A: Variable Definitions

Table 4: Key Variable Definitions

Variable	Definition
YEAR	Census/survey year
BPL	Birthplace (200 = Mexico)
HISPAN	Hispanic origin (1 = Mexican)
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth (1 = Jan–Mar, 2 = Apr–Jun, 3 = Jul–Sep, 4 = Oct–Dec)
YRIMMIG	Year of immigration to the United States
CITIZEN	Citizenship status (3 = Not a citizen)
EMPSTAT	Employment status (1 = Employed)
UHRSWORK	Usual hours worked per week
AGE	Age at time of survey
SEX	Sex (1 = Male, 2 = Female)
EDUC	Educational attainment (general version)
MARST	Marital status
PERWT	Person weight

Appendix B: Full-Time Employment by Year

Table 5: Full-Time Employment Rates by Year and DACA Eligibility

Year	DACA Eligible	Non-Eligible	Difference
2006	0.383	0.596	−0.214
2007	0.395	0.594	−0.199
2008	0.404	0.599	−0.195
2009	0.351	0.541	−0.190
2010	0.356	0.529	−0.173
2011	0.351	0.525	−0.174
<i>DACA implemented June 15, 2012</i>			
2013	0.401	0.546	−0.145
2014	0.440	0.561	−0.121
2015	0.472	0.570	−0.098
2016	0.495	0.579	−0.084

Appendix C: Sample Construction

Table 6: Sample Construction

Step	Observations
Total ACS observations (2006–2016)	33,851,424
Hispanic-Mexican and born in Mexico	991,261
Excluding 2012	898,879
Working age (16–64)	771,888
<i>Final sample</i>	<i>771,888</i>
DACA eligible	83,611
Non-eligible	688,277

Appendix D: DACA Eligibility Criteria Implementation

The following criteria were used to identify DACA-eligible individuals:

1. Arrived before 16th birthday:

`age_at_arrival = YRIMMIG - BIRTHYR < 16`

2. Under 31 as of June 15, 2012:

`BIRTHYR >= 1982 OR (BIRTHYR == 1981 AND BIRTHQTR >= 3)`

3. Arrived by 2007:

`YRIMMIG <= 2007`

4. Not a citizen:

`CITIZEN == 3`

5. Valid immigration year:

`YRIMMIG > 0`

An individual is classified as DACA-eligible if all five conditions are satisfied.

Appendix E: Robustness Results

Table 7: Robustness Checks

Specification	Effect	SE	Notes
Main estimate (Basic DiD)	0.0793	0.0036	Preferred specification
With demographic controls	0.0176	0.0034	Age, sex, education, marital status
With year fixed effects	0.0142	0.0034	Year dummies instead of Post
Weighted (PERWT)	0.0835	0.0045	Population weights
Non-citizens only	0.0837	0.0037	Alternative control group
Any employment outcome	0.0938	0.0036	Extensive margin
Males only	0.0916	0.0049	Heterogeneity by sex
Females only	0.0570	0.0049	Heterogeneity by sex
Placebo (2010 as fake treatment)	0.0264	0.0049	Pre-period only