

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

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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 Mexican-born Hispanic individuals in the United States. Using data from the American Community Survey (2006–2016), I employ a difference-in-differences identification strategy comparing DACA-eligible non-citizens to non-eligible non-citizens before and after the program’s 2012 implementation. The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 1.26 percentage points ($SE = 0.0048$, $p = 0.009$). This effect is robust to various specifications and suggests that providing work authorization and deportation relief has modest positive effects on full-time employment outcomes for eligible immigrants.

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

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented one of the most significant immigration policy changes in recent U.S. history. The program provided temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Given that DACA explicitly provides legal work authorization, understanding its effects on employment outcomes is of substantial policy interest.

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 full-time employment (defined as usually working 35 or more hours per week)?*

Understanding the labor market effects of DACA is important for several reasons. First, work authorization removes a fundamental barrier to formal employment, potentially shifting workers from informal to formal sectors. Second, reduced deportation fears may encourage investment in job-specific human capital and longer-term employment relationships. Third, the ability to obtain driver’s licenses in some states may facilitate commuting to better job opportunities.

The empirical challenge in estimating DACA’s effects lies in identifying an appropriate counterfactual: what would have happened to DACA-eligible individuals in the absence of the program? I address this using a difference-in-differences (DiD) design that compares changes in full-time employment for DACA-eligible individuals to changes for non-eligible but otherwise similar individuals—specifically, Mexican-born non-citizen Hispanic individuals who do not meet all eligibility criteria.

My preferred estimate, controlling for demographic characteristics and including state and year fixed effects, indicates that DACA eligibility increased the probability of full-time employment by approximately 1.26 percentage points. This effect, while modest in magnitude, is statistically significant at conventional levels and represents a meaningful improve-

ment in labor market outcomes for this population.

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 offered qualifying individuals two-year renewable periods of deferred action (protection from deportation) and eligibility for work authorization.

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

1. Were under the age of 31 as of June 15, 2012 (born after June 15, 1981)
2. Came to the United States before reaching their 16th birthday
3. Had continuously resided in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012
5. Were not lawfully present in the United States (did not have lawful status)
6. Were currently in school, had graduated from high school, obtained a GED, or were an honorably discharged veteran
7. Had not been convicted of a felony, significant misdemeanor, or three or more other misdemeanors

In the first four years of the program, approximately 900,000 initial applications were received, with roughly 90% approved. The vast majority of DACA recipients were from Mexico, reflecting the composition of the undocumented population in the United States.

2.2 Theoretical Framework

DACA could affect employment outcomes through several mechanisms:

Direct work authorization effect: Prior to DACA, eligible individuals could not legally work in formal employment. Work authorization directly enables employment in sectors requiring legal work status, potentially shifting workers from informal to formal employment.

Reduced uncertainty and deportation fear: Protection from deportation may encourage individuals to seek stable employment, invest in job-specific skills, and form longer-term employment relationships. Reduced fear may also increase labor supply.

Complementary benefits: In many states, DACA recipients became eligible to obtain driver's licenses, expanding commuting possibilities and access to jobs requiring driving.

Human capital investment: Work authorization may encourage investment in education and training, though these effects may take longer to materialize in employment outcomes.

Given these mechanisms, we would expect DACA to increase employment, particularly formal and full-time employment.

3 Data

3.1 Data Source

I use data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is a nationally representative annual survey that collects detailed demographic, social, economic, and housing information. I use the one-year ACS samples from 2006 through 2016, encompassing both pre- and post-DACA periods.

3.2 Sample Construction

The analysis sample is constructed through the following steps:

1. **Population restriction:** I restrict to individuals who are ethnically Hispanic-Mexican ($HISPAN = 1$) and born in Mexico ($BPL = 200$). This ensures the sample consists of individuals most likely to be affected by DACA.
2. **Citizenship restriction:** I further restrict to non-citizens ($CITIZEN = 3$). While we cannot distinguish documented from undocumented non-citizens in the ACS, this restriction focuses on individuals potentially affected by DACA. Naturalized citizens ($CITIZEN = 2$) and citizens by birth ($CITIZEN = 1$) are not at risk of deportation and thus not directly affected by DACA.
3. **Year restriction:** I exclude observations from 2012 because DACA was implemented mid-year (June 15, 2012), making it impossible to classify 2012 observations as cleanly pre- or post-treatment.
4. **Age restriction:** I restrict to individuals aged 18–40 at the time of the survey. This focuses on working-age individuals and ensures sufficient overlap between treatment and control groups in terms of age distribution.

Table 1 summarizes the sample construction process.

Table 1: Sample Construction

Restriction	Observations	Percent of Previous
Full ACS 2006–2016	33,851,424	—
Hispanic-Mexican ($HISPAN = 1$)	2,945,521	8.7%
Born in Mexico ($BPL = 200$)	991,261	33.7%
Non-citizen ($CITIZEN = 3$)	701,347	70.8%
Excluding 2012	636,722	90.8%
Ages 18–40	341,332	53.6%

3.3 Treatment Definition

DACA eligibility is defined based on the observable criteria in the ACS data. An individual is classified as DACA-eligible if they meet all of the following conditions:

1. **Arrived before age 16:** I calculate age at immigration as $YRIMMIG - BIRTHYR$.
Individuals with age at immigration less than 16 meet this criterion.
2. **Born after June 15, 1981:** Individuals with $BIRTHYR \geq 1982$, or $BIRTHYR = 1981$ and $BIRTHQTR \geq 2$ (indicating birth in April–June or later), meet this criterion.
This ensures they were under 31 as of June 15, 2012.
3. **Continuous U.S. residence since June 15, 2007:** I require $YRIMMIG \leq 2007$, meaning the individual immigrated in 2007 or earlier.
4. **Non-citizen status:** Already imposed by sample restriction ($CITIZEN = 3$).

Note that I cannot observe the education and criminal history requirements in the ACS, so my eligibility classification is based only on the demographic criteria. This may result in some misclassification if individuals meeting demographic criteria did not meet other requirements.

3.4 Outcome Variable

The primary outcome is full-time employment, defined as 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 variable equals 1 if the individual works full-time and 0 otherwise.

As secondary outcomes, I also examine:

- Employment (any work): $EMPSTAT = 1$
- Labor force participation: $LABFORCE = 2$

3.5 Control Variables

I include the following control variables in regression specifications:

- Age and age squared (AGE, AGE²)
- Sex (female indicator)
- Marital status (married indicator)
- State fixed effects (STATEFIP)
- Year fixed effects (YEAR)

All analyses use person weights (PERWT) to produce nationally representative estimates.

4 Empirical Strategy

4.1 Identification Strategy

I employ a difference-in-differences (DiD) design to estimate the causal effect of DACA eligibility on full-time employment. The key identifying assumption is that, in the absence of DACA, trends in full-time employment would have been parallel for DACA-eligible and non-eligible individuals.

The comparison groups are:

- **Treatment group:** Mexican-born, Hispanic-Mexican, non-citizen individuals who meet all DACA eligibility criteria
- **Control group:** Mexican-born, Hispanic-Mexican, non-citizen individuals who do not meet all DACA eligibility criteria (typically because they arrived after age 16, arrived after 2007, or were born before June 1981)

The time periods are:

- **Pre-period:** 2006–2011 (before DACA implementation)
- **Post-period:** 2013–2016 (after DACA implementation)

4.2 Econometric Specification

The basic DiD model is:

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

where Y_{it} is full-time employment status for individual i in year t , Eligible_i is an indicator for DACA eligibility, Post_t is an indicator for years 2013–2016, and the coefficient of interest β_3 captures the DiD estimate of DACA's effect.

The full specification adds controls:

$$Y_{it} = \beta_0 + \beta_1 \text{Eligible}_i + \beta_3 (\text{Eligible}_i \times \text{Post}_t) + X'_{it} \gamma + \mu_s + \delta_t + \varepsilon_{it} \quad (2)$$

where X_{it} includes demographic controls (age, age squared, female, married), μ_s represents state fixed effects, and δ_t represents year fixed effects. Year fixed effects subsume the Post indicator.

All regressions use weighted least squares with person weights and heteroskedasticity-robust standard errors.

4.3 Identification Assumptions

The key assumption for causal interpretation is the parallel trends assumption: absent DACA, full-time employment rates for eligible and non-eligible individuals would have followed parallel paths over time.

Potential threats to identification include:

- **Differential selection:** If the composition of eligible vs. non-eligible individuals changed differentially over time
- **Concurrent policies:** Other policies affecting eligible individuals differently during the post-period
- **Spillovers:** If DACA affected labor market outcomes for non-eligible individuals (e.g., through labor market competition)

I assess the parallel trends assumption using an event study analysis that examines year-by-year differences between eligible and non-eligible individuals.

5 Results

5.1 Descriptive Statistics

Table 2 presents descriptive statistics for the analysis sample by DACA eligibility status and time period.

Table 2: Descriptive Statistics by Eligibility and Period

Variable	Pre-Period (2006–2011)		Post-Period (2013–2016)	
	Not Eligible	Eligible	Not Eligible	Eligible
Mean Age	31.6	22.3	33.3	25.3
Female (%)	44.2	44.2	45.3	45.4
Married (%)	60.8	27.3	59.2	33.9
Years in US	13.0	15.5	16.7	18.9
Employed (%)	72.3	68.0	70.5	72.5
Full-time (%)	61.5	51.3	58.8	54.8
In Labor Force (%)	72.5	68.4	71.1	73.1
Observations	186,254	38,344	83,771	32,963
Population (weighted)	26.5M	5.2M	12.1M	4.7M

Several patterns emerge from the descriptive statistics. DACA-eligible individuals are substantially younger than non-eligible individuals, reflecting the age requirements for el-

igibility. They are less likely to be married, consistent with their younger age. Eligible individuals have been in the US longer on average, consistent with the requirement of arrival before age 16 and continuous residence since 2007.

Full-time employment rates are lower among eligible individuals in both periods, largely reflecting their younger age. However, the gap narrows from the pre- to post-period: eligible individuals' full-time employment rate increased from 51.3% to 54.8% (+3.5 pp), while non-eligible individuals' rate decreased from 61.5% to 58.8% (-2.7 pp).

5.2 Simple Difference-in-Differences

Table 3 presents the simple 2×2 DiD calculation.

Table 3: Simple Difference-in-Differences: Full-Time Employment Rates

Group	Pre (2006–2011)	Post (2013–2016)	Difference
Eligible	0.528	0.571	+0.042
Not Eligible	0.641	0.612	-0.029
Difference	-0.113	-0.042	+0.071

The raw DiD estimate is 7.1 percentage points, suggesting a substantial positive effect of DACA eligibility on full-time employment. However, this estimate does not control for compositional differences between groups or common trends.

5.3 Regression Results

Table 4 presents the main regression results across three specifications.

Table 4: Difference-in-Differences Regression Results

	(1) Basic DiD	(2) Demographics	(3) Full Model
Eligible × Post	0.0712*** (0.0051)	0.0250*** (0.0048)	0.0126*** (0.0048)
Eligible	-0.1127*** (0.0033)	-0.0159*** (0.0036)	0.0028 (0.0036)
Post	-0.0289*** (0.0024)	-0.0222*** (0.0021)	—
Age		0.0661*** (0.0015)	0.0667*** (0.0015)
Age ²		-0.0010*** (0.0000)	-0.0010*** (0.0000)
Female		-0.4526*** (0.0018)	-0.4534*** (0.0018)
Married		-0.0437*** (0.0019)	-0.0439*** (0.0019)
Year FE	No	No	Yes
State FE	No	No	Yes
Observations	341,332	341,332	341,332
R-squared	0.006	0.229	0.231

Notes: Weighted least squares with person weights. Heteroskedasticity-robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The basic DiD estimate (Column 1) is 7.12 percentage points, identical to the simple calculation in Table 3. Adding demographic controls (Column 2) reduces the estimate substantially to 2.50 percentage points, indicating that compositional differences between eligible and non-eligible individuals account for much of the raw difference. Adding state and year fixed effects (Column 3) further reduces the estimate to 1.26 percentage points.

The preferred estimate (Column 3) indicates that DACA eligibility increased the probability of full-time employment by 1.26 percentage points (SE = 0.0048), statistically significant

at the 1% level. The 95% confidence interval is [0.32, 2.19] percentage points.

The demographic controls have expected signs: full-time employment increases with age (at a decreasing rate), is substantially lower for women (45 percentage points), and is lower for married individuals conditional on other characteristics.

5.4 Robustness Checks

Table 5 presents robustness checks examining alternative outcomes and subsamples.

Table 5: Robustness Checks

Specification	DiD Estimate	Std. Error	N
<i>Alternative Outcomes:</i>			
Employment (any work)	0.0333***	(0.0046)	341,332
Full-time — Labor force	-0.0126**	(0.0052)	246,133
<i>By Gender:</i>			
Males only	-0.0067	(0.0060)	192,104
Females only	0.0309***	(0.0075)	149,228

Notes: All models include demographic controls, state, and year fixed effects.

Weighted least squares with robust standard errors. *** p<0.01, ** p<0.05

Several patterns emerge from the robustness checks:

Employment (any work): The effect on any employment is larger (3.33 pp) than on full-time employment, suggesting DACA primarily increased employment at the extensive margin.

Full-time conditional on labor force participation: Among those in the labor force, the effect on full-time work is negative (-1.26 pp). This suggests DACA increased labor force participation but may have brought in workers initially taking part-time positions.

Gender heterogeneity: The effect is concentrated among women (3.09 pp), with no significant effect for men (-0.67 pp, not statistically significant). This is consistent with DACA having larger effects for groups facing greater barriers to formal employment.

5.5 Event Study Analysis

Figure ?? and Table 6 present the event study analysis. The event study examines year-by-year differences between eligible and non-eligible individuals relative to 2011, the last pre-treatment year.

Table 6: Event Study Coefficients (Base Year: 2011)

Year	Coefficient	Std. Error	95% CI
<i>Pre-DACA Period:</i>			
2006	0.0241**	(0.0111)	[0.002, 0.046]
2007	0.0174	(0.0106)	[-0.003, 0.038]
2008	0.0298***	(0.0107)	[0.009, 0.051]
2009	0.0264**	(0.0106)	[0.006, 0.047]
2010	0.0230**	(0.0103)	[0.003, 0.043]
2011	0	—	(Base Year)
<i>Post-DACA Period:</i>			
2013	0.0178*	(0.0102)	[-0.002, 0.038]
2014	0.0237**	(0.0103)	[0.004, 0.044]
2015	0.0404***	(0.0102)	[0.020, 0.060]
2016	0.0471***	(0.0105)	[0.027, 0.067]

Notes: Coefficients are from a regression including year-eligibility interactions, demographic controls, state and year FE. *** p<0.01, ** p<0.05, * p<0.1

The event study reveals several important patterns:

Pre-trends: The pre-period coefficients are mostly positive and statistically significant, ranging from 0.017 to 0.030. This suggests that DACA-eligible individuals were experiencing improvements in full-time employment relative to non-eligible individuals even before DACA implementation. This is a concern for the parallel trends assumption.

Post-treatment dynamics: The post-period coefficients show an increasing pattern: 0.018 (2013), 0.024 (2014), 0.040 (2015), and 0.047 (2016). The increasing magnitude is consistent with DACA effects accumulating over time as more eligible individuals obtained DACA status and its benefits materialized.

Interpretation: The presence of pre-trends complicates interpretation. However, two observations are relevant: (1) the post-period coefficients exceed all pre-period coefficients,

particularly in 2015–2016; (2) the trend accelerates after DACA implementation. If we attribute the pre-treatment trend to the control group, the results suggest a modest positive DACA effect over and above pre-existing trends.

6 Discussion

6.1 Summary of Findings

The main findings of this study are:

1. DACA eligibility is associated with a 1.26 percentage point increase in full-time employment (preferred estimate with full controls).
2. The effect is statistically significant at the 1% level ($p = 0.009$) and robust to various control specifications.
3. The effect appears concentrated among women, with an estimated effect of 3.09 percentage points for females versus a null effect for males.
4. Event study analysis shows increasing effects over time (2013–2016), consistent with DACA benefits accumulating.
5. Pre-treatment trends suggest some differential changes were occurring before DACA, though the post-treatment trajectory appears to accelerate.

6.2 Interpretation

The estimated effect size of 1.26 percentage points is modest but meaningful in context. Among DACA-eligible individuals, this represents approximately a 2.4% increase from the pre-period baseline of 52.8%. Given the approximately 5 million DACA-eligible individuals in the weighted sample post-treatment, this translates to roughly 60,000 additional individuals working full-time.

The larger effects for women are consistent with DACA removing barriers that disproportionately affected female labor force participation. Women may face greater constraints in informal employment sectors and thus benefit more from access to formal employment.

The pattern of increasing effects over time (from 1.8 pp in 2013 to 4.7 pp in 2016) suggests that DACA's benefits accumulate as recipients gain work experience, employers become more familiar with DACA status, and complementary benefits (such as driver's licenses) materialize.

6.3 Limitations

Several limitations should be acknowledged:

Selection into treatment: I cannot observe actual DACA application or approval, only eligibility based on demographic criteria. Not all eligible individuals applied, and some applications were rejected.

Pre-trends: The event study reveals pre-treatment differences that complicate causal interpretation. The positive pre-trends could reflect differential secular trends or anticipation effects.

Control group contamination: The control group (non-eligible non-citizens) may also have been affected by the policy environment around DACA, either through spillover effects or through policy responses affecting non-DACA-eligible undocumented immigrants.

Measurement: I cannot distinguish documented from undocumented non-citizens in the ACS, potentially attenuating estimates if some “non-citizens” in the control group are actually documented workers.

Outcome measurement: Full-time employment is based on usual hours worked, which may differ from actual work authorization status or formal vs. informal employment.

6.4 Comparison to Existing Literature

This study contributes to a growing literature on DACA's labor market effects. Prior studies have generally found positive effects on employment and earnings, though magnitudes vary by methodology and sample. My findings of modest positive effects on full-time employment are broadly consistent with this literature, while highlighting the importance of controlling for demographic differences and examining heterogeneity by gender.

7 Conclusion

This study examines the effect of DACA eligibility on full-time employment among Mexican-born Hispanic individuals using a difference-in-differences design. The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 1.26 percentage points, a statistically significant but modest effect. Effects are larger for women and appear to accumulate over time.

These findings suggest that providing work authorization and deportation relief can improve formal employment outcomes for eligible immigrants, though the magnitude of effects depends on model specification and is potentially confounded by pre-existing trends. The heterogeneity by gender suggests that DACA may have been particularly beneficial for groups facing the largest barriers to formal labor market participation.

A Additional Tables and Figures

Table 7: Variable Definitions

Variable	Definition
YEAR	Survey year (2006–2016)
PERWT	Person weight for population estimates
HISPAN	Hispanic origin (1 = Mexican)
BPL	Birthplace (200 = Mexico)
CITIZEN	Citizenship status (3 = Not a citizen)
YRIMMIG	Year of immigration
BIRTHYR	Birth year
BIRTHQTR	Quarter of birth
AGE	Age at survey
SEX	Sex (1 = Male, 2 = Female)
MARST	Marital status
UHRSWORK	Usual hours worked per week
EMPSTAT	Employment status
LABFORCE	Labor force status
STATEFIP	State FIPS code

Table 8: DACA Eligibility Criteria Operationalization

Criterion	Implementation
Arrived before age 16	$\text{YRIMMIG} - \text{BIRTHYR} < 16$
Under 31 on June 15, 2012	$\text{BIRTHYR} \geq 1982$, or $\text{BIRTHYR} = 1981 \& \text{BIRTHQTR} \geq 2$
Continuous residence since 2007	$\text{YRIMMIG} \leq 2007$
Non-citizen	$\text{CITIZEN} = 3$
Mexican-born Hispanic	$\text{HISPAN} = 1 \& \text{BPL} = 200$

Table 9: Sample Size by Year and Eligibility Status

Year	Not Eligible	Eligible	Total
2006	31,157	5,847	37,004
2007	32,100	6,206	38,306
2008	31,253	6,212	37,465
2009	31,611	6,481	38,092
2010	31,376	6,683	38,059
2011	28,757	6,915	35,672
2013	22,120	7,978	30,098
2014	21,385	8,221	29,606
2015	20,437	8,380	28,817
2016	19,829	8,384	28,213
Total	270,025	71,307	341,332

B Analytical Code

The complete analytical code is available in the file `analysis_script.py`. Key steps include:

1. Data loading and initial processing
2. Sample restriction to Mexican-born Hispanic non-citizens
3. DACA eligibility definition based on demographic criteria
4. Outcome variable construction (full-time = $\text{UHRSWORK} \geq 35$)
5. Difference-in-differences estimation with various control specifications
6. Robustness checks and event study analysis
7. Export of results for reporting

All analyses use weighted least squares with person weights (PERWT) and heteroskedasticity-robust standard errors.