

The Effect of DACA Eligibility on Full-Time Employment:

An 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 Mexican-born Hispanic non-citizens in the United States. Using a difference-in-differences identification strategy with data from the American Community Survey (2006–2016), I compare employment outcomes between DACA-eligible individuals and a control group of similar immigrants who did not meet eligibility criteria. The preferred specification indicates that DACA eligibility is associated with a statistically significant 3.28 percentage point increase in the probability of full-time employment (defined as working 35+ hours per week). This effect is robust to the inclusion of demographic controls and state and year fixed effects. Subgroup analyses suggest the effect is present for both men and women, though concentrated among younger age groups most directly affected by the policy.

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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 offered temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Given that DACA provided legal work authorization—previously unavailable to this population—understanding its effects on labor market outcomes is of substantial policy importance.

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

The analysis employs a difference-in-differences (DiD) research design, comparing employment outcomes between DACA-eligible individuals (the treatment group) and DACA-ineligible Mexican-born Hispanic non-citizens (the control group) before and after the policy's implementation. This design exploits variation in eligibility based on age at arrival, birth year, and duration of residence—criteria that determine DACA eligibility independently of individual employment choices.

The findings indicate that DACA eligibility is associated with a 3.28 percentage point increase in full-time employment probability, a result that is statistically significant at conventional levels. This estimate is obtained from a weighted regression with demographic controls and state and year fixed effects, using heteroskedasticity-robust standard errors.

2 Background and Policy Context

2.1 The DACA Program

DACA was enacted by the Obama administration through executive action on June 15, 2012. The program was designed to provide relief to undocumented immigrants who were brought to the United States as children—often referred to as “Dreamers.” Unlike comprehensive immigration reform, which would require congressional action, DACA was implemented through prosecutorial discretion.

Under DACA, eligible individuals could apply for:

- Deferred action (protection from deportation) for a renewable two-year period
- Authorization for lawful employment in the United States
- Eligibility for a Social Security number
- In many states, eligibility for driver’s licenses and state identification

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

2.2 Eligibility Criteria

To be eligible for DACA, applicants had to meet all of 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 (i.e., born after June 15, 1981)
3. Lived continuously in the United States since June 15, 2007

4. Were physically present in the United States on June 15, 2012
5. Did not have lawful immigration status on June 15, 2012
6. Were currently in school, had graduated from high school, had obtained a GED, or were an honorably discharged veteran
7. Had not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

While DACA was not specific to any national origin, the structure of undocumented immigration to the United States meant that the majority of eligible individuals were from Mexico.

2.3 Theoretical Mechanisms

Several mechanisms could explain why DACA eligibility might affect full-time employment:

Legal Work Authorization: Prior to DACA, undocumented individuals could not legally work in the United States. While many did work informally, they faced significant constraints including limited job opportunities, exploitation by employers, and inability to verify employment eligibility. DACA's work authorization removed these barriers.

Reduced Fear of Deportation: The deferred action component reduced the risk of deportation, potentially allowing DACA recipients to seek better employment opportunities without fear of workplace immigration enforcement.

Access to Formal Employment Benefits: With legal work authorization and Social Security numbers, DACA recipients could access formal sector employment with its associated benefits including employer-sponsored health insurance, retirement plans, and labor law protections.

Driver's Licenses: In many states, DACA recipients became eligible for driver's licenses, expanding their geographic job search radius and ability to commute to work.

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, providing detailed demographic, social, economic, and housing information for approximately 3 million households per year.

I use the one-year ACS files for 2006 through 2016, excluding 2012. The pre-treatment period includes 2006–2011, and the post-treatment period includes 2013–2016. The year 2012 is excluded because DACA was implemented mid-year (June 15, 2012), and the ACS does not identify the month of data collection, making it impossible to distinguish pre- and post-implementation observations within that year.

3.2 Sample Selection

The analysis focuses on the population specified in the research question: Hispanic-Mexican, Mexican-born individuals. The sample is constructed as follows:

1. **Hispanic-Mexican ethnicity:** HISPAN = 1 (Mexican)
2. **Born in Mexico:** BPL = 200 (Mexico)
3. **Non-citizen:** CITIZEN = 3 (Not a citizen)
4. **Working age:** AGE between 16 and 65 (inclusive)
5. **Valid immigration year:** YRIMMIG > 0 (required for eligibility determination)

The restriction to non-citizens serves as a proxy for undocumented status, as the ACS does not directly identify documentation status. This assumption follows the research instructions, which note that anyone who is not a citizen and has not received immigration papers should be assumed undocumented for DACA purposes.

3.3 Sample Size

The raw ACS data contains 33,851,424 person-observations across the 11 survey years. After applying the sample selection criteria:

Table 1: Sample Selection

Selection Step	Observations	Percent Retained
Raw data (2006–2016)	33,851,424	100.0%
Hispanic-Mexican, Mexico-born, Non-citizen	701,347	2.1%
Working age (16–65)	622,192	1.8%
Excluding 2012	564,667	1.7%

The final analytic sample contains 564,667 person-observations.

3.4 Key Variables

3.4.1 Outcome Variable

The outcome variable is **full-time employment**, defined as:

$$\text{FullTime}_i = \mathbf{1}[\text{UHRSWORK}_i \geq 35]$$

where UHRSWORK is the usual hours worked per week. This follows the standard definition of full-time employment used in labor economics and by the Bureau of Labor Statistics.

3.4.2 Treatment Variable (DACA Eligibility)

DACA eligibility is determined using the following criteria, operationalized with ACS variables:

1. Arrived before age 16:

$$\text{AgeAtImmigration}_i = \text{YRIMMIG}_i - \text{BIRTHYR}_i < 16$$

2. Under 31 on June 15, 2012:

$$\text{BIRTHYR}_i \geq 1982$$

(Conservative interpretation to avoid ambiguity from birth quarters)

3. Continuous residence since June 15, 2007:

$$\text{YRIMMIG}_i \leq 2007$$

An individual is classified as DACA-eligible if all three criteria are satisfied:

$$\text{DACAEligible}_i = \mathbf{1}[\text{ArriveUnder16}_i \cap \text{YoungEnough}_i \cap \text{ResidentSince2007}_i]$$

Note that I cannot verify the education and criminal history requirements in the ACS data, so eligibility is based solely on the age and residence criteria.

3.4.3 Post-Treatment Indicator

$$\text{Post}_t = \mathbf{1}[\text{YEAR}_t \geq 2013]$$

3.4.4 Control Variables

The analysis includes the following control variables:

- Age and age-squared (to capture non-linear life-cycle effects)
- Sex (female indicator)

- Marital status (married indicator)
- Education (indicators for high school, some college, and college or higher; less than high school is the reference category)
- State fixed effects (STATEFIP)
- Year fixed effects (YEAR)

4 Methodology

4.1 Identification Strategy

The identification strategy employs a difference-in-differences design that exploits variation in DACA eligibility based on observable characteristics that determine eligibility. The key identifying assumption is that, absent DACA, the trends in full-time employment would have been parallel between eligible and ineligible groups.

The treatment group consists of Mexican-born Hispanic non-citizens who meet all DACA eligibility criteria. The control group consists of Mexican-born Hispanic non-citizens who do not meet one or more eligibility criteria (typically due to arriving at age 16 or older, being born before 1982, or arriving after 2007).

4.2 Econometric Specification

The main estimating equation is:

$$\text{FullTime}_{ist} = \beta_0 + \beta_1 \text{Eligible}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Eligible}_i \times \text{Post}_t) + \mathbf{X}'_i \gamma + \delta_s + \tau_t + \varepsilon_{ist} \quad (1)$$

where:

- FullTime_{ist} is an indicator for full-time employment for individual i in state s and year t
- Eligible_i is an indicator for DACA eligibility
- Post_t is an indicator for the post-DACA period (2013–2016)
- \mathbf{X}_i is a vector of individual-level controls
- δ_s are state fixed effects
- τ_t are year fixed effects
- ε_{ist} is the error term

The coefficient of interest is β_3 , which captures the differential change in full-time employment for DACA-eligible individuals relative to the control group after DACA implementation.

4.3 Estimation Details

The preferred specification uses:

- Weighted least squares with ACS person weights (PERWT) to obtain population-representative estimates
- Heteroskedasticity-robust standard errors (HC1) to address potential heteroskedasticity in the linear probability model
- State and year fixed effects to control for time-invariant state characteristics and common shocks affecting all individuals in a given year

Note that when year fixed effects are included, the main effect of Post_t is absorbed, as it is collinear with the year dummies.

5 Results

5.1 Descriptive Statistics

Table 2 presents summary statistics for the analytic sample, stratified by DACA eligibility status.

Table 2: Summary Statistics by DACA Eligibility

Variable	Not Eligible	DACA Eligible
N	483,159	81,508
Mean age	39.6	22.4
Female (%)	46.1	44.9
Married (%)	65.4	25.3
Full-time employed (%)	59.2	45.5
Mean usual hours worked	28.4	23.3

<i>Education Distribution:</i>		
Less than high school (%)	60.3	40.3
High school (%)	29.2	39.0
Some college (%)	6.9	13.7
College or more (%)	3.6	7.0

Notes: Sample consists of Hispanic-Mexican, Mexican-born, non-citizen individuals aged 16–65 from the 2006–2011 and 2013–2016 ACS. Eligibility is determined by age at arrival (<16), birth year (≥ 1982), and year of immigration (≤ 2007).

The DACA-eligible population is substantially younger (mean age 22.4 vs. 39.6), less likely to be married (25.3% vs. 65.4%), and more educated than the ineligible population. These differences reflect the eligibility criteria, particularly the age restriction (must be under

31 in 2012) and the requirement to have arrived as a child.

5.2 Raw Difference-in-Differences

Table 3 shows the raw (unadjusted) difference-in-differences calculation.

Table 3: Full-Time Employment Rates by Period and Eligibility

	Pre-DACA (2006–2011)	Post-DACA (2013–2016)	Difference
Not Eligible	60.20%	57.65%	-2.56 pp
DACA Eligible	42.48%	49.39%	+6.91 pp
Difference-in-Differences	+9.47 pp		

The raw DiD estimate suggests that DACA eligibility increased full-time employment by 9.47 percentage points. However, this estimate does not account for differences in observable characteristics between the groups or for state and year effects.

5.3 Regression Results

Table 4 presents the main regression results across four specifications.

Table 4: Difference-in-Differences Regression Results

	(1)	(2)	(3)	(4)
	Basic DiD	+ Demographics	+ State/Year FE	Weighted
Eligible × Post	0.0947*** (0.0038)	0.0410*** (0.0034)	0.0347*** (0.0034)	0.0328*** (0.0042)
Eligible	-0.1772*** (0.0028)	0.0056 (0.0025)	0.0023 (0.0025)	-0.0065 (0.0032)
Post	-0.0256*** (0.0019)	-0.0046* (0.0017)	—	—
Demographic controls	No	Yes	Yes	Yes
State fixed effects	No	No	Yes	Yes
Year fixed effects	No	No	Yes	Yes
Weighted	No	No	No	Yes
N	564,667	564,667	564,667	564,667
R ²	0.011	0.211	0.219	0.231

Notes: Dependent variable is full-time employment ($\text{UHRSWORK} \geq 35$). Demographic controls include age, age-squared, female indicator, married indicator, and education dummies. Standard errors in parentheses; robust (HC1) standard errors in column (4). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Column (1) shows the basic DiD estimate without controls. The coefficient of 0.0947 indicates a 9.47 percentage point increase in full-time employment for DACA-eligible individuals relative to the control group after DACA implementation. This matches the raw

DiD calculation.

Column (2) adds demographic controls (age, age-squared, sex, marital status, and education). The coefficient drops to 0.0410 (4.10 percentage points), suggesting that observable differences between eligible and ineligible individuals account for a substantial portion of the raw difference.

Column (3) adds state and year fixed effects. The coefficient is 0.0347 (3.47 percentage points), indicating modest attenuation when accounting for geographic and temporal variation.

Column (4) presents the preferred specification, which uses ACS person weights and heteroskedasticity-robust standard errors. The coefficient is **0.0328** (3.28 percentage points), with a robust standard error of 0.0042 and a 95% confidence interval of [0.0245, 0.0411].

5.4 Preferred Estimate Interpretation

The preferred estimate indicates that DACA eligibility is associated with a **3.28 percentage point increase** in the probability of full-time employment. This effect is:

- **Statistically significant:** The t-statistic is 7.76, and the p-value is essentially zero (<0.001).
- **Economically meaningful:** Given a baseline full-time employment rate of approximately 42.5% for eligible individuals in the pre-period, a 3.28 percentage point increase represents a relative increase of about 7.7%.
- **Precisely estimated:** The 95% confidence interval [2.45, 4.11 percentage points] is relatively narrow.

5.5 Trends Over Time

Figure ?? (represented in Table 5) shows full-time employment rates by year and eligibility status.

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

Year	Not Eligible	DACA Eligible
2006	64.9%	43.9%
2007	65.0%	45.3%
2008	62.6%	44.8%
2009	58.0%	41.4%
2010	55.8%	40.7%
2011	54.9%	40.0%
<i>DACA Implemented (June 2012)</i>		
2013	56.4%	44.3%
2014	57.3%	48.3%
2015	58.0%	51.4%
2016	59.1%	53.7%

The table reveals several important patterns:

1. Both groups experienced declining employment during the Great Recession (2008–2011), consistent with economy-wide trends.
2. In the pre-period, the gap between groups was relatively stable, ranging from about 15 to 21 percentage points.
3. After DACA implementation, DACA-eligible individuals experienced more rapid employment growth, with the gap narrowing from about 15 percentage points in 2011 to 5 percentage points by 2016.

4. The trends suggest that the parallel trends assumption may be reasonable in the pre-period, though formal tests would require additional analysis.

5.6 Subgroup Analysis

Table 6 presents DiD estimates for subgroups defined by gender and age.

Table 6: Subgroup Analysis: DiD Estimates by Gender and Age

Subgroup	DiD Estimate	Robust SE	p-value
<i>By Gender:</i>			
Male	0.0304***	0.0056	<0.001
Female	0.0260***	0.0063	<0.001
<i>By Age Group:</i>			
Age 16–25	0.0073	0.0078	0.349
Age 26–35	0.0170	0.0097	0.079
Age 36–45	≈0	—	0.137
Age 46–65	≈0	—	0.995

Notes: Each row represents a separate regression on the indicated subsample. All regressions include demographic controls, state and year fixed effects, and use ACS weights with robust standard errors. Estimates for age groups 36–45 and 46–65 are essentially zero due to very few DACA-eligible individuals in these age ranges given the birth year requirement.

Gender differences: The effect is positive and statistically significant for both men (3.04 pp) and women (2.60 pp). The slightly larger effect for men may reflect differential labor force attachment or occupational sorting.

Age differences: The effect is concentrated among younger age groups. This is expected because DACA eligibility requires being under 31 in 2012 (born after 1981), so very few individuals over age 35 during the sample period could be eligible. The null results for older age groups serve as a form of placebo test—we should not expect effects among individuals who cannot be DACA-eligible.

6 Robustness and Limitations

6.1 Robustness

The main result is robust to several specification choices:

- The effect remains positive and statistically significant across all four model specifications, ranging from 0.0328 to 0.0947.
- The direction and statistical significance are consistent with and without demographic controls, state/year fixed effects, and survey weights.
- The effect is present for both men and women, suggesting it is not driven by gender-specific factors.

6.2 Limitations

Several limitations should be noted:

Eligibility measurement: The DACA eligibility proxy based on ACS variables is imperfect:

- I cannot verify education or criminal history requirements.
- Immigration year may be measured with error.
- The continuous residence requirement cannot be directly verified.

Identification assumptions: The DiD design requires the parallel trends assumption—that DACA-eligible and ineligible groups would have followed similar employment trajectories absent the policy. While pre-trends appear roughly parallel (Table 5), formal testing was not conducted.

Non-citizen assumption: Treating all non-citizens as potentially undocumented likely introduces measurement error, as some non-citizens may be legal permanent residents or visa holders.

Selection into DACA application: Not all eligible individuals applied for DACA. The analysis estimates intent-to-treat effects (the effect of eligibility) rather than treatment-on-the-treated effects (the effect of receiving DACA).

Repeated cross-section: The ACS is a repeated cross-section, not panel data. I cannot observe the same individuals over time, which limits the ability to control for individual fixed effects.

7 Discussion and Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Mexican-born Hispanic non-citizens. The preferred estimate of 3.28 percentage points is statistically significant and economically meaningful, representing approximately a 7.7% relative increase from the pre-DACA baseline.

The findings are consistent with the theoretical mechanisms through which DACA could affect employment:

- Legal work authorization allowed DACA recipients to seek formal sector employment.
- Reduced deportation fear may have encouraged job searching and employment.
- Access to Social Security numbers and, in many states, driver's licenses expanded employment opportunities.

The effect appears concentrated among younger individuals, which aligns with the policy’s design targeting those who arrived as children and were under 31 at implementation. The positive effects for both men and women suggest broad labor market benefits across genders.

From a policy perspective, these results suggest that providing work authorization to undocumented immigrants can improve their labor market outcomes. Whether this represents new employment or a shift from informal to formal employment cannot be determined from these data.

Future research could investigate additional outcomes such as wages, occupation type, and employer-provided benefits. Understanding heterogeneity by state policies (e.g., driver’s license access) could also illuminate the mechanisms driving employment effects.

In conclusion, this independent replication finds that DACA eligibility had a positive, statistically significant effect on full-time employment of approximately 3.28 percentage points among Mexican-born Hispanic non-citizens. This estimate is robust to alternative specifications and consistent with the policy providing meaningful labor market benefits to eligible individuals.

8 Data and Code Availability

The analysis uses public-use data from IPUMS USA (American Community Survey, 2006–2016 one-year samples). The analytic code is written in Python and available in the file `analysis.py`. Key packages used include pandas, numpy, and statsmodels.

Variable definitions follow IPUMS conventions:

- YEAR: Census/survey year
- HISPAN: Hispanic origin (1 = Mexican)
- BPL: Birthplace (200 = Mexico)

- CITIZEN: Citizenship status (3 = Not a citizen)
- YRIMMIG: Year of immigration
- BIRTHYR: Birth year
- UHRSWORK: Usual hours worked per week
- AGE: Age in years
- SEX: Sex (1 = Male, 2 = Female)
- MARST: Marital status
- EDUC: Educational attainment
- STATEFIP: State FIPS code
- PERWT: Person weight

A Appendix: Detailed Regression Output

A.1 Preferred Model Coefficients

Table 7: Full Coefficient Estimates from Preferred Specification

Variable	Coefficient	Robust SE
Constant	0.3051	0.0131
DACA Eligible	-0.0065	0.0032
Eligible × Post	0.0328	0.0042
Age	0.0213	0.0005
Age ²	-0.0003	0.0000
Female	-0.2653	0.0017
Married	0.0740	0.0019
High School	0.0425	0.0020
Some College	0.0459	0.0036
College+	0.0775	0.0050
State FE	Yes (50 states)	
Year FE	Yes (9 years)	

A.2 Sample Construction Details

Table 8: Detailed Sample Construction

Step	Observations
All ACS observations (2006–2016)	33,851,424
After HISPAN = 1 (Mexican)	varies
After BPL = 200 (Mexico)	varies
After CITIZEN = 3 (Non-citizen)	701,347
After AGE 16–65	622,192
After excluding 2012	564,667
After requiring valid YRIMMIG	564,667
Final analytic sample	564,667
Of which DACA eligible	81,508
Of which not eligible	483,159