

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

Replication Study

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Abstract

This study examines the causal effect 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 American Community Survey data from 2006–2016, I find that DACA eligibility increased full-time employment by approximately 6.3 percentage points (SE = 0.0063, $p < 0.001$). This effect is robust across multiple specifications including models with demographic controls, year fixed effects, and state fixed effects. Event study analysis reveals that the treatment effects grew over time, reaching nearly 9 percentage points by 2016. These findings suggest that DACA’s provision of work authorization and deportation relief 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 was announced by the Obama administration on June 15, 2012, representing one of the most significant immigration policy changes affecting young undocumented immigrants in recent U.S. history. The program allows eligible undocumented immigrants who arrived in the United States as children to apply for a renewable two-year period of deferred action from deportation and eligibility for a work permit.

This study addresses the following 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, defined as usually working 35 or more hours per week?

The identification strategy exploits the specific eligibility criteria for DACA, which create sharp distinctions between otherwise similar individuals based on their age at arrival and current age. By comparing changes in full-time employment for DACA-eligible individuals relative to similar individuals who do not meet the eligibility criteria, I can identify the causal effect of DACA eligibility on labor market outcomes.

The main finding is that DACA eligibility increased full-time employment by approximately 6.3 percentage points, representing a substantial improvement in labor market outcomes for this population. This effect is statistically significant at the 1% level and robust across multiple specifications.

2 Background

2.1 The DACA Program

DACA was implemented on June 15, 2012, following an announcement by President Obama. The program was designed to address the situation of young people who were brought to the United States as children and had grown up in the country but lacked legal immigration status.

To be eligible for DACA, individuals must 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. 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 at least 15 years old at the time of application

Applications for the program began being accepted on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved. Recipients could later apply for renewal of their status for additional two-year periods.

2.2 Theoretical Mechanisms

DACA could affect full-time employment through several channels:

Direct Work Authorization: The most direct mechanism is that DACA provides recipients with legal work authorization. Prior to DACA, undocumented individuals faced significant barriers to formal employment, including the inability to provide valid work authorization documents to employers. DACA recipients can obtain Employment Authorization Documents (EADs), allowing them to work legally for any U.S. employer.

Reduced Fear of Deportation: DACA provides recipients with protection from deportation during the period of deferred action. This reduced fear may encourage greater labor market participation and willingness to seek formal employment rather than remaining in informal work arrangements.

Access to State-Level Benefits: In some states, DACA recipients became eligible for driver's licenses and state identification documents. This improved ability to commute to work and verify identity could facilitate employment, particularly in positions requiring transportation or formal identification.

Human Capital Investment: DACA eligibility might encourage individuals to invest more in human capital (education, job training) due to improved prospects for utilizing these investments in the formal labor market.

2.3 Prior Literature

Several studies have examined the effects of DACA on various outcomes. Research has found positive effects on educational attainment, labor force participation, wages, and health outcomes. The labor market effects of DACA have been of particular interest given that work authorization is a central component of the program.

This study contributes to this literature by focusing specifically on full-time employment among Mexican-born Hispanic non-citizens, using a transparent difference-in-differences research design.

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 collects detailed demographic, social, economic, and housing information from approximately 3.5 million households each year.

I use the one-year ACS samples from 2006 through 2016, excluding the 2012 sample. The 2012 exclusion is necessary because DACA was implemented on June 15, 2012—the middle of the survey year—and the ACS does not record the month of interview. Including 2012 would therefore mix pre-treatment and post-treatment observations in an indistinguishable manner.

3.2 Sample Construction

The sample is constructed through the following restrictions:

1. **Hispanic-Mexican Ethnicity (HISPAN = 1):** I restrict to individuals identified as Mexican in the Hispanic origin variable, consistent with the research question focusing on this population.
2. **Born in Mexico (BPL = 200):** I further restrict to individuals born in Mexico, as the research question specifically concerns Mexican-born individuals.
3. **Non-Citizens (CITIZEN = 3):** I restrict to non-citizens, as citizens would not be affected by DACA (they already have legal status). Following the instructions, I assume that non-citizens who have not received naturalization papers are undocumented for DACA purposes.
4. **Working Age (AGE 16–64):** I restrict to individuals of traditional working age to focus on those who could plausibly be employed.
5. **Valid Immigration Year:** I exclude observations with missing year of immigration (YRIMMIG = 0), as this variable is necessary for determining DACA eligibility.

Table 1 shows the sample construction process.

Table 1: Sample Construction

Restriction	Observations	Observations Lost
Full ACS sample (2006–2016)	33,851,424	—
Hispanic-Mexican (HISPAN = 1)	2,945,521	30,905,903
Born in Mexico (BPL = 200)	991,261	1,954,260
Non-citizen (CITIZEN = 3)	701,347	289,914
Exclude 2012	636,722	64,625
Working age (16–64)	561,470	75,252

Notes: Sample construction from ACS 2006–2016 (excluding 2012). Final analysis sample is 561,470 observations.

3.3 Variable Definitions

3.3.1 Outcome Variable

The primary outcome is **full-time employment**, defined as usually working 35 or more hours per week. This is constructed from the UHRSWORK variable, which records usual hours worked per week. The outcome is coded as:

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

As a robustness check, I also examine **any employment**, defined as being employed (EMPSTAT = 1).

3.3.2 Treatment Variable

The treatment variable is **DACA eligibility**, constructed based on the eligibility criteria described above. Specifically, an individual is coded as DACA-eligible if all of the following conditions are met:

1. **Arrived before age 16:** YRIMMIG – BIRTHYR < 16
2. **Under 31 on June 15, 2012:** BIRTHYR \geq 1982, or (BIRTHYR = 1981 and BIRTHQTR \geq 3). This conservative coding ensures individuals born in the second half of 1981 or later would not have reached age 31 by mid-June 2012.
3. **In U.S. since June 2007:** YRIMMIG \leq 2007. This captures the continuous presence requirement.

4. **At least 15 years old:** $\text{BIRTHYR} \leq 1996$, or ($\text{BIRTHYR} = 1997$ and $\text{BIRTHQTR} \leq 2$). This ensures individuals were old enough to apply.

3.3.3 Control Variables

I include several demographic control variables:

- **Age and Age Squared:** Continuous measures of age to capture non-linear age effects on employment
- **Female:** Indicator for female gender ($\text{SEX} = 2$)
- **Married:** Indicator for married individuals ($\text{MARST} = 1$ or 2)
- **High School or More:** Indicator for completing high school or higher ($\text{EDUC} \geq 6$)

3.4 Descriptive Statistics

Table 2 presents descriptive statistics for the analysis sample, separately by treatment status and time period.

Table 2: Descriptive Statistics by Treatment Status and Period

	Pre-DACA (2006–2011)		Post-DACA (2013–2016)	
	Eligible	Ineligible	Eligible	Ineligible
Full-time employment rate	0.431	0.604	0.539	0.569
Employment rate	0.506	0.654	0.652	0.650
Mean age	21.1	38.2	25.1	41.3
N	46,814	298,978	33,234	182,444

Notes: Sample consists of Mexican-born, Hispanic-Mexican, non-citizen individuals ages 16–64 with non-missing year of immigration. Pre-DACA period is 2006–2011; Post-DACA period is 2013–2016. Year 2012 is excluded.

Several patterns are noteworthy in the descriptive statistics. First, DACA-eligible individuals are substantially younger on average than ineligible individuals, reflecting the age-based eligibility criteria. Second, in the pre-DACA period, eligible individuals had substantially lower full-time employment rates (43.1%) compared to ineligible individuals (60.4%). This difference likely reflects the younger age of eligible individuals. Third, in the post-DACA period, the gap in full-time employment narrowed considerably, with eligible individuals increasing to 53.9% and ineligible individuals decreasing slightly to 56.9%.

4 Empirical Strategy

4.1 Identification Strategy

I use a difference-in-differences (DiD) research design to identify the causal effect of DACA eligibility on full-time employment. The identifying assumption is that, in the absence of DACA, trends in full-time employment would have been parallel between DACA-eligible and DACA-ineligible individuals.

The basic DiD estimator compares the change in outcomes for the treatment group (DACA-eligible) to the change for the control group (DACA-ineligible):

$$\hat{\tau}^{DiD} = (\bar{Y}_{T,post} - \bar{Y}_{T,pre}) - (\bar{Y}_{C,post} - \bar{Y}_{C,pre}) \quad (2)$$

4.2 Regression Specification

The primary regression specification is:

$$\text{FullTime}_{it} = \alpha + \beta_1 \text{Eligible}_i + \beta_2 \text{Post}_t + \delta(\text{Eligible}_i \times \text{Post}_t) + X'_{it} \gamma + \lambda_t + \epsilon_{it} \quad (3)$$

where:

- FullTime_{it} is an indicator for individual i in year t working full-time
- Eligible_i is an indicator for DACA eligibility
- Post_t is an indicator for the post-DACA period (2013–2016)
- X_{it} is a vector of control variables
- λ_t represents year fixed effects
- ϵ_{it} is the error term

The coefficient of interest is δ , which represents the causal effect of DACA eligibility on full-time employment under the parallel trends assumption.

Standard errors are clustered at the state level to account for within-state correlation in outcomes and potential state-level variation in the effects of DACA (e.g., due to differences in state policies regarding driver's licenses for DACA recipients).

4.3 Identification Assumptions

The key identifying assumption for the DiD estimator is that, absent DACA, trends in full-time employment would have been parallel between eligible and ineligible individuals. Several features of the research design support this assumption:

1. **Common Shocks:** Both groups are Mexican-born, non-citizen, Hispanic individuals facing similar economic conditions and immigration policy environments (aside from DACA eligibility).
2. **Control for Demographics:** By controlling for age, gender, marital status, and education, I account for compositional differences between groups that might independently affect employment trends.
3. **Year Fixed Effects:** Including year fixed effects controls for any aggregate shocks affecting both groups equally.

I provide direct evidence on the parallel trends assumption through an event study analysis.

5 Results

5.1 Main Results

Table 3 presents the main difference-in-differences estimates across multiple specifications.

Table 3: Effect of DACA Eligibility on Full-Time Employment

	(1) Simple	(2) Controls	(3) Year FE	(4) State FE	(5) Weighted
DACA Eligible × Post	0.1429*** (0.0059)	0.0682*** (0.0066)	0.0629*** (0.0063)	0.0621*** (0.0064)	0.0600*** (0.0051)
DACA Eligible	-0.1730*** (0.0052)	-0.0236*** (0.0049)	-0.0240*** (0.0050)	-0.0257*** (0.0050)	-
Post	-0.0344*** (0.0028)	-0.0098** (0.0040)	-	-	-
Controls	No	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	No
Survey Weights	No	No	No	No	Yes
Observations	561,470	561,470	561,470	561,470	561,470
R-squared	0.027	0.214	0.215	0.218	-

Notes: Dependent variable is an indicator for full-time employment (working 35+ hours per week). Controls include age, age squared, female, married, and high school or more education. Standard errors clustered at the state level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Column (1) presents the simple DiD estimate without controls. This specification yields a large positive effect of 14.3 percentage points. However, this estimate is likely biased due to differences in observable characteristics between eligible and ineligible individuals, particularly age.

Column (2) adds demographic controls (age, age squared, female, married, and education). The coefficient drops substantially to 6.8 percentage points, indicating that much of the simple DiD estimate was due to compositional differences between groups. This estimate remains highly statistically significant.

Column (3) adds year fixed effects, which absorb any aggregate time trends. The estimated effect is 6.3 percentage points (SE = 0.0063), statistically significant at the 1% level. This is my **preferred specification** as it balances parsimony with important controls.

Column (4) further adds state fixed effects. The estimate is virtually unchanged at 6.2 percentage points, suggesting that state-level factors do not substantially confound the

relationship.

Column (5) presents weighted estimates using ACS person weights (PERWT). The weighted estimate is 6.0 percentage points, consistent with the unweighted results.

Interpretation: The preferred estimate indicates that DACA eligibility increased full-time employment by 6.29 percentage points. Given a baseline full-time employment rate of 43.1% for eligible individuals in the pre-period, this represents a relative increase of approximately 14.6%.

5.2 Event Study Analysis

To examine the dynamics of the treatment effect and assess the parallel trends assumption, I estimate an event study specification that allows the treatment effect to vary by year:

$$\text{FullTime}_{it} = \alpha + \sum_{k \neq 2011} \delta_k (\text{Eligible}_i \times \mathbf{1}[t = k]) + X'_{it} \gamma + \lambda_t + \epsilon_{it} \quad (4)$$

Figure ?? presents the event study results. Year 2011 is used as the reference year (the year immediately before DACA implementation).

Table 4: Event Study Estimates: Year-by-Year Treatment Effects

Year	Coefficient	Std. Error	95% CI	p-value
2006	-0.0198	0.0088	[-0.037, -0.003]	0.025
2007	-0.0190	0.0054	[-0.030, -0.008]	<0.001
2008	-0.0060	0.0090	[-0.024, 0.012]	0.507
2009	-0.0006	0.0064	[-0.013, 0.012]	0.928
2010	0.0023	0.0101	[-0.018, 0.022]	0.821
2011			(Reference Year)	
2013	0.0151	0.0096	[-0.004, 0.034]	0.117
2014	0.0487	0.0146	[0.020, 0.077]	<0.001
2015	0.0814	0.0115	[0.059, 0.104]	<0.001
2016	0.0888	0.0101	[0.069, 0.109]	<0.001

Notes: Event study coefficients showing treatment effect by year, relative to 2011. Controls include age, age squared, female, married, high school or more, and year fixed effects. Standard errors clustered at state level.

The event study reveals several important patterns:

Pre-trends: The coefficients for 2006 and 2007 are negative and statistically significant, suggesting some evidence of differential pre-trends in these early years. However, the coefficients for 2008, 2009, and 2010 are small, statistically insignificant, and close to zero. This pattern suggests that parallel trends held reasonably well in the years immediately preceding DACA.

Post-DACA Effects: Treatment effects emerge gradually after DACA implementation. The 2013 coefficient (1.5 pp) is positive but not statistically significant. By 2014, the effect grows to 4.9 pp and becomes statistically significant. The effect continues to grow in 2015 (8.1 pp) and 2016 (8.9 pp).

Interpretation: The gradual emergence of effects is consistent with DACA's implementation. Applications were first accepted in August 2012, and it took time for recipients to receive work authorization and translate this into improved employment outcomes. The growing effects over time may also reflect cumulative benefits as DACA recipients gained work experience and employer relationships.

5.3 Robustness Checks

5.3.1 Alternative Outcome: Any Employment

Table 5 Column (1) shows results using any employment as the outcome (rather than full-time employment). The DiD estimate is 7.2 percentage points (SE = 0.0092), larger than the full-time employment effect. This suggests DACA increased both the extensive margin (whether employed) and intensive margin (hours worked conditional on employment).

Table 5: Robustness Checks

	(1) Any Employment	(2) Placebo (2009 Treatment)	(3)
DiD Coefficient	0.0718*** (0.0092)	0.0161*** (0.0042)	
Sample	Full	Pre-2012 only	
Observations	561,470	345,792	

Notes: Column (1) uses any employment as the outcome. Column (2) is a placebo test using only pre-DACA data with a fake treatment date of 2009. All models include demographic controls and year fixed effects. Standard errors clustered at state level in parentheses. *** p<0.01.

5.3.2 Placebo Test

Column (2) presents a placebo test using only pre-DACA data (2006–2011) with a fake treatment date of 2009. The placebo coefficient is small (1.6 pp) but statistically significant, suggesting some residual violation of parallel trends. This is consistent with the negative coefficients observed for 2006 and 2007 in the event study.

This finding suggests that the main estimates should be interpreted with some caution, as there is evidence of differential trends between groups even in the pre-period. However, the pre-trend coefficients close to the actual treatment date (2008–2010) are small and insignificant, providing more confidence in the identification around the treatment date.

5.3.3 Heterogeneity by Gender

Table 6: Heterogeneous Effects by Gender

	Male	Female
DiD Coefficient	0.0682*** (0.0056)	0.0476*** (0.0086)
Observations	303,717	257,753

Notes: Separate regressions by gender. Models include demographic controls (excluding female) and year fixed effects. Standard errors clustered at state level in parentheses. *** p<0.01.

Table 6 presents heterogeneous effects by gender. The effect for men (6.8 pp) is larger than for women (4.8 pp), though both are statistically significant. This difference may reflect gender differences in labor market attachment or occupational sorting in this population.

6 Discussion

6.1 Summary of Findings

This study finds that DACA eligibility increased full-time employment by approximately 6.3 percentage points among Mexican-born, non-citizen, Hispanic individuals. This represents a meaningful improvement in labor market outcomes—a relative increase of about 15% from the pre-DACA baseline.

Several features of the results strengthen confidence in a causal interpretation:

1. **Robustness:** The estimates are stable across multiple specifications, including models with different sets of controls, fixed effects, and survey weights.
2. **Dynamic Pattern:** The event study shows treatment effects emerging after DACA and growing over time, consistent with the gradual rollout of the program and accumulating benefits.
3. **Parallel Trends (Recent Years):** While there is evidence of differential trends in 2006–2007, the years immediately preceding treatment (2008–2011) show no significant differential trends.

4. **Consistent Direction:** The effect appears for both full-time employment and any employment, and for both men and women.

6.2 Limitations

Several limitations should be considered when interpreting these results:

Parallel Trends Concerns: The event study reveals some evidence of differential pre-trends, particularly in 2006–2007. While the trends appear parallel in the years immediately preceding DACA, this raises some concern about the identifying assumption.

Sample Definition: The sample includes all non-citizens, but not all non-citizens are undocumented. Some may have temporary visas or pending applications. This measurement error in the treatment group would likely attenuate the estimates toward zero.

DACA Take-up: Not all eligible individuals applied for or received DACA. The estimates reflect intent-to-treat effects of eligibility, not the effect of actually receiving DACA benefits. If take-up was incomplete, the effect on those who actually received DACA would be larger than the estimated eligibility effect.

General Equilibrium: If DACA affected the labor market outcomes of non-eligible individuals (e.g., through competition for jobs), the control group comparison would not fully capture the treatment effect.

6.3 Policy Implications

The findings suggest that DACA’s provision of work authorization and deportation relief meaningfully improved labor market outcomes for eligible individuals. This has several implications:

1. Programs providing work authorization to undocumented immigrants can substantially improve their employment outcomes.
2. The gradual emergence of effects suggests that sustained access to work authorization (rather than temporary measures) may be important for realizing labor market benefits.
3. The benefits extend to full-time rather than just part-time employment, suggesting integration into more stable employment relationships.

7 Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Mexican-born Hispanic non-citizens by approximately 6.3 percentage points. The effect

is robust across specifications and shows a pattern of gradual emergence consistent with the program's implementation. While some concerns about pre-trends remain, the overall evidence supports a causal interpretation.

These findings contribute to our understanding of how immigration policy affects labor market outcomes. The results suggest that providing work authorization to undocumented immigrants who have lived in the United States since childhood can meaningfully improve their employment prospects, with potential benefits for both the individuals affected and the broader economy.

A Appendix: Additional Tables and Figures

A.1 Full Regression Output

Table 7 presents the complete regression output from the preferred specification.

Table 7: Full Regression Output: Preferred Specification

Variable	Coefficient	Std. Error	t-stat	p-value
Intercept	-0.0193	0.0320	-0.604	0.546
DACA Eligible	-0.0240	0.0050	-4.779	<0.001
Eligible × Post	0.0629	0.0063	9.935	<0.001
Age	0.0444	0.0012	37.315	<0.001
Age Squared	-0.0005	0.00001	-37.652	<0.001
Female	-0.4212	0.0146	-28.915	<0.001
Married	-0.0243	0.0053	-4.566	<0.001
High School+	0.0492	0.0044	11.146	<0.001
Year Fixed Effects			Yes	
R-squared			0.215	
Observations			561,470	

Notes: Dependent variable is full-time employment (35+ hours per week). Year fixed effects included but coefficients not shown. Standard errors clustered at state level.

A.2 Variable Definitions

Table 8: Variable Definitions and IPUMS Codes

Variable	IPUMS Name	Definition
Full-time Employment	UHRSWORK	= 1 if UHRSWORK \geq 35
Employment	EMPSTAT	= 1 if EMPSTAT = 1
DACA Eligible	(constructed)	See text for eligibility criteria
Year	YEAR	Survey year
Age	AGE	Age in years
Female	SEX	= 1 if SEX = 2
Married	MARST	= 1 if MARST $\in \{1, 2\}$
High School+	EDUC	= 1 if EDUC \geq 6
Hispanic-Mexican	HISPAN	= 1 if HISPAN = 1
Born in Mexico	BPL	= 1 if BPL = 200
Non-citizen	CITIZEN	= 1 if CITIZEN = 3
Year of Immigration	YRIMMIG	Year first came to live in U.S.
Birth Year	BIRTHYR	Year of birth
Birth Quarter	BIRTHQTR	Quarter of birth
State	STATEFIP	State FIPS code
Person Weight	PERWT	ACS person weight

Notes: All variables are from IPUMS USA American Community Survey data.

A.3 DACA Eligibility Criteria Implementation

The DACA eligibility indicator was constructed as follows:

1. Arrived before 16th birthday:

```
arrived_before_16 = (YRIMMIG - BIRTHYR < 16)
```

2. Under 31 on June 15, 2012:

```
under_31 = (BIRTHYR >= 1982) |
((BIRTHYR == 1981) & (BIRTHQTR >= 3))
```

3. In U.S. since June 2007:

```
in_us_since_2007 = (YRIMMIG <= 2007)
```

4. At least 15 to apply:

```
at_least_15 = (BIRTHYR <= 1996) |  
              ((BIRTHYR == 1997) & (BIRTHQTR <= 2))
```

5. DACA Eligible:

```
daca_eligible = arrived_before_16 & under_31 &  
                 in_us_since_2007 & at_least_15
```

Observations with missing year of immigration (YRIMMIG = 0) were coded as ineligible.