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

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Abstract

This study estimates the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using data from the American Community Survey (2006–2016) and a difference-in-differences design that compares individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group), I find that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points ($p < 0.001$). This effect is robust across multiple specifications including controls for demographics, year fixed effects, and state fixed effects. A placebo test using pre-period data shows no evidence of differential pre-trends, supporting the parallel trends assumption underlying the difference-in-differences design.

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

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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 provides temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Given that DACA explicitly grants work authorization to eligible individuals, understanding its effects on labor market outcomes is of substantial policy importance.

This study examines whether DACA eligibility causally affected the probability of full-time employment among the program's target population. Specifically, I estimate the effect of DACA eligibility on the probability that an eligible individual works 35 or more hours per week, the standard definition of full-time employment.

The identification strategy exploits the age-based eligibility cutoff built into the DACA program. To be eligible, individuals must have been under 31 years of age as of June 15, 2012. This creates a natural comparison between those who were just young enough to be eligible (ages 26–30 at implementation) and those who were just too old (ages 31–35 at implementation). By comparing changes in employment outcomes between these two groups before and after DACA implementation, I can isolate the causal effect of the program using a difference-in-differences (DiD) research design.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points, an effect that is highly statistically significant ($p < 0.001$). This represents a meaningful improvement in labor market outcomes for eligible individuals. The finding is robust to various alternative specifications, including models with demographic controls, year fixed effects, and state fixed effects.

The remainder of this paper is organized as follows. Section 2 provides background on the DACA program and its eligibility requirements. Section 3 describes the data and sample construction. Section 4 presents the empirical methodology. Section 5 reports the main results and robustness checks. Section 6 discusses the findings and their implications.

Section 7 concludes.

2 Background: The DACA Program

2.1 Program Overview

DACA was announced by the Department of Homeland Security on June 15, 2012, and began accepting applications on August 15, 2012. The program allows certain undocumented immigrants who entered the United States as minors to receive a renewable two-year period of deferred action from deportation and to become eligible for work permits.

The key benefits of DACA include:

- Protection from deportation for two years (renewable)
- Authorization to work legally in the United States
- Eligibility to apply for a Social Security number
- Ability to obtain a driver's license in many states

2.2 Eligibility Requirements

To qualify for DACA, applicants must meet several criteria:

1. Were under 31 years of age as of June 15, 2012
2. Came to the United States before their 16th birthday
3. Have continuously resided in the United States since June 15, 2007
4. Were present in the United States on June 15, 2012, and at the time of application
5. Had no lawful status on June 15, 2012

6. Are currently in school, have graduated from high school, have obtained a GED, or are an honorably discharged veteran

7. Have not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

2.3 Program Uptake

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

2.4 Expected Effects on Employment

DACA is expected to increase employment among eligible individuals through several channels:

1. **Legal work authorization:** DACA recipients can legally work for any employer, expanding their job opportunities beyond the informal sector.

2. **Reduced fear of deportation:** The security provided by deferred action may encourage recipients to seek better employment opportunities.

3. **Driver's licenses:** In many states, DACA recipients became eligible for driver's licenses, facilitating commuting to work.

4. **Human capital investment:** The two-year renewable status may encourage recipients to invest in job-specific skills and education.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, economic, and housing information for a representative sample of the U.S. population.

I use the one-year ACS files from 2006 through 2016, excluding 2012. The exclusion of 2012 is necessary because DACA was implemented on June 15, 2012, and the ACS does not record the month of interview. Therefore, observations from 2012 cannot be reliably classified as pre- or post-treatment.

3.2 Sample Selection

The analytical sample is constructed by applying several filters to approximate the DACA-eligible population:

1. **Hispanic-Mexican ethnicity (HISPAN = 1):** The sample is restricted to individuals of Mexican Hispanic origin, as this group comprises the majority of DACA-eligible individuals.

2. **Born in Mexico (BPL = 200):** Only individuals born in Mexico are included to focus on the immigrant population.

3. **Not a U.S. citizen (CITIZEN = 3):** Following the instructions, individuals who are not citizens and have not received first papers are assumed to be undocumented for DACA purposes. The ACS does not distinguish between documented and undocumented non-citizens.

4. **Arrived before age 16:** The age at immigration is calculated as YRIMMIG -

BIRTHYR, and only individuals who arrived before age 16 are included to match the DACA requirement.

5. **Arrived by 2007 (YRIMMIG $\leq$ 2007):** To approximate the continuous residence requirement (in the U.S. since June 15, 2007), only individuals who immigrated by 2007 are included.

6. **Relevant birth years (1977–1986):** To construct the treatment and control groups, the sample is limited to individuals born between 1977 and 1986.

3.3 Treatment and Control Groups

The treatment and control groups are defined based on age at DACA implementation (June 15, 2012):

- **Treatment group:** Individuals who were ages 26–30 on June 15, 2012 (born 1982–1986). These individuals meet the age requirement for DACA eligibility.

- **Control group:** Individuals who were ages 31–35 on June 15, 2012 (born 1977–1981). These individuals are just above the age cutoff and would otherwise be DACA-eligible if not for their age.

The final analytical sample consists of 44,161 observations:

- Treatment group: 26,294 observations

- Control group: 17,867 observations

- Pre-period (2006–2011): 28,968 observations

- Post-period (2013–2016): 15,193 observations

3.4 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 in the ACS:

$$\text{fulltime}_i = \begin{cases} 1 & \text{if UHRSWORK}_i \geq 35 \\ 0 & \text{otherwise} \end{cases}$$

3.5 Survey Weights

All analyses use the ACS person weights (PERWT) to ensure nationally representative estimates. The ACS employs a complex survey design, and the weights adjust for differential sampling probabilities and non-response.

4 Methodology

4.1 Difference-in-Differences Design

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

The basic DiD estimator is:

$$\hat{\delta}_{DiD} = (\bar{Y}_{T,Post} - \bar{Y}_{T,Pre}) - (\bar{Y}_{C,Post} - \bar{Y}_{C,Pre}) \tag{1}$$

where $\bar{Y}_{T,Post}$ is the mean outcome for the treatment group in the post-period, etc.

4.2 Regression Framework

The DiD estimate is obtained from the following linear probability model:

$$\text{fulltime}_{ist} = \beta_0 + \beta_1 \text{treat}_i + \beta_2 \text{post}_t + \beta_3 (\text{treat}_i \times \text{post}_t) + \varepsilon_{ist} \tag{2}$$

where:

- fulltime_{ist} is an indicator for whether individual i in state s in year t works full-time
- treat_i is an indicator for being in the treatment group (born 1982–1986)
- post_t is an indicator for the post-DACA period (2013–2016)
- β_3 is the DiD estimate of the DACA effect

The coefficient β_3 represents the causal effect of DACA eligibility on full-time employment under the parallel trends assumption.

4.3 Extended Specifications

I estimate several alternative specifications to test the robustness of the main finding:

Model with demographic controls:

$$\text{fulltime}_{ist} = \beta_0 + \beta_1 \text{treat}_i + \beta_2 \text{post}_t + \beta_3 (\text{treat}_i \times \text{post}_t) + X_i' \gamma + \varepsilon_{ist} \tag{3}$$

where X_i includes gender, marital status, and education.

Model with year fixed effects:

$$\text{fulltime}_{ist} = \beta_0 + \beta_1 \text{treat}_i + \beta_3 (\text{treat}_i \times \text{post}_t) + \mu_t + \varepsilon_{ist} \tag{4}$$

where μ_t are year fixed effects.

Model with year and state fixed effects:

$$\text{fulltime}_{ist} = \beta_0 + \beta_1 \text{treat}_i + \beta_3(\text{treat}_i \times \text{post}_t) + \mu_t + \lambda_s + \varepsilon_{ist} \tag{5}$$

where λ_s are state fixed effects.

4.4 Standard Errors

Standard errors are clustered at the state level to account for potential correlation of errors within states. This is a standard approach in DiD analyses with geographic variation and helps address concerns about serial correlation in the outcome variable.

4.5 Identifying Assumption

The key identifying assumption for the DiD design is the parallel trends assumption: in the absence of DACA, the treatment and control groups would have experienced the same trends in full-time employment. This assumption is inherently untestable, but I provide supporting evidence through:

1. A placebo test using only pre-period data
2. An event study showing year-by-year treatment effects

5 Results

5.1 Descriptive Statistics

Table 1 presents the weighted means of key variables by treatment group and time period.

Table 1: Descriptive Statistics by Group and Period

	Control (Ages 31–35)		Treatment (Ages 26–30)	
	Pre	Post	Pre	Post
Full-time employment (%)	66.97	64.05	62.53	65.85
Any employment (%)	68.40	68.99	65.93	70.76
Female (%)	42.47	43.83	40.55	43.42
Married (%)	64.10	63.28	48.22	53.47
High school or more (%)	24.56	30.59	31.95	40.26
N (unweighted)	11,757	6,110	17,211	9,083

Notes: Weighted means using ACS person weights (PERWT). Pre-period: 2006–2011; Post-period: 2013–2016.

Several patterns emerge from Table 1. First, full-time employment increased for the treatment group from 62.53% to 65.85% (a 3.32 percentage point increase), while it decreased for the control group from 66.97% to 64.05% (a 2.92 percentage point decrease). The raw difference-in-differences is therefore 6.24 percentage points.

Second, the treatment group is younger (by construction) and therefore less likely to be married and more likely to have higher education. These compositional differences motivate the inclusion of demographic controls in some specifications.

5.2 Main Results

Table 2 presents the main regression results from six different specifications.

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

	(1)	(2)	(3)	(4)	(5)	(6)
Treat × Post	0.0541***	0.0624***	0.0505***	0.0614***	0.0600***	0.0486***
	(0.007)	(0.009)	(0.011)	(0.010)	(0.012)	(0.011)
Treat	−0.0313***	−0.0444***	−0.0441***	−0.0450***	−0.0448***	−0.0439***
	(0.004)	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
Post	−0.0309***	−0.0293**	−0.0151	—	—	—
	(0.009)	(0.012)	(0.012)			
Female			−0.3744***			−0.3783***
			(0.013)			(0.013)
Married			−0.0128**			−0.0145**
			(0.006)			(0.006)
High School+			0.0456***			0.0430***
			(0.005)			(0.005)
College+			0.0378***			0.0345***
			(0.008)			(0.008)
Weights	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes	Yes
State FE	No	No	No	No	Yes	Yes
Demographics	No	No	Yes	No	No	Yes
Observations	44,161	44,161	44,161	44,161	44,161	44,161

Notes: The dependent variable is an indicator for working 35+ hours per week. Standard errors in parentheses are clustered at the state level for models (1)–(4) and robust (HC1) for models (5)–(6). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The key finding is that the DiD coefficient (Treat × Post) is positive and highly statistically significant across all specifications. The preferred specification (Column 2) shows that DACA eligibility increased the probability of full-time employment by 6.24 percentage points (SE = 0.009, $p < 0.001$). The 95% confidence interval is [4.4, 8.1] percentage points.

The estimates are remarkably stable across specifications. Adding demographic controls (Column 3) reduces the estimate slightly to 5.05 percentage points. Including year fixed effects (Column 4) yields an estimate of 6.14 percentage points. The most comprehensive specification (Column 6) with year fixed effects, state fixed effects, and demographic controls produces an estimate of 4.86 percentage points.

5.3 Robustness Checks

5.3.1 Placebo Test

To assess the validity of the parallel trends assumption, I conduct a placebo test using only pre-period data (2006–2011). I define a "placebo post" period as 2009–2011 versus 2006–2008 and estimate the DiD model on this subsample. If there were pre-existing differential trends, we would expect to find a significant placebo effect.

Table 3: Placebo Test: Pre-Period Only (2006–2011)

	Placebo DiD
Treat × Placebo Post	0.0123
	(0.009)
	[$p = 0.177$]
Observations	28,968

Notes: Placebo post = 1 for years 2009–2011, 0 for years 2006–2008. Standard errors clustered at state level.

The placebo coefficient is small (1.23 percentage points) and not statistically significant ($p = 0.177$). This provides reassurance that the treatment and control groups were following similar trends prior to DACA implementation.

5.3.2 Event Study

Figure **??** presents the event study results, showing the year-by-year treatment effects relative to 2011 (the year before DACA implementation).

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

Year	Coefficient	Standard Error
2006	−0.0015	0.020
2007	−0.0113	0.018
2008	0.0235	0.019
2009	0.0219	0.021
2010	0.0256	0.020
2011	0 (ref)	—
2013	0.0629***	0.024
2014	0.0724***	0.019
2015	0.0488**	0.020
2016	0.0994***	0.018

Notes: Coefficients from event study regression with 2011 as reference year. Standard errors clustered at state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The event study results support the parallel trends assumption. The pre-period coefficients (2006–2010) are all small and not statistically different from zero, indicating no

differential pre-trends. In contrast, the post-period coefficients (2013–2016) are all positive and statistically significant, ranging from 4.9 to 9.9 percentage points. The effect appears to grow over time, with the largest effect observed in 2016 (9.9 percentage points).

5.3.3 Alternative Outcome: Any Employment

As an additional robustness check, I estimate the effect of DACA eligibility on any employment (EMPSTAT = 1) rather than specifically full-time employment.

Table 5: Alternative Outcome: Any Employment

	Any Employment
Treat × Post	0.0555***
	(0.008)
	[$p < 0.001$]
Observations	44,161

Notes: Dependent variable is indicator for any employment. Standard errors clustered at state level.

DACA eligibility increased the probability of any employment by 5.55 percentage points ($p < 0.001$), which is similar in magnitude to the effect on full-time employment.

5.3.4 Heterogeneity by Gender

Table 6 presents separate estimates for men and women.

Table 6: Heterogeneity by Gender

	Men	Women
Treat × Post	0.0608***	0.0345*
	(0.014)	(0.018)
	[$p < 0.001$]	[$p = 0.052$]
Observations	25,756	18,405

Notes: Standard errors clustered at state level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The effect is larger and more precisely estimated for men (6.1 percentage points, $p < 0.001$) than for women (3.5 percentage points, $p = 0.052$). This difference may reflect gender differences in labor force participation patterns or differential take-up of DACA benefits.

5.4 Summary of Main Findings

The preferred estimate from the basic weighted DiD specification indicates that DACA eligibility increased the probability of full-time employment by 6.24 percentage points. This represents a substantial effect—relative to the control group's post-period employment rate of 64.05%, this is approximately a 10% increase in relative terms.

Key findings from the analysis:

1. **Main effect:** 6.24 percentage point increase in full-time employment (95% CI: 4.4–8.1 pp)
2. **Robustness:** The effect is stable across specifications ranging from 4.9 to 6.2 pp
3. **Parallel trends:** Placebo test and event study support the identifying assumption
4. **Any employment:** Similar effect (5.6 pp) on any employment

5. **Gender heterogeneity:** Effects larger for men (6.1 pp) than women (3.5 pp)

6 Discussion

6.1 Interpretation of Results

The findings suggest that DACA eligibility had a meaningful positive effect on full-time employment among eligible individuals. The magnitude of the effect—approximately 6 percentage points—is economically significant and represents a substantial improvement in labor market outcomes for this population.

Several mechanisms could explain this effect:

1. **Legal work authorization:** The most direct channel is that DACA allows recipients to work legally, opening up formal employment opportunities that were previously unavailable.

2. **Employer discrimination:** With valid work authorization, DACA recipients can present documentation to employers, potentially reducing discrimination in hiring.

3. **Job mobility:** DACA recipients may be able to leave lower-quality jobs in the informal sector for better positions in the formal sector.

4. **Geographic mobility:** With driver's licenses available to DACA recipients in many states, commuting options expand, potentially improving job matches.

6.2 Comparison to Prior Literature

The estimated effect of 6.2 percentage points is consistent with findings from other studies examining DACA's labor market effects. While a formal literature review was not conducted, the magnitude is plausible given the substantial barriers to formal employment faced by undocumented workers.

6.3 Limitations

Several limitations should be noted:

1. **Measurement of DACA eligibility:** The ACS does not directly identify DACA recipients or even undocumented immigrants. The sample construction uses proxies (non-citizenship, birth in Mexico, etc.) that may include some documented immigrants who are not DACA-eligible.

2. **Intent-to-treat vs. treatment-on-the-treated:** The estimates reflect the effect of eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA, so the effect on actual recipients may be larger.

3. **Control group composition:** The control group (ages 31–35) may differ from the treatment group in ways correlated with employment trends beyond just DACA ineligibility.

4. **Exclusion of 2012:** The necessary exclusion of 2012 data means we cannot observe the immediate effects of DACA in the months following implementation.

5. **Survey response:** Undocumented immigrants may be less likely to respond to government surveys, potentially creating selection issues.

6.4 Policy Implications

The findings have implications for immigration policy debates:

1. DACA appears to have achieved one of its intended goals of improving employment outcomes for eligible individuals.

2. The positive employment effects suggest that work authorization programs can meaningfully improve the economic integration of undocumented immigrants.

3. The persistence of effects through 2016 suggests that the benefits of DACA are not merely temporary.

7 Conclusion

This study provides causal evidence that eligibility for the Deferred Action for Childhood Arrivals (DACA) program increased the probability of full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I find that DACA eligibility increased full-time employment by approximately 6.2 percentage points.

This effect is robust across multiple specifications, including models with demographic controls, year fixed effects, and state fixed effects. Placebo tests and event study analyses support the parallel trends assumption underlying the difference-in-differences design. The findings suggest that DACA has been successful in improving labor market outcomes for the population it was designed to serve.

These results contribute to our understanding of how immigration policy affects economic outcomes and highlight the potential benefits of providing work authorization to undocumented immigrants who were brought to the United States as children.

A Variable Definitions

Table 7: IPUMS Variable Definitions

Variable	Definition
YEAR	Census year (survey year)
STATEFIP	State FIPS code
PERWT	Person weight
SEX	Sex (1 = Male, 2 = Female)
BIRTHYR	Year of birth
HISPAN	Hispanic origin (1 = Mexican)
BPL	Birthplace (200 = Mexico)
CITIZEN	Citizenship status (3 = Not a citizen)
YRIMMIG	Year of immigration
EDUC	Educational attainment
EMPSTAT	Employment status (1 = Employed)
UHRSWORK	Usual hours worked per week
MARST	Marital status (1,2 = Married)

B Sample Construction Details

The analytical sample is constructed through the following sequential filters:

1. Start with all observations from ACS 2006–2016 (excluding 2012)
2. Filter to HISPAN = 1 (Mexican Hispanic)
3. Filter to BPL = 200 (Born in Mexico)
4. Filter to CITIZEN = 3 (Not a citizen)

5. Filter to age at immigration < 16 (YRIMMIG $-$ BIRTHYR < 16)

6. Filter to YRIMMIG ≤ 2007 (continuous residence since 2007)

7. Filter to BIRTHYR between 1977 and 1986 (relevant age range)

C Additional Results

Table 8: Full Regression Output: Preferred Specification

Variable	Coefficient	Std. Error	t-stat	p-value
Intercept	0.6697	0.007	89.34	0.000
Treat	-0.0444	0.005	-9.63	0.000
Post	-0.0293	0.012	-2.39	0.017
Treat $\times$ Post	0.0624	0.009	6.66	0.000