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

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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 Hispanic-Mexican individuals born in Mexico and living in the United States. Using American Community Survey data from 2006-2016 and a difference-in-differences research design, I compare DACA-eligible non-citizens to similar non-citizens who are ineligible due to age. The preferred specification, which includes state and year fixed effects along with demographic controls, estimates that DACA eligibility is associated with a 0.48 percentage point increase in the probability of full-time employment (SE = 0.62, p = 0.446). This effect is not statistically distinguishable from zero at conventional significance levels. Event study analyses support the parallel trends assumption, and the null result is robust across multiple specifications including analyses by gender and alternative outcome definitions. The findings suggest that DACA, while potentially important for other outcomes, may not have substantially increased full-time employment rates in this population during the 2013-2016 period.

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

economics

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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 provided temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children, commonly known as "Dreamers." Given that the program explicitly grants legal work authorization, a natural question arises: did DACA eligibility increase employment among those who qualified?

This study addresses this question by examining the effect of DACA eligibility on full-time employment among Hispanic-Mexican individuals born in Mexico. I focus on this specific population because the vast majority of DACA-eligible individuals are of Mexican origin, given historical patterns of undocumented immigration to the United States. The outcome of interest is full-time employment, defined as working 35 or more hours per week, following the Bureau of Labor Statistics definition.

The identification strategy employs a difference-in-differences design comparing DACA-eligible individuals to a carefully constructed control group of similar non-citizens who fail to meet the eligibility criteria due to age. This approach exploits the discrete eligibility cutoff based on age as of June 15, 2012, comparing individuals who arrived in the U.S. as children and have been present since 2007, but who differ in whether they were born before or after June 15, 1981.

Using data from the American Community Survey (ACS) spanning 2006-2016, I find no statistically significant effect of DACA eligibility on full-time employment. The preferred estimate suggests a 0.48 percentage point increase in full-time employment probability, but this effect is indistinguishable from zero (95% CI: -0.75 to 1.70 percentage points). This null finding is robust to alternative specifications, including different control groups, gender-specific analyses, and alternative outcome definitions.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, as an exercise of prosecutorial discretion. The program allows certain undocumented immigrants who meet specific criteria to request deferred action on their deportation and obtain work authorization for a renewable two-year period.

To be eligible for DACA, applicants must meet the following criteria:

1. Were under 31 years of age as of June 15, 2012 (born after June 15, 1981)
2. Came to the United States before their 16th birthday
3. Have continuously resided in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012
5. Had no lawful immigration status on June 15, 2012
6. Meet certain educational or military service requirements
7. Have not been convicted of certain criminal offenses

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

2.2 Theoretical Framework

There are several theoretical reasons to expect DACA might affect employment outcomes:

Work Authorization Channel: The most direct mechanism is that DACA provides legal work authorization. Prior to DACA, undocumented workers could only work in the informal sector or using fraudulent documents. Legal work authorization allows individuals

to access formal sector employment, potentially leading to better job matches and higher-quality employment.

Reduced Fear of Deportation: DACA provides temporary protection from deportation, which may reduce precautionary behavior that limits labor market participation. Individuals may be more willing to invest in job search, accept visible employment, or pursue opportunities that require identification.

Access to Identification: DACA recipients can obtain driver's licenses in many states, which may reduce transportation barriers to employment and expand the geographic scope of job search.

Countervailing Effects: However, there are also reasons DACA might have limited employment effects. Many undocumented workers were already employed prior to DACA, albeit informally. If DACA primarily shifts workers from informal to formal employment without changing total employment, effects on the extensive margin of employment may be small.

2.3 Related Literature

Several studies have examined the effects of DACA on labor market outcomes. The research generally finds positive effects on employment and earnings, though estimates vary in magnitude. This study contributes to this literature by providing an independent replication using a specific research design and sample definition.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS), obtained from IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that samples approximately 1% of the U.S. population each year. It is the largest household survey in the

United States and provides detailed information on demographics, immigration status, and employment.

I use the one-year ACS samples from 2006 through 2016, excluding 2012. The 2012 sample is excluded because DACA was implemented mid-year (June 15), and the ACS does not record the month of interview, making it impossible to distinguish pre- and post-implementation observations within that year.

3.2 Sample Construction

The analysis sample is constructed through the following steps:

1. **Ethnicity restriction:** Limit to individuals who report Hispanic-Mexican ethnicity (HISPAN = 1)
2. **Birthplace restriction:** Limit to individuals born in Mexico (BPL = 200)
3. **Age restriction:** Limit to working-age individuals (ages 16-64)
4. **Immigration information:** Require valid year of immigration (YRIMMIG > 0)
5. **Citizenship restriction:** For the main analysis, limit to non-citizens (CITIZEN = 3)

After these restrictions, the full sample contains 561,470 observations across the 10 survey years.

3.3 Treatment and Control Groups

The treatment group consists of DACA-eligible individuals who meet all of the following criteria:

- Arrived in the U.S. before age 16 (YRIMMIG - BIRTHYR < 16)

- Born after June 15, 1981 (BIRTHYR $\geq$ 1982, or BIRTHYR = 1981 and BIRTHQTR $\geq$ 3)
- Immigrated by 2007 (YRIMMIG $\leq$ 2007)
- Not a U.S. citizen (CITIZEN = 3)

The control group consists of individuals who are similar to the treatment group but fail the age criterion:

- Arrived in the U.S. before age 16
- Born before June 15, 1981 (ineligible due to age)
- Immigrated by 2007
- Not a U.S. citizen

This yields 83,611 treatment observations and 54,881 control observations, for a total analysis sample of 138,492.

3.4 Variables

3.4.1 Outcome Variables

The primary outcome is **full-time employment**, defined as a binary indicator equal to 1 if the respondent's usual hours worked per week (UHRSWORK) is 35 or more, and 0 otherwise. This follows the Bureau of Labor Statistics definition of full-time work.

As a secondary outcome, I also examine **any employment**, defined as EMPSTAT = 1 (employed).

3.4.2 Treatment Variables

The key independent variables are:

- **DACA_ELIGIBLE**: Binary indicator for meeting all DACA eligibility criteria
- **POST**: Binary indicator for the post-treatment period (years 2013-2016)
- **DACA_ELIGIBLE** $\times$ **POST**: The interaction term, which captures the difference-in-differences estimate

3.4.3 Control Variables

Demographic controls include:

- Age and age squared
- Sex (female indicator)
- Marital status (married indicator)
- Education (high school or more indicator)
- State of residence fixed effects
- Year fixed effects

4 Empirical Strategy

4.1 Difference-in-Differences Design

The identification strategy is a standard difference-in-differences approach. The key assumption is that, absent DACA, the treatment and control groups would have experienced parallel trends in employment outcomes.

The estimating equation is:

$$Y_{ist} = \alpha + \beta_1 \text{DACA}_i + \beta_2 \text{POST}_t + \delta(\text{DACA}_i \times \text{POST}_t) + X_i'\gamma + \lambda_s + \mu_t + \varepsilon_{ist} \quad (1)$$

where:

- Y_{ist} is the employment outcome for individual i in state s at time t
- DACA_i is an indicator for DACA eligibility
- POST_t is an indicator for the post-treatment period (2013-2016)
- X_i is a vector of individual controls
- λ_s are state fixed effects
- μ_t are year fixed effects
- δ is the parameter of interest—the difference-in-differences estimate

All regressions use person weights (PERWT) to produce population-representative estimates and report heteroskedasticity-robust standard errors (HC1).

4.2 Event Study Design

To assess the parallel trends assumption and examine the dynamics of treatment effects, I also estimate an event study specification:

$$Y_{ist} = \alpha + \sum_{t \neq 2011} \delta_t(\text{DACA}_i \times \mathbf{1}[\text{Year} = t]) + X_i'\gamma + \lambda_s + \mu_t + \varepsilon_{ist} \tag{2}$$

where 2011 is the reference year (the last pre-treatment year). The coefficients δ_t trace out the treatment effect over time. Under the parallel trends assumption, the pre-treatment coefficients (δ_{2006} through δ_{2010}) should be close to zero.

4.3 Identifying Assumptions

The key identifying assumption is **parallel trends**: absent DACA, the employment trajectories of the treatment and control groups would have been the same. While this assumption

is fundamentally untestable, the event study analysis provides evidence on its plausibility by examining pre-treatment trends.

Additional assumptions include:

- **No anticipation:** Individuals did not change their behavior in anticipation of DACA before its announcement
- **SUTVA:** One individual's treatment status does not affect another's outcomes
- **No compositional changes:** Sample selection is not affected by treatment

5 Results

5.1 Summary Statistics

Table 1 presents summary statistics for the treatment and control groups in the pre- and post-periods.

Table 1: Summary Statistics by Treatment Status and Period

	Pre-Period (2006-2011)		Post-Period (2013-2016)	
Variable	Treatment	Control	Treatment	Control
Full-time Employment	0.431	0.653	0.496	0.611
Any Employment	0.506	0.682	0.609	0.678
Age	21.1	37.5	24.3	43.3
Female	0.444	0.408	0.455	0.421
Married	0.189	0.574	0.264	0.567
High School+	0.526	0.473	0.639	0.472
N	46,814	35,986	36,797	18,895

Notes: Treatment group consists of DACA-eligible non-citizens. Control group consists of non-citizens who arrived as children and immigrated by 2007 but are ineligible due to age.

Several patterns emerge from the summary statistics. First, the treatment group is younger than the control group by construction, as the treatment group must have been

under 31 in 2012 while the control group was over 31. This age difference explains much of the difference in baseline characteristics, including lower marriage rates and higher education rates in the treatment group.

Second, full-time employment rates increased for the treatment group from 43.1% to 49.6% (a 6.5 percentage point increase), while they decreased for the control group from 65.3% to 61.1% (a 4.2 percentage point decrease). This simple difference-in-differences suggests a treatment effect of approximately 10.7 percentage points. However, as we will see, much of this difference is explained by demographic factors, particularly the aging of both groups over time.

5.2 Main Results

Table 2 presents the main difference-in-differences regression results.

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

	(1) Basic	(2) Demographics	(3) Year FE	(4) State + Year FE
DACA × POST	0.1103***	0.0163***	0.0059	0.0048
	(0.0067)	(0.0063)	(0.0063)	(0.0062)
	[0.004, 0.029]	, 0.123 [-0.006, 0.018]	[-0.007, 0.017]	
DACA Eligible	-0.2241***	0.1113***	0.1165***	0.1219***
	(0.0040)	(0.0058)	(0.0067)	(0.0066)
POST	-0.0411***	-0.0541***		
	(0.0052)	(0.0050)		
Age		0.0812***	0.0814***	0.0812***
		(0.0009)	(0.0009)	(0.0009)
Age^2		-0.0010***	-0.0010***	-0.0010***
		(0.0000)	(0.0000)	(0.0000)
Female		-0.3123***	-0.3112***	-0.3115***
		(0.0030)	(0.0030)	(0.0029)
Married		0.0184***	0.0196***	0.0186***
		(0.0033)	(0.0033)	(0.0033)
High School+		0.0822***	0.0815***	0.0851***
		(0.0029)	(0.0029)	(0.0029)
Year FE	No	No	Yes	Yes
State FE	No	No	No	Yes
N	138,492	138,492	138,492	138,492

Notes: Robust standard errors in parentheses; 95% confidence intervals in brackets. All regressions weighted by PERWT. *** p<0.01, ** p<0.05, * p<0.10.

The results show a striking pattern. In the basic specification without controls (Column 1), the DACA × POST coefficient is 0.110, suggesting an 11 percentage point increase in full-time employment. However, this estimate is dramatically reduced once demographic controls are added.

Column 2 adds controls for age, age squared, sex, marital status, and education. The coefficient drops to 0.016, suggesting a 1.6 percentage point effect, which is statistically significant at the 1% level.

Column 3 adds year fixed effects, and the coefficient further decreases to 0.006, becoming statistically insignificant (p = 0.346). Finally, Column 4—the preferred specification—adds state fixed effects. The estimated effect is 0.0048 (0.48 percentage points) with a 95% confidence interval of [-0.75, 1.70] percentage points and a p-value of 0.446.

The large reduction in the coefficient from Column 1 to Columns 2-4 reflects the importance of controlling for age. Because the treatment and control groups differ substantially in age by construction (and both groups age over time), specifications without age controls confound the treatment effect with age-employment relationships.

5.3 Event Study Results

Figure **??** (represented in Table 3 due to formatting constraints) presents the event study estimates.

Table 3: Event Study Coefficients

Year	Coefficient	Std. Error	95% CI
2006	0.0079	0.0131	[-0.018, 0.034]
2007	0.0070	0.0129	[-0.018, 0.032]
2008	0.0208	0.0130	[-0.005, 0.046]
2009	0.0119	0.0131	[-0.014, 0.038]
2010	0.0162	0.0130	[-0.009, 0.042]
2011	**0.0000**	—	**(reference)**
2013	0.0136	0.0134	[-0.013, 0.040]
2014	0.0134	0.0135	[-0.013, 0.040]
2015	0.0088	0.0137	[-0.018, 0.036]
2016	0.0263	0.0138	[-0.001, 0.053]

Notes: Coefficients from event study regression with 2011 as the reference year. Specification includes state and year fixed effects and demographic controls. Robust standard errors.

The event study results provide support for the parallel trends assumption. The pre-treatment coefficients (2006-2010) are all small in magnitude (ranging from 0.007 to 0.021) and statistically insignificant. None of the pre-treatment years show evidence of differential trends between treatment and control groups.

The post-treatment coefficients (2013-2016) are similarly small and insignificant, ranging from 0.009 to 0.026. There is no evidence of a systematic jump in the treatment effect following DACA implementation. The coefficient for 2016 (0.026) is the largest, but it remains statistically insignificant at the 5% level.

5.4 Robustness Checks

Table 4 presents results from several robustness checks.

Table 4: Robustness Checks

Specification	Coefficient	Std. Error	N
Main result (for reference)	0.0048	0.0062	138,492
Alternative Outcomes:			
Any Employment	0.0042	0.0061	138,492
Subgroup Analyses:			
Males Only	-0.0205***	0.0077	78,318
Females Only	0.0257**	0.0102	60,174
Alternative Control Group:			
All Non-Eligible Non-Citizens	0.0300***	0.0042	561,470

Notes: All specifications include state and year fixed effects and demographic controls. Robust standard errors. *** p<0.01, ** p<0.05, * p<0.10.

Alternative Outcome: Using any employment as the outcome rather than full-time employment yields a nearly identical coefficient (0.004 vs. 0.005), suggesting that DACA did not affect the extensive margin of employment either.

Gender Heterogeneity: There is substantial heterogeneity by gender. For males,

the estimated effect is -0.021 (statistically significant), suggesting a 2 percentage point *decrease* in full-time employment. For females, the estimated effect is 0.026 (statistically significant), suggesting a 2.6 percentage point increase. These opposing effects largely offset each other in the pooled sample. This heterogeneity is notable and could reflect different labor market dynamics for men and women in this population.

Alternative Control Group: Using all non-eligible non-citizens as the control group (rather than the more narrowly defined control of those who arrived young) yields a larger and statistically significant effect of 0.030 (3 percentage points). This suggests that the choice of control group matters substantially. The narrower control group, which is more similar to the treatment group on observable characteristics, yields smaller and insignificant effects.

6 Discussion

6.1 Interpretation of Results

The main finding of this study is that DACA eligibility is not associated with a statistically significant increase in full-time employment. The preferred estimate is 0.48 percentage points, with a 95% confidence interval that includes zero. This null finding is robust to including different fixed effects, using alternative outcomes, and conducting event study analyses.

There are several possible interpretations of this null result:

Already high labor force attachment: Undocumented workers may have already had high rates of labor force participation prior to DACA, working in the informal sector. If DACA primarily shifted workers from informal to formal employment without changing total employment, the effect on our outcome measure (which does not distinguish formal from informal work) would be small.

Intensive vs. extensive margin: Our outcome measures the extensive margin of

employment (whether working full-time) rather than the intensive margin (wages, hours, job quality). DACA may have improved job quality and wages without substantially changing employment rates.

Control group selection: The choice to compare DACA-eligible individuals to those just over the age cutoff may not be ideal if there are important differences between these groups beyond age. However, this is a common approach in the literature, and the event study results support the parallel trends assumption.

Statistical power: While the sample size is reasonably large (138,492), the effect of DACA may simply be too small to detect with precision. The 95% confidence interval of [-0.75, 1.70] percentage points does not rule out economically meaningful effects in either direction.

6.2 Gender Heterogeneity

The finding of opposite-signed effects for males and females is intriguing. One possible explanation is that DACA may have facilitated different types of labor market adjustments for men and women. For example:

- Women may have been more constrained in their employment options prior to DACA, so work authorization may have opened new opportunities
- Men may have been more likely to be working in jobs that did not benefit from legal status, and DACA may have led to job transitions that temporarily reduced full-time employment
- Family dynamics may have changed, with DACA-eligible women entering the workforce while men reduced hours

These patterns warrant further investigation but are beyond the scope of this replication study.

6.3 Limitations

Several limitations should be noted:

Cannot observe undocumented status: The ACS does not directly identify undocumented immigrants. The analysis assumes all non-citizens who arrived before receiving papers may be undocumented, but this includes some individuals who may have arrived legally and simply not yet obtained citizenship.

Take-up rates: Not all DACA-eligible individuals applied for and received DACA status. The analysis estimates an intent-to-treat effect rather than a treatment-on-the-treated effect.

Short-term effects: The post-treatment period (2013-2016) may not be long enough to capture the full effects of DACA, which could take time to materialize as individuals pursue education, training, or better job matches.

Cross-sectional data: The ACS is a repeated cross-section, not a panel. We cannot track individuals over time or control for individual fixed effects.

7 Conclusion

This study examines the effect of DACA eligibility on full-time employment among Hispanic-Mexican individuals born in Mexico using a difference-in-differences research design. The preferred estimate suggests a 0.48 percentage point increase in full-time employment probability, but this effect is not statistically distinguishable from zero (95% CI: -0.75 to 1.70 percentage points, p = 0.446).

The null finding is robust across specifications and is supported by event study analyses that show parallel pre-trends between treatment and control groups. However, there is evidence of heterogeneity by gender, with opposing effects for males (negative) and females (positive) that largely offset in the pooled sample.

These findings suggest that DACA, while potentially important for other outcomes

such as wages, job quality, educational attainment, and psychological well-being, may not have substantially increased full-time employment rates among eligible individuals during the 2013-2016 period. This could reflect that undocumented workers were already highly attached to the labor force prior to DACA, with the program primarily affecting the type of work rather than whether individuals work.

Future research could examine longer-term effects, outcomes related to job quality and wages, and mechanisms underlying the gender heterogeneity documented here.

A Data Appendix

A.1 Variable Definitions

Table 5: Variable Definitions from IPUMS

Variable	Definition
YEAR	Census/survey year
PERWT	Person weight
HISPAN	Hispanic origin (1 = Mexican)
BPL	Birthplace (200 = Mexico)
CITIZEN	Citizenship status (3 = Not a citizen)
YRIMMIG	Year of immigration
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth (1=Jan-Mar, 2=Apr-Jun, 3=Jul-Sep, 4=Oct-Dec)
AGE	Age in years
SEX	Sex (1 = Male, 2 = Female)
MARST	Marital status (1 = Married, spouse present)
EDUC	Educational attainment (6+ = High school or more)
EMPSTAT	Employment status (1 = Employed)
UHRSWORK	Usual hours worked per week
STATEFIP	State FIPS code

A.2 DACA Eligibility Criteria Implementation

DACA eligibility is determined using the following criteria:

```
DACA_ELIGIBLE = 1 if:
    (YRIMMIG - BIRTHYR < 16)                          # Arrived before age 16
    AND (BIRTHYR >= 1982 OR
         (BIRTHYR == 1981 AND BIRTHQTR >= 3))         # Under 31 on 6/15/2012
    AND (YRIMMIG <= 2007)                             # In US since 2007
    AND (CITIZEN == 3)                                # Non-citizen
```

A.3 Sample Sizes by Year

Table 6: Sample Sizes by Year and Treatment Status

Year	Control	Treatment
2006	6,410	6,734
2007	6,213	7,350
2008	6,018	7,160
2009	5,724	7,821
2010	5,860	8,566
2011	5,761	9,183
2013	5,213	9,228
2014	4,897	9,371
2015	4,421	9,205
2016	4,364	8,993
Total	54,881	83,611

B Technical Appendix

B.1 Regression Specifications

Model 1 (Basic DiD):

$$\text{Fulltime}_{ist} = \alpha + \beta_1 \text{DACA}_i + \beta_2 \text{POST}_t + \delta(\text{DACA}_i \times \text{POST}_t) + \varepsilon_{ist} \tag{3}$$

Model 2 (With Demographics):

$$\begin{aligned}\text{Fulltime}_{ist} = \alpha + \beta_1 \text{DACA}_i + \beta_2 \text{POST}_t + \delta(\text{DACA}_i \times \text{POST}_t) \\ + \gamma_1 \text{Age}_i + \gamma_2 \text{Age}_i^2 + \gamma_3 \text{Female}_i + \gamma_4 \text{Married}_i + \gamma_5 \text{HS}_i + \varepsilon_{ist}\end{aligned} \tag{4}$$

Model 3 (Year FE):

$$\begin{aligned}\text{Fulltime}_{ist} = \alpha + \beta_1 \text{DACA}_i + \delta(\text{DACA}_i \times \text{POST}_t) \\ + \gamma_1 \text{Age}_i + \gamma_2 \text{Age}_i^2 + \gamma_3 \text{Female}_i + \gamma_4 \text{Married}_i + \gamma_5 \text{HS}_i + \mu_t + \varepsilon_{ist}\end{aligned} \tag{5}$$

Model 4 (State + Year FE):

$$\begin{aligned}\text{Fulltime}_{ist} = \alpha + \beta_1 \text{DACA}_i + \delta(\text{DACA}_i \times \text{POST}_t) \\ + \gamma_1 \text{Age}_i + \gamma_2 \text{Age}_i^2 + \gamma_3 \text{Female}_i + \gamma_4 \text{Married}_i + \gamma_5 \text{HS}_i + \lambda_s + \mu_t + \varepsilon_{ist}\end{aligned} \tag{6}$$

B.2 Standard Error Calculation

All standard errors are heteroskedasticity-robust (HC1) standard errors, computed as:

$$\widehat{V}_{HC1} = (X'X)^{-1} \left(\sum_{i=1}^{n} \frac{n}{n-k} \hat{u}_i^2 x_i x_i' \right) (X'X)^{-1} \tag{7}$$

where $\hat{u}_i$ are the OLS residuals, n is the sample size, and k is the number of regressors.

B.3 Software

All analyses were conducted using Python 3 with the following packages:

- pandas (data manipulation)
- numpy (numerical operations)
- statsmodels (regression analysis)

C Summary of Key Results

PREFERRED ESTIMATE

Outcome: Full-time employment (UHRSWORK $\geq$ 35)

Treatment: DACA eligibility

Sample: Hispanic-Mexican, Mexican-born, non-citizens, ages 16-64

Effect Size:	0.0048 (0.48 percentage points)
Standard Error:	0.0062 (0.62 percentage points)
95% Confidence Interval:	[-0.0075, 0.0170]
p-value:	0.446
Sample Size:	138,492

Interpretation: DACA eligibility is associated with a 0.48 percentage point increase in the probability of full-time employment, but this effect is not statistically significant at conventional levels. The evidence does not support a causal effect of DACA on full-time employment in this population.