The Effect of DACA Eligibility on Full-Time Employment Among Mexican-Born Non-Citizens: A Difference-in-Differences Analysis

Replication Task 89

January 25, 2026

Abstract

This study examines the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican, Mexican-born non-citizens in the United States. Using American Community Survey data from 2006–2016 and a difference-in-differences research design, I find that DACA eligibility is associated with a 2.76 percentage point increase in the probability of full-time employment (defined as working 35 or more hours per week). This effect is statistically significant at conventional levels and robust across multiple specifications, including controls for demographic characteristics and state and year fixed effects. The findings suggest that DACA's provision of work authorization had meaningful positive effects on the employment outcomes of eligible individuals.

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1   Introduction

The Deferred Action for Childhood Arrivals (DACA) program, announced on June 15, 2012, represented one of the most significant changes to U.S. immigration policy in recent decades. The program offered temporary relief from deportation and work authorization to certain undocumented immigrants who had arrived in the United States as children. By providing legal work authorization, DACA potentially removed significant barriers to formal employment that undocumented workers face, including the risk of workplace raids, inability to provide documentation required by employers, and exclusion from certain occupations and industries.

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 the Deferred Action for Childhood Arrivals (DACA) program on the probability of full-time employment?*

Full-time employment is defined as usually working 35 or more hours per week, following the standard Bureau of Labor Statistics definition. This outcome measure captures the intensive margin of employment—not merely whether someone is employed, but whether they are working full-time hours, which typically corresponds to better job quality, benefits, and earnings.

The identification strategy relies on a difference-in-differences (DiD) design that compares changes in full-time employment rates between DACA-eligible and non-eligible Mexican-born non-citizens before and after the program's implementation. The key identifying assumption is that, absent DACA, the full-time employment trends of eligible and non-eligible groups would have evolved similarly over time.

The main finding of this analysis is that DACA eligibility is associated with a statistically significant increase in full-time employment of approximately 2.76 percentage points. This effect is robust across specifications and suggests that the program had meaningful labor market impacts on eligible individuals.

2   Background

2.1   The DACA Program

DACA was announced by the Department of Homeland Security on June 15, 2012. The program was implemented through executive action rather than legislation, allowing certain undocumented immigrants to apply for a two-year period of deferred action on deportation and authorization to work legally in the United States.

To qualify for DACA, applicants must meet several criteria:

1. **Age at arrival**: Must have arrived in the United States before their 16th birthday

2. **Age as of June 15, 2012**: Must not have reached their 31st birthday as of June 15, 2012

3. **Continuous presence**: Must have lived continuously in the United States since June 15, 2007

4. **Physical presence**: Must have been present in the United States on June 15, 2012

5. **Immigration status**: Must not have had lawful immigration status on June 15, 2012

6. **Education/Military**: Must have been in school, graduated from high school, obtained a GED, or been honorably discharged from the military

7. **Criminal record**: Must not have been convicted of a felony, significant misdemeanor, or three or more other misdemeanors

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% being approved. Recipients could reapply for renewal after the initial two-year period.

2.2 Theoretical Mechanisms

Several mechanisms could link DACA eligibility to improved employment outcomes:

Legal work authorization: The most direct mechanism is that DACA provides temporary work authorization, allowing recipients to work legally for any employer. Without such authorization, undocumented workers are limited to the informal labor market, where jobs tend to offer lower wages, fewer hours, and worse working conditions.

Reduced fear of deportation: Even apart from formal work authorization, the deferred action aspect of DACA reduces the risk that recipients will be apprehended and deported. This may make them more willing to seek employment, particularly in formal sector jobs where documentation might be checked.

Access to identification: DACA recipients can obtain Social Security numbers and, in many states, driver's licenses. These forms of identification facilitate employment and enable workers to commute to jobs that might otherwise be inaccessible.

Human capital investment: By reducing uncertainty about future deportation, DACA may encourage recipients to invest in education and job-specific training, potentially leading to better employment outcomes over time.

2.3 Related Literature

Several studies have examined the effects of DACA on various outcomes. Research has found positive effects on labor force participation, wages, and educational attainment among DACA-eligible individuals. Studies using similar difference-in-differences designs have documented improvements in employment rates and reductions in poverty among eligible populations.

The present analysis contributes to this literature by focusing specifically on full-time employment as an outcome, examining the intensive margin of labor supply rather than simply employment status.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS), obtained through 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 a representative sample of the U.S. population.

The sample includes 1-year ACS files from 2006 through 2016. This time span provides six years of pre-DACA data (2006–2011) and four years of post-DACA data (2013–2016). The year 2012 is excluded from the analysis because DACA was implemented in June 2012, and the ACS does not record the month of interview, making it impossible to determine whether 2012 observations were collected before or after DACA implementation.

3.2 Sample Selection

The analysis focuses on a specific population: working-age, Mexican-born, Hispanic-Mexican, non-citizen individuals. Table 1 documents the sequential sample restrictions applied.

Table 1: Sample Selection Process

Restriction	Observations	Percent of Previous
Initial ACS sample (2006–2016)	33,851,424	—
Hispanic-Mexican (HISPAN = 1)	2,945,521	8.7%
Born in Mexico (BPL = 200)	991,261	33.7%
Non-citizen (CITIZEN = 3)	701,347	70.8%
Working age (16–64 years)	618,640	88.2%
Excluding 2012	561,470	90.8%
Final analytic sample	**561,470**	—

The restriction to non-citizens is particularly important. Following the research instructions, I assume that anyone who is not a citizen (CITIZEN = 3, indicating "not a citizen") and who has not received immigration papers is undocumented for DACA purposes. While some non-citizens in the data may have legal permanent residence (green cards) or other legal status, restricting to those identified as non-citizens provides the closest available proxy for the undocumented population that DACA targeted.

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome is full-time employment, defined as an indicator equal to one if the individual usually works 35 or more hours per week (UHRSWORK $\geq$ 35). This follows the standard Bureau of Labor Statistics definition of full-time work. The variable captures hours usually worked, including both paid employment and self-employment.

3.3.2 Treatment Variable: DACA Eligibility

DACA eligibility is constructed based on the program's requirements that can be observed in the ACS data:

1. **Arrived before age 16**: Age at immigration (YRIMMIG − BIRTHYR) must be less than 16

2. **Under 31 as of June 15, 2012**: Must be born in 1981 or later (BIRTHYR $\geq$ 1981)

3. **Continuous presence since June 2007**: Must have immigrated by 2007 (YRIMMIG $\leq$ 2007)

Some eligibility criteria cannot be directly observed in the ACS, including the education/military service requirement and criminal history. Additionally, the ACS does not distinguish between undocumented non-citizens and those with other non-citizen statuses. These limitations mean the constructed eligibility variable likely includes some individuals who would not actually qualify for DACA, introducing measurement error that would tend to attenuate the estimated effects.

3.3.3 Control Variables

The analysis includes several demographic control variables:

- **Age**: Linear and quadratic terms

- **Sex**: Female indicator

- **Marital status**: Married indicator (spouse present or absent)

- **Education**: Indicators for high school diploma, some college, and bachelor's degree or higher (less than high school as reference)

Fixed effects are included for state of residence and survey year.

4 Empirical Strategy

4.1 Identification Strategy

The analysis employs a difference-in-differences (DiD) design. The first difference compares outcomes before and after DACA implementation (June 2012). The second difference compares DACA-eligible individuals (treatment group) to non-eligible individuals (control group).

The treatment group consists of non-citizen Mexican immigrants who meet the age-at-arrival, birth year, and year-of-immigration criteria for DACA eligibility. The control group consists of non-citizen Mexican immigrants who do not meet these criteria—typically because they arrived as adults or were born too early to qualify for DACA.

4.2 Estimation Equation

The main specification estimates:

$$Y_{ist} = \alpha + \beta_1 \text{DACA}_i + \beta_2 \text{Post}_t + \beta_3 (\text{DACA}_i \times \text{Post}_t) + X_i' \gamma + \delta_s + \tau_t + \varepsilon_{ist} \qquad (1)$$

where:

- Y_{ist} is full-time employment status for individual i in state s and year t

- $DACA_i$ indicates DACA eligibility

- $Post_t$ indicates the post-DACA period (2013–2016)

- X_i is a vector of demographic 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 non-eligible individuals after DACA implementation.

4.3 Identifying Assumptions

The key identifying assumption is the parallel trends assumption: absent DACA, the full-time employment trends of eligible and non-eligible groups would have been the same. This assumption cannot be directly tested, but I examine pre-DACA trends to assess its plausibility.

The validity of the comparison between eligible and non-eligible groups also requires that the control group provides a reasonable counterfactual for what would have happened to the treatment group in the absence of DACA. The groups differ in age distribution and age at arrival, which could be correlated with different underlying employment trajectories. I address this by controlling for age and age-squared and by examining robustness to different age restrictions.

4.4 Inference

All regressions are weighted using ACS person weights (PERWT) to produce population-representative estimates. Standard errors are clustered at the state level to account for potential within-state correlation in the error terms. With observations from all 50 states and the District of Columbia, the number of clusters is sufficient for reliable cluster-robust inference.

5 Results

5.1 Descriptive Statistics

Table 2 presents descriptive statistics for the analytic sample, separately for DACA-eligible and non-eligible individuals.

Table 2: Descriptive Statistics by DACA Eligibility

	DACA-Eligible		Non-Eligible	
Variable	Mean	SD	Mean	SD
Full-time employed	0.463	0.499	0.594	0.491
Employed	0.554	0.497	0.656	0.475
Age	22.7	4.6	39.6	10.4
Female	0.449	—	0.461	—
Married	0.264	—	0.655	—
Less than high school	0.475	—	0.641	—
High school diploma	0.318	—	0.230	—
Some college	0.186	—	0.085	—
Bachelor's or higher	0.021	—	0.044	—
Observations	85,466		476,004	

Several differences between the groups are apparent. DACA-eligible individuals are substantially younger on average (22.7 vs. 39.6 years), reflecting the eligibility requirement that individuals be under 31 as of June 2012. They are also less likely to be married and have somewhat higher educational attainment on average, consistent with their younger age and the DACA requirement to be in school or have completed high school.

Notably, DACA-eligible individuals have lower baseline full-time employment rates (46.3% vs. 59.4%). This partly reflects the age difference—younger workers are generally less likely to work full-time—but may also reflect barriers to employment faced by younger undocumented workers.

Table 3 shows full-time employment rates by group and time period.

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

	Pre-DACA (2006–2011)	Post-DACA (2013–2016)
DACA-Eligible	43.6%	49.8%
Non-Eligible	60.4%	57.9%
Difference	−16.8 pp	−8.1 pp

The raw difference-in-differences is $(49.8 - 43.6) - (57.9 - 60.4) = 6.2 + 2.5 = 8.7$ percentage points. However, this does not account for differences in demographics or state-year effects. The regression analysis below provides more precise estimates.

5.2   Main Results

Table 4 presents the main difference-in-differences estimates across four specifications.

Table 4: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic	(2) Demographics	(3) Education	(4) State/Year FE
DACA Eligible	−0.170***	−0.036***	−0.040***	−0.023***
	(0.005)	(0.005)	(0.005)	(0.004)
Post Period	−0.026***	−0.019***	−0.020***	—
	(0.003)	(0.002)	(0.002)	
DACA × Post	**0.092*****	**0.038*****	**0.035*****	**0.028*****
	(0.004)	(0.005)	(0.004)	(0.004)
Age controls	No	Yes	Yes	Yes
Demographics	No	Yes	Yes	Yes
Education	No	No	Yes	Yes
State FE	No	No	No	Yes
Year FE	No	No	No	Yes
Observations	561,470	561,470	561,470	561,470

Notes: Standard errors clustered by state in parentheses. All regressions weighted by person weights. ***p<0.01, **p<0.05, *p<0.1

Column (1) shows the basic DiD without controls. The coefficient on the interaction term is 0.092, suggesting a 9.2 percentage point increase in full-time employment for DACA-

eligible individuals. However, this estimate is substantially attenuated when demographic controls are added.

Column (2) adds age (linear and quadratic), sex, and marital status. The DiD coefficient falls to 0.038 (3.8 percentage points), indicating that much of the raw difference was driven by age differences between the groups.

Column (3) adds education controls, and the coefficient remains similar at 0.035.

Column (4), the preferred specification, adds state and year fixed effects. The coefficient is 0.028 (2.76 percentage points) with a standard error of 0.004, yielding a 95% confidence interval of [0.020, 0.035]. This effect is statistically significant at the 1% level.

Interpretation: The preferred estimate indicates that DACA eligibility is associated with a 2.76 percentage point increase in the probability of full-time employment. Given the baseline full-time employment rate of 43.6% among DACA-eligible individuals in the pre-period, this represents approximately a 6.3% increase in full-time employment.

5.3   Robustness Checks

Table 5 presents results from several robustness checks.

Table 5: Robustness Checks

Specification	Effect	SE	p-value	N
Main result	0.0276	0.0038	<0.001	561,470
Alternative samples:				
Ages 18–40 only	0.0113	0.0045	0.012	341,332
Men only	0.0231	0.0055	<0.001	303,717
Women only	0.0230	0.0059	<0.001	257,753
Alternative outcomes:				
Employment (extensive margin)	0.0374	0.0074	<0.001	561,470
Alternative control groups:				
Narrow bandwidth (5-year)	0.0262	0.0060	<0.001	164,448

Notes: All specifications include demographic controls and state/year FE.

Ages 18–40 only: Restricting to a narrower age range that is more comparable between treatment and control groups yields a smaller but still positive and significant effect (1.1 percentage points).

By sex: The effects are similar for men (2.3 pp) and women (2.3 pp), suggesting DACA benefited both groups comparably.

Employment (extensive margin): Using any employment (rather than full-time employment) as the outcome yields a larger effect of 3.7 percentage points. This suggests DACA affected both the extensive margin (whether employed at all) and the intensive margin (whether employed full-time).

Narrow bandwidth: Using only individuals born within 5 years of the eligibility cutoff (1976–1980 vs. 1982–1986) provides a more comparable treatment and control group. The effect (2.6 pp) is similar to the main result, supporting the robustness of the findings.

5.4 Event Study Analysis

Table 6 presents event study estimates that allow the treatment effect to vary by year, relative to 2011 as the reference year.

Table 6: Event Study Estimates

Year	Coefficient	SE
2006	−0.014	(0.014)
2007	−0.010	(0.008)
2008	0.002	(0.012)
2009	0.006	(0.011)
2010	0.011	(0.016)
2011	[Reference]	
2013	0.012	(0.010)
2014	0.021	(0.015)
2015	0.038**	(0.013)
2016	0.039***	(0.012)

***p<0.01, **p<0.05, *p<0.1

The event study results provide support for the parallel trends assumption. The pre-DACA coefficients (2006–2010) are small and not statistically different from zero, indicating no significant differential trends between treatment and control groups before DACA implementation.

The post-DACA coefficients show a pattern of gradually increasing effects. The effect is small and not significant in 2013 (0.012), begins to grow in 2014 (0.021), and becomes statistically significant in 2015 (0.038) and 2016 (0.039). This pattern is consistent with the

gradual uptake of DACA benefits—applications began in August 2012, and it took time for approvals to be processed and for recipients to find full-time employment.

6 Discussion

6.1 Summary of Findings

This analysis provides evidence that DACA eligibility is associated with meaningful improvements in full-time employment among Mexican-born non-citizens. The preferred estimate indicates a 2.76 percentage point increase in the probability of full-time employment, which is statistically significant and robust across multiple specifications.

The magnitude of this effect is economically meaningful. Given that the baseline full-time employment rate among DACA-eligible individuals was about 44% in the pre-period, a 2.76 percentage point increase represents roughly a 6% improvement. Scaled to the estimated 800,000+ DACA recipients, this could translate to tens of thousands of individuals gaining full-time employment.

6.2 Mechanisms

Several mechanisms likely contribute to this effect:

Direct work authorization: The most straightforward mechanism is that DACA provides legal authorization to work, allowing recipients to take formal sector jobs that were previously unavailable to them. Many employers, particularly larger firms, are reluctant or unable to hire workers who cannot provide documentation. DACA removes this barrier.

Improved job matching: With work authorization and identification documents, DACA recipients can search more broadly for employment, access job postings that require background checks, and compete for positions that match their skills. This improved job matching could lead to full-time positions rather than part-time or informal work.

Reduced job instability: Without DACA, undocumented workers may experience frequent job separations due to documentation checks or fear of enforcement. DACA reduces this instability, potentially allowing workers to maintain stable full-time employment.

6.3 Limitations

Several limitations should be considered when interpreting these results:

Measurement of DACA eligibility: The ACS does not directly identify undocumented immigrants or DACA recipients. The constructed eligibility variable likely includes

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some legal permanent residents and excludes some individuals who do not meet the education requirement. This measurement error would tend to attenuate the estimated effects toward zero, suggesting the true effect may be larger.

Control group differences: Despite the difference-in-differences design and demographic controls, the control group differs substantially from the treatment group in age distribution and life-cycle position. Older non-eligible immigrants may face different labor market dynamics than younger eligible immigrants.

Generalizability: The analysis focuses specifically on Mexican-born individuals, who constitute the majority of DACA-eligible individuals but are not fully representative of all DACA recipients.

No direct treatment assignment: This is an intent-to-treat analysis based on eligibility rather than actual DACA receipt. Not all eligible individuals applied for or received DACA.

6.4 Policy Implications

The findings have implications for ongoing policy debates about DACA and immigration reform more broadly. The evidence that DACA eligibility improves full-time employment suggests that providing work authorization to undocumented immigrants can have meaningful positive effects on their labor market outcomes.

The gradual increase in effects over time (seen in the event study) suggests that such benefits may continue to accrue as workers have more time to find appropriate positions and advance in their careers. Policies that maintain or extend work authorization may therefore generate cumulative benefits over time.

7 Conclusion

This study examined the effect of DACA eligibility on full-time employment among Mexican-born non-citizens using a difference-in-differences research design. The analysis finds that DACA eligibility is associated with a 2.76 percentage point increase in the probability of full-time employment. This effect is statistically significant, robust to alternative specifications, and supported by event study evidence showing flat pre-trends and growing effects after DACA implementation.

These findings contribute to our understanding of how immigration policy affects labor market outcomes. The evidence suggests that providing work authorization to undocumented immigrants can meaningfully improve their employment outcomes, with implications for both

individual welfare and broader economic productivity.

A Variable Definitions

Table 7: Variable Definitions

Variable	Definition
Outcome	
Full-time employed	= 1 if UHRSWORK $\geq$ 35
Treatment	
DACA eligible	= 1 if (YRIMMIG − BIRTHYR < 16) AND (BIRTHYR $\geq$ 1981) AND (YRIMMIG $\leq$ 2007)
Post	= 1 if YEAR $\geq$ 2013
Sample restrictions	
Hispanic-Mexican	HISPAN = 1
Born in Mexico	BPL = 200
Non-citizen	CITIZEN = 3
Working age	AGE $\in$ [16, 64]
Controls	
Female	= 1 if SEX = 2
Married	= 1 if MARST $\in$ {1, 2}
High school	= 1 if EDUCD $\in$ [62, 64]
Some college	= 1 if EDUCD $\in$ (64, 101)
Bachelor's+	= 1 if EDUCD $\geq$ 101

B Additional Descriptive Statistics

Table 8: Observations by Year

Year	DACA-Eligible	Non-Eligible	Total
2006	5,893	40,519	46,412
2007	6,452	44,028	50,480
2008	7,124	47,812	54,936
2009	7,742	51,639	59,381
2010	10,198	58,174	68,372
2011	10,646	55,565	66,211
2013	9,679	46,073	55,752
2014	9,360	44,133	53,493
2015	9,176	44,023	53,199
2016	9,196	44,038	53,234
Total	85,466	476,004	561,470

C Full Regression Output: Preferred Specification

Table 9: Full Regression Results: Model 4 (Preferred Specification)

Variable	Coefficient	Std. Error
DACA Eligible	-0.0234	(0.0035)
DACA $\times$ Post	0.0276	(0.0038)
Age	0.0445	(0.0011)
Age^2	-0.0005	(0.0000)
Female	-0.4290	(0.0151)
Married	-0.0369	(0.0048)
High school	0.0488	(0.0032)
Some college	0.0503	(0.0062)
Bachelor's+	0.0706	(0.0044)
Constant	0.0666	(0.0232)
State FE	Yes	
Year FE	Yes	
Observations	561,470	

Standard errors clustered by state.

D Code and Replication Files

The analysis was conducted using Python 3 with the following packages:

- pandas (data manipulation)

- numpy (numerical operations)

- statsmodels (regression analysis)

All code and data files are available in the replication package:

- `analysis.py`: Main analysis script

- `data/data.csv`: ACS data extract

- `data/acs_data_dict.txt`: Data dictionary

- `run_log_89.md`: Analysis log documenting all decisions