Replication Study: The Effect of DACA Eligibility on Full-Time Employment Among Mexican-Born Hispanic Immigrants

Independent Replication Analysis

January 2026

Abstract

This study examines the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic, Mexican-born individuals living in the United States. Using American Community Survey (ACS) data from 2008–2016 (excluding 2012) and a difference-in-differences (DiD) research design, I compare employment outcomes between individuals who were 26–30 years old at the time of DACA implementation (treatment group) and those who were 31–35 years old (control group). The preferred specification, which includes survey weights and individual-level covariates, estimates that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points (SE = 0.017, 95% CI: [0.029, 0.094], $p < 0.001$). This effect is robust to various specification checks, including the inclusion of state and year fixed effects, clustered standard errors, and state policy controls. The results suggest that DACA's provision of work authorization and deportation relief had a meaningful positive impact on labor market outcomes for eligible immigrants.

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1 Introduction

1.1 Motivation

The Deferred Action for Childhood Arrivals (DACA) program, enacted on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program provides eligible undocumented immigrants who arrived in the United States as children with temporary relief from deportation and authorization to work legally for renewable two-year periods. Given that DACA offers legal work authorization—removing a major barrier to formal employment—understanding its effects on labor market outcomes is of substantial policy interest.

Immigration policy in the United States has long been a contentious issue, with debates centering on the economic and social impacts of both documented and undocumented immigration. Prior to DACA, undocumented immigrants faced significant barriers to formal employment, including the inability to legally work and the constant threat of deportation. These barriers not only affected the immigrants themselves but also had broader implications for the U.S. labor market and economy.

1.2 Research Question

This replication study examines a specific research question: **What was the causal impact of DACA eligibility on the probability of full-time employment among ethnically Hispanic, Mexican-born individuals living in the United States?**

The analysis focuses on this demographic group because, due to the structure of undocumented immigration to the United States, the great majority of DACA-eligible individuals were from Mexico. This focus allows for a more homogeneous sample and cleaner identification of the policy's effects.

1.3 Identification Strategy Overview

The identification strategy exploits the age-based eligibility cutoff for DACA. The program was available only to individuals who had not yet reached their 31st birthday as of June 15, 2012. I compare individuals who were ages 26–30 at the time of implementation (treatment group) to those who were ages 31–35 (control group). Both groups are otherwise similar in that they would have met the program's other eligibility requirements, but the older group was ineligible solely due to their age.

This age-based discontinuity provides a natural experiment for estimating the causal effect of DACA eligibility. The key assumption is that individuals just above and just below the age cutoff are similar in all relevant characteristics except for their DACA eligibility status.

1.4 Findings Preview

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points. This effect is statistically significant at conventional levels and robust to various specification choices. The results suggest that DACA's provision of work authorization had meaningful positive effects on labor market outcomes for eligible immigrants.

1.5 Paper Organization

The remainder of this paper is organized as follows. Section 2 provides background on the DACA program. Section 3 describes the data sources and sample construction. Section 4 outlines the empirical strategy. Section 5 presents the main results and robustness checks. Section 6 discusses the findings and their implications. Section 7 concludes.

2 Background on DACA

2.1 Historical Context

Prior to DACA, undocumented immigrants in the United States faced significant legal and economic challenges. Without legal status, they were unable to work legally, obtain driver's licenses in many states, or access various public benefits. The constant threat of deportation created additional uncertainty and limited their ability to plan for the future.

Several legislative attempts to provide relief for undocumented immigrants who arrived as children, such as the Development, Relief, and Education for Alien Minors (DREAM) Act, failed to pass Congress. In response to this legislative impasse, the Obama administration announced DACA as an executive action in June 2012.

2.2 Program Description

DACA was announced by the Obama administration on June 15, 2012, and applications began to be accepted on August 15, 2012. To be eligible for the program, individuals needed to meet the following criteria:

- Arrived in the United States before their 16th birthday
- Had not yet reached their 31st birthday as of June 15, 2012
- Lived continuously in the United States since June 15, 2007
- Were present in the United States on June 15, 2012 without lawful immigration status

- Met certain educational requirements (enrolled in school, graduated from high school, obtained a GED, or honorably discharged from the military)
- Had not been convicted of a felony or significant misdemeanors

Successful applicants received deferred action status for two years, which could be renewed. Importantly, DACA provided recipients with employment authorization documents (EADs), allowing them to work legally in the United States. This work authorization was a key benefit of the program and the focus of this analysis.

2.3 Program Uptake and Demographics

The program experienced substantial uptake among eligible individuals. In the first four years following implementation, nearly 900,000 initial applications were received, with approximately 90% approved. Recipients could reapply for additional two-year periods after their initial authorization expired, and many did so.

The demographics of DACA recipients largely reflect the composition of the undocumented immigrant population in the United States. The majority of recipients were born in Mexico, followed by El Salvador, Guatemala, and Honduras. DACA recipients were concentrated in states with large immigrant populations, including California, Texas, Illinois, and New York.

2.4 Expected Labor Market Effects

DACA eligibility could affect full-time employment through several mechanisms:

1. **Work authorization**: DACA provides legal work authorization, allowing recipients to work formally without fear of employer sanctions. Prior to DACA, undocumented workers often worked in informal sectors or used fraudulent documents, limiting their employment options.
2. **Driver's licenses**: Many states allow DACA recipients to obtain driver's licenses, expanding job opportunities by enabling commuting to jobs that were previously inaccessible. Access to reliable transportation is particularly important for employment in suburban and rural areas.
3. **Deportation relief**: Reduced fear of deportation may enable recipients to seek better employment opportunities. Without the constant threat of removal, DACA recipients may be more willing to apply for jobs, negotiate for better wages, and invest in job-specific skills.

4. **Signaling and credentials**: Having legal status may signal reliability to employers, improving job prospects. Additionally, DACA allows recipients to use their real names and Social Security numbers, enabling them to build credit histories and obtain professional licenses.

5. **Human capital investment**: The promise of future work authorization may encourage recipients to invest in education and training. Knowing that they will be able to legally work in the future, DACA recipients may be more likely to pursue higher education or vocational training.

These mechanisms suggest that DACA should have positive effects on employment outcomes for eligible individuals. The magnitude of the effect, however, depends on the baseline employment conditions and the extent to which DACA removes binding constraints on labor supply.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is a large-scale, ongoing survey conducted by the U.S. Census Bureau that collects information on demographic, social, economic, and housing characteristics of the U.S. population. The survey uses a stratified sampling design and includes approximately 1% of the U.S. population each year.

The dataset covers the years 2008 through 2016, with data from 2012 omitted since it cannot be determined whether observations in 2012 were collected before or after DACA's implementation (June 15, 2012). This creates a natural division between the pre-treatment period (2008–2011) and the post-treatment period (2013–2016).

3.2 Sample Construction

The provided analytic sample consists of ethnically Hispanic-Mexican, Mexican-born individuals residing in the United States who meet all DACA eligibility criteria except potentially the age requirement. Specifically, the sample includes individuals who:

- Were born in Mexico (based on the BPL variable)
- Are of Hispanic-Mexican ethnicity (based on the HISPAN variable)
- Meet the continuous residence and presence requirements implied by the available data

The sample is further restricted to individuals who were either:

- Ages 26–30 as of June 15, 2012 (treatment group, ELIGIBLE = 1)
- Ages 31–35 as of June 15, 2012 (control group, ELIGIBLE = 0)

The choice of age ranges reflects the research design specification. The treatment group consists of individuals who were eligible for DACA based on their age, while the control group consists of individuals who were too old to qualify but otherwise similar in terms of their immigration background and other characteristics.

3.3 Sample Characteristics

The final sample contains 17,382 observations representing approximately 2.4 million individuals when weighted using the ACS person weights (PERWT). Table 1 presents the distribution of observations by treatment group and time period.

Table 1: Sample Sizes by Group and Period

	Pre-DACA (2008–2011)	Post-DACA (2013–2016)	Total
Control (ELIGIBLE = 0)	3,294	2,706	6,000
Treatment (ELIGIBLE = 1)	6,233	5,149	11,382
Total	9,527	7,855	17,382

Since the ACS is a repeated cross-section and not a panel dataset, the same individuals are not necessarily observed before and after treatment. This is an important consideration for interpreting the results, as changes in group averages may reflect both individual-level changes and changes in sample composition.

3.4 Key Variables

3.4.1 Outcome Variable

The outcome variable is `FT` (full-time employment), a binary indicator equal to 1 for individuals usually working 35 hours per week or more, and 0 otherwise. This variable is constructed from the UHRSWORK (usual hours worked per week) variable in the ACS.

Importantly, individuals not in the labor force are included in the analysis with `FT` = 0, as per the research design specifications. This means that the outcome captures both the extensive margin (whether an individual is employed) and the intensive margin (whether an employed individual works full-time). The full-time employment rate therefore reflects the proportion of the entire population (not just workers) who are employed full-time.

3.4.2 Treatment Variables

The key treatment variables are:

- `ELIGIBLE`: Binary indicator equal to 1 for individuals aged 26–30 at DACA implementation (treatment group) and 0 for those aged 31–35 (control group). This variable is provided in the data and captures the age-based eligibility criterion for DACA.
- `AFTER`: Binary indicator equal to 1 for observations from 2013–2016 (post-treatment period) and 0 for observations from 2008–2011 (pre-treatment period). This variable distinguishes the period before and after DACA was implemented.
- `ELIGIBLE_AFTER`: Interaction term (ELIGIBLE $\times$ AFTER), which is the key variable of interest in the difference-in-differences framework. This captures the differential change in full-time employment for the treatment group relative to the control group after DACA was implemented.

3.4.3 Control Variables

The following control variables are available and used in various specifications:

- `SEX`: Sex (1 = Male, 2 = Female in IPUMS coding)
- `AGE`: Age at time of survey
- `MARST`: Marital status (married, separated, divorced, widowed, never married)
- `NCHILD`: Number of own children in household
- `EDUC_RECODE`: Education level, recoded into categories (Less than High School, High School Degree, Some College, Two-Year Degree, BA+)
- `STATEFIP`: State of residence (FIPS code)
- `YEAR`: Survey year

Additionally, several state-level policy variables are available:

- `DRIVERSLICENSES`: Indicator for states allowing undocumented immigrants to obtain driver's licenses
- `INSTATETUITION`: Indicator for states offering in-state tuition to undocumented students
- `STATEFINANCIALAID`: Indicator for states offering financial aid to undocumented students

- `EVERIFY`: Indicator for state E-Verify requirements
- `SECURECOMMUNITIES`: Indicator for Secure Communities program participation

3.5 Variable Coding Notes

As noted in the data documentation, binary variables from IPUMS are typically coded with 1 = No and 2 = Yes. However, the variables specifically created for this analysis (`FT`, `AFTER`, `ELIGIBLE`, and state policy variables) are coded with 0 = No and 1 = Yes. This coding convention is maintained throughout the analysis.

4 Empirical Strategy

4.1 Difference-in-Differences Design

The identification strategy employs a difference-in-differences (DiD) approach that compares changes in full-time employment between treatment and control groups before and after DACA implementation. The DiD design is well-suited for this setting because it controls for both time-invariant differences between groups and common time trends affecting both groups.

The intuition behind the DiD approach is as follows:

1. First, calculate the change in full-time employment for the treatment group from before to after DACA: $\Delta_{Treatment} = \bar{FT}_{Treatment,After} - \bar{FT}_{Treatment,Before}$
2. Second, calculate the change for the control group: $\Delta_{Control} = \bar{FT}_{Control,After} - \bar{FT}_{Control,Before}$
3. The DiD estimate is the difference between these changes: $DiD = \Delta_{Treatment} - \Delta_{Control}$

This approach removes any time-invariant differences between the groups (which could confound a simple comparison) and removes any common time trends (which could confound a simple before-after comparison for the treatment group alone).

4.2 Econometric Specification

The baseline DiD model is specified as:

$$FT_{it} = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + \epsilon_{it} \quad (1)$$

where:

- FT_{it} is the full-time employment indicator for individual i observed in year t
- $ELIGIBLE_i$ indicates treatment group membership
- $AFTER_t$ indicates the post-treatment period
- β_3 is the coefficient of interest capturing the causal effect of DACA eligibility
- ϵ_{it} is the error term

The coefficient β_1 captures the baseline difference between treatment and control groups, β_2 captures the common time trend, and β_3 captures the differential change for the treatment group—i.e., the effect of DACA eligibility.

The preferred specification extends this model to include individual-level covariates:

$$\begin{aligned} FT_{it} = &\beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) \\ &+ \beta_4 FEMALE_i + \beta_5 MARRIED_i + \beta_6 AGE_i + \beta_7 CHILDREN_i \\ &+ \sum_k \gamma_k EDU_{ik} + \epsilon_{it} \end{aligned} \tag{2}$$

All models use ACS person weights (`PERWT`) to produce population-representative estimates. Robust (heteroskedasticity-consistent) standard errors are used throughout.

4.3 Estimation Method

The models are estimated using weighted least squares (WLS) with person weights from the ACS. While the outcome variable is binary, the linear probability model (LPM) is used rather than logit or probit for several reasons:

1. The LPM coefficients are easily interpreted as percentage point changes in the probability of full-time employment.
2. The DiD coefficient in a linear model has a straightforward causal interpretation.
3. With a large sample size and the outcome not near 0 or 1, the LPM provides similar results to nonlinear models.

Robust standard errors (HC1) are used to address potential heteroskedasticity, which is inherent in models with binary outcomes.

4.4 Identification Assumptions

The validity of the DiD design relies on several key assumptions:

1. **Parallel trends assumption**: Absent DACA, the treatment and control groups would have experienced similar trends in full-time employment. This is the key identifying assumption and cannot be directly tested. However, it can be assessed by examining pre-treatment trends and conducting placebo tests.

2. **No anticipation effects**: Individuals did not change their behavior in anticipation of DACA before its announcement. Since DACA was announced as a surprise executive action, this assumption is likely satisfied.

3. **Stable unit treatment value assumption (SUTVA)**: The treatment of one individual does not affect the outcomes of other individuals, and there is only one version of the treatment. Potential violations could occur if DACA recipients crowd out or complement non-recipients in the labor market.

4. **No differential selection**: The composition of treatment and control groups did not change differentially over time. This could be violated if, for example, DACA-eligible individuals were more likely to remain in or enter the country after DACA was announced.

4.5 Pre-Trends and Parallel Trends Assessment

To assess the parallel trends assumption, I examine the pre-treatment trends in full-time employment for both groups. Specifically, I estimate:

$$FT_{it} = \alpha + \beta_1 ELIGIBLE_i + \beta_2 TREND_t + \beta_3 (ELIGIBLE_i \times TREND_t) + \epsilon_{it} \quad (3)$$

where $TREND_t$ is a linear time trend and the sample is restricted to the pre-treatment period (2008–2011). The coefficient β_3 captures the differential pre-trend between treatment and control groups. If the parallel trends assumption holds, we would expect β_3 to be close to zero and not statistically significant.

Additionally, I present an event study specification that allows for year-specific treatment effects:

$$FT_{it} = \alpha + \beta_1 ELIGIBLE_i + \sum_j \gamma_j YEAR_j + \sum_{j \neq 2011} \delta_j (ELIGIBLE_i \times YEAR_j) + \epsilon_{it} \quad (4)$$

where 2011 is the reference year. The coefficients δ_j for pre-treatment years (2008–2010) can be used to assess whether there were differential trends before DACA, while the coefficients for post-treatment years (2013–2016) show how the treatment effect evolved over time.

5 Results

5.1 Descriptive Statistics

5.1.1 Full-Time Employment Rates

Table 2 shows full-time employment rates by group and period, both unweighted and weighted.

Table 2: Full-Time Employment Rates by Group and Period

	Unweighted		Weighted	
	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
Control (ages 31–35)	0.670	0.645	0.689	0.663
Treatment (ages 26–30)	0.626	0.666	0.637	0.686
Change			−0.026	—
DiD	0.064		0.075	

The raw data reveal several patterns:

1. In the pre-DACA period, the control group had higher full-time employment rates than the treatment group (68.9% vs. 63.7% weighted). This is consistent with older workers being more likely to be employed full-time.

2. The treatment group experienced an increase in full-time employment from 63.7% to 68.6% (weighted), an increase of 4.9 percentage points.

3. The control group experienced a decrease from 68.9% to 66.3%, a decrease of 2.6 percentage points.

4. The simple DiD estimate is 4.9 - (-2.6) = 7.5 percentage points using weighted data.

5.1.2 Yearly Trends

Table 3 shows full-time employment rates by year and eligibility status.

Table 3: Full-Time Employment Rates by Year and Eligibility Status

Year	Control (ages 31–35)	Treatment (ages 26–30)
Pre-DACA period		
2008	0.726	0.667
2009	0.657	0.617
2010	0.673	0.606
2011	0.617	0.617
Post-DACA period		
2013	0.624	0.642
2014	0.649	0.640
2015	0.650	0.680
2016	0.660	0.708

Several observations emerge from the yearly data:

1. Both groups experienced a decline in full-time employment during the Great Recession (2008–2011), which is expected given the overall economic downturn.

2. By 2011, the two groups had converged to nearly identical full-time employment rates (61.7% for both).

3. After DACA, the treatment group's full-time employment rate increased steadily, reaching 70.8% in 2016, while the control group's rate remained relatively flat around 65%.

5.1.3 Demographic Characteristics

Table 4 compares demographic characteristics between the treatment and control groups.

Table 4: Demographic Characteristics by Eligibility Status

Characteristic	Control	Treatment
Gender		
Male	52.9%	51.8%
Female	47.1%	48.2%
Education		
Less than High School	0.5%	0.5%
High School Degree	73.8%	70.4%
Some College	15.3%	17.2%
Two-Year Degree	5.1%	6.0%
BA+	5.8%	6.3%
Marital Status		
Married (spouse present)	51.6%	41.8%
Never married	33.7%	47.3%
Other	14.7%	10.9%
Age in June 2012		
Mean	32.9	28.1
Min	31.0	26.0
Max	35.0	30.8

The two groups are similar in terms of gender composition and education levels, which supports the validity of the comparison. The main difference is in marital status and age, with the control group being older and more likely to be married, as expected given the age-based selection criterion.

5.2 Main Results

5.2.1 Baseline Specifications

Table 5 presents the main regression results across multiple specifications.

Table 5: Difference-in-Differences Estimates of DACA Effect on Full-Time Employment

	(1) Basic Unweighted	(2) Basic Weighted	(3) With Covariates	(4) With FE and Covariates
ELIGIBLE	−0.043***	−0.052***	−0.031**	−0.005
	(0.010)	(0.012)	(0.015)	(0.018)
AFTER	−0.025**	−0.026*	−0.027	—
	(0.012)	(0.015)	(0.018)	
ELIGIBLE × AFTER	0.064***	0.075***	0.062***	0.058***
	(0.015)	(0.018)	(0.017)	(0.017)
FEMALE			−0.338***	−0.336***
			(0.008)	(0.008)
MARRIED			−0.026***	−0.026***
			(0.009)	(0.009)
AGE			0.003	0.008***
			(0.002)	(0.003)
HAS_CHILDREN			0.009	0.009
			(0.009)	(0.009)
Education Dummies	No	No	Yes	Yes
Year Fixed Effects	No	No	No	Yes
State Fixed Effects	No	No	No	Yes
Weights	No	Yes	Yes	Yes
N	17,382	17,382	17,382	17,382
R-squared	0.002	0.003	0.130	0.138

Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.2.2 Interpretation of Results

Across all specifications, the DiD coefficient (ELIGIBLE × AFTER) is positive and statistically significant at the 1% level. The estimates range from 5.8 to 7.5 percentage points depending on the specification:

- **Model 1** (basic, unweighted): The DiD estimate is 6.4 percentage points (SE = 0.015), indicating that the treatment group experienced a 6.4 percentage point larger increase in full-time employment relative to the control group after DACA.
- **Model 2** (basic, weighted): Using survey weights increases the estimate to 7.5 percentage points (SE = 0.018), reflecting population-representative effects.
- **Model 3** (with covariates, weighted): Adding individual-level covariates reduces the estimate slightly to 6.2 percentage points (SE = 0.017), as the covariates absorb some of the variation.

- **Model 4** (with fixed effects): Adding state and year fixed effects yields an estimate of 5.8 percentage points (SE = 0.017). The AFTER coefficient is absorbed by the year fixed effects.

5.2.3 Preferred Specification

The preferred specification is Model (3), which includes individual-level covariates but does not include state and year fixed effects. This specification estimates that **DACA eligibility increased full-time employment by 6.2 percentage points** (SE = 0.017, 95% CI: [0.029, 0.094]).

The rationale for preferring Model (3) includes:

1. The year fixed effects in Model (4) absorb the AFTER coefficient, making interpretation less straightforward.
2. The DiD coefficient is similar across models, suggesting robustness.
3. The inclusion of covariates improves precision by controlling for observable differences between groups.
4. The model balances parsimony with control for confounding.

5.2.4 Interpretation of Covariate Effects

Several covariate effects are noteworthy:

- **Gender**: Women have approximately 34 percentage points lower probability of full-time employment compared to men. This large gap is consistent with known gender differences in labor force participation, particularly among the Hispanic population, where cultural factors may contribute to lower female labor force participation.
- **Education**: Compared to individuals with a bachelor's degree or higher, those with less education have lower full-time employment rates. The gap is particularly large for those with less than a high school education (-63 percentage points), though this group represents only 0.5% of the sample.
- **Marital status**: Married individuals have slightly lower full-time employment rates (-2.6 percentage points), possibly reflecting household specialization where one spouse may reduce labor supply.
- **Age**: Age has a small positive effect (0.8 percentage points per year in the fixed effects model), consistent with increased employment stability over the life cycle.

5.3 Robustness Checks

5.3.1 Clustered Standard Errors

To account for potential within-state correlation in the error terms, I re-estimate the preferred specification with standard errors clustered at the state level. This yields:

- Coefficient: 0.062
- Clustered SE: 0.021
- p-value: 0.004

The larger standard errors (0.021 vs. 0.017) reflect the within-state correlation, but the result remains statistically significant at the 1% level.

5.3.2 Heterogeneity by Gender

Table 6 presents the DiD estimates separately for men and women.

Table 6: DiD Estimates by Gender

	Coefficient	SE	p-value	N
Men	0.072***	0.020	0.0003	9,075
Women	0.053*	0.028	0.061	8,307

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

The effect is larger and more precisely estimated for men (7.2 percentage points) than for women (5.3 percentage points). The effect for women is marginally significant at the 10% level. This pattern is consistent with prior research finding larger employment effects of DACA for men, possibly because men have higher baseline labor force participation rates and thus more room for improvement in full-time employment.

5.3.3 State Policy Controls

Including state-level policy variables (`DRIVERSLICENSES`, `INSTATETUITION`, `EVERIFY`) does not substantially change the main result:

- ELIGIBLE $\times$ AFTER coefficient: 0.064 (SE = 0.017, p $<$ 0.001)

Among the state policy variables, only `DRIVERSLICENSES` has a statistically significant effect (-0.041, SE = 0.012), suggesting that full-time employment is lower in states that allow undocumented immigrants to obtain driver's licenses. This counterintuitive finding may reflect omitted variable bias (e.g., states with such policies may have different labor markets) rather than a causal effect.

5.3.4 Pre-Trends Test

To assess the parallel trends assumption, I estimate the differential pre-trend using data from 2008–2011:

- Differential pre-trend coefficient (ELIGIBLE × TREND): 0.017 (SE = 0.011, p = 0.113)

The differential pre-trend is positive but not statistically significant, suggesting some convergence between groups over time but not a statistically significant violation of the parallel trends assumption. However, the point estimate of 1.7 percentage points per year suggests caution in interpreting the DiD results, as some of the observed effect may reflect continuing pre-trends rather than a DACA effect.

5.4 Event Study

Table 7 presents event study estimates showing year-specific treatment effects relative to 2011 (the last pre-treatment year).

Table 7: Event Study Estimates (Relative to 2011)

Year	Coefficient	SE	95% CI	
Pre-treatment period				
2008	−0.068	0.035	[−0.136, 0.000]	*
2009	−0.050	0.036	[−0.120, 0.021]	
2010	−0.082	0.036	[−0.152, −0.012]	**
2011	—	(ref.)	—	
Post-treatment period				
2013	0.016	0.038	[−0.058, 0.090]	
2014	0.000	0.038	[−0.075, 0.076]	
2015	0.001	0.038	[−0.073, 0.076]	
2016	0.074	0.038	[−0.001, 0.149]	*

* $p < 0.1$, ** $p < 0.05$

The event study reveals several patterns:

1. **Pre-treatment coefficients**: The coefficients for 2008–2010 are negative, suggesting that the treatment group had relatively lower full-time employment compared to the control group in the early pre-treatment years, but this gap was closing over time. By 2011, the groups were at parity (the reference year).

2. **Post-treatment coefficients**: The coefficients for 2013–2015 are close to zero and not statistically significant, suggesting no immediate treatment effect. The coefficient for 2016 is larger (7.4 percentage points) and marginally significant.

3. **Gradual effect**: The pattern suggests that the treatment effect may have taken time to materialize, with the largest effect appearing in 2016, four years after DACA was implemented.

6 Discussion

6.1 Summary of Findings

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points. This effect is statistically significant and robust across multiple specifications. In relative terms, this represents an increase of roughly 10% from the baseline full-time employment rate of approximately 64% for the treatment group in the pre-period.

6.2 Interpretation

Several factors may explain this positive effect:

1. **Direct effect of work authorization**: DACA provides legal work authorization, eliminating the need for eligible individuals to work informally or in jobs that do not verify immigration status. This allows them to access a broader range of employment opportunities, including those that require work authorization.

2. **Job quality improvements**: With legal status, DACA recipients may be able to better match with jobs that suit their skills, potentially leading to higher-quality employment. They may also be more willing to negotiate for full-time positions rather than accepting part-time or informal work.

3. **Geographic and occupational mobility**: Legal status may enable recipients to relocate to areas with better employment opportunities or to pursue occupations that require licenses or background checks.

4. **Reduced employment risk**: Without the constant threat of deportation, DACA recipients may be more willing to invest in job-specific skills and maintain stable employment relationships.

6.3 Comparison with Existing Literature

The estimated effect size is broadly consistent with prior research on DACA's labor market effects. Previous studies have found positive effects of DACA on employment, wages, and labor force participation. The finding that the effect is larger for men than for women aligns with patterns documented in other research, likely reflecting higher baseline labor force participation among men.

6.4 Limitations

Several limitations should be noted:

1. **Pre-trend concerns**: The event study reveals some evidence of differential pre-trends, with the control group showing relatively higher full-time employment in the early pre-treatment years and convergence over time. This could bias the DiD estimate upward if the convergence pattern continued independent of DACA. The pre-trend coefficient is not statistically significant, but the point estimate suggests caution.

2. **Age and cohort effects**: While the treatment and control groups are defined by their age at DACA implementation, this means that individuals in the two groups are at different points in their life cycles when observed. The control group (ages 31–35 in 2012) may face different labor market conditions than the treatment group (ages 26–30 in 2012) for reasons unrelated to DACA.

3. **Selection into eligibility**: The sample consists of individuals who meet all DACA eligibility criteria except the age cutoff. However, these criteria (e.g., continuous residence, educational attainment) may be correlated with employment outcomes in ways that differ between the two age groups.

4. **Repeated cross-section**: Because the ACS is not a panel dataset, we cannot track the same individuals over time. This means the analysis captures changes in group-level averages, which may be affected by changes in sample composition due to migration, mortality, or other factors.

5. **Definition of full-time employment**: The outcome includes individuals not in the labor force as having FT = 0. This means the analysis captures effects on both the extensive margin (labor force participation) and the intensive margin (full-time vs. part-time among workers). The relative contributions of these margins cannot be disentangled with this outcome measure.

6. **Compliance and take-up**: Not all eligible individuals apply for or receive DACA. The estimated effect is an intent-to-treat effect based on eligibility rather than a treatment-on-the-treated effect based on actual DACA receipt. The true effect among those who actually receive DACA may be larger.

6.5 Policy Implications

The results suggest that DACA's provision of work authorization and deportation relief had meaningful positive effects on the labor market outcomes of eligible immigrants. This has implications for ongoing policy debates about DACA and immigration reform more broadly:

1. **Work authorization matters**: Providing legal work authorization can improve employment outcomes for undocumented immigrants. This finding is relevant for debates about comprehensive immigration reform and alternative policies that could provide work authorization to broader populations.

2. **Effects may be gradual**: The event study pattern suggests that the effects may take time to fully materialize, as DACA recipients adjust their labor market behavior and employers become aware of the policy change.

3. **Targeting youth**: The focus of DACA on younger immigrants may be particularly effective, as this population has more years of potential work ahead and may be more able to adapt to formal labor market participation.

4. **Policy uncertainty**: The uncertain future of DACA (which has faced legal challenges) may dampen some of these positive effects if recipients are hesitant to make long-term labor market investments.

7 Conclusion

This replication study examines the effect of DACA eligibility on full-time employment among Mexican-born Hispanic immigrants in the United States. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I find that DACA eligibility increased the probability of full-time employment by approximately 6.2 percentage points.

The effect is statistically significant and robust to various specification choices, including the inclusion of individual covariates, state and year fixed effects, clustered standard errors, and state policy controls. Subgroup analysis suggests that the effect is larger for men than for women. Event study analysis reveals some evidence of differential pre-trends, though the differential trend is not statistically significant.

Overall, the results support the conclusion that DACA had a positive effect on labor market outcomes for eligible immigrants, consistent with the program's goal of enabling recipients to work legally in the United States. The findings have implications for immigration policy debates and suggest that work authorization is an important determinant of employment outcomes for undocumented immigrants.

Summary of Preferred Estimate

Preferred Estimate Summary

Statistic	Value
Effect Size (DiD coefficient)	0.062
Standard Error	0.017
95% Confidence Interval	[0.029, 0.094]
p-value	< 0.001
Sample Size (unweighted)	17,382
Sample Size (weighted)	2,416,349

A Appendix: Additional Tables and Figures

A.1 Sample Distribution by State

Table 8: Sample Distribution by State (Top 15)

State	N	Percent	Cumulative
California	7,796	44.9%	44.9%
Texas	3,572	20.6%	65.4%
Illinois	995	5.7%	71.2%
Arizona	860	4.9%	76.1%
Nevada	383	2.2%	78.3%
Washington	366	2.1%	80.4%
Florida	318	1.8%	82.2%
New York	292	1.7%	83.9%
Georgia	292	1.7%	85.6%
Colorado	268	1.5%	87.1%
North Carolina	241	1.4%	88.5%
Oregon	220	1.3%	89.8%
New Mexico	163	0.9%	90.7%
Utah	144	0.8%	91.5%
New Jersey	123	0.7%	92.2%
Other states	1,349	7.8%	100.0%

The sample is heavily concentrated in a few states, with California and Texas together accounting for nearly two-thirds of observations. This reflects the geographic distribution of the Mexican-born Hispanic population in the United States.

A.2 Census Region Distribution

Table 9: Sample Distribution by Census Region

Region	N	Percent
West	10,290	59.2%
South	4,998	28.8%
Midwest	1,578	9.1%
Northeast	516	3.0%

A.3 Employment Status Distribution

Table 10: Employment Status Distribution

Employment Status	N	Percent
Employed	12,886	74.1%
Not in Labor Force	3,318	19.1%
Unemployed	1,178	6.8%

A.4 Full Regression Output for Preferred Model

The preferred model specification is:

```
FT ~ ELIGIBLE + AFTER + ELIGIBLE_AFTER + FEMALE + MARRIED + AGE
     + HAS_CHILDREN + EDU_High_School_Degree + EDU_Less_than_High_School
     + EDU_Some_College + EDU_Two_Year_Degree
```

with weighted least squares using person weights (PERWT) and robust (HC1) standard errors.

Table 11: Full Regression Results: Preferred Model

Variable	Coefficient	SE	z-stat	p-value
Intercept	0.837	0.070	11.90	<0.001
ELIGIBLE	−0.031	0.015	−2.01	0.044
AFTER	−0.027	0.018	−1.55	0.122
ELIGIBLE × AFTER	0.062	0.017	3.68	<0.001
FEMALE	−0.338	0.008	−40.19	<0.001
MARRIED	−0.026	0.009	−2.93	0.003
AGE	0.003	0.002	1.22	0.224
HAS_CHILDREN	0.009	0.009	0.98	0.326
High School Degree	−0.093	0.017	−5.50	<0.001
Less than High School	−0.628	0.129	−4.88	<0.001
Some College	−0.045	0.019	−2.38	0.017
Two-Year Degree	−0.029	0.024	−1.23	0.221
R-squared		0.130		
Adjusted R-squared		0.129		
N		17,382		
F-statistic		162.5		

A.5 Model Comparison Summary

Table 12: Summary of DiD Coefficient Across Specifications

Specification	Coefficient	SE	p-value	R^2
Basic (unweighted)	0.064	0.015	<0.001	0.002
Basic (weighted)	0.075	0.018	<0.001	0.003
With covariates (weighted)	0.062	0.017	<0.001	0.130
With state/year FE	0.058	0.017	<0.001	0.138
Clustered SEs (state)	0.062	0.021	0.004	0.130
With state policy controls	0.064	0.017	<0.001	0.131

A.6 Technical Notes

A.6.1 Software and Replication

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

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

The analysis code is available in `analysis_code.py` in the replication materials.

A.6.2 Variable Construction

The following variables were constructed for the analysis:

- `ELIGIBLE_AFTER`: Interaction of ELIGIBLE and AFTER
- `FEMALE`: Binary indicator (1 if SEX = 2, 0 otherwise)
- `MARRIED`: Binary indicator (1 if MARST = 1 or 2, 0 otherwise)
- `HAS_CHILDREN`: Binary indicator (1 if NCHILD > 0, 0 otherwise)
- Education dummies: Based on EDUC_RECODE, with BA+ as reference category

A.6.3 Standard Error Computation

Robust standard errors (HC1) are used throughout to address heteroskedasticity. The HC1 estimator applies a degrees-of-freedom correction:

$$\hat{V}_{HC1} = \frac{n}{n-k}(X'X)^{-1}X'\text{diag}(\hat{u}_i^2)X(X'X)^{-1} \tag{5}$$

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

For clustered standard errors, the cluster-robust estimator accounts for within-cluster correlation:

$$\hat{V}_{cluster} = (X'X)^{-1}\left(\sum_g X_g'\hat{u}_g\hat{u}_g'X_g\right)(X'X)^{-1} \tag{6}$$

where g indexes clusters (states) and $\hat{u}_g$ is the vector of residuals for cluster g.