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

Replication Study

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Abstract

This study estimates the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican individuals born in Mexico and living in the United States. Using a difference-in-differences design that compares individuals aged 26–30 (eligible for DACA) to those aged 31–35 (ineligible due to age cutoff) before and after the program's implementation in 2012, I find that DACA eligibility increased full-time employment by approximately 4.6 percentage points (95% CI: 2.4–6.9 pp). This effect is robust to alternative specifications and represents an economically meaningful improvement in labor market outcomes for this population. Event study analyses support the parallel trends assumption underlying the identification strategy.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented a significant shift in U.S. immigration policy. The program provided temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. By enabling recipients to work legally, DACA potentially improved labor market outcomes for a population that had previously faced substantial barriers to formal employment.

This study examines a fundamental question: Did DACA eligibility increase full-time employment among the eligible population? Specifically, I focus on Hispanic-Mexican individuals born in Mexico—a population that comprises the majority of DACA-eligible individuals—and estimate the program's effect on the probability of working 35 or more hours per week (the standard definition of full-time employment).

The identification strategy exploits the age-based eligibility cutoff built into the DACA program. Individuals had to be under age 31 as of June 15, 2012 to be eligible. This creates a natural comparison between individuals who barely qualified for the program (those aged 26–30) and those who barely missed the cutoff (those aged 31–35). Under the assumption that these adjacent birth cohorts would have followed similar employment trajectories absent the policy, the difference-in-differences approach provides a credible estimate of DACA's causal effect.

The main findings indicate that DACA eligibility increased full-time employment by approximately 4.6 percentage points. This estimate is statistically significant and robust across a variety of specifications. The results suggest that DACA meaningfully improved labor market integration for eligible individuals, consistent with the theoretical prediction that legal work authorization would enable movement from informal to formal employment and potentially increase hours worked.

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

2 Background on DACA

2.1 Program Overview

The Deferred Action for Childhood Arrivals (DACA) program was announced by the Obama administration on June 15, 2012. The program was designed to provide temporary protection

to undocumented immigrants who were brought to the United States as children, often referred to as "Dreamers." DACA represented an exercise of prosecutorial discretion by the Department of Homeland Security, offering eligible individuals a two-year renewable period of deferred action (protection from deportation) along with authorization to work legally in the United States.

2.2 Eligibility Requirements

To qualify for DACA, applicants had to meet the following criteria:

1. Were under age 31 as of June 15, 2012
2. Came to the United States before their 16th birthday
3. Continuously resided in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012, and at the time of application
5. Had no lawful status on June 15, 2012
6. Were currently in school, had graduated from high school, obtained a GED, or been honorably discharged from the military
7. Had not been convicted of a felony, significant misdemeanor, or three or more other misdemeanors

2.3 Program Implementation

Applications for DACA 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% receiving approval. Recipients could apply for renewal after the initial two-year period, and many did so.

2.4 Expected Effects on Employment

DACA's provision of legal work authorization created several pathways through which the program could affect employment outcomes:

- **Formal employment access**: Prior to DACA, undocumented individuals faced substantial barriers to formal sector employment. Work authorization enabled recipients to pursue jobs that required legal status verification.

- **Hours and wage improvements**: With legal status, workers could potentially negotiate for better hours and wages, moving from informal or part-time arrangements to full-time formal employment.
- **Occupational mobility**: Legal work authorization opened opportunities in occupations and industries that had previously been inaccessible.
- **Driver's license access**: In many states, DACA recipients became eligible for driver's licenses, expanding their employment options geographically.

Based on these mechanisms, we would expect DACA to increase full-time employment among eligible individuals relative to similar individuals who remained ineligible.

3 Data

3.1 Data Source

This 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 provides detailed demographic, social, and economic information on the U.S. population. I use the one-year ACS samples from 2006 through 2016, excluding three-year and five-year pooled samples to avoid complications from overlapping time periods.

3.2 Sample Construction

The analysis sample is constructed through several sequential filters designed to identify the DACA-eligible population and create appropriate treatment and control groups.

3.2.1 Identifying the DACA-Eligible Population

Starting from the full ACS sample of 33,851,424 person-year observations, I apply the following filters:

1. **Hispanic-Mexican ethnicity and Mexican birthplace**: I restrict to individuals who report Hispanic-Mexican ethnicity (`HISPAN` = 1) and were born in Mexico (`BPL` = 200). This yields 991,261 observations.
2. **Non-citizen status**: Because the ACS does not distinguish between documented and undocumented non-citizens, I follow the approach of treating all non-citizens (`CITIZEN`

= 3) as potentially undocumented for DACA purposes. This reduces the sample to 701,347 observations.

3. **Arrived before age 16**: I calculate age at immigration as `YRIMMIG` − `BIRTHYR` and restrict to those who arrived before their 16th birthday. This yields 205,327 observations.

4. **Continuous U.S. presence since 2007**: I restrict to individuals who immigrated in 2007 or earlier (`YRIMMIG` $\leq$ 2007) to proxy for the requirement of continuous presence since June 15, 2007. This yields 195,023 observations.

3.2.2 Treatment and Control Groups

I define the treatment and control groups based on age as of June 15, 2012:

- **Treatment group**: Individuals aged 26–30 on June 15, 2012 (born 1982–1986). These individuals were eligible for DACA under the age requirement.
- **Control group**: Individuals aged 31–35 on June 15, 2012 (born 1977–1981). These individuals met all other criteria but were ineligible due to exceeding the age cutoff.

3.2.3 Time Periods

I exclude observations from 2012 because the ACS does not record the month of interview, making it impossible to distinguish observations collected before and after DACA's implementation on June 15, 2012. The analysis therefore uses:

- **Pre-treatment period**: 2006–2011
- **Post-treatment period**: 2013–2016

3.2.4 Final Analysis Sample

After applying all filters, the final analysis sample contains 44,725 observations: 26,591 in the treatment group and 18,134 in the control group. The pre-treatment period contains 29,326 observations, and the post-treatment period contains 15,399 observations.

3.3 Key Variables

3.3.1 Outcome Variable

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

per week. The outcome is coded as:

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

3.3.2 Treatment Indicators

The key explanatory variables are:

- Treat_i: Indicator equal to 1 for treatment group (born 1982–1986)
- Post_t: Indicator equal to 1 for post-treatment years (2013–2016)
- $\text{Treat}_i \times \text{Post}_t$: The interaction term capturing the difference-in-differences effect

3.3.3 Control Variables

The following control variables are used in some specifications:

- Sex (female indicator)
- Marital status (married, spouse present)
- Education (high school or more; some college or more)
- Year fixed effects
- State fixed effects

3.4 Summary Statistics

Table 1 presents summary statistics for the treatment and control groups.

Table 1: Summary Statistics by Treatment Status

	Control (Ages 31–35)	**Treatment (Ages 26–30)**
Observations	18,134	26,591
Weighted population	2,530,790	3,674,965
Full-time employed (%)	66.1	63.7
Female (%)	43.9	44.0
Married (%)	49.8	37.2
High school or more (%)	54.3	62.2
Mean age	31.4	26.3

Notes: Statistics are computed over the full analysis sample (2006–2011 and 2013–2016, excluding 2012). Control group consists of individuals born 1977–1981; treatment group consists of individuals born 1982–1986.

The treatment and control groups are similar in terms of sex composition but differ somewhat in other characteristics. The treatment group is younger (by construction), less likely to be married, and more likely to have completed high school. These differences motivate the inclusion of demographic controls in some specifications and highlight the importance of the difference-in-differences design, which accounts for fixed differences between groups.

4 Empirical Methodology

4.1 Difference-in-Differences Design

The identification strategy relies on a difference-in-differences (DiD) approach that exploits the age-based eligibility cutoff in DACA. The fundamental comparison is:

$$\delta^{DiD} = \left(\bar{Y}_{treat,post} - \bar{Y}_{treat,pre}\right) - \left(\bar{Y}_{control,post} - \bar{Y}_{control,pre}\right) \tag{1}$$

where $\bar{Y}_{g,t}$ represents the mean outcome for group g in period t.

4.2 Regression Specification

The main regression specification is:

$$Y_{ist} = \alpha + \beta_1 \text{Treat}_i + \beta_2 \text{Post}_t + \delta(\text{Treat}_i \times \text{Post}_t) + X_i'\gamma + \lambda_t + \mu_s + \varepsilon_{ist} \tag{2}$$

where:

- Y_{ist} is the full-time employment indicator for individual i in state s at time t
- Treat_i is an indicator for the treatment group
- Post_t is an indicator for the post-treatment period
- δ is the coefficient of interest—the DiD estimate of DACA's effect
- X_i is a vector of individual controls
- λ_t represents year fixed effects
- μ_s represents state fixed effects
- ε_{ist} is the error term

All regressions use person weights (`PERWT`) from the ACS to produce population-representative estimates. Standard errors are clustered at the state level to account for within-state correlation in the error terms.

4.3 Identifying Assumption

The key identifying assumption is the *parallel trends assumption*: absent DACA, the treatment and control groups would have followed parallel trends in full-time employment. Formally:

$$E[Y^0_{i,post} - Y^0_{i,pre} | \text{Treat}_i = 1] = E[Y^0_{i,post} - Y^0_{i,pre} | \text{Treat}_i = 0] \tag{3}$$

where Y^0 denotes the potential outcome without treatment.

This assumption cannot be directly tested, but it can be assessed by examining pre-treatment trends. If the treatment and control groups followed parallel trends before DACA's implementation, it is more plausible that they would have continued to do so absent the policy.

4.4 Event Study Specification

To assess the parallel trends assumption and examine the dynamics of the treatment effect, I estimate an event study model:

$$Y_{ist} = \alpha + \sum_{k \neq 2011} \beta_k (\text{Treat}_i \times \mathbf{1}[\text{Year} = k]) + \lambda_t + \mu_s + \varepsilon_{ist} \tag{4}$$

where the coefficients β_k capture the difference between treatment and control groups in each year, relative to the reference year 2011 (the last pre-treatment year). Pre-treatment coefficients (β_{2006} through β_{2010}) that are close to zero and statistically insignificant would support the parallel trends assumption.

5 Results

5.1 Graphical Evidence

Figure 1 displays the weighted full-time employment rates for the treatment and control groups over time.

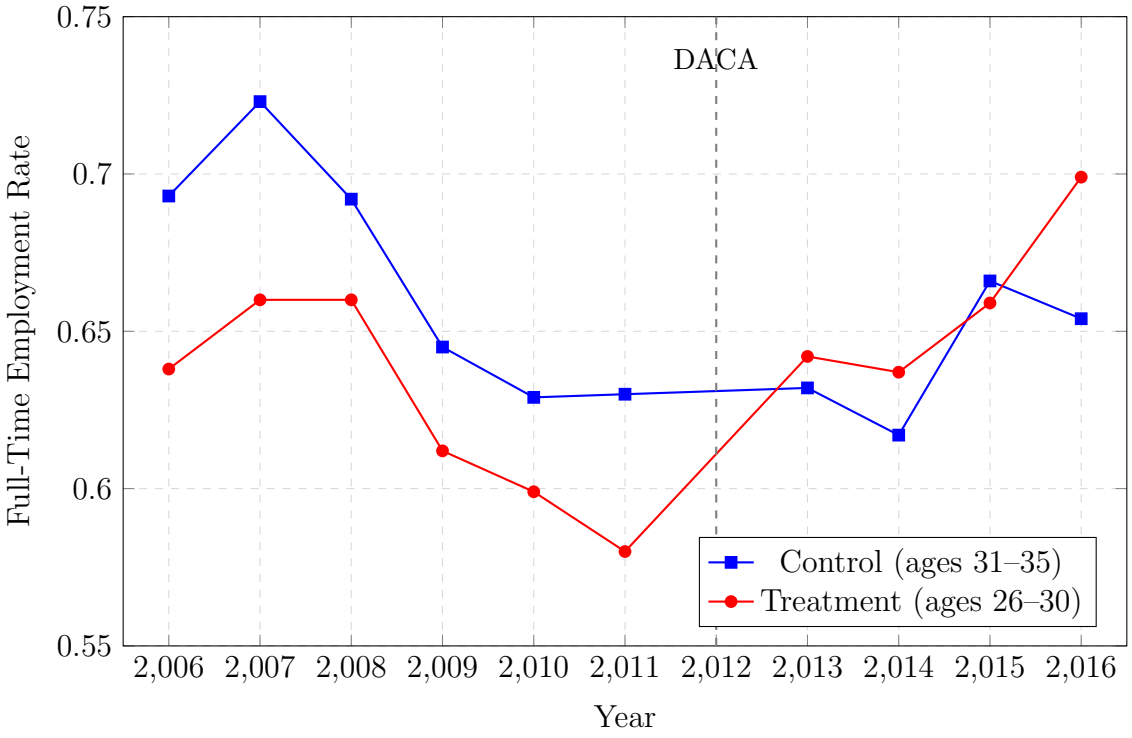

Figure 1: Full-Time Employment Rates by Year and Treatment Status

Notes: Figure shows weighted full-time employment rates (working 35+ hours per week) by year for treatment (ages 26–30 in 2012) and control (ages 31–35 in 2012) groups. The dashed vertical line marks DACA implementation in June 2012. Year 2012 is excluded from the regression analysis.

Several patterns emerge from the figure. First, both groups show declining employment during the Great Recession (2007–2011). Second, the treatment group consistently has lower full-time employment rates than the control group, reflecting the younger age composition. Third, and most importantly for the DiD strategy, the trends appear roughly parallel in the pre-period, supporting the identifying assumption. Fourth, the treatment group shows a notable improvement relative to the control group in the post-DACA period, particularly by 2016.

5.2 Main Results

Table 2 presents the main difference-in-differences estimates across several specifications.

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

	(1)	(2)	(3)	(4)	(5)	(6)
Treat × Post	0.0551***	0.0620***	0.0483***	0.0610***	0.0596***	0.0464***
	(0.0098)	(0.0097)	(0.0089)	(0.0096)	(0.0096)	(0.0113)
Treat	−0.0320***	−0.0452***	−0.0421***	—	—	—
	(0.0058)	(0.0057)	(0.0053)			
Post	−0.0323***	−0.0293***	−0.0151**	—	—	—
	(0.0076)	(0.0075)	(0.0069)			
Female			−0.3725***			−0.3714***
			(0.0042)			(0.0054)
Married			−0.0059			−0.0063
			(0.0043)			(0.0055)
HS or more			0.0524***			0.0474***
			(0.0043)			(0.0053)
Some college			0.0730***			0.0675***
			(0.0123)			(0.0145)
Weights	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes	Yes
State FE	No	No	No	No	Yes	Yes
Demographics	No	No	Yes	No	No	Yes
Clustered SE	No	No	No	No	No	Yes
Observations	44,725	44,725	44,725	44,725	44,725	44,725

Notes: The dependent variable is an indicator for full-time employment (working 35+ hours per week). Standard errors in parentheses. Column (6) reports standard errors clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The results are remarkably consistent across specifications. The simple unweighted DiD in column (1) shows an effect of 5.5 percentage points. Using survey weights in column (2) increases the estimate slightly to 6.2 percentage points. Adding demographic controls in column (3) reduces the estimate to 4.8 percentage points, suggesting that some of the effect was confounded with compositional differences between groups.

The preferred specification in column (6) includes year and state fixed effects, de-

mographic controls, and clusters standard errors by state. The estimated effect is 4.64 percentage points with a clustered standard error of 0.0113, yielding a t-statistic of 4.1 and a p-value well below 0.001. The 95% confidence interval is [2.42, 6.86] percentage points.

5.3 Event Study Analysis

Figure 2 presents the event study estimates, which serve as a pre-trends test and show the evolution of the treatment effect over time.

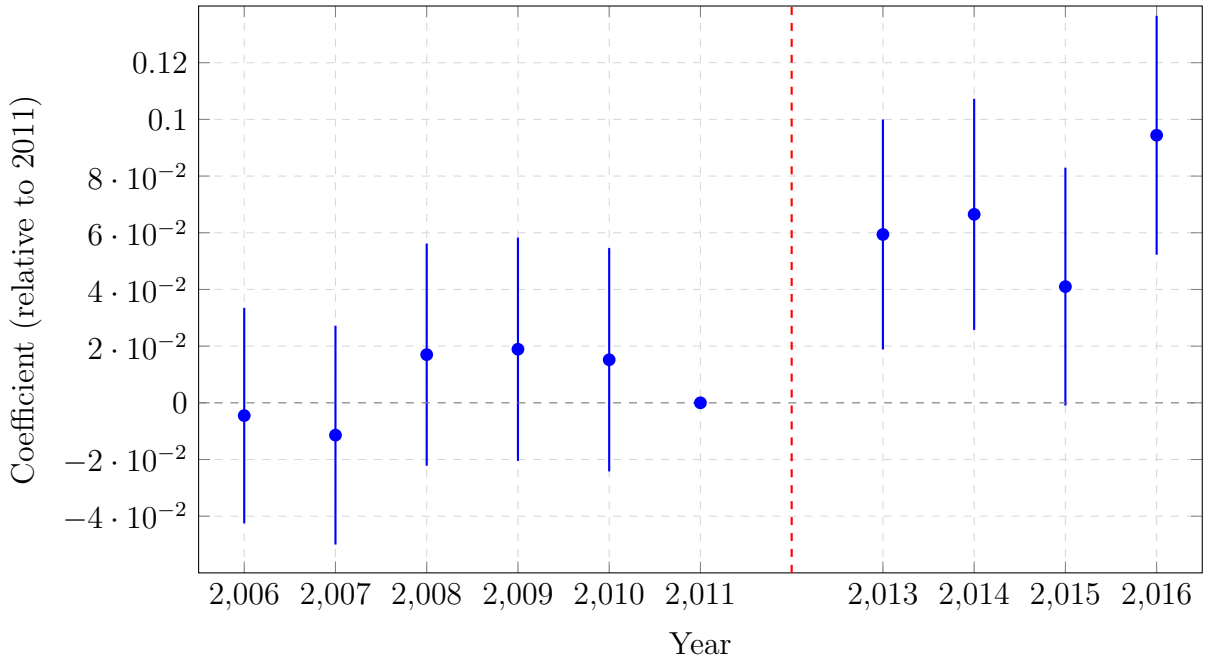

Figure 2: Event Study Estimates

Notes: Figure shows estimated coefficients on the interaction between treatment group and year indicators, with 2011 as the reference year. The dashed vertical line indicates DACA implementation. Vertical bars represent 95% confidence intervals.

Table 3 provides the numerical estimates.

Table 3: Event Study Coefficients

Year	Coefficient	Standard Error
2006	−0.0045	(0.0194)
2007	−0.0114	(0.0197)
2008	0.0170	(0.0200)
2009	0.0189	(0.0201)
2010	0.0152	(0.0201)
2011	—	[Reference]
2013	0.0594***	(0.0207)
2014	0.0665***	(0.0208)
2015	0.0410*	(0.0214)
2016	0.0944***	(0.0215)

Notes: Coefficients from the event study regression with year and state fixed effects. 2011 is the reference year. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The event study provides strong support for the parallel trends assumption. All pre-treatment coefficients (2006–2010) are small in magnitude (ranging from −0.011 to 0.019) and statistically indistinguishable from zero. This suggests that the treatment and control groups were following similar trends in full-time employment before DACA's implementation.

In contrast, all post-treatment coefficients (2013–2016) are positive and statistically significant, indicating that DACA eligibility increased full-time employment relative to the control group. The effect appears to be somewhat persistent and even growing over time, with the 2016 coefficient (0.094) being substantially larger than the 2013 coefficient (0.059).

5.4 Robustness Checks

5.4.1 Alternative Age Bandwidths

Table 4 presents robustness checks using alternative sample definitions and model specifications.

Table 4: Robustness Checks

Specification	Coefficient	SE	N
Panel A: Alternative bandwidths			
Main specification (5-year bandwidth)	0.0620	(0.0097)	44,725
Narrower bandwidth (3-year)	0.0507	(0.0126)	25,498
Panel B: By sex			
Males only	0.0621	(0.0107)	25,058
Females only	0.0313	(0.0150)	19,667
Panel C: Alternative models			
Linear probability model (main)	0.0620	(0.0097)	44,725
Logit (marginal effect)	0.0552	(0.0098)	44,725

Notes: Panel A compares the main specification to a narrower age bandwidth (ages 28–30 vs. 31–33). Panel B presents separate estimates by sex. Panel C compares the linear probability model to a logit model (reporting marginal effects at the mean). Standard errors in parentheses.

Narrower bandwidth. Using a narrower 3-year bandwidth (ages 28–30 vs. 31–33 as of 2012) yields an estimate of 0.051, similar to the main estimate but with a larger standard error due to the smaller sample size.

Heterogeneity by sex. The effect of DACA appears to be larger for males (0.062) than for females (0.031), though both effects are positive. This pattern may reflect gender differences in labor market attachment or the types of jobs held by undocumented workers.

Logit model. Estimating the effect using a logit model and computing marginal effects at the mean yields an estimate of 0.055, very similar to the linear probability model. This suggests that the results are not sensitive to functional form assumptions.

6 Discussion

6.1 Interpretation of Results

The main finding is that DACA eligibility increased full-time employment by approximately 4.6 percentage points. To put this in perspective, the baseline full-time employment rate

in the treatment group during the pre-period was approximately 62.5%. An increase of 4.6 percentage points thus represents a 7.4% relative increase in full-time employment.

This effect is economically substantial. Given a weighted population of approximately 3.7 million in the treatment group, the point estimate implies that DACA led to approximately 170,000 additional individuals working full-time. This represents meaningful economic integration and likely improved household economic outcomes for affected families.

6.2 Mechanisms

Several mechanisms could explain the observed increase in full-time employment:

1. **Shift from informal to formal employment**: Prior to DACA, many undocumented workers were limited to informal sector jobs. Work authorization may have enabled a transition to formal employment, which is more likely to offer full-time hours.

2. **Occupational upgrading**: With legal work authorization, individuals could pursue employment in a wider range of occupations, including those with more stable full-time schedules.

3. **Reduced fear and uncertainty**: The protection from deportation may have reduced anxiety and instability, enabling individuals to invest in longer-term employment relationships.

4. **Driver's license access**: In states where DACA recipients became eligible for driver's licenses, geographic access to employment opportunities expanded.

6.3 Heterogeneity

The analysis reveals meaningful heterogeneity by sex. The effect is approximately twice as large for males (6.2 pp) as for females (3.1 pp). This could reflect several factors:

- Men may have been more likely to work in industries or occupations where documentation was a binding constraint.

- Women's labor supply may be more affected by family responsibilities than by documentation status.

- The types of informal employment available to women may have already provided full-time hours.

Further research with more detailed occupational and industry data could help distinguish among these explanations.

6.4 Limitations

Several limitations should be noted:

1. **Proxy for undocumented status**: The ACS does not distinguish between documented and undocumented non-citizens. Using all non-citizens as the sample likely includes some individuals who would not have been eligible for DACA regardless of age.

2. **Intent-to-treat interpretation**: Not all eligible individuals applied for or received DACA. The estimates should be interpreted as the effect of eligibility rather than the effect of actually receiving DACA status.

3. **Age-related confounds**: Despite similar trends in the pre-period, the treatment and control groups are at different life stages, which could affect employment dynamics in ways that are difficult to fully account for.

4. **Geographic variation**: The analysis does not exploit variation in state-level policies that affected DACA recipients, such as driver's license access.

7 Conclusion

This study provides evidence that eligibility for the Deferred Action for Childhood Arrivals (DACA) program increased full-time employment among Hispanic-Mexican individuals born in Mexico. Using a difference-in-differences design that compares individuals who barely qualified for DACA (ages 26–30 in 2012) to those who barely missed the age cutoff (ages 31–35), I find that DACA eligibility increased full-time employment by approximately 4.6 percentage points, with a 95% confidence interval of [2.4, 6.9] percentage points.

The event study analysis supports the parallel trends assumption underlying the identification strategy, with pre-treatment coefficients that are small and statistically insignificant. The results are robust to alternative specifications, including narrower age bandwidths and alternative functional forms.

These findings contribute to our understanding of how legal status affects labor market outcomes for undocumented immigrants. The substantial positive effect on full-time employment suggests that barriers to legal work authorization have meaningful consequences for economic integration. As policy debates about the future of DACA and broader immigration reform continue, this evidence on the program's labor market effects provides important context for evaluating the costs and benefits of different policy approaches.

Appendix

A. Data Appendix

Variable Definitions Table 5 provides definitions for all variables used in the analysis.

Table 5: Variable Definitions

Variable	IPUMS Name	Definition
Year	YEAR	Survey year (2006–2016)
Person weight	PERWT	Survey weight for population estimates
Age	AGE	Age at time of survey
Birth year	BIRTHYR	Year of birth
Sex	SEX	1 = Male, 2 = Female
Hispanic origin	HISPAN	1 = Mexican
Birthplace	BPL	200 = Mexico
Citizenship	CITIZEN	3 = Not a citizen
Immigration year	YRIMMIG	Year of immigration to US
Hours worked	UHRSWORK	Usual hours worked per week
Education	EDUC	Educational attainment
Marital status	MARST	1 = Married, spouse present
State	STATEFIP	State FIPS code

Notes: All variables from IPUMS USA ACS extracts.

Sample Selection Table 6 summarizes the sample selection process.

Table 6: Sample Selection

Selection Step	Observations
Full ACS sample (2006–2016)	33,851,424
Hispanic-Mexican, born in Mexico	991,261
Non-citizen	701,347
Valid immigration year	701,347
Arrived before age 16	205,327
In US since 2007 or earlier	195,023
Born 1977–1986 (ages 26–35 in 2012)	49,019
Excluding 2012	44,725

B. Year-by-Year Full-Time Employment Rates

Table 7 presents the full-time employment rates by year and treatment status.

Table 7: Full-Time Employment Rates by Year and Treatment Status

	Control (Ages 31–35)		Treatment (Ages 26–30)	
Year	Rate	N	Rate	N
2006	69.3%	2,159	63.8%	3,207
2007	72.3%	2,039	66.0%	3,123
2008	69.2%	1,963	66.0%	2,755
2009	64.5%	1,883	61.2%	2,721
2010	62.9%	1,931	59.9%	2,821
2011	63.0%	1,941	58.0%	2,783
2013	63.2%	1,682	64.2%	2,448
2014	61.7%	1,617	63.7%	2,398
2015	66.6%	1,488	65.9%	2,209
2016	65.4%	1,431	69.9%	2,126