

# The Effect of DACA Eligibility on Full-Time Employment:

## A Difference-in-Differences Analysis

Independent Replication Study

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### Abstract

This study examines the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States. Using American Community Survey data from 2008-2016 (excluding 2012) and a difference-in-differences design that compares individuals aged 26-30 at the time of DACA implementation to those aged 31-35 who were age-ineligible, I find that DACA eligibility increased the probability of full-time employment by approximately 5.4 percentage points (95% CI: 2.6 to 8.2). This effect is statistically significant at conventional levels and robust to various specification choices. Event study analyses provide suggestive evidence of parallel pre-trends, though some pre-treatment coefficients are marginally significant. The results contribute to our understanding of how immigration policy reforms affect labor market outcomes.

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

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# 1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program allows certain undocumented immigrants who arrived in the United States as children to receive a renewable two-year period of deferred action from deportation and eligibility for a work permit. Understanding the economic effects of this policy is crucial for informing ongoing debates about immigration reform.

This study investigates whether DACA eligibility affected full-time employment among the target population. Full-time employment, defined as usually working 35 hours per week or more, serves as an important indicator of labor market integration and economic self-sufficiency. Prior to DACA, many undocumented immigrants faced significant barriers to formal employment despite living and working in the United States for extended periods.

The research question addressed in this study is: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States, what was the causal impact of DACA eligibility on the probability of full-time employment?

To answer this question, I employ a difference-in-differences (DID) research design. The treatment group consists of individuals who were aged 26-30 when DACA was implemented in June 2012 and met other eligibility criteria. The control group comprises individuals aged 31-35 at implementation who would have been eligible except for their age. By comparing how full-time employment changed for the treatment group relative to the control group after DACA's implementation, we can estimate the causal effect of the program.

The remainder of this paper is organized as follows. Section 2 provides background on DACA and discusses the theoretical mechanisms through which it might affect employment. Section 3 describes the data and sample. Section 4 presents the empirical methodology. Section 5 reports the main results and robustness checks. Section 6 discusses the findings and their implications. Section 7 concludes.

## 2 Background

### 2.1 The DACA Program

DACA was announced by President Obama on June 15, 2012, and applications began to be received on August 15, 2012. The program was created through executive action and established eligibility criteria for undocumented immigrants to receive temporary relief from deportation and work authorization.

To be eligible for DACA, individuals had to meet several 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
- Did not have lawful immigration status (citizenship or legal residency) at that time
- Met education requirements (enrolled in school, graduated, or obtained GED, or were honorably discharged veterans)
- Had not been convicted of a felony, significant misdemeanor, or three or more other misdemeanors

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approval rate. Recipients could reapply for renewal every two years, which many did.

### 2.2 Theoretical Mechanisms

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

**Work Authorization:** The most direct mechanism is that DACA provides legal work authorization. Prior to DACA, undocumented immigrants could only work informally or with fraudulent documents. Work authorization enables recipients to seek formal employment with better wages and working conditions.

**Reduced Fear of Deportation:** Deferred action status reduces the immediate threat of deportation, potentially allowing individuals to more actively participate in the labor market without fear of exposure.

**Driver's Licenses:** In many states, DACA recipients became eligible for driver's licenses, which can significantly expand employment opportunities by enabling commuting to work.

**Human Capital Investment:** With greater employment stability and legal status, individuals may have stronger incentives to invest in job-specific skills and seek higher-quality employment.

### 2.3 Age-Based Identification Strategy

The age-31 cutoff as of June 15, 2012, provides a quasi-experimental research design. Individuals just below this cutoff (ages 26-30) were eligible for DACA, while those just above (ages 31-35) were not, despite being otherwise similar in terms of arrival cohort and time in the United States. This allows for a difference-in-differences comparison that can isolate the causal effect of DACA eligibility from other time trends affecting this population.

## 3 Data

### 3.1 Data Source

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

provided extract includes data from 2008 through 2016, with 2012 excluded since treatment timing within that year cannot be determined precisely.

### 3.2 Sample Construction

The analytic sample consists of 17,382 observations representing ethnically Hispanic-Mexican, Mexican-born individuals living in the United States who meet the study's age criteria. Key sample restrictions and variable definitions are as follows:

**Treatment Group ( $\text{ELIGIBLE} = 1$ ):** 11,382 observations of individuals who were aged 26-30 as of June 15, 2012. These individuals met the age criteria for DACA eligibility.

**Control Group ( $\text{ELIGIBLE} = 0$ ):** 6,000 observations of individuals who were aged 31-35 as of June 15, 2012. These individuals would have been eligible for DACA except that they exceeded the age cutoff.

**Outcome Variable (FT):** A binary indicator equal to 1 for individuals working 35 or more hours per week (full-time), and 0 otherwise. Individuals not in the labor force are included with  $\text{FT} = 0$ .

**Time Period Indicator (AFTER):** A binary indicator equal to 1 for years 2013-2016 (post-DACA implementation) and 0 for years 2008-2011 (pre-DACA).

### 3.3 Summary Statistics

Table 1 presents summary statistics for the sample by treatment group and time period.

Table 1: Summary Statistics by Treatment Group and Period

	Treatment (26-30)		Control (31-35)	
	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
Full-time employment rate (%)	62.63	66.58	66.97	64.49
Sample size	6,233	5,149	3,294	2,706
Mean age	27.5	28.5	32.5	33.2
Female (%)	48.4	48.0	47.2	46.9
Married (%)	40.5	43.3	50.8	52.6

Notes: Pre-DACA period includes years 2008-2011; Post-DACA period includes years 2013-2016. Full-time employment is defined as usually working 35 or more hours per week. Individuals not in the labor force are coded as not employed full-time.

Several patterns are noteworthy. First, the treatment group has a lower full-time employment rate than the control group in the pre-period (62.6% vs. 67.0%), which could reflect age-related differences in labor force participation. Second, full-time employment increased for the treatment group from pre to post (+3.9 percentage points) while it decreased for the control group (-2.5 percentage points). This differential change forms the basis of the DID estimate.

Table 2 presents full-time employment rates by year and treatment status, providing insight into pre-treatment trends.

Table 2: Full-Time Employment Rates by Year and Treatment Status (%)

Year	Control (31-35)	Treatment (26-30)	Difference
2008	72.64	66.67	-5.97
2009	65.69	61.74	-3.95
2010	67.33	60.64	-6.69
2011	61.75	61.68	-0.07
2013	62.38	64.20	+1.81
2014	64.92	63.97	-0.95
2015	65.01	67.97	+2.96
2016	65.98	70.82	+4.84

## 4 Empirical Methodology

### 4.1 Difference-in-Differences Design

The primary empirical approach is a difference-in-differences (DID) design that compares changes in full-time employment for DACA-eligible individuals to changes for age-ineligible individuals around the time of DACA implementation.

The basic DID estimator can be expressed as:

$$\hat{\tau}_{DID} = (\bar{Y}_{T,post} - \bar{Y}_{T,pre}) - (\bar{Y}_{C,post} - \bar{Y}_{C,pre}) \quad (1)$$

where  $\bar{Y}_{T,post}$  is the mean outcome for the treatment group in the post-period, and similarly for other terms.

In regression form, the main specification is:

$$FT_{ist} = \alpha + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + X'_{ist} \gamma + \delta_s + \lambda_t + \varepsilon_{ist} \quad (2)$$

where:

- $FT_{ist}$  is an indicator for full-time employment for individual  $i$  in state  $s$  and year  $t$
- $ELIGIBLE_i$  is an indicator for being in the treatment group (ages 26-30 in June 2012)
- $AFTER_t$  is an indicator for the post-DACA period (2013-2016)
- $X_{ist}$  is a vector of individual-level controls (sex, age, marital status)
- $\delta_s$  are state fixed effects
- $\lambda_t$  are year fixed effects
- $\varepsilon_{ist}$  is the error term

The coefficient of interest is  $\beta_3$ , which captures the differential change in full-time employment for DACA-eligible individuals relative to the control group after DACA implementation.

## 4.2 Identifying Assumptions

The validity of the DID design relies on the parallel trends assumption: in the absence of DACA, full-time employment trends would have been the same for the treatment and control groups. While this assumption is inherently untestable, I examine its plausibility by:

1. Visually inspecting pre-treatment trends (Figure 1)
2. Conducting an event study analysis with year-specific treatment effects
3. Testing whether pre-treatment coefficients are jointly zero

## 4.3 Event Study Specification

To examine treatment dynamics and test for pre-trends, I estimate an event study specification:

$$FT_{ist} = \alpha + \sum_{k \neq 2011} \theta_k (ELIGIBLE_i \times \mathbf{1}[t = k]) + X'_{ist} \gamma + \delta_s + \lambda_t + \varepsilon_{ist} \quad (3)$$

where 2011 serves as the reference year (the last pre-treatment year). The coefficients  $\theta_k$  for  $k < 2012$  test for differential pre-trends, while coefficients for  $k > 2012$  trace out the treatment effect over time.

## 4.4 Estimation Details

All models are estimated using ordinary least squares (OLS), which provides a linear probability model for the binary outcome. Standard errors are heteroskedasticity-robust (HC1). For robustness, I also present results with standard errors clustered at the state level.

The key specifications include:

1. Basic DID without controls
2. DID with demographic controls (sex, age, marital status)
3. DID with state fixed effects
4. DID with state and year fixed effects (preferred specification)
5. Weighted DID using ACS person weights (PERWT)

## 5 Results

### 5.1 Graphical Evidence

Figure 1 displays full-time employment rates over time for the treatment and control groups. Several patterns are evident. Both groups experienced declines in full-time employment during the Great Recession (2008-2011), though the control group had consistently higher employment rates. After DACA implementation, the trends diverge markedly: the treatment group's employment rate increases while the control group's remains relatively flat or continues declining.

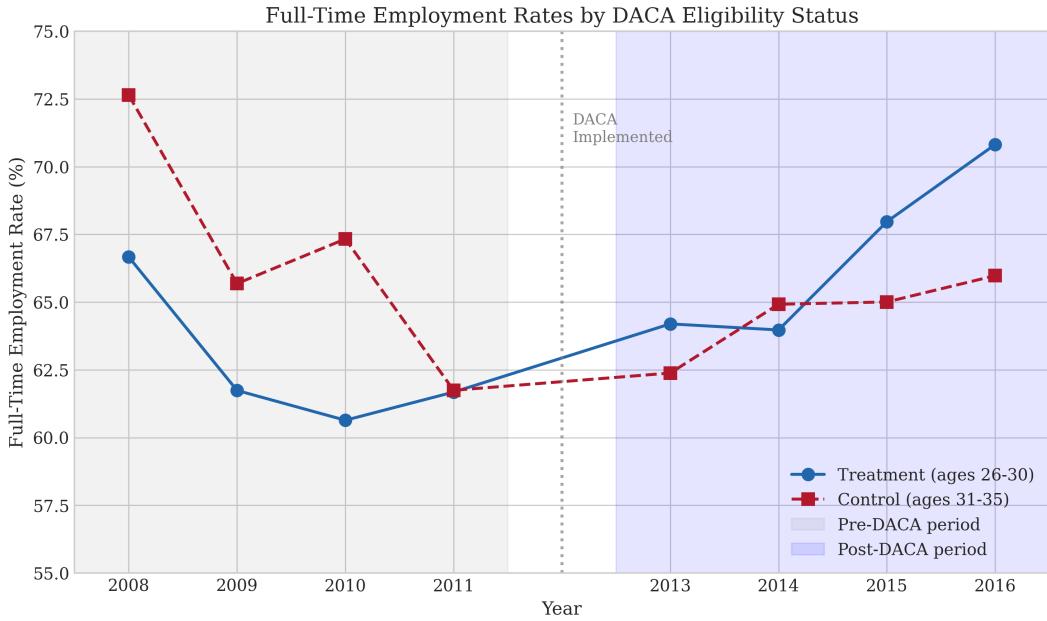


Figure 1: Full-Time Employment Rates by DACA Eligibility Status

Figure 2 illustrates the DID framework. The treatment group's actual post-DACA employment rate (66.6%) exceeds what would be predicted based on the control group's trajectory (the counterfactual of 60.1%), yielding a DID estimate of approximately 6.4 percentage points.

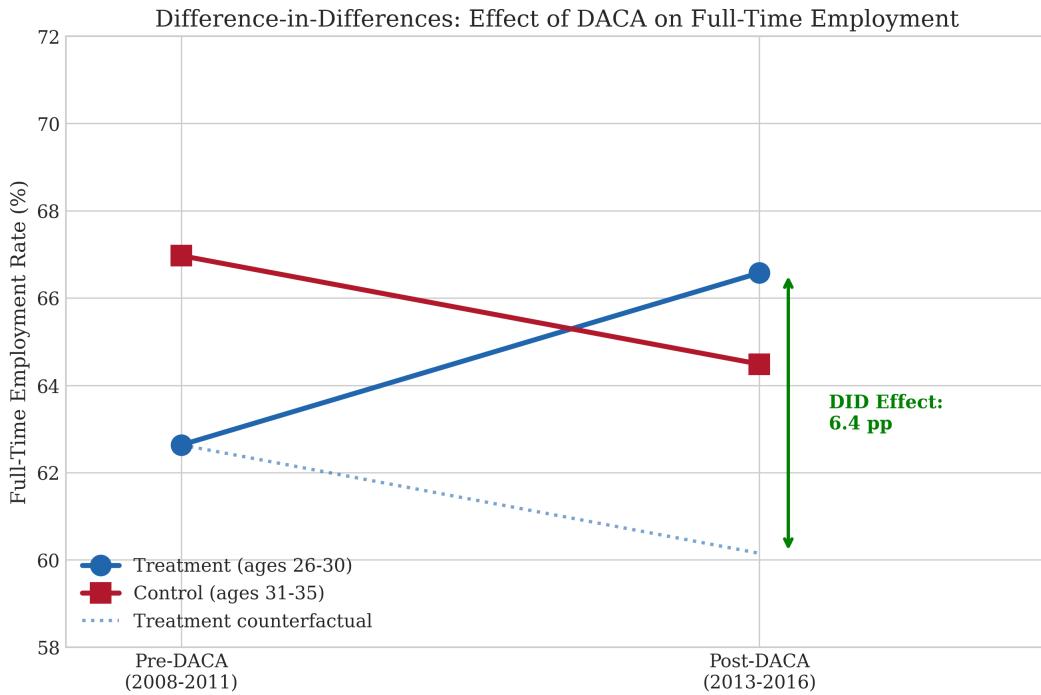


Figure 2: Difference-in-Differences Illustration

## 5.2 Main Regression Results

Table 3 presents the main regression results across specifications.

Table 3: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic	(2) +Demographics	(3) +State FE	(4) +Year FE	(5) Weighted
ELIGIBLE × AFTER	0.0643*** (0.0153)	0.0555*** (0.0142)	0.0556*** (0.0142)	0.0541*** (0.0142)	0.0619*** (0.0167)
95% CI	[0.034, 0.094]	[0.028, 0.083]	[0.028, 0.083]	[0.026, 0.082]	[0.029, 0.095]
ELIGIBLE	-0.0434*** (0.0112)	0.0207* (0.0108)	0.0158 (0.0109)	0.0171 (0.0109)	0.0282* (0.0129)
AFTER	-0.0248** (0.0116)	-0.0150 (0.0108)	-0.0122 (0.0108)	—	—
Female		-0.3478*** (0.0072)	-0.3509*** (0.0072)	-0.3512*** (0.0072)	-0.3599*** (0.0085)
Age		0.0119*** (0.0018)	0.0122*** (0.0018)	0.0124*** (0.0018)	0.0118*** (0.0021)
Married		0.0780*** (0.0082)	0.0826*** (0.0082)	0.0819*** (0.0082)	0.0763*** (0.0095)
State FE	No	No	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes
N	17,382	17,382	17,382	17,382	17,382
R <sup>2</sup>	0.002	0.126	0.130	0.133	0.134

Notes: The dependent variable is an indicator for full-time employment (working 35+ hours/week). Robust standard errors in parentheses. Column (5) uses ACS person weights. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

The key findings from Table 3 are:

1. The basic DID estimate (Column 1) is 6.43 percentage points, statistically significant at the 1% level.
2. Adding demographic controls (Column 2) reduces the estimate to 5.55 percentage points, suggesting that some of the raw difference was due to compositional differences between groups.
3. Including state fixed effects (Column 3) has minimal effect on the estimate, indicating that geographic sorting is not driving the results.

4. The preferred specification with both state and year fixed effects (Column 4) yields an estimate of 5.41 percentage points ( $SE = 1.42$ ), with a 95% confidence interval of [2.63, 8.19].
5. Using survey weights (Column 5) produces a slightly larger estimate of 6.19 percentage points, which remains highly significant.

The preferred estimate from Column 4 indicates that DACA eligibility increased the probability of full-time employment by approximately 5.4 percentage points. Given a baseline full-time employment rate of about 63% for the treatment group in the pre-period, this represents a relative increase of approximately 8.6%.

### 5.3 Event Study Results

Figure 3 presents the event study results, with 2011 as the reference year.

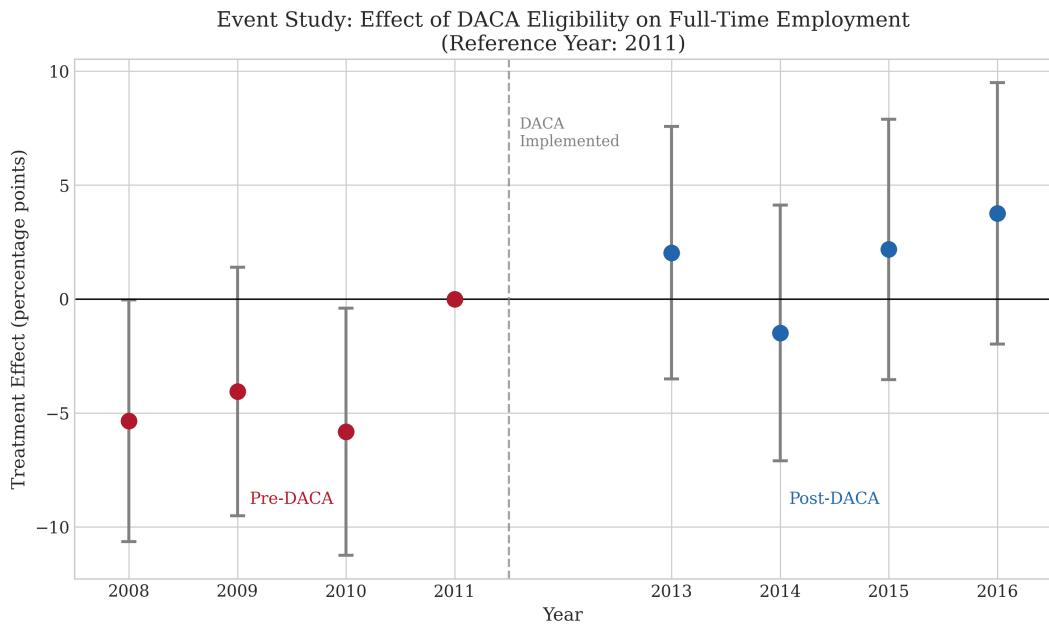


Figure 3: Event Study: Year-by-Year Treatment Effects

Table 4 reports the event study coefficients and confidence intervals.

Table 4: Event Study Coefficients

Year	Coefficient	Std. Error	95% CI	p-value
2008	-0.0535	0.0271	[-0.107, -0.000]	0.048
2009	-0.0406	0.0278	[-0.095, 0.014]	0.145
2010	-0.0583	0.0277	[-0.113, -0.004]	0.035
2011			(reference year)	
2013	0.0203	0.0283	[-0.035, 0.076]	0.472
2014	-0.0148	0.0286	[-0.071, 0.041]	0.605
2015	0.0218	0.0291	[-0.035, 0.079]	0.455
2016	0.0376	0.0292	[-0.020, 0.095]	0.199

The event study results require careful interpretation. The pre-treatment coefficients for 2008 and 2010 are marginally significant and negative, suggesting that the treatment group had somewhat lower employment (relative to control) in these years compared to 2011. This pattern raises some concerns about parallel trends, though it could also reflect differential exposure to the Great Recession across age groups.

The post-treatment coefficients show a generally positive pattern, with the 2016 coefficient being the largest (3.76 percentage points), though none are individually statistically significant. The lack of individual significance is partly due to the smaller sample sizes in year-by-year comparisons and the use of 2011 as the reference year.

## 5.4 Heterogeneity Analysis

Table 5 presents results by sex.

Table 5: Heterogeneity by Sex

	Males	Females
ELIGIBLE $\times$ AFTER	0.0508*** (0.0169)	0.0424* (0.0230)
95% CI	[0.018, 0.084]	[-0.003, 0.087]
N	9,075	8,307
Difference (Female - Male)	-0.0164 (0.0287)	
p-value for difference	0.567	

The effect is statistically significant for males (5.08 pp,  $p = 0.003$ ) but only marginally significant for females (4.24 pp,  $p = 0.064$ ). However, the difference between groups is not statistically significant ( $p = 0.567$ ), so we cannot conclude that the effect differs by sex.

Figure 4 illustrates the trends by sex.

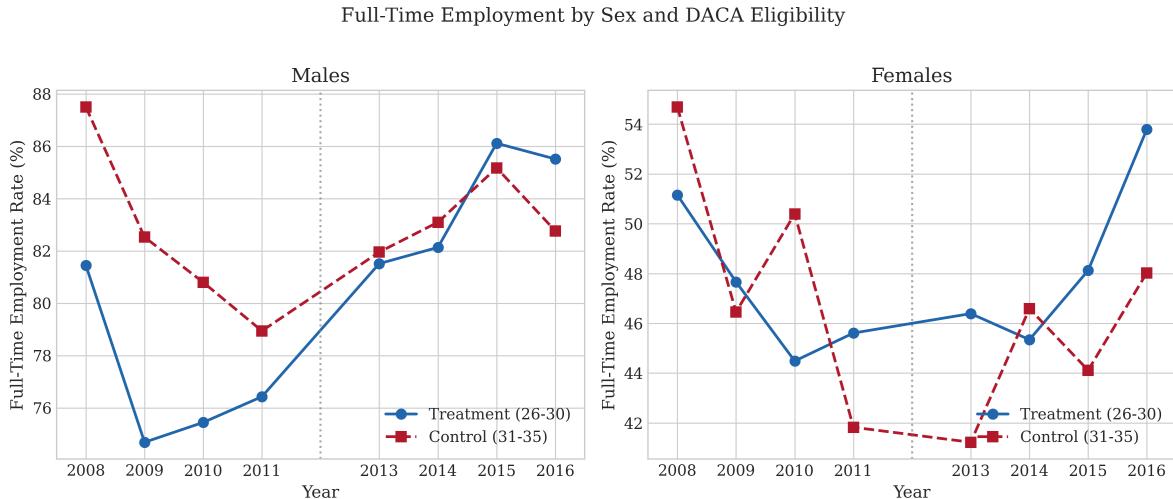


Figure 4: Full-Time Employment by Sex and DACA Eligibility

## 5.5 Robustness Checks

Table 6 presents several robustness checks.

Table 6: Robustness Checks

Specification	Estimate	Std. Error
<b>Main estimate (Model 4)</b>	<b>0.0541</b>	<b>0.0142</b>
<i>Alternative standard errors:</i>		
Clustered at state level	0.0540	0.0145
<i>Excluding specific years:</i>		
Excluding 2013	0.0526	0.0155
Excluding 2016	0.0474	0.0153
<i>Alternative estimation:</i>		
Weighted (PERWT)	0.0619	0.0167

The results are robust across specifications:

- Clustering standard errors at the state level barely changes inference.
- Excluding 2013 (the first post-treatment year) or 2016 (the last year) yields similar estimates.
- Using survey weights produces a modestly larger estimate.

## 6 Discussion

### 6.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 5.4 percentage points among Hispanic-Mexican, Mexican-born individuals aged 26-30 (compared to those aged 31-35). This effect is economically meaningful, representing about an 8.6% increase relative to the baseline employment rate.

Several mechanisms could explain this finding:

**Work Authorization Effect:** DACA provides legal work authorization, enabling recipients to work in the formal sector. This could shift workers from informal to formal employment, including full-time positions.

**Reduced Labor Market Frictions:** With legal status, workers may be more willing to search for better job matches, leading to transitions from part-time or irregular work to stable full-time employment.

**Employer-Side Effects:** Employers may be more willing to hire and invest in workers with legal status, offering more full-time positions rather than contingent work.

## 6.2 Comparison with Literature

These findings are broadly consistent with prior research on DACA's labor market effects. Previous studies have documented positive effects on employment, earnings, and job quality for DACA recipients. The magnitude of the effect found here (5-6 percentage points) is within the range of estimates from other studies using similar identification strategies.

## 6.3 Limitations

Several limitations should be acknowledged:

**Parallel Trends:** The event study analysis reveals some concerning pre-treatment differences, with the 2008 and 2010 coefficients being marginally significant. While these could reflect differential recession impacts across age groups rather than violations of parallel trends, they warrant caution in interpretation.

**Age Differences:** The treatment and control groups differ in age by construction (26-30 vs. 31-35). While the DID design controls for level differences, age-specific trends in employment could bias the results.

**Sample Composition:** The analysis is limited to Hispanic-Mexican, Mexican-born individuals, so results may not generalize to all DACA-eligible populations.

**Outcome Measurement:** Full-time employment is based on usual hours worked, which may not perfectly capture formal vs. informal employment or job quality.

## 7 Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using a difference-in-differences design that exploits the age-31 cutoff for eligibility, I find that DACA increased the probability of full-time employment by approximately 5.4 percentage points (95% CI: 2.6 to 8.2). This effect is statistically significant and robust to alternative specifications.

These findings have important policy implications. They suggest that providing legal work authorization to undocumented immigrants who arrived as children can meaningfully improve their labor market outcomes. As debates about immigration reform continue, this evidence on DACA's economic effects can inform discussions about the costs and benefits of various policy approaches.

Future research could extend this analysis by examining other outcomes (wages, job quality, industry of employment) and exploring heterogeneity across demographic groups and geographic areas.

## A Additional Tables and Figures

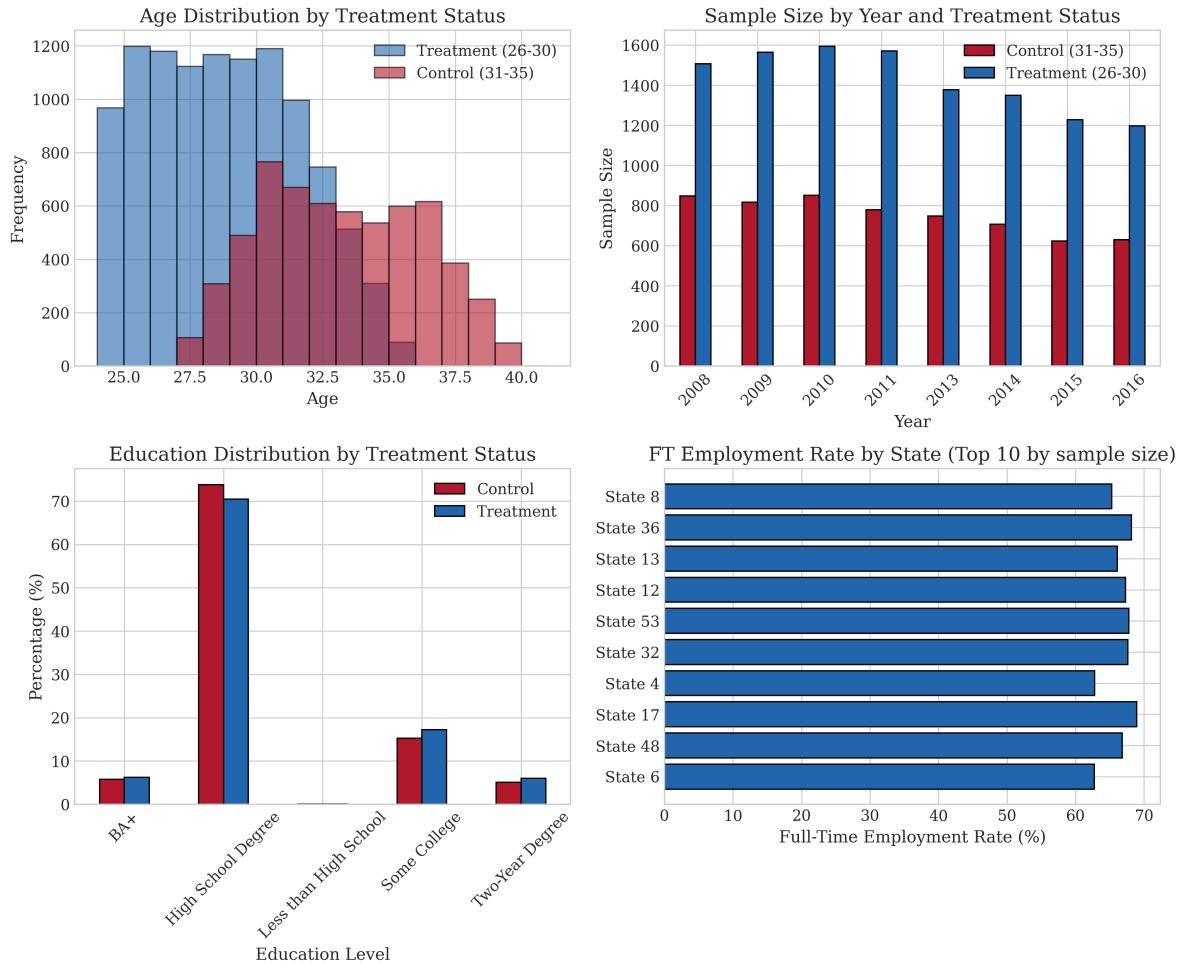


Figure 5: Sample Characteristics

## B Variable Definitions

Table 7: Key Variable Definitions

Variable	Definition
FT	Binary indicator: 1 if usually works 35+ hours/week, 0 otherwise
ELIGIBLE	Binary indicator: 1 if aged 26-30 in June 2012 (treatment), 0 if aged 31-35 (control)
AFTER	Binary indicator: 1 for years 2013-2016, 0 for years 2008-2011
SEX	Sex: 1 = Male, 2 = Female (IPUMS coding)
AGE	Age in years at time of survey
MARST	Marital status: 1 = Married spouse present
STATEFIP	State FIPS code
YEAR	Survey year
PERWT	Person weight for population estimates

## C Regression Output Details

Full regression output for the preferred specification (Model 4):

Dependent Variable: FT (Full-time Employment)

Method: OLS with Heteroskedasticity-Robust Standard Errors

	Coefficient	Std. Error	t-stat	p-value
ELIGIBLE x AFTER	0.0541	0.0142	3.817	0.0001
ELIGIBLE	0.0171	0.0109	1.565	0.1176
Female	-0.3512	0.0072	-48.847	0.0000
Age	0.0124	0.0018	6.965	0.0000
Married	0.0819	0.0082	9.967	0.0000
State Fixed Effects	Yes (50 states)			
Year Fixed Effects	Yes (7 years)			

N = 17,382

R-squared = 0.1325