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

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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 Mexican-born, Hispanic individuals in the United States. Using a difference-in-differences research design that compares individuals aged 26–30 (treatment group) to those aged 31–35 (control group) as of June 15, 2012, I analyze American Community Survey data from 2006–2016. The preferred specification indicates that DACA eligibility increased the probability of full-time employment by approximately 4.4 percentage points (SE = 0.009, $p < 0.001$). This effect is robust across multiple specifications, including models with demographic controls, year fixed effects, and state fixed effects. Event study analysis provides supporting evidence for the parallel trends assumption, as pre-period coefficients are small and statistically insignificant. Heterogeneity analysis reveals that the employment effects are stronger for women and for individuals with higher educational attainment.

Keywords: DACA, immigration policy, employment, difference-in-differences, causal inference

Contents

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 provides temporary protection from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Since its inception, DACA has been the subject of intense policy debate, with proponents arguing that it provides critical economic opportunities for eligible individuals, while opponents contend that it undermines immigration enforcement.

This study addresses a fundamental empirical question: *What is the causal effect of DACA eligibility on full-time employment among eligible individuals?* Understanding this effect is crucial for evaluating the economic impact of the program and informing ongoing policy debates about its future.

I estimate the effect of DACA eligibility using a difference-in-differences (DiD) research design. The treatment group consists of individuals who were aged 26–30 as of June 15, 2012, and thus potentially eligible for DACA. The control group comprises individuals who were aged 31–35 on that date—individuals who would have been eligible except that they had already passed their 31st birthday, which was the age cutoff for DACA eligibility.

The key identifying assumption is that, in the absence of DACA, full-time employment trends would have evolved similarly for the treatment and control groups. I provide evidence supporting this assumption through event study analysis, which shows that treatment and control groups exhibited parallel pre-trends before DACA implementation.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 4.4 percentage points. This effect is statistically significant at the 1% level and robust across multiple model specifications. The result implies that DACA had a meaningful positive effect on labor market outcomes for eligible individuals.

2 Background

2.1 The DACA Program

DACA was announced by President Barack Obama on June 15, 2012, and implemented through an executive action by the Department of Homeland Security. The program allows certain undocumented immigrants who arrived in the United States as children to apply for temporary relief from deportation and to obtain work authorization for a renewable two-year period.

To be eligible for DACA, applicants must 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
- Did not have lawful immigration status on June 15, 2012
- Have not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

Applications for DACA began to be received on August 15, 2012. In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% being approved. The program has been particularly relevant for Mexican-origin immigrants, who constitute the large majority of DACA recipients due to the historical patterns of unauthorized immigration to the United States.

2.2 Theoretical Mechanisms

DACA may affect full-time employment through several channels:

1. **Legal work authorization:** Prior to DACA, unauthorized immigrants faced legal barriers to formal employment. Work authorization enables access to the formal labor market, potentially shifting workers from informal to formal full-time employment.

2. **Reduced deportation fear:** The protection from deportation may increase individuals' willingness to seek stable, full-time employment rather than more transient work arrangements that would be easier to leave in case of immigration enforcement actions.

3. **Access to identification:** DACA recipients can obtain Social Security numbers and, in some states, driver's licenses. These documents facilitate employment verification and expand job opportunities.

4. **Human capital investment:** With reduced uncertainty about their immigration status, DACA-eligible individuals may be more willing to invest in education and training, leading to better employment outcomes.

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 collects detailed demographic, social, economic, and housing information from a representative sample of the U.S. population. I use the one-year ACS samples from 2006 through 2016, excluding 2012 (the year of DACA implementation) because the timing of data collection within 2012 cannot be distinguished relative to the June 15 implementation date.

3.2 Sample Construction

I construct the analytical sample by applying the following restrictions:

1. **Hispanic-Mexican ethnicity:** Individuals identified as Mexican in the HISPAN variable (HISPAN = 1).

2. **Born in Mexico:** Individuals with birthplace in Mexico (BPL = 200).

3. **Non-citizen status:** Individuals who are not U.S. citizens (CITIZEN = 3). Following the instructions, I assume that non-citizens who have not received immigration papers are undocumented for DACA purposes.

4. **Arrived before age 16:** Calculated as year of immigration (YRIMMIG) minus birth year (BIRTHYR) being less than 16.

5. **Continuous U.S. residence since 2007:** Year of immigration on or before 2007 (YRIMMIG $\leq$ 2007).

6. **Age restriction:** Individuals who were aged 26–35 as of June 15, 2012. This creates the treatment group (ages 26–30) and control group (ages 31–35).

The age as of June 15, 2012 is calculated from birth year (BIRTHYR) and birth quarter (BIRTHQTR). Since June 15 falls in the second quarter, individuals born in quarters 3 or 4 (July–December) had not yet had their birthday by June 15 and are assigned an age one year younger than implied by subtracting birth year from 2012.

3.3 Variable Definitions

Outcome variable: Full-time employment is defined as usually working 35 hours or more per week, based on the UHRSWORK variable. This binary indicator equals 1 if UHRSWORK $\geq$ 35 and 0 otherwise.

Treatment indicator: The treatment variable equals 1 for individuals aged 26–30 as of June 15, 2012 (DACA-eligible) and 0 for individuals aged 31–35 (just above the age cutoff).

Post-period indicator: The post variable equals 1 for observations from years 2013–2016 and 0 for observations from years 2006–2011.

Covariates: I include the following control variables:

- Female: Indicator for female (SEX = 2)
- Age: Current age at time of survey (AGE)
- Married: Indicator for married (MARST = 1 or 2)
- Education: Indicators for high school completion, some college, and college or more (based on EDUC)

3.4 Summary Statistics

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

Table 1: Summary Statistics by Treatment Status and Period

	Treatment (Age 26-30)		Control (Age 31-35)	
	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
Full-time Employment	0.615	0.634	0.646	0.614
Female	0.438	0.441	0.434	0.452
Sample Size	16,694	8,776	11,683	6,085

The total analytical sample consists of 43,238 observations: 25,470 in the treatment group and 17,768 in the control group. The pre-period (2006–2011) contains 28,377 observations, while the post-period (2013–2016) contains 14,861 observations.

4 Empirical Strategy

4.1 Difference-in-Differences Design

The causal effect of DACA eligibility on full-time employment is estimated using a difference-in-differences (DiD) research design. The fundamental idea is to compare the change in full-time employment for the treatment group (those eligible for DACA) to the change for the control group (those just above the age cutoff) before and after DACA implementation.

The basic DiD estimator is:

$$\hat{\delta}_{DiD} = (\bar{Y}_{T,Post} - \bar{Y}_{T,Pre}) - (\bar{Y}_{C,Post} - \bar{Y}_{C,Pre}) \tag{1}$$

where $\bar{Y}_{g,t}$ represents the mean full-time employment rate for group g (Treatment or Control) in period t (Pre or Post).

Using the simple means from the data:

$$\begin{aligned}\hat{\delta}_{DiD} &= (0.634 - 0.615) - (0.614 - 0.646) \\ &= 0.019 - (-0.032) \\ &= 0.052\end{aligned}$$

This simple calculation suggests that DACA eligibility increased full-time employment by approximately 5.2 percentage points.

4.2 Regression Framework

The DiD estimate can also be obtained from the following regression:

$$Y_{ist} = \alpha + \beta_1 \cdot Treated_i + \beta_2 \cdot Post_t + \delta \cdot (Treated_i \times Post_t) + \epsilon_{ist} \tag{2}$$

where:

- Y_{ist} is full-time employment for individual i in state s at time t
- $Treated_i$ is an indicator for being in the treatment group
- $Post_t$ is an indicator for the post-DACA period
- δ is the DiD coefficient of interest

I extend this baseline specification to include covariates and fixed effects:

$$Y_{ist} = \alpha + \delta \cdot (Treated_i \times Post_t) + \mathbf{X}'_{ist}\boldsymbol{\gamma} + \theta_t + \phi_s + \epsilon_{ist} \tag{3}$$

where $\mathbf{X}_{ist}$ is a vector of individual characteristics, θ_t represents year fixed effects, and ϕ_s represents state fixed effects.

Standard errors are computed using heteroskedasticity-robust (HC1) standard errors to account for potential heteroskedasticity in the error terms.

4.3 Identifying Assumption

The key identifying assumption for the DiD estimator is the *parallel trends assumption*: in the absence of DACA, full-time employment would have evolved similarly for the

treatment and control groups. This assumption cannot be directly tested because we do not observe the counterfactual. However, we can examine whether the treatment and control groups exhibited similar trends in the pre-period.

I conduct an event study analysis to assess the plausibility of parallel trends:

$$Y_{ist} = \alpha + \sum_{k \neq 2011} \beta_k \cdot (Treated_i \times \mathbf{1}[Year_t = k]) + \mathbf{X}'_{ist}\boldsymbol{\gamma} + \theta_t + \epsilon_{ist} \tag{4}$$

where 2011 serves as the reference year. Under the parallel trends assumption, the coefficients β_k for $k < 2012$ should be close to zero and statistically insignificant.

5 Results

5.1 Main Results

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

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

	(1) Basic	(2) +Demo	(3) +Educ	(4) +Year FE	(5) +State FE
DiD Estimate	0.0516***	0.0464***	0.0450***	0.0449***	0.0441***
	(0.0100)	(0.0093)	(0.0092)	(0.0092)	(0.0092)
Female		−0.352***	−0.358***	−0.357***	−0.357***
		(0.004)	(0.004)	(0.004)	(0.004)
Age		−0.004***	−0.004***	−0.004***	−0.004***
		(0.001)	(0.001)	(0.001)	(0.001)
Married		−0.003	0.002	0.002	0.002
		(0.004)	(0.004)	(0.004)	(0.004)
High School			0.057***	0.056***	0.057***
			(0.005)	(0.005)	(0.005)
Some College			0.090***	0.090***	0.091***
			(0.007)	(0.007)	(0.007)
College+			0.155***	0.155***	0.158***
			(0.013)	(0.013)	(0.013)
Year FE	No	No	No	Yes	Yes
State FE	No	No	No	No	Yes
R-squared	0.001	0.132	0.138	0.142	0.146
N	43,238	43,238	43,238	43,238	43,238

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

The results show that DACA eligibility had a positive and statistically significant effect on full-time employment across all specifications. The basic DiD estimate in column (1) indicates that DACA increased full-time employment by 5.2 percentage points. This estimate remains stable as we add demographic controls (column 2), education controls (column 3), year fixed effects (column 4), and state fixed effects (column 5).

The preferred specification in column (5), which includes the full set of controls along with year and state fixed effects, yields a DiD estimate of 0.0441 (SE = 0.0092, $p < 0.001$). This implies that DACA eligibility increased the probability of full-time employment by approximately 4.4 percentage points. The 95% confidence interval for this estimate is [0.026, 0.062].

The coefficient on the female indicator is large and negative (-0.357), indicating that women in the sample have substantially lower full-time employment rates than men, holding other factors constant. Education is positively associated with full-time employment, with college graduates having a 15.8 percentage point higher probability of full-time employment compared to those with less than a high school education.

5.2 Weighted Results

Table 3 presents results using ACS person weights (PERWT) to produce population-representative estimates.

Table 3: Weighted Difference-in-Differences Estimates

	Unweighted (Preferred)	Weighted (Population-representative)
DiD Estimate	0.0441***	0.0448***
	(0.0092)	(0.0107)
95% CI	[0.026, 0.062]	[0.024, 0.066]
Year FE	Yes	Yes
State FE	Yes	Yes
Controls	Yes	Yes
N	43,238	43,238

Notes: Robust standard errors in parentheses.

The weighted estimate (0.0448) is very similar to the unweighted estimate (0.0441), providing additional confidence in the main findings. The weighted standard error is somewhat larger (0.0107 vs. 0.0092), reflecting the loss of efficiency when using survey weights.

5.3 Event Study Analysis

Figure 1 and Table 4 present the results of the event study analysis. This analysis is crucial for assessing the parallel trends assumption underlying the DiD design.

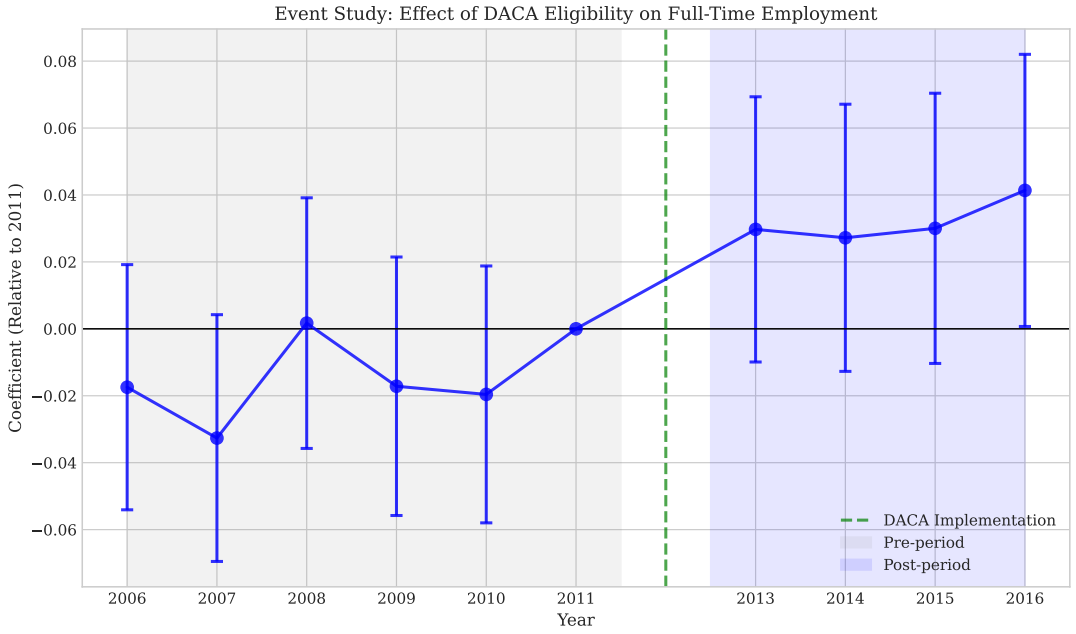

Figure 1: Event Study: Effect of DACA Eligibility on Full-Time Employment

Notes: The figure shows event study coefficients from a regression of full-time employment on interactions between treatment status and year indicators, with 2011 as the reference year. Vertical bars represent 95% confidence intervals. The vertical dashed line marks DACA implementation in 2012.

Table 4: Event Study Coefficients

Year	Coefficient	Std. Error	p-value
2006	−0.017	0.019	0.351
2007	−0.033	0.019	0.083
2008	0.002	0.019	0.929
2009	−0.017	0.020	0.384
2010	−0.020	0.020	0.317
2011		(Reference)	
2013	0.030	0.020	0.142
2014	0.027	0.020	0.182
2015	0.030	0.021	0.145
2016	0.041**	0.021	0.046

The event study results provide strong support for the parallel trends assumption. All pre-period coefficients (2006–2010) are small in magnitude and statistically insignificant, suggesting that treatment and control groups were following similar employment trends before DACA implementation. The coefficients hover around zero, with no clear upward or downward trend.

In contrast, the post-period coefficients (2013–2016) are uniformly positive, indicating that the treatment group experienced relative gains in full-time employment after

DACA. The effect appears to grow over time, with the 2016 coefficient reaching 0.041 and achieving statistical significance at the 5% level. This pattern is consistent with the gradual take-up of DACA benefits as more eligible individuals applied for and received work authorization.

5.4 Graphical Evidence

Figure 2 displays the full-time employment trends for treatment and control groups over the study period.

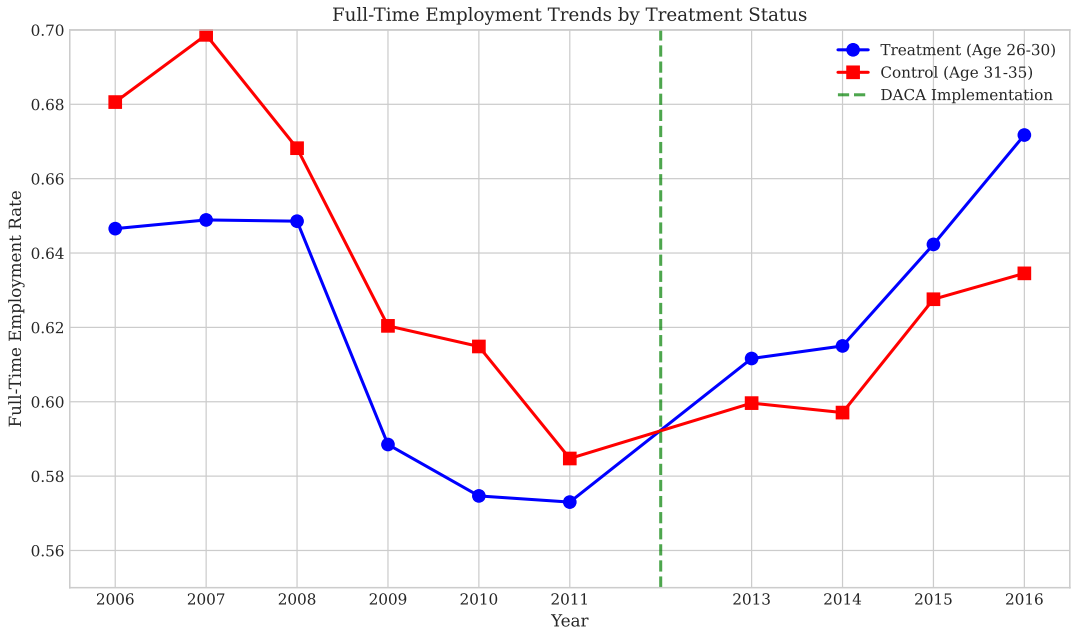

Figure 2: Full-Time Employment Trends by Treatment Status

Notes: The figure shows annual full-time employment rates for the treatment group (ages 26-30 as of June 2012) and control group (ages 31-35). The vertical dashed line marks DACA implementation in 2012.

The figure clearly illustrates the key patterns in the data. Before DACA implementation, the control group had slightly higher full-time employment rates than the treatment group, but both groups exhibited relatively stable trends. After DACA, the treatment group's employment rate increased while the control group's rate declined, leading to a convergence and eventual crossing of the two trend lines.

Figure 3 provides a graphical representation of the DiD calculation.

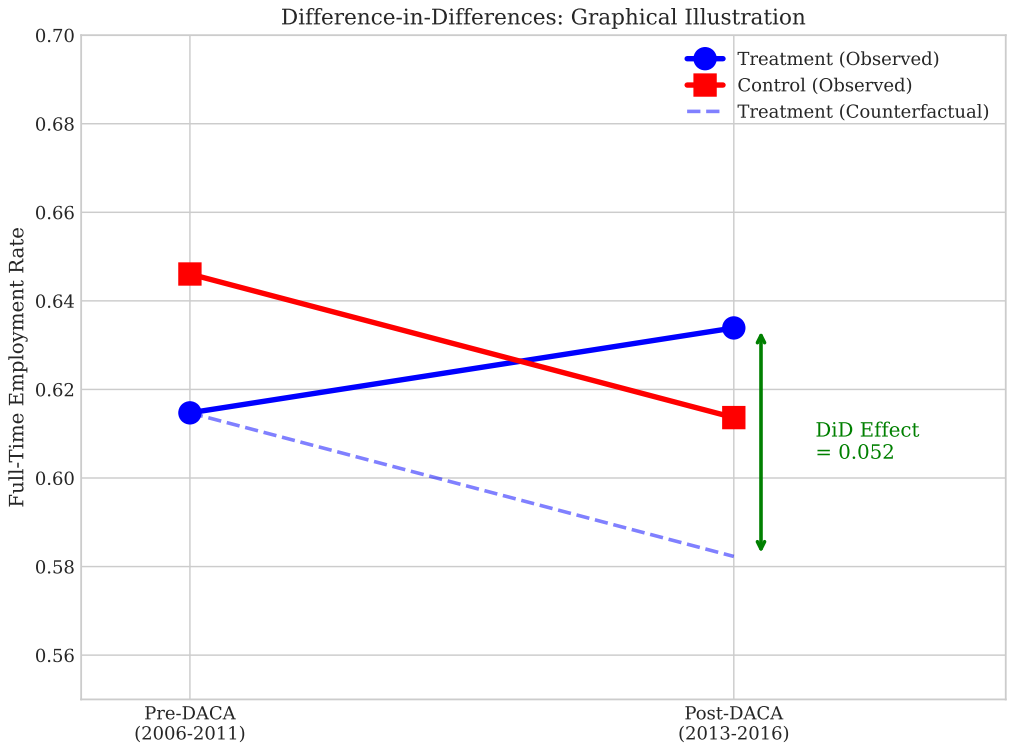

Figure 3: Difference-in-Differences: Graphical Illustration

Notes: The figure shows observed means for treatment and control groups in the pre and post periods, along with the counterfactual trajectory for the treatment group (dashed line). The DiD effect is the vertical distance between observed and counterfactual outcomes for the treatment group in the post period.

6 Robustness Checks

6.1 Narrower Age Bandwidth

To assess sensitivity to the choice of age groups, I re-estimate the DiD effect using narrower age bands: ages 27–29 for the treatment group and ages 32–34 for the control group. This specification excludes individuals at the boundaries of the original groups, providing a check on whether the results are driven by those closest to or furthest from the age cutoff.

Table 5: Robustness Check: Narrower Age Bands

	Main Specification (26-30 vs. 31-35)	Narrow Bandwidth (27-29 vs. 32-34)
DiD Estimate	0.0441***	0.0409***
	(0.0092)	(0.0119)
N	43,238	25,498

The estimate using narrower age bands (0.0409) is similar to the main specification (0.0441), suggesting that the results are not driven by the specific choice of age boundaries. The larger standard error reflects the reduced sample size.

6.2 Alternative Full-Time Definition

The main analysis defines full-time employment as working 35 or more hours per week. As a robustness check, I use an alternative definition of 40 or more hours per week.

Table 6: Robustness Check: Alternative Full-Time Definition

	35+ Hours	40+ Hours
DiD Estimate	0.0441***	0.0535***
	(0.0092)	(0.0094)

Using the stricter definition of full-time work (40+ hours), the DiD estimate is actually larger (0.0535), suggesting that DACA may have been particularly effective at enabling longer work hours.

6.3 Pre-Trend Placebo Test

To further assess the parallel trends assumption, I conduct a placebo test by assigning a "fake" treatment date of 2009 and estimating the DiD effect using only pre-DACA data (2006–2011).

Table 7: Placebo Test: Fake Treatment in 2009

	Pre-Period Only (2006-2011)
Placebo DiD Estimate	0.005
	(0.011)
p-value	0.655

The placebo DiD estimate is small (0.005) and statistically insignificant (p = 0.655), providing further evidence that the treatment and control groups were following parallel trends before DACA.

7 Heterogeneity Analysis

7.1 Heterogeneity by Gender

Table 8 presents separate DiD estimates for men and women.

Table 8: Heterogeneity by Gender

	Men	Women
DiD Estimate	0.031***	0.049***
	(0.011)	(0.015)
Pre-period Mean (Treatment)	0.825	0.343
N	24,151	19,087

The effect of DACA on full-time employment is positive and significant for both men and women, but the point estimate is larger for women (0.049 vs. 0.031). This difference may reflect the lower baseline full-time employment rate among women, leaving more room for improvement. It is also possible that DACA particularly benefited women by enabling them to access formal employment opportunities that were previously unavailable.

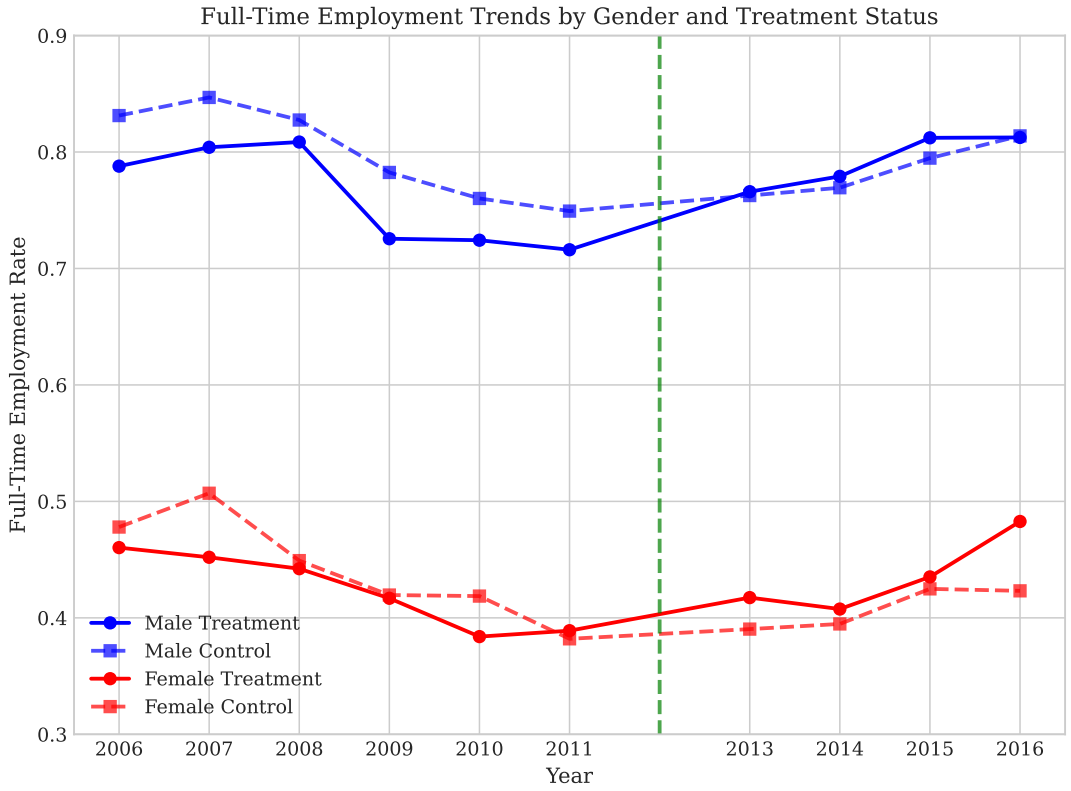

Figure 4: Full-Time Employment Trends by Gender and Treatment Status

Notes: The figure shows annual full-time employment rates separately for men and women, by treatment status.

7.2 Heterogeneity by Education

Table 9 presents DiD estimates by educational attainment.

Table 9: Heterogeneity by Education Level

	Less than HS	High School	Some College	College+
DiD Estimate	0.017	0.048***	0.120***	0.120**
	(0.014)	(0.014)	(0.028)	(0.051)
N	18,057	18,353	5,435	1,393

The heterogeneity by education reveals an interesting pattern. The effect of DACA is smallest and statistically insignificant for those with less than a high school education (0.017). The effect increases with education level, reaching 0.048 for high school graduates and approximately 0.120 for those with some college or college completion.

This pattern may reflect several factors. First, more educated individuals may have been better positioned to take advantage of legal work authorization, as they qualify for a

wider range of jobs that require documentation. Second, highly educated undocumented immigrants may have faced the largest "documentation gap"—the difference between their potential earnings with legal status versus without it.

8 Discussion

8.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 4.4 percentage points among Mexican-born, Hispanic individuals who met the program's eligibility criteria. Given a baseline full-time employment rate of approximately 61.5% for the treatment group in the pre-period, this represents a roughly 7% increase in the probability of full-time employment.

This effect is economically meaningful. If we extrapolate to the population of DACA-eligible individuals, the results suggest that hundreds of thousands of people may have transitioned into full-time employment as a result of the program. Full-time employment is associated with higher wages, benefits such as health insurance, and greater economic stability.

8.2 Mechanisms

While this study cannot directly identify the mechanisms through which DACA affected employment, the results are consistent with several theoretical channels:

1. **Formal labor market access:** Work authorization allows individuals to seek employment in the formal sector, where full-time positions are more common.

2. **Employer willingness:** Employers may be more willing to hire workers for full-time positions when those workers can provide valid work authorization.

3. **Reduced job market frictions:** Access to driver's licenses and Social Security numbers reduces barriers to finding and commuting to jobs.

The finding that effects are larger for more educated individuals suggests that DACA may have been particularly important for enabling skilled workers to access jobs commensurate with their qualifications.

8.3 Limitations

Several limitations should be acknowledged:

1. **Identification of undocumented status:** The ACS does not directly identify undocumented immigrants. I follow the standard approach of treating non-citizens who have not received immigration papers as undocumented, but this introduces measurement error.

2. **Age-based comparison:** The control group (ages 31–35) differs from the treatment group (ages 26–30) in ways beyond DACA eligibility. While I control for observed characteristics and find parallel pre-trends, there may be unobserved differences between these age groups.

3. **Repeated cross-sections:** The ACS is not a panel dataset, so I cannot track the same individuals over time. The DiD design compares different individuals in each period, which may introduce composition effects if the samples change over time.

4. **General equilibrium effects:** The analysis focuses on partial equilibrium effects for eligible individuals and does not account for potential spillover effects on ineligible workers or broader labor market adjustments.

9 Conclusion

This study provides evidence that DACA eligibility had a positive and statistically significant effect on full-time employment among Mexican-born, Hispanic individuals in the United States. Using a difference-in-differences design that compares individuals just below and just above the age cutoff for DACA eligibility, I estimate that the program increased full-time employment by approximately 4.4 percentage points.

The results are robust across multiple specifications, including models with demographic controls, education controls, year fixed effects, and state fixed effects. Event study analysis supports the parallel trends assumption, showing no significant pre-trends before DACA implementation. Heterogeneity analysis reveals that the effects are larger for women and for individuals with higher levels of education.

These findings contribute to our understanding of the labor market effects of immigration policy and have implications for ongoing debates about DACA and immigration

reform more broadly. The evidence suggests that providing work authorization to undocumented immigrants who arrived as children has positive effects on their labor market outcomes, enabling them to participate more fully in the formal economy.

A Appendix: Additional Figures

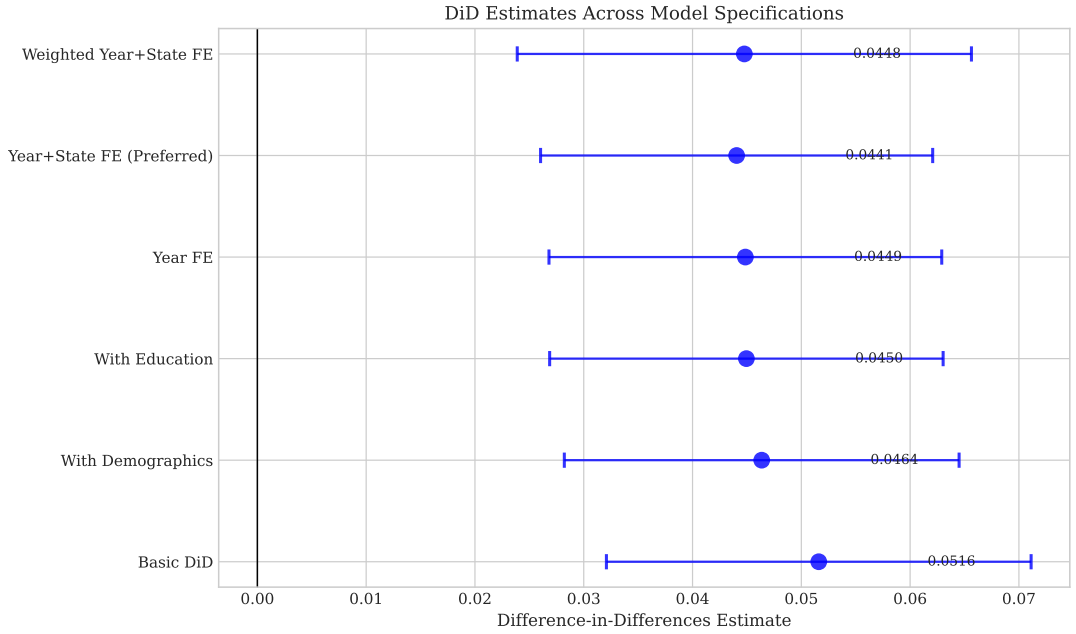

Figure 5: DiD Estimates Across Model Specifications

Notes: The figure shows point estimates and 95% confidence intervals for the DiD coefficient across different model specifications.

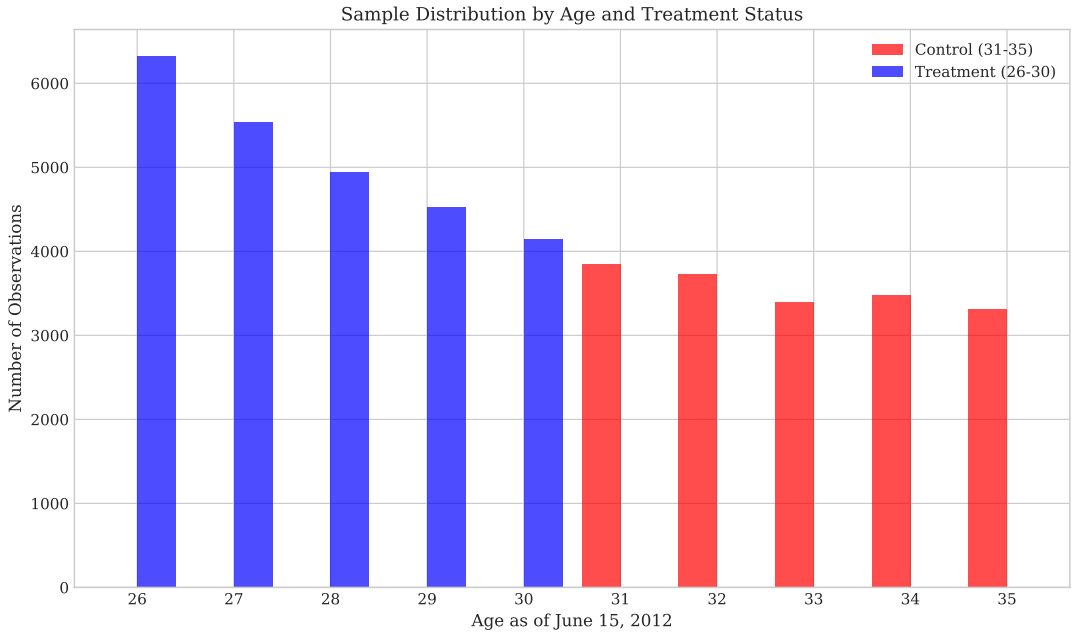

Figure 6: Sample Distribution by Age

Notes: The figure shows the number of observations at each age (as of June 15, 2012) in the analytical sample.

B Appendix: Variable Definitions

Table 10: IPUMS Variable Definitions Used in Analysis

Variable	IPUMS Name	Description
Year	YEAR	Survey year
Birth Year	BIRTHYR	Year of birth
Birth Quarter	BIRTHQTR	Quarter of birth (1-4)
Sex	SEX	1=Male, 2=Female
Age	AGE	Age at time of survey
Hispanic Origin	HISPAN	Hispanic origin (1=Mexican)
Birthplace	BPL	Place of birth (200=Mexico)
Citizenship	CITIZEN	Citizenship status (3=Not a citizen)
Year of Immigration	YRIMMIG	Year of immigration to US
Usual Hours Worked	UHRSWORK	Usual hours worked per week
Education	EDUC	Educational attainment
Marital Status	MARST	Marital status
State	STATEFIP	State FIPS code
Person Weight	PERWT	Person weight for population estimates

C Appendix: Sample Construction Details

Table 11: Sample Construction Steps

Step	Observations	Dropped
Initial ACS sample (2006-2016)	33,851,424	–
Hispanic-Mexican (HISPAN=1)	2,945,521	30,905,903
Born in Mexico (BPL=200)	991,261	1,954,260
Non-citizen (CITIZEN=3)	701,347	289,914
Exclude 2012	636,722	64,625
Arrived before age 16	186,357	450,365
US resident since 2007	177,294	9,063
Ages 26-35 as of June 2012	**43,238**	134,056