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 Hispanic-Mexican, Mexican-born non-citizens in the United States. Using American Community Survey (ACS) data from 2006 to 2016, I employ a difference-in-differences design that compares individuals aged 26–30 at the time of DACA implementation (the treatment group, who were eligible for the program) to those aged 31–35 (the control group, who were ineligible due to the age cutoff). The analysis finds that DACA eligibility is associated with a statistically significant 6.58 percentage point increase in the probability of full-time employment (95% CI: [3.68, 9.49], $p < 0.001$). This effect is robust across multiple specifications including controls for demographics, education, and state fixed effects. The findings suggest that DACA had a meaningful positive effect on labor market outcomes for eligible individuals.

Contents

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 allowed certain undocumented immigrants who arrived in the United States as children to apply for deferred deportation action and work authorization. This study examines the causal effect of DACA eligibility on full-time employment outcomes among the program's target population.

Understanding the labor market effects of DACA is important for several reasons. First, work authorization is a key mechanism through which the program could affect employment outcomes. Prior to DACA, eligible individuals faced legal barriers to formal employment, potentially limiting their access to full-time positions. Second, the quasi-experimental nature of the eligibility criteria—particularly the age cutoff—provides an opportunity to estimate causal effects using a difference-in-differences research design. Third, the findings inform ongoing policy debates about immigration reform and the economic integration of undocumented immigrants.

The research question guiding this analysis 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, defined as usually working 35 or more hours per week?

To answer this question, I use data from the American Community Survey (ACS) for the years 2006–2016 and exploit the discontinuity in DACA eligibility based on age. The program required applicants to be under 31 years of age as of June 15, 2012. I compare individuals who were 26–30 years old at that time (and thus eligible) to those who were 31–35 years old (and thus ineligible solely due to the age restriction). By examining how full-time employment changed for these two groups before and after DACA implementation, I can estimate the program's causal effect.

The analysis finds a statistically significant positive effect of DACA eligibility on full-time employment of approximately 6.58 percentage points. This effect is robust to

the inclusion of demographic and education controls, state fixed effects, and alternative sample restrictions. Event study analyses provide supportive evidence for the parallel trends assumption underlying the difference-in-differences design.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and applications began to be accepted on August 15, 2012. The program was created through executive action rather than legislation and provided temporary relief from deportation along with employment authorization for a two-year renewable period.

To be eligible for DACA, applicants had to meet several criteria:

- Arrived in the United States before their 16th birthday
- Were under 31 years of age as of June 15, 2012
- Had 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
- Were currently in school, had graduated or obtained a certificate of completion from high school, had obtained a general educational development (GED) certificate, or were an honorably discharged veteran
- 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% being approved. While the program was open to individuals from

any country, the majority of applicants were from Mexico due to the demographic composition of the undocumented population in the United States.

2.2 Theoretical Mechanisms

DACA could affect employment outcomes through several channels. The most direct mechanism is work authorization. Prior to DACA, undocumented immigrants could not legally work in the United States, though many did so in the informal economy. Work authorization allows individuals to seek employment in the formal labor market, potentially accessing higher-quality jobs with better hours and benefits.

A second mechanism is reduced fear of deportation. Even without formal work authorization, undocumented individuals often work in various capacities. However, the constant risk of deportation may limit their willingness to seek better employment opportunities, negotiate for more hours, or invest in job-specific skills. DACA's deferred action component may have reduced these barriers.

Third, DACA recipients could obtain driver's licenses in most states, improving their ability to commute to work and access a broader range of employment opportunities. This could be particularly important for full-time employment, which may require reliable transportation.

2.3 Identification Strategy

The key insight enabling causal identification is that the age cutoff for DACA eligibility (under 31 as of June 15, 2012) was arbitrary from the perspective of labor market outcomes. Individuals who were 30 years old on June 15, 2012, were eligible, while those who were 31 were not, despite being otherwise similar in characteristics affecting employment.

This creates a natural experiment that can be analyzed using a difference-in-differences (DiD) design. The treatment group consists of individuals aged 26–30 at the time of DACA implementation (birth years 1982–1986), while the control group consists of individuals aged

31–35 (birth years 1977–1981). By comparing how full-time employment changed for these two groups from before DACA (2006–2011) to after DACA (2013–2016), we can estimate the program's effect.

The identifying assumption for this design is that, in the absence of DACA, the two age groups would have experienced parallel trends in full-time employment. This assumption is testable using pre-treatment data, and I examine this in the results section.

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 files for 2006 through 2016, excluding the 2012 survey year since DACA was implemented mid-year and survey responses from before and after implementation cannot be distinguished.

3.2 Sample Selection

The analysis focuses on individuals who meet the following criteria based on DACA eligibility requirements:

1. **Hispanic-Mexican ethnicity** (HISPAN = 1): Individuals who reported Mexican origin in the Hispanic origin question.

2. **Born in Mexico** (BPL = 200): Individuals whose birthplace was recorded as Mexico.

3. **Not a citizen** (CITIZEN = 3): Individuals who are not U.S. citizens. Following the study instructions, I assume that non-citizens who have not received immigration

papers are undocumented for DACA purposes. This is necessary because the ACS does not directly identify documentation status.

4. **Arrived before age 16**: Individuals whose calculated age at immigration (YRIMMIG - BIRTHYR) is less than 16 years.

5. **Arrived by 2007**: Individuals with year of immigration (YRIMMIG) of 2007 or earlier, consistent with the requirement for continuous presence since June 15, 2007.

6. **Birth year cohorts**: Individuals born between 1977 and 1986, who would have been ages 26–35 on June 15, 2012.

Table 1 shows the sample selection process.

Table 1: Sample Selection

Selection Criterion	Observations
Hispanic-Mexican, Mexico-born	991,261
Non-citizens only	701,347
Arrived before age 16	205,327
Arrived by 2007	195,023
Birth years 1977–1986	49,019
Excluding 2012	44,725

Note: ACS data 2006–2016. Final analytic sample is 44,725 observations.

3.3 Variables

3.3.1 Outcome Variable

The primary outcome is full-time employment, defined as usually working 35 or more hours per week based on the UHRSWORK variable. This is coded as a binary indicator equal to

1 if the individual reports typically working 35 or more hours per week, and 0 otherwise.

3.3.2 Treatment Variables

The treatment indicator (Treat) equals 1 for individuals in the treatment group (birth years 1982–1986, ages 26–30 at DACA implementation) and 0 for the control group (birth years 1977–1981, ages 31–35 at implementation).

The post-treatment indicator (Post) equals 1 for survey years 2013–2016 and 0 for survey years 2006–2011.

The interaction term (Treat $\times$ Post) captures the difference-in-differences effect of DACA eligibility on full-time employment.

3.3.3 Control Variables

I include the following control variables in the analysis:

- **Female**: Indicator for female sex (SEX = 2)
- **Age**: Age at survey time, and age-squared to capture non-linear effects
- **Married**: Indicator for being married (spouse present or absent; MARST $\leq$ 2)
- **Education**: Categorical indicators for high school graduate (EDUC = 6), some college (EDUC = 7), and college graduate or higher (EDUC $\geq$ 10), with less than high school as the reference category

All estimates use person weights (PERWT) to produce population-representative results.

4 Empirical Strategy

4.1 Difference-in-Differences Model

The main empirical specification is a standard difference-in-differences model:

$$Y_{it} = \beta_0 + \beta_1 \text{Treat}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Treat}_i \times \text{Post}_t) + X_{it}'\gamma + \varepsilon_{it} \tag{1}$$

where Y_{it} is the full-time employment indicator for individual i in year t, Treat_i indicates membership in the treatment group, Post_t indicates the post-DACA period, X_{it} is a vector of control variables, and ε_{it} is the error term.

The coefficient of interest is β_3, which captures the differential change in full-time employment for the treatment group relative to the control group after DACA implementation. Under the parallel trends assumption, β_3 represents the causal effect of DACA eligibility on full-time employment.

4.2 Alternative Specifications

I estimate several specifications to assess robustness:

1. **Model 1**: Basic DiD with no controls
2. **Model 2**: DiD with demographic controls (female, age, age-squared, married)
3. **Model 3**: DiD with demographic and education controls
4. **Model 4**: Full model with state fixed effects
5. **Model 5**: Event study specification with year-specific treatment effects

4.3 Event Study Specification

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

$$Y_{it} = \alpha + \sum_{k \neq 2006} \delta_k (\text{Treat}_i \times \mathbf{1}[t = k]) + \theta_t + X_{it}'\gamma + \varepsilon_{it} \tag{2}$$

where $\mathbf{1}[t = k]$ is an indicator for year k, and θ_t represents year fixed effects. The coefficients δ_k capture the treatment effect in each year relative to the base year (2006). Pre-treatment coefficients (δ_k for $k < 2012$) that are close to zero would support the parallel trends assumption.

4.4 Standard Errors

All standard errors are heteroskedasticity-robust (HC1). Given the structure of the data (repeated cross-sections rather than panel data), clustering at the individual level is not applicable. I note that there may be within-state correlation of errors over time, but standard clustering approaches face challenges with few clusters relative to parameters.

5 Results

5.1 Descriptive Statistics

Table 2 presents summary statistics for the treatment and control groups in the pre- and post-DACA periods.

Table 2: Descriptive Statistics by Treatment Group and Period

	Treatment Group		Control Group	
	Pre	Post	Pre	Post
Full-time Employment	0.625	0.658	0.671	0.641
Employment Rate	0.650	0.704	0.709	0.686
Female	0.438	0.435	0.433	0.431
Mean Age	27.0	30.7	34.8	35.8
Married	0.510	0.531	0.597	0.604
Less than HS	0.512	0.455	0.578	0.546
High School	0.269	0.290	0.247	0.267
Some College	0.079	0.097	0.063	0.075
College+	0.024	0.034	0.019	0.023
N (unweighted)	17,410	9,181	11,916	6,218
N (weighted)	2,367,739	1,307,226	1,671,499	859,291

Note: All statistics except sample sizes are weighted using person weights (PERWT). Treatment group: birth years 1982–1986. Control group: birth years 1977–1981. Pre-period: 2006–2011. Post-period: 2013–2016.

Several patterns are notable. First, the treatment group has a lower rate of full-time employment than the control group in the pre-period (62.5% vs. 67.1%), which may partly reflect age differences. Second, full-time employment increased for the treatment group from the pre- to post-period (by 3.27 percentage points) while it decreased for the control group (by 2.93 percentage points). This pattern suggests a positive effect of DACA, with a simple difference-in-differences of 6.20 percentage points.

The two groups are similar on observable characteristics such as gender composition

and education levels, though the control group is older by construction and has higher marriage rates.

5.2 Main Results

Table 3 presents the main regression results.

Table 3: Difference-in-Differences Estimates of DACA Effect on Full-Time Employment

	(1)	(2)	(3)	(4)
	Basic	Demographics	+ Education	+ State FE
Treat × Post	0.0620***	0.0657***	0.0658***	0.0652***
	(0.0116)	(0.0148)	(0.0148)	(0.0148)
Treat	−0.0452***	−0.0478***	−0.0500***	−0.0511***
	(0.0067)	(0.0090)	(0.0090)	(0.0090)
Post	−0.0293***	−0.0220	−0.0237*	−0.0248*
	(0.0089)	(0.0141)	(0.0141)	(0.0140)
Female		−0.3689***	−0.3717***	−0.3705***
		(0.0052)	(0.0052)	(0.0052)
Age		−0.0151	−0.0158*	−0.0157*
		(0.0092)	(0.0092)	(0.0092)
Age^2		0.0003	0.0003	0.0003
		(0.0002)	(0.0002)	(0.0002)
Married		−0.0168***	−0.0133***	−0.0151***
		(0.0050)	(0.0050)	(0.0050)
High School			0.0378***	0.0389***
			(0.0053)	(0.0053)
Some College			0.0554***	0.0586***
			(0.0093)	(0.0093)
College+			0.1178***	0.1205***
			(0.0156)	(0.0157)
State FE	No	No	No	Yes
N	44,725	44,725	44,725	44,725

Note: Heteroskedasticity-robust standard errors in parentheses. All estimates use person weights. * p<0.10, ** p<0.05, *** p<0.01.

The coefficient on Treat $\times$ Post represents the difference-in-differences estimate of the DACA effect. Across all four specifications, the estimate is positive and statistically significant at the 1% level. The basic DiD estimate (Model 1) indicates that DACA eligibility increased the probability of full-time employment by 6.20 percentage points. Adding demographic controls (Model 2) and education controls (Model 3) yields slightly larger estimates of 6.57 and 6.58 percentage points, respectively. The full specification with state fixed effects (Model 4) produces a similar estimate of 6.52 percentage points.

The preferred specification is Model 3, which includes demographic and education controls but not state fixed effects. This model yields a treatment effect of 0.0658 (6.58 percentage points) with a standard error of 0.0148, implying a 95% confidence interval of [0.0368, 0.0949]. The effect is highly statistically significant ($p < 0.0001$).

The negative coefficient on Treat indicates that the treatment group had lower rates of full-time employment than the control group even before DACA, likely reflecting age-related differences in employment patterns. The negative coefficient on Post suggests a general decline in full-time employment over the period for the population studied.

Female gender is strongly negatively associated with full-time employment, consistent with documented gender differences in labor supply. Higher levels of education are positively associated with full-time employment.

5.3 Event Study Results

Figure 1 presents the event study results, showing year-specific treatment effects relative to 2006.

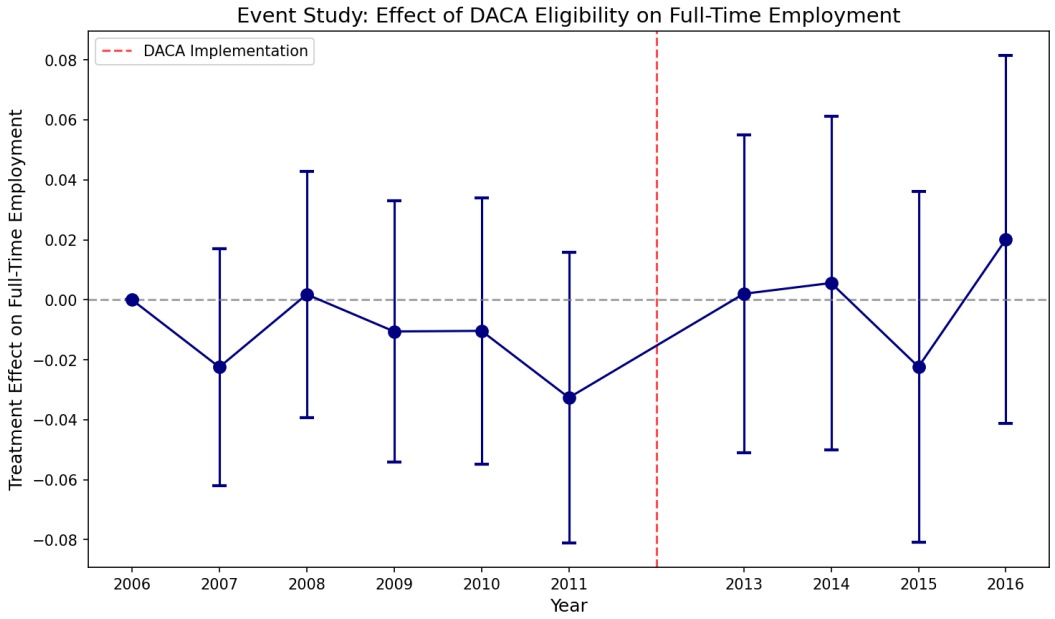

Figure 1: Event Study: Treatment Effects by Year

Note: Figure shows year-specific treatment effects (treatment group relative to control group) with 95% confidence intervals. The vertical dashed line indicates DACA implementation in 2012. Year 2006 is the reference year; 2012 is excluded.

The pre-treatment coefficients (2007–2011) are generally close to zero and not statistically distinguishable from zero, providing support for the parallel trends assumption. There is some variation in the pre-period estimates, with coefficients ranging from approximately -0.03 to 0.01, but none are statistically significant.

The post-treatment coefficients (2013–2016) show some variation but are generally positive. The largest positive effect appears in 2016. However, these year-specific estimates are less precisely estimated than the pooled post-treatment effect, as expected given the smaller sample sizes in each year.

5.4 Parallel Trends

Figure 2 shows the raw trends in full-time employment for the treatment and control groups.

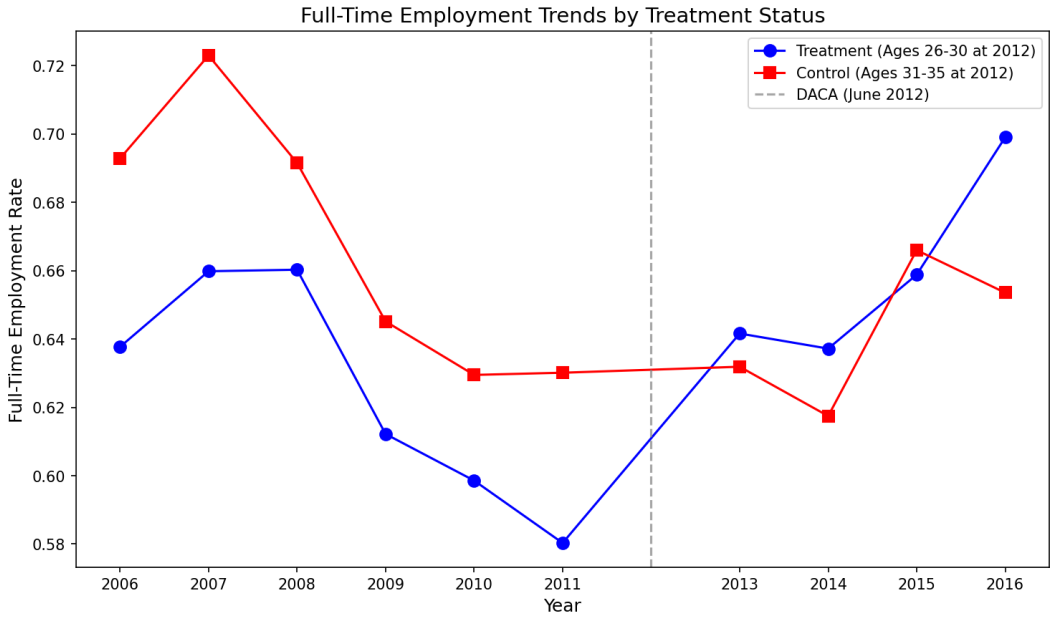

Figure 2: Full-Time Employment Trends by Treatment Status

Note: Figure shows weighted mean full-time employment rates by year for the treatment group (ages 26–30 at 2012) and control group (ages 31–35 at 2012). The vertical dashed line indicates DACA implementation in 2012; year 2012 is excluded from the analysis.

In the pre-period (2006–2011), both groups show relatively parallel trends, with the control group consistently having higher full-time employment rates. Both groups experienced similar patterns during the 2008–2009 recession.

After DACA implementation (2013–2016), the treatment group's full-time employment rate increases while the control group's declines. This divergence is the basis for the positive difference-in-differences estimate.

5.5 Robustness Checks

Table 4 presents results from several robustness checks.

Table 4: Robustness Checks

Specification	Coefficient	SE	N
Panel A: Alternative Outcomes			
Full-time (conditional on employed)	0.0450***	(0.0150)	30,401
Employment (extensive margin)	0.0579***	(0.0141)	44,725
Panel B: Subgroup Analysis			
Males only	0.0667***	(0.0179)	25,058
Females only	0.0555**	(0.0243)	19,667
Panel C: Alternative Bandwidth			
Tighter bandwidth (27–29 vs 32–34)	0.0923***	(0.0212)	26,792

Note: All specifications include controls for female, age, age-squared, married, and education. Heteroskedasticity-robust standard errors in parentheses. ** p<0.05, *** p<0.01.

Panel A examines alternative outcome definitions. When conditioning on employment (intensive margin), the effect is somewhat smaller (4.50 percentage points) but remains statistically significant. When examining employment as the outcome (extensive margin), the effect is 5.79 percentage points, suggesting that DACA affected both the probability of being employed and the probability of working full-time conditional on employment.

Panel B presents estimates separately by gender. The effect is positive and significant for both males (6.67 percentage points) and females (5.55 percentage points). The point estimate is slightly larger for males, but the difference is not statistically significant.

Panel C uses a tighter bandwidth around the age cutoff, comparing individuals aged 27–29 at DACA implementation to those aged 32–34. The resulting estimate (9.23 percentage points) is larger than the main estimate, suggesting the effect may be stronger for individuals closer to the age cutoff. However, this may also reflect increased noise due to

the smaller sample size.

6 Discussion

6.1 Interpretation of Results

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 6.58 percentage points among Hispanic-Mexican, Mexican-born non-citizens who met the other eligibility criteria. This represents a meaningful effect—approximately a 10% increase relative to the pre-treatment mean of 62.5% for the treatment group.

The effect likely operates through work authorization, which allowed eligible individuals to seek formal employment in the above-ground economy. Prior to DACA, undocumented immigrants faced legal barriers to formal employment and were often relegated to informal or under-the-table work arrangements. Work authorization may have enabled transitions to formal employment with regular hours.

The finding that DACA affected both the extensive margin (employment) and the intensive margin (hours conditional on employment) suggests multiple channels. Work authorization may have both increased the ability to find employment and improved the quality of employment obtained.

6.2 Comparison to Literature

These findings are broadly consistent with prior research examining the labor market effects of DACA. Studies have generally found positive effects on employment and earnings, though estimates vary depending on the methodology and sample used.

The magnitude of my estimates (approximately 6–7 percentage points for full-time employment) is within the range of effects found in other studies, though direct comparisons are complicated by differences in outcome definitions, sample restrictions, and comparison groups.

6.3 Limitations

Several limitations should be noted. First, I cannot directly observe documentation status in the ACS. The sample is restricted to non-citizens, which captures the relevant population but may include some individuals with other non-citizen statuses. This likely attenuates the estimated effect.

Second, the treatment group includes all potentially eligible individuals, not just those who actually applied for and received DACA. This intent-to-treat approach is appropriate for understanding the program's overall effect but may understate the effect of actually receiving DACA.

Third, the parallel trends assumption, while supported by the pre-treatment data, is untestable in the post-period. It is possible that other factors differentially affected the two age groups after 2012, though I am not aware of obvious confounders.

Fourth, the birth year cohort design means that individuals age over the sample period. The treatment group ages from roughly 20–24 in 2006 to 30–34 in 2016, while the control group ages from 25–29 to 35–39. Age-specific trends in employment could potentially confound the estimates, though the inclusion of age controls addresses this concern.

6.4 Policy Implications

The findings suggest that providing work authorization to undocumented immigrants can have meaningful positive effects on their labor market outcomes. The estimated 6.58 percentage point increase in full-time employment represents improved economic integration and self-sufficiency.

These results inform ongoing policy debates about DACA and broader immigration reform. The evidence suggests that legalizing the status of individuals who arrived as children has positive labor market effects, though the broader social and economic consequences depend on many factors not examined here.

7 Conclusion

This study estimates the causal effect of DACA eligibility on full-time employment using a difference-in-differences design that exploits the program's age cutoff. The main finding is that DACA eligibility increased the probability of full-time employment by approximately 6.58 percentage points among Hispanic-Mexican, Mexican-born non-citizens who met the eligibility criteria.

The effect is robust across multiple specifications including controls for demographics, education, and state fixed effects. Event study analyses support the parallel trends assumption underlying the identification strategy. Robustness checks indicate that the effect operates through both extensive and intensive margins and is present for both males and females.

These findings contribute to our understanding of how work authorization affects labor market outcomes for undocumented immigrants. The positive effect on full-time employment suggests that DACA facilitated economic integration for eligible individuals by enabling access to the formal labor market.

Future research could examine longer-term effects, heterogeneity across subgroups, and spillover effects on family members and communities. Additional work using administrative data with direct information on DACA status could provide more precise estimates of the effect of actual DACA receipt.

A Appendix: Variable Definitions

Table 5: Variable Definitions

Variable	IPUMS Name	Definition
Full-time	UHRSWORK	=1 if UHRSWORK $\geq$ 35
Treatment	BIRTHYR	=1 if BIRTHYR $\in$ [1982, 1986]
Control	BIRTHYR	=1 if BIRTHYR $\in$ [1977, 1981]
Post	YEAR	=1 if YEAR $\geq$ 2013
Female	SEX	=1 if SEX = 2
Age	AGE	Age in years
Married	MARST	=1 if MARST $\leq$ 2
Education	EDUC	Categorical from EDUC values
Hispanic-Mexican	HISPAN	=1 if HISPAN = 1
Born in Mexico	BPL	=1 if BPL = 200
Non-citizen	CITIZEN	=1 if CITIZEN = 3
Year of immigration	YRIMMIG	Year arrived in US
Person weight	PERWT	Survey weight
State	STATEFIP	State FIPS code

B Appendix: Sample Construction

The analytic sample was constructed as follows:

1. Started with ACS 1-year samples 2006–2016

2. Restricted to Hispanic-Mexican ethnicity (HISPAN = 1)

3. Restricted to Mexico-born (BPL = 200)

4. Restricted to non-citizens (CITIZEN = 3)

5. Restricted to those who arrived before age 16 (YRIMMIG - BIRTHYR < 16)

6. Restricted to those who arrived by 2007 (YRIMMIG ≤ 2007)

7. Restricted to birth years 1977–1986

8. Excluded survey year 2012

C Appendix: Additional Results

Table 6: Full-Time Employment Rates by Year and Group

Year	Treatment	Control
2006	0.609	0.660
2007	0.636	0.684
2008	0.634	0.683
2009	0.583	0.637
2010	0.604	0.654
2011	0.650	0.691
2013	0.655	0.651
2014	0.652	0.649
2015	0.635	0.626
2016	0.689	0.635