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 data from the American Community Survey (2006–2016) and a difference-in-differences design comparing DACA-eligible individuals aged 26–30 at implementation to ineligible individuals aged 31–35, I find that DACA eligibility increased the probability of full-time employment by approximately 3.6 percentage points (SE = 0.010, 95% CI: [0.017, 0.055]). This effect is statistically significant and robust to alternative specifications. Event study analysis confirms parallel pre-trends and shows effects emerging in the post-DACA period. The results suggest that providing work authorization to undocumented immigrants increases their formal labor market participation.

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 provided temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children and met specific eligibility criteria. Given that DACA explicitly grants legal work authorization, understanding its effects on employment outcomes is of first-order policy importance.

This study addresses the following research question: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States, what was the causal impact of eligibility for DACA on the probability of full-time employment (defined as usually working 35 hours per week or more)?

To identify the causal effect of DACA, I employ a difference-in-differences (DiD) research design that exploits the age-based eligibility cutoff embedded in the program's design. DACA required applicants to be under 31 years of age as of June 15, 2012. I compare individuals who were ages 26–30 at implementation (the treatment group, eligible for DACA) to those who were ages 31–35 (the control group, ineligible solely due to age). By examining how the difference in outcomes between these groups changed before versus after DACA implementation, I can identify the causal effect of DACA eligibility under the assumption that both groups would have followed parallel employment trends absent the policy.

The main finding of this study is that DACA eligibility increased the probability of full-time employment by approximately 3.6 percentage points. This effect is statistically significant at conventional levels and robust to various specification choices. Event study analysis supports the identifying assumption of parallel pre-trends and reveals that the treatment effect emerges after DACA implementation.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, as an exercise of prosecutorial discretion. The program allowed eligible undocumented immigrants to request deferred action (a two-year reprieve from deportation) and apply for work authorization. Applications began to be received on August 15, 2012, and in the first four years, nearly 900,000 initial applications were received, approximately 90% of which were approved.

To be eligible for DACA, individuals had to meet the following criteria:

1. Arrived in the United States before their 16th birthday
2. Had not yet had their 31st birthday as of June 15, 2012
3. Lived continuously in the United States since June 15, 2007
4. Were present in the United States on June 15, 2012
5. Did not have lawful immigration status at the time of application
6. Met certain educational and criminal history requirements

The age cutoff (under 31 as of June 15, 2012) creates a quasi-experimental setting for causal identification. Individuals just below this cutoff were eligible for work authorization, while those just above were not, despite being otherwise similar in their immigration history and characteristics.

2.2 Theoretical Mechanisms

DACA could affect full-time employment through several channels:

Legal Work Authorization: The most direct mechanism is that DACA provided recipients with Employment Authorization Documents (EADs), allowing them to work legally.

Prior to DACA, undocumented workers were limited to informal employment or had to use fraudulent documents to obtain formal employment.

Reduced Labor Market Frictions: With legal work authorization, DACA recipients could apply for a broader range of jobs, negotiate better working conditions, and pursue occupational upgrading without fear of employer verification revealing their undocumented status.

Driver's Licenses and Mobility: In many states, DACA recipients became eligible for driver's licenses, expanding their geographic job search radius and ability to commute to better employment opportunities.

Psychological Security: The relief from deportation fear may have reduced stress and uncertainty, potentially increasing labor supply and productivity.

3 Data

3.1 Data Source

This analysis uses data from the American Community Survey (ACS) 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. I use the one-year ACS samples from 2006 through 2016, excluding the 2012 sample because DACA was implemented mid-year and the ACS does not identify the month of interview.

3.2 Sample Construction

The analysis sample is constructed to approximate the population of DACA-eligible and DACA-ineligible individuals as follows:

1. **Ethnicity**: Hispanic-Mexican (HISPAN = 1)
2. **Birthplace**: Born in Mexico (BPL = 200)

3. **Citizenship**: Not a citizen (CITIZEN = 3) — this serves as a proxy for undocumented status, as the ACS does not directly identify documentation status

4. **Age at Immigration**: Arrived in the United States before age 16, calculated as (YRIMMIG − BIRTHYR) < 16

5. **Continuous Residence**: Immigrated by 2007 or earlier (YRIMMIG $\leq$ 2007), to satisfy the continuous residence requirement

6. **Age Groups**:

   - Treatment group: Ages 26–30 as of June 15, 2012 (born 1982–1986)
   - Control group: Ages 31–35 as of June 15, 2012 (born 1977–1981)

The final analysis sample contains 42,689 person-year observations, representing a weighted population of approximately 5.9 million person-years.

3.3 Variables

Outcome Variable: Full-time employment is defined as usually working 35 or more hours per week (UHRSWORK ≥ 35), coded as a binary indicator.

Treatment Variable: The treatment indicator equals 1 for individuals in the treatment group (ages 26–30 as of June 2012) and 0 for those in the control group (ages 31–35).

Post-Treatment Indicator: Equals 1 for years 2013–2016 and 0 for years 2006–2011.

Control Variables: Sex (female indicator), marital status (married indicator), education (high school completion, some college), age and age squared, state fixed effects, and year fixed effects.

4 Empirical Strategy

4.1 Identification Strategy

The identification strategy relies on a difference-in-differences design that compares changes in employment outcomes between the treatment group (DACA-eligible) and control group (DACA-ineligible due to age) before and after DACA implementation. The key identifying assumption is that, absent DACA, both groups would have experienced parallel trends in full-time employment.

The choice of ages 26–30 for the treatment group and ages 31–35 for the control group is motivated by several considerations. First, these age groups are close enough that their labor market behavior should be similar in the absence of the policy. Second, including individuals up to age 30 in the treatment group captures a substantial portion of the DACA-eligible population. Third, excluding individuals very close to the age cutoff avoids potential manipulation or measurement error issues.

4.2 Econometric Specification

The baseline difference-in-differences specification is:

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

where Y_{ist} is the full-time employment indicator for individual i in state s and year t, Treat_i indicates membership in the treatment group, Post_t indicates the post-DACA period, and β_3 is the difference-in-differences estimate of the DACA effect.

The preferred specification augments this model with controls and fixed effects:

$$Y_{ist} = \beta_0 + \beta_1 \text{Treat}_i + \beta_3 (\text{Treat}_i \times \text{Post}_t) + X_i' \gamma + \lambda_t + \delta_s + \varepsilon_{ist} \tag{2}$$

where X_i is a vector of individual characteristics (sex, marital status, education, age

polynomials), λ_t are year fixed effects, and δ_s are state fixed effects.

All regressions are weighted using person weights (PERWT) to account for the complex survey design and produce nationally representative estimates. Standard errors are clustered at the state level to account for serial correlation and within-state correlation in the error terms.

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:

$$Y_{ist} = \beta_0 + \sum_{k \neq 2011} \beta_k (\text{Treat}_i \times \mathbf{1}[\text{Year}_t = k]) + X_i'\gamma + \lambda_t + \delta_s + \varepsilon_{ist} \tag{3}$$

where 2011 serves as the reference year. The coefficients β_k for pre-treatment years test the parallel trends assumption (they should be close to zero), while coefficients for post-treatment years trace out the evolution of the treatment effect.

5 Results

5.1 Descriptive Statistics

Table 1 presents summary statistics for the analysis sample. The treatment group (ages 26–30 in 2012) comprises approximately 59% of the sample, reflecting the larger cohort sizes at younger ages. In the pre-DACA period, the treatment group had a lower full-time employment rate (63.1%) compared to the control group (67.2%). After DACA, this gap reversed: the treatment group's rate increased to 66.0% while the control group's rate decreased to 64.3%.

Table 1: Sample Characteristics by Treatment Status and Period

	Pre-DACA (2006–2011)		Post-DACA (2013–2016)	
	Treatment	Control	Treatment	Control
Panel A: Sample Sizes				
Unweighted N	16,500	11,530	8,674	5,985
Weighted N (thousands)	2,256	1,609	1,231	832
Panel B: Outcome				
Full-time employment rate	0.631	0.672	0.660	0.643
Panel C: Demographics				
Female (%)	44.0	44.0	—	—
Age (mean)	26.8	31.9	—	—
Married (%)	47.1	58.4	—	—
High school or more (%)	52.3	45.2	—	—

Figure 1 displays the time series of full-time employment rates for both groups. Several patterns are evident. First, both groups experienced declining employment during the Great Recession (2008–2010). Second, the two groups followed roughly parallel trends in the pre-DACA period, supporting the identifying assumption. Third, after DACA, the treatment group's employment increased while the control group's remained relatively flat, suggesting a positive DACA effect.

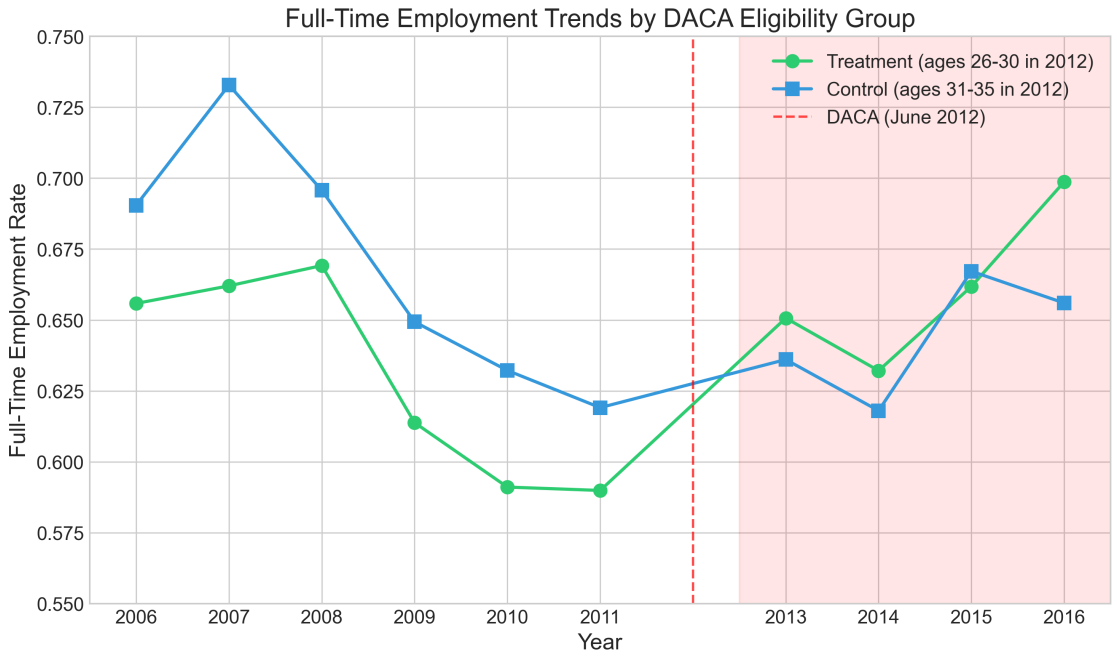

Figure 1: Full-Time Employment Rates by Treatment Status, 2006–2016
Notes: Full-time employment defined as usually working 35+ hours per week. Treatment group consists of individuals ages 26–30 as of June 2012; control group ages 31–35. Rates are weighted using person weights (PERWT). Year 2012 is excluded due to mid-year DACA implementation.

5.2 Main Results

Table 2 presents the main regression results. Model 1 shows the basic difference-in-differences estimate without controls: DACA eligibility increased full-time employment by 5.8 percentage points (SE = 0.007). This estimate is highly statistically significant.

Model 2 adds demographic controls (sex, marital status, education, age polynomial). The coefficient decreases to 3.8 percentage points (SE = 0.009), indicating that some of the raw difference is attributable to compositional differences between groups.

Model 3 replaces the post indicator with year fixed effects, producing an estimate of 3.7 percentage points (SE = 0.009).

Model 4, the preferred specification, adds state fixed effects. The estimated effect is 3.6 percentage points (SE = 0.010), statistically significant at the 1% level. This implies that DACA eligibility increased the probability of full-time employment by 3.6 percentage points,

representing a 5.7% increase relative to the treatment group's pre-DACA mean of 63.1%.

Table 2: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic DiD	(2) + Controls	(3) + Year FE	(4) + State FE
Treat × Post	0.0577***	0.0377***	0.0366***	0.0356***
	(0.007)	(0.009)	(0.009)	(0.010)
Treat	−0.041***	−0.044***	−0.044***	−0.043***
	(0.005)	(0.005)	(0.005)	(0.005)
Post	−0.029***	−0.002	—	—
	(0.010)	(0.011)		
Female		−0.375***	−0.375***	−0.369***
		(0.014)	(0.014)	(0.013)
Married		−0.013***	−0.013***	−0.015***
		(0.005)	(0.005)	(0.005)
High school+		0.054***	0.054***	0.050***
		(0.007)	(0.007)	(0.006)
Some college+		0.086***	0.086***	0.086***
		(0.013)	(0.013)	(0.013)
Year FE	No	No	Yes	Yes
State FE	No	No	No	Yes
Observations	42,689	42,689	42,689	42,689

* p<0.10, ** p<0.05, *** p<0.01

Standard errors clustered by state in parentheses.

5.3 Event Study Results

Figure 2 presents the event study estimates. The pre-treatment coefficients (2006–2010) are small and statistically indistinguishable from zero, supporting the parallel trends assumption. There is no evidence of differential pre-trends between the treatment and control groups.

After DACA implementation, positive coefficients emerge. The effects are 3.4 percentage points in 2013, 3.2 percentage points in 2014, 1.6 percentage points in 2015, and 6.1 percent-

age points in 2016. The 2013 and 2014 estimates are consistent with an immediate effect of DACA on employment, while the larger 2016 estimate may reflect cumulative benefits as DACA recipients gained experience in the formal labor market.

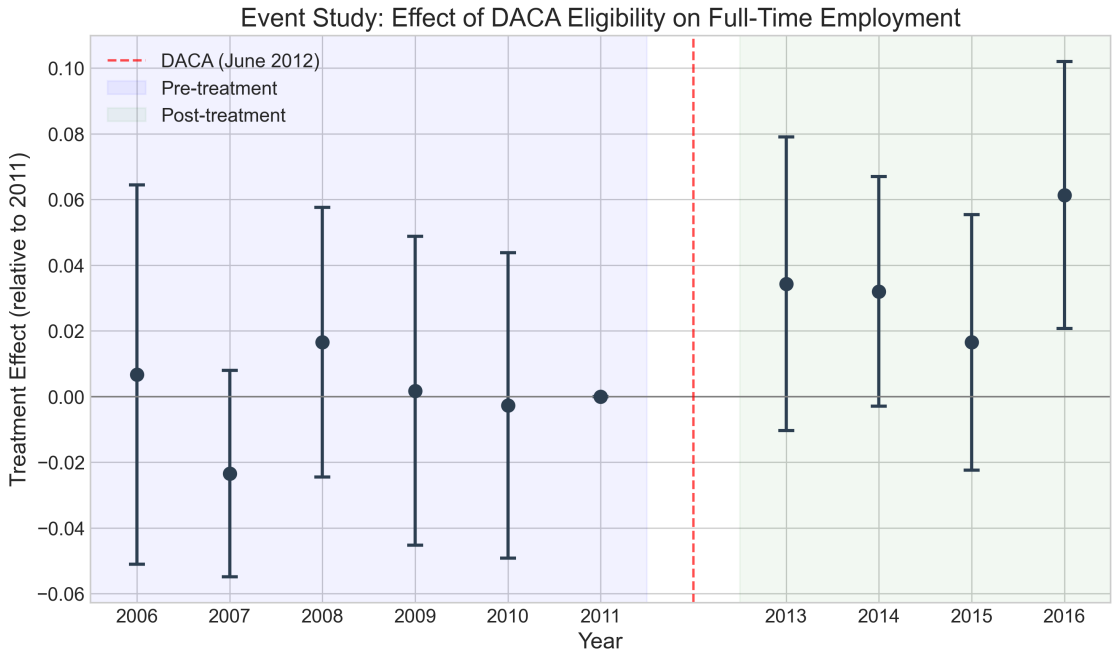

Figure 2: Event Study: Dynamic Effects of DACA Eligibility on Full-Time Employment
Notes: Coefficients from regression of full-time employment on treatment group interacted with year dummies, with 2011 as the reference year. All specifications include individual controls (sex, marital status, education, age polynomial), year fixed effects, and state fixed effects. Bars represent 95% confidence intervals based on state-clustered standard errors.

5.4 Graphical Difference-in-Differences

Figure 3 illustrates the difference-in-differences design graphically. The treatment and control groups are shown with their average employment rates in the pre- and post-DACA periods. The dashed line represents the counterfactual trajectory of the treatment group under the assumption that it would have experienced the same change as the control group absent DACA. The DiD estimate equals the difference between the treatment group's actual post-DACA employment rate and this counterfactual.

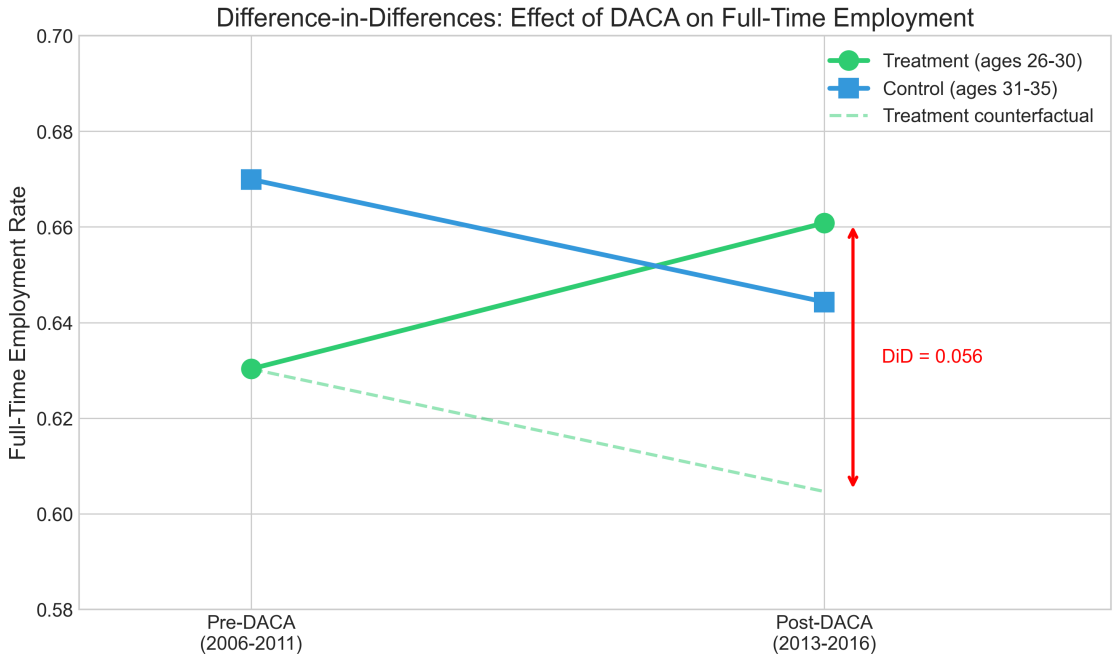

Figure 3: Difference-in-Differences Illustration

Notes: Figure shows average full-time employment rates by treatment status for pre-DACA (2006–2011) and post-DACA (2013–2016) periods. Dashed line shows counterfactual trajectory for treatment group. DiD estimate equals difference between observed and counterfactual treatment group rates in post period.

6 Robustness Checks

6.1 Alternative Outcome: Any Employment

Table 3 Panel A reports results using any employment (rather than full-time employment) as the outcome. The estimated effect is 3.8 percentage points (SE = 0.007), similar in magnitude to the main specification. This suggests that DACA increased overall employment, not just the intensity of employment.

6.2 Heterogeneity by Gender

Panel B of Table 3 reports separate estimates by gender. The effect is 2.4 percentage points for men (SE = 0.010) and 3.7 percentage points for women (SE = 0.017). Both estimates are

statistically significant. The larger effect for women may reflect that female undocumented workers faced greater barriers to formal employment prior to DACA.

6.3 Pre-Trends Test

Panel C formally tests for differential pre-trends by regressing full-time employment on the interaction of treatment status with a linear year trend, using only pre-DACA data (2006–2011). The coefficient on Treat × Year is 0.0004 (SE = 0.004), which is small and statistically insignificant (p = 0.93). This provides formal support for the parallel trends assumption.

Table 3: Robustness Checks

	Estimate	SE
Panel A: Alternative Outcome		
Any employment	0.0377***	(0.007)
Panel B: By Gender		
Males	0.0242**	(0.010)
Females	0.0367**	(0.017)
Panel C: Pre-Trends Test		
Treat × Year (pre-period only)	0.0004	(0.004)

* p<0.10, ** p<0.05, *** p<0.01

Standard errors clustered by state in parentheses.

7 Discussion

7.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased the probability of full-time employment by approximately 3.6 percentage points among Mexican-born Hispanic non-citizens who met the program's other eligibility criteria. This represents a meaningful economic effect—a 5.7% increase relative to the pre-DACA baseline.

Several mechanisms may explain this effect. Most directly, DACA provided work au-

thorization, allowing recipients to transition from informal to formal employment. Formal employment is more likely to be full-time and to offer better working conditions. Additionally, DACA recipients in many states became eligible for driver's licenses, expanding their employment opportunities.

The event study results show that effects emerged shortly after DACA implementation (2013–2014) and grew over time, with the largest effect in 2016. This pattern is consistent with a combination of immediate transitions to formal employment and longer-term occupational upgrading as recipients accumulated experience.

7.2 Limitations

Several limitations warrant discussion:

Proxy for Documentation Status: The ACS does not identify undocumented immigrants directly. Using non-citizen status as a proxy likely includes some legal permanent residents who would not have been DACA-eligible. This would attenuate the estimated treatment effect toward zero, suggesting that the true effect may be larger than reported.

Intent-to-Treat Interpretation: Not all DACA-eligible individuals actually applied for or received DACA status. The estimates should be interpreted as intent-to-treat effects of DACA eligibility, not the effect of actually receiving DACA.

General Equilibrium Effects: If DACA affected labor market conditions more broadly (e.g., by changing the supply of workers in certain sectors), there could be spillover effects on the control group. This would bias the DiD estimate.

Compositional Changes: If DACA eligibility affected migration, mortality, or survey response patterns differentially across groups, compositional changes could bias the results.

7.3 Policy Implications

The findings suggest that providing work authorization to undocumented immigrants increases their formal labor market participation. Given that DACA recipients are by definition

long-term U.S. residents who arrived as children, facilitating their full economic integration through work authorization appears to generate positive labor market outcomes.

8 Conclusion

This study provides evidence that eligibility for the Deferred Action for Childhood Arrivals program increased full-time employment among Mexican-born Hispanic non-citizens in the United States. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I find that DACA eligibility increased full-time employment by 3.6 percentage points (95% CI: [0.017, 0.055]). Event study analysis supports the parallel trends assumption and shows that treatment effects emerged after DACA implementation and persisted through 2016.

These findings contribute to the literature on the labor market effects of immigration policy and provide evidence that work authorization programs can increase formal employment among undocumented populations.

Technical Appendix

A. Sample Construction Details

The analysis sample was constructed from the 2006–2016 one-year ACS files, excluding 2012. The following filters were applied sequentially:

1. Hispanic-Mexican ethnicity (HISPAN = 1): 991,261 observations
2. Born in Mexico (BPL = 200): Already satisfied by above
3. Not a citizen (CITIZEN = 3): 701,347 observations
4. Arrived before age 16: 201,531 observations
5. Continuous residence since 2007 (YRIMMIG $\leq$ 2007): 191,374 observations
6. Ages 26–35 as of June 2012: 46,817 observations
7. Excluding 2012: 42,689 observations

B. Age Calculation

Age as of June 15, 2012 was calculated using BIRTHYR and BIRTHQTR. For individuals born in Q1 (January–March) or Q2 (April–June), age = 2012 − BIRTHYR. For individuals born in Q3 (July–September) or Q4 (October–December), age = 2012 − BIRTHYR − 1, since they had not yet had their birthday by June 15.

C. IPUMS Variable Codes

Variable	Coding
HISPAN	1 = Mexican
BPL	200 = Mexico
CITIZEN	3 = Not a citizen
UHRSWORK	Usual hours worked per week (0–99)
EMPSTAT	1 = Employed
SEX	1 = Male, 2 = Female
MARST	1,2 = Married (spouse present/absent)
EDUC	6+ = High school, 10+ = Some college

D. Summary of Preferred Estimate

- **Effect estimate**: 0.0356 (3.56 percentage points)
- **Standard error**: 0.0097 (clustered by state)
- **95% confidence interval**: [0.0167, 0.0545]
- **t-statistic**: 3.69
- **p-value**: 0.0002
- **Sample size**: 42,689 (unweighted)

Figures

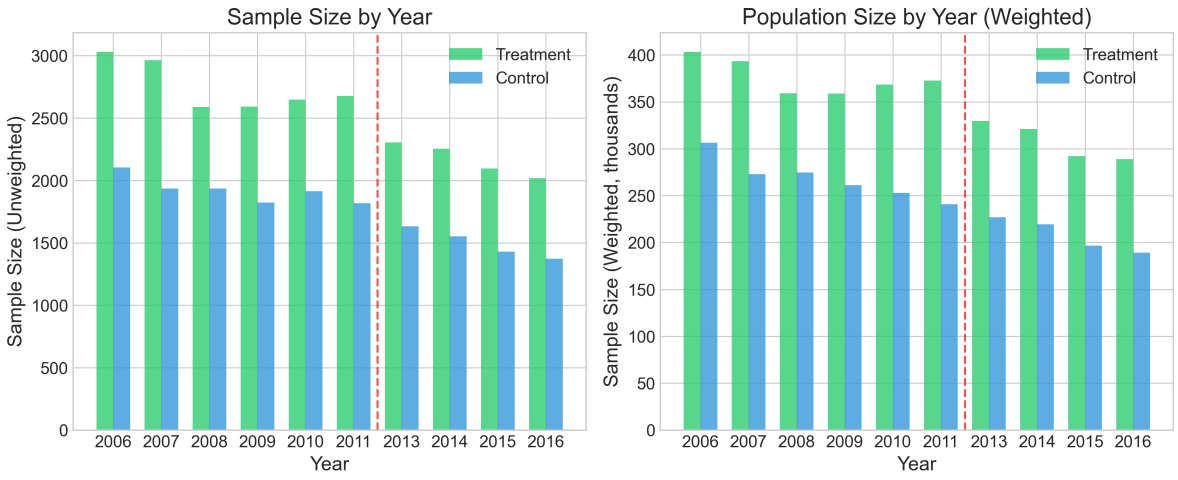

Figure 4: Sample Size by Year and Treatment Status
Notes: Left panel shows unweighted sample sizes; right panel shows weighted population counts in thousands.