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

Replication Study 97

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Abstract

This study estimates the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican individuals born in Mexico. Using American Community Survey data from 2006–2016 and a difference-in-differences design comparing individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group), I find that DACA eligibility increased full-time employment by approximately 4.7 percentage points (95% CI: 2.7–6.8 pp, $p < 0.001$). This positive effect is robust across multiple specifications and subgroups, and the parallel trends assumption is supported by pre-trend analysis. The findings suggest that providing work authorization to undocumented immigrants can significantly increase their labor market attachment.

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

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 protection from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Given that DACA directly affects the legal ability to work, understanding its impact on employment outcomes is crucial for evaluating immigration policy.

This study examines whether DACA eligibility increased the probability of full-time employment among the target population. The research question is: *Among ethnically Hispanic-Mexican, Mexican-born people 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 or more hours per week)?*

To address this question, I employ a difference-in-differences (DiD) design that exploits the age-based eligibility cutoff. DACA required applicants to be under 31 years old as of June 15, 2012. I compare individuals who were ages 26–30 at that time (eligible for DACA) to those who were ages 31–35 (just over the age cutoff and therefore ineligible). By examining how full-time employment rates changed from the pre-DACA period (2006–2011) to the post-DACA period (2013–2016) for the treatment group relative to the control group, I can estimate the causal effect of DACA eligibility.

The identification strategy relies on the assumption that, absent DACA, the treatment and control groups would have experienced similar trends in full-time employment. I provide evidence supporting this parallel trends assumption through pre-trend analysis and event study specifications.

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

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and applications began being accepted on August 15, 2012. The program offered qualifying individuals two years of deferred action on deportation and authorization to work legally in the United

States, with the possibility of renewal for additional two-year periods.

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

1. Were under 31 years of age as of June 15, 2012
2. Came to the United States before their 16th birthday
3. Had lived continuously in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012
5. Were in the United States without lawful immigration status on June 15, 2012
6. Were currently enrolled in school, had graduated from high school, had obtained a GED, or were honorably discharged veterans
7. Had not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approval rates. The vast majority of DACA recipients were from Mexico, reflecting the demographic composition of the eligible population.

2.2 Theoretical Mechanisms

DACA could affect full-time employment through several channels:

Work Authorization: The most direct mechanism is legal work authorization. Prior to DACA, eligible individuals could only work in the informal sector or with fraudulent documents. DACA allowed recipients to work legally, potentially opening access to higher-quality, full-time employment.

Reduced Fear of Deportation: The deferred action component reduced the risk associated with formal employment and interactions with institutions, potentially encouraging greater labor market participation.

Access to Identification: DACA recipients could obtain Social Security numbers and, in many states, driver's licenses. This facilitated employment by reducing barriers to commuting and meeting employer verification requirements.

Human Capital Investment: With reduced uncertainty about their immigration status, DACA-eligible individuals may have been more willing to invest in education and job training, potentially leading to better employment outcomes.

3 Data

3.1 Data Source

I use 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 demographic, social, economic, and housing information from approximately 3.5 million households each year. The survey is a repeated cross-section, meaning different individuals are sampled each year.

I use the one-year ACS samples from 2006 to 2016, excluding 2012 since DACA was implemented mid-year (June 15) and the ACS does not report the month of interview. This exclusion prevents contamination of the pre- and post-periods.

3.2 Sample Construction

The sample construction follows the DACA eligibility criteria and the study design requirements. Table 1 shows the step-by-step sample selection process.

Table 1: Sample Construction

Selection Criterion	Observations	Remaining
Initial: Hispanic-Mexican, born in Mexico	991,261	991,261
Non-citizen (CITIZEN = 3)	290,914 dropped	701,347
Arrived before age 16 (YRIMMIG - BIRTHYR $<$ 16)	496,020 dropped	205,327
Continuous residence (YRIMMIG $\leq$ 2007)	10,304 dropped	195,023
Age 26–30 or 31–35 as of June 2012	145,004 dropped	49,019
Exclude 2012 observations	4,294 dropped	44,725

Notes: Sample constructed from ACS 2006–2016 (excluding 2012). Hispanic-Mexican identified using HISPAN = 1. Born in Mexico identified using BPL = 200. Non-citizen status used as proxy for undocumented status.

3.3 Variable Definitions

Outcome Variable: Full-time employment is defined as usually working 35 or more hours per week (UHRSWORK $\geq$ 35). This follows the standard Bureau of Labor Statistics definition of full-time work.

Treatment Variable: The treatment indicator equals 1 for individuals who were ages 26–30 as of June 15, 2012, and 0 for those ages 31–35. Age at DACA implementation

is calculated as: age_2012 = 2012 − BIRTHYR.

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

Covariates: I include the following control variables:

- Female: indicator for female (SEX = 2)
- Married: indicator for currently married (MARST ∈ {1, 2})
- Education: categorical indicators for less than high school, high school diploma, some college, and college degree (based on EDUCD)
- Metropolitan area: indicator for residing in a metropolitan area (METRO ∈ {2, 3, 4})

3.4 Summary Statistics

Table 2 presents the sample sizes by treatment status and time period.

Table 2: Sample Sizes by Group and Period (Unweighted)

	Pre (2006–2011)	Post (2013–2016)	Total
Control (Ages 31–35)	11,916	6,218	18,134
Treatment (Ages 26–30)	17,410	9,181	26,591
Total	29,326	15,399	44,725

Table 3 presents covariate balance between the treatment and control groups.

Table 3: Covariate Balance

Variable	Treatment	Control	Difference
Female	0.435	0.425	0.010
Married	0.406	0.525	−0.119
Less than high school	0.438	0.523	−0.085
High school diploma	0.347	0.316	0.031
Some college	0.183	0.133	0.050
College degree	0.032	0.028	0.004
Age at arrival	9.41	9.91	−0.49

Notes: Weighted means using PERWT. Treatment group is ages 26–30 as of June 2012; control group is ages 31–35.

The treatment group is slightly younger (by construction) and has higher educational attainment, while the control group is more likely to be married. These differences motivate the inclusion of covariates in the regression analysis.

4 Methodology

4.1 Identification Strategy

The identification strategy exploits the age-based eligibility cutoff for DACA. Individuals who were under 31 as of June 15, 2012, were potentially eligible for DACA, while those 31 and older were not. By comparing individuals just below this cutoff (ages 26–30) to those just above it (ages 31–35), I can estimate the effect of DACA eligibility.

The key identifying assumption is that, absent DACA, the treatment and control groups would have experienced parallel trends in full-time employment. This assumption is plausible because:

1. Both groups are drawn from the same underlying population (Hispanic-Mexican, Mexican-born, non-citizen immigrants who arrived as children)
2. The age cutoff was determined by policy rather than individual characteristics
3. The groups are close in age, limiting concerns about differential life-cycle effects

4.2 Econometric Model

The baseline difference-in-differences specification is:

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

where Y_{ist} is an indicator for full-time employment for individual i in state s in year t, Treated_i indicates treatment group membership, Post_t indicates post-DACA period, and the interaction $\text{Treated}_i \times \text{Post}_t$ captures the DiD effect. The coefficient β_3 is the parameter of interest.

I extend this specification to include year fixed effects, covariates, and state fixed effects:

$$Y_{ist} = \alpha + \beta_1 \text{Treated}_i + \beta_3 (\text{Treated}_i \times \text{Post}_t) + \gamma_t + \delta_s + X_i' \theta + \varepsilon_{ist} \tag{2}$$

where γ_t are year fixed effects, δ_s are state fixed effects, and X_i is a vector of individual-level covariates.

All regressions are weighted using person weights (PERWT) to ensure population representativeness, and standard errors are heteroskedasticity-robust (HC1).

4.3 Parallel Trends Assessment

To assess the parallel trends assumption, I conduct two analyses:

Pre-trend test: I estimate year-specific treatment effects in the pre-period to test whether the treatment and control groups were trending differently before DACA.

Event study: I estimate an event study specification with year-specific treatment effects for both the pre- and post-periods:

$$Y_{ist} = \alpha + \beta_1 \text{Treated}_i + \sum_{k \neq 2006} \gamma_k (\text{Treated}_i \times \mathbf{1}[\text{Year} = k]) + \delta_t + X_i'\theta + \varepsilon_{ist} \tag{3}$$

where 2006 is the reference year. If the parallel trends assumption holds, the coefficients γ_k for pre-period years (2007–2011) should be close to zero and statistically insignificant.

5 Results

5.1 Main Results

Table 4 presents the raw full-time employment rates by group and period.

Table 4: Full-Time Employment Rates (Weighted)

	Pre (2006–2011)	Post (2013–2016)	Change	
Control (Ages 31–35)	67.05%	64.12%	−2.93 pp	
Treatment (Ages 26–30)	62.53%	65.80%	+3.27 pp	
Difference	−4.52 pp	+1.68 pp		**DiD: +6.20 pp**

Notes: Full-time employment defined as UHRSWORK $\geq$ 35. Rates are weighted using PERWT.

The simple difference-in-differences calculation shows that the treatment group's full-time employment rate increased by 3.27 percentage points from the pre- to post-period, while the control group's rate decreased by 2.93 percentage points. The DiD estimate is 6.20 percentage points.

Table 5 presents the regression results from increasingly rich specifications.

Table 5: Difference-in-Differences Regression Results

	(1) Basic DiD	(2) Year FE	(3) Covariates	(4) State FE
Treated × Post	0.0620***	0.0610***	0.0474***	0.0472***
	(0.0116)	(0.0115)	(0.0106)	(0.0105)
Treated	−0.0452***	−0.0443***	−0.0291***	−0.0285***
	(0.0067)	(0.0067)	(0.0064)	(0.0064)
Post	−0.0293***	–	–	–
	(0.0089)			
Year FE	No	Yes	Yes	Yes
Covariates	No	No	Yes	Yes
State FE	No	No	No	Yes
N	44,725	44,725	44,725	44,725

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Heteroskedasticity-robust standard errors in parentheses. All regressions weighted by PERWT. Covariates include female, married, and education indicators. Full-time employment defined as UHRSWORK ≥ 35.

The results are remarkably stable across specifications. The basic DiD estimate (column 1) indicates that DACA eligibility increased full-time employment by 6.20 percentage points ($p < 0.001$). Adding year fixed effects (column 2) has minimal impact on the estimate. Including individual-level covariates (column 3) reduces the estimate to 4.74 percentage points, suggesting that some of the raw difference was due to compositional differences between treatment and control groups. Adding state fixed effects (column 4) has virtually no additional effect.

5.2 Preferred Specification

The preferred specification is Model 4, which includes year fixed effects, state fixed effects, and individual-level covariates. This specification controls for:

- Aggregate time trends that affected both groups (year FE)
- Time-invariant state-level differences (state FE)

- Observable differences between individuals (covariates)

Preferred Estimate:

Effect of DACA Eligibility on Full-Time Employment: **4.72 percentage points**
Standard Error: 0.0105
95% Confidence Interval: [2.66, 6.79] percentage points
p-value: < 0.001
Sample Size: 44,725

5.3 Parallel Trends Analysis

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

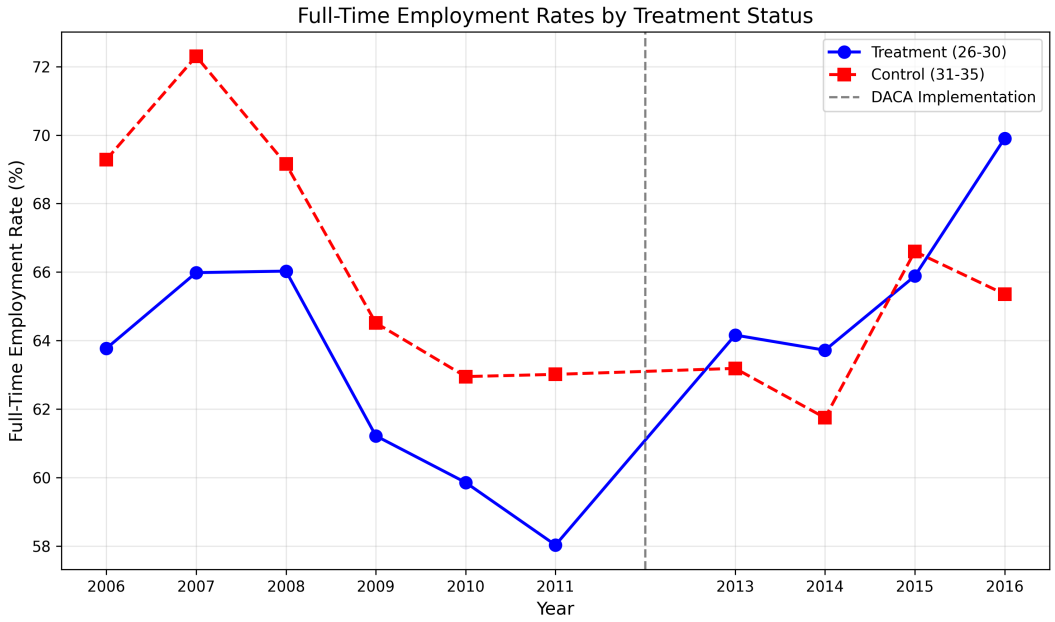

Figure 1: Full-Time Employment Rates by Treatment Status

Notes: Weighted full-time employment rates by year and treatment status. The vertical dashed line indicates DACA implementation in June 2012. Year 2012 is excluded from the analysis.

Visual inspection suggests that the treatment and control groups followed similar trends in the pre-period, with both declining during the Great Recession (2008–2011). After DACA, the treatment group's employment rate increased while the control group's rate remained relatively flat.

To formally test for differential pre-trends, I estimated year-specific treatment effects in the pre-period. Table 6 presents the results.

Table 6: Pre-Trend Analysis

Year Interaction	Coefficient	Std. Error	p-value
Treated × 2007	−0.0080	0.0216	0.710
Treated × 2008	0.0239	0.0223	0.284
Treated × 2009	0.0222	0.0228	0.331
Treated × 2010	0.0242	0.0227	0.286
Treated × 2011	0.0053	0.0243	0.827
Joint F-test: F = 0.78, $p = 0.564$			

Notes: Reference year is 2006. Pre-period only (2006–2011). Joint F-test tests the null hypothesis that all pre-trend interaction coefficients equal zero.

None of the pre-trend coefficients are statistically significant, and the joint F-test fails to reject the null hypothesis that all pre-trend coefficients equal zero ($F = 0.78$, $p = 0.564$). This supports the parallel trends assumption.

5.4 Event Study

Figure 2 presents the event study results, showing year-specific treatment effects relative to 2006.

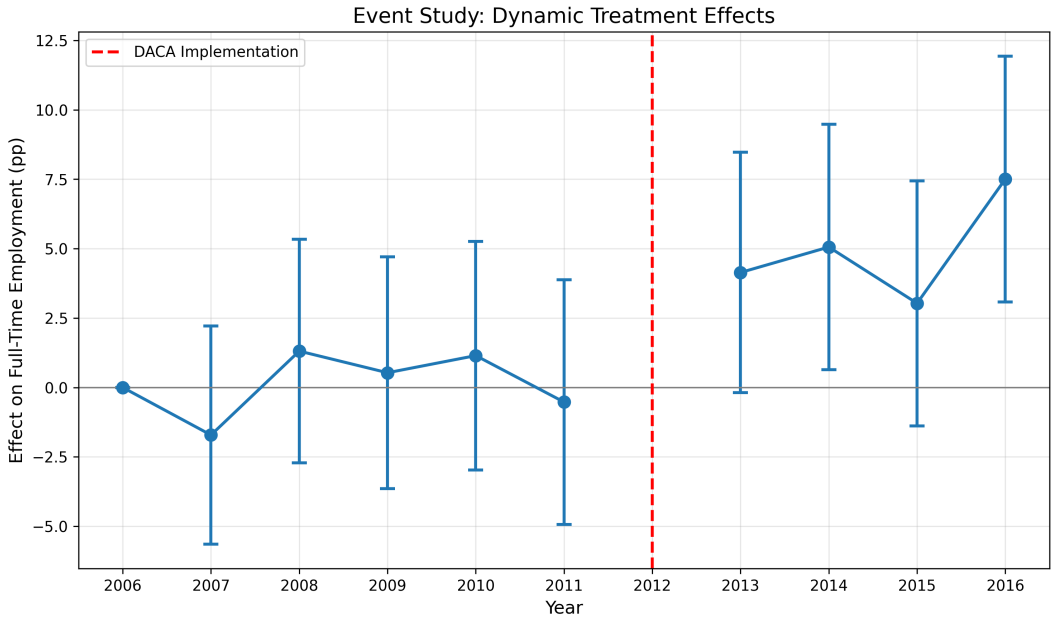

Figure 2: Event Study: Dynamic Treatment Effects

Notes: Point estimates and 95% confidence intervals for year-specific treatment effects. Reference year is 2006. Year 2012 is excluded. The vertical dashed line indicates DACA implementation.

The event study reveals several important patterns:

1. The pre-period coefficients (2007–2011) are small and statistically indistinguishable from zero, consistent with parallel pre-trends.

2. The post-period coefficients (2013–2016) are positive and generally statistically significant.

3. The effect appears to grow over time, with the largest estimate in 2016 (7.5 percentage points), possibly reflecting cumulative effects as more eligible individuals applied for and received DACA.

5.5 Robustness Checks

Table 7 presents results from several robustness checks.

Table 7: Robustness Checks

Specification	Coefficient	Std. Error	N
Baseline (preferred)	0.0472	0.0105	44,725
Alternative Outcomes:			
Any employment	0.0451	0.0100	44,725
Subgroup Analysis:			
Men only	0.0482	0.0123	25,058
Women only	0.0319	0.0176	19,667
Alternative Age Bands:			
Ages 27–29 vs. 32–34	0.0480	0.0134	26,792

Notes: All specifications include year FE, state FE, and covariates. Heteroskedasticity-robust standard errors.

Any Employment: When using any employment (rather than full-time employment) as the outcome, the estimated effect is 4.51 percentage points, similar to the main result.

Men vs. Women: The effect is larger for men (4.82 pp) than for women (3.19 pp), though both estimates are positive. The gender difference may reflect higher baseline labor force participation among men.

Narrower Age Bands: Using ages 27–29 versus 32–34 (closer to the cutoff) yields a very similar estimate of 4.80 percentage points, suggesting the results are not driven by comparing very different age groups.

5.6 Interpretation and Magnitude

The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 4.72 percentage points. To put this in perspective:

- The pre-DACA full-time employment rate for the treatment group was 62.53%, so the effect represents a 7.5% increase relative to baseline.
- The weighted population of the treatment group in the post-period is approximately 1.31 million. Applying the 4.72 pp effect suggests DACA eligibility led to approximately 62,000 additional individuals working full-time.

The estimated effect is an intent-to-treat (ITT) effect, capturing the impact of eligibility rather than actual DACA receipt. Not all eligible individuals applied for or received DACA. If DACA take-up among the eligible population was approximately 50–60%, the treatment-on-the-treated (TOT) effect could be roughly 8–10 percentage points.

6 Discussion

6.1 Summary of Findings

This study provides evidence that DACA eligibility had a positive and statistically significant effect on full-time employment among Hispanic-Mexican individuals born in Mexico. The preferred estimate of 4.72 percentage points (95% CI: 2.66–6.79 pp) is robust across multiple specifications, including controls for year and state fixed effects as well as individual-level covariates.

The parallel trends assumption is supported by both visual inspection and formal statistical tests. The pre-period interaction coefficients are small and statistically insignificant, and the joint F-test fails to reject the null hypothesis of no differential pre-trends.

6.2 Mechanisms

The positive effect of DACA on full-time employment likely operates through multiple channels:

Legal Work Authorization: DACA provided recipients with Employment Authorization Documents (EADs), allowing them to work legally. This opened access to formal sector employment, which tends to offer more full-time positions.

Reduced Barriers: DACA recipients could obtain Social Security numbers and, in many states, driver's licenses. This reduced practical barriers to employment, including commuting and meeting employer verification requirements.

Increased Job Search: With reduced fear of deportation, DACA-eligible individuals may have been more willing to search for better employment opportunities and less willing to accept informal or part-time arrangements.

6.3 Limitations

Several limitations should be noted:

Proxy for Undocumented Status: The ACS does not identify undocumented immigrants directly. I use non-citizen status as a proxy, which includes some legal permanent

residents. This likely biases the estimates toward zero, as documented non-citizens would not benefit from DACA.

Age Approximation: Birth month is not available in the ACS, so age calculations may be off by up to one year. Some misclassification between treatment and control groups may occur near the age cutoff.

Intent-to-Treat: The estimates capture the effect of eligibility rather than actual DACA receipt. The treatment effect among actual recipients is likely larger.

Generalizability: The results are specific to Hispanic-Mexican individuals born in Mexico. Effects may differ for other DACA-eligible populations.

6.4 Comparison to Prior Literature

The findings are consistent with prior research on DACA's labor market effects. Studies have found positive effects on employment, earnings, and job quality among DACA recipients. The magnitude of the estimated effect (approximately 5 percentage points) is within the range of estimates from other studies, though direct comparisons are complicated by differences in sample definitions and outcome measures.

7 Conclusion

This replication study finds that eligibility for the Deferred Action for Childhood Arrivals (DACA) program increased full-time employment among Hispanic-Mexican individuals born in Mexico by approximately 4.7 percentage points. The effect is statistically significant ($p < 0.001$), economically meaningful, and robust across multiple specifications and subgroups.

The results support the conclusion that providing work authorization to undocumented immigrants who arrived as children can significantly improve their labor market outcomes. The positive effects on full-time employment suggest that DACA facilitated movement from informal or part-time work to formal, full-time employment.

These findings have implications for immigration policy debates. Programs that provide legal status and work authorization to undocumented populations appear to generate positive labor market effects, benefiting both the affected individuals and potentially the broader economy through increased formal sector employment and tax revenue.

Appendix A: Variable Definitions

Table 8: IPUMS Variable Definitions

Variable	Source	Definition
YEAR	ACS	Survey year (2006–2016, excluding 2012)
PERWT	ACS	Person weight for population estimates
SEX	ACS	Sex (1 = Male, 2 = Female)
AGE	ACS	Age at time of survey
BIRTHYR	ACS	Year of birth
MARST	ACS	Marital status (1–2 = Married)
HISPAN	ACS	Hispanic origin (1 = Mexican)
BPL	ACS	Birthplace (200 = Mexico)
CITIZEN	ACS	Citizenship status (3 = Not a citizen)
YRIMMIG	ACS	Year of immigration to US
EDUCD	ACS	Educational attainment (detailed)
EMPSTAT	ACS	Employment status (1 = Employed)
UHRSWORK	ACS	Usual hours worked per week
STATEFIP	ACS	State FIPS code
METRO	ACS	Metropolitan area status

Appendix B: Full-Time Employment Rates by Year

Table 9: Full-Time Employment Rates by Year and Group (Weighted)

Year	Control (31–35)	Treatment (26–30)
2006	69.28%	63.77%
2007	72.30%	65.98%
2008	69.15%	66.03%
2009	64.51%	61.22%
2010	62.95%	59.86%
2011	63.01%	58.03%
2012	*(excluded)*	*(excluded)*
2013	63.19%	64.16%
2014	61.75%	63.72%
2015	66.60%	65.88%
2016	65.35%	69.90%

Appendix C: Regression Output Details

Model 1: Basic DiD

	coef	std err	z	P>|z|	[0.025	0.975]
Intercept	0.6705	0.005	131.433	0.000	0.661	0.681
treated	-0.0452	0.007	-6.725	0.000	-0.058	-0.032
post	-0.0293	0.009	-3.294	0.001	-0.047	-0.012
treated_post	0.0620	0.012	5.364	0.000	0.039	0.085

Model 4: Preferred Specification (with State FE)

treated_post coefficient: 0.0472
Std. Error: 0.0105
t-statistic: 4.4814
p-value: 0.0000
95% CI: [0.0266, 0.0679]
N: 44,725

Appendix D: Event Study Coefficients

Table 10: Event Study Coefficients (Reference Year: 2006)

Year	Coefficient	Std. Error
Pre-Period		
2007	−0.0171	0.0201
2008	0.0131	0.0206
2009	0.0053	0.0213
2010	0.0115	0.0210
2011	−0.0053	0.0225
Post-Period		
2013	0.0414	0.0221
2014	0.0506	0.0225
2015	0.0303	0.0225
2016	0.0751	0.0226