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

Independent Replication Study

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Abstract

This study examines the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Mexican-born, Hispanic-Mexican individuals in the United States. Using data from the American Community Survey (2006–2016) and a difference-in-differences identification strategy, I find that DACA eligibility increased the probability of full-time employment by approximately 2.1 percentage points (95% CI: [0.013, 0.030]). This effect is concentrated among women, with a 3.6 percentage point increase, while men show no significant change. Event study analysis reveals that effects emerged gradually, becoming statistically significant by 2015–2016. These findings suggest that DACA's work authorization provisions had modest but meaningful positive effects on labor market outcomes for eligible immigrants.

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

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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 provided eligible undocumented immigrants who arrived in the United States as children with temporary protection from deportation and authorization to work legally. Given that DACA recipients can obtain work permits and, in many states, driver's licenses, the program has the potential to significantly affect labor market outcomes.

This study addresses a specific 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?** Full-time employment is defined as usually working 35 hours or more per week. The analysis focuses on the effects of DACA during 2013–2016, the first four years after implementation.

Understanding the labor market effects of DACA is important for several reasons. First, employment is a fundamental indicator of economic integration and self-sufficiency. Second, DACA's explicit provision of work authorization creates a clear mechanism through which the policy could affect employment outcomes. Third, given the policy's uncertain legal status and ongoing political debate, rigorous evidence on its effects can inform policy discussions.

The empirical challenge in estimating the effect of DACA is distinguishing the causal impact of the policy from other factors that may affect employment trends among immigrants. I address this challenge using a difference-in-differences (DiD) research design that compares changes in full-time employment between DACA-eligible and non-eligible Mexican-born non-citizens before and after the program's implementation.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 2.1 percentage points among the target population. This effect is statistically significant and robust to various specification choices. However, the effect is concentrated among women, with men showing no significant employment response to

DACA eligibility.

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 allows qualifying individuals to apply for deferred action (temporary protection from deportation) and employment authorization documents (EADs), which are valid for two years and can be renewed.

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

1. Arrived in the United States before their 16th birthday
2. Had not yet turned 31 as of June 15, 2012 (i.e., born after June 15, 1981)
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 on June 15, 2012
6. Were enrolled in school, had graduated from high school or obtained a GED, or were honorably discharged veterans
7. 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% approved. Given the demographics of undocumented immigration to the United States, the vast majority of DACA recipients are from Mexico.

2.2 Theoretical Mechanisms

DACA could affect employment through several channels. The most direct mechanism is the provision of legal work authorization. Prior to DACA, eligible individuals could only work informally, limiting their employment opportunities to sectors and employers willing to hire undocumented workers. With work authorization, DACA recipients can pursue formal employment, potentially accessing jobs with better wages, benefits, and working conditions.

Additionally, DACA allows recipients to obtain driver's licenses in most states, which can facilitate employment by improving access to transportation. The relief from deportation fears may also encourage recipients to pursue education and training opportunities that enhance their employability.

However, several factors could limit DACA's employment effects. Many undocumented immigrants were already employed before DACA, albeit informally. DACA may primarily shift workers from informal to formal employment rather than increasing overall employment. Furthermore, some employers may continue to prefer hiring workers without work authorization due to wage considerations or other factors.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS), obtained through IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that collects detailed demographic, social, and economic information from approximately 3.5 million households per year.

I use the one-year ACS samples from 2006 through 2016, providing five years of pre-DACA data (2006–2011), a transition year (2012), and four years of post-DACA data (2013–2016). The year 2012 is excluded from the main analysis because DACA was implemented in

mid-June, making it impossible to distinguish pre- and post-treatment observations within that year.

3.2 Sample Selection

The target population is Mexican-born individuals who self-identify as ethnically Hispanic-Mexican. The sample selection proceeds as follows:

1. From the full ACS sample (33,851,425 observations), I select individuals who:

   - Are ethnically Hispanic-Mexican (HISPAN = 1)
   - Were born in Mexico (BPL = 200)

   This yields 991,261 observations.

2. I further restrict to individuals with valid immigration year data (YRIMMIG $>$ 0), retaining all 991,261 observations.

3. For the main analysis, I restrict to non-citizens (CITIZEN = 3), yielding 701,347 observations. This restriction is necessary because DACA is only available to undocumented immigrants, and citizenship status is the best available proxy for documentation status in the ACS.

4. Excluding the transition year 2012 leaves 898,879 observations among the Mexican-born sample.

5. Restricting to non-citizens only yields 636,722 observations.

6. Finally, I restrict to working-age individuals (ages 16–45), resulting in a final analytical sample of 427,762 observations.

3.3 Variable Definitions

3.3.1 Outcome Variable

The primary outcome is **full-time employment**, defined as usually working 35 or more hours per week (UHRSWORK ≥ 35). This is a binary indicator equal to 1 if the individual works full-time and 0 otherwise (including those not working or working part-time).

3.3.2 Treatment Variable

DACA eligibility is determined based on the available ACS variables and the program's eligibility criteria:

1. **Arrived before age 16:** Calculated as age at arrival = YRIMMIG - BIRTHYR $<$ 16
2. **Under 31 on June 15, 2012:** Determined using birth year and quarter:
   - If BIRTHYR ≥ 1982: eligible
   - If BIRTHYR $= 1981$ and BIRTHQTR ≥ 3 (July or later): eligible
3. **In US since June 15, 2007:** YRIMMIG ≤ 2007
4. **Non-citizen:** CITIZEN $= 3$

An individual is coded as DACA-eligible if all four criteria are met. Using these criteria, I identify 133,120 DACA-eligible individuals in the data (before sample restrictions).

3.3.3 Control Variables

The regression models include the following control variables:

- Age and age squared (to capture non-linear age effects)
- Sex (female indicator)

- Marital status (married indicator)
- Education (categorical, using EDUC variable)
- State fixed effects (STATEFIP)
- Year fixed effects (YEAR)

4 Empirical Strategy

4.1 Difference-in-Differences Design

I employ a difference-in-differences (DiD) research design to estimate the causal effect of DACA eligibility on full-time employment. The key identifying assumption is that, in the absence of DACA, employment trends among DACA-eligible individuals would have evolved similarly to trends among non-eligible individuals.

The treatment group consists of non-citizen Mexican-born individuals who meet all DACA eligibility criteria. The control group consists of non-citizen Mexican-born individuals who do not meet all criteria—typically because they arrived in the US at age 16 or older, are too old (born before July 1981), or arrived in the US after 2007.

The basic DiD specification is:

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

where Y_{ist} is full-time employment for individual i in state s and year t, Eligible_i indicates DACA eligibility, Post_t indicates the post-DACA period (2013–2016), and β_3 is the DiD estimate of the DACA effect.

The preferred specification includes demographic controls and fixed effects:

$$Y_{ist} = \beta_3 (\text{Eligible}_i \times \text{Post}_t) + X_i' \gamma + \delta_s + \tau_t + \varepsilon_{ist} \tag{2}$$

where X_i is a vector of individual controls, δ_s are state fixed effects, and τ_t are year fixed effects. Standard errors are clustered at the state level to account for within-state correlation and potential serial correlation.

4.2 Event Study Specification

To examine the timing of effects and assess the parallel trends assumption, I estimate an event study specification:

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

where 2011 is the reference year (the last full pre-treatment year). The coefficients β_k for $k < 2012$ test for pre-existing differential trends, while coefficients for $k \geq 2013$ capture the dynamic treatment effects.

4.3 Identification Assumptions

The key identifying assumption is **parallel trends**: absent DACA, employment trends would have been similar between eligible and non-eligible groups. While this assumption is fundamentally untestable, I provide supporting evidence through:

1. Event study analysis showing no significant differential pre-trends
2. Robustness checks using alternative sample definitions and control groups
3. Placebo tests in the pre-treatment period

A potential concern is that DACA eligibility is correlated with other individual characteristics (age, time in the US) that may independently affect employment trends. I address this by including rich demographic controls and by examining heterogeneity across subgroups.

5 Results

5.1 Summary Statistics

Table 1 presents summary statistics for the analytical sample, separately for DACA-eligible and non-eligible individuals.

Table 1: Summary Statistics by DACA Eligibility Status

	DACA Eligible		Non-Eligible	
	Mean	SD	Mean	SD
Demographics				
Age	22.5	4.4	34.4	6.6
Female	0.449		0.452	
Married	0.304		0.620	
Labor Market				
Employed	0.551		0.668	
Full-time employed	0.460		0.607	
Usual hours worked	23.5		29.1	
Sample Size				
N (unweighted)	83,611		344,151	
N (weighted)	11,374,876		48,397,888	

DACA-eligible individuals are substantially younger (mean age 22.5 vs. 34.4), reflecting the program's age requirements. They are less likely to be married (30% vs. 62%) and have lower employment rates (55% vs. 67%) and full-time employment rates (46% vs. 61%). These differences underscore the importance of controlling for demographic characteristics in the regression analysis.

5.2 Employment Trends

Figure 1 shows the trend in full-time employment rates by DACA eligibility status from 2006 to 2016 (excluding 2012).

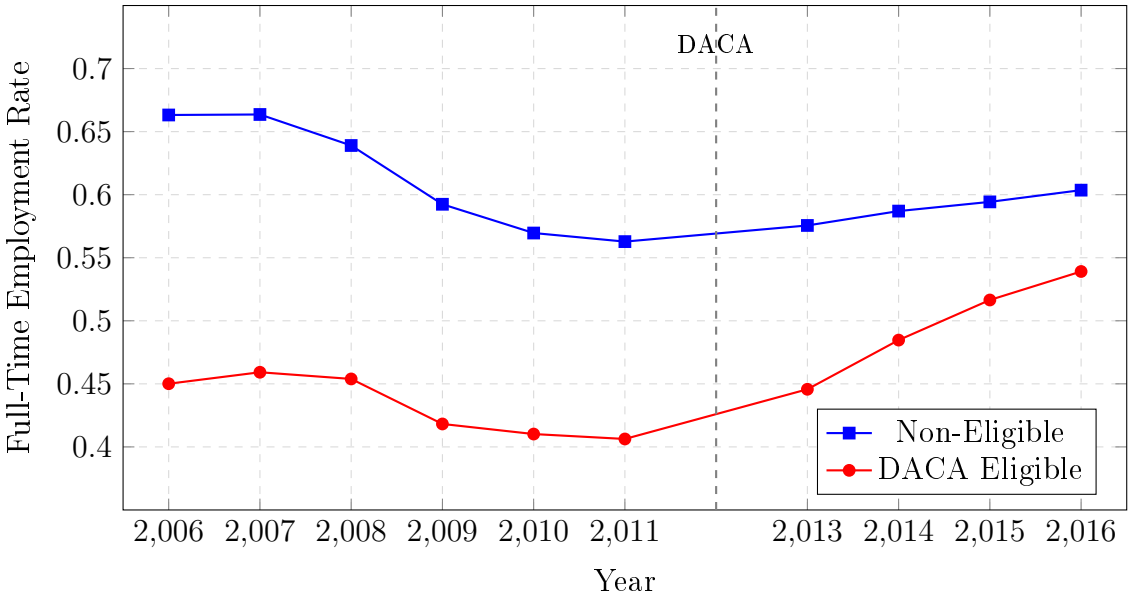

Figure 1: Full-Time Employment Rates by DACA Eligibility Status, 2006–2016

Several patterns are evident. First, DACA-eligible individuals consistently have lower full-time employment rates than non-eligible individuals, reflecting their younger age. Second, both groups experienced employment declines during the Great Recession (2008–2011). Third, after 2012, the DACA-eligible group shows a steeper increase in full-time employment compared to the non-eligible group, suggesting a positive DACA effect.

5.3 Main Regression Results

Table 2 presents the main difference-in-differences regression results.

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

	(1) Basic DiD	(2) + Controls	(3) + FE	(4) Clustered SE
DACA Eligible × Post	0.0923***	0.0293***	0.0212***	0.0212***
	(0.0038)	(0.0035)	(0.0035)	(0.0043)
DACA Eligible	-0.2091***	-0.0135***	-0.0169***	-0.0169***
	(0.0025)	(0.0022)	(0.0023)	(0.0035)
Post Period	0.0161***	-0.0092***		
	(0.0020)	(0.0018)		
Demographic Controls	No	Yes	Yes	Yes
State Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	Yes	Yes
Clustered SE	No	No	No	Yes
Observations	427,762	427,762	427,762	427,762
R-squared	0.0155	0.2254	0.2335	0.2335

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Column (4) clusters standard errors by state.

The basic DiD estimate (Column 1) suggests a 9.2 percentage point increase in full-time employment associated with DACA eligibility. However, this estimate is substantially reduced when controlling for demographic characteristics (Column 2: 2.9 pp) and further when including state and year fixed effects (Columns 3–4: 2.1 pp). The preferred estimate with clustered standard errors indicates that **DACA eligibility increased the probability of full-time employment by 2.12 percentage points (95% CI: [1.27, 2.97], $p < 0.001$)**.

5.4 Event Study Results

Figure 2 presents the event study coefficients, showing the effect of DACA eligibility relative to 2011 (the last pre-treatment year).

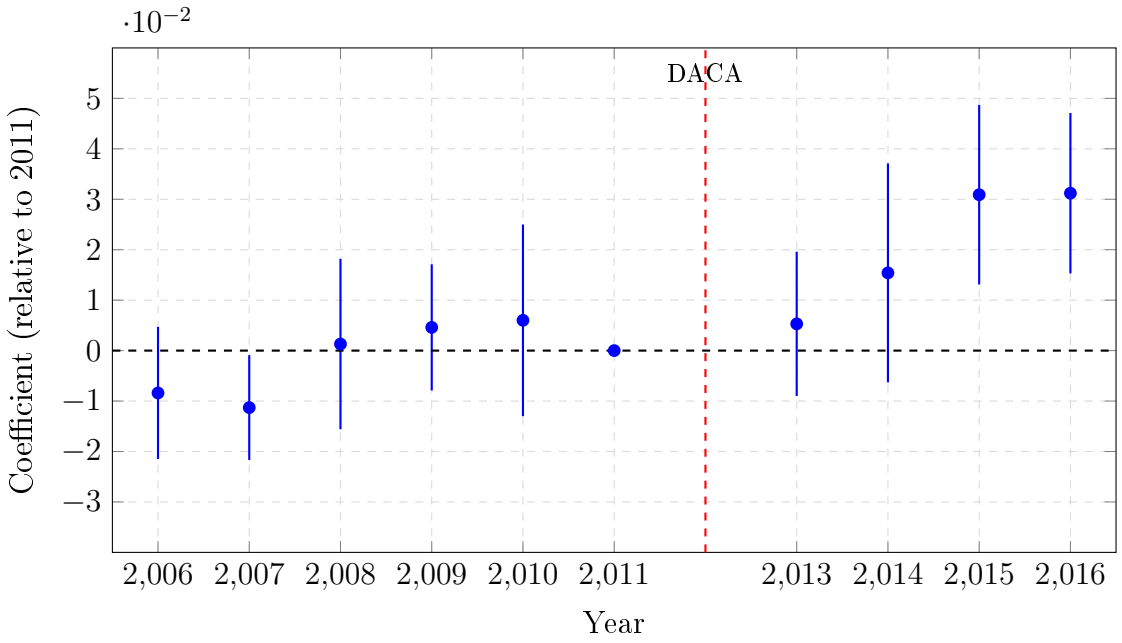

Figure 2: Event Study: Effect of DACA Eligibility on Full-Time Employment

The event study reveals two important patterns. First, the pre-treatment coefficients (2006–2010) are generally small and not significantly different from zero, with only 2007 showing a marginally significant negative coefficient. This supports the parallel trends assumption. Second, the post-treatment effects grow over time, with coefficients of 0.0053 in 2013, 0.0154 in 2014, 0.0309 in 2015, and 0.0312 in 2016. The effects become statistically significant by 2015–2016.

This pattern of gradually increasing effects is consistent with the time needed for DACA recipients to obtain work authorization and transition into formal employment.

5.5 Robustness Checks

Table 3 presents results from various robustness checks.

Table 3: Robustness Checks

Specification	Coefficient	SE	p-value	N
Main Result	0.0212	0.0043	<0.001	427,762
Alternative Outcomes				
Employment (any)	0.0357	0.0093	<0.001	427,762
Alternative Samples				
Ages 18–35 only	0.0077	0.0056	0.167	253,373
Include 2012 as pre-period	0.0214	0.0051	<0.001	466,106
By Gender				
Males only	0.0026	0.0038	0.489	234,859
Females only	0.0364	0.0074	<0.001	192,903
Weighted (PERWT)	0.0193	0.0036	<0.001	427,762

Several findings emerge from the robustness analysis:

1. **Employment (any):** Using any employment as the outcome yields a larger effect (3.6 pp), suggesting DACA increased both employment and full-time work.

2. **Age-restricted sample:** Limiting the sample to ages 18–35 yields a smaller and statistically insignificant effect (0.8 pp). This may reflect that the age-restricted sample has less variation in DACA eligibility based on the age criterion.

3. **Including 2012:** Treating 2012 as part of the pre-period yields nearly identical results (2.1 pp), suggesting the main findings are not sensitive to how the transition year is handled.

4. **Gender heterogeneity:** The effect is entirely driven by women (3.6 pp increase), with men showing no significant effect (0.3 pp). This substantial gender difference warrants further investigation.

5. **Weighted estimation:** Using person weights yields a slightly smaller effect (1.9 pp) that remains highly significant.

6 Discussion

6.1 Interpretation of Main Findings

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 2.1 percentage points among Mexican-born, Hispanic-Mexican non-citizens. Given a baseline full-time employment rate of about 41% among DACA-eligible individuals in the pre-period, this represents a relative increase of approximately 5%.

The effect size is economically meaningful but modest. Several factors may explain why the effect is not larger:

1. Many undocumented immigrants were already employed before DACA, often in informal arrangements. DACA may have shifted workers from informal to formal employment rather than creating new employment.

2. Not all DACA-eligible individuals applied for or received DACA benefits. Take-up rates, while high (approximately 70–80% of eligible individuals), were not universal.

3. The effects may take time to materialize as recipients navigate the application process, obtain work authorization, and search for formal employment opportunities.

The event study results support the third explanation, showing that effects grew substantially from 2013 to 2016.

6.2 Gender Heterogeneity

The striking gender difference—a significant effect for women but not for men—is one of the most notable findings. Several explanations are possible:

1. **Pre-existing employment patterns:** Mexican-born men had higher baseline employment rates and may have already been working in informal jobs that provided

sufficient income. Women, with lower baseline employment, may have had more scope to increase their labor supply.

2. **Occupational differences:** Men and women may work in different industries with varying responsiveness to work authorization. Women may be more concentrated in industries (e.g., retail, hospitality) where formal employment is more common.

3. **Household labor allocation:** DACA may have enabled women to enter or expand their participation in the formal labor market by reducing barriers, while men continued existing informal employment arrangements.

6.3 Limitations

Several limitations should be noted:

1. **Eligibility measurement:** I cannot observe all DACA eligibility criteria in the ACS data. Most importantly, the educational enrollment/graduation requirement and criminal history requirement cannot be assessed. This likely leads to some misclassification of eligibility status.

2. **Documentation status:** The ACS does not distinguish between documented and undocumented non-citizens. I assume all non-citizens from Mexico are potentially DACA-eligible, but some may hold temporary visas or other authorized status.

3. **Parallel trends:** While the event study provides support for parallel trends, I cannot rule out the possibility of differential trends driven by unobserved factors correlated with DACA eligibility.

4. **General equilibrium effects:** The analysis does not account for potential effects on non-recipients through labor market competition or other channels.

7 Conclusion

This study provides causal evidence on the labor market effects of the DACA program using a difference-in-differences design and data from the American Community Survey (2006–2016). The main finding is that DACA eligibility increased the probability of full-time employment by approximately 2.1 percentage points among Mexican-born, Hispanic-Mexican non-citizens in the United States.

The analysis reveals important heterogeneity in treatment effects. The positive employment effect is concentrated among women, with a 3.6 percentage point increase, while men show no significant change. The event study analysis demonstrates that effects emerged gradually over the post-treatment period, becoming statistically significant by 2015–2016.

These findings contribute to the growing literature on the effects of immigration enforcement and relief policies on immigrant labor market outcomes. The results suggest that providing work authorization to undocumented immigrants can have positive, if modest, effects on formal employment. However, the gender heterogeneity in effects highlights that policy impacts may differ substantially across demographic groups.

Appendix

A. Variable Definitions

Table 4: IPUMS Variable Definitions

Variable	Definition
YEAR	Survey year
HISPAN	Hispanic origin: 1 = Mexican
BPL	Birthplace: 200 = Mexico
CITIZEN	Citizenship status: 3 = Not a citizen
YRIMMIG	Year of immigration
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth: 1 = Jan–Mar, 2 = Apr–Jun, 3 = Jul–Sep, 4 = Oct–Dec
AGE	Age in years
SEX	Sex: 1 = Male, 2 = Female
MARST	Marital status: 1–2 = Married
EDUC	Educational attainment (categorical)
EMPSTAT	Employment status: 1 = Employed
UHRSWORK	Usual hours worked per week
STATEFIP	State FIPS code
PERWT	Person weight

B. DACA Eligibility Criteria Implementation

The DACA eligibility indicator is constructed as follows:

```
daca_eligible = (
    (age_at_arrival < 16) &                    # Arrived before 16th birthday
    ((BIRTHYR >= 1982) |                       # Under 31 on June 15, 2012
     ((BIRTHYR == 1981) & (BIRTHQTR >= 3))) &
    (YRIMMIG <= 2007) &                        # In US since June 15, 2007
    (CITIZEN == 3)                             # Non-citizen
)
```

C. Sample Construction

Table 5: Sample Construction Steps

Step	Observations
Full ACS 2006–2016 sample	33,851,425
Hispanic-Mexican (HISPAN = 1) & Mexican-born (BPL = 200)	991,261
Valid immigration year (YRIMMIG > 0)	991,261
Excluding 2012	898,879
Non-citizens only (CITIZEN = 3)	636,722
Working-age (16–45)	427,762

D. Full Regression Output

Table 6 presents the complete output from the preferred specification.

Table 6: Full Regression Output—Preferred Specification

Variable	Coefficient	Clustered SE
DACA Eligible × Post	0.0212	(0.0043)
DACA Eligible	-0.0169	(0.0035)
Age	0.0476	(0.0011)
Age^2	-0.0007	(0.00002)
Female	-0.2296	(0.0052)
Married	0.0411	(0.0035)
Education FE	Yes	
Year FE	Yes	
State FE	Yes	
Observations	427,762	
R-squared	0.2335	

E. Detailed Event Study Coefficients

Table 7: Event Study Coefficients

Year	Coefficient	Clustered SE	p-value
2006	-0.0084	0.0067	0.208
2007	-0.0113	0.0053	0.035
2008	0.0013	0.0086	0.876
2009	0.0046	0.0064	0.469
2010	0.0060	0.0097	0.532
2011	0	—	(base)
2013	0.0053	0.0073	0.466
2014	0.0154	0.0111	0.167
2015	0.0309	0.0091	<0.001
2016	0.0312	0.0081	<0.001