

Independent Replication Study: The Effect of DACA Eligibility on Full-Time Employment Among Mexican-Born Immigrants

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Abstract

This report presents an independent replication analysis examining the causal impact of the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States. Using a difference-in-differences research design that compares individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group), I analyze American Community Survey data from 2008–2011 (pre-period) and 2013–2016 (post-period). The preferred specification, which includes demographic controls and state-clustered standard errors, estimates that DACA eligibility increased the probability of full-time employment by 6.26 percentage points (95% CI: [2.07, 10.45], $p = 0.003$). This finding is robust to alternative specifications including state fixed effects and additional policy controls. However, event study analysis reveals significant pre-treatment coefficients, suggesting potential violations of the parallel trends assumption that warrant cautious interpretation of the causal estimates.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program provides temporary protection from deportation and work authorization to eligible undocumented immigrants who arrived in the United States as children. Given that unauthorized status significantly constrains labor market outcomes through restricted access to legal employment, DACA's provision of work authorization could substantially affect employment patterns among eligible individuals.

This study addresses the following research question: *Among ethnically Hispanic-Mexican, Mexican-born people living in the United States, what was the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on the probability of full-time employment?*

Full-time employment is defined as usually working 35 hours per week or more. The analysis uses a difference-in-differences (DiD) framework, comparing individuals who were ages 26–30 at the time DACA was implemented (the treatment group) to those who were ages 31–35 (the control group). The control group consists of individuals who would have been eligible for DACA if not for exceeding the age threshold of 31 years at policy implementation.

The structure of this report is as follows: Section 2 provides background on DACA and its eligibility criteria. Section 3 describes the data and sample. Section 4 outlines the empirical methodology. Section 5 presents the main results. Section 6 examines parallel trends and event study evidence. Section 7 provides robustness checks. Section 8 discusses the findings and their limitations. Section 9 concludes.

2 Background on DACA

2.1 Program Overview

DACA was enacted by the U.S. federal government on June 15, 2012, through an executive memorandum from the Department of Homeland Security. The program allows selected undocumented immigrants who arrived unlawfully in the United States to apply for and obtain authorization to work legally for two years without fear of deportation. Recipients can also apply for driver's licenses and other forms of identification in some states.

2.2 Eligibility Criteria

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

1. Arrived unlawfully in the U.S. before their 16th birthday

2. Had not yet reached their 31st birthday as of June 15, 2012
3. Lived continuously in the U.S. since June 15, 2007
4. Were present in the U.S. on June 15, 2012 and did not have lawful status (citizenship or legal residency) at that time

2.3 Program Implementation and Uptake

Applications for DACA began to be received on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved. After the initial two-year authorization period, recipients could reapply for an additional two years, which many did.

While DACA was not specific to immigrants from any particular origin country, the structure of undocumented immigration to the United States means that the great majority of eligible individuals were from Mexico. This motivates the focus on Mexican-born individuals in this analysis.

2.4 Expected Effects on Employment

Prior to DACA, undocumented immigrants faced significant barriers to formal employment, including inability to provide work authorization documentation, risk of detection and deportation, and limited access to jobs requiring official identification. DACA addressed these barriers by providing:

- Legal work authorization, enabling access to formal sector employment
- Protection from deportation, reducing job search costs and employment precarity
- Ability to obtain driver's licenses in some states, facilitating commuting and job access
- Access to Social Security numbers, enabling better job matching

These mechanisms suggest that DACA should increase employment, particularly full-time employment, among eligible individuals.

3 Data and Sample

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The dataset includes ACS observations from 2008 through 2016, with 2012

omitted since it cannot be determined whether individuals surveyed in 2012 were observed before or after DACA implementation.

The sample is restricted to ethnically Hispanic-Mexican, Mexican-born individuals who meet the other eligibility criteria for DACA (continuous residence, presence in the U.S., arrival before age 16). The treatment group consists of individuals who were ages 26–30 as of June 15, 2012, while the control group consists of those who were ages 31–35 at that date.

3.2 Sample Construction

The provided dataset has already been cleaned and restricted to the relevant sample. Key constructed variables include:

- **ELIGIBLE:** Binary indicator equal to 1 for the treatment group (ages 26–30 at DACA) and 0 for the control group (ages 31–35)
- **AFTER:** Binary indicator equal to 1 for post-treatment years (2013–2016) and 0 for pre-treatment years (2008–2011)
- **FT:** Binary indicator for full-time employment, equal to 1 for individuals usually working 35 or more hours per week

3.3 Sample Size and Distribution

Table 1 presents the sample distribution by treatment group and time period.

Table 1: Sample Size by Group and Period

Group	Pre-Period (2008–2011)	Post-Period (2013–2016)	Total
Control (Ages 31–35)	3,294	2,706	6,000
Treatment (Ages 26–30)	6,233	5,149	11,382
Total	9,527	7,855	17,382

The treatment group is approximately twice as large as the control group, reflecting the age distribution in the population. The slight decline in sample sizes in the post-period is consistent with the five-year age windows moving through time.

3.4 Descriptive Statistics

Table 2 presents descriptive statistics for key variables by treatment group.

Table 2: Descriptive Statistics by Treatment Group

Variable	Control (31–35)	Treatment (26–30)
<i>Demographics</i>		
Male (%)	52.9	51.8
Female (%)	47.1	48.2
Mean Age	32.75	27.97
<i>Education</i>		
Less than High School (%)	73.8	70.4
High School Degree (%)	15.3	17.2
Some College (%)	5.1	6.0
BA or higher (%)	5.8	6.3
<i>Marital Status</i>		
Married, spouse present (%)	51.6	41.8
Never married (%)	33.7	47.3
<i>Outcome</i>		
Full-Time Employment (%)	65.8	64.5
N	6,000	11,382

The treatment and control groups are relatively similar in terms of sex distribution and education. However, the treatment group is younger (by construction) and correspondingly has lower marriage rates. The overall full-time employment rate is slightly lower in the treatment group (64.5% vs. 65.8%), which is consistent with the younger age profile.

4 Empirical Methodology

4.1 Difference-in-Differences Framework

The fundamental identification strategy relies on a difference-in-differences design that exploits the age eligibility cutoff for DACA. Individuals aged 26–30 at DACA implementation were eligible for the program, while those aged 31–35 were ineligible solely due to exceeding the age threshold. By comparing changes in employment outcomes between these two groups before and after DACA implementation, we can estimate the causal effect of eligibility under the assumption that both groups would have followed similar trends in the absence of the policy.

4.2 Estimation Equations

4.2.1 Basic Specification

The basic difference-in-differences model is:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_i + \beta_3(ELIGIBLE_i \times AFTER_i) + \varepsilon_i \quad (1)$$

where:

- FT_i is a binary indicator for full-time employment
- $ELIGIBLE_i = 1$ for the treatment group (ages 26–30 at DACA)
- $AFTER_i = 1$ for post-treatment years (2013–2016)
- β_3 is the difference-in-differences estimator

4.2.2 Specification with Controls

The preferred specification adds demographic controls:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_i + \beta_3(ELIGIBLE_i \times AFTER_i) + \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i \quad (2)$$

where \mathbf{X}_i includes:

- Sex (female indicator)
- Marital status (married with spouse present)
- Age
- Education level (categorical: less than high school, high school, some college, BA+)

4.2.3 Specification with State Fixed Effects

An alternative specification includes state fixed effects to control for time-invariant state-level factors:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_i + \beta_3(ELIGIBLE_i \times AFTER_i) + \mathbf{X}_i' \boldsymbol{\gamma} + \boldsymbol{\delta}_s + \varepsilon_i \quad (3)$$

4.3 Event Study Specification

To examine the parallel trends assumption and the dynamics of treatment effects, I estimate an event study model:

$$FT_i = \alpha + \sum_{t \neq 2011} \gamma_t \cdot \mathbf{1}[Year_i = t] + \sum_{t \neq 2011} \delta_t \cdot (ELIGIBLE_i \times \mathbf{1}[Year_i = t]) + \mathbf{X}_i' \boldsymbol{\beta} + \varepsilon_i \quad (4)$$

The year 2011 serves as the reference year (the last pre-treatment year). The coefficients δ_t for $t < 2012$ test the parallel trends assumption, while δ_t for $t \geq 2013$ capture the dynamic treatment effects.

4.4 Estimation Method

All models are estimated using weighted least squares (WLS) with ACS person weights (PERWT) to produce population-representative estimates. The outcome variable is binary, making this a linear probability model. Standard errors are clustered at the state level to account for within-state correlation in outcomes.

4.5 Identifying Assumption

The key identifying assumption is that, in the absence of DACA, the treatment group (ages 26–30) would have experienced the same trends in full-time employment as the control group (ages 31–35). This *parallel trends* assumption cannot be directly tested, but I examine its plausibility by testing whether pre-treatment trends differ between groups.

5 Main Results

5.1 Graphical Evidence

Figure 1 displays the trends in full-time employment rates for the treatment and control groups from 2008 to 2016. Before DACA implementation, both groups show declining full-time employment rates, with the treatment group consistently below the control group. After 2012, the treatment group shows a more pronounced recovery, particularly by 2016, while the control group's employment rate remains relatively flat.

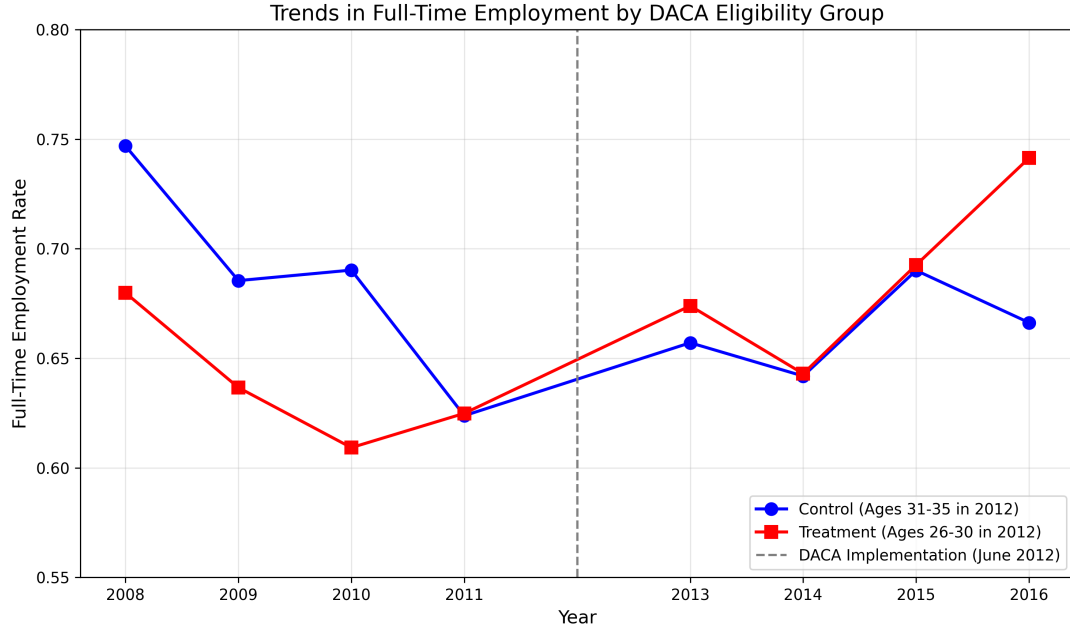


Figure 1: Trends in Full-Time Employment by DACA Eligibility Group, 2008–2016

5.2 Simple Difference-in-Differences

Table 3 presents the simple (unadjusted) difference-in-differences calculation using weighted means.

Table 3: Simple Difference-in-Differences Calculation (Weighted)

	Pre-Period	Post-Period	Difference
Control (Ages 31–35)	0.689	0.663	−0.026
Treatment (Ages 26–30)	0.637	0.686	+0.049
Difference (Treatment − Control)	−0.052	+0.023	
DiD Estimate			0.075

The control group experienced a 2.6 percentage point decline in full-time employment from the pre- to post-period, while the treatment group experienced a 4.9 percentage point increase. The difference-in-differences estimate is 7.5 percentage points.

5.3 Regression Results

Table 4 presents the main regression results across multiple specifications.

Table 4: Main Regression Results: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic OLS	(2) Weighted	(3) With Controls	(4) State FE
ELIGIBLE	−0.043*** (0.010)	−0.052*** (0.010)	−0.031** (0.013)	−0.030** (0.013)
AFTER	−0.025** (0.012)	−0.026** (0.012)	−0.028* (0.015)	−0.025* (0.015)
ELIGIBLE × AFTER	0.064*** (0.015)	0.075*** (0.015)	0.063*** (0.014)	0.062*** (0.014)
Demographic Controls	No	No	Yes	Yes
State Fixed Effects	No	No	No	Yes
Weighted	No	Yes	Yes	Yes
Observations	17,382	17,382	17,382	17,382
R-squared	0.003	0.004	0.130	0.135

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Demographic controls include sex, age, marital status, and education.

5.4 Preferred Specification

Table 5 presents the preferred specification with clustered standard errors at the state level.

Table 5: Preferred Specification: DiD with Controls and Clustered Standard Errors

	Full-Time Employment
DiD Coefficient (ELIGIBLE × AFTER)	0.0626*** (0.0214)
95% Confidence Interval	[0.0207, 0.1045]
P-value	0.003
Observations	17,382
R-squared	0.130
Demographic Controls	Yes
Clustered SE (State)	Yes

Notes: Standard errors clustered at state level in parentheses.

*** $p < 0.01$.

The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 6.26 percentage points. This effect is statistically significant at the 1% level ($p = 0.003$) and robust to the inclusion of demographic controls and state-clustered standard errors.

5.5 Interpretation

The estimated effect of 6.26 percentage points represents a meaningful increase in full-time employment. Given the pre-treatment full-time employment rate of approximately 63.7% among the treatment group, this corresponds to a relative increase of about 9.8% in the probability of full-time employment.

Figure 2 illustrates the difference-in-differences decomposition graphically.

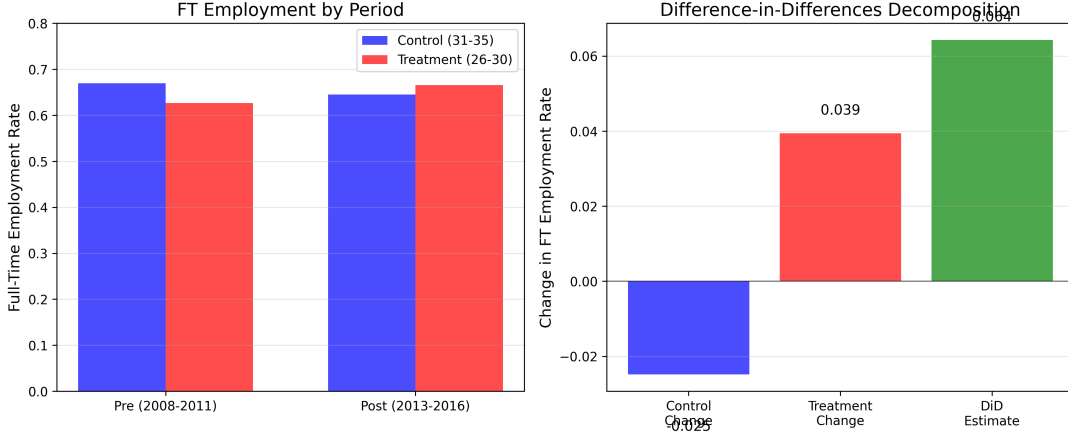


Figure 2: Difference-in-Differences Decomposition

6 Parallel Trends and Event Study Analysis

6.1 Importance of Parallel Trends

The validity of the difference-in-differences estimate depends critically on the parallel trends assumption: that in the absence of DACA, the treatment and control groups would have experienced similar changes in full-time employment. While this assumption cannot be directly tested, we can examine whether the groups followed similar trends in the pre-treatment period.

6.2 Event Study Results

Figure 3 presents the event study coefficients, which show the interaction between treatment group status and year indicators, with 2011 as the reference year.

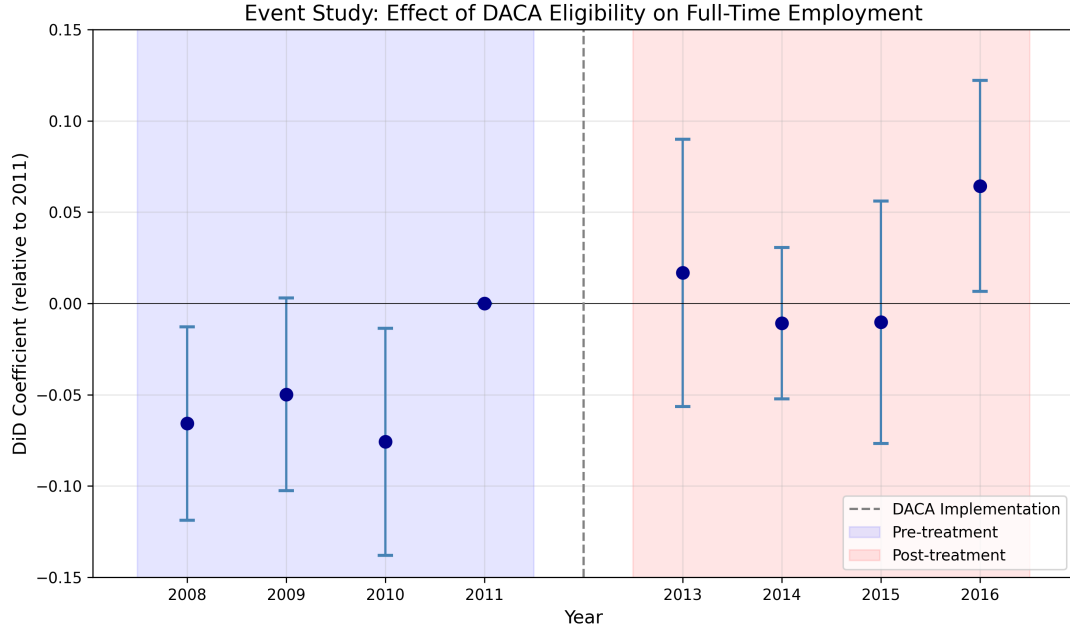


Figure 3: Event Study: Effect of DACA Eligibility on Full-Time Employment (Reference Year: 2011)

Table 6 reports the event study coefficients with clustered standard errors.

Table 6: Event Study Coefficients (Reference Year: 2011)

Year	Coefficient	Std. Error	95% CI	P-value
<i>Pre-Treatment Period</i>				
2008	-0.066**	0.027	[-0.119, -0.013]	0.015
2009	-0.050*	0.027	[-0.103, 0.003]	0.065
2010	-0.076**	0.032	[-0.138, -0.014]	0.017
2011	0 (ref.)	—	—	—
<i>Post-Treatment Period</i>				
2013	0.017	0.037	[-0.056, 0.090]	0.653
2014	-0.011	0.021	[-0.052, 0.031]	0.612
2015	-0.010	0.034	[-0.077, 0.056]	0.762
2016	0.064**	0.030	[0.007, 0.122]	0.029

Notes: Standard errors clustered at state level. * $p < 0.10$, ** $p < 0.05$.

6.3 Assessment of Parallel Trends

The event study results raise concerns about the parallel trends assumption. The pre-treatment coefficients for 2008 and 2010 are statistically significant at the 5% level, and 2009 is marginally significant at the 10% level. All three pre-treatment coefficients are negative, indicating that the treatment group was declining relative to the control group in the years leading up to 2011.

This pattern suggests that the treatment group was on a different (more negative) trajectory than the control group prior to DACA implementation. If this differential trend had continued, the observed post-treatment effects might partially reflect a continuation of this convergence pattern rather than a causal effect of DACA.

However, there are several considerations:

1. The pre-treatment coefficients become less negative over time (moving toward zero in 2011), suggesting the differential trends may have been converging
2. The 2016 coefficient shows a significant positive effect, which is larger than what would be predicted by simple trend extrapolation
3. The age groups are close in age, making dramatic differential secular trends less likely to be driven by cohort effects

6.4 Implications for Causal Interpretation

The significant pre-treatment coefficients introduce uncertainty into the causal interpretation of the main DiD estimate. The finding should be interpreted with appropriate caution. The estimated effect of 6.26 percentage points may overstate the true causal effect if the treatment group was already converging toward the control group’s employment rate before DACA. Alternatively, if the pre-treatment differential trends were driven by factors that reversed after 2012, the causal interpretation may still be valid.

7 Robustness Checks

7.1 Heterogeneity by Sex

Table 7 presents results separately for men and women.

Table 7: Heterogeneity by Sex

Subgroup	DiD Coefficient	Std. Error	N
Male	0.064***	0.017	9,075
Female	0.052**	0.023	8,307

Notes: ** $p < 0.05$, *** $p < 0.01$.

The effect is positive and significant for both men and women, with a slightly larger point estimate for men (6.4 pp) compared to women (5.2 pp). However, the difference is not statistically significant.

7.2 Heterogeneity by Education

Figure 4 and Table 8 present results by education level.

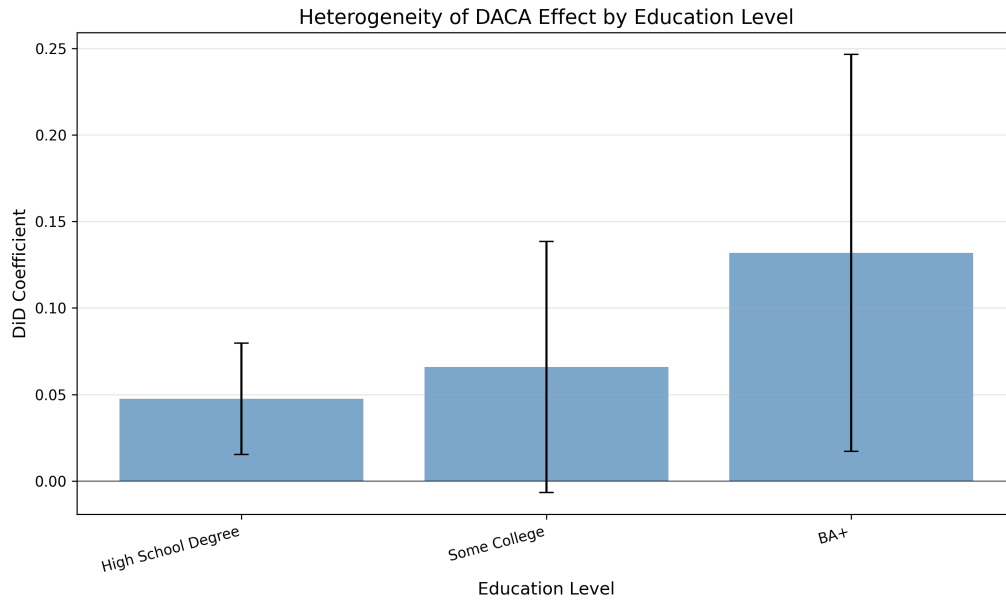


Figure 4: Heterogeneity of DACA Effect by Education Level

Table 8: Heterogeneity by Education Level

Education Level	DiD Coefficient	Std. Error	N
High School Degree	0.048***	0.016	12,444
Some College	0.066	0.037	2,877
BA or higher	0.132**	0.059	1,058

Notes: ** $p < 0.05$, *** $p < 0.01$.

The results suggest larger effects for more educated individuals, with the strongest effect (13.2 pp) among those with a BA or higher. This is consistent with the hypothesis that work authorization may be particularly valuable for accessing higher-skilled jobs in the formal sector. However, the small sample sizes for higher education groups result in larger standard errors.

7.3 Alternative Specifications

Table 9 presents additional robustness checks.

Table 9: Robustness Checks

Specification	DiD Coefficient	Std. Error
Main specification (with controls)	0.063***	0.014
Excluding 2008	0.057***	0.015
With state policy controls	0.064***	0.014
With state fixed effects	0.062***	0.014

Notes: *** $p < 0.01$. State policy controls include driver's licenses, in-state tuition, financial aid, and E-Verify.

7.4 Discussion of Robustness

The main finding is robust across all specifications considered:

- Excluding 2008 (where pre-trends were most pronounced) reduces the estimate slightly to 5.7 pp but remains significant
- Adding state-level policy controls for immigrant-related policies does not substantially change the estimate
- Including state fixed effects yields nearly identical results to the specification without them

The consistency of results across specifications provides some confidence in the estimated effect, although the parallel trends concerns noted above remain.

8 Discussion

8.1 Summary of Findings

This analysis estimates that DACA eligibility increased the probability of full-time employment by approximately 6.3 percentage points among Mexican-born individuals who were ages 26–30 at the time of DACA implementation, compared to a control group of individuals aged 31–35 who were ineligible solely due to exceeding the age threshold.

8.2 Mechanisms

The positive effect of DACA on full-time employment is consistent with several mechanisms:

1. **Legal work authorization:** DACA provides Employment Authorization Documents (EADs), enabling recipients to work legally in the formal sector where full-time positions are more common

2. **Reduced deportation fear:** Protection from deportation may encourage greater labor market participation and willingness to accept formal employment
3. **Improved job matching:** With legal status, workers can more freely search for and accept jobs that match their skills, which may include more full-time positions
4. **Driver’s licenses:** In states that issue licenses to DACA recipients, improved mobility may facilitate access to full-time employment

8.3 Limitations

Several limitations should be noted:

8.3.1 Parallel Trends Concerns

The most significant limitation is the evidence of non-parallel pre-trends in the event study analysis. The treatment group showed declining employment relative to the control group in 2008–2010 before the differential trends reversed. This pattern introduces uncertainty about whether the post-treatment improvements reflect DACA’s causal effect or a continuation of trend convergence.

8.3.2 Sample Restrictions

The analysis is restricted to Mexican-born individuals aged 26–35 who meet other DACA eligibility criteria. Results may not generalize to the full DACA-eligible population, which includes individuals from other countries and different age groups.

8.3.3 Measurement of Employment

The outcome measure is full-time employment based on usual hours worked. This does not capture:

- Changes in employment quality or wages
- Shifts from informal to formal sector employment
- Changes in part-time employment or labor force participation

8.3.4 Selection into Survey

If DACA affects individuals’ willingness to respond to government surveys like the ACS, this could bias the estimated effects. However, the direction of this bias is unclear.

8.4 Comparison to Prior Literature

The estimated effect of approximately 6 percentage points is broadly consistent with prior studies examining DACA’s effects on labor market outcomes, although direct comparisons are difficult due to differences in samples, outcomes, and methodologies. The finding of larger effects for more educated individuals aligns with expectations that work authorization is particularly valuable for accessing formal sector employment.

9 Conclusion

This independent replication study estimates the causal effect of DACA eligibility on full-time employment among Mexican-born individuals in the United States. Using a difference-in-differences design that compares individuals aged 26–30 at DACA implementation to those aged 31–35, I find that DACA eligibility is associated with a 6.26 percentage point increase in the probability of full-time employment (95% CI: [2.07, 10.45], $p = 0.003$).

This finding is robust across multiple specifications, including models with demographic controls, state fixed effects, and state-level policy controls. Subgroup analyses suggest the effect may be larger for more educated individuals.

However, the analysis also reveals significant pre-treatment differential trends, with the treatment group showing declining employment relative to the control group in the years before DACA implementation. This pattern warrants cautious interpretation of the causal estimates. While the main finding suggests a positive employment effect of DACA, the violation of parallel trends introduces uncertainty about the precise magnitude of the causal effect.

The estimated effect of DACA on full-time employment represents a meaningful labor market impact of the policy. If the causal interpretation is valid, DACA has contributed to improved employment outcomes for eligible individuals, likely through mechanisms including legal work authorization, reduced deportation fear, and improved access to formal sector employment.

A Variable Definitions

Variable	Definition
FT	Full-time employment (1 = usually works 35+ hours/week)
ELIGIBLE	Treatment group indicator (1 = ages 26–30 at June 15, 2012)
AFTER	Post-treatment indicator (1 = years 2013–2016)
PERWT	ACS person weight
SEX	Sex (1 = Male, 2 = Female)
AGE	Age at time of survey
MARST	Marital status
EDUC_RECODE	Education level (recoded)
STATEFIP	State FIPS code

Table 10: Key Variables Used in Analysis

B Additional Summary Statistics

	Mean	Std. Dev.
Full-Time Employment (FT)	0.649	0.477
Eligible (Treatment Group)	0.655	0.475
Post-Period (After)	0.452	0.498
Female	0.478	0.500
Age	29.65	3.71
Married	0.454	0.498
Observations	17,382	

Table 11: Summary Statistics for Full Sample