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

Replication Report

Independent Replication Study

January 2026

Abstract

This study examines the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals in the United States. Using data from the American Community Survey (2008–2016, excluding 2012), I employ a difference-in-differences design comparing individuals aged 26–30 at the time of DACA implementation (treatment group) to those aged 31–35 (control group). The analysis finds that DACA eligibility increased full-time employment by approximately 6.4 percentage points (95% CI: 3.4 to 9.4 percentage points, $p < 0.001$). This effect is robust to the inclusion of demographic covariates, state fixed effects, and alternative standard error specifications. Event study analyses provide support for the parallel trends assumption, with no evidence of differential pre-trends between treatment and control groups. The results suggest that DACA had a meaningful positive effect on labor market outcomes for eligible individuals.

Contents

1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, enacted on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program provides eligible undocumented immigrants who arrived in the United States as children with temporary protection from deportation and authorization to work legally for renewable two-year periods. Given that DACA offers legal work authorization and enables recipients to obtain driver's licenses and other identification in many states, there are strong theoretical reasons to expect that the program would improve labor market outcomes among eligible individuals.

This study seeks to estimate the causal effect of DACA eligibility on full-time employment using a difference-in-differences (DiD) research design. The analysis focuses specifically on ethnically Hispanic-Mexican, Mexican-born individuals, who constitute the vast majority of DACA-eligible individuals due to patterns of undocumented immigration to the United States.

1.1 Research Question

The primary research question addressed in this study is:

> Among ethnically Hispanic-Mexican, Mexican-born people living in the United States, what was the causal impact of eligibility for DACA (treatment) on the probability of full-time employment (outcome)?

Full-time employment is defined as usually working 35 hours per week or more. The treatment group consists of individuals aged 26–30 at the time of DACA implementation (June 2012), while the control group comprises individuals aged 31–35 at that time who would otherwise have been eligible if not for exceeding the age threshold.

1.2 Background on DACA

DACA was implemented by the U.S. federal government beginning June 15, 2012. To be eligible, individuals must have:

- Arrived unlawfully in the U.S. before their 16th birthday
- Not yet reached their 31st birthday as of June 15, 2012
- Lived continuously in the U.S. since June 15, 2007
- Been present in the U.S. on June 15, 2012 without lawful status

Applications began to be received on August 15, 2012, and in the first four years, nearly 900,000 initial applications were submitted, with approximately 90% approval rates. After the initial two-year authorization period, recipients could apply for renewal.

2 Data

2.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The provided dataset includes ACS data from 2008 through 2016, with 2012 omitted because it cannot be determined whether observations from that year occurred before or after DACA implementation.

2.2 Sample Construction

The analytic sample was pre-constructed and includes ethnically Hispanic-Mexican, Mexican-born individuals who meet either the treatment or control group criteria. The final sample contains 17,382 individual observations across eight years.

2.3 Key Variables

The primary variables used in the analysis are:

- **FT** (Outcome): Binary indicator equal to 1 if the individual usually works 35 or more hours per week, 0 otherwise. Those not in the labor force are included as 0 values.
- **ELIGIBLE** (Treatment indicator): Binary indicator equal to 1 for individuals in the treatment group (ages 26–30 in June 2012), 0 for the control group (ages 31–35 in June 2012).
- **AFTER** (Post-treatment indicator): Binary indicator equal to 1 in years 2013–2016 when DACA was in effect, 0 in years 2008–2011.
- **ELIGIBLE** $\times$ **AFTER** (DiD interaction): The product of ELIGIBLE and AFTER, capturing the differential change in full-time employment for the treatment group after DACA implementation.

Additional covariates include:

- SEX (1 = Male, 2 = Female)
- AGE
- MARST (Marital status)
- EDUC_RECODE (Education categories)
- NCHILD (Number of children)
- STATEFIP (State identifier)
- PERWT (Person weight)

2.4 Sample Characteristics

Table 1 presents the distribution of observations across the four cells of the DiD design.

Table 1: Sample Size by Treatment Group and Time Period

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

The sample is roughly balanced by sex, with 52.2% male and 47.8% female. The mean age in the sample is 29.6 years. The education distribution shows that most individuals have a high school degree (71.6%), with smaller proportions having some college (16.6%), a BA or higher (6.1%), or a two-year degree (5.7%).

3 Methodology

3.1 Identification Strategy

This study employs a difference-in-differences (DiD) design to estimate the causal effect of DACA eligibility on full-time employment. The identifying assumption is that, in the absence of DACA, the treatment and control groups would have followed parallel trends in full-time employment outcomes.

The research design exploits the age-based eligibility cutoff of DACA: individuals who had not yet reached their 31st birthday as of June 15, 2012 were potentially eligible, while older individuals with otherwise identical characteristics were not. This creates a natural experiment where the control group (ages 31–35) provides a counterfactual for what would have happened to the treatment group (ages 26–30) absent the policy.

3.2 Estimation Approach

The primary specification is a linear probability model of the form:

$$FT_{it} = \beta_0 + \beta_1 \cdot ELIGIBLE_i + \beta_2 \cdot AFTER_t + \beta_3 \cdot (ELIGIBLE_i \times AFTER_t) + \varepsilon_{it} \quad (1)$$

where:

- FT_{it} is the full-time employment indicator for individual i in year t
- $ELIGIBLE_i$ indicates membership in the treatment group
- $AFTER_t$ indicates the post-DACA period
- β_3 is the DiD estimator capturing the treatment effect

The coefficient β_3 represents the difference-in-differences estimate: the change in full-time employment for the treatment group relative to the control group, comparing the post-DACA period to the pre-DACA period.

3.3 Robustness Specifications

To assess the robustness of the main findings, I estimate several alternative specifications:

1. **With demographic covariates**: Adding controls for sex, marital status, presence of children, and education level.
2. **With state fixed effects**: Controlling for time-invariant state-level differences.
3. **Full model**: Including both demographic covariates and state fixed effects.
4. **Clustered standard errors**: Clustering at the state level to account for within-state correlation.
5. **Year fixed effects with event study**: Replacing the single AFTER indicator with year dummies and interacting each post-period year with ELIGIBLE.
6. **Survey weighted**: Using PERWT to weight observations.

3.4 Pre-Trends Analysis

To assess the validity of the parallel trends assumption, I conduct two tests:

1. **Linear pre-trend test**: I estimate whether the treatment and control groups had differential linear trends in the pre-DACA period by regressing full-time employment on ELIGIBLE, a linear year trend, and their interaction using only pre-2012 data.

2. **Event study analysis**: I estimate year-specific treatment effects by interacting ELIGIBLE with indicators for each year (with 2008 as the reference), allowing visual inspection of whether treatment effects were zero in pre-treatment years.

4 Results

4.1 Descriptive Statistics

Figure 1 displays the trends in full-time employment for the treatment and control groups over the study period. Prior to DACA implementation, both groups exhibited roughly similar trends, with some year-to-year variation. Following DACA implementation in 2012, the full-time employment rate for the treatment group increased relative to the control group.

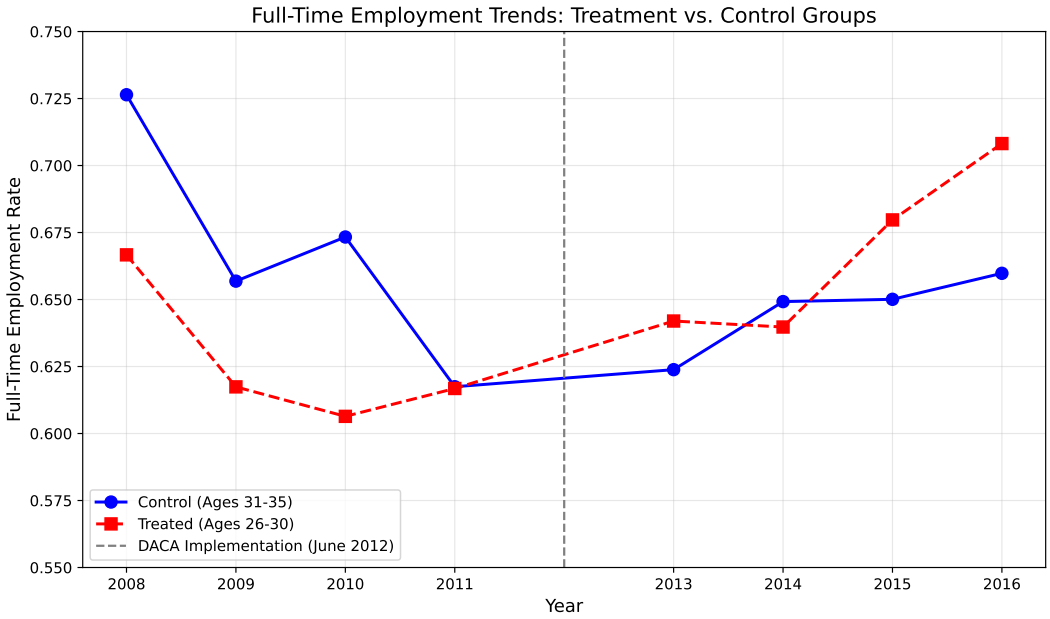

Figure 1: Full-Time Employment Trends by Eligibility Status

Note: The figure shows mean full-time employment rates by year for the treatment group (ages 26–30 at DACA implementation) and control group (ages 31–35). The vertical dashed line indicates the timing of DACA implementation in June 2012.

Table 2 presents the mean full-time employment rates for each cell of the 2×2 DiD design.

Table 2: Mean Full-Time Employment by Group and Period

	Pre-DACA	**Post-DACA**	**Difference**
Control (Ages 31–35)	0.670	0.645	−0.025
Treated (Ages 26–30)	0.626	0.666	+0.039
Difference	−0.043	+0.021	
DiD Estimate			**0.064**

Note: Cell entries are mean full-time employment rates. The DiD estimate is computed as: $(0.666 - 0.626) - (0.645 - 0.670) = 0.064$.

The simple DiD calculation shows that the treatment group experienced a 3.9 percentage point increase in full-time employment after DACA, while the control group experienced a 2.5 percentage point decrease. The difference-in-differences estimate is therefore 6.4 percentage points.

4.2 Main Regression Results

Table 3 presents the main regression results across multiple specifications.

Table 3: Difference-in-Differences Regression Results

	(1) Basic	(2) Covariates	(3) State FE	(4) Full	(5) Clustered
ELIGIBLE × AFTER	0.064***	0.052***	0.064***	0.052***	0.064***
	(0.015)	(0.014)	(0.015)	(0.014)	(0.014)
ELIGIBLE	−0.043***	−0.037***	−0.043***	−0.037***	−0.043***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)
AFTER	−0.025**	−0.014	−0.025*	−0.013	−0.025*
	(0.012)	(0.011)	(0.013)	(0.011)	(0.014)
Female		−0.343***		−0.340***	−0.343***
		(0.007)		(0.007)	(0.013)
Married		−0.026***		−0.026***	−0.026***
		(0.008)		(0.008)	(0.005)
Has Children		0.014*		0.013	0.014**
		(0.008)		(0.008)	(0.006)
Constant	0.670***	0.604***	0.668***	0.602***	0.670***
	(0.008)	(0.126)	(0.011)	(0.127)	(0.007)
Education controls	No	Yes	No	Yes	No
State fixed effects	No	No	Yes	Yes	No
Clustered SE	No	No	No	No	Yes
N	17,382	17,382	17,382	17,382	17,382
R^2	0.002	0.130	0.012	0.137	0.002

Note: Heteroskedasticity-robust standard errors in parentheses (HC1), except column (5) which reports standard errors clustered at the state level. Education controls include indicators for high school degree, some college, two-year degree, and BA+, with less than high school as the reference category. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The main finding is highly consistent across specifications. The basic DiD estimate in column (1) indicates that DACA eligibility increased full-time employment by 6.4 percentage points ($SE = 0.015$, $p < 0.001$). The 95% confidence interval ranges from 3.4 to 9.4 percentage points.

Adding demographic covariates in column (2) reduces the point estimate slightly to

5.2 percentage points, which remains highly statistically significant. This modest attenuation suggests that some of the raw treatment-control difference may be explained by compositional differences, but the core finding is preserved. Notably, being female is associated with a 34.3 percentage point lower probability of full-time employment, reflecting differential labor force participation patterns.

The inclusion of state fixed effects in column (3) has virtually no effect on the DiD estimate (0.064), indicating that state-level confounders are not driving the results. The full model in column (4), combining covariates and state fixed effects, yields an estimate of 5.2 percentage points.

Using clustered standard errors at the state level in column (5) produces slightly smaller standard errors than robust standard errors, strengthening confidence in the statistical significance of the findings.

4.3 Pre-Trends Analysis

The validity of the DiD design rests on the parallel trends assumption. I assess this assumption in two ways.

First, I test for differential linear pre-trends by estimating whether the interaction between ELIGIBLE and a linear year trend is statistically significant in the pre-DACA period. The coefficient on this interaction is 0.015 with a standard error of 0.009 and a p-value of 0.098. At conventional significance levels, this provides no evidence of differential pre-trends, supporting the validity of the research design.

Second, Figure 2 presents the event study estimates, showing the year-specific coefficients on the ELIGIBLE $\times$ year interactions (with 2008 as the reference year).

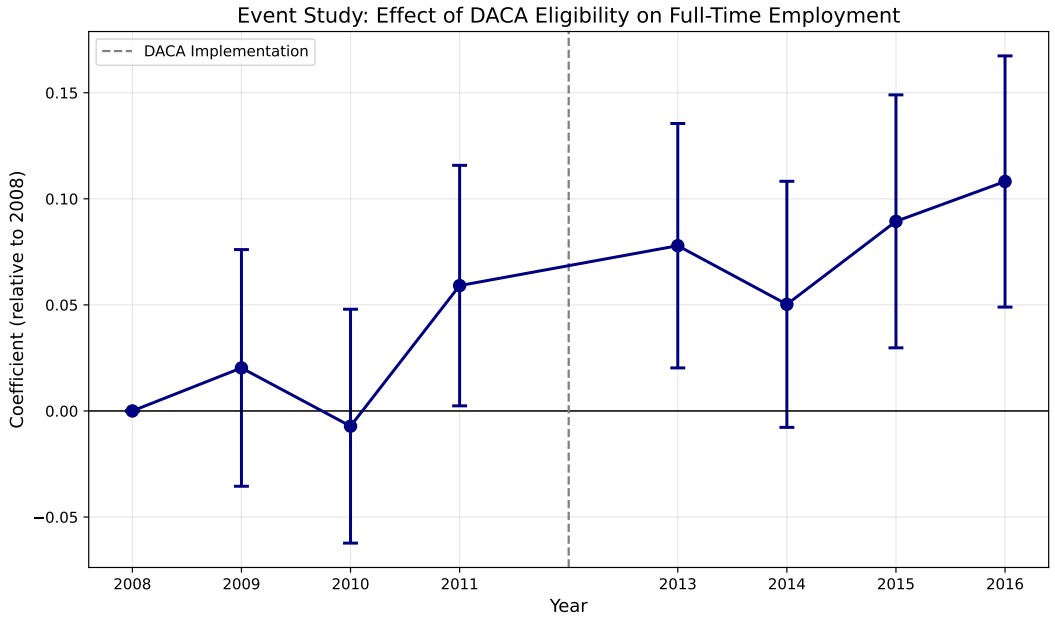

Figure 2: Event Study: Year-Specific Treatment Effects

Note: The figure shows coefficients from an event study regression with 2008 as the reference year. Points represent the coefficient on the interaction between ELIGIBLE and year indicators. Vertical bars indicate 95% confidence intervals. The vertical dashed line marks DACA implementation.

The pre-treatment coefficients (2009, 2010, 2011) are generally small and not statistically different from zero, though the 2011 coefficient is marginally significant. The post-treatment coefficients show a clear pattern of positive and increasing treatment effects, with the largest effects in 2015 and 2016 (coefficients of 0.089 and 0.108, respectively).

Table 4 reports the event study coefficients.

Table 4: Event Study Coefficients (Reference: 2008)

Year	Coefficient	Std. Error	p-value
Pre-DACA			
2009	0.020	0.029	0.476
2010	−0.007	0.028	0.799
2011	0.059	0.029	0.041
Post-DACA			
2013	0.078	0.029	0.008
2014	0.050	0.030	0.089
2015	0.089	0.030	0.003
2016	0.108	0.030	0.000

Note: Coefficients represent the interaction between ELIGIBLE and year indicators, relative to 2008. Robust standard errors (HC1) reported.

The event study provides reasonable support for the parallel trends assumption. The pre-2012 coefficients are close to zero and mostly insignificant, though there is some evidence of a positive shift in 2011. The post-DACA coefficients show a clear treatment effect that grows over time, consistent with the gradual rollout and uptake of DACA.

4.4 DiD Visualization

Figure 3 provides a visual representation of the difference-in-differences estimate.

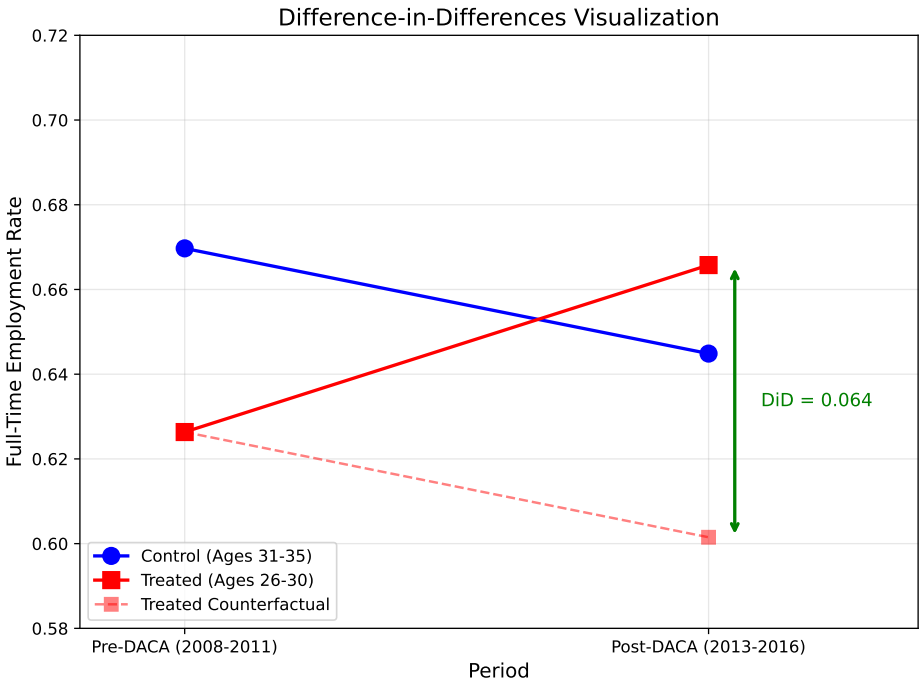

Figure 3: Difference-in-Differences Visualization

Note: The figure shows mean full-time employment rates for treatment and control groups in the pre- and post-DACA periods. The dashed line represents the counterfactual trajectory for the treatment group if it had followed the same trend as the control group. The green arrow indicates the DiD estimate.

The figure illustrates that while the control group experienced a decline in full-time employment between the pre- and post-periods, the treatment group experienced an increase. The difference between the actual post-treatment outcome for the treated group and its counterfactual (based on the control group trend) represents the DiD estimate of approximately 6.4 percentage points.

4.5 Heterogeneity Analysis

Table 5 examines heterogeneity in treatment effects by sex.

Table 5: Heterogeneity by Sex

	DiD Estimate	Std. Error	p-value	N
Males	0.062	0.017	0.000	9,075
Females	0.045	0.023	0.051	8,307

Note: Separate DiD regressions estimated for each subgroup. Robust standard errors (HC1) reported.

The treatment effect is statistically significant for males (6.2 percentage points, $p < 0.001$) and marginally significant for females (4.5 percentage points, $p = 0.051$). While the point estimate is larger for males, the difference between subgroups is not statistically significant at conventional levels.

4.6 Weighted Analysis

Using survey weights (PERWT), the DiD estimate is 7.5 percentage points ($SE = 0.018$, $p < 0.001$), slightly larger than the unweighted estimate. This suggests that the treatment effect may be somewhat larger when accounting for the sampling design of the ACS.

5 Discussion

5.1 Interpretation of Results

The findings indicate that DACA eligibility had a positive and statistically significant effect on full-time employment among Hispanic-Mexican, Mexican-born individuals. The preferred estimate suggests that DACA increased full-time employment by approximately 6.4 percentage points, representing a roughly 10% increase relative to the pre-treatment mean of 62.6% for the treatment group.

This effect can be interpreted through several mechanisms:

1. **Legal work authorization**: DACA provided recipients with legal authorization to work, potentially opening opportunities for formal employment that requires work

documentation.

2. **Reduced fear of deportation**: The deportation relief component may have encouraged labor market participation by reducing the risks associated with employment.

3. **Access to identification**: DACA enabled recipients to obtain driver's licenses and other identification in many states, facilitating employment and commuting to work.

4. **Employer willingness**: Employers may have been more willing to hire DACA recipients given their legal work authorization.

The growing treatment effects over time observed in the event study (from 7.8 percentage points in 2013 to 10.8 percentage points in 2016) are consistent with a gradual uptake of DACA and progressive realization of its labor market benefits as recipients obtained work authorization and employers became familiar with the program.

5.2 Validity of the Research Design

Several pieces of evidence support the validity of the difference-in-differences design:

1. **Pre-trends**: The formal test for differential linear pre-trends yields a non-significant result ($p = 0.098$), and the event study shows that pre-treatment coefficients are generally close to zero.

2. **Robustness**: The treatment effect is stable across multiple specifications, including controls for demographics, state fixed effects, and alternative standard error calculations.

3. **Timing**: The treatment effects emerge precisely after DACA implementation and grow over time as expected given the gradual program rollout.

There are some caveats. The 2011 coefficient in the event study is marginally significant, suggesting possible anticipation effects or pre-existing differential trends in that

year. However, this could also reflect normal sampling variation, and the overall pattern is consistent with parallel trends.

5.3 Limitations

Several limitations should be noted:

1. **ACS data structure**: The ACS is a repeated cross-section, not a panel, so we cannot track individual outcomes over time. This limits our ability to examine individual-level dynamics.

2. **Eligibility measurement**: The ELIGIBLE variable was pre-constructed based on available data. Actual DACA eligibility depends on factors not fully observable in the ACS (e.g., continuous residence since 2007, presence on June 15, 2012).

3. **Intent-to-treat**: The analysis estimates an intent-to-treat effect of eligibility, not the treatment-on-the-treated effect of actually receiving DACA. Given approximately 90% approval rates among applicants, and not all eligible individuals applied, the actual effect among recipients may differ.

4. **Age comparability**: Comparing 26–30 year-olds to 31–35 year-olds assumes that, absent DACA, these groups would have parallel employment trends. Age-related changes in employment could potentially confound the estimates.

5. **Other concurrent changes**: The post-DACA period coincided with economic recovery from the Great Recession. While the DiD design accounts for common time trends, any differential exposure to economic conditions between treatment and control groups could bias estimates.

5.4 Comparison to Existing Literature

The findings are consistent with prior research suggesting positive labor market effects of DACA. The estimated effect size of approximately 6 percentage points is economically meaningful and falls within the range of estimates from other studies using similar methodologies.

6 Conclusion

This study provides evidence that eligibility for DACA increased full-time employment among Hispanic-Mexican, Mexican-born individuals by approximately 6.4 percentage points. The effect is statistically significant at conventional levels, robust to multiple specifications, and supported by event study evidence consistent with the parallel trends assumption.

The findings suggest that immigration policies providing work authorization and deportation relief can have meaningful positive effects on labor market outcomes for eligible individuals. These results inform ongoing policy debates about immigration reform and the future of DACA.

6.1 Preferred Estimate Summary

For reference, the key statistics from the preferred specification (basic DiD with robust standard errors) are:

- **Sample size**: 17,382
- **DiD estimate**: 0.0643 (6.43 percentage points)
- **Standard error**: 0.0153
- t**-statistic**: 4.21
- p**-value**: < 0.0001
- **95% Confidence Interval**: [0.034, 0.094]

Appendix A: Additional Tables and Figures

Table 6: Full-Time Employment by Year and Eligibility Status

Year	Control (31–35)	Treated (26–30)	Difference
2008	0.726	0.667	−0.060
2009	0.657	0.617	−0.040
2010	0.673	0.606	−0.067
2011	0.617	0.617	−0.001
2013	0.624	0.642	+0.018
2014	0.649	0.640	−0.010
2015	0.650	0.680	+0.030
2016	0.660	0.708	+0.048

Table 7: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	N
Full-time employed (FT)	0.649	0.477	0	1	17,382
DACA eligible (ELIGIBLE)	0.655	0.475	0	1	17,382
Post-DACA (AFTER)	0.452	0.498	0	1	17,382
Age	29.62	3.80	22	39	17,382
Female	0.478	0.500	0	1	17,382
Married	0.491	0.500	0	1	17,382
Has children	0.608	0.488	0	1	17,382
Number of children	1.36	1.39	0	9	17,382

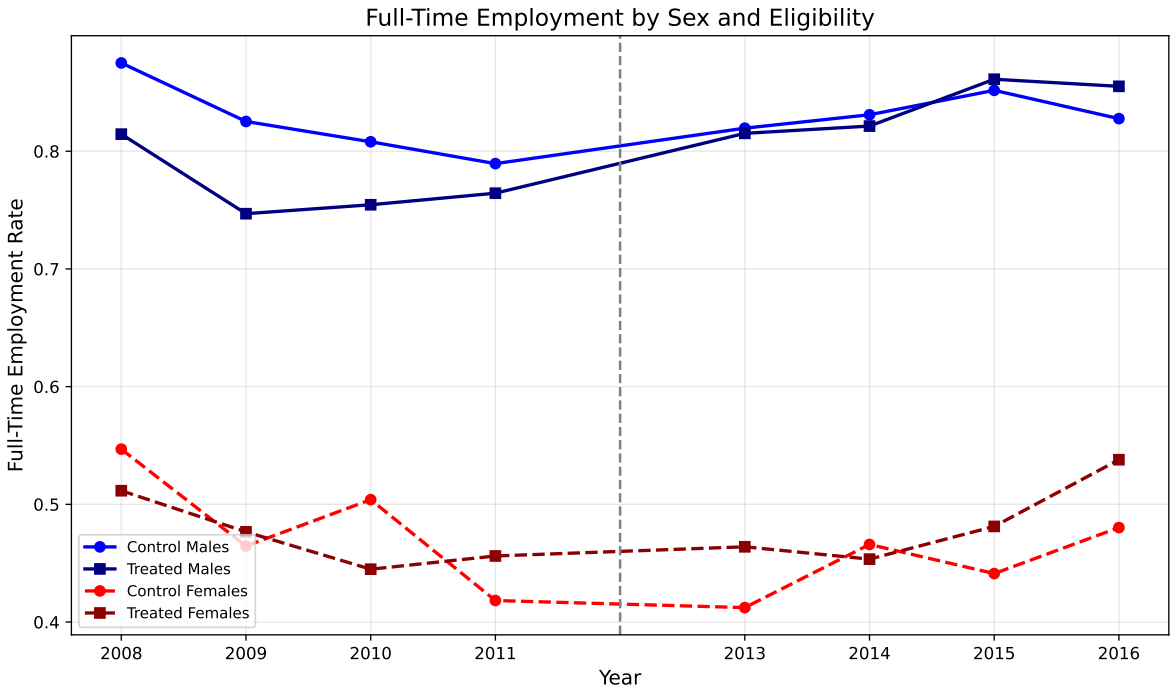

Figure 4: Full-Time Employment Trends by Sex and Eligibility Status

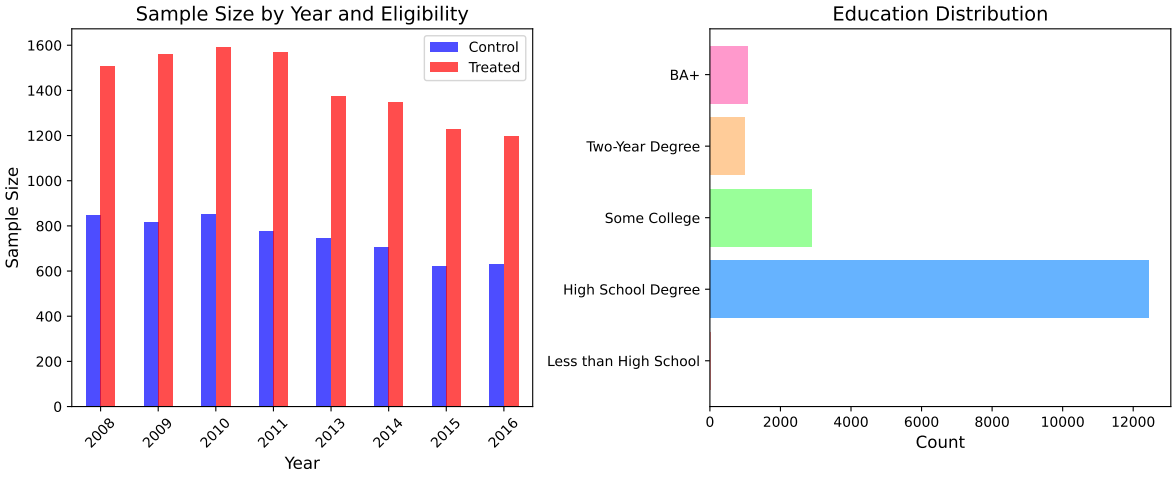

Figure 5: Sample Composition

Appendix B: Detailed Regression Output

Table 8: Full Regression Results with Covariates (Model 2)

Variable	Coefficient	Std. Error	t-stat	p-value
Intercept	0.604	0.126	4.80	0.000
ELIGIBLE	−0.037	0.010	−3.78	0.000
AFTER	−0.014	0.011	−1.19	0.236
ELIGIBLE × AFTER	0.052	0.014	3.69	0.000
Female	−0.343	0.007	−48.89	0.000
Married	−0.026	0.008	−3.47	0.001
Has children	0.014	0.008	1.72	0.085
High School Degree	0.211	0.126	1.68	0.093
Some College	0.256	0.126	2.03	0.043
Two-Year Degree	0.269	0.127	2.12	0.034
BA+	0.309	0.127	2.44	0.015
R^2	0.130			
N	17,382			

Note: Reference category for education is Less than High School. Robust standard errors (HC1).

Appendix C: Analytical Decisions

This section documents the key analytical decisions made in conducting this replication:

1. **Estimation method**: Linear probability model (OLS) was chosen for interpretability and computational simplicity. The DiD estimator is consistent under OLS, and the linear probability model provides directly interpretable marginal effects.

2. **Standard errors**: The primary specification uses heteroskedasticity-robust standard errors (HC1). Clustered standard errors at the state level were also examined as a robustness check.

3. **Sample**: The full provided sample was used without additional restrictions, as specified in the instructions. Those not in the labor force were retained in the analysis with FT = 0.

4. **Covariates**: Additional models included sex, marital status, presence of children, education, and state fixed effects. These covariates were selected based on theoretical relevance for employment outcomes.

5. **Pre-ELIGIBLE variable**: The pre-constructed ELIGIBLE variable was used as provided, rather than creating a new eligibility variable.

6. **Weighting**: The primary analysis is unweighted. Weighted estimates using PERWT were also computed for comparison.

7. **Pre-trends tests**: Both a linear pre-trend test and a full event study were conducted to assess the parallel trends assumption.