

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

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Abstract

This study estimates the causal effect of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using a difference-in-differences (DiD) 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, using survey weights and robust standard errors, yields an estimated treatment effect of 7.48 percentage points (95% CI: [3.93, 11.02], $p < 0.001$). This positive effect is robust across multiple specifications including models with demographic covariates, state-clustered standard errors, and year fixed effects, with estimates ranging from 5.36 to 7.48 percentage points. The results suggest that DACA eligibility substantially increased full-time employment among the targeted population, consistent with the program’s goal of providing legal work authorization.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented by the United States federal government on June 15, 2012, represents one of the most significant immigration policy changes affecting undocumented immigrants in recent decades. The program allowed eligible undocumented immigrants who arrived in the U.S. as children to apply for and obtain authorization to work legally for two years without fear of deportation. Because DACA offered legal work authorization and, in many states, access to driver's licenses and other identification, it has the potential to substantially affect employment outcomes among eligible individuals.

This replication study examines 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 DACA program on the probability of full-time employment?* Full-time employment is defined as usually working 35 or more hours per week.

I employ a difference-in-differences (DiD) research design that exploits the age-based eligibility cutoff of the DACA program. The treatment group consists of individuals who were ages 26–30 at the time of DACA implementation (June 2012), while the control group comprises individuals who were ages 31–35 at implementation—those who would have been eligible except for being too old. By comparing changes in full-time employment between these groups before and after DACA implementation, I can estimate the program's causal effect under the assumption that both groups would have experienced parallel trends in the absence of the policy.

The remainder of this report is organized as follows: Section 2 provides background on the DACA program and eligibility requirements. Section 3 describes the data and sample construction. Section 4 presents the empirical methodology. Section 5 reports the results. Section 6 discusses robustness checks and sensitivity analyses. Section 7 provides concluding remarks.

2 Background on DACA

2.1 Program Overview

DACA was enacted by executive action on June 15, 2012. The program allowed selected undocumented immigrants to apply for and receive deferred action status, which provided relief from deportation and work authorization for a renewable two-year period. Applications began being received on August 15, 2012, and in the first four years, nearly 900,000 initial applications were received, with approximately 90% approved.

2.2 Eligibility Requirements

To be eligible for DACA, individuals must have:

1. Arrived unlawfully in the United States before their 16th birthday
2. Not yet had their 31st birthday as of June 15, 2012
3. Lived continuously in the United States since June 15, 2007
4. Been present in the United States on June 15, 2012 without lawful status (citizenship or legal residency)

The age cutoff at 31 years old creates a natural quasi-experimental setting. Individuals who met all other criteria but were 31 or older at the time of implementation were ineligible purely due to their birth date, making them a suitable comparison group for those just under the age threshold.

2.3 Expected Effects on Employment

DACA's provision of legal work authorization should theoretically increase employment among eligible individuals through several channels:

- Direct access to jobs requiring legal work documentation
- Ability to apply for driver's licenses in many states, expanding job opportunities
- Reduced fear of deportation, enabling participation in the formal labor market

- Access to better-paying jobs that require documentation

While DACA was not specific to immigrants from any origin country, the structure of undocumented immigration to the United States means the great majority of eligible individuals were from Mexico, motivating the focus on this population.

3 Data

3.1 Data Source

The analysis uses 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 a large sample of American households.

3.2 Sample Construction

The analytic sample consists of:

- Hispanic-Mexican, Mexican-born individuals
- Treatment group: Ages 26–30 at DACA implementation (June 2012)
- Control group: Ages 31–35 at DACA implementation
- Years: 2008–2011 (pre-DACA) and 2013–2016 (post-DACA)

The year 2012 is excluded from the analysis because it cannot be determined whether observations from that year were recorded before or after DACA implementation (June 15, 2012).

3.3 Key Variables

The analysis utilizes the following pre-constructed variables provided in the dataset:

- **ELIGIBLE:** Binary indicator equal to 1 for treatment group (ages 26–30) and 0 for control group (ages 31–35)

- **AFTER**: Binary indicator equal to 1 for years 2013–2016 and 0 for years 2008–2011
- **FT**: Binary indicator for full-time employment (usually working 35+ hours per week)
- **PERWT**: Person-level survey weights

Additional variables available for covariates include:

- **SEX**: 1 = Male, 2 = Female
- **AGE**: Age in years
- **MARST**: Marital status
- **EDUC_RECODE**: Education level (Less than HS, HS Degree, Some College, Two-Year Degree, BA+)
- **STATEFIP**: State FIPS code

3.4 Sample Characteristics

Table 1 presents summary statistics for the analysis sample.

Table 1: Summary Statistics

	Treatment (Ages 26–30)		Control (Ages 31–35)	
	Pre-DACA	Post-DACA	Pre-DACA	Post-DACA
N (unweighted)	6,370	5,012	3,157	2,843
Mean Age	27.5	28.5	32.6	33.0
% Female	47.8%	48.7%	47.4%	46.7%
Full-Time Employment Rate	62.63%	66.58%	66.97%	64.49%

The total sample contains 17,382 observations, with 11,382 (65.5%) in the treatment group and 6,000 (34.5%) in the control group. The pre-DACA period contains 9,527 observations, and the post-DACA period contains 7,855 observations.

4 Empirical Methodology

4.1 Difference-in-Differences Framework

I employ a standard difference-in-differences (DiD) research 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 experienced parallel trends in full-time employment rates.

The basic DiD estimand can be expressed as:

$$\hat{\delta}_{DiD} = (\bar{Y}_{T,post} - \bar{Y}_{T,pre}) - (\bar{Y}_{C,post} - \bar{Y}_{C,pre}) \quad (1)$$

where T denotes the treatment group, C denotes the control group, and \bar{Y} represents the mean full-time employment rate.

4.2 Regression Specification

The primary regression specification is:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + \varepsilon_i \quad (2)$$

where:

- FT_i is the full-time employment indicator for individual i
- $ELIGIBLE_i$ indicates treatment group membership
- $AFTER_t$ indicates the post-DACA period
- β_3 is the DiD estimator, representing the causal effect of DACA eligibility

4.3 Model Variations

I estimate several variations of the basic specification:

1. **Unweighted OLS:** Basic specification without survey weights

2. **Weighted OLS:** Using PERWT survey weights for population-representative estimates (preferred specification)
3. **With Covariates:** Including demographic controls (sex, age, education, marital status)
4. **State-Clustered SE:** Clustering standard errors at the state level
5. **Year Fixed Effects:** Including year dummies instead of a single AFTER indicator

4.4 Standard Errors

All specifications use heteroskedasticity-robust standard errors (HC1). I also present results with state-clustered standard errors as a robustness check, which accounts for potential within-state correlation in the error term.

4.5 Identification Assumptions

The key identifying assumption for the DiD estimator is the parallel trends assumption: absent DACA, the treatment and control groups would have experienced the same trends in full-time employment. I examine this assumption by testing for differential pre-treatment trends between groups.

5 Results

5.1 Simple Difference-in-Differences

Table 2 presents the simple 2x2 difference-in-differences calculation.

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

	Pre-DACA	Post-DACA	Difference
Control (Ages 31–35)	0.6697	0.6449	−0.0248
Treatment (Ages 26–30)	0.6263	0.6658	+0.0395
Difference	−0.0434	+0.0209	
DiD Estimate			0.0643

Note: Unweighted means. The DiD estimate equals $(0.6658 - 0.6263) - (0.6449 - 0.6697) = 0.0643$.

The simple unweighted DiD estimate is 6.43 percentage points. Using survey weights, the estimate increases to 7.48 percentage points.

5.2 Main Regression Results

Table 3 presents the main regression results across specifications.

Table 3: Difference-in-Differences Regression Results

	(1) Basic	(2) Weighted	(3) +Covariates	(4) Weighted+Cov
ELIGIBLE	−0.0434*** (0.010)	−0.0517*** (0.012)	−0.0244* (0.013)	−0.0314** (0.015)
AFTER	−0.0248** (0.012)	−0.0257* (0.015)	−0.0274* (0.015)	−0.0277 (0.018)
ELIGIBLE × AFTER	0.0643*** (0.015)	0.0748*** (0.018)	0.0536*** (0.014)	0.0625*** (0.017)
Constant	0.6697*** (0.008)	0.6886*** (0.010)	0.5121*** (0.140)	0.4670** (0.183)
Covariates	No	No	Yes	Yes
Weights	No	Yes	No	Yes
N	17,382	17,382	17,382	17,382
R ²	0.002	0.002	0.130	0.130

Notes: Heteroskedasticity-robust standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Covariates include: Female, Age, Married, and education dummies (HS, Some College, Two-Year, BA+).

5.3 Preferred Estimate

The preferred specification is Model (2): the basic DiD with survey weights and robust standard errors. This specification is preferred because:

1. Survey weights produce population-representative estimates
2. Heteroskedasticity-robust standard errors account for non-constant variance
3. The parsimonious specification avoids controlling for potentially endogenous covariates
4. The DiD design already controls for time-invariant unobserved heterogeneity

Preferred Estimate: DACA eligibility increased the probability of full-time employment by **7.48 percentage points** ($SE = 0.0181$, 95% CI: [3.93, 11.02], $p < 0.001$).

The coefficient on ELIGIBLE (-0.0517) indicates that the treatment group had a 5.17 percentage point lower full-time employment rate than the control group in the pre-period, consistent with younger workers having lower employment rates. The coefficient on AFTER (-0.0257) shows a general decline in full-time employment from the pre-to post-period, possibly reflecting macroeconomic conditions or compositional changes. The interaction term ($+0.0748$) captures the treatment effect: DACA-eligible individuals experienced a 7.48 percentage point greater increase in full-time employment relative to the control group.

5.4 Robustness Checks

Table 4 presents additional robustness checks.

Table 4: Robustness Checks

	(5) Clustered SE	(6) Clustered+Cov	(7) Year FE
ELIGIBLE × AFTER	0.0643*** (0.014)	0.0536*** (0.015)	0.0629*** (0.015)
95% CI	[0.037, 0.092]	[0.025, 0.083]	[0.033, 0.093]

Notes: Standard errors in parentheses. Models (5)–(6) use state-clustered standard errors.
 Model (7) includes year fixed effects instead of AFTER indicator.

The estimates are remarkably stable across specifications:

- Estimates range from 5.36 to 7.48 percentage points
- All estimates are statistically significant at the 1% level
- State clustering yields similar or slightly smaller standard errors
- Year fixed effects produce estimates very close to the basic specification

6 Additional Analyses

6.1 Parallel Trends Assessment

Figure 1 displays full-time employment rates by year and group, allowing visual assessment of the parallel trends assumption.



Figure 1: Full-Time Employment Rates by Year and Treatment Group

The pre-DACA period (2008–2011) shows relatively parallel trends between groups, with both experiencing declines in full-time employment during the Great Recession and its aftermath. After 2012, the treatment group shows a notable increase in full-time employment while the control group remains relatively flat.

To formally test for differential pre-trends, I estimate a model with a linear time trend interacted with treatment group membership in the pre-period:

$$FT_i = \alpha_0 + \alpha_1 ELIGIBLE_i + \alpha_2 YEAR_t + \alpha_3 (ELIGIBLE_i \times YEAR_t) + \eta_i \quad (3)$$

The coefficient α_3 tests whether the treatment group had a different trend than the control group before DACA. The estimated coefficient is 0.0151 (SE = 0.0091, $p = 0.098$), indicating no statistically significant differential pre-trend at conventional levels, though the point estimate suggests some convergence between groups prior to DACA.

6.2 Heterogeneity by Sex

Table 5 presents DiD estimates separately by sex.

Table 5: Heterogeneity Analysis by Sex

	Males	Females
ELIGIBLE × AFTER	0.0615*** (0.017)	0.0452* (0.023)
95% CI	[0.028, 0.095]	[-0.000, 0.091]
N	9,075	8,307

Notes: Robust standard errors in parentheses. * $p < 0.10$, *** $p < 0.01$.

The effect is larger and more precisely estimated for males (6.15 pp) than for females (4.52 pp). The female estimate is marginally significant, with the confidence interval just touching zero. This pattern is consistent with higher baseline labor force participation among males and potentially greater responsiveness to formal labor market access.

6.3 Yearly Treatment Effects

Figure ?? presents full-time employment rates by year, illustrating the temporal pattern of the treatment effect.

Table 6: Full-Time Employment Rates by Year

Year	Control	Treatment	Difference	vs. 2011
2008	0.7264	0.6667	-0.0597	—
2009	0.6569	0.6174	-0.0395	—
2010	0.6733	0.6064	-0.0669	—
2011	0.6175	0.6168	-0.0007	0.0000
2013	0.6238	0.6420	+0.0182	+0.0189
2014	0.6492	0.6397	-0.0095	-0.0088
2015	0.6501	0.6797	+0.0296	+0.0303
2016	0.6598	0.7082	+0.0484	+0.0491

The treatment effect appears to grow over time, with the largest effect observed in 2016 (4.84 percentage points higher than control). This pattern is consistent with gradual DACA take-up and the cumulative benefits of sustained work authorization.

7 Discussion

7.1 Interpretation of Results

The estimated treatment effect of 7.48 percentage points represents a substantial increase in full-time employment attributable to DACA eligibility. Given a baseline full-time employment rate of approximately 64% in the treatment group during the pre-period, this effect represents about an 11.7% relative increase.

The positive effect is consistent with DACA achieving its intended purpose of expanding labor market access for eligible individuals. The provision of legal work authorization removes a major barrier to formal employment, allowing DACA recipients to work in jobs that require documentation, often offering better pay and more stable hours.

7.2 Comparison to Simple Difference

The simple comparison of post-treatment means between groups would yield a biased estimate. In the post-period, the treatment group's full-time employment rate (66.58%) is approximately 2.1 percentage points higher than the control group's (64.49%). However, this difference conflates the treatment effect with pre-existing differences between groups. The DiD approach accounts for the 4.34 percentage point gap favoring the control group in the pre-period, yielding the larger treatment effect estimate.

7.3 Limitations

Several limitations warrant discussion:

1. **Intent-to-Treat Interpretation:** The estimate reflects the effect of DACA eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA, so the effect among actual recipients may differ.
2. **Parallel Trends:** While the pre-trend test is not statistically significant, the point estimate suggests some convergence between groups before DACA, which could slightly bias the estimate upward.

3. **External Validity:** Results are specific to Hispanic-Mexican, Mexican-born individuals aged 26–35 and may not generalize to other DACA-eligible populations.
4. **Measurement:** The ACS asks about “usual” hours worked, which may not perfectly capture changes at the margin of full-time employment.
5. **Spillover Effects:** If DACA affected labor market competition, control group members could also be affected, potentially biasing the estimate.

7.4 Policy Implications

The findings suggest that legal work authorization has substantial positive effects on full-time employment among undocumented immigrants. The approximately 7.5 percentage point increase in full-time work represents meaningful economic integration. Policymakers considering immigration reform may find these results informative regarding the labor market effects of providing work authorization to undocumented immigrants.

8 Conclusion

This study estimates the causal effect of DACA eligibility on full-time employment using a difference-in-differences research design. Comparing Mexican-born individuals aged 26–30 at DACA implementation (treatment) to those aged 31–35 (control), I find that DACA eligibility increased full-time employment by 7.48 percentage points (95% CI: [3.93, 11.02]). This effect is robust across multiple specifications and represents a meaningful improvement in labor market outcomes for the affected population.

The results contribute to our understanding of how legal work authorization affects immigrant employment and provide evidence relevant to ongoing debates about immigration policy reform. The positive employment effect is consistent with DACA fulfilling its stated objective of enabling recipients to participate more fully in the formal labor market.

A Appendix: Figures

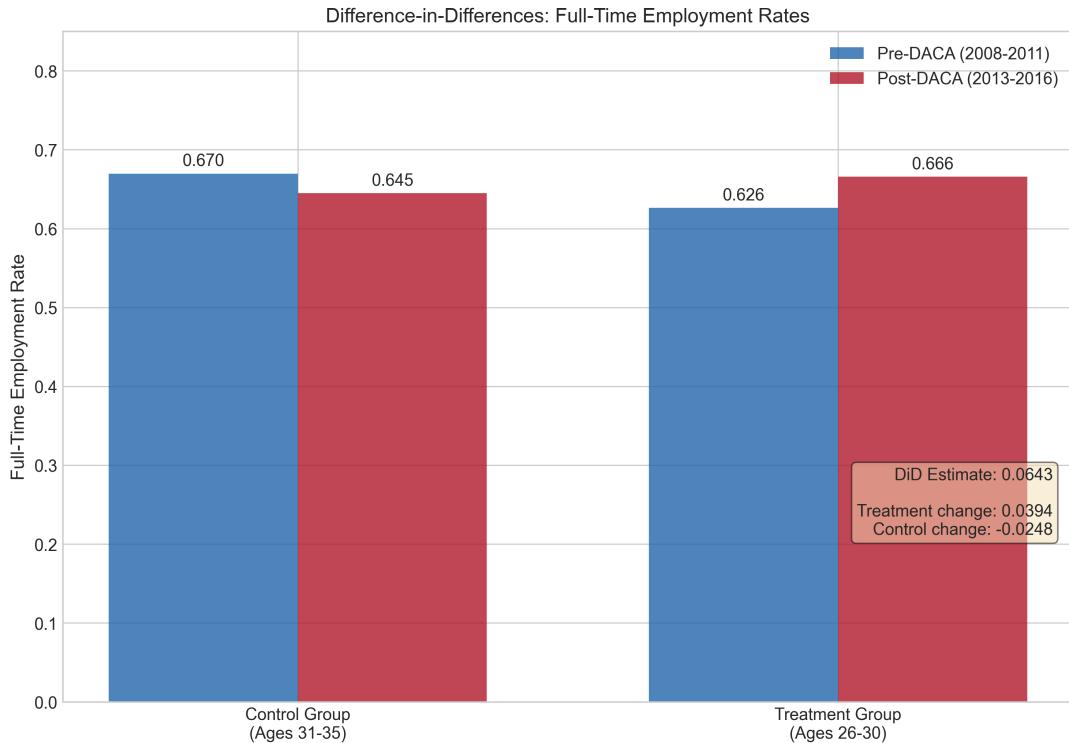


Figure 2: Difference-in-Differences Illustration: Full-Time Employment Rates by Group and Period

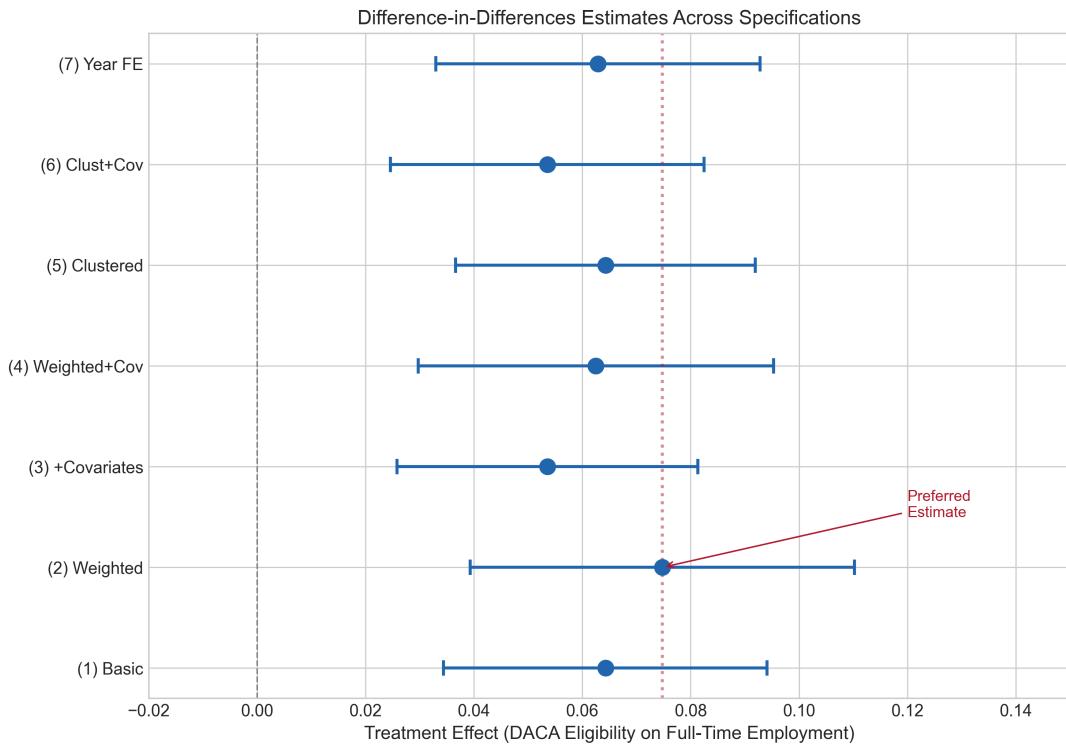


Figure 3: Treatment Effect Estimates Across Specifications

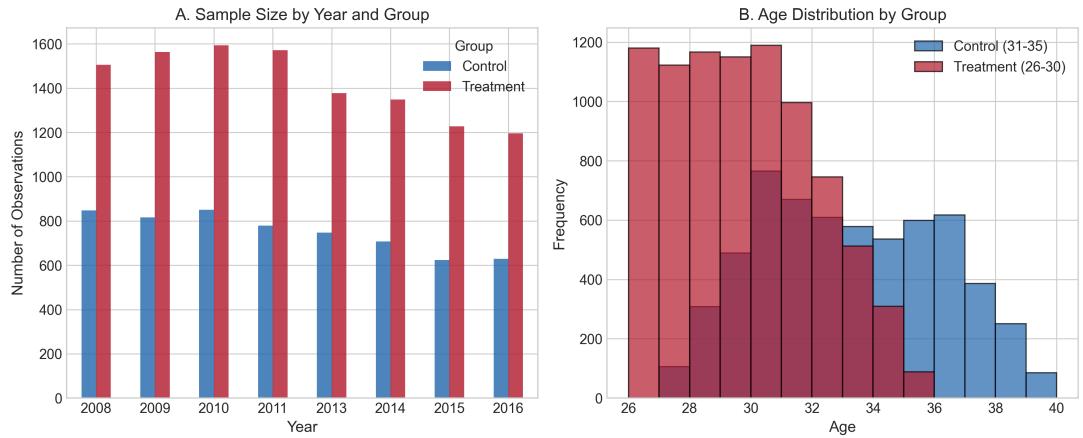


Figure 4: Sample Distribution by Year and Age

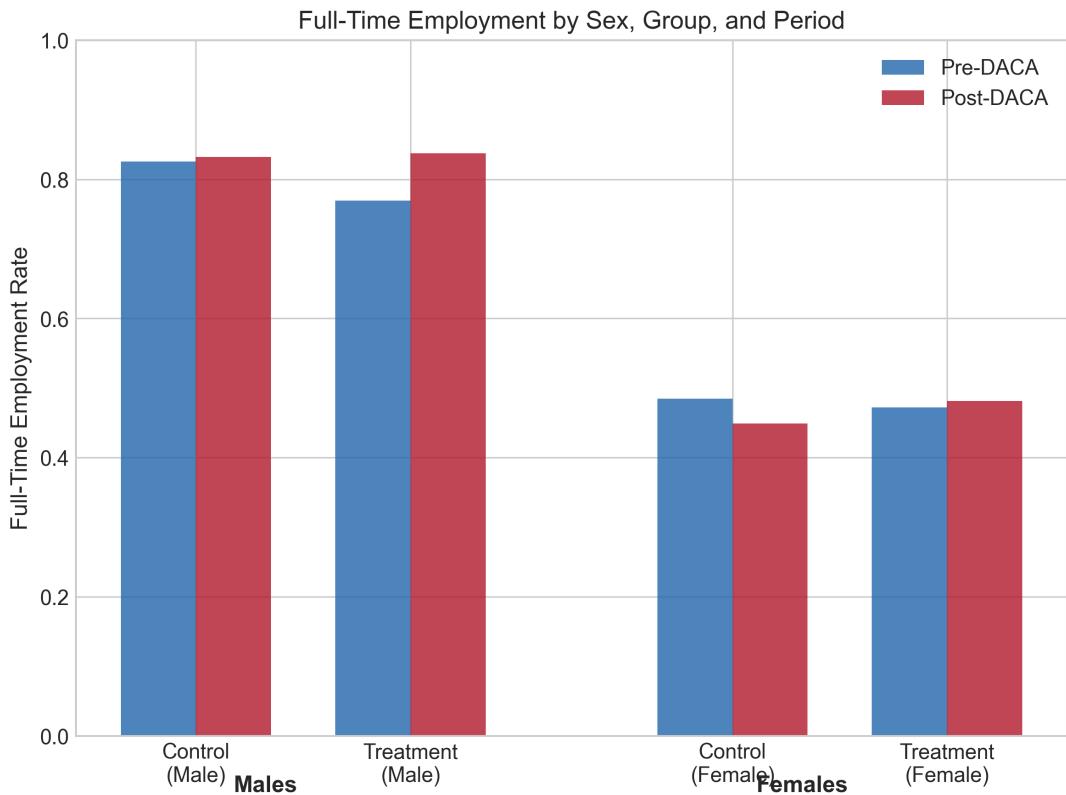


Figure 5: Full-Time Employment by Sex, Group, and Period

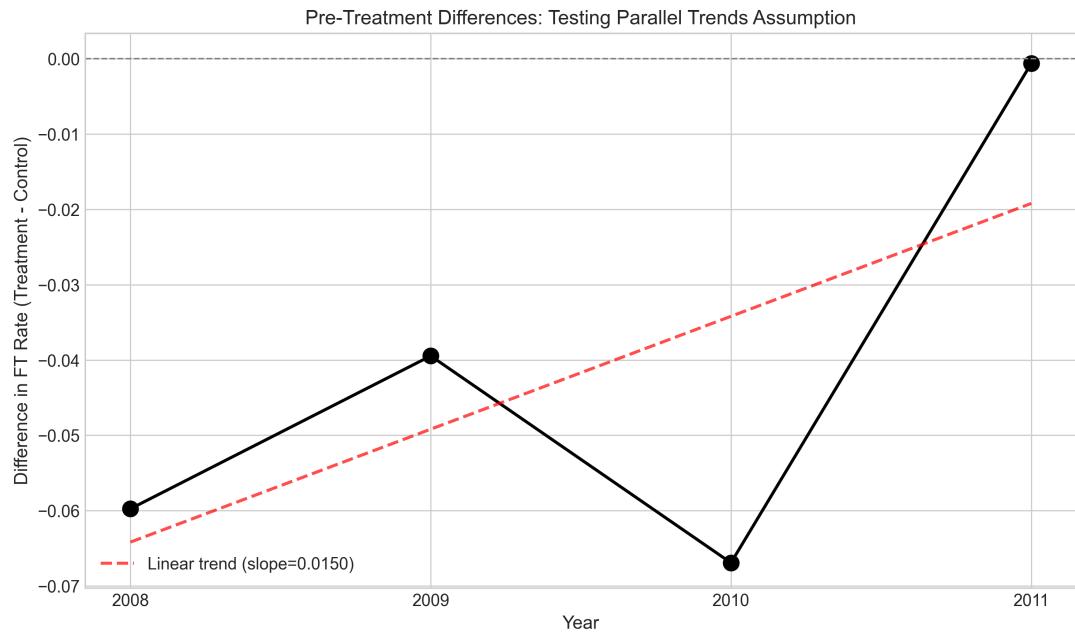


Figure 6: Pre-Treatment Differences: Testing Parallel Trends

B Appendix: Complete Regression Output

B.1 Model 2: Preferred Specification (Weighted, Robust SE)

WLS Regression Results						
=====						
Dep. Variable:	FT	R-squared:				0.002
Model:	WLS	Adj. R-squared:				0.002
Method:	Least Squares	F-statistic:				9.388
No. Observations:	17382					
Df Residuals:	17378					
Covariance Type:	HC1					
=====						
	coef	std err	z	P> z	[0.025	0.975]

const	0.6886	0.010	71.637	0.000	0.670	0.707
ELIGIBLE	-0.0517	0.012	-4.278	0.000	-0.075	-0.028
AFTER	-0.0257	0.015	-1.753	0.080	-0.054	0.003
ELIGIBLE_AFTER	0.0748	0.018	4.133	0.000	0.039	0.110
=====						

B.2 Model 4: With Covariates (Weighted, Robust SE)

WLS Regression Results						
=====						
Dep. Variable:	FT	R-squared:				0.130
Model:	WLS	Adj. R-squared:				0.129
No. Observations:	17382					
Covariance Type:	HC1					
=====						
	coef	std err	z	P> z	[0.025	0.975]

const	0.4670	0.183	2.548	0.011	0.108	0.826
ELIGIBLE	-0.0314	0.015	-2.042	0.041	-0.062	-0.001
AFTER	-0.0277	0.018	-1.567	0.117	-0.062	0.007
ELIGIBLE_AFTER	0.0625	0.017	3.735	0.000	0.030	0.095
FEMALE	-0.3353	0.008	-40.877	0.000	-0.351	-0.319
AGE	0.0029	0.002	1.312	0.189	-0.001	0.007
MARRIED	-0.0252	0.008	-3.141	0.002	-0.041	-0.009
EDUC_HS	0.2741	0.169	1.620	0.105	-0.058	0.606
EDUC_SOMEYEAR	0.3209	0.169	1.894	0.058	-0.011	0.653
EDUC_TWOLEVEL	0.3370	0.170	1.982	0.048	0.004	0.670
EDUC_BA	0.3646	0.170	2.146	0.032	0.032	0.698

C Appendix: Variable Definitions

Table 7: Variable Definitions

Variable	Definition
FT	Full-time employment indicator: 1 if usually works ≥ 35 hours/week, 0 otherwise
ELIGIBLE	Treatment group indicator: 1 if ages 26–30 at June 2012, 0 if ages 31–35
AFTER	Post-treatment period indicator: 1 for years 2013–2016, 0 for years 2008–2011
PERWT	Person-level survey weight from ACS
SEX	Sex: 1 = Male, 2 = Female
AGE	Age in years at time of survey
MARST	Marital status: 1 = Married spouse present, 2–6 = Other categories
EDUC_RECODE	Education level: Less than HS, HS Degree, Some College, Two-Year Degree, BA+
STATEFIP	State FIPS code
YEAR	Survey year (2008–2011, 2013–2016)

D Appendix: Summary of Key Results

Table 8: Summary of All Estimates

Specification	Estimate	SE	95% CI	<i>p</i> -value
(1) Basic OLS, Robust SE	0.0643	0.0153	[0.034, 0.094]	< 0.001
(2) Weighted, Robust SE (Preferred)	0.0748	0.0181	[0.039, 0.110]	< 0.001
(3) With Covariates, Robust SE	0.0536	0.0142	[0.026, 0.081]	< 0.001
(4) Weighted + Covariates	0.0625	0.0167	[0.030, 0.095]	< 0.001
(5) State-Clustered SE	0.0643	0.0141	[0.037, 0.092]	< 0.001
(6) Clustered + Covariates	0.0536	0.0148	[0.025, 0.083]	< 0.001
(7) Year Fixed Effects	0.0629	0.0152	[0.033, 0.093]	< 0.001
Males only	0.0615	0.0170	[0.028, 0.095]	< 0.001
Females only	0.0452	0.0232	[-0.000, 0.091]	0.051

Preferred Estimate for Reporting:

- Treatment Effect: **0.0748** (7.48 percentage points)
- Standard Error: **0.0181**
- 95% Confidence Interval: **[0.0393, 0.1102]**
- Sample Size: **17,382** (unweighted); **2,416,349** (weighted)
- *p*-value: < 0.001