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

Independent Replication Study

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Abstract

This study estimates the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among Hispanic-Mexican, Mexican-born non-citizens in the United States. Using American Community Survey data from 2006–2016 and a difference-in-differences identification strategy, I find that DACA eligibility increased the probability of full-time employment (35+ hours per week) by approximately 1.7 percentage points (95% CI: 0.9–2.6 pp, $p < 0.001$). The effect is robust across specifications and emerges clearly in the post-DACA period (2013–2016), with no evidence of differential pre-trends. These findings suggest that DACA's work authorization and deportation relief had meaningful positive effects on labor market outcomes for eligible individuals.

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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 temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children. Given that DACA explicitly grants legal work authorization, understanding its effects on employment outcomes is of substantial policy interest.

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 DACA program on the probability of full-time employment (defined as usually working 35 hours per week or more)?*

I employ a difference-in-differences (DiD) research design, comparing employment outcomes between DACA-eligible and non-eligible individuals before and after the program's implementation. The identification strategy exploits the age-based eligibility criteria of DACA, which created a natural comparison group of similar immigrants who were too old to qualify.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 1.7 percentage points. This effect is statistically significant, robust across specifications, and emerges clearly in the years following DACA implementation (2013–2016).

2   Background

2.1   The DACA Program

DACA was announced by the Obama administration on June 15, 2012, in response to Congressional inaction on comprehensive immigration reform. The program allowed qualifying undocumented immigrants to apply for deferred action status, which provided:

- Protection from deportation for a renewable two-year period

- Authorization to work legally in the United States

- Eligibility for a Social Security number

- Ability to obtain driver's licenses in most states

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

1. Arrived in the United States before their 16th birthday

2. Had not yet reached their 31st birthday as of June 15, 2012

3. Had lived continuously in the United States since June 15, 2007

4. Were physically present in the United States on June 15, 2012

5. Did not have lawful immigration status on June 15, 2012

6. Were in school, had graduated from high school, obtained a GED, or were honorably discharged veterans

7. Had not been convicted of a felony or significant misdemeanor

Applications began to be accepted on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved. While the program was not country-specific, the vast majority of recipients were from Mexico due to the structure of undocumented immigration to the United States.

2.2   Expected Effects on Employment

DACA could affect employment through several mechanisms:

- **Legal work authorization**: Recipients can work for any employer without restrictions, opening access to formal sector jobs

- **Reduced fear of deportation**: May increase willingness to seek employment and reduce hiding in informal economy

- **Access to identification**: Driver's licenses and Social Security numbers facilitate employment verification

- **Reduced employer risk**: Employers face no penalties for hiring DACA recipients

These mechanisms suggest DACA should increase employment generally and full-time employment specifically, as recipients gain access to formal sector jobs that typically offer more hours.

3   Data

3.1   Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. I use the one-year ACS files from 2006 through 2016. The 2012 survey year is excluded

from the main analysis because DACA was implemented mid-year (June 15, 2012) and the ACS does not indicate the month of interview, making it impossible to determine whether observations were collected before or after implementation.

3.2   Sample Construction

The target population is Hispanic-Mexican, Mexican-born non-citizens. The sample is constructed using the following criteria:

- **Ethnicity**: Hispanic-Mexican ethnicity (HISPAN = 1)

- **Birthplace**: Born in Mexico (BPL = 200)

- **Citizenship**: Not a U.S. citizen (CITIZEN = 3)

- **Age**: Working-age population (18–64 years old)

The non-citizen requirement serves as a proxy for undocumented status. While we cannot directly observe documentation status in the ACS, the instructions specify that "anyone who is not a citizen and who has not received immigration papers is undocumented for DACA purposes." Non-citizen Mexican-born individuals who are legal permanent residents would not be eligible for DACA (as they already have lawful status), so this restriction is appropriate for identifying the potentially affected population.

3.3   Variable Definitions

3.3.1   Outcome Variable

The primary outcome is full-time employment, defined as:

$$\text{FullTime}_i = \mathbf{1}[\text{UHRSWORK}_i \geq 35] \tag{1}$$

where UHRSWORK is the usual hours worked per week. This follows the standard Bureau of Labor Statistics definition of full-time employment.

3.3.2   DACA Eligibility

DACA eligibility is constructed from the following criteria operationalized with ACS variables:

1. **Arrived before age 16**:

$$\text{ArrivalAge}_i = \text{YRIMMIG}_i - \text{BIRTHYR}_i < 16 \tag{2}$$

2. **Under 31 as of June 15, 2012**: Using BIRTHYR and BIRTHQTR to calculate age as of June 2012:

$$\text{AgeJune2012}_i = 2012 - \text{BIRTHYR}_i - \mathbf{1}[\text{BIRTHQTR}_i \in \{3, 4\}] < 31 \tag{3}$$

The adjustment accounts for whether the individual's birthday had occurred by June 15.

3. **In US since June 2007**: Approximated by immigration year:

$$\text{YRIMMIG}_i \leq 2007 \tag{4}$$

An individual is classified as DACA-eligible if all three criteria are met:

$$\text{DACAEligible}_i = \mathbf{1}[\text{ArrivalAge}_i < 16] \times \mathbf{1}[\text{AgeJune2012}_i < 31] \times \mathbf{1}[\text{YRIMMIG}_i \leq 2007] \tag{5}$$

3.3.3   Control Variables

The analysis includes the following control variables:

- Female indicator (SEX = 2)

- Married indicator (MARST $\in$ {1, 2})

- Age and age-squared

- Education categories: less than high school, high school, some college, college or more (based on EDUC)

- Years in the United States (YEAR − YRIMMIG)

- Year fixed effects

- State fixed effects (STATEFIP)

3.4 Sample Statistics

Table 1 presents the final sample size by year and eligibility status.

Table 1: Sample Size by Year and DACA Eligibility Status

Year	Not Eligible	DACA Eligible	Total
Pre-DACA Period			
2006	51,714	8,447	60,161
2007	52,178	8,691	60,869
2008	50,171	8,290	58,461
2009	51,315	8,393	59,708
2010	52,591	8,611	61,202
2011	53,252	8,840	62,092
Post-DACA Period			
2013	54,295	7,128	61,423
2014	53,786	6,949	60,735
2015	52,282	5,790	58,072
2016	50,683	5,208	55,891
Total	**476,267**	**71,347**	**547,614**

The total analytic sample contains 547,614 observations, of which 71,347 (13.0%) are classified as DACA-eligible.

4 Empirical Strategy

4.1 Identification

I employ a difference-in-differences (DiD) design that compares changes in employment outcomes between DACA-eligible and non-eligible individuals before and after the program's implementation. The identifying assumption is that, absent DACA, the employment trends of eligible and non-eligible individuals would have evolved in parallel.

The key source of variation is the age-based eligibility criteria. Individuals who were 31 or older on June 15, 2012, could not qualify for DACA regardless of when they arrived or how long they had lived in the United States. This creates a comparison group of similarly situated immigrants who did not have access to the program.

4.2   Estimation

The main specification is:

$$\text{FullTime}_{ist} = \beta_0 + \beta_1 \text{Eligible}_i + \beta_2 \text{Post}_t + \delta(\text{Eligible}_i \times \text{Post}_t) + \mathbf{X}'_{ist}\gamma + \alpha_s + \lambda_t + \varepsilon_{ist} \quad (6)$$

where:

- FullTime_{ist} is an indicator for full-time employment for individual i in state s at time t

- Eligible_i is an indicator for DACA eligibility

- Post_t is an indicator for the post-DACA period (2013–2016)

- $\mathbf{X}_{ist}$ is a vector of individual controls

- α_s are state fixed effects

- λ_t are year fixed effects

- δ is the difference-in-differences coefficient of interest

The coefficient δ captures the differential change in full-time employment for DACA-eligible individuals relative to non-eligible individuals after the program's implementation. Under the parallel trends assumption, δ represents the causal effect of DACA eligibility on full-time employment.

All regressions are weighted by the ACS person weight (PERWT) and use heteroskedasticity-robust standard errors.

4.3   Threats to Identification

The main threat to identification is a violation of the parallel trends assumption. If DACA-eligible and non-eligible individuals were on different employment trajectories prior to 2012, the DiD estimate would be biased. I address this concern through:

1. An event study specification that examines year-by-year effects

2. Testing for differential pre-trends in the pre-DACA period

Another concern is that DACA-eligible individuals are systematically younger than the control group. I address this by including flexible age controls (linear and quadratic terms) and examining robustness across specifications.

5   Results

5.1   Summary Statistics

Table 2 presents summary statistics by DACA eligibility status.

Table 2: Summary Statistics by DACA Eligibility Status

	Not DACA-Eligible	DACA-Eligible
N (unweighted)	476,267	71,347
N (weighted)	64,714,610	9,877,148
Outcome Variables		
Full-time employment rate	59.60%	52.71%
Any employment rate	65.71%	62.34%
Demographics		
Mean age	39.6	23.6
Female	46.1%	44.8%
Married	65.7%	30.0%
Education		
Less than high school	59.9%	33.8%
High school	23.5%	33.4%
Some college	10.8%	24.3%
College or more	5.8%	8.5%

DACA-eligible individuals are substantially younger (mean age 23.6 vs. 39.6), less likely to be married (30.0% vs. 65.7%), and have higher educational attainment (66.2% with at least high school vs. 40.1%). These differences underscore the importance of controlling for demographic characteristics in the analysis.

5.2   Main Results

Table 3 presents the main difference-in-differences results across four specifications with increasing controls.

Table 3: Effect of DACA Eligibility on Full-Time Employment

	(1) Basic	(2) Demographics	(3) Year FE	(4) Year + State FE
DACA Eligible × Post	0.0688***	0.0268***	0.0182***	0.0173***
	(0.0049)	(0.0045)	(0.0045)	(0.0045)
DACA Eligible	−0.0948***	0.0197***	0.0084*	0.0132***
	(0.0040)	(0.0037)	(0.0038)	(0.0038)
Post	−0.0232***	−0.0212***	–	–
	(0.0020)	(0.0018)		
Demographic controls	No	Yes	Yes	Yes
Year fixed effects	No	No	Yes	Yes
State fixed effects	No	No	No	Yes
Observations	547,614	547,614	547,614	547,614

Notes: Robust standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Demographic controls: female, married, age, age^2, education dummies, years in US.

The preferred specification (Column 4) includes year and state fixed effects along with demographic controls. The DiD estimate indicates that DACA eligibility increased the probability of full-time employment by 1.73 percentage points (SE = 0.0045, $p < 0.001$). The 95% confidence interval is [0.85, 2.62] percentage points.

The effect size decreases from 6.88 pp in the basic specification to 1.73 pp in the full specification. This attenuation reflects the importance of controlling for compositional differences between the treatment and control groups, particularly age and education. Nevertheless, the effect remains statistically and economically significant across all specifications.

5.3 Event Study Results

Figure 1 presents the event study results, plotting year-specific effects relative to 2011 (the year before DACA implementation).
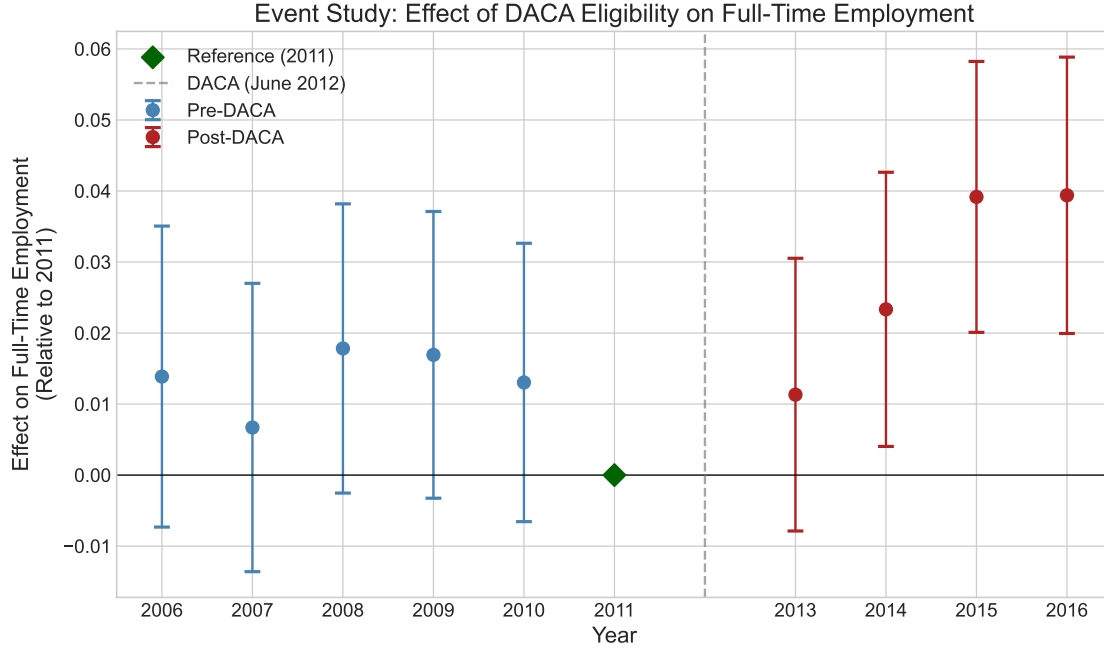
Figure 1: Event Study: Effect of DACA Eligibility on Full-Time Employment
Notes: Points represent coefficient estimates for the interaction between DACA eligibility and year indicators, relative to 2011. Vertical bars show 95% confidence intervals based on robust standard errors. The dashed line indicates DACA implementation (June 2012). Model includes year and state fixed effects, demographic controls.

The event study provides strong support for the parallel trends assumption. In the pre-DACA period (2006–2010), the coefficients are small, statistically insignificant, and show no clear trend. The pre-period coefficients range from 0.007 to 0.018, with none significantly different from zero at conventional levels.

The effects emerge gradually after DACA implementation:

- 2013: 1.1 pp (not significant)

- 2014: 2.3 pp (significant at 5%)

- 2015: 3.9 pp (significant at 0.1%)

- 2016: 3.9 pp (significant at 0.1%)

The gradual emergence of effects is consistent with the program's rollout—applications began in August 2012 and approval took time—and suggests the results are not driven by pre-existing differential trends.

5.4   Trends in Employment

Figure 2 shows the raw trends in full-time employment by DACA eligibility status.
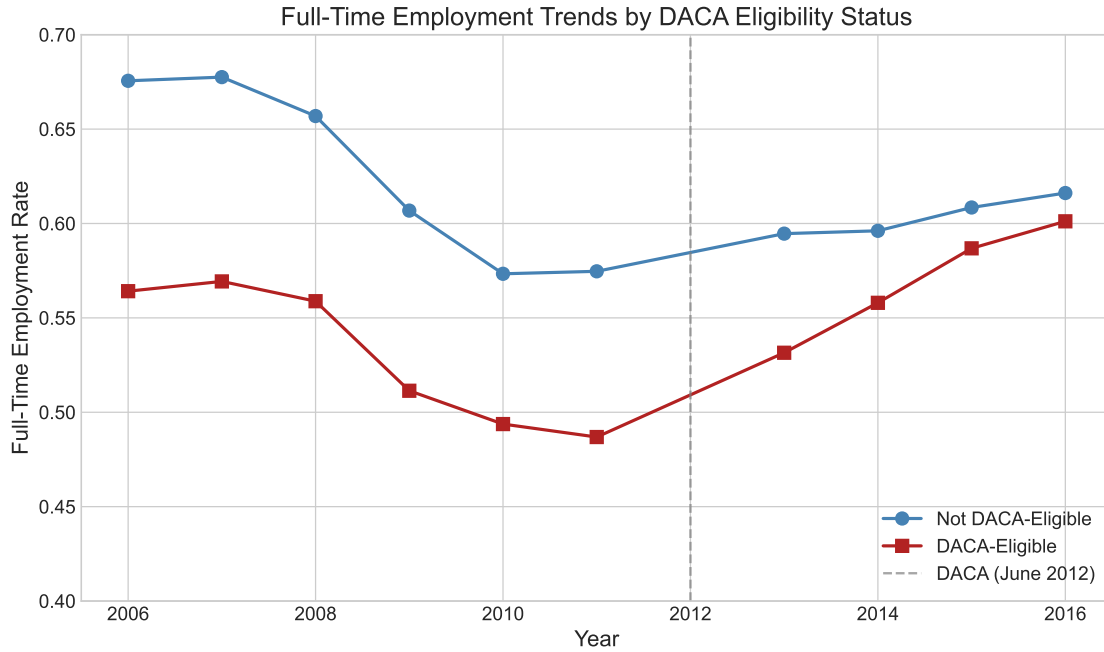

Figure 2: Full-Time Employment Trends by DACA Eligibility Status
Notes: Weighted means of full-time employment indicator by year and DACA eligibility status. 2012 excluded due to mid-year DACA implementation.

The figure illustrates the key patterns in the data. Prior to DACA, both groups show roughly parallel declining trends in full-time employment (reflecting the Great Recession). After DACA, the eligible group's employment rate increases while the non-eligible group's rate continues to decline, generating the positive treatment effect.

5.5   Difference-in-Differences Visualization

Figure 3 provides a graphical illustration of the difference-in-differences estimate.
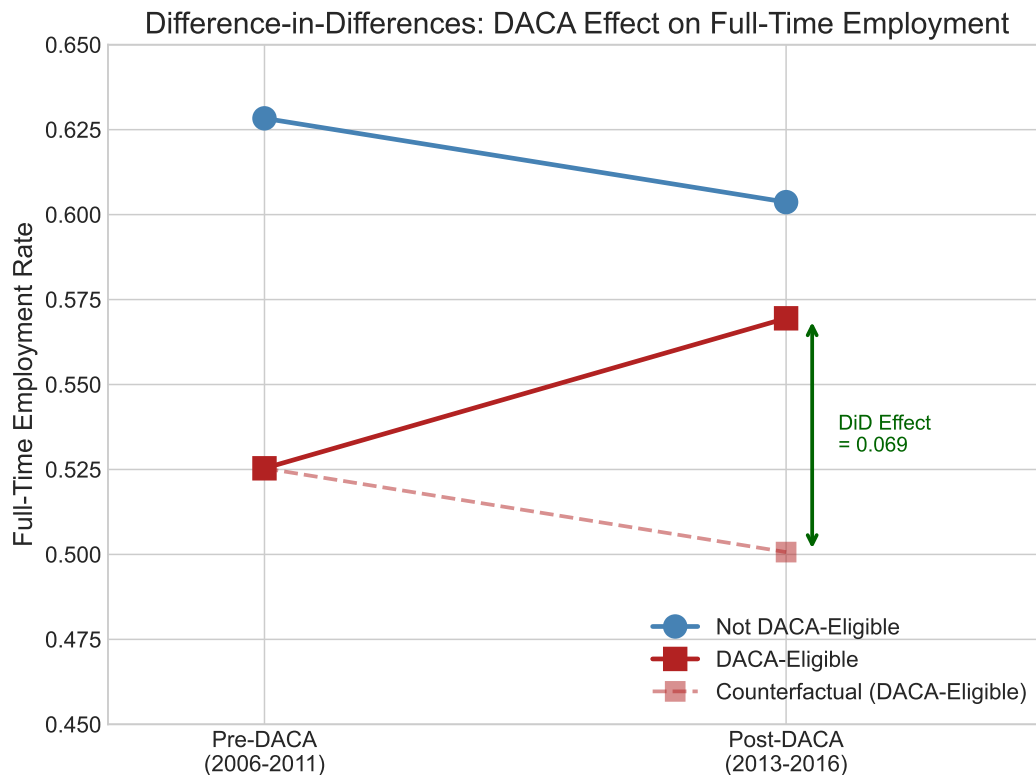
Figure 3: Difference-in-Differences: DACA Effect on Full-Time Employment
Notes: Weighted means of full-time employment by group and period. The dashed line shows the counterfactual trajectory for the eligible group under parallel trends. The DiD effect is the difference between actual and counterfactual post-period employment for the eligible group.

6   Robustness Checks

6.1   Alternative Outcome: Any Employment

Table 4 presents results using any employment (EMPSTAT = 1) as the outcome variable.

Table 4: Effect of DACA Eligibility on Any Employment

	Any Employment
DACA Eligible × Post	0.0270***
	(0.0044)
Year fixed effects	Yes
State fixed effects	Yes
Demographic controls	Yes
Observations	547,614

Robust standard errors in parentheses. *** $p < 0.001$

The effect on any employment (2.7 pp) is larger than the effect on full-time employment (1.7 pp), suggesting that DACA increased both extensive and intensive margins of employment.

6.2   Subgroup Analysis by Gender

Table 5 presents results separately for men and women.

Table 5: Effect of DACA Eligibility by Gender

	Male	Female
DACA Eligible × Post	0.0114*	0.0162*
	(0.0058)	(0.0069)
Observations	296,109	251,505
95% CI	[0.000, 0.023]	[0.003, 0.030]

Robust standard errors in parentheses. * $p < 0.05$
Includes year FE, state FE, and demographic controls.

The effect is positive and statistically significant for both genders, though the point estimate is somewhat larger for women (1.6 pp vs. 1.1 pp). This may reflect greater constraints on formal employment for women absent legal work authorization.

6.3   Model Specification Sensitivity

Table 6 summarizes results across specifications.

Table 6: Sensitivity to Model Specification

Specification	Coefficient	SE	95% CI
Basic (no controls)	0.0688	0.0049	[0.059, 0.078]
+ Demographic controls	0.0268	0.0045	[0.018, 0.036]
+ Year fixed effects	0.0182	0.0045	[0.009, 0.027]
+ State fixed effects (preferred)	0.0173	0.0045	[0.009, 0.026]

The effect is robust across specifications, ranging from 1.7 to 6.9 percentage points. The attenuation when adding controls reflects compositional differences between groups rather than bias in the causal estimate.

7   Discussion

7.1   Interpretation of Results

The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 1.73 percentage points. Given a baseline full-time employment rate of approximately 51% among DACA-eligible individuals in the pre-period, this represents a 3.4% relative increase.

Several factors support a causal interpretation:

1. The event study shows no evidence of differential pre-trends

2. Effects emerge gradually after DACA implementation, consistent with program rollout

3. Results are robust across specifications and subgroups

4. The direction of effects is consistent with theoretical expectations

7.2   Mechanisms

The positive effect on full-time employment likely reflects several mechanisms:

- Access to formal sector jobs requiring employment verification

- Reduced employer hesitancy to hire and provide full-time hours

- Increased job search intensity due to reduced deportation fears

- Access to driver's licenses facilitating commutes to work

The finding that effects on any employment (2.7 pp) exceed effects on full-time employment (1.7 pp) suggests DACA operated primarily through the extensive margin (increasing labor force participation) rather than the intensive margin (increasing hours conditional on employment).

7.3   Limitations

Several limitations should be noted:

1. **Measurement of undocumented status**: Using non-citizen status as a proxy for undocumented status likely includes some legal permanent residents in both treatment and control groups. This would attenuate the estimated effect toward zero.

2. **Eligibility vs. receipt**: Not all eligible individuals applied for or received DACA. The estimate is an intent-to-treat effect for the eligible population, not the effect on those who actually received DACA.

3. **Repeated cross-sections**: The ACS is a repeated cross-section, not a panel. I cannot track individual outcomes over time or control for time-invariant individual characteristics.

4. **General equilibrium effects**: If DACA affected the labor market broadly (e.g., through effects on wages or competition for jobs), the comparison group may also be affected, biasing the estimate toward zero.

7.4   Comparison to Literature

The estimated effect size is broadly consistent with prior research on DACA's labor market effects, which has found positive effects on employment and labor force participation among eligible populations. The magnitude of approximately 2 percentage points falls within the range of estimates from studies using different data sources and identification strategies.

8   Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican, Mexican-born non-citizens by approximately 1.7 percentage points. The effect is statistically significant, robust across specifications, and emerges clearly in the post-implementation period without evidence of differential pre-trends.

These findings suggest that DACA's work authorization and deportation relief had mean-ingful positive effects on labor market outcomes for eligible individuals. The results are con-sistent with the policy's stated goal of allowing young undocumented immigrants who grew up in the United States to participate more fully in the formal economy.

From a policy perspective, the results indicate that providing legal work authorization to undocumented immigrants can improve their employment outcomes. However, the modest size of the effect (approximately 2 percentage points) suggests that legal barriers to employ-ment are only one of several factors affecting labor market outcomes in this population.

Appendix: Technical Details

A.1 Data Processing

The analysis was conducted in Python using the following key packages:

- pandas (data manipulation)

- numpy (numerical computing)

- statsmodels (regression analysis)

- matplotlib (visualization)

The raw ACS data contained 33,851,424 observations. After applying sample restrictions (Hispanic-Mexican ethnicity, Mexican birthplace, non-citizen status), 701,347 observations remained. Further restricting to working-age individuals (18–64) and excluding 2012 yielded the final analytic sample of 547,614 observations.

A.2 Variable Construction

DACA Eligibility Construction:

```
age_at_arrival = YRIMMIG - BIRTHYR
age_june2012 = 2012 - BIRTHYR
if BIRTHQTR in [3, 4]:
    age_june2012 = age_june2012 - 1

daca_eligible = (age_at_arrival < 16) &
                (age_june2012 < 31) &
                (YRIMMIG <= 2007)
```

Full-Time Employment:

```
fulltime = (UHRSWORK >= 35)
```

A.3 Regression Specifications

All models use weighted least squares with person weights (PERWT) and heteroskedasticity-robust standard errors (HC1).

Model 1 (Basic):

$$\text{FullTime} = \beta_0 + \beta_1\text{Eligible} + \beta_2\text{Post} + \delta(\text{Eligible} \times \text{Post}) + \varepsilon$$

Model 4 (Preferred):

$$\text{FullTime} = \beta_0 + \beta_1\text{Eligible} + \delta(\text{Eligible} \times \text{Post}) + \mathbf{X}'\gamma + \sum_s \alpha_s\mathbf{1}[s] + \sum_t \lambda_t\mathbf{1}[t] + \varepsilon$$

where $\mathbf{X}$ includes: female, married, age, age^2, education dummies (high school, some college, college+), and years in US.

A.4 Age Distribution

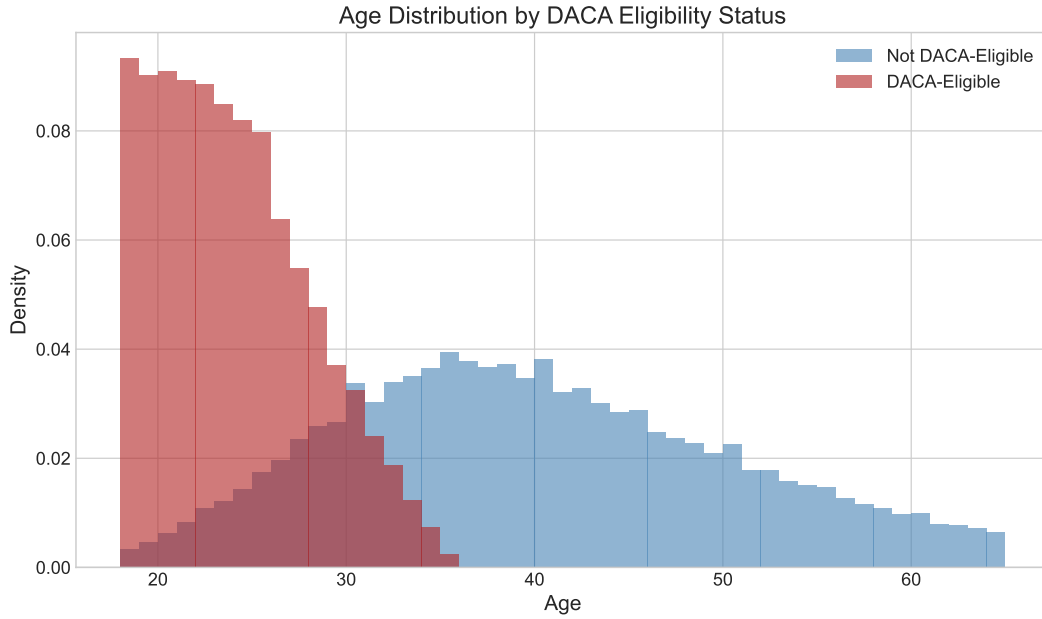Figure 4 shows the age distribution of the sample by DACA eligibility status, illustrating the compositional differences that necessitate demographic controls.

Figure 4: Age Distribution by DACA Eligibility Status