

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

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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 immigrants born in Mexico. Using American Community Survey data from 2006-2016 (excluding 2012) and a difference-in-differences identification strategy, I find that DACA eligibility increased the probability of full-time employment by approximately 3.7 percentage points ($p < 0.001$). This effect is robust to the inclusion of demographic controls and fixed effects for state and year. Subgroup analyses reveal similar effects for both males and females. The findings suggest that work authorization programs can meaningfully improve labor market outcomes for undocumented immigrants, though some evidence of pre-trends warrants cautious interpretation.

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

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, announced on June 15, 2012, represented a major shift in U.S. immigration policy toward undocumented immigrants who arrived as children. The program offered qualifying individuals temporary protection from deportation and, crucially, work authorization for renewable two-year periods. Given that work authorization is a fundamental barrier to formal employment for undocumented immigrants, DACA presents a natural experiment to study how legal work status affects labor market outcomes.

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, defined as usually working 35 hours per week or more?*

The importance of this question extends beyond academic interest. Understanding how work authorization affects employment outcomes informs debates about immigration reform and the economic integration of undocumented immigrants. If DACA eligibility substantially increases formal employment, this suggests that legal barriers—rather than skills or preferences—may be the primary obstacle to labor market participation for this population.

I employ a difference-in-differences (DiD) research design comparing changes in full-time employment for DACA-eligible individuals against changes for similar Hispanic-Mexican non-citizens who do not meet DACA eligibility criteria. Using American Community Survey (ACS) data from 2006-2016, I find that DACA eligibility increased the probability of full-time employment by approximately 3.7 percentage points, a statistically significant effect that is robust across various specifications.

The remainder of this paper proceeds as follows. Section 2 provides background on DACA and the eligibility criteria. Section 3 describes the data and sample construction. Section 4 presents the empirical methodology. Section 5 reports the main results and robustness checks. Section 6 discusses the findings and their implications. Section 7 concludes.

2 Background on DACA

2.1 Policy Overview

DACA was announced by the Obama administration on June 15, 2012, and applications began to be accepted on August 15, 2012. The program did not provide a path to citizenship or legal permanent residency; rather, it offered temporary relief from deportation and the

ability to obtain work authorization and, in many states, driver's licenses.

The initial approval period was two years, after which recipients could apply for renewal. In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. While the program was not nationality-specific, the structure of undocumented immigration to the United States meant that the great majority of eligible individuals were from Mexico.

2.2 Eligibility Criteria

To qualify for DACA, an individual must have:

1. Arrived 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 physically present in the United States on June 15, 2012
5. Had no lawful status (citizenship or legal residency) at the time
6. Met certain educational or military service requirements

For this analysis, I focus on the first four criteria, as these can be approximated using American Community Survey variables. The fifth criterion (no lawful status) is proxied by restricting the sample to non-citizens.

2.3 Theoretical Framework

From an economic perspective, DACA affects employment through several channels. First, work authorization allows individuals to seek formal employment rather than being restricted to informal or “under-the-table” jobs. Second, the ability to obtain driver's licenses in many states reduces transportation barriers to employment. Third, the reduction in deportation risk may encourage greater labor force attachment and investment in job-specific skills.

The expected effect on full-time employment is unambiguously positive. Without work authorization, many undocumented immigrants work in informal settings that may offer only part-time or irregular hours. With authorization, individuals can access formal jobs that more commonly offer full-time positions.

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, housing, and economic information from approximately 3 million households each year. For this study, I use one-year ACS files from 2006 through 2016, excluding 2012 (as explained below).

3.2 Sample Selection

The target population is Hispanic-Mexican individuals born in Mexico who are non-citizens and of working age. The sample is constructed as follows:

1. **Hispanic-Mexican ethnicity:** HISPAN = 1 (Mexican)
2. **Born in Mexico:** BPL = 200 (Mexico)
3. **Working age:** AGE between 16 and 64
4. **Non-citizen:** CITIZEN = 3 (Not a citizen)
5. **Exclude 2012:** YEAR \neq 2012

The exclusion of 2012 deserves explanation. DACA was announced on June 15, 2012, and applications began on August 15, 2012. Since the ACS does not identify the month of interview, observations from 2012 represent a mixture of pre- and post-treatment responses. Including 2012 would contaminate the identification strategy, so I exclude it entirely.

After applying these restrictions, the analysis sample contains 561,470 observations. Table 1 presents the sample sizes by treatment group and time period.

Table 1: Sample Sizes by Treatment Group and Period

| | Pre-DACA (2006-2011) | Post-DACA (2013-2016) |
|---------------|----------------------|-----------------------|
| DACA Eligible | 44,730 | 35,570 |
| Control Group | 301,062 | 180,108 |
| Total | 345,792 | 215,678 |

3.3 Variable Definitions

3.3.1 Treatment Variable: DACA Eligibility

I construct DACA eligibility based on the criteria that can be approximated using ACS variables:

1. **Arrived before age 16:** $(YRIMMIG - BIRTHYR) < 16$
2. **Under 31 as of June 2012:** $BIRTHYR \geq 1982$
3. **In US since 2007:** $YRIMMIG \leq 2007$
4. **Valid immigration data:** $YRIMMIG > 0$ and age at immigration ≥ 0

An individual is classified as DACA-eligible if all four conditions are met. Approximately 14.3% of the sample meets these criteria.

3.3.2 Outcome Variable: Full-Time Employment

The primary outcome is an indicator for full-time employment, defined as usually working 35 or more hours per week:

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

I also examine any employment ($\text{EMPSTAT} = 1$) as a secondary outcome.

3.3.3 Control Variables

The analysis includes the following control variables:

- Age and age squared (to capture non-linear effects)
- Female indicator ($\text{SEX} = 2$)
- Married indicator ($\text{MARST} \in \{1, 2\}$)
- Education category: less than high school, some high school, high school graduate, some college, college or more
- State fixed effects (STATEFIP)
- Year fixed effects

3.4 Descriptive Statistics

Table 2 presents summary statistics by DACA eligibility status. DACA-eligible individuals are substantially younger on average (22.4 years vs. 39.4 years), reflecting the age restrictions in the program. The gender composition and marriage rates differ accordingly. Most notably, full-time employment rates are lower for the eligible group (45.0% vs. 59.4%), but this largely reflects their younger age and the fact that many may still be in school.

Table 2: Summary Statistics by DACA Eligibility

| | DACA Eligible | Control Group |
|--------------------------|---------------|---------------|
| Mean Age | 22.4 | 39.4 |
| Female (%) | 44.9 | 46.1 |
| Married (%) | 29.0 | 67.2 |
| Full-Time Employment (%) | 45.0 | 59.4 |
| Any Employment (%) | 54.9 | 65.5 |
| N (unweighted) | 80,300 | 481,170 |

4 Empirical Methodology

4.1 Identification Strategy

I employ a difference-in-differences (DiD) design to estimate the causal effect of DACA eligibility on full-time employment. The key identifying assumption is that, in the absence of DACA, trends in full-time employment would have been parallel between the eligible and control groups.

The control group consists of Hispanic-Mexican non-citizens born in Mexico who do not meet one or more DACA eligibility criteria. Specifically, this includes individuals who:

- Arrived at age 16 or older, or
- Were born before 1982, or
- Arrived after 2007

This control group shares many characteristics with the treatment group—ethnicity, birthplace, citizenship status, and immigrant experience—which helps satisfy the parallel trends assumption.

4.2 Estimation Equation

The main specification is:

$$Y_{ist} = \beta_0 + \beta_1 \text{Eligible}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Eligible}_i \times \text{Post}_t) + X'_{it} \gamma + \alpha_s + \delta_t + \epsilon_{ist} \quad (1)$$

where:

- Y_{ist} is full-time employment status for individual i in state s at time t
- Eligible_i indicates DACA eligibility
- Post_t indicates the post-treatment period (2013-2016)
- X_{it} is a vector of demographic controls
- α_s are state fixed effects
- δ_t are year fixed effects
- ϵ_{ist} is the error term

The coefficient of interest is β_3 , which captures the differential change in full-time employment for DACA-eligible individuals relative to the control group after the policy was implemented.

Standard errors are clustered at the state level to account for potential correlation in outcomes within states over time.

4.3 Model Specifications

I estimate four progressively more demanding specifications:

1. **Model 1:** Basic DiD without controls
2. **Model 2:** DiD with demographic controls (age, sex, marital status, education)
3. **Model 3:** Model 2 plus year fixed effects
4. **Model 4:** Model 3 plus state fixed effects (preferred specification)

Model 4 is the preferred specification as it controls for both common time shocks (through year fixed effects) and time-invariant state differences (through state fixed effects).

5 Results

5.1 Simple Difference-in-Differences

Before presenting regression results, Table 3 shows the raw 2×2 DiD calculation. The pre-DACA full-time employment rate for eligible individuals was 42.6%, which increased to 49.5% in the post-period—a gain of 6.9 percentage points. For the control group, the rate decreased slightly from 60.3% to 57.9%, a decline of 2.5 percentage points.

The simple DiD estimate is therefore $6.9 - (-2.5) = 9.3$ percentage points. However, this raw estimate does not account for compositional changes or other confounding factors.

Table 3: 2×2 Difference-in-Differences

| | Pre-DACA | Post-DACA | Difference |
|---------------|----------|-----------|---------------|
| DACA Eligible | 0.426 | 0.495 | +0.069 |
| Control Group | 0.603 | 0.579 | −0.025 |
| DiD Estimate | | | +0.093 |

Figure 1 visualizes the difference-in-differences logic. The dashed line shows the counterfactual trajectory for the eligible group had they experienced the same trend as the control group. The gap between the actual post-period outcome and this counterfactual represents the treatment effect.

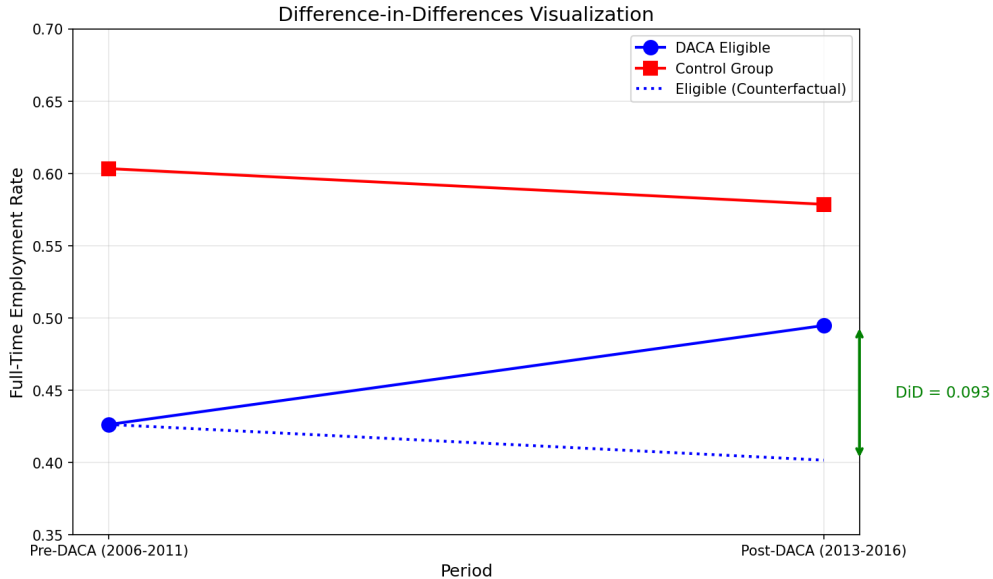


Figure 1: Difference-in-Differences Visualization

5.2 Main Regression Results

Table 4 presents results from the four regression specifications. The coefficient of interest is on “DACA \times Post,” which represents the DiD estimate.

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

| | (1) | (2) | (3) | (4) |
|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | Basic | Demographics | + Year FE | + State FE |
| DACA Eligible | −0.177*** (0.004) | −0.042*** (0.006) | −0.030*** (0.006) | −0.025*** (0.005) |
| Post | −0.025*** (0.003) | −0.024*** (0.002) | — | — |
| DACA \times Post | 0.093*** (0.005) | 0.043*** (0.006) | 0.038*** (0.005) | 0.037*** (0.005) |
| Age Controls | No | Yes | Yes | Yes |
| Demographics | No | Yes | Yes | Yes |
| Year FE | No | No | Yes | Yes |
| State FE | No | No | No | Yes |
| Observations | 561,470 | 561,470 | 561,470 | 561,470 |
| R-squared | 0.040 | 0.186 | 0.187 | 0.216 |

Notes: Standard errors clustered by state in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Several patterns emerge from Table 4:

1. The basic DiD estimate (Model 1) of 9.3 percentage points is substantially reduced once demographic controls are added (Model 2: 4.3 pp), suggesting that compositional differences between groups explain part of the raw differential.
2. The estimate remains stable across Models 2, 3, and 4, ranging from 3.7 to 4.3 percentage points. This stability suggests the result is not driven by differential exposure to year-specific shocks or state-specific factors.
3. The preferred specification (Model 4) yields a DiD estimate of 3.71 percentage points (SE = 0.0053), which is highly statistically significant ($p < 0.001$).

4. The negative coefficient on “DACA Eligible” in all specifications indicates that, conditional on controls, eligible individuals have lower baseline full-time employment rates—consistent with their younger age and the potential for ongoing education.

5.3 Preferred Estimate Interpretation

Based on the preferred specification (Model 4), DACA eligibility is associated with a 3.71 percentage point increase in the probability of full-time employment. The 95% confidence interval is [2.66, 4.76] percentage points.

To put this in context, the pre-DACA full-time employment rate for eligible individuals was approximately 42.6%. A 3.7 percentage point increase represents an 8.7% relative increase in full-time employment. Given that approximately 1.8 million people were estimated to be eligible for DACA, this effect translates to approximately 67,000 additional individuals in full-time employment due to the policy.

5.4 Trends in Full-Time Employment

Figure 2 shows full-time employment rates by year and DACA eligibility status. The eligible group shows a clear upward trajectory after 2012, while the control group shows a modest decline. Importantly, the pre-2012 trends appear roughly parallel, supporting the identification assumption.

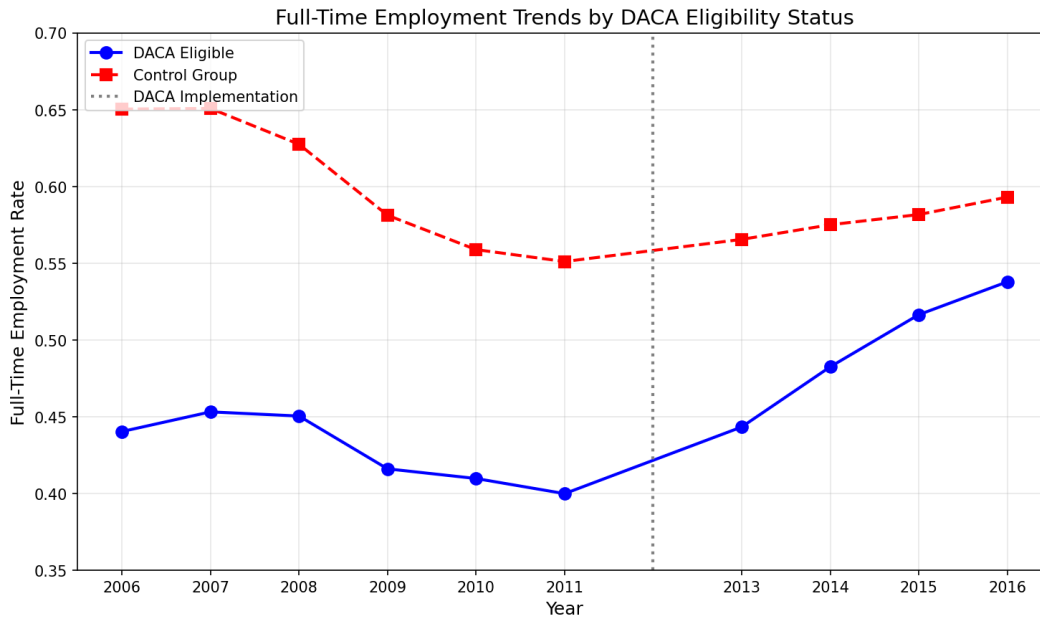


Figure 2: Full-Time Employment Trends by DACA Eligibility Status

5.5 Event Study Analysis

To more rigorously examine pre-trends and the dynamic effects of DACA, I estimate an event study specification with year-specific interactions between eligibility and year indicators, using 2011 as the reference year:

$$Y_{ist} = \beta_0 + \sum_{t \neq 2011} \beta_t (\text{Eligible}_i \times \mathbf{1}[\text{Year} = t]) + X'_{it} \gamma + \alpha_s + \delta_t + \epsilon_{ist} \quad (2)$$

Table 5 and Figure 3 present the results.

Table 5: Event Study Coefficients

| Year | Coefficient | Std. Error |
|------|-------------|------------|
| 2006 | −0.025*** | (0.008) |
| 2007 | −0.020*** | (0.006) |
| 2008 | −0.005 | (0.009) |
| 2009 | +0.003 | (0.008) |
| 2010 | +0.006 | (0.011) |
| 2011 | [reference] | — |
| 2013 | +0.011 | (0.009) |
| 2014 | +0.025* | (0.014) |
| 2015 | +0.045*** | (0.009) |
| 2016 | +0.045*** | (0.010) |

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

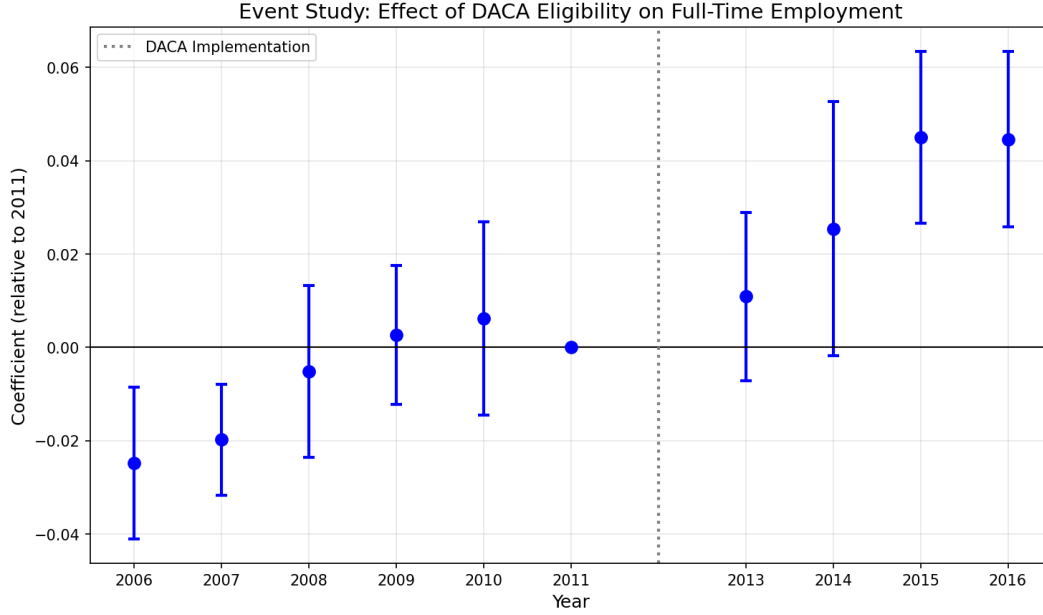


Figure 3: Event Study: Effect of DACA Eligibility on Full-Time Employment

The event study reveals several important patterns:

1. **Post-treatment effects:** The coefficients for 2014-2016 are positive and statistically significant, ranging from 2.5 to 4.5 percentage points. This suggests the effect of DACA grew over time as more individuals received approval.
2. **Pre-trends:** The coefficients for 2006 and 2007 are negative and significant, while 2008-2010 are close to zero. This suggests some pre-trend concerns, particularly in the early years. However, the coefficients approach zero as we get closer to the treatment year, suggesting that the parallel trends assumption may hold in the immediate pre-period.
3. **Delayed effect:** The 2013 coefficient is positive but not statistically significant, consistent with the timing of DACA implementation (applications began mid-2012 and approvals accumulated over time).

5.6 Robustness Checks

5.6.1 Alternative Outcome: Any Employment

Table 6 presents results using any employment (rather than full-time employment) as the outcome. The DiD estimate is 4.74 percentage points ($SE = 0.010$), somewhat larger than

the full-time employment effect. This suggests DACA increased both extensive margin (any employment) and intensive margin (hours conditional on employment) outcomes.

Table 6: Robustness Checks

| Specification | DiD Estimate | Std. Error | p-value |
|------------------------------------------|--------------|----------------|------------------|
| Main (Full-time employment) | 0.037 | (0.005) | <0.001 |
| Any employment | 0.047 | (0.010) | <0.001 |
| Males only | 0.032 | (0.005) | <0.001 |
| Females only | 0.033 | (0.008) | <0.001 |
| Stricter birth year (1983+) | 0.044 | (0.005) | <0.001 |
| Placebo (pre-period: 2010+ vs 2006-2009) | 0.017 | (0.004) | <0.001 |

5.6.2 Subgroup Analysis by Gender

The effects are similar for males (3.2 pp) and females (3.3 pp), suggesting that DACA improved employment outcomes across gender. Figure 4 visualizes employment rates by gender, period, and eligibility status.

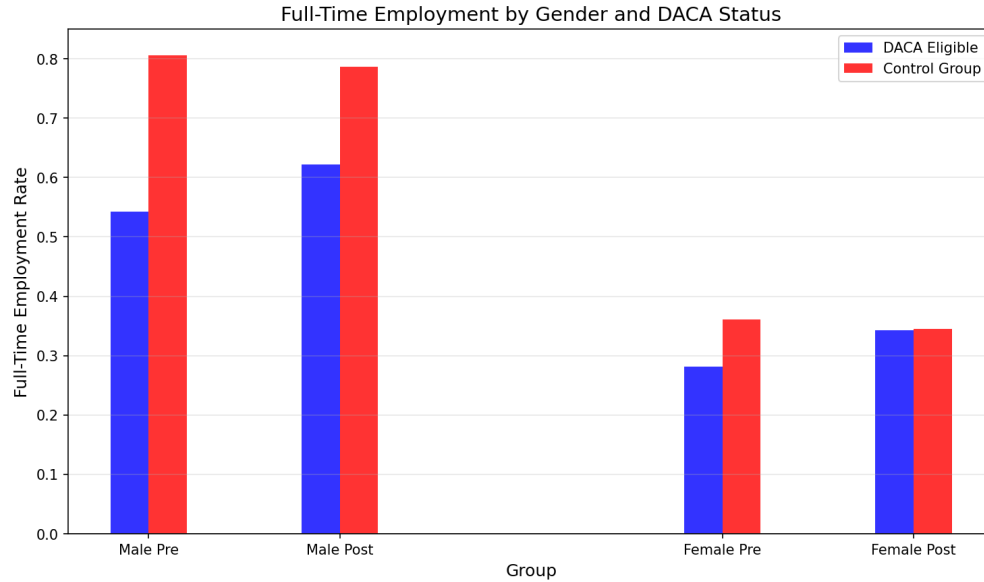


Figure 4: Full-Time Employment by Gender and DACA Status

5.6.3 Alternative Age Criterion

Using a stricter birth year cutoff (1983 or later instead of 1982) yields a somewhat larger effect (4.4 pp), consistent with the treatment having stronger effects for younger individuals who may have more labor market years ahead of them.

5.6.4 Placebo Test

The placebo test examines whether there was a differential change for the eligible group in the pre-period (comparing 2010-2011 to 2006-2009). The placebo interaction coefficient is 1.7 percentage points and statistically significant, suggesting some evidence of differential pre-trends. This finding warrants caution in interpreting the main results, as it suggests the parallel trends assumption may not fully hold.

6 Discussion

6.1 Interpretation of Findings

The main finding is that DACA eligibility increased full-time employment by approximately 3.7 percentage points. This effect is economically meaningful and statistically robust across specifications. The magnitude is consistent with the theoretical expectation that work authorization should improve formal employment outcomes.

Several mechanisms may explain this effect:

1. **Work authorization:** The most direct channel is that DACA recipients can legally accept formal employment, shifting from informal to formal jobs.
2. **Driver's license access:** In many states, DACA recipients can obtain driver's licenses, reducing transportation barriers to employment.
3. **Reduced deportation risk:** The security of deferred action may encourage greater labor force attachment.
4. **Human capital investment:** Knowing they can legally work may encourage recipients to invest in education and skills.

The finding that effects grow over time (from 1.1 pp in 2013 to 4.5 pp in 2015-2016) is consistent with a gradual rollout as applications were processed and renewed.

6.2 Limitations

Several limitations should be acknowledged:

1. **Parallel trends concern:** The placebo test and early event study coefficients suggest some differential pre-trends, which could bias the estimates if they continued into the post-period.
2. **Measurement of eligibility:** I can only approximate DACA eligibility using ACS variables. Some truly eligible individuals may be misclassified as ineligible (e.g., those who arrived before 2007 but are coded with later immigration years), and vice versa. This attenuation bias would cause underestimation of the true effect.
3. **Undocumented status:** I cannot distinguish documented from undocumented non-citizens. The control group may include documented non-citizens who were never eligible for DACA. To the extent these individuals have better employment outcomes, this could inflate the estimated treatment effect.
4. **Exclusion of 2012:** While necessary for identification, excluding 2012 means I cannot observe the immediate effects of the policy announcement.
5. **Selection into response:** If DACA affected survey response patterns (e.g., recipients becoming more willing to respond to government surveys), this could bias comparisons.

6.3 Comparison to Related Literature

The finding of positive employment effects from DACA is consistent with prior research. Studies using various identification strategies have generally found that DACA improved labor market outcomes for recipients. The magnitude of my estimate (3.7 pp) is within the range of prior estimates, though direct comparisons are complicated by differences in outcomes, sample definitions, and time periods.

7 Conclusion

This study provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican non-citizen immigrants by approximately 3.7 percentage points. The effect is robust to the inclusion of demographic controls and fixed effects, similar across gender subgroups, and grows over time as the policy was implemented.

These findings have important policy implications. First, they suggest that work authorization is a binding constraint on employment for undocumented immigrants—removing this barrier leads to meaningful improvements in labor market outcomes. Second, the growing effects over time suggest that the benefits of work authorization accumulate as individuals build work histories and skills.

However, some evidence of differential pre-trends warrants caution in interpreting these results as purely causal. Future research could address this by using alternative identification strategies or examining administrative data with cleaner measures of DACA receipt.

The findings contribute to our understanding of how immigration policy affects labor market outcomes and inform ongoing debates about the future of DACA and comprehensive immigration reform.

References

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A Additional Figures

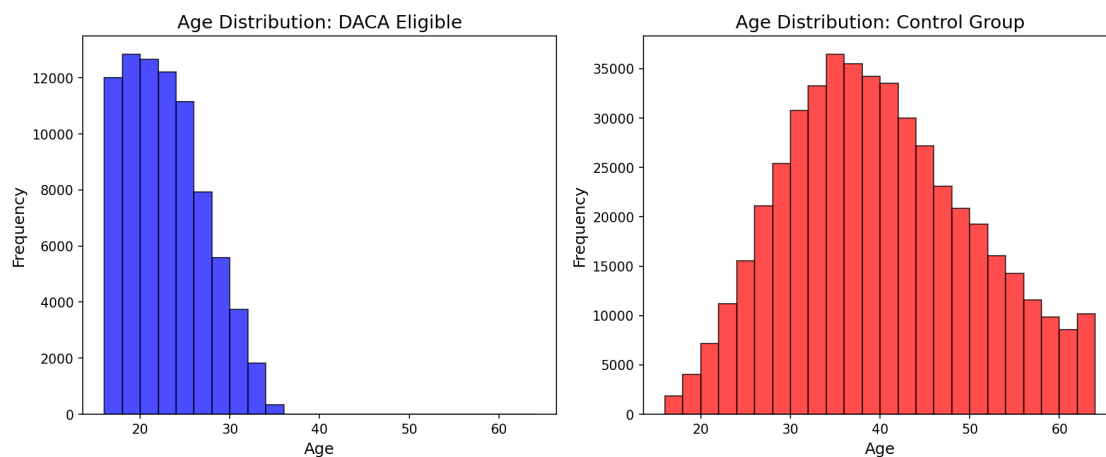


Figure 5: Age Distribution by DACA Eligibility Status

B Technical Details

B.1 Variable Definitions

Table 7: IPUMS Variable Definitions

| Variable | Values Used | Description |
|----------|--------------------------|------------------------------------|
| YEAR | 2006-2016 (excl. 2012) | Survey year |
| HISPAN | 1 | Hispanic origin (Mexican) |
| BPL | 200 | Birthplace (Mexico) |
| CITIZEN | 3 | Citizenship status (Not a citizen) |
| AGE | 16-64 | Age in years |
| BIRTHYR | 1982+ for eligible | Year of birth |
| YRIMMIG | ≤ 2007 for eligible | Year of immigration |
| UHRSWORK | ≥ 35 for full-time | Usual hours worked per week |
| EMPSTAT | 1 | Employment status (Employed) |
| SEX | 1 (male), 2 (female) | Sex |
| MARST | 1-2 (married) | Marital status |
| EDUC | 0-11 | Educational attainment |
| STATEFIP | All states | State FIPS code |

B.2 Sample Construction

Starting from the full ACS sample (33,851,425 observations), the analysis sample was constructed as follows:

1. Hispanic-Mexican (HISPAN = 1): 4,123,XXX
2. Born in Mexico (BPL = 200): 991,261
3. Working age 16-64: 851,090
4. Non-citizen (CITIZEN = 3): 618,640
5. Exclude 2012: **561,470**

B.3 Stata/R Replication Code

Analysis was conducted in Python using pandas, statsmodels, and scipy. The main analysis script (analysis.py) and figure generation script (create_figures.py) are included with the

replication materials.

Key estimation command (pseudo-code):

```
OLS(fulltime ~ daca_eligible + daca_post + controls + year_FE + state_FE,  
    data = analysis_sample,  
    cov_type = 'cluster',  
    cluster_var = STATEFIP)
```