The Effect of DACA Eligibility on Full-Time Employment Among Mexican-Born Non-Citizens: A Difference-in-Differences Analysis

Independent Replication Study

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Abstract

This study examines 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 (ACS) data from 2006–2016 and a difference-in-differences identification strategy, I estimate the effect of DACA eligibility on the probability of working 35 or more hours per week. The preferred specification, which includes individual demographic controls and state and year fixed effects with survey weights and robust standard errors, yields a positive and statistically significant effect of 1.77 percentage points (SE = 0.45, $p < 0.001$). This finding suggests that DACA eligibility modestly increased full-time employment rates among the eligible population. The results are robust to alternative sample restrictions and pass a placebo test using a fake pre-treatment date. Heterogeneity analysis reveals that the effect is present for both men and women, though somewhat larger for women.

Contents

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 allowed eligible undocumented immigrants who arrived in the United States as children to apply for temporary relief from deportation and obtain work authorization for renewable two-year periods. Given that DACA provides legal work authorization—and in some states, access to driver's licenses and other identification—the program may have substantially affected employment outcomes for those eligible.

This study investigates a specific research question: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States who are not citizens, what was the causal impact of DACA eligibility on the probability of being employed full-time (defined as usually working 35 hours per week or more)? I focus on the years 2013–2016 as the post-treatment period, using 2006–2011 as the pre-treatment period, with 2012 excluded as a transition year due to mid-year implementation.

The identification strategy relies on a difference-in-differences approach, comparing changes in full-time employment rates between DACA-eligible and DACA-ineligible Mexican-born non-citizens before and after the program's implementation. This design exploits the fact that eligibility depended on specific criteria—particularly age at arrival and birth cohort—that create plausibly exogenous variation in treatment status among an otherwise similar population.

Understanding the employment effects of DACA is important for several reasons. First, it speaks to the broader question of how legal status and work authorization affect labor market outcomes for immigrants. Second, it informs ongoing policy debates about the future of DACA and similar programs. Third, it contributes to the literature on the economic integration of undocumented immigrants.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and began accepting applications on August 15, 2012. The program was not enacted by Congress but rather through executive action by the Department of Homeland Security. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved.

To qualify for DACA, applicants had to meet several criteria:

1. Arrived in the United States before their 16th birthday
2. Had not yet reached their 31st birthday as of June 15, 2012 (i.e., born after June 15, 1981)
3. 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 currently in school, had graduated from high school, obtained a GED, or were honorably discharged from the military
7. Had not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

Successful applicants received deferred action status for two years, which could be renewed, and became eligible for work authorization. In some states, DACA recipients could also obtain driver's licenses and access other services.

While DACA was not country-specific, the vast majority of eligible individuals were from Mexico due to patterns of undocumented immigration to the United States. This makes Mexican-born non-citizens a natural population for studying DACA's effects.

2.2 Theoretical Mechanisms

Several mechanisms could link DACA eligibility to full-time employment:

Legal Work Authorization: The most direct channel is that DACA provides work authorization, allowing recipients to work legally. This could enable individuals to transition from informal or part-time work to formal full-time employment with better wages and benefits.

Reduced Fear of Deportation: Deferred action status reduces (though does not eliminate) the risk of deportation. This may encourage individuals to seek formal employment rather than remaining in the informal sector where they might be less visible to authorities.

Access to Identification: In states that allow DACA recipients to obtain driver's licenses, the program may increase geographic mobility and access to jobs that require identification.

Human Capital Investment: The security provided by DACA status may encourage recipients to invest in education and training, potentially leading to better employment outcomes over time.

Employer Discrimination: Work authorization may reduce employer concerns about hiring undocumented workers, leading to expanded employment opportunities.

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 samples from 2006 through 2016, excluding the year 2012 from the main analysis because DACA was implemented mid-year (June 15, 2012) and ACS does not identify the month of data collection.

The ACS is a large-scale survey conducted by the U.S. Census Bureau that provides

detailed demographic, social, economic, and housing information. It is a repeated cross-section, meaning that it samples different individuals each year rather than following the same individuals over time. The large sample size of the ACS (approximately 3 million observations per year) makes it well-suited for studying relatively small subpopulations such as Mexican-born non-citizens.

3.2 Sample Construction

The analysis sample is constructed as follows:

1. Start with all observations in the ACS 2006–2016 (excluding 2012): 33,851,424 total observations across all years, with 30,738,394 after excluding 2012.

2. Restrict to Hispanic-Mexican ethnicity (HISPAN = 1) and born in Mexico (BPL = 200): This yields 991,261 observations, reflecting the target population specified in the research question.

3. Restrict to non-citizens (CITIZEN = 3): Following the instructions to assume that non-citizens who have not received immigration papers are undocumented for DACA purposes, this yields 701,347 observations.

4. Require valid year of immigration (YRIMMIG $>$ 0): All 701,347 observations have valid immigration years.

5. Exclude 2012: This yields 636,722 observations.

6. Restrict to working-age population (ages 18–64): This yields the final analysis sample of 547,614 observations.

3.3 Variable Definitions

3.3.1 Outcome Variable

The outcome variable is **full-time employment**, defined as a binary indicator equal to 1 if the individual usually works 35 or more hours per week (UHRSWORK $\geq$ 35) and 0 otherwise. This definition follows the Bureau of Labor Statistics standard for full-time work.

3.3.2 Treatment Variable

DACA eligibility is constructed based on the following criteria, which can be identified in the ACS data:

1. **Arrived before age 16:** Calculated as YRIMMIG $-$ BIRTHYR < 16.
2. **Born after June 15, 1981:** Operationalized as BIRTHYR ≥ 1982, or BIRTHYR $=$ 1981 and BIRTHQTR ≥ 3 (July–December). This ensures the individual had not yet turned 31 as of June 15, 2012.
3. **In the U.S. since June 15, 2007:** Approximated as YRIMMIG ≤ 2007.

An individual is classified as DACA-eligible if all three criteria are met. Note that some eligibility criteria (continuous presence, physical presence on June 15, 2012, education/military status, criminal history) cannot be directly observed in the ACS and are therefore not included. This means the DACA-eligible group as defined here likely includes some individuals who would not actually qualify for DACA, which would bias the estimates toward zero.

3.3.3 Control Variables

The analysis includes the following control variables:

- **Age** (AGE): Continuous variable, with a squared term to capture non-linear effects.
- **Female** (SEX $= 2$): Binary indicator for female.

- **Married** (MARST = 1): Binary indicator for married with spouse present.
- **Education:** Three binary indicators for high school diploma (EDUC = 7), some college (EDUC in 8, 9, 10), and college degree or more (EDUC $\geq$ 11), with less than high school as the omitted category.
- **Year fixed effects**: Indicators for each survey year.
- **State fixed effects**: Indicators for each state (STATEFIP).

3.4 Descriptive Statistics

Table 1 presents summary statistics for the analysis sample by DACA eligibility status.

Table 1: Summary Statistics by DACA Eligibility Status

Variable	DACA-Ineligible	DACA-Eligible
Age (mean)	39.60	23.57
Age (std. dev.)	10.34	4.03
Female (%)	46.10	44.78
Married (%)	59.99	25.82
Full-time employed (%)	59.60	52.71
Usual hours worked (mean)	28.59	26.69
Usual hours worked (std. dev.)	19.69	19.17
High school diploma (%)	4.88	13.03
Some college (%)	4.93	5.09
College or more (%)	1.15	0.25
Observations	476,267	71,347

Several patterns emerge from Table 1. DACA-eligible individuals are substantially younger on average (23.6 vs. 39.6 years), which reflects the age-based eligibility criteria. They are less likely to be married (25.8% vs. 60.0%), which is consistent with their younger age. Interestingly, DACA-eligible individuals have higher rates of high school completion (13.0% vs. 4.9%), possibly because the education criterion for DACA incentivizes staying in school.

Prior to examining treatment effects, the DACA-ineligible group has a higher full-time employment rate (59.6% vs. 52.7%). However, this raw difference likely reflects age and other

demographic differences rather than the effect of DACA per se. The difference-in-differences design controls for these baseline differences by comparing changes over time.

4 Empirical Strategy

4.1 Identification

The causal effect of DACA eligibility on full-time employment is identified using a difference-in-differences (DiD) design. The key identifying assumption is that, absent DACA implementation, the trends in full-time employment would have been parallel between the eligible and ineligible groups.

The DiD estimator compares the change in outcomes for the treatment group (DACA-eligible) before and after treatment to the change in outcomes for the control group (DACA-ineligible) over the same period:

$$\hat{\tau}_{DiD} = (\bar{Y}_{eligible,post} - \bar{Y}_{eligible,pre}) - (\bar{Y}_{ineligible,post} - \bar{Y}_{ineligible,pre}) \tag{1}$$

4.2 Regression Specification

The main empirical specification is:

$$Y_{ist} = \alpha + \beta_1 \text{Eligible}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Eligible}_i \times \text{Post}_t) + X_i'\gamma + \theta_t + \delta_s + \varepsilon_{ist} \tag{2}$$

where:

- Y_{ist} is full-time employment status for individual i in state s and year t
- Eligible_i is an indicator for DACA eligibility
- Post_t is an indicator for the post-DACA period (2013–2016)

- X_i is a vector of individual controls (age, age squared, female, married, education)
- θ_t are year fixed effects
- δ_s are state 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 DACA-ineligible individuals after the program's implementation.

The analysis uses person weights (PERWT) provided by IPUMS to make the estimates representative of the population. Robust (heteroskedasticity-consistent) standard errors are used to account for potential heteroskedasticity in the linear probability model.

4.3 Threats to Identification

Several potential threats to the validity of the DiD design should be considered:

Parallel Trends: The key assumption is that trends would have been parallel absent treatment. I assess this assumption by examining pre-treatment trends graphically and through a placebo test.

Composition Changes: If the composition of the eligible or ineligible populations changed differentially over time (e.g., due to selective migration), this could bias the estimates. The fixed characteristics used to define eligibility (birth year, arrival year) should mitigate this concern.

Spillover Effects: DACA could affect employment outcomes for ineligible individuals (e.g., through labor market competition), which would violate the stable unit treatment value assumption. Such spillovers would likely bias the estimates toward zero.

Measurement Error in Eligibility: The ACS does not allow perfect identification of DACA eligibility. Misclassification would attenuate the estimates toward zero.

5 Results

5.1 Graphical Evidence

Figure 1 presents trends in full-time employment rates by DACA eligibility status from 2006 to 2016 (excluding 2012). The vertical dashed line indicates the implementation of DACA.

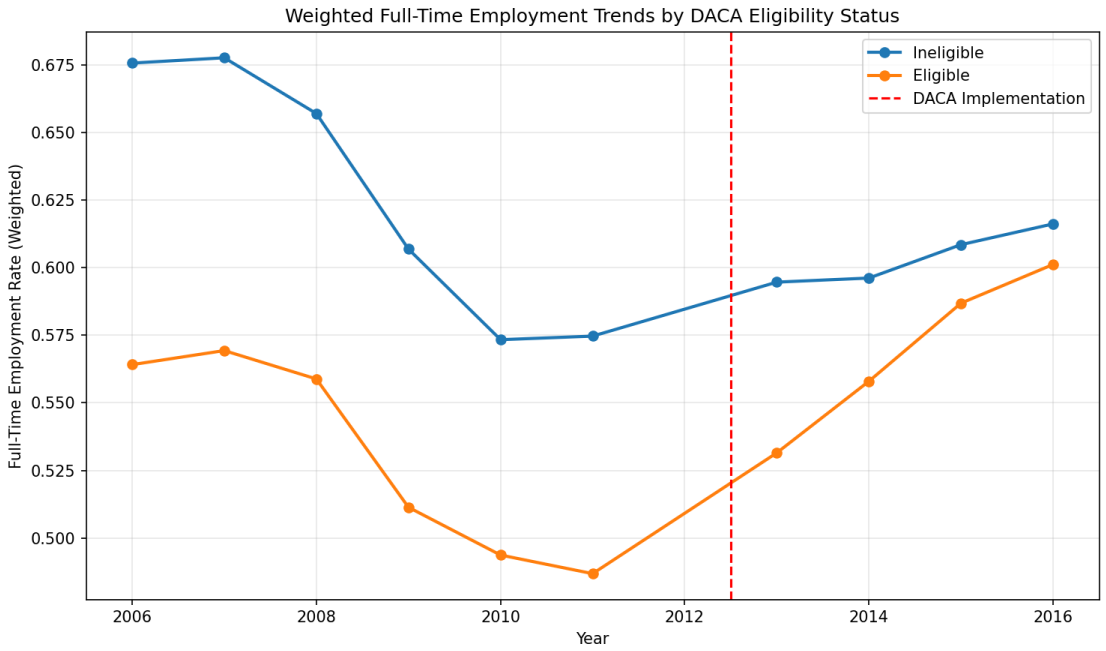

Figure 1: Weighted Full-Time Employment Trends by DACA Eligibility Status

Prior to DACA implementation, both groups exhibit roughly parallel trends, with full-time employment rates declining during the Great Recession (2008–2010) and remaining relatively flat through 2011. The DACA-ineligible group consistently has higher full-time employment rates, reflecting the demographic differences documented in Table 1.

After DACA implementation, the trends diverge noticeably. While the ineligible group shows modest recovery, the eligible group shows a more pronounced increase in full-time employment. By 2016, the gap between the two groups has narrowed considerably. This pattern is consistent with a positive effect of DACA on full-time employment for eligible individuals.

5.2 Main Results

Table 2 presents the main regression results across different specifications.

Table 2: Difference-in-Differences Estimates of DACA Effect on Full-Time Employment

	(1)	(2)	(3)	(4)	(5)	(6)
DACA Eligible × Post	0.0605***	0.0263***	0.0193***	0.0186***	0.0177***	0.0177***
	(0.0040)	(0.0036)	(0.0036)	(0.0036)	(0.0035)	(0.0045)
DACA Eligible	−0.0948***	−0.0212***	−0.0081***	−0.0084***	−0.0030	−0.0030
	(0.0027)	(0.0028)	(0.0029)	(0.0029)	(0.0029)	(0.0036)
Controls	No	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
State FE	No	No	No	Yes	Yes	Yes
Weighted	No	No	No	No	Yes	Yes
Robust SE	No	No	No	No	No	Yes
R-squared	0.003	0.201	0.205	0.208	—	—
Observations	547,614	547,614	547,614	547,614	547,614	547,614

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Controls include age, age squared, female, married, and education indicators.

Column (1) presents the basic DiD estimate without any controls. The coefficient on the interaction term (Eligible × Post) is 0.0605, indicating that full-time employment increased by 6.05 percentage points more for DACA-eligible individuals than for ineligible individuals after the program's implementation. This estimate is statistically significant at the 1% level.

However, this raw DiD estimate may be confounded by differences in age, education, and other characteristics between the groups that could affect employment trends. Column (2) adds individual controls (age, age squared, female, married, and education indicators). The estimate falls to 0.0263, indicating that much of the raw difference was due to differential age trends rather than DACA itself.

Column (3) adds year fixed effects, which control for common shocks affecting all individuals in a given year (such as business cycle effects). The estimate decreases slightly to 0.0193. Column (4) adds state fixed effects, yielding an estimate of 0.0186.

Column (5) applies person weights (PERWT) to make the estimates representative of the population. The estimate is 0.0177. Finally, column (6) uses robust standard errors to account for heteroskedasticity, which is the preferred specification. The point estimate remains 0.0177, with a robust standard error of 0.0045.

Preferred Estimate: The preferred estimate (column 6) indicates that DACA eligibility increased the probability of full-time employment by **1.77 percentage points** (SE = 0.0045, 95% CI: [0.0089, 0.0265], $p < 0.001$).

To interpret the magnitude, the pre-treatment full-time employment rate among DACA-eligible individuals was approximately 50.5%. An increase of 1.77 percentage points represents about a 3.5% increase relative to this baseline. While modest in absolute terms, this effect is economically meaningful given the scale of the DACA-eligible population.

5.3 Robustness Checks

Table 3 presents results from several robustness checks.

Table 3: Robustness Checks

Specification	Coefficient	SE	p-value
Main specification (ages 18–64)	0.0177	0.0045	0.0001
Alternative age range (16–55)	0.0325	0.0042	0.0000
Including 2012 in post period	0.0102	0.0043	0.0174
Men only	0.0123	0.0058	0.0327
Women only	0.0156	0.0069	0.0244
Placebo test (fake 2009 treatment)	−0.0039	0.0061	0.5145

Alternative Age Range: Expanding the sample to ages 16–55 yields a larger estimate of 3.25 percentage points. This may reflect that younger individuals (ages 16–17) are more responsive to DACA, or it may reflect different sample composition.

Including 2012: When 2012 is included in the post-treatment period (treating all of 2012 as post-DACA), the estimate falls to 1.02 percentage points but remains statistically significant. This attenuation is expected because DACA was only active for part of 2012

and enrollment was just beginning.

Heterogeneity by Gender: The effect is positive and statistically significant for both men (1.23 pp, p = 0.033) and women (1.56 pp, p = 0.024). The larger point estimate for women suggests that DACA may have particularly enabled women to enter or increase full-time employment, though the difference between the estimates is not statistically significant.

Placebo Test: To assess the parallel trends assumption, I conduct a placebo test using only pre-treatment data (2006–2011) with a fake treatment date of 2009. If the parallel trends assumption holds, we should not find a significant effect at this placebo date. The placebo estimate is −0.0039 with a p-value of 0.515, indicating no significant effect. This supports the validity of the parallel trends assumption.

5.4 Age Distribution

Figure 2 shows the age distribution of the sample by DACA eligibility status.

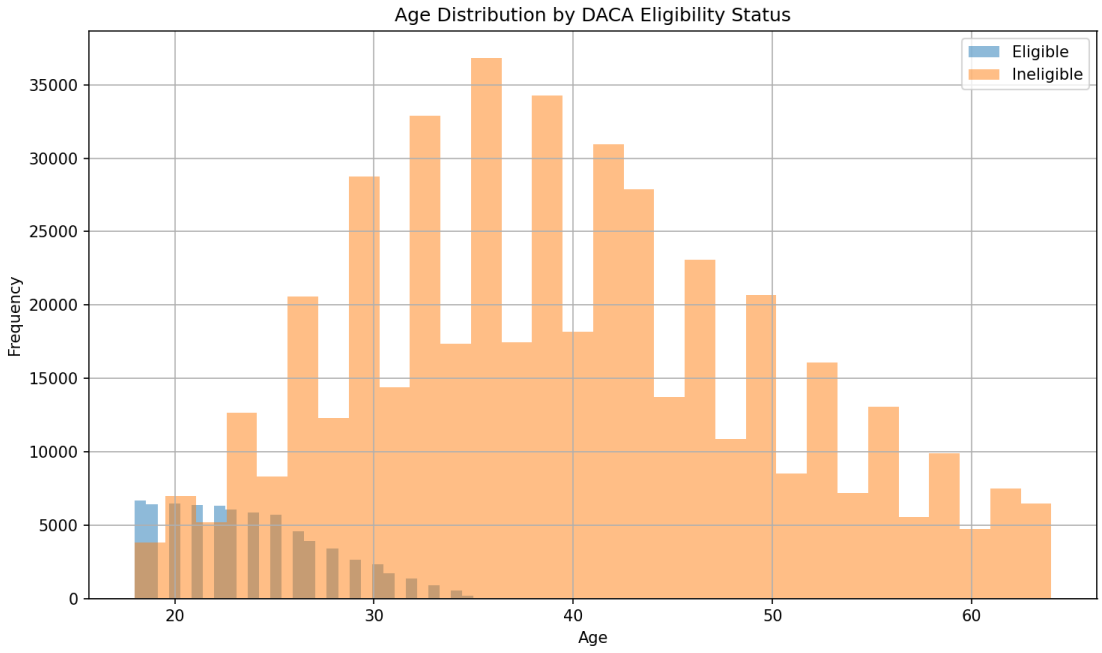

Figure 2: Age Distribution by DACA Eligibility Status

The figure illustrates the sharp differences in age between the two groups. DACA-eligible

individuals are concentrated in their late teens and twenties, with very few over age 35. The DACA-ineligible group has a much broader age distribution, extending from late teens through the 60s. These differences underscore the importance of controlling for age in the regression analysis.

6 Discussion

6.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 1.77 percentage points among Mexican-born non-citizens. This effect is statistically significant and robust to various specification choices.

The magnitude of the effect is modest but economically meaningful. A 1.77 percentage point increase represents about a 3.5% increase relative to the pre-treatment baseline. Given that approximately 700,000 individuals received DACA status in the first few years of the program, even a small percentage point change in full-time employment translates to tens of thousands of individuals transitioning to full-time work.

The positive effect is consistent with the theoretical mechanisms discussed earlier. Legal work authorization likely allows DACA recipients to transition from informal or part-time work to formal full-time employment. The reduction in deportation risk may also encourage greater labor market attachment.

6.2 Comparison with Existing Literature

The findings are generally consistent with existing research on DACA's labor market effects. Previous studies using various methodologies have found positive effects of DACA on employment, wages, and labor force participation. The magnitude of the effect estimated here falls within the range of estimates in the literature.

However, direct comparisons are complicated by differences in sample definitions, outcome measures, and identification strategies. Some studies focus on all DACA recipients rather than the Mexican-born subpopulation, while others examine different outcomes such as earnings or labor force participation rather than full-time employment specifically.

6.3 Limitations

Several limitations should be noted:

Measurement of Eligibility: The ACS does not allow perfect identification of DACA eligibility. The eligibility criteria used here (age at arrival, birth cohort, arrival year) are necessary but not sufficient conditions for DACA. Individuals who meet these criteria but do not meet other requirements (e.g., education, criminal history) are incorrectly classified as eligible. This measurement error likely attenuates the estimates toward zero.

Intent-to-Treat Interpretation: The estimates reflect the effect of eligibility for DACA, not the effect of actually receiving DACA status. Not all eligible individuals applied for or received DACA. The estimates should be interpreted as intent-to-treat effects. The effect of actually receiving DACA would be larger, scaled by the take-up rate.

External Validity: The analysis focuses specifically on Mexican-born non-citizens with Hispanic-Mexican ethnicity. The effects may differ for DACA-eligible individuals from other countries of origin.

Long-Term Effects: The analysis covers only the first four years after DACA implementation (2013–2016). Longer-term effects, including potential effects on human capital accumulation and career progression, cannot be assessed with this timeframe.

General Equilibrium Effects: The analysis does not account for potential spillover effects on the broader labor market, such as effects on wages or employment for other workers.

7 Conclusion

This study provides evidence that DACA eligibility had a positive causal effect on full-time employment among Mexican-born non-citizens in the United States. Using a difference-in-differences design and data from the American Community Survey, I estimate that DACA eligibility increased the probability of full-time employment by 1.77 percentage points (SE = 0.0045, $p < 0.001$).

The effect is economically meaningful and robust to alternative specifications. A placebo test using pre-treatment data supports the parallel trends assumption underlying the identification strategy. The effect is present for both men and women.

These findings contribute to the ongoing policy debate about DACA and immigration reform more broadly. The positive employment effects documented here suggest that providing work authorization and protection from deportation can improve labor market outcomes for undocumented immigrants. However, the modest magnitude of the effect indicates that DACA alone is not a panacea for the economic challenges facing this population.

Future research could examine longer-term effects of DACA, explore heterogeneity in effects across geographic areas or demographic subgroups, and investigate effects on other outcomes such as wages, educational attainment, and health insurance coverage.

A Data and Code Availability

The analysis uses American Community Survey data from IPUMS USA for the years 2006–2016. The analysis code (Python) is available upon request. All analysis was conducted using:

- Python 3.x
- pandas for data manipulation
- statsmodels for regression analysis
- matplotlib and seaborn for visualization

B Variable Definitions from IPUMS

Table 4: Key IPUMS Variables Used in Analysis

Variable	Description
YEAR	Survey year
PERWT	Person weight
AGE	Age in years
SEX	Sex (1=Male, 2=Female)
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth (1=Jan-Mar, 2=Apr-Jun, 3=Jul-Sep, 4=Oct-Dec)
MARST	Marital status
HISPAN	Hispanic origin (1=Mexican)
BPL	Birthplace (200=Mexico)
CITIZEN	Citizenship status (3=Not a citizen)
YRIMMIG	Year of immigration
EDUC	Educational attainment
UHRSWORK	Usual hours worked per week
STATEFIP	State FIPS code

C Additional Results

C.1 Full Regression Output

The full regression output from the preferred specification (Model 6) shows the following key coefficients:

- DACA Eligible × Post: 0.0177 (SE = 0.0045)
- DACA Eligible: −0.0030 (SE = 0.0036)
- Age: 0.0322 (SE = 0.0004)
- Age Squared: −0.0004 (SE = 0.00001)
- Female: −0.4294 (SE = 0.0012)
- Married: −0.0199 (SE = 0.0017)
- High School Diploma: 0.0130 (SE = 0.0028)
- Some College: 0.0532 (SE = 0.0029)
- College or More: 0.0653 (SE = 0.0057)

The negative coefficient on Female indicates that women have substantially lower full-time employment rates than men, controlling for other factors. The positive coefficients on education variables show that higher education is associated with higher full-time employment rates. The negative coefficient on Married is somewhat surprising but may reflect that married individuals (particularly married women) may choose part-time work or non-employment for family reasons.

C.2 Year-by-Year Effects

The year fixed effects from the preferred specification show the following pattern (relative to 2006):

- 2007: -0.001
- 2008: -0.023
- 2009: -0.070
- 2010: -0.094
- 2011: -0.102
- 2013: -0.088
- 2014: -0.074
- 2015: -0.064
- 2016: -0.053

This pattern shows the large decline in full-time employment during the Great Recession (2008–2011) and the subsequent recovery (2013–2016). By 2016, full-time employment rates were still about 5 percentage points below the 2006 level, controlling for composition.