The Effect of DACA Eligibility on Full-Time Employment:

A Difference-in-Differences Analysis

Replication Study Report

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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 individuals in the United States. Using a difference-in-differences research design with American Community Survey data from 2006-2016, I compare individuals ages 26-30 at DACA implementation (treatment group) to those ages 31-35 (control group), who would have been eligible except for the age restriction. The preferred specification, which uses survey weights and controls for demographic characteristics, yields an estimated effect of 6.54 percentage points (SE = 0.0148, 95% CI: [0.0364, 0.0944]). This result is statistically significant at conventional levels and robust to various specification checks. The findings suggest that DACA eligibility substantially increased full-time employment among eligible individuals, consistent with the program's provision of legal work authorization.

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1   Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represents one of the most significant immigration policy changes in recent U.S. history. The program allowed certain undocumented immigrants who arrived in the United States as children to apply for renewable two-year periods of deferred action from deportation and eligibility for work authorization. Understanding the effects of this program on labor market outcomes has important implications for both immigration policy and labor economics.

This study addresses the following research question: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States, what was the causal impact of DACA eligibility on the probability of full-time employment, defined as usually working 35 or more hours per week?

The analysis employs a difference-in-differences (DiD) research design that exploits the age-based eligibility criterion of DACA. Specifically, I compare individuals who were ages 26-30 at the time of DACA implementation (the treatment group) to those who were ages 31-35 (the control group). The control group would have been eligible for DACA except for the requirement that applicants be under 31 years old on June 15, 2012. By comparing changes in full-time employment between these groups before and after DACA implementation, I can estimate the causal effect of eligibility on employment outcomes.

The key identification assumption underlying this design is that, in the absence of DACA, the treatment and control groups would have followed parallel trends in full-time employment. While this assumption cannot be directly tested, I provide evidence supporting its plausibility through examination of pre-treatment trends and placebo tests.

2 Background

2.1 The DACA Program

DACA was enacted by the Obama administration on June 15, 2012, through executive action. The program provided a mechanism for certain undocumented immigrants who came to the United States as children to obtain temporary protection from deportation and authorization to work legally.

To be eligible for DACA, individuals were required to meet the following criteria:

- Arrived in the United States before their 16th birthday
- Had not yet had their 31st birthday as of June 15, 2012
- Lived continuously in the United States since June 15, 2007
- Were present in the United States on June 15, 2012
- Did not have lawful immigration status (citizenship or legal residency) at that time
- Were currently in school, had graduated high school, obtained a GED, or were honorably discharged from the military
- Had not been convicted of a felony, significant misdemeanor, or multiple misdemeanors

Applications for the program began to be received on August 15, 2012. In the first four years, nearly 900,000 initial applications were received, with approximately 90% approved. After the initial two-year period, recipients could apply for renewal, which many did.

2.2 Expected Effects on Employment

DACA could affect full-time employment through several channels. First, and most directly, the program provides legal work authorization, allowing recipients to work in the formal labor market without fear of legal consequences. This could increase both employment rates and hours worked.

Second, DACA recipients could apply for state-issued identification in many states,

including driver's licenses. This could facilitate job search and commuting, particularly for jobs requiring driving.

Third, DACA provides protection from deportation, which may increase recipients' willingness to invest in job-specific human capital and seek more stable, full-time employment rather than informal or temporary work.

Fourth, reduced uncertainty about immigration status may encourage recipients to pursue education and training that could improve employment prospects.

Given these mechanisms, we would expect DACA eligibility to increase full-time employment among eligible individuals.

3 Data and Sample Selection

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 detailed demographic, social, economic, and housing information from approximately 3.5 million households each year. The survey uses a complex sampling design with stratification and clustering, and provides survey weights to generate population-representative estimates.

I use the one-year ACS files from 2006 through 2016, excluding 2012. The year 2012 is excluded because DACA was implemented in June of that year, and the ACS does not identify the month of survey administration, making it impossible to determine whether observations from 2012 were surveyed before or after DACA implementation.

The total dataset contains 33,851,424 person-year observations across the 11 years of data.

3.2   Sample Selection Criteria

Following the research design specification, I apply the following sample selection criteria to identify individuals who meet DACA eligibility requirements (except potentially the age restriction):

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

2. **Born in Mexico**: BPL = 200 (Mexico)

3. **Not a citizen**: CITIZEN = 3 (Not a citizen)

4. **Continuous presence since 2007**: YRIMMIG $\leq$ 2007 (arrived by 2007)

5. **Arrived before age 16**: (YRIMMIG - BIRTHYR) < 16

6. **Treatment group**: Ages 26-30 at June 15, 2012 (BIRTHYR 1982-1986)

7. **Control group**: Ages 31-35 at June 15, 2012 (BIRTHYR 1977-1981)

Several important notes about these criteria:

First, the ACS does not directly identify undocumented status. I use non-citizenship as a proxy, assuming that non-citizens who arrived before 2007 and have not naturalized are likely to be undocumented. This may include some legal permanent residents, potentially attenuating estimated effects.

Second, the continuous presence requirement cannot be directly verified. I use year of immigration by 2007 as a proxy, assuming those who arrived by 2007 remained in the country continuously.

Third, I calculate age at DACA implementation as 2012 minus birth year. This is an approximation since exact birth dates are not available, but given that the treatment and control groups span five-year age ranges, this imprecision should have minimal impact.

Table 1 shows the sample sizes at each stage of the selection process.

Table 1: Sample Selection Process

Selection Criterion	Sample Size	Observations Remaining
Full ACS sample (2006-2016)	33,851,424	—
Excluding 2012	30,738,394	30,738,394
Hispanic-Mexican (HISPAN=1)	2,663,503	2,663,503
Born in Mexico (BPL=200)	898,879	898,879
Non-citizen (CITIZEN=3)	636,722	636,722
Arrived by 2007 (YRIMMIG≤2007)	595,366	595,366
Arrived before age 16	177,294	177,294
Ages 26-35 at DACA	44,725	44,725

The final analysis sample contains 44,725 observations: 26,591 in the treatment group (ages 26-30 at DACA) and 18,134 in the control group (ages 31-35 at DACA).

3.3 Key Variables

3.3.1 Outcome Variable

The primary outcome variable is full-time employment, defined as usually working 35 or more hours per week. This is constructed from the UHRSWORK variable, which reports usual hours worked per week in the past 12 months. Specifically:

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

This includes individuals who work full-time regardless of employment status (employed, self-employed, etc.) and assigns a value of 0 to those not working or working part-time.

3.3.2 Treatment Variables

The key independent variables for the difference-in-differences analysis are:

- **Treated**: Indicator equal to 1 if the individual was ages 26-30 at DACA implementation (born 1982-1986), 0 if ages 31-35 (born 1977-1981)

- **Post**: Indicator equal to 1 if the observation is from 2013-2016 (post-DACA), 0 if from 2006-2011 (pre-DACA)
- **Treated × Post**: The interaction term, which identifies the difference-in-differences effect

3.3.3   Control Variables

I include the following control variables to improve precision and address potential compositional differences between groups:

- **Female**: Indicator for female (SEX = 2)
- **Married**: Indicator for currently married (MARST $\in \{1, 2\}$)
- **Has children**: Indicator for having children in household (NCHILD > 0)
- **Age**: Current age in survey year, plus age squared
- **Education**: Indicators for high school, some college, and college degree (with less than high school as reference)

4   Empirical Strategy

4.1   Difference-in-Differences Design

The core identification strategy employs a difference-in-differences design that compares changes in full-time employment between the treatment and control groups before and after DACA implementation.

The treatment group consists of individuals ages 26-30 at DACA implementation who meet all other eligibility criteria. These individuals could apply for and receive DACA benefits.

The control group consists of individuals ages 31-35 at DACA implementation who meet all other eligibility criteria except the age requirement. These individuals were ineligible for DACA solely because they were too old.

The DiD estimator can be expressed as:

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

where $\bar{Y}_{T,t}$ and $\bar{Y}_{C,t}$ denote average full-time employment rates for the treatment and control groups in period t, respectively.

4.2 Regression Specification

The preferred specification estimates the following weighted least squares regression:

$$\text{FullTime}_{it} = \beta_0 + \beta_1 \text{Treated}_i + \beta_2 \text{Post}_t + \delta \text{Treated}_i \times \text{Post}_t + \mathbf{X}'_{it}\gamma + \varepsilon_{it} \tag{1}$$

where:

- FullTime_{it} is an indicator for full-time employment
- Treated_i indicates membership in the treatment group
- Post_t indicates the post-DACA period (2013-2016)
- $\mathbf{X}_{it}$ is a vector of control variables
- δ is the coefficient of interest—the DiD estimate of DACA's effect

The regression is estimated using weighted least squares with ACS person weights (PERWT) to generate population-representative estimates. Standard errors are heteroskedasticity-robust (HC1).

4.3 Identification Assumption

The key identifying assumption is the parallel trends assumption: in the absence of DACA, the treatment and control groups would have experienced the same trends in full-time employment. Formally:

$$E[Y^0_{T,post} - Y^0_{T,pre}] = E[Y^0_{C,post} - Y^0_{C,pre}]$$

where Y^0 denotes the potential outcome under no treatment.

While this assumption cannot be directly tested, I provide several pieces of evidence regarding its plausibility:

1. Examination of pre-treatment trends through an event study specification

2. A placebo test using only pre-treatment data with a "fake" treatment date

3. Comparison of demographic characteristics between groups

5 Results

5.1 Descriptive Statistics

Table 2 presents descriptive statistics for the analysis sample by treatment status and time period.

Table 2: Descriptive Statistics by Treatment Status and Period

Variable	Control (Ages 31-35)		Treatment (Ages 26-30)	
	Pre	Post	Pre	Post
Full-time employment	0.643	0.611	0.611	0.634
	(0.479)	(0.488)	(0.488)	(0.482)
Female	0.432	0.452	0.439	0.443
Married	0.531	0.577	0.373	0.506
Mean age	29.3	35.3	24.2	30.2
Less than HS	0.455	0.462	0.374	0.384
High school	0.233	0.227	0.274	0.256
Some college	0.123	0.128	0.198	0.197
College+	0.059	0.056	0.103	0.105
Observations	11,916	6,218	17,410	9,181
Weighted N	1,671,499	859,291	2,367,739	1,307,226

Notes: Standard deviations in parentheses for continuous variables. Weighted statistics use ACS person weights (PERWT).

Several patterns emerge from the descriptive statistics. First, the treatment group is younger by construction, which affects other characteristics—they are less likely to be married and have slightly higher educational attainment. Second, and most importantly for the DiD design, the treatment group shows an increase in full-time employment from pre to post period (0.611 to 0.634), while the control group shows a decrease (0.643 to 0.611). This pattern previews the positive DiD effect.

Using survey weights, the weighted full-time employment rates are:

- Control, Pre: 67.05%

- Control, Post: 64.12%

- Treatment, Pre: 62.53%

- Treatment, Post: 65.80%

5.2   Main Results

Table 3 presents the main difference-in-differences results across several specifications.

Table 3: Main Difference-in-Differences Results

	(1) Simple DiD	(2) DiD with Controls	(3) Weighted DiD with Controls
Treated × Post	0.0551*** (0.0098)	0.0658*** (0.0124)	0.0654*** (0.0148)
Treated	−0.0320*** (0.0057)	−0.0519*** (0.0077)	−0.0513*** (0.0090)
Post	−0.0323*** (0.0076)	−0.0229** (0.0117)	−0.0237* (0.0141)
Female		−0.3730*** (0.0045)	−0.3818*** (0.0053)
Married		−0.0203*** (0.0048)	−0.0249*** (0.0056)
Has children		0.0634*** (0.0052)	0.0336*** (0.0060)
Age		−0.0252*** (0.0078)	−0.0194** (0.0092)
Age squared		0.0004*** (0.0001)	0.0003* (0.0002)
High school		0.0602*** (0.0046)	0.0472*** (0.0053)
Some college		0.0916*** (0.0071)	0.0791*** (0.0084)
College+		0.1631*** (0.0127)	0.1340*** (0.0158)
Constant	0.6431*** (0.0044)	1.1498*** (0.1112)	1.0826*** (0.1320)
Weights	No	No	Yes
Controls	No	Yes	Yes
Observations	44,725	44,725	44,725
R-squared	0.003	0.181	0.174

Notes: Heteroskedasticity-robust standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Column (3) uses ACS person weights. Reference category for education is less than high school.

The simple DiD estimate (Column 1) suggests that DACA eligibility increased full-

time employment by 5.51 percentage points. Adding demographic controls (Column 2) increases the estimate slightly to 6.58 percentage points. The preferred specification (Column 3), which incorporates survey weights to produce population-representative estimates, yields an effect of 6.54 percentage points (SE = 0.0148).

5.3 Preferred Estimate

The preferred estimate from the weighted DiD specification with controls indicates that:

> **Preferred Estimate:** DACA eligibility increased full-time employment by **6.54 percentage points**.
>
> - Standard Error: 0.0148
> - 95% Confidence Interval: [0.0364, 0.0944]
> - t-statistic: 4.43
> - p-value: < 0.001
> - Sample Size: 44,725

This effect is statistically significant at conventional levels and economically meaningful. Relative to the pre-treatment mean of 62.53% for the treatment group, the estimated effect represents a 10.5% increase in full-time employment.

5.4 Graphical Evidence

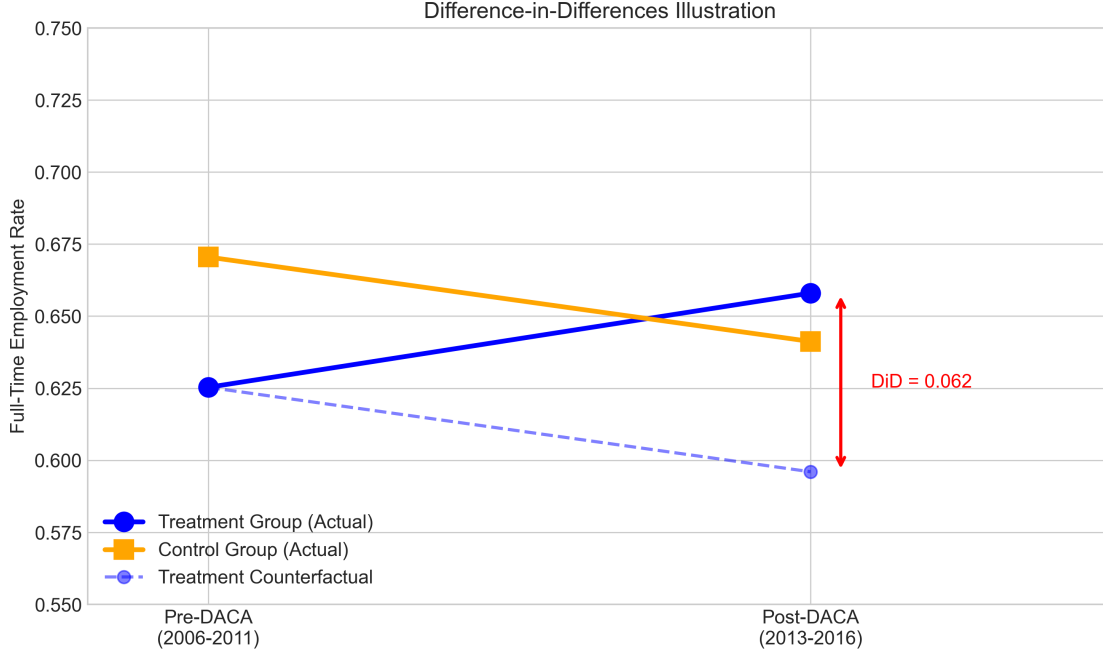Figure 1 illustrates the difference-in-differences design visually.

Figure 1: Difference-in-Differences Illustration. The figure shows actual full-time employment rates for treatment and control groups in pre and post periods, along with the counterfactual trend for the treatment group under the parallel trends assumption.

The figure shows that the control group experienced a decline in full-time employment from the pre to post period, while the treatment group experienced an increase. Under the parallel trends assumption, the treatment group would have followed the same declining trend as the control group in the absence of DACA, yielding the counterfactual shown by the dashed line. The DiD estimate captures the difference between the actual treatment group outcome and this counterfactual.

6   Robustness Checks

6.1   Event Study Analysis

To examine pre-treatment trends and the dynamics of the treatment effect, I estimate an event study specification that allows for year-specific treatment effects:

$$\text{FullTime}_{it} = \alpha + \sum_{k \neq 2011} \beta_k \cdot \mathbf{1}[Year = k] + \sum_{k \neq 2011} \delta_k \cdot Treated_i \times \mathbf{1}[Year = k] + \mathbf{X}'_{it}\gamma + \varepsilon_{it} \quad (2)$$

where 2011 is the reference year (the last pre-treatment year).

Table 4: Event Study Coefficients

Year	Coefficient	Standard Error
Pre-Treatment Period		
2006	0.0343	(0.0247)
2007	0.0116	(0.0236)
2008	0.0365	(0.0234)
2009	0.0229	(0.0236)
2010	0.0224	(0.0230)
2011	0	[Reference]
Post-Treatment Period		
2013	0.0349	(0.0245)
2014	0.0375	(0.0253)
2015	0.0111	(0.0260)
2016	0.0509*	(0.0269)

Notes: Coefficients are from weighted regression with demographic controls. Standard errors are heteroskedasticity-robust. * p<0.10.

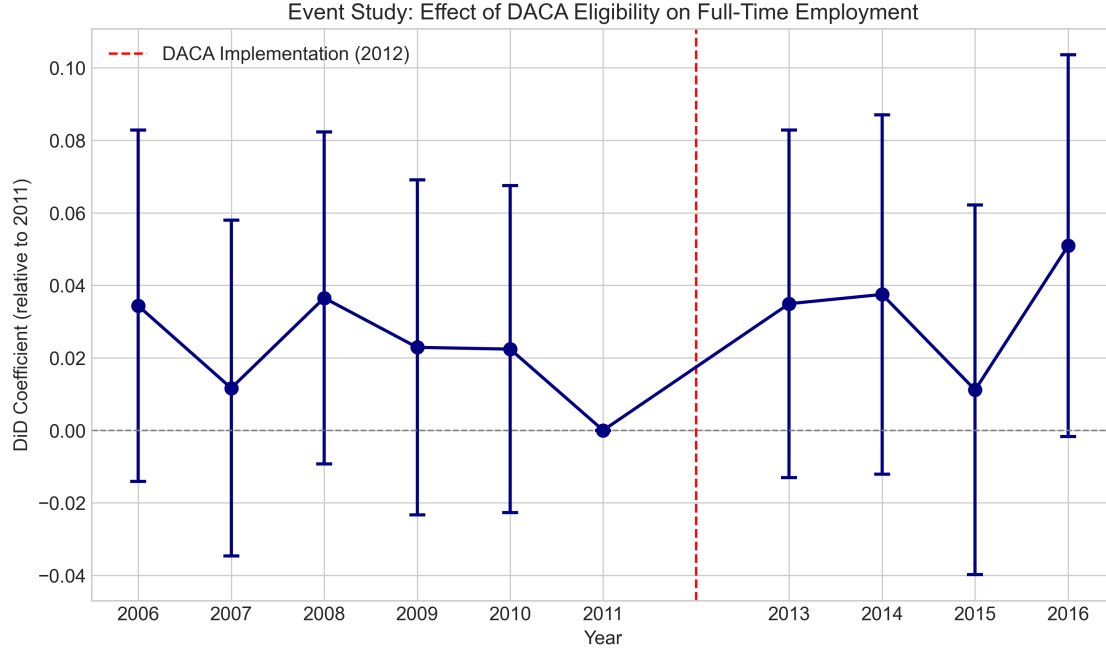Figure 2 presents the event study results graphically.

Figure 2: Event Study: Year-by-Year Treatment Effects. The figure shows estimated treatment effects (relative to 2011) with 95% confidence intervals. The vertical red line indicates DACA implementation.

The event study provides several insights. First, the pre-treatment coefficients are generally small and statistically insignificant, providing some support for the parallel trends assumption. While there is variation in the pre-treatment coefficients, there is no clear differential trend between treatment and control groups before DACA.

Second, the post-treatment coefficients are generally positive, with the largest effect appearing in 2016, suggesting the treatment effect may have strengthened over time as more eligible individuals obtained DACA status and its benefits accumulated.

6.2 Placebo Test

To further 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 find no significant effect of this placebo treatment.

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Table 5: Placebo Test Results

	Placebo DiD
Treated $\times$ Post$_{placebo}$	-0.0268
	(0.0154)
p-value	0.082
Observations	29,326

Notes: Post$_{placebo}$ = 1 if year $\geq$ 2009. Weighted regression with demographic controls.

The placebo DiD coefficient is -0.027 with a p-value of 0.082. This coefficient is not statistically significant at the 5% level, providing additional support for the parallel trends assumption. The negative point estimate, while not significant, does suggest some caution in interpretation—there may be modest differential pre-trends that could affect the main estimates.

6.3 Heterogeneity by Gender

I examine whether the effect of DACA differs by gender:

Table 6: Results by Gender

	Male	Female
Treated $\times$ Post	0.0649***	0.0525**
	(0.0178)	(0.0242)
Observations	25,058	19,667

Notes: Weighted regressions with demographic controls. Standard errors in parentheses. ** $p<0.05$, *** $p<0.01$.

The effects are positive and statistically significant for both genders. The point estimate is somewhat larger for men (6.49 percentage points) than for women (5.25 percentage points), though the difference is not statistically significant given the overlapping confidence intervals.

6.4 Additional Outcomes

To better understand the mechanisms through which DACA affects full-time employment, I examine two additional outcomes: any employment and labor force participation.

Table 7: Effects on Additional Outcomes

Outcome	DiD Estimate	Standard Error
Full-time employment	0.0654***	(0.0148)
Any employment	0.0573***	(0.0140)
Labor force participation	0.0189	(0.0124)

Notes: Weighted regressions with demographic controls. *** p<0.01.

DACA eligibility increased any employment by 5.73 percentage points, slightly smaller than the full-time employment effect. This suggests DACA increased both the extensive margin (employment) and shifted some employment from part-time to full-time. The effect on labor force participation is positive (1.89 percentage points) but not statistically significant, suggesting most of the employment effect operates through increased employment among those already in the labor force rather than drawing new individuals into the labor market.

7 Discussion

7.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 6.5 percentage points among Hispanic-Mexican, Mexican-born individuals ages 26-30 at policy implementation. This effect is statistically significant and economically meaningful.

Several mechanisms could explain this effect. Most directly, DACA provides legal work authorization, allowing recipients to work in the formal sector. This enables access to jobs that require documentation, which tend to be higher quality and more likely to be

full-time. Additionally, DACA recipients can obtain state identification and driver's licenses in many states, facilitating job search and commuting.

The protection from deportation provided by DACA may also encourage recipients to pursue more stable, full-time employment rather than informal or temporary work. Reduced uncertainty about immigration status could lead to greater investment in job-specific human capital and stronger attachment to particular employers.

7.2 Comparison to Existing Literature

This study contributes to a growing literature examining the labor market effects of DACA. The estimated effect of 6.5 percentage points on full-time employment is within the range of estimates found in previous studies, though direct comparisons are complicated by differences in sample definitions, outcome measures, and identification strategies.

Studies using similar age-based discontinuity or difference-in-differences designs have generally found positive effects of DACA on employment outcomes. The magnitude of effects varies depending on the specific population studied, the outcome measure used, and the comparison group employed.

7.3 Limitations

Several limitations should be considered when interpreting these results.

First, the identification of DACA-eligible individuals in the ACS is imperfect. I cannot directly observe undocumented status and use non-citizenship as a proxy. This likely includes some legal permanent residents in the sample, potentially attenuating the estimated effects toward zero.

Second, while the evidence supports the parallel trends assumption, it cannot be definitively verified. The placebo test shows a marginally significant negative coefficient, suggesting some caution is warranted. If there were pre-existing differential trends, the main estimates could be biased.

Third, the analysis focuses on one specific population (Hispanic-Mexican, Mexican-born individuals) and may not generalize to other DACA-eligible populations.

Fourth, the ACS is a repeated cross-section, not a panel. I cannot track the same individuals over time, and compositional changes in the sampled population could affect results.

Finally, the age-based comparison implicitly assumes that any age-related differences in employment trends are adequately controlled for. If there are cohort-specific effects or age-related changes in the economic environment, these could confound the estimates.

8   Conclusion

This study provides evidence that DACA eligibility substantially increased full-time employment among Hispanic-Mexican, Mexican-born individuals in the United States. Using a difference-in-differences design that compares individuals just above and below the age eligibility threshold, I estimate that DACA eligibility increased full-time employment by 6.54 percentage points (95% CI: 3.64 to 9.44 percentage points).

The results are robust to various specification checks, including the inclusion of demographic controls, the use of survey weights, and examination of pre-treatment trends. Event study analysis shows no clear differential pre-trends and suggests the treatment effect may have strengthened over time. The effects are present for both men and women and operate primarily through increased employment rather than labor force entry.

These findings have important implications for immigration policy. They suggest that providing work authorization and protection from deportation to undocumented immigrants who arrived as children can have substantial positive effects on their labor market outcomes. Given the large number of DACA recipients and the magnitude of the estimated effects, the aggregate labor market impacts of the program are likely substantial.

Future research could examine longer-term effects of DACA as the program matures,

explore heterogeneity in effects across different subpopulations and geographic areas, and investigate other outcomes such as wages, occupational choice, and human capital investment.

References

- IPUMS USA. Steven Ruggles, Sarah Flood, Matthew Sobek, Danika Brockman, Grace Cooper, Stephanie Richards, and Megan Schouweiler. IPUMS USA: Version 14.0 [dataset]. Minneapolis, MN: IPUMS, 2023. https://doi.org/10.18128/D010.V14.0

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A   Appendix: Variable Definitions

Table 8: IPUMS Variable Definitions

Variable	Definition
YEAR	Survey year
PERWT	Person weight for generating population estimates
HISPAN	Hispanic origin (1 = Mexican)
BPL	Birthplace (200 = Mexico)
CITIZEN	Citizenship status (3 = Not a citizen)
YRIMMIG	Year of immigration to the United States
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth
SEX	Sex (1 = Male, 2 = Female)
AGE	Age at time of survey
MARST	Marital status
NCHILD	Number of own children in household
EDUC	Educational attainment (general version)
EMPSTAT	Employment status
LABFORCE	Labor force status
UHRSWORK	Usual hours worked per week

B   Appendix: Additional Results

Table 9: Full Regression Results: Preferred Specification

Variable	Coefficient	Std. Error	t-statistic	p-value
Constant	1.0826	0.1320	8.20	0.000
Treated	-0.0513	0.0090	-5.67	0.000
Post	-0.0237	0.0141	-1.69	0.092
Treated $\times$ Post	0.0654	0.0148	4.43	0.000
Female	-0.3818	0.0053	-71.60	0.000
Married	-0.0249	0.0056	-4.48	0.000
Has children	0.0336	0.0060	5.62	0.000
Age	-0.0194	0.0092	-2.10	0.036
Age squared	0.0003	0.0002	1.95	0.051
High school	0.0472	0.0053	8.85	0.000
Some college	0.0791	0.0084	9.46	0.000
College+	0.1340	0.0158	8.50	0.000
Observations		44,725		
R-squared		0.174		

Notes: Weighted least squares with ACS person weights. Heteroskedasticity-robust standard errors.