The Effect of DACA Eligibility on Full-Time Employment: An 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 immigrants born in Mexico. Using American Community Survey data from 2006–2016 and a difference-in-differences design comparing individuals aged 26–30 (DACA-eligible) to those aged 31–35 (ineligible due to age) at the time of DACA implementation, I find that DACA eligibility increased the probability of full-time employment by approximately 4.3 percentage points. This effect is statistically significant at the 1% level and robust to various specification choices including alternative bandwidths, clustering adjustments, and placebo tests. The results suggest that DACA's provision of legal work authorization substantially improved labor market outcomes for eligible immigrants.

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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 provides temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children and meet specific criteria. Given the program's scale—nearly 900,000 initial applications in its first four years, with approximately 90% approval rates—understanding its labor market effects is of substantial policy importance.

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 DACA on the probability of full-time employment?*

The identification strategy exploits a key eligibility cutoff: individuals must not have reached their 31st birthday as of June 15, 2012. This creates a natural comparison group of individuals who would have been eligible for DACA but for their age. I compare employment outcomes for individuals aged 26–30 (treatment group) to those aged 31–35 (control group) as of the DACA implementation date, examining changes from the pre-DACA period (2006–2011) to the post-DACA period (2013–2016).

The main finding is that DACA eligibility increased full-time employment by 4.3 percentage points, representing a meaningful improvement in labor market outcomes for eligible immigrants. This effect is precisely estimated with a standard error of 1.07 percentage points and is statistically significant at conventional levels.

2 Background

2.1 The DACA Program

DACA was enacted by the Obama administration through executive action on June 15, 2012. The program allows qualifying undocumented immigrants to apply for renewable two-year periods of deferred action from deportation and eligibility for work authorization. The key eligibility requirements include:

1. Arrival in the United States before the applicant's 16th birthday
2. Continuous residence in the United States since June 15, 2007
3. Physical presence in the United States on June 15, 2012
4. Age under 31 as of June 15, 2012 (no upper age limit for eligibility after that date)

5. No lawful immigration status on June 15, 2012

6. Educational or military service requirements

7. No significant criminal history

Applications began to be received on August 15, 2012. The program was particularly impactful for immigrants from Mexico, who constituted the majority of eligible individuals due to the composition of unauthorized immigration to the United States.

2.2 Theoretical Framework

DACA's work authorization provision potentially affects employment through several channels:

Legal Employment Access: Prior to DACA, unauthorized immigrants faced substantial barriers to formal employment. Work authorization allows recipients to work legally, potentially accessing higher-quality jobs with better compensation and working conditions.

Reduced Fear of Detection: Without legal status, immigrants may avoid formal employment or limit their job searches to reduce detection risk. DACA's deportation relief may encourage more active labor force participation.

Complementary Benefits: DACA recipients can obtain driver's licenses in many states, facilitating commuting and expanding the geographic scope of job searches. Additionally, legal work authorization may reduce employer discrimination against individuals perceived as unauthorized.

Human Capital Investment: The temporary protection may encourage recipients to invest in education and training, though this effect would materialize over a longer time horizon.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that collects demographic, social, economic, and housing information from approximately 3.5 million households each year.

I use one-year ACS samples from 2006 through 2016, excluding 2012. The year 2012 is excluded because the ACS does not record the month of survey administration, making it

impossible to distinguish pre- and post-DACA observations within that year. Years prior to 2006 are excluded to ensure data definition consistency and availability of variables necessary for identifying DACA eligibility.

3.2 Sample Construction

The analytic sample is constructed through the following sequential filters:

1. **Hispanic-Mexican ethnicity**: HISPAN = 1 (Mexican origin)
2. **Born in Mexico**: BPL = 200 (birthplace is Mexico)
3. **Non-citizen**: CITIZEN = 3 (not a U.S. citizen)
4. **Age eligibility**: Age 26–35 as of June 15, 2012
5. **Arrived before age 16**: Calculated as YRIMMIG - BIRTHYR < 16
6. **Continuous U.S. residence**: YRIMMIG ≤ 2007 (proxy for residence since June 2007)

Following the instructions, non-citizens who have not received immigration papers are assumed to be undocumented for DACA purposes. This is a necessary assumption given that the ACS does not directly measure documentation status.

3.3 Variable Definitions

Outcome Variable: Full-time employment is defined as usually working 35 or more hours per week. This is constructed from UHRSWORK, where the outcome equals 1 if UHRSWORK ≥ 35 and 0 otherwise.

Treatment Variable: The treatment indicator equals 1 for individuals aged 26–30 as of June 15, 2012 (DACA-eligible) and 0 for individuals aged 31–35 (DACA-ineligible due to age).

Age as of June 15, 2012 is calculated from BIRTHYR and BIRTHQTR. For individuals born in quarters 3 (July–September) or 4 (October–December), one year is subtracted from the simple (2012 - BIRTHYR) calculation since they would not yet have had their birthday by June 15.

Post-Period Indicator: Equals 1 for survey years 2013–2016 and 0 for survey years 2006–2011.

Control Variables:

- Sex: Female indicator (SEX = 2)
- Marital status: Married indicator (MARST = 1 or 2)
- Education: Categorical variable with four levels (less than high school, high school, some college, bachelor's or higher)
- State fixed effects: STATEFIP
- Year fixed effects: YEAR

3.4 Sample Characteristics

Table 1 presents the final sample sizes after applying all eligibility criteria.

Table 1: Sample Construction

Selection Criterion	Observations	Reduction
Hispanic-Mexican born in Mexico	991,261	—
Non-citizen	701,347	289,914
Age 26–35 as of June 2012	181,229	520,118
Arrived before age 16	46,817	134,412
Continuous residence since 2007	46,817	0
Excluding 2012	42,689	4,128
Final Sample	**42,689**	—

Note: Sample construction from ACS 2006–2016 (excluding 2012).

The final analytic sample contains 42,689 person-year observations, with 25,174 in the treatment group (ages 26–30) and 17,515 in the control group (ages 31–35).

4 Empirical Strategy

4.1 Identification Approach

The identification strategy employs a difference-in-differences (DID) design that exploits the age cutoff for DACA eligibility. Individuals who were ages 26–30 as of June 15, 2012 are compared to those who were ages 31–35 at that time. Both groups are otherwise similar in terms of DACA eligibility criteria (arrived before age 16, non-citizens, Mexican-born), but the older group was excluded from the program solely due to the age requirement.

The key identifying assumption is that, in the absence of DACA, the treatment and control groups would have experienced parallel trends in full-time employment. Under this assumption, the control group provides a valid counterfactual for what would have happened to the treatment group's employment outcomes absent the program.

4.2 Estimation

The primary specification is a linear probability model:

$$Y_{ist} = \alpha + \beta_1 \text{Treated}_i + \beta_2 \text{Post}_t + \delta(\text{Treated}_i \times \text{Post}_t) + X'_{ist}\gamma + \lambda_s + \tau_t + \epsilon_{ist} \quad (1)$$

where:

- Y_{ist} is an indicator for full-time employment (UHRSWORK ≥ 35)
- Treated_i equals 1 for ages 26–30 as of June 2012
- Post_t equals 1 for years 2013–2016
- X_{ist} includes controls for sex, marital status, and education
- λ_s are state fixed effects
- τ_t are year fixed effects
- δ is the difference-in-differences coefficient of interest

The model is estimated using weighted least squares with ACS person weights (PERWT), and standard errors are heteroskedasticity-robust (HC1).

4.3 Threats to Identification

Several potential threats to the validity of the DID design warrant consideration:

Differential Trends by Age: If employment trends differ systematically by age cohort for reasons unrelated to DACA, the parallel trends assumption may be violated. I address this through pre-trend testing and event study analysis.

Compositional Changes: The sample composition could change differently across groups over time due to migration, mortality, or survey response patterns. The use of the control group helps account for common shocks, but differential composition changes remain a concern.

Spillover Effects: DACA could affect the control group through general equilibrium effects on labor markets. If DACA increased labor supply among the treated group, this could affect wages or employment for the control group, potentially biasing the DID estimate.

Measurement Error in Eligibility: The proxies used to identify DACA eligibility (non-citizenship, immigration year) may not perfectly capture true eligibility status, introducing measurement error.

5 Results

5.1 Descriptive Statistics

Table 2 presents summary statistics by treatment status and time period.

Table 2: Summary Statistics by Treatment Group and Period

	Pre-DACA (2006–2011)		Post-DACA (2013–2016)	
	Treatment (Ages 26–30)	Control (Ages 31–35)	Treatment (Ages 26–30)	Control (Ages 31–35)
Full-time employed	0.615	0.645	0.634	0.614
Employed	0.661	0.686	0.709	0.692
Hours worked	29.6	30.8	30.3	29.4
Female	0.438	0.434	0.440	0.452
Married	0.391	0.541	0.514	0.583
Age (at survey)	24.7	29.9	30.7	35.9
N	16,500	11,530	8,674	5,985

Note: Unweighted means. Treatment group: ages 26–30 as of June 15, 2012. Control group: ages 31–35 as of June 15, 2012.

The treatment group has a slightly lower pre-DACA full-time employment rate (61.5%) compared to the control group (64.5%). Post-DACA, this pattern reverses, with the treatment group showing higher full-time employment (63.4% vs. 61.4%). This reversal is suggestive of a positive DACA effect.

5.2 Simple Difference-in-Differences

Table 3 presents the simple 2×2 DID calculation using weighted means.

Table 3: Simple Difference-in-Differences Calculation

	Pre-DACA	Post-DACA	Difference
Treatment (Ages 26–30)	0.631	0.660	+0.029
Control (Ages 31–35)	0.672	0.643	−0.029
Difference	−0.041	+0.017	**0.058**

Note: Weighted full-time employment rates using ACS person weights (PERWT). The DID estimate is $(0.660 - 0.631) - (0.643 - 0.672) = 0.058$.

The simple DID estimate suggests that DACA increased full-time employment by approximately 5.8 percentage points. The treatment group experienced a 2.9 percentage point increase in full-time employment while the control group experienced a 2.9 percentage point decrease, yielding a combined difference-in-differences of 5.8 percentage points.

5.3 Regression Results

Table 4 presents the main regression results across multiple specifications.

Table 4: Difference-in-Differences Regression Results

	(1) Basic	(2) + Controls	(3) + Year FE	(4) + State FE
Treated × Post	0.050***	0.043***	0.043***	0.043***
	(0.010)	(0.009)	(0.009)	(0.011)
Treated	−0.030***	−0.035***	−0.035***	−0.042***
	(0.006)	(0.005)	(0.005)	(0.006)
Post	−0.031***	−0.024***	—	—
	(0.008)	(0.007)		
Female		−0.360***	−0.360***	−0.375***
		(0.004)	(0.004)	(0.005)
Married		0.000	0.003	−0.014***
		(0.004)	(0.004)	(0.005)
Education controls	No	Yes	Yes	Yes
Year fixed effects	No	No	Yes	Yes
State fixed effects	No	No	No	Yes
Weighted	No	No	No	Yes
R^2	0.001	0.140	0.143	0.163
N	42,689	42,689	42,689	42,689

Note: The dependent variable is full-time employment (UHRSWORK $\geq$ 35). Robust standard errors in parentheses. Column (4) uses ACS person weights and HC1 standard errors. Education controls are categorical indicators for high school, some college, and bachelor's or higher (less than high school is omitted). *** p<0.01, ** p<0.05, * p<0.1.

The DID coefficient is stable across specifications, ranging from 4.3 to 5.0 percentage points. The preferred specification in Column (4), which includes demographic controls, year and state fixed effects, and uses survey weights, estimates a DACA effect of 4.3 percentage points with a standard error of 1.1 percentage points.

5.4 Preferred Estimate

Preferred Estimate:

- **Effect Size**: 0.043 (4.3 percentage points)
- **Standard Error**: 0.0107
- **95% Confidence Interval**: [0.022, 0.064]
- **P-value**: 0.0001
- **Sample Size**: 42,689

This estimate indicates that DACA eligibility increased the probability of full-time employment by 4.3 percentage points among eligible Hispanic-Mexican immigrants. Relative to the pre-DACA mean full-time employment rate of approximately 63% for the treatment group, this represents a 6.8% increase.

5.5 Robustness Checks

Table 5 presents results from several robustness exercises.

Table 5: Robustness Checks

Specification	DID Estimate	Std. Error
Main Specification	0.043	(0.011)
Standard Error Adjustments		
Clustered by state	0.043	(0.010)
Bandwidth Variations		
Narrow (ages 27–29 vs. 32–34)	0.037	(0.014)
Alternative Outcomes		
Any employment	0.042	(0.010)
Heterogeneity		
Males only	0.033	(0.013)
Females only	0.047	(0.018)
Placebo Test		
2009 cutoff (pre-period only)	−0.001	(0.013)

Note: All specifications include controls for sex (where applicable), marital status, education, and year fixed effects. The main specification additionally includes state fixed effects and uses survey weights.

Clustered Standard Errors: Clustering standard errors at the state level yields a slightly smaller standard error (0.010), suggesting that the baseline HC1 standard errors are appropriately conservative.

Narrower Bandwidth: Restricting the sample to ages 27–29 (treatment) versus 32–34 (control) yields a similar but somewhat smaller estimate of 3.7 percentage points. This suggests the main result is not driven by individuals at the boundaries of the age groups.

Any Employment: Using any employment (EMPSTAT = 1) as the outcome produces a nearly identical estimate (4.2 percentage points), indicating that DACA's effects operated primarily through extensive margin adjustments rather than intensive margin changes in hours conditional on employment.

Heterogeneity by Sex: The effect is positive for both males (3.3 percentage points) and females (4.7 percentage points), though the female effect is larger and less precisely estimated due to smaller sample size.

Placebo Test: Using 2009 as a placebo treatment date within the pre-period yields an estimate of essentially zero (−0.001), providing support for the parallel trends assumption.

5.6 Event Study

Table 6 presents the event study coefficients, which show the treatment-control difference in each year relative to 2011 (the last pre-DACA year).

Table 6: Event Study Coefficients

Year	Coefficient	Std. Error	95% CI
2006	0.010	(0.023)	[−0.035, 0.055]
2007	−0.029	(0.022)	[−0.073, 0.015]
2008	0.015	(0.023)	[−0.030, 0.059]
2009	−0.000	(0.024)	[−0.046, 0.046]
2010	−0.005	(0.023)	[−0.051, 0.041]
2011	*(reference)*		
2013	0.040	(0.024)	[−0.008, 0.088]
2014	0.038	(0.025)	[−0.011, 0.086]
2015	0.023	(0.025)	[−0.026, 0.072]
2016	0.070	(0.025)	[0.021, 0.119]

Note: Coefficients represent the interaction between treatment status and year indicators, with 2011 as the omitted reference year. All specifications include controls and year fixed effects with survey weights.

The event study results provide support for the parallel trends assumption. The pre-DACA coefficients (2006–2010) are all small in magnitude and statistically indistinguishable from zero, fluctuating around the reference year without a clear trend. The post-DACA coefficients (2013–2016) are uniformly positive, with the effect growing over time from 4.0 percentage points in 2013 to 7.0 percentage points in 2016. The largest and most precisely estimated effect in 2016 suggests that the benefits of DACA may have accumulated over time as recipients gained work experience and labor market attachment.

6 Discussion

6.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased full-time employment by approximately 4.3 percentage points among Hispanic-Mexican immigrants who were ages 26–30 at the time of implementation. This effect is statistically significant and robust to various specification choices.

The magnitude of this effect is economically meaningful. A 4.3 percentage point increase represents roughly a 6.8% improvement relative to the baseline full-time employment rate. Given that DACA provides work authorization, this finding aligns with the expectation that legal work status would improve labor market outcomes.

Several mechanisms could explain this effect:

1. **Direct access to legal employment**: DACA's work authorization allows recipients to work legally, enabling access to formal sector jobs that require employment verification.

2. **Reduced job search frictions**: With legal status, recipients may be more willing to actively search for employment and negotiate for better positions without fear of detection.

3. **Employer willingness to hire**: Employers may be more willing to hire DACA recipients for full-time positions given the reduced legal risks compared to hiring unauthorized workers.

4. **Complementary benefits**: Access to driver's licenses and other documentation in many states may have expanded employment opportunities.

6.2 Comparison with Literature

The estimated effect of 4.3 percentage points is broadly consistent with prior research on DACA's labor market effects, though methodological differences make direct comparisons difficult. The finding of positive employment effects aligns with the theoretical expectation that work authorization should improve labor market outcomes.

6.3 Limitations

Several limitations should be considered when interpreting these results:

Proxy for undocumented status: The ACS does not directly measure documentation status. The assumption that non-citizens who have not received immigration papers are undocumented may introduce measurement error.

Age-based comparison: While the age cutoff provides a natural experiment, the treatment and control groups differ in age by approximately 5 years on average. Age-related factors unrelated to DACA could potentially confound the estimates, though the parallel trends evidence suggests this is not a major concern.

Generalizability: The sample is restricted to Hispanic-Mexican immigrants born in Mexico who arrived before age 16 and were non-citizens. Results may not generalize to DACA-eligible individuals from other countries or with different characteristics.

Repeated cross-sections: The ACS is not panel data, so I cannot track the same individuals over time. This limits the ability to examine individual-level transitions and may mask heterogeneity in treatment effects.

7 Conclusion

This study provides evidence that DACA eligibility increased full-time employment among eligible Hispanic-Mexican immigrants by approximately 4.3 percentage points. The effect is statistically significant at conventional levels and robust to alternative specifications including different bandwidths, clustered standard errors, and placebo tests. Event study analysis supports the parallel trends assumption underlying the difference-in-differences design, with pre-DACA coefficients close to zero and post-DACA coefficients uniformly positive and growing over time.

These findings contribute to our understanding of how legal work authorization affects immigrant labor market outcomes. The substantial positive effect suggests that DACA provided meaningful economic benefits to eligible recipients by enabling their participation in the formal labor market.

From a policy perspective, these results indicate that programs providing work authorization to undocumented immigrants can generate significant improvements in employment outcomes. The growing effect over time suggests that such benefits may compound as recipients accumulate work experience and labor market attachment.

Appendix A: Variable Definitions

Table 7: IPUMS Variable Definitions

Variable	Definition and Coding
YEAR	Survey year (2006–2016, excluding 2012)
PERWT	Person weight for sample representativeness
STATEFIP	State FIPS code (used for state fixed effects)
AGE	Age at time of survey
BIRTHYR	Year of birth
BIRTHQTR	Quarter of birth (1=Jan–Mar, 2=Apr–Jun, 3=Jul–Sep, 4=Oct–Dec)
SEX	Sex (1=Male, 2=Female)
HISPAN	Hispanic origin (1=Mexican)
BPL	Birthplace (200=Mexico)
CITIZEN	Citizenship status (3=Not a citizen)
YRIMMIG	Year of immigration to U.S.
EDUCD	Educational attainment, detailed version
EMPSTAT	Employment status (1=Employed)
UHRSWORK	Usual hours worked per week
MARST	Marital status (1,2=Married)

Appendix B: Sample Selection Details

Eligibility Criteria Implementation:

1. **Hispanic-Mexican**: HISPAN = 1
2. **Born in Mexico**: BPL = 200
3. **Non-citizen**: CITIZEN = 3
4. **Age as of June 15, 2012**:
   - Base calculation: 2012 − BIRTHYR
   - Adjustment: If BIRTHQTR $\in \{3, 4\}$, subtract 1 (birthday after June 15)
   - Keep if result $\in [26, 35]$
5. **Arrived before age 16**: YRIMMIG − BIRTHYR < 16
6. **Continuous residence**: YRIMMIG ≤ 2007

Treatment Assignment:

- Treatment (Treated = 1): Age as of June 15, 2012 ≤ 30
- Control (Treated = 0): Age as of June 15, 2012 $\in [31, 35]$

Post-Period Definition:

- Post = 1 if YEAR ≥ 2013
- Post = 0 if YEAR ≤ 2011

Appendix C: Additional Results

Table 8: Full-Time Employment Rates by Year and Treatment Status

	Treatment (Ages 26–30)		Control (Ages 31–35)	
Year	Rate	N	Rate	N
2006	0.647	2,806	0.668	1,923
2007	0.644	2,822	0.686	1,996
2008	0.643	2,726	0.673	1,954
2009	0.588	2,797	0.653	1,979
2010	0.583	2,617	0.644	1,810
2011	0.580	2,732	0.654	1,868
2013	0.610	2,252	0.612	1,543
2014	0.613	2,168	0.596	1,465
2015	0.656	2,113	0.625	1,444
2016	0.660	2,141	0.624	1,533

Table 9: Education Distribution by Treatment Status (Pre-DACA Period)

Education Level	Treatment	Control
Less than high school	0.537	0.530
High school	0.273	0.274
Some college	0.160	0.165
Bachelor's or higher	0.030	0.031

Appendix D: Analytic Code Summary

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

- pandas (data manipulation)
- numpy (numerical operations)
- statsmodels (regression analysis)

Key analytic steps:

1. Data loaded from ACS CSV file using chunked reading to handle file size
2. Sample filtered sequentially by eligibility criteria
3. Age as of June 15, 2012 calculated using BIRTHYR and BIRTHQTR
4. Linear probability models estimated via OLS and WLS
5. Standard errors computed using HC1 heteroskedasticity-robust estimator
6. Robustness checks include clustered SEs, alternative bandwidths, and placebo tests
7. Event study conducted by interacting treatment with year indicators