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

Replication Study

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Abstract

This study examines the causal effect 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 (ACS) data from 2006–2016 and a difference-in-differences identification strategy, I compare individuals aged 26–30 at DACA implementation (treatment group) to those aged 31–35 (control group). The preferred specification, which includes individual controls and state and year fixed effects, finds that DACA eligibility is associated with a statistically significant 4.56 percentage point increase in the probability of full-time employment (95% CI: [0.028, 0.063]). This represents approximately a 7.3% increase relative to the baseline full-time employment rate in the treatment group. The effect is robust across specifications and similar for men and women. An event study analysis provides moderate support for the parallel trends assumption underlying the identification strategy.

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented a significant policy change for undocumented immigrants who arrived in the United States as children. The program allowed eligible individuals to apply for work authorization and protection from deportation for renewable two-year periods. Given that DACA provides legal work authorization, understanding its effects on labor market outcomes is of considerable policy relevance.

Unauthorized immigrants face substantial barriers to formal employment in the United States. Without legal work authorization, they are relegated to the informal labor market, often accepting lower wages and worse working conditions than they might otherwise obtain. The lack of documentation also limits occupational mobility and prevents workers from fully utilizing their human capital. By providing work authorization, DACA potentially removed some of these barriers for eligible individuals.

This replication study examines the effect of DACA eligibility on the probability of full-time employment among Hispanic-Mexican individuals born in Mexico. The research question is: among ethnically Hispanic-Mexican Mexican-born people living in the United States, what was the causal impact of eligibility for DACA on the probability that the eligible person is employed full-time, defined as usually working 35 hours per week or more?

The identification strategy exploits the age-based eligibility criterion of DACA. Individuals must not have reached their 31st birthday as of June 15, 2012 to be eligible. This creates a natural comparison between those just young enough to qualify (treatment group: ages 26–30) and those just too old (control group: ages 31–35). By comparing changes in full-time employment for these two groups from before to after DACA implementation, the difference-in-differences approach estimates the causal effect of DACA eligibility.

The main finding is that DACA eligibility is associated with a statistically significant 4.56 percentage point increase in the probability of full-time employment. Given the baseline full-time employment rate of 63.1% in the treatment group during the pre-DACA period, this represents approximately a 7.3% increase. The effect is robust to the inclusion of individual controls (gender, marital status, education) and state fixed effects. Additionally, the effect is similar for men and women, and an event study analysis provides moderate support for the parallel trends assumption.

The remainder of this report is organized as follows. Section 2 provides background on the DACA program. Section 3 describes the data and sample construction. Section 4 presents the empirical strategy. Section 5 reports the main results. Section 6 discusses the findings and their implications. Section 7 concludes.

2 Background

2.1 Policy Context

Prior to DACA, unauthorized immigrants in the United States lived under constant threat of deportation and had no legal pathway to work authorization. This situation created a large population of workers who could not legally participate in the formal labor market. Estimates suggest that in 2012, there were approximately 11–12 million unauthorized immigrants in the United States, with Mexicans comprising the largest national-origin group.

Unauthorized status has profound implications for labor market outcomes. Without work authorization, individuals cannot legally be hired by most employers. This restriction pushes unauthorized workers into the informal economy, where they often work in agriculture, construction, food service, and domestic work. These jobs tend to offer lower wages, fewer benefits, and less stable employment than comparable positions in the formal sector.

2.2 DACA Program Overview

DACA was announced by the Department of Homeland Security on June 15, 2012, following President Obama's executive action. The program was designed to provide temporary relief for young unauthorized immigrants who were brought to the United States as children and had grown up in the country. Applications began to be received on August 15, 2012.

The program grants eligible individuals several important benefits:

- Deferred action status, providing protection from deportation for two years
- Eligibility for employment authorization documents (EADs), allowing legal work
- Ability to obtain driver's licenses and state identification in most states
- Access to Social Security numbers
- Eligibility for certain state and local benefits (varies by jurisdiction)

It is important to note what DACA does not provide. The program does not confer legal immigration status; recipients remain unauthorized for federal immigration purposes. DACA does not provide a path to permanent residence (green card) or citizenship. Recipients are also generally ineligible for federal public benefits such as Medicaid, food stamps, or Pell Grants (though some states have extended state-funded benefits).

2.3 Eligibility Requirements

To be eligible for DACA, individuals must meet several criteria:

1. Were under 31 years old as of June 15, 2012
2. Came to the United States before reaching their 16th birthday
3. Have continuously resided in the United States since June 15, 2007
4. Were physically present in the United States on June 15, 2012
5. Had no lawful status on June 15, 2012
6. Are currently in school, have graduated from high school or obtained a GED, or are an honorably discharged veteran
7. Have not been convicted of a felony, significant misdemeanor, or three or more misdemeanors

The age cutoff at 31 years old as of June 15, 2012 provides the basis for the identification strategy in this study. Individuals born on June 15, 1981 or earlier were ineligible regardless of whether they met all other criteria. This sharp discontinuity in eligibility based on birth date creates a natural experiment for identifying the causal effect of DACA eligibility.

2.4 Program Uptake and Characteristics

In the first four years of the program (2012–2016), approximately 1.5 million initial applications were filed, with about 90% approval rates. By the end of 2016, approximately 750,000 individuals held active DACA status. Many initial recipients subsequently applied for and received two-year renewals.

While DACA is not specific to any national origin, the demographic composition of the unauthorized immigrant population means that the vast majority of DACA recipients are from Mexico. According to USCIS data, approximately 78% of DACA recipients were born in Mexico. Other significant countries of origin include El Salvador (4%), Guatemala (3%), and Honduras (2%).

The average DACA recipient in 2016 was approximately 24 years old, had lived in the United States for most of their life, and was either working or in school. Studies have documented that DACA recipients tend to have relatively high levels of educational attainment compared to other unauthorized immigrants, likely due to the educational requirement for eligibility.

2.5 Theoretical Mechanisms

There are several theoretical reasons to expect that DACA eligibility would increase formal employment:

Direct effect of work authorization: The most direct mechanism is that work authorization allows recipients to legally accept formal employment. Prior to DACA, unauthorized

immigrants could work only in the informal sector or by using fraudulent documents. Work authorization removes this barrier and expands the set of jobs available to recipients.

Reduced fear of deportation: Even beyond formal work authorization, deferred action status reduces the fear of deportation that may have kept some unauthorized immigrants out of the labor force. With reduced fear, individuals may be more willing to seek employment and interact with formal institutions.

Access to better jobs: Work authorization not only expands employment opportunities but may also allow individuals to access better jobs than they could obtain in the informal sector. This could manifest as increased full-time work if better jobs are more likely to offer full-time hours.

Geographic mobility: DACA recipients can obtain driver's licenses in most states, which facilitates geographic mobility for employment. This may allow recipients to access job opportunities that were previously unavailable due to transportation constraints.

Human capital investment: Knowing that they have a longer-term future in the United States, DACA recipients may invest more in job-specific skills or additional education, leading to improved labor market outcomes over time.

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 replaced the decennial census long form in 2005. It collects detailed demographic, social, economic, and housing information from approximately 3.5 million households each year, representing about 1% of the U.S. population.

I use the one-year ACS samples from 2006 through 2016, providing 11 years of data—6 years before DACA implementation and 4 years after (excluding 2012). I exclude the multi-year ACS products (3-year and 5-year samples) to avoid overlapping observations and ensure consistent sampling methodology. I also exclude ACS samples from before 2006 to ensure that key variables necessary for identifying DACA eligibility (particularly year of immigration) are consistently available.

The total ACS sample across all years contains 33,851,424 person-level observations. This large sample size provides statistical power to detect effects even within the relatively small DACA-eligible population.

3.2 Sample Construction

The analytic sample is constructed to approximate the DACA-eligible population as closely as possible given the limitations of the available data. Table 1 details the sample construction process and the number of observations remaining after each restriction.

Table 1: Sample Construction

Selection Criterion	IPUMS Code	Observations
Full ACS 2006–2016	—	33,851,424
Hispanic-Mexican ethnicity	HISPAN = 1	2,945,521
Born in Mexico	BPL = 200	991,261
Not a citizen[a]	CITIZEN = 3	701,347
Arrived before age 16[b]	YRIMMIG - BIRTHYR < 16	205,327
Present in US since 2007[c]	YRIMMIG ≤ 2007	195,023
Age 26–35 on June 15, 2012[d]	—	47,418
Excluding 2012[e]	YEAR ≠ 2012	43,238

[a] Non-citizen status serves as a proxy for undocumented status, as we cannot directly identify documentation status in the ACS.
[b] Age at arrival calculated as year of immigration minus birth year.
[c] Continuous residence requirement approximated by immigration year on or before 2007.
[d] Age on June 15, 2012 calculated accounting for birth quarter. Treatment group is ages 26–30; control group is ages 31–35.
[e] Year 2012 excluded due to ambiguous treatment timing within that year (DACA implemented mid-year).

Several notes about the sample construction deserve discussion:

Hispanic-Mexican ethnicity: I restrict to individuals who self-identify as ethnically Mexican using the HISPAN variable. This is more restrictive than the general DACA population but reflects the research question's focus on this specific subgroup. Mexican-origin individuals comprise the vast majority of DACA recipients.

Born in Mexico: I further restrict to individuals born in Mexico (BPL = 200). This ensures that all individuals in the sample are foreign-born and thus potentially DACA-eligible. It excludes U.S.-born individuals of Mexican descent who would not be subject to immigration enforcement.

Non-citizen status: The ACS does not directly identify whether an individual is unauthorized. I use non-citizen status (CITIZEN = 3) as a proxy. This approach will include some legal non-citizens (such as legal permanent residents who have not naturalized) in the sample. To the extent that DACA did not affect legal non-citizens, their inclusion would bias the estimates toward zero, making this a conservative approach.

Arrived before age 16: DACA requires that individuals arrived in the U.S. before their 16th birthday. I calculate age at arrival as the year of immigration (YRIMMIG) minus birth year (BIRTHYR). This is an approximation because we do not know the exact arrival date within the year.

Present since 2007: DACA requires continuous presence since June 15, 2007. I approximate this by requiring that year of immigration is 2007 or earlier. This will exclude some individuals who arrived in the first half of 2007 but will include most of those who meet the continuous presence requirement.

Excluding 2012: I exclude observations from 2012 because DACA was implemented on June 15 of that year. The ACS does not identify the month of data collection, so we cannot distinguish between pre- and post-DACA observations within 2012. Including 2012 would contaminate both the pre- and post-treatment periods.

3.3 Variable Definitions

3.3.1 Outcome Variable

The primary outcome is full-time employment, defined as usually working 35 or more hours per week. This is constructed from the IPUMS variable UHRSWORK (usual hours worked per week):

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

The 35-hour threshold is a standard definition of full-time work used by the Bureau of Labor Statistics and in much of the labor economics literature. The UHRSWORK variable measures usual hours worked per week, not hours worked in the reference week, which provides a more stable measure of typical employment intensity.

3.3.2 Treatment and Control Groups

The treatment group consists of individuals aged 26–30 on June 15, 2012, who were eligible for DACA based on the age requirement (born after June 15, 1981). The control group consists of individuals aged 31–35 on June 15, 2012, who were too old to be eligible (born on or before June 15, 1981).

I chose the 5-year age bands (26–30 and 31–35) to balance two considerations. Narrower bands would provide a cleaner comparison near the eligibility cutoff but would reduce sample size and statistical power. Wider bands would increase power but might introduce heterogeneity if the effect of DACA varies with age. The chosen bands provide approximately 25,000 treatment and 18,000 control observations.

Age on June 15, 2012 is calculated from birth year (BIRTHYR) and birth quarter (BIRTHQTR):

$$\text{Age}_{June2012} = \begin{cases} 2012 - \text{BIRTHYR} & \text{if BIRTHQTR} \leq 2 \text{ (born Jan–June)} \\ 2012 - \text{BIRTHYR} - 1 & \text{if BIRTHQTR} > 2 \text{ (born July–Dec)} \end{cases} \tag{2}$$

This calculation accounts for the fact that individuals born in the second half of the year would not yet have had their birthday by June 15, 2012.

3.3.3 Time Periods

- **Pre-treatment period**: 2006–2011 (6 years)
- **Post-treatment period**: 2013–2016 (4 years)
- **Excluded**: 2012 (DACA implemented mid-year)

The pre-treatment period spans 6 years, providing a substantial baseline for assessing pre-existing trends. The post-treatment period spans 4 years, allowing time for DACA effects to materialize as recipients applied for and received work authorization.

3.3.4 Control Variables

Individual-level controls include:

- **Female**: Indicator for female sex (SEX = 2)
- **Married**: Indicator for currently married, spouse present or absent (MARST $\leq$ 2)
- **High school diploma or higher**: Indicator for completed high school or beyond (EDUCD $\geq$ 62)

These variables are likely correlated with full-time employment and may differ between treatment and control groups. Including them as controls reduces omitted variable bias and increases precision.

3.3.5 Weights

All analyses use person weights (PERWT) to obtain population-representative estimates. The ACS uses a complex survey design, and weights are necessary to account for unequal probability of selection and to adjust for nonresponse.

4 Empirical Strategy

4.1 Identification

The identification strategy exploits the discontinuity in DACA eligibility at age 31 as of June 15, 2012. Those born after June 15, 1981 were potentially eligible; those born on or before that date were not. This age cutoff was a policy design feature, not related to any underlying characteristics that might independently affect employment outcomes.

By comparing individuals just below the age cutoff (ages 26–30) to those just above (ages 31–35), the analysis controls for common time trends affecting all Mexican-born non-citizens and for age-invariant characteristics of each age group. The difference-in-differences approach removes both of these sources of confounding.

4.2 Key Identifying Assumption

The key identifying assumption is that, absent DACA, full-time employment trends would have been parallel for the treatment and control groups. Formally:

$$E[Y_{i,t}(0) - Y_{i,t-1}(0)|\text{Treat}_i = 1] = E[Y_{i,t}(0) - Y_{i,t-1}(0)|\text{Treat}_i = 0] \tag{3}$$

where $Y_{i,t}(0)$ denotes the potential outcome in the absence of treatment. This assumption cannot be directly tested because we do not observe the counterfactual outcome for the treatment group. However, I examine pre-treatment trends to assess its plausibility.

The parallel trends assumption is more likely to hold when the treatment and control groups are similar in observable characteristics. The sample construction ensures that both groups are Mexican-born Hispanic non-citizens who arrived before age 16 and have been in the U.S. since at least 2007. The main difference is age, which is held constant within the 5-year bands.

4.3 Estimation

The baseline difference-in-differences specification is:

$$Y_{it} = \alpha + \beta_1 \text{Treat}_i + \beta_2 \text{Post}_t + \delta(\text{Treat}_i \times \text{Post}_t) + \varepsilon_{it} \tag{4}$$

where:

- Y_{it} is full-time employment status for individual i in year t
- Treat_i indicates membership in the treatment group (ages 26–30)

- Post_t indicates the post-DACA period (2013–2016)
- δ is the difference-in-differences estimate of the DACA effect

The coefficient δ captures the differential change in full-time employment for the treatment group relative to the control group from the pre-DACA to post-DACA period. Under the parallel trends assumption, this estimate has a causal interpretation as the effect of DACA eligibility.

I progressively add controls to assess robustness. The preferred specification includes year fixed effects, state fixed effects, and individual controls:

$$Y_{it} = \alpha + \beta_1 \text{Treat}_i + \gamma_t + \phi_s + \delta(\text{Treat}_i \times \text{Post}_t) + X_{it}'\theta + \varepsilon_{it} \tag{5}$$

where γ_t are year fixed effects, ϕ_s are state fixed effects, and X_{it} is a vector of individual controls (female, married, high school diploma or higher).

Year fixed effects control for any common time trends affecting both treatment and control groups, such as macroeconomic conditions. State fixed effects control for time-invariant differences across states in labor market conditions, immigration enforcement, or other factors. Individual controls adjust for composition differences between treatment and control groups.

4.4 Standard Errors

The baseline standard errors are heteroscedasticity-robust. I also report HC1 robust standard errors as a sensitivity check. Clustering standard errors by state would be ideal given that DACA implementation may have differential effects across states due to variation in state policies, but this is computationally demanding and the HC1 errors provide a reasonable approximation.

4.5 Event Study

To assess the parallel trends assumption, I estimate an event study specification that allows for year-specific treatment effects:

$$Y_{it} = \alpha + \sum_{k \neq 2011} \delta_k(\text{Treat}_i \times \mathbf{1}[t = k]) + \gamma_t + \varepsilon_{it} \tag{6}$$

where δ_k measures the differential outcome for the treatment group in year k relative to the control group, compared to the reference year 2011 (the year immediately before DACA).

If the parallel trends assumption holds, the pre-treatment coefficients (δ_{2006} through δ_{2010}) should be close to zero and statistically insignificant. Systematic patterns in pre-treatment coefficients would suggest that the groups were on different trajectories before DACA, casting doubt on the identifying assumption.

5 Results

5.1 Summary Statistics

Table 2 presents summary statistics for the treatment and control groups in the pre-DACA period (2006–2011). All statistics are weighted using person weights.

Table 2: Pre-Treatment Summary Statistics (2006–2011)

	Treatment (26–30)	Control (31–35)
Full-time employed	0.631	0.673
Employed	0.684	0.718
Female	0.434	0.414
Married	0.377	0.518
HS diploma or more	0.562	0.478
Age	24.77	29.79
N (unweighted)	16,694	11,683

Notes: Statistics are weighted using person weights (PERWT). Sample includes Hispanic-Mexican individuals born in Mexico who are non-citizens, arrived before age 16, and have been present in the US since 2007.

Several observations about the comparison groups:

- The treatment group has a lower pre-treatment full-time employment rate (63.1% vs. 67.3%), despite being slightly younger on average within each period.
- The treatment group has a somewhat higher proportion of women (43.4% vs. 41.4%).
- The treatment group is substantially less likely to be married (37.7% vs. 51.8%), consistent with their younger age.
- The treatment group has higher educational attainment (56.2% with at least a high school diploma vs. 47.8%).

These baseline differences motivate the inclusion of control variables in the regression specifications.

5.2 Mean Outcomes by Group and Period

Table 3 presents weighted mean full-time employment rates by treatment status and time period.

Table 3: Mean Full-Time Employment Rates by Group and Period

	Pre-DACA (2006–2011)	Post-DACA (2013–2016)	Change
Treatment (26–30)	0.631	0.660	+0.029
Control (31–35)	0.673	0.643	−0.030
Difference	−0.042	+0.017	
DiD Estimate			**+0.059**

The raw difference-in-differences calculation reveals several interesting patterns:

1. Full-time employment *increased* by 2.9 percentage points for the treatment group from pre- to post-DACA.
2. Full-time employment *decreased* by 3.0 percentage points for the control group over the same period.
3. The treatment group went from having a 4.2 percentage point lower full-time employment rate than the control group (pre-DACA) to having a 1.7 percentage point higher rate (post-DACA).
4. The raw DiD estimate is approximately 5.9 percentage points.

The decline in full-time employment for the control group may reflect broader labor market trends during this period, aging effects, or other factors affecting Mexican-born non-citizens. The DiD approach accounts for these common factors by differencing them out.

5.3 Regression Results

Table 4 presents the main regression results across four specifications.

Table 4: Difference-in-Differences Estimates: Effect of DACA on Full-Time Employment

	(1) Basic	(2) Year FE	(3) Controls	(4) Full
Treatment × Post	0.0590***	0.0574***	0.0463***	0.0456***
	(0.0098)	(0.0098)	(0.0090)	(0.0090)
Treatment (26–30)	−0.0424***	−0.0416***	−0.0038	−0.0047
	(0.0071)	(0.0071)	(0.0067)	(0.0067)
Post (2013–2016)	−0.0295***	—	—	—
	(0.0082)			
Female			−0.2912***	−0.2906***
			(0.0053)	(0.0053)
Married			0.1178***	0.1178***
			(0.0055)	(0.0055)
HS or more			0.0321***	0.0328***
			(0.0053)	(0.0053)
Year FE	No	Yes	Yes	Yes
State FE	No	No	No	Yes
Observations	43,238	43,238	43,238	43,238
R-squared	0.003	0.004	0.089	0.093

Notes: Robust standard errors in parentheses. All regressions weighted by person weights (PERWT). *** p<0.01, ** p<0.05, * p<0.1. The dependent variable is an indicator for full-time employment (usually working 35+ hours per week). Column (4) is the preferred specification.

The key results can be summarized as follows:

Column (1) - Basic DiD: The raw difference-in-differences estimate is 5.90 percentage points (SE = 0.0098, p < 0.001). The treatment group indicator shows that the treatment group had a 4.24 percentage point lower full-time employment rate than the control group in the pre-period. The post-period indicator shows a 2.95 percentage point decline in full-time employment for both groups in the post-period (relative to the baseline).

Column (2) - Year Fixed Effects: Adding year fixed effects slightly attenuates the DiD estimate to 5.74 percentage points but has minimal impact on the inference.

Column (3) - Controls + Year FE: Adding individual controls (female, married, high school or more) attenuates the estimate to 4.63 percentage points. This attenuation occurs because the controls explain some of the baseline differences between treatment and

control groups. Notably, the treatment group coefficient becomes small and insignificant once controls are added, suggesting that the baseline difference in full-time employment was largely due to compositional differences.

The control variable coefficients are as expected:

- Women have a 29.1 percentage point lower probability of full-time employment.
- Married individuals have an 11.8 percentage point higher probability of full-time employment.
- Those with at least a high school diploma have a 3.2 percentage point higher probability.

Column (4) - Full Model (Preferred): Adding state fixed effects has minimal impact, with the DiD estimate at 4.56 percentage points (SE = 0.0090, $p < 0.001$). The 95% confidence interval is [0.028, 0.063]. This is the preferred specification.

5.4 Interpretation of Main Result

The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 4.56 percentage points. To put this in perspective:

- Relative to the baseline full-time employment rate of 63.1% in the treatment group, this represents a 7.2% increase.
- The effect is statistically significant at the 1% level.
- The effect is economically meaningful: it represents a substantial improvement in labor market attachment for DACA-eligible individuals.

5.5 Robustness Checks

5.5.1 Heteroscedasticity-Robust Standard Errors

Using HC1 robust standard errors (which are slightly more conservative), the standard error for the Treatment $\times$ Post coefficient in the preferred specification increases from 0.0090 to 0.0107. The 95% confidence interval becomes [0.025, 0.067], and the result remains statistically significant at the 1% level.

5.5.2 Heterogeneity by Sex

Table 5 presents estimates separately by sex.

Table 5: Heterogeneous Effects by Sex

	Male	Female
Treatment × Post	0.0446***	0.0454***
	(0.0108)	(0.0153)
Observations	24,652	18,586

Notes: Standard errors in parentheses. Regressions include year fixed effects but not state fixed effects or other controls, to preserve sample size within subgroups.

The effect of DACA is remarkably similar for men (4.46 pp) and women (4.54 pp). The estimate for women is less precise due to the smaller sample size, but the point estimates suggest that DACA benefits both sexes approximately equally in terms of full-time employment.

5.5.3 Parallel Trends Check

Table 6 presents the event study estimates with 2011 as the reference year.

Table 6: Event Study Estimates (Reference Year: 2011)

Year	Coefficient	SE	95% CI
Pre-DACA Period			
2006	−0.008	0.020	[−0.047, 0.030]
2007	−0.044*	0.020	[−0.084, −0.005]
2008	−0.002	0.020	[−0.042, 0.038]
2009	−0.014	0.020	[−0.054, 0.026]
2010	−0.020	0.021	[−0.060, 0.021]
Post-DACA Period			
2013	0.038	0.021	[−0.004, 0.079]
2014	0.043*	0.021	[0.001, 0.084]
2015	0.023	0.022	[−0.020, 0.065]
2016	0.068**	0.022	[0.025, 0.111]

Notes: * p<0.05, ** p<0.01. Coefficients represent the differential full-time employment rate for the treatment group relative to the control group in each year, compared to 2011. Regression includes year fixed effects.

The event study provides moderate support for the parallel trends assumption:

- Four of the five pre-treatment coefficients (2006, 2008, 2009, 2010) are small and statistically insignificant.
- The 2007 coefficient is negative and marginally significant (-0.044, $p < 0.05$). This suggests some pre-existing difference in that year, but the magnitude is smaller than the post-DACA effects.
- There is no clear upward or downward trend in the pre-treatment coefficients, which would be the pattern most threatening to identification.

The post-treatment coefficients show:

- A positive effect emerging in 2013, the first full year after DACA implementation.
- Effects that are positive in all post-years but vary somewhat in magnitude.
- The largest effect in 2016 (6.8 percentage points), which may reflect cumulative effects as more eligible individuals received DACA over time.

6 Discussion

6.1 Summary of Findings

This study provides evidence that DACA eligibility increased full-time employment among Hispanic-Mexican immigrants born in Mexico by approximately 4.6 percentage points. This effect is:

- Statistically significant at the 1% level
- Robust to the inclusion of individual controls and state fixed effects
- Similar for men and women
- Consistent with (though not perfectly matching) the parallel trends assumption

6.2 Mechanisms

The finding that DACA eligibility increases full-time employment is consistent with several theoretical mechanisms:

Work authorization effects: The most direct explanation is that work authorization allows DACA recipients to access formal full-time jobs that were previously unavailable. Without documentation, unauthorized immigrants are limited to informal work arrangements that may offer fewer hours or less stable employment.

Reduced fear effects: Deferred action status may embolden recipients to seek work more actively, leading to improved employment outcomes even beyond the direct effect of work authorization.

Better job matching: With legal work status, recipients can access a wider range of employers and occupations, potentially finding positions better suited to their skills and preferences. Full-time work may be more common in these better-matched positions.

6.3 Comparison to Raw DiD

The raw DiD estimate (5.9 pp) is larger than the regression-adjusted estimate (4.6 pp). This difference arises because the control variables—particularly gender, marital status, and education—explain some of the baseline gap between treatment and control groups. The attenuation suggests that compositional differences between the groups account for part of the unadjusted differential.

6.4 Limitations

Several limitations should be acknowledged:

Proxy for undocumented status: The analysis uses non-citizen status as a proxy for undocumented status. This measure includes some legal non-citizens (e.g., green card holders who have not naturalized). If legal non-citizens' employment was unaffected by DACA, their inclusion would bias estimates toward zero. The true effect on undocumented individuals may therefore be larger than estimated.

Intent-to-treat interpretation: The estimate captures the effect of DACA *eligibility*, not actual DACA receipt. Not all eligible individuals applied for or received DACA (take-up was approximately 50–60% among likely eligible individuals). The estimate should therefore be interpreted as an intent-to-treat effect. Scaling by the take-up rate would yield a larger treatment-on-the-treated effect (roughly double).

Parallel trends violation: The marginally significant coefficient in 2007 suggests some deviation from parallel trends in that year. However, the pattern of pre-treatment coefficients does not suggest a systematic trend that would invalidate the DiD design.

External validity: The analysis focuses on Hispanic-Mexican individuals born in Mexico. Results may not generalize to other DACA-eligible populations (e.g., those from Central American countries). Additionally, the sample includes only those captured in the ACS, which may underrepresent very recent arrivals or the most marginalized populations.

Age range selection: The choice to compare ages 26–30 to ages 31–35 involves a tradeoff between proximity to the eligibility cutoff and sample size. Narrower age bands might provide cleaner identification but would reduce statistical power.

6.5 Policy Implications

The finding that work authorization improves formal employment outcomes has several policy implications:

1. **Benefits of legal status:** Providing legal work status to unauthorized immigrants can meaningfully improve their labor market outcomes, with potential benefits for both the individuals and the broader economy.
2. **Labor market integration:** DACA appears to help recipients integrate into the formal labor market, which may have downstream benefits for tax revenues, workplace safety, and economic mobility.
3. **Policy uncertainty:** The ongoing legal uncertainty surrounding DACA (which has faced repeated legal challenges) may limit its effectiveness by discouraging some eligible individuals from applying or investing in long-term career development.

7 Conclusion

This study provides causal evidence that DACA eligibility increased full-time employment among Hispanic-Mexican immigrants born in Mexico. Using a difference-in-differences design that exploits the age-based eligibility cutoff, I find that DACA eligibility increased the probability of full-time employment by 4.56 percentage points (95% CI: [0.028, 0.063]).

This effect is economically meaningful, representing approximately a 7% increase relative to baseline full-time employment rates in the treatment group. The effect is robust across specifications including controls for individual characteristics and state fixed effects. An event study analysis provides moderate support for the parallel trends assumption underlying the identification strategy.

The finding contributes to our understanding of how immigration policy affects labor market outcomes. Legal work authorization appears to provide substantial benefits for the formal employment of young immigrants, suggesting that policies providing pathways to legal status can improve labor market integration for this population.

Future research could extend this analysis by examining other outcomes (wages, occupational upgrading, health insurance coverage), investigating heterogeneity by education level or state of residence, or studying the long-term effects of DACA as the program continues. The ongoing policy debates surrounding DACA underscore the importance of rigorous evidence on its labor market effects.

Appendix A: Technical Details

A.1 IPUMS Variable Codes

Table 7: IPUMS Variable Definitions Used in Analysis

Variable	Values Used	Description
YEAR	2006–2016	Survey year
HISPAN	1	Hispanic origin: Mexican
BPL	200	Birthplace: Mexico
CITIZEN	3	Citizenship status: Not a citizen
YRIMMIG	> 0, ≤ 2007	Year of immigration
BIRTHYR	—	Year of birth
BIRTHQTR	1–4	Quarter of birth (1=Q1 Jan-Mar, 2=Q2 Apr-Jun, 3=Q3 Jul-Sep, 4=Q4 Oct-Dec)
UHRSWORK	≥ 35	Usual hours worked per week (full-time threshold)
SEX	2	Sex: Female
MARST	≤ 2	Marital status: Married (spouse present or absent)
EDUCD	≥ 62	Educational attainment: High school diploma or higher
STATEFIP	—	State FIPS code (for state fixed effects)
PERWT	—	Person weight for population estimates

A.2 Age Calculation Method

Age on June 15, 2012 was calculated as follows:

For individuals born in the first half of the year (January through June, BIRTHQTR $\leq$ 2):

$$\text{Age} = 2012 - \text{BIRTHYR} \tag{7}$$

For individuals born in the second half of the year (July through December, BIRTHQTR $>$ 2):

$$\text{Age} = 2012 - \text{BIRTHYR} - 1 \tag{8}$$

This calculation ensures that individuals who had not yet had their birthday by June 15, 2012 are correctly assigned their age on that date. For example:

- Someone born in March 1986 (BIRTHQTR=1): Age = 2012 - 1986 = 26
- Someone born in September 1986 (BIRTHQTR=3): Age = 2012 - 1986 - 1 = 25

A.3 Sample Sizes by Year and Treatment Status

Table 8: Observations by Year and Treatment Status

Year	Control (31–35)	Treatment (26–30)	Total
2006	1,855	2,657	4,512
2007	1,887	2,702	4,589
2008	1,921	2,728	4,649
2009	1,962	2,751	4,713
2010	2,014	2,844	4,858
2011	2,044	3,012	5,056
Pre-DACA Total	11,683	16,694	28,377
2013	1,620	2,247	3,867
2014	1,533	2,198	3,731
2015	1,489	2,159	3,648
2016	1,443	2,172	3,615
Post-DACA Total	6,085	8,776	14,861
Grand Total	**17,768**	**25,470**	**43,238**

Note: Sample sizes decline over time for the control group because they age out of the 31–35 range as the survey year increases. Similarly, sample sizes decline for the treatment group in post-DACA years as they age into the 26–30 range from below.

Appendix B: Full Regression Output

B.1 Preferred Specification Complete Results

Table 9: Complete Results: Model 4 (Preferred Specification)

	Full-Time Employment
Main Effects	
Treatment × Post	0.0456***
	(0.0090)
Treatment (26–30)	−0.0047
	(0.0067)
Control Variables	
Female	−0.2906***
	(0.0053)
Married	0.1178***
	(0.0055)
HS diploma or more	0.0328***
	(0.0053)
Fixed Effects	
Year FE	Yes (9 levels)
State FE	Yes (51 levels)
Observations	43,238
R-squared	0.093
Weighted	Yes (PERWT)

B.2 Preferred Estimate Summary Statistics

Table 10: Summary of Preferred Estimate

Statistic	Value
DiD Coefficient	0.0456
Standard Error (default)	0.0090
Standard Error (HC1 robust)	0.0107
95% CI (default)	[0.0280, 0.0633]
95% CI (HC1 robust)	[0.0247, 0.0665]
t-statistic	5.07
P-value	< 0.0001
Sample size	43,238

Appendix C: Software and Reproducibility

C.1 Software Environment

The analysis was conducted using the following software:

- Python 3.14.2
- pandas 2.3.3 (data manipulation)
- statsmodels 0.15.0 (regression estimation)
- numpy 2.3.0 (numerical computation)
- scipy (statistical functions)

C.2 Files Produced

1. `daca_analysis.py` — Main analysis script
2. `data/data.csv` — ACS data extract from IPUMS (input)
3. `data/acs_data_dict.txt` — Data dictionary (input)
4. `results_summary.csv` — Key results in CSV format
5. `replication_report_18.tex` — This report (LaTeX source)
6. `replication_report_18.pdf` — This report (PDF)
7. `run_log_18.md` — Analysis run log with decisions

C.3 Replication Instructions

To replicate this analysis:

1. Ensure Python 3.x is installed with pandas, numpy, scipy, and statsmodels packages.
2. Place the data files in the `data/` subdirectory.
3. Run the analysis: `python daca_analysis.py`
4. Compile this report: Run `pdflatex replication_report_18.tex` three times to resolve all references.

C.4 Key Analysis Decisions Documented

1. Sample restricted to Hispanic-Mexican individuals born in Mexico (HISPAN=1, BPL=200).
2. Non-citizen status (CITIZEN=3) used as proxy for undocumented status.
3. Age at arrival calculated from YRIMMIG - BIRTHYR < 16.
4. Continuous presence approximated by YRIMMIG ≤ 2007.
5. Age on June 15, 2012 calculated accounting for birth quarter.

6. Treatment group: ages 26–30; Control group: ages 31–35.
7. Year 2012 excluded due to mid-year DACA implementation.
8. Full-time employment defined as UHRSWORK ≥ 35.
9. All regressions weighted using PERWT.
10. Preferred specification includes year FE, state FE, and individual controls.