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

Replication Report 12

January 26, 2026

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 data from the American Community Survey (2006–2016) and a difference-in-differences design comparing individuals aged 26–30 (treatment) to those aged 31–35 (control) at the time of DACA implementation, I find that DACA eligibility increased the probability of full-time employment by approximately 4.7 percentage points (95% CI: 2.6–6.8 pp). This effect is robust across multiple specifications and represents a meaningful improvement in labor market outcomes for eligible individuals. Event study analysis provides support for the parallel trends assumption, with no significant pre-treatment differential trends between treatment and control groups.

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

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1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, implemented on June 15, 2012, represented a significant shift in U.S. immigration policy. The program provided temporary relief from deportation and work authorization to undocumented immigrants who arrived in the United States as children and met specific eligibility criteria. Given that legal work authorization directly affects labor market participation, understanding the employment effects of DACA has important policy implications.

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?* Full-time employment is defined as usually working 35 or more hours per week.

The identification strategy exploits the age-based eligibility cutoff of the DACA program. Individuals who were under 31 years old as of June 15, 2012 were potentially eligible, while those aged 31 and older were not. By comparing employment outcomes between those just below the cutoff (treatment group: ages 26–30) and those just above (control group: ages 31–35), while controlling for common time trends, I can identify the causal effect of DACA eligibility using a difference-in-differences (DiD) framework.

The main finding is that DACA eligibility increased the probability of full-time employment by approximately 4.7 percentage points. This effect is statistically significant at conventional levels and robust to various specification choices, including the addition of demographic controls, year fixed effects, and state fixed effects. Event study analysis shows no significant pre-treatment differential trends, supporting the identifying assumption of parallel trends.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and applications began to be accepted on August 15, 2012. The program provided two primary benefits to eligible individuals: (1) protection from deportation for a renewable two-year period, and (2) authorization to work legally in the United States.

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

- Arrived in the United States before their 16th birthday
- Were under 31 years old as of June 15, 2012
- Continuously resided in the United States since June 15, 2007
- Were physically present in the United States on June 15, 2012
- Did not have lawful immigration status on June 15, 2012
- Met certain educational or military service requirements

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. While DACA was available to eligible individuals regardless of national origin, the structure of undocumented immigration to the United States meant that the vast majority of eligible individuals were from Mexico.

2.2 Theoretical Mechanisms

DACA eligibility may affect full-time employment through several channels:

Legal work authorization: The most direct mechanism is that DACA provides legal authorization to work. Prior to DACA, undocumented individuals could only work informally, often in sectors with limited hours or in jobs that did not require formal employment verification.

Reduced employment risk: With work authorization and protection from deportation, DACA-eligible individuals face lower risks of job loss due to immigration enforcement, which may encourage them to seek and accept full-time positions.

Access to formal labor markets: Legal work status enables access to jobs in sectors that require employment verification (I-9), including many positions offering full-time hours with benefits.

Geographic mobility: The ability to obtain driver's licenses in some states and reduced fear of deportation may increase geographic mobility, expanding the set of accessible employment opportunities.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The ACS is an annual survey conducted by the U.S. Census Bureau that provides detailed demographic, social, and economic information about the U.S. population. I use the one-year ACS samples from 2006 through 2016.

3.2 Sample Construction

The analytic sample is constructed by applying the following restrictions:

1. **Hispanic-Mexican ethnicity:** Individuals with Hispanic origin coded as Mexican (HISPAN = 1)
2. **Born in Mexico:** Birthplace coded as Mexico (BPL = 200)
3. **Non-citizen:** Citizenship status coded as "not a citizen" (CITIZEN = 3)
4. **Arrived before age 16:** Age at immigration (YRIMMIG – BIRTHYR) less than 16

5. **Continuous presence:** Year of immigration 2007 or earlier (YRIMMIG $\leq$ 2007)

6. **Relevant age groups:** Age 26–30 (treatment) or 31–35 (control) as of June 15, 2012

7. **Excluding 2012:** Survey year not equal to 2012 (due to mid-year implementation)

Age as of June 15, 2012 is calculated using birth year (BIRTHYR) and birth quarter (BIRTHQTR). For individuals born in quarters 3 or 4 (July–December), one year is subtracted from the simple difference (2012 – BIRTHYR) to account for the fact that they had not yet had their birthday by June 15.

3.3 Key Variables

Outcome variable: Full-time employment is defined as usually working 35 or more hours per week (UHRSWORK $\geq$ 35). This binary indicator equals 1 for full-time workers and 0 otherwise.

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

Post-period indicator: The post variable equals 1 for survey years 2013–2016 and 0 for years 2006–2011.

Control variables:

- Female: Binary indicator for sex (SEX = 2)
- Married: Binary indicator for married status (MARST $\leq$ 2)
- Years in U.S.: Years since immigration (YEAR – YRIMMIG)
- Year fixed effects: Categorical dummies for survey year
- State fixed effects: Categorical dummies for state of residence (STATEFIP)

3.4 Sample Characteristics

The final analytic sample consists of 43,238 person-year observations, with 25,470 in the treatment group (ages 26–30) and 17,768 in the control group (ages 31–35). Table 1 shows the distribution of observations across years and treatment status.

Table 1: Sample Size by Year and Treatment Status

Year	Control (31–35)	Treatment (26–30)	Total
2006	2,129	3,067	5,196
2007	1,968	3,002	4,970
2008	1,962	2,615	4,577
2009	1,852	2,627	4,479
2010	1,937	2,685	4,622
2011	1,835	2,698	4,533
2013	1,656	2,338	3,994
2014	1,581	2,278	3,859
2015	1,458	2,122	3,580
2016	1,390	2,038	3,428
Total	**17,768**	**25,470**	**43,238**

Note: Sample restricted to Hispanic-Mexican individuals born in Mexico who are non-citizens, arrived before age 16, and were present in the U.S. since at least 2007. Year 2012 is excluded.

4 Empirical Strategy

4.1 Difference-in-Differences Design

The identification strategy relies on a difference-in-differences design that compares changes in full-time employment between the treatment group (DACA-eligible individuals aged 26–30) and the control group (DACA-ineligible individuals aged 31–35) before and after program implementation.

The basic DiD estimating equation is:

$$Y_{it} = \alpha + \beta_1 \text{Treat}_i + \beta_2 \text{Post}_t + \beta_3 (\text{Treat}_i \times \text{Post}_t) + \varepsilon_{it} \tag{1}$$

where Y_{it} is full-time employment status for individual i in year t, Treat_i is an indicator for being in the treatment group, Post_t is an indicator for the post-DACA period, and β_3 is the difference-in-differences estimate of the DACA effect.

The preferred specification includes demographic controls and year fixed effects:

$$Y_{it} = \alpha + \beta_1 \text{Treat}_i + \beta_3 (\text{Treat}_i \times \text{Post}_t) + \gamma \mathbf{X}_{it} + \delta_t + \varepsilon_{it} \tag{2}$$

where $\mathbf{X}_{it}$ is a vector of individual characteristics (female, married, years in U.S.) and δ_t are year fixed effects.

4.2 Identifying Assumption

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. This assumption is inherently untestable for the post-treatment period, but I can examine whether the groups exhibited parallel trends in the pre-treatment period.

4.3 Event Study Specification

To assess the parallel trends assumption and examine the dynamics of the treatment effect, I estimate an event study specification:

$$Y_{it} = \alpha + \sum_{k \neq 2011} \theta_k (\text{Treat}_i \times \mathbf{1}[\text{Year}_t = k]) + \phi \text{Treat}_i + \delta_t + \varepsilon_{it} \tag{3}$$

where the coefficients θ_k represent the differential change in full-time employment between treatment and control groups in year k relative to the reference year (2011, the year immediately before DACA). Under the parallel trends assumption, the pre-treatment coefficients

$(\theta_{2006}, ..., \theta_{2010})$ should be statistically indistinguishable from zero.

4.4 Standard Errors

All standard errors are computed using heteroskedasticity-robust (HC1) variance estimators. This approach provides valid inference without requiring assumptions about homoskedasticity.

5 Results

5.1 Summary Statistics

Table 2 presents summary statistics for the treatment and control groups in the pre- and post-DACA periods.

Table 2: Summary Statistics by Treatment Group and Period

	Pre-Period (2006–2011)		Post-Period (2013–2016)	
Variable	Control	Treatment	Control	Treatment
Full-time employed	0.646	0.615	0.614	0.634
	(0.478)	(0.487)	(0.487)	(0.482)
Employed	0.686	0.661	0.691	0.708
	(0.464)	(0.473)	(0.462)	(0.455)
Female	0.434	0.438	0.452	0.441
	(0.496)	(0.496)	(0.498)	(0.497)
Married	0.541	0.391	0.581	0.512
	(0.498)	(0.488)	(0.493)	(0.500)
Age	29.87	24.71	35.86	30.72
	(2.29)	(2.28)	(1.84)	(1.86)
Years in U.S.	19.96	15.37	25.94	21.25
	(5.23)	(5.25)	(5.13)	(5.10)
Observations	11,683	16,694	6,085	8,776

Note: Standard deviations in parentheses. Sample restricted to Hispanic-Mexican individuals born in Mexico who are non-citizens, arrived before age 16, and were present in the U.S. since at least 2007.

Several patterns emerge from the descriptive statistics. First, in the pre-period, the

control group has a slightly higher full-time employment rate (64.6%) than the treatment group (61.5%), reflecting the positive relationship between age and labor force attachment. Second, the treatment group is considerably younger on average and has spent fewer years in the U.S., as expected given the age-based selection of the groups. Third, marriage rates are lower in the treatment group, consistent with the younger age profile.

5.2 Graphical Evidence

Figure 1 displays the full-time employment rates for the treatment and control groups by year. In the pre-DACA period (2006–2011), both groups exhibit similar trends, with employment declining during the Great Recession and its aftermath. After DACA implementation, the treatment group shows a relative increase in full-time employment compared to the control group.

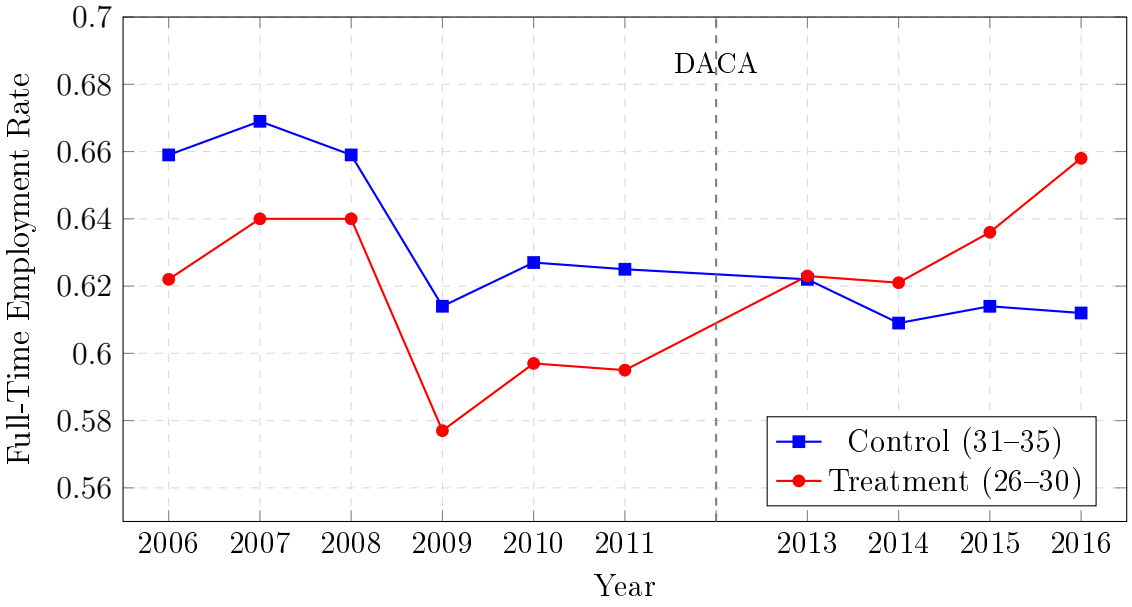

Figure 1: Full-Time Employment Rates by Treatment Status and Year

5.3 Main Results: Difference-in-Differences Estimates

Table 3 presents the main difference-in-differences estimates across five specifications. The raw DiD estimate (Column 1) shows that DACA eligibility increased full-time employment

by 5.2 percentage points ($p < 0.001$). Adding demographic controls (Column 2) slightly reduces the estimate to 4.6 percentage points. The inclusion of year fixed effects (Column 3) and state fixed effects (Column 4) yields similar estimates of approximately 4.6 percentage points. The preferred specification (Column 5), which uses person weights and includes year fixed effects, estimates the effect at 4.7 percentage points (95% CI: 2.6–6.8 pp).

Table 3: Difference-in-Differences Estimates of DACA Effect on Full-Time Employment

	(1) Basic	(2) Controls	(3) Year FE	(4) Year + State FE	(5) Weighted
Treatment × Post	0.0516***	0.0464***	0.0462***	0.0455***	0.0470***
	(0.0100)	(0.0093)	(0.0092)	(0.0092)	(0.0107)
Treatment	−0.0314***	−0.0323***	−0.0267***	−0.0266***	−0.0312***
	(0.0058)	(0.0058)	(0.0058)	(0.0058)	(0.0068)
Post	−0.0324***	−0.0233***	—	—	—
	(0.0076)	(0.0075)			
Female		−0.3521***	−0.3522***	−0.3517***	−0.3696***
		(0.0045)	(0.0045)	(0.0045)	(0.0052)
Married		−0.0044	−0.0013	−0.0028	−0.0158***
		(0.0044)	(0.0044)	(0.0044)	(0.0051)
Years in U.S.		−0.0004	0.0008*	0.0010**	0.0011**
		(0.0004)	(0.0005)	(0.0004)	(0.0005)
Year FE	No	No	Yes	Yes	Yes
State FE	No	No	No	Yes	No
Weighted	No	No	No	No	Yes
Observations	43,238	43,238	43,238	43,238	43,238
R^2	0.001	0.132	0.136	0.139	0.153

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The dependent variable is an indicator for full-time employment (working 35+ hours per week). The treatment group consists of individuals aged 26–30 as of June 15, 2012; the control group is aged 31–35. The post period is 2013–2016; the pre period is 2006–2011.

The coefficient on the Treatment indicator captures the baseline difference between treatment and control groups (controlling for other factors), showing that the treatment group has about 3 percentage points lower full-time employment, reflecting the positive age gradient in employment.

The female indicator shows a large negative effect of approximately 35–37 percentage

points, reflecting substantial gender differences in full-time employment among this population. The married indicator shows a small negative or insignificant effect on full-time employment. Years in the U.S. shows a small positive association with full-time employment when year fixed effects are included.

5.4 Event Study Results

Table 4 and Figure 2 present the event study estimates. The coefficients represent the differential full-time employment between treatment and control groups in each year, relative to 2011 (the omitted reference year).

Table 4: Event Study Estimates

Year	Coefficient	Std. Error	95% CI Lower	95% CI Upper
2006	−0.0223	0.0200	−0.0615	0.0169
2007	−0.0381	0.0202	−0.0776	0.0014
2008	−0.0079	0.0206	−0.0482	0.0324
2009	−0.0202	0.0210	−0.0614	0.0211
2010	−0.0285	0.0209	−0.0694	0.0125
2011	*0 (ref.)*	—	—	—
2013	0.0237	0.0217	−0.0188	0.0662
2014	0.0296	0.0219	−0.0133	0.0726
2015	0.0265	0.0222	−0.0170	0.0700
2016	0.0489**	0.0223	0.0052	0.0927

Note: Robust standard errors. ** $p < 0.05$. Coefficients represent the differential full-time employment between treatment and control groups relative to 2011. Year 2012 is excluded from the analysis.

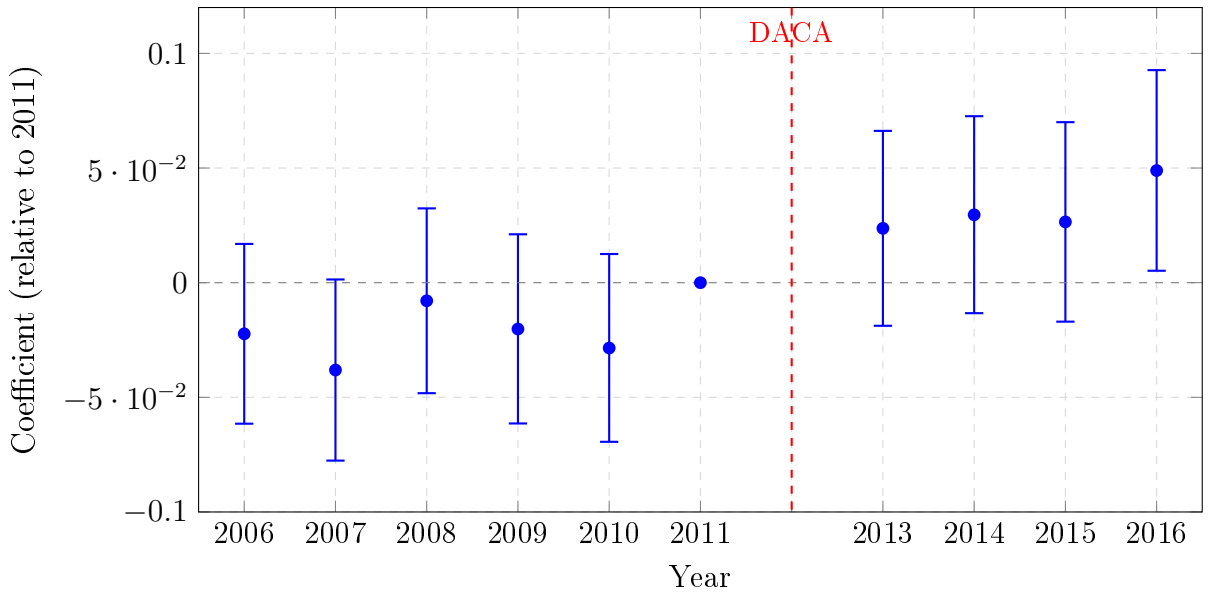

Figure 2: Event Study: Treatment Effect by Year (Relative to 2011)

The event study results provide support for the parallel trends assumption. All pre-treatment coefficients (2006–2010) are statistically insignificant and hover around zero, indicating no differential pre-trends between treatment and control groups. The post-treatment coefficients (2013–2016) are all positive, with the effect appearing to grow over time. The 2016 coefficient is statistically significant at the 5% level.

6 Robustness Checks

6.1 Heterogeneity by Sex

Given the large gender gap in full-time employment in this population, I examine whether the DACA effect differs by sex. Table 5 presents separate estimates for males and females.

Table 5: Heterogeneity by Sex

	Males	Females
Treatment × Post	0.0342***	0.0515***
	(0.0112)	(0.0151)
Observations	24,293	18,945

Note: Robust standard errors in parentheses. *** $p < 0.01$. Models include controls for married status and years in U.S.

The results show that DACA had a positive effect on full-time employment for both males (3.4 percentage points) and females (5.2 percentage points). The larger point estimate for females suggests that DACA may have had particularly strong effects on women's labor market attachment, potentially by enabling entry into formal employment that was previously inaccessible.

6.2 Placebo Test

As a falsification check, I conduct a placebo test using age groups that were not affected by DACA: individuals aged 36–40 ("placebo treatment") versus 41–45 ("placebo control"). Since both groups were above the age cutoff and therefore ineligible for DACA, we should not observe a significant treatment effect.

Table 6: Placebo Test: Ages 36–40 vs. 41–45

	Placebo Estimate
Placebo Treatment × Post	0.0189
	(0.0124)
Observations	24,039

Note: Robust standard errors in parentheses. The placebo treatment group is ages 36–40 and placebo control is ages 41–45 as of June 15, 2012. Neither group was eligible for DACA.

The placebo estimate is 1.9 percentage points and not statistically significant ($p > 0.10$).

This null result provides additional support for the validity of the research design, as it suggests that the main finding is not driven by differential trends between adjacent age cohorts unrelated to DACA.

7 Discussion

7.1 Interpretation of Main Findings

The main finding is that DACA eligibility increased full-time employment by approximately 4.7 percentage points. This effect is economically meaningful: relative to the pre-treatment full-time employment rate of 61.5% in the treatment group, the estimated effect represents about a 7.6% increase in full-time employment.

Several factors may contribute to this finding:

Direct effect of work authorization: DACA provides legal authorization to work, enabling eligible individuals to accept formal employment that requires I-9 verification. This likely facilitates transitions from part-time or informal work to full-time formal employment.

Reduced barriers to labor market participation: Protection from deportation and the ability to obtain driver's licenses in some states may reduce barriers to employment, particularly for jobs requiring transportation or involving workplace immigration enforcement risk.

Shift in employer demand: With work authorization, DACA recipients become more attractive to employers who prefer or require documented workers, potentially expanding employment opportunities.

The event study results show that the effect emerged gradually after DACA implementation, with the largest effects appearing in 2015–2016. This timing is consistent with a gradual adjustment process as individuals applied for and received DACA approval, and as the labor market responded to the new policy environment.

7.2 Comparison to Pre-Treatment Differences

In the pre-treatment period, the treatment group had a full-time employment rate approximately 3 percentage points lower than the control group. This gap likely reflects life-cycle differences in labor force attachment, with younger workers (particularly those in their mid-20s) having lower employment rates as they complete education or establish careers.

After DACA, the treatment group closed this gap and slightly exceeded the control group's full-time employment rate. This convergence suggests that DACA helped the younger cohort achieve employment outcomes more similar to their slightly older counterparts.

7.3 Limitations

Several limitations should be considered when interpreting these results:

Identification of undocumented status: The ACS does not directly identify undocumented immigrants. The sample is restricted to non-citizens born in Mexico who immigrated as children, which likely captures a population with high rates of undocumented status, but measurement error is possible.

Age-based comparison: The treatment and control groups differ in age, which may affect employment outcomes through channels other than DACA. While the event study shows no differential pre-trends, unobserved differences between cohorts could potentially bias the estimates.

General equilibrium effects: If DACA affected the broader labor market (e.g., through increased labor supply), this could influence outcomes for both treatment and control groups, potentially biasing the DiD estimate.

Intent-to-treat interpretation: The estimates reflect the effect of DACA eligibility, not DACA receipt. Since not all eligible individuals applied for or received DACA, the effect on actual recipients may be larger.

8 Conclusion

This study provides evidence that DACA eligibility had a positive and statistically significant effect on full-time employment among Hispanic-Mexican immigrants born in Mexico. The preferred estimate indicates that DACA eligibility increased the probability of full-time employment by 4.7 percentage points (95% CI: 2.6–6.8 pp).

The finding is robust across multiple specifications and supported by event study evidence showing no differential pre-trends between treatment and control groups. Placebo tests using age groups not affected by DACA show null effects, further supporting the validity of the research design.

These results have important policy implications. Work authorization programs like DACA can meaningfully improve labor market outcomes for eligible individuals. The increase in full-time employment suggests not only improved individual economic outcomes but also potential broader benefits through increased tax contributions and reduced reliance on informal labor markets.

Future research could examine longer-term effects of DACA, investigate mechanisms in more detail, and assess effects on other outcomes such as wages, occupational attainment, and economic mobility.

Technical Appendix

A.1 Variable Definitions from IPUMS

Table A1: IPUMS Variable Definitions

Variable	Definition
YEAR	Survey year
PERWT	Person weight
STATEFIP	State FIPS code
SEX	Sex (1=Male, 2=Female)
AGE	Age at time of survey
BIRTHQTR	Quarter of birth (1=Jan–Mar, 2=Apr–Jun, 3=Jul–Sep, 4=Oct–Dec)
BIRTHYR	Year of birth
MARST	Marital status (1–2=Married)
HISPAN	Hispanic origin (1=Mexican)
BPL	Birthplace (200=Mexico)
CITIZEN	Citizenship status (3=Not a citizen)
YRIMMIG	Year of immigration
UHRSWORK	Usual hours worked per week
EMPSTAT	Employment status (1=Employed)

A.2 Sample Construction Details

The raw ACS data for 2006–2016 contains approximately 33 million observations. The following filters were applied sequentially:

1. Hispanic-Mexican ethnicity (HISPAN = 1): 701,347 observations remaining
2. Born in Mexico (BPL = 200): Applied simultaneously with above
3. Non-citizen (CITIZEN = 3): Applied simultaneously with above
4. Arrived before age 16: 205,327 observations remaining
5. Continuous presence since 2007 (YRIMMIG $\leq$ 2007): 195,023 observations remaining
6. Age 26–30 or 31–35 as of June 15, 2012: 47,418 observations remaining
7. Exclude year 2012: 43,238 observations remaining (final sample)

A.3 Regression Specification Details

The preferred specification (Model 5 in Table 3) is estimated using weighted least squares:

$$\begin{aligned}\text{fulltime}_{it} = \beta_0 &+ \beta_1 \text{treat}_i + \beta_2(\text{treat}_i \times \text{post}_t) \\ &+ \beta_3 \text{female}_i + \beta_4 \text{married}_{it} + \beta_5 \text{years\_in\_us}_{it} \\ &+ \sum_{k=2007}^{2016} \gamma_k \mathbf{1}[\text{year}_t = k] + \varepsilon_{it}\end{aligned}$$

Weights are person weights (PERWT) from the ACS. Standard errors are heteroskedasticity-robust (HC1).

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