Are low-skilled immigration and coresidence substitutes? Evidence from Secure Communities

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Abstract

This paper studies the impact of Secure Communities (SC), an immigration enforcement program that removed a large number of non-citizens, on the living arrangements of elderly U.S.-born individuals. Exploiting spatial and temporal variation in the implementation of SC, I estimate a difference-in-differences model with location and time fixed effects. The findings indicate that SC increased the likelihood of coresidence among U.S.-born elderly. Additionally, there is suggestive evidence indicating an increase in coresidence of the elderly with unemployed individuals following SC. Empirical tests suggest that the increased price of household services due to the reduction of immigrants' labor supply is the key mechanism generating these effects.

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1 Introduction

The population of the United States is aging.[1] The number of Americans aged 80 and older is projected to more than double between 2020 and 2060 (U.S. Census Bureau, Figure 1). Aging requires care, with approximately 60% of individuals between the ages of 85 and 89 needing help from others (Freedman and Spillman, 2014). Beyond age 90, only around 2% of people can fully accommodate their limitations. Traditionally, family members provide the needed assistance. However, the family's caregiving contribution is decreasing due to the declining fertility rate and migration of family members (Redfoot et al., 2013), thereby increasing the demand for paid support. Currently, 38% of home health aid workers are immigrants (Kosten, 2021). Therefore, immigration enforcement policy stands to impact the labor supply for elder care and may disrupt family living arrangements and the work decisions of the elderly's adult children.

In this paper, I evaluate the impact of Secure Communities (SC), a compulsory police-based immigration enforcement program, on the living arrangements of elderly American residents. Older adults often rely on outsourced private household services. Evidence suggests that in areas with higher immigrant populations, U.S.-born elderly are more likely to age in place, possibly due to immigrants filling roles in household services such as housekeeping and home health aides, which support elderly independence (Butcher et al., 2021). Approximately 17% of workers in the private household sector are likely undocumented immigrants (Figure 2). Previous research found that SC led to a decline in employment and hours worked by undocumented immigrants, including those in household services (East et al., 2018; Valdivia, 2019; East and Velásquez, 2022). This decline in labor supply due to immigration enforcement policies could drive up the costs of household services, potentially pushing elderly towards higher-cost formal assistance or reliance on informal support from family.

[1] https://www.urban.org/policy-centers/cross-center-initiatives/program-retirement-policy/projects/data-warehouse/what-future-holds/us-population-aging

While SC primarily targeted men (about 96% of deportations during 2009-2014), the program may have created a climate of fear among immigrant communities and families that could significantly impact the household services market.[2] This fear could reduce labor supply also among women due to concerns about deportation affecting themselves or their families, leading to reduced work hours or avoidance to work to avoid encounters with law enforcement. Consequently, elderly may increasingly rely on family care support, impacting their living arrangements and the labor market outcomes of those who care for them. However, such caregiving responsibilities often entail reduced formal work hours or result in exiting the labor force entirely (Van Houtven et al., 2013; Skira, 2015; Fahle and McGarry, 2018; Maestas et al., 2020).

Exploiting a staggered rollout of SC across locations and over time, this paper examines the 80-plus-year-old single residents' ability to live independently. Specifically, I look into whether these individuals are more likely to live with their adult child, or family, relatives, non-relatives rather than living alone. I link the timing of the policy's activation across localities with individual-level data from the American Community Survey (ACS). This allows me to estimate a difference-in-differences model with location and survey year fixed effects. I show that the SC's start date is not correlated with an area's demographic and economic profiles, lending support to the identification assumption. Additionally, I validate the identification strategy by estimating an event study model, revealing no significant trends in the single elderly's living arrangement prior to the SC implementation, thereby supporting the parallel pre-trends assumption. To mitigate concern about biased estimates due to the different treatment timing and different treatment effects, I perform a Bacon decomposition (Goodman-Bacon, 2021) and employ the alternative estimation method proposed by Callaway and Sant'Anna (2021), which is robust to potential biases in two-way fixed effects specifications with staggered rollout design. Additionally, I show that the results are robust to a number of identification tests.

[2]For detailed demographic information on deportation, visit https://trac.syr.edu/phptools/immigration/secure/

The main finding is that the presence of SC in a local area increased the likelihood of single elderly individuals residing with their adult children or with someone else, whether a family member, non-family member, or relative. Specifically, the results indicate that the incidence of coresidence with their children increased by 0.9 percentage points (a 3.7% increase relative to the sample mean). As further evidence that single elderly are more sensitive to immigration policies, I identify a comparison group that should be less impacted by changes in the private household sector: married U.S.-born elderly. For this group, I find a small and insignificant effect of SC on the incidence of coresidence.

I then proceed to analyze with whom the elderly are likely to reside. If SC increased the likelihood of the elderly not living alone and instead sharing a home with family members or relatives, it is important to understand its implications for the labor market outcomes of those living with the elderly. Consistent with the findings of the literature on caregiving and work, I find that single elderly are 0.3 percentage points (16.9% relative to the sample mean) more likely to coreside with a working-age unemployed individual following SC.

I supplement this analysis by exploring changes in the market for household services. As the private household sector employs a substantial number of immigrant workers, the intensification of SC should decrease the labor supply of immigrants in this sector, leading to increased wages for private household workers. As such, I examine the effect of SC on the labor supply of undocumented immigrant workers in the private household sector, which reveals a decrease in labor supply by these workers. Next, I investigate the effect of SC on the wages of workers in this sector. The wage bill is likely to represent the cost of private household services. My findings show that earnings of working-age low- and middle-skilled workers in the private household industry significantly increased in response to SC exposure. Given that workers in this industry are more likely to be involved in labor-intensive jobs, we are more likely to observe the effect of SC on the wages of low- and middle-skilled workers.

This paper advances the literature in three ways. First, it builds on existing research on the spillover effects of SC. Prior research confirmed that SC extended beyond directly

affected immigrants and had ripple effects on the employment of U.S. citizens (East et al., 2018; East and Velásquez, 2022), safety net participation and health insurance decisions of documented immigrants (Alsan and Yang, 2018; Toshmatova et al., 2024), and worker complaints in Hispanic workplaces (Grittner and Johnson, 2021). This paper extends these findings by examining the impact on the living arrangements of elderly, showing that decreased labor supply in the private household industry contributed to changes in elderly living arrangements.

Second, my work also contributes to the literature on immigration and aging. Recent studies found that an increased supply of low-skilled immigrants help elderly individuals to stay in their own homes longer (Butcher et al., 2021; Mockus, 2021). In these studies, causal identification of the impact of immigrants on the elderly's living setting comes from exploiting the area's variation in the inflow of immigrants and shift-share approach to identification. In contrast, I use SC as a natural experiment to explore how the outflow of immigrants affects the living arrangements of elderly Americans. The effect of immigration outflows versus inflows is likely asymmetric; newly arrived immigrants require time to adjust to labor market conditions, contrasting with the immediate impact of removing an already integrated labor force (Lee et al., 2022). Additionally, I focus on vulnerable populations such as those aged 80 and over who are single and lack spousal support..

Relatedly, Almuhaisen et al. (2024) found that SC increased the likelihood of institutionalization among Americans aged 65 and above, driven by a reduction in household services. In contrast, my findings suggest that SC increased coresidence with family members among the elderly aged 80 and over, likely as a proxy for informal care. The difference in results may be attributed to the distinct age groups studied, as well as the focus on U.S.-born elderly in my research compared to the broader population of U.S. citizens in the other study.

Finally, this paper contributes to the broader literature on the relationship between caregiving and work. Recent evidence from the U.S. suggests that caregiving has an adverse effect on labor supply on both intensive and extensive margins, and is also accompanied

by low earnings (Van Houtven et al., 2013; Skira, 2015; Maestas et al., 2020). Studies in European countries explore the consequences of unexpected health shocks. They find a modest decline in earnings following a spouse's severe non-fatal health shock (Fadlon and Nielsen, 2021), and no effect on earnings and employment caused by sudden parental hospitalization (Rellstab et al., 2020). Complementing these studies, I present suggestive evidence of the increased likelihood of the elderly's coresidence with an unemployed person due to SC.

The next section provides background on SC and the role of undocumented immigrants in elderly living arrangements. Section 3 describes the data, construction of variables, and provides summary statistics. Section 4 presents the empirical strategy, and section 5 reports the results. Section 6 explores mechanisms, and section 7 concludes.

2 Background

2.1 Elderly Living Arrangements and the Role of Undocumented Immigrants

The settings in which the elderly live depend on factors such as health, income, the availability of affordable care services, and personal preferences. Most elderly Americans prefer aging in place (AARP, 2021). To age in place, many seniors need not only formal health care assistance but also informal assistance. The latter may be provided by a family member, often an adult child of the elderly, relatives, friends, or a paid support individual. Figure 1 shows the increasing number of the 80-plus population and the declining caregiver support ratio.[3] With declining family care support, the demand for paid care and support services is expected to grow. Studies based on the Health and Retirement Survey (HRS) show that in 2016, over 72 percent of individuals aged 65 and over with limitations in activities of daily

[3]The caregiver support ratio is defined as the number of people aged 45-64 divided by the number of people 80 and older (Redfoot et al., 2013).

living (ADL) or instrumental activities of daily living (IADL) hired paid informal home-based services (Van Houtven et al., 2020).[4] Another supporting piece of evidence for the growing demand for paid care is presented in Figure 3. As the figure shows, the employment of home care workers increased by 120 percent from 1.2 million to 2.6 million individuals during 2012-2021.

Likely undocumented immigrant workers are employed in a wide spectrum of home-based services, ranging from home maintenance to basic care services, such as blood pressure readings and medication management. Table 1 (column 2) reports the occupations of undocumented immigrants in the private household sector. The undocumented status of immigrants is proxied using key demographic traits, following the literature's definition of an immigrant as undocumented if a foreign-born individual has less than a high school education (East and Velásquez, 2022). As shown in Table 1, a substantial share of all undocumented workforce serves as maids and housekeeping cleaners (79%). A smaller share of undocumented immigrant workers in the private household industry includes direct care workers (personal care workers (6.2%) and nursing assistants (1.12%)).[5] These occupations provide vital services for aging in place. The private household industry hires 17% of the undocumented workforce (Figure 2), notably higher than the share of undocumented workers in construction (9.8%) and only 1% lower than in agriculture (18.3%). Restrictive policies targeting undocumented immigrants are expected to reduce the workforce in the household sector. Research shows that a larger availability of immigrants makes household services more affordable, enabling elderly individuals to age at home by outsourcing in-home care at a reasonable cost (Butcher et al., 2021). In Italy, older women can work longer and retire later because they can afford to outsource care for their aging spouses in areas with a higher concentration of immigrants (Peri et al., 2015). Similarly, in Austria, an increased supply of foreign care workers miti-

[4]ADLs can include walking, dressing, bathing, eating, getting into or out of bed, and using the toilet. IADLs can include preparing hot meals, shopping for groceries, making telephone calls, taking medications, and managing money

[5]Zallman et al. (2019) classifies direct care workers as personal care workers, home health aides, and nursing assistants.

gates the negative impact of a parent's health shock on their children's employment decisions (Frimmel et al., 2020).

2.2 Secure Communities

Secure Communities was a federal immigration-enforcement program administered by Immigration and Customs Enforcement (ICE). It started in October 2008, was temporarily suspended in October 2014, and was reactivated in 2017. The program required local and state law enforcement agencies to collaborate with the Federal Bureau of Investigation (FBI) and the Department of Homeland Security (DHS). Ordinarily, detained individuals' fingerprints were sent to the FBI to check against criminal databases. However, under Secure Communities, the fingerprints were also shared with DHS to verify detainees' immigration history. If these checks reveal an unlawful presence in the U.S., the ICE district office makes a decision on whether to arrest a detainee in order to prioritize removal (Cox and Miles, 2013).

From 2008 to 2014, ICE deported over 450,000 immigrants under SC. Majority of removed immigrants were men, comprising 96% of all deportees. Additionally, Mexicans (63%) and Central American (23%) citizens were among the largest groups removed through Secure Communities. SC is also known for deportation of people with minor offenses (a non-violent crime) or no offense, which created "chilling effects" among other immigrant groups.[6] Prior research confirmed that SC have affected both undocumented and documented immigrants (Alsan and Yang, 2018; Grittner and Johnson, 2021; Valdivia, 2019).

The design of SC makes it an attractive setting for investigating the policy's effects. Firstly, owing to resource and technological limitations, SC did not have a simultaneous nationwide implementation but was introduced progressively, county by county, across states from 2008 to 2013. This timing helps to isolate the impact of the program by comparing the outcomes in areas that adopted SC early to similar areas that activated the policy later.

[6]Visit https://trac.syr.edu/phptools/immigration/secure/ for detailed information on demographic and criminal background

Second, in contrast to other immigration enforcement programs, SC was mandatory for all jurisdictions. Furthermore, the federal government determined the start date, with minimal or no local authority control over the initiation timing.

As mentioned earlier, SC was activated at the county level, and gradually by all counties of the U.S. I map county-level SC information to the Public Use Microdata Area (PUMA) level, the smallest geography available in the American Community Survey. Consistent with East and Velásquez (2022), I consider a county treated if SC was in effect for the entire 12 months.[7] Figure 4 shows the program's activation across PUMAs from 2009 to 2013. Early-adopting PUMAs are located in proximity to the U.S.-Mexico border with a larger Hispanic population, and had 287(g) agreements in place.[8] I account for this selection by including PUMA fixed effects and by conducting several robustness checks.

The identification strategy described in more detail below relies on the assumption that the timing of the policy adoption in a local area cannot be predicted by the area's time-varying factors such as demographic and economic characteristics of PUMA. To assess if this assumption is satisfied, I examine whether changes in "pre-characteristics" are correlated with the start date of SC at the PUMA level. Column 3 of Table A.1 reports the estimates of the relationship between the first year of the policy activation in the PUMA and the change in PUMA's relevant characteristics between 2000 and 2005. Columns 1 and 2 of Table A.1 display mean and standard deviations of changes in characteristics. The results show that most of demographic and economic characteristics of PUMA do not predict the year of SC activation. However, two variables - the percentage change in non-citizens and the percentage change in housing prices - correlate with the program's starting year. While the relationship is statistically significant, its quantitative importance is minimal. The results imply that a one standard deviation increase in housing price is associated with a 3.06 months earlier

[7]Section 3.3 provides detailed description on how county level SC- information is mapped to PUMA level.

[8]287(g) programs which included two components jail and tasks were similar in design but optional state and local enforcement programs. 287(g) Memorandum of Agreement details and authorizes local law enforcement officers to perform certain functions to enhance federal immigration law, including interviewing immigration status, detaining non-citizens, and investigating information on individuals.

adoption of SC (-0.010×25.5×12). Similarly, a one standard deviation increase in the non-citizen population is correlated with a 1.65 months earlier activation (-5.482×0.0251×12). These results mitigate concerns that the timing of SC's implementation may be correlated with differential trends across PUMAs.

3 Data Source and Descriptive Statistics

In this section, I provide an overview of the data sources, describe the construction of key variables, and report summary statistics.

3.1 American Community Survey and Coresidence of Elderly

The primary data source is American Community Survey (ACS) Integrated Public Use Microdata Series (Ruggles et al., 2019). The ACS is a repeated cross-sectional dataset covering a 1% random sample of the U.S. population. The smallest geographical area in the public version of the ACS is PUMA. There are about 1,000 PUMAs. PUMAs could be comprised of several small contiguous counties, while large urban counties are subdivided into multiple PUMAs, and a PUMA could be equivalent to a single county. It is important to note that a PUMA does not cross state boundaries. The main analysis covers the years 2006-2014. I chose the sample to begin in 2006 because this is the first year when the ACS started to sample institutionalized individuals, enabling me to construct data for all elderly individuals living in both communities and nursing homes. The sample ends in 2014, aligning with the temporarily termination of SC on October 2014.

I restrict the sample to single individuals aged 80 and above, who are not employed and are U.S. citizens.[9] I narrow the sample to single elderly because their primary source of informal care is their children, as opposed to married individuals who might be cared for by their spouses. One potential concern with this restriction is that single elderly individuals

[9]In ACS, individuals who report being married with a spouse being present are excluded from the sample.

might not have children. However, data from the Health and Retirement Survey shows that 87% of single individuals aged 65 and over have children. Additionally, in the sample, only 6% of single individuals were never married, while about 79% are widowed. Hereafter, unless otherwise specified, the term 'elderly' will refer to this specific sample of single, aged 80 and above, not employed, and U.S. citizens.

To define a person residing with an elderly individual, I focus on household members and their relationship to the elderly. The ACS records the status of each household member in relation to the household head. Household members are categorized as children, children-in-law, grandchildren, siblings, friends, visitors, or other non-relatives in relation to the elderly household head. Alternatively, if the elderly person is not the household head, their status may be listed in relation to the head as parent, parent-in-law, sibling, or other relative/non-relative. Based on these relationships, two binary variables are constructed: (a) an elderly person coresides with an adult child, and (b) an elderly person coresides with any family member, relative, or non-relative. The sample of coresiding members is restricted to those aged 30-65 to capture potential caregivers.[10]

To give some sense with whom an elderly person resides, Figure 5, based on the ACS 2006-2014, plots the percentage of household members living with an elderly individual by relationship status. This sample is restricted to households with 80-plus single individuals and omits those who reside alone or in nursing home. Most elderly share a home with their adult child or children (73.1%) and child-in-law (24.3%). Given the age of the sample, where individuals are 80 and over, grandchildren, constituting approximately 17.5%, may serve as potential caregivers. Additionally, a substantial share of households with elderly also include other relatives (9.9%) and non-relatives (14.2%), while only 5.3% of the households have elderly living with siblings.

Summary statistics for the sample of single elderly is presented in Table 2. All results are weighted using the ACS person weight variable. The average age of individuals in the

[10] According to the American Association of Retired Persons (2020) 54 percent of family caregivers are aged 50 or older with an average age is 49.4 years old.

sample is 86 years old. The sample comprises 79% widowed, 10% divorced, and 6% never married individuals. Women dominate the sample, making up 77%, which reflects the fact that women often outlive their spouses.

The ACS asks respondents about six types of disabilities: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty. Respondents who report at least one of these six types are considered to have a disability. As such, about 68% of elderly individuals report at least one form of disability. Moreover, 47% of respondents report not being able to live alone, which is captured by the variables "self-care difficulty" or "independent living difficulty." Almost half of the individuals in the sample (46%) have only a high school education, and a small percentage (14%) have obtained college degrees.

In terms of living arrangements, 23% of elderly coreside with their adult children, and 26% of them share their residence with someone who could be a family member, relative, or non-relative. Additionally, about 13% of single elderly live in institutional setting.

3.2 Coresidence and Informal Care

Studying coresidence is an interesting outcome because coresidence may be a convenient arrangement through which elderly receive care from their adult children or other relatives. However, elderly do not necessarily get care only through coresidence. Informal care could be provided in a variety of settings, including in separate living arrangements. Similarly, the decision to coreside may not be driven only by the desire to provide care. There could be other economic factors behind such a decision. For example, families may coreside to save on housing costs. To better understand the relationship between coresidence and informal care, I analyze data from the Health and Retirement Survey. Table 3 contrasts how often coresiding and non-coresiding elderly get informal care. Column 1 of Table 3 shows that 47% individuals aged 80 and over who coreside received at least one hour of informal care in the previous month versus 16% of individuals who do not coreside. The gap between the

two groups increases when I look into longer hours of informal care, which shows that 42% of coresiding elderly received at least 20 hours of care in the past month versus 10% of those who do not coreside. This simple analysis suggests that coresiding elderly are more likely to get informal care than non-coresiding. Thus, I conclude that the coresidence of adult children or relatives with an elderly person is directly linked with the intention to provide caregiving support.

3.3 Data on Secure Communities

The data on the presence of Secure Communities are reported at the county level and are obtained from the Freedom of Information Act (FOIA) Library. As Secure Communities was activated on a county-by-county basis, its coverage may extend only to a portion of PUMA. Consequently, I construct a population-weighted Secure Communities variable for each PUMA for every year. For a given PUMA, denoted as p at time t and formed by several counties c_i for i=1,..N, the Secure Communities variable at the PUMA level takes the following form:

$$SC_{pt} = \sum_{i=1}^{N} \frac{CountyPop_{ipt}}{PUMAPop_{pt}} \mathbf{1}\{SecCom_{it}\} \tag{1}$$

$SecCom_{it}$ is equal to one if Secure Communities program is implemented in county i at year t. $CountyPop_{ipt}$ is the population of the county i within PUMA p at time t, and $PUMAPop_{pt}$ is the population of PUMA p at year t. For example, if 20% of the overall population in PUMA p resides in county i, and county i is the only county within PUMA p activated the policy in 2010, then SC will take a value of 0.2 in PUMA p in the year 2010. Once all counties within PUMA adopt the policy, SC takes a value of one for the rest of the survey years. Therefore $SC_{pt} \in [0,1]$ is a continuous treatment variable. The Secure Communities activation is reported on a monthly and yearly basis at the county level. Due to the absence of information about the month in which respondents were surveyed in the

ACS, I consider a county treated if the SC policy was in effect for the entire 12 months. Note there is no "never-treated" PUMAs, since all counties activated SC policy by the end of 2013.

As discussed in section 2.2, during the sample period of 2006-2014, some jurisdictions also implemented 287(g) agreements. 287(g) Memorandum of Agreement data is collected by examining current and historical agreements posted on the ICE website.[11]

3.4 Undocumented Immigrants in Private Households Industry

The ACS does not directly inquire about visa status. It only provides information on whether a foreign-born person is a naturalized citizen. To identify likely undocumented immigrants, I focus on low-skilled individuals—those with less than a high-school degree and foreign-born. This demographic group captures a large portion of undocumented individuals, aligning with the approach taken in existing literature (Van Hook and Bachmeier, 2013; East et al., 2018; Borjas and Cassidy, 2019; East and Velásquez, 2022). Additionally, to better capture undocumented status, I limit the sample to low-skilled Hispanic foreign-born and also low-skilled individuals born in one of Central American countries or Mexico (East and Velásquez, 2022). The latter group has the highest representation among undocumented individuals in the United States.

I hypothesize that SC will push family members and relatives of elderly to take on caregiving roles or extend caregiving time. I proxy family caregiving through the coresidence (Mommaerts, 2018). I expect that the incidence of coresidence should increase in areas impacted by SC due to the increased cost of domestic services caused by the decline of labor supply in the private household sector. The potential causes of reduction of labor supply in the private household industry could be: (1) forced removal of undocumented immigrants, (2) voluntary out-migration of immigrants, and (3) decreased labor supply by immigrants due to "chilling effects".

[11] https://www.ice.gov/identify-and-arrest/287g

To measure whether changes in the private household industry drive a positive effect on coresidence among the elderly, I examine the labor supply decisions of likely undocumented immigrants in this industry. I construct a sample of working-age immigrants in this sector and estimate the direct effect of SC on the total number of workers and total work hours provided by likely undocumented immigrants, aggregated by PUMA and year. Next, I estimate the effect of SC on the cost of household services, proxied by the real hourly earnings of workers in the private household industry.

4 Empirical Analysis

The identification strategy exploits the staggered rollout of SC activation across PUMAs over time to identify its effect on the living arrangement of U.S.-born elderly individuals. Specifically, I estimate the change in pre- versus post-SC activation differences in incidence of coresidence by elderly in PUMAs that have activated SC compared to PUMAs that have not yet activated SC. Using the ACS repeated individual-level cross-sectional data, I run the following model specification:

$$Y_{ipt} = \beta_1 SC_{pt} + X'_{ipt}\delta + Z'_{pt}\gamma + \mu_p + \theta_t + \varepsilon_{ipt} \tag{2}$$

where Y_{ipt} is one of the four measures of coresidence for an individual i, living in PUMA p during year t. The key regressor is SC_{pt}, which ranges between 0 and 1. When none of the counties within PUMA p implements the policy in year t, SC is zero. SC_{pt} takes a value one once all counties within PUMA have an active SC throughout the entire survey year. Once the entire PUMA has adopted the policy, the value of one remains for the rest survey years. Additionally, PUMAs are required to have at least one working-age low-educated foreign-born Hispanic in 2005 to capture areas likely affected by enforcement intensification. The coefficient of interest is β_1 should be interpreted as the effect of SC on coresidence when the entire PUMA is exposed to SC.

Equation 2 includes the vector of individual controls X_{ipt}. Specifically, X_{ipt} includes age, age squared, education, race, disability, and poverty status. Z_{pt} includes PUMA-level controls, such as presence of 287(g) local immigration enforcement programs, and Bartik-style measures of labor demand. The specifications are adjusted using the ACS person-level weights, and standard errors are clustered at the PUMA level.

Additionally, equation 2 controls for PUMA and year fixed effects. PUMA fixed effects μ_p absorbs differences in observable and unobservable time-invariant characteristics between PUMAs. For example, μ_p controls for proximity to the U.S.-Mexico border, which is one of the concerns that counties located close to the border selected into program based on observable characteristics. Year fixed effects capture national trends common to all PUMAs, such as national shock that impacts people's decision to live in extended families.

The validity of the research design requires the assumption of no time-varying PUMA-specific factors correlated with the timing of the SC implementation that impact elderly's coresidence. This was tested directly earlier (Table A.1). In addition, I show that the results hold in a number of robustness check specifications.

The validity of the difference-in-differences model requires that there are no unobserved, PUMA-specific time-varying factors correlated with the timing of SC intensification and that elderly coresidence was trending similarly across PUMAs prior to SC adoption. This was tested earlier by examining whether the SC start date is correlated with PUMA-specific local and economic conditions (Table A.1). To further validate the identification strategy, I employ an event study model with PUMA and year fixed effects. The equation follows below:

$$Y_{ipt} = \sum_{k \neq -1, k \neq -8} \beta^k (SC_{p,t=k}) + X'_{ipt}\delta + Z'_{pt}\gamma + \mu_p + \delta_t + \varepsilon_{ipt} \tag{3}$$

The main difference between equation 3 and equation 2 is that the SC variable is binary and not continuous. I follow Sun and Abraham (2021) and Borusyak and Jaravel (2017) and include the full set of relative event indicators. In the staggered treatment design with

no never-treated units, it is recommended to omit two pre-periods in order to avoid issues of perfect collinearity with the event time dummies, year fixed effects, and PUMA fixed effects. As a result, I exclude the indicator for the most negative relative-time period and the indicator for the year prior to the reform (Baker et al., 2022).

5 Results

5.1 Baseline Results

This paper aims to investigate the impact of SC on the incidence of coresidence among U.S.-born elderly. Table 4 presents the main coefficient of interest β_1 from equation 2 for the sample of single individuals who are 80-plus years old and not employed. Column 1 presents the results for the dependent variable coresidence with an adult child, and column 2 focuses on coresidence with any individuals who could relate to the elderly as a family or non-family member. Panel A presents the results focusing on all PUMAs. The point estimates in both columns are positive and statistically significant. SC heightened the probability of coresidence with an adult child by 0.6 percentage points, representing a 2.8% increase relative to the sample mean. Including any family and non-relatives as coresiding members increased the point estimate to 0.7 percentage points, signifying a 2.7% increase relative to the sample mean.

Panel B further focuses on the sample PUMAs with at least one low-educated foreign-born Hispanic resident in the ACS 2005. The estimated impact from this model specification depicts larger point estimates. This preferred model reports an increase of 0.9 percentage points for both types of coresidence. These findings align with expectations that areas with higher concentrations of immigrants may experience more pronounced impacts from SC on elderly coresidence.

Figure 6 presents the event study estimates along with 95% confidence intervals from equation 3. The graphs plot the effect of SC on the probability of single elderly individu-

als' coresidence with a child (panel A) and coresidence with someone who could be either family/relatives or non-relatives (panel B). As mentioned above, I include the full set of event dummies and treat the most negative year and a year before the activation of SC as the reference years. However, since I observe fewer than one-third of PUMAs five years or earlier before and three years or later after SC adoption, I report the estimates within the time window from -5 to +3 in the figures. As the figures show, no differential trends in elderly individuals' coresidence are evident prior to immigration enforcement. The estimates turn positive in the year of policy adoption and continue to increase afterward.

Recent advances in the difference-in-differences (DiD) literature suggest that when the research setting incorporates staggered timing of treatment and two-way fixed effects, the DiD estimate is likely to be biased (Goodman-Bacon, 2021). In the case of SC, all PUMAs were eventually treated, so the design includes a comparison of already treated units with not yet treated which can bias the ATT. To test whether heterogeneous treatment effects are causing a biased estimate, I implement the Goodman-Bacon decomposition. The result of decomposition presented in Figure A.1 indicates that the effects of SC on coresidence are driven primarily by the two-by-two comparison that compare earlier-treated units (treatment group) to later-treated units (control group), generating a weight of 0.67 in the overall two-way fixed effect estimate. In contrast, the potentially problematic two-by-two comparison, using earlier-treated units as comparison group, produce an average effect close to zero and receives a lower weight.

In addition, I implement the new estimator proposed by Callaway and Sant'Anna (2021). This method does not use already treated units as comparisons for not-yet-treated units and is robust to heterogeneous treatment effects. Figure 7 shows the results from the Callaway and Sant'Anna estimator. The lead point estimates depict no pre-trends, while the lagged estimates are positive and statistically significant, reassuring that the estimates presented in Figure 6 are not biased.

5.2 Labor Market Outcomes of Working Age Coresiding Family Members

The results presented above indicate that SC affected the living arrangements of the elderly by sharing a home with a family member or relatives who are of working age (30-65 years old). As discussed earlier, the decision to reside with an elderly person is likely explained by the intention to provide care. At the same time, extending caregiving time or entering a caregiving role may come at the cost of formal work hours, which has a further effect on financial well-being and retirement saving. Recognizing the importance of the relationship between work and informal care, substantial research finds an adverse effect of caregiving on labor market outcomes (Van Houtven et al., 2013; Skira, 2015; Maestas et al., 2020). From a policy perspective, it is crucial to understand the unintended consequences of SC on coresiding family members' work decisions.

The ideal dataset to study the effect of SC on the labor supply behavior of caregivers would be individual-level longitudinal data with rich information on demographics and economic characteristics. Additionally, the dataset should contain information on all individuals, regardless of whether they coreside with the elderly person. While the ACS covers a wide array of topics, it has certain limitations. First, the ACS is a cross-sectional dataset, lacking the ability to track an individual's employment history and transitions into coresidence. Second, the ACS only allows researchers to observe children residing within the same household as the elderly individual. This constraint hinders the construction of a research design that would enable a comparison of labor market outcomes between children who live with their parents and those who do not. A few alternative potential panel datasets in the U.S., such as the Panel Study of Income Dynamics (PSID) and the Health and Retirement Survey, suffer from small sample sizes and larger geographic units that are not suitable for my research design.

Nonetheless, to circumvent these limitations and offer insights into the relationship be-

tween SC and the labor market outcomes of individuals coresiding with the elderly, I estimate the effect of SC on whether the elderly individual lives with an unemployed person or a person out of the labor force. The results from this analysis are presented in Table 5. I estimate the likelihood of single elderly individuals' coresidence with an unemployed person (column 1) and a person not in the labor force (column 2). Additionally, a coresiding individual must be of working age, within 30 and 60. The SC coefficients are positive in both columns, but only the effect of coresidence with an unemployed person is statistically significant, suggesting a positive association between the implementation of SC and the likelihood of single elderly individuals living with an unemployed person, with an increase of 16.9% relative to the sample mean. This result aligns with the literature, which often finds a negative effect of providing informal care on the labor market outcomes of caregivers (Van Houtven et al., 2013).

My findings suggest that the effect of SC on coresidence is driven by working-age individuals who are unemployed. This pattern implies that these individuals might be leaving their jobs to assume caregiving responsibilities for an elderly family member. To bolster the evidence connecting coresidence with an aging parent to the diminished labor market outcomes of adult children, I turn to the Panel Study of Income Dynamics (PSID). Figure A.2 presents the average employment (panel A) and annual hours worked (panel B) of individuals aged 30-60 before and after coresiding with a parent aged 75 and older.[12] The key takeaway from these figures is that residing with an elderly parent leads to a decrease in employment and labor supply hours. To sum up, the results based on the ACS and the PSID offer suggestive evidence that coresiding with the elderly, prompted by immigration deportations, has a detrimental labor market outcome on the elderly's children and families.

[12]Due to the PSID's small sample size, I restricted the analysis to individuals aged 75 and older.

5.3 Robustness Checks

To assess the reliability of the findings, I conduct several additional specification checks. First, I assess the sensitivity of the results to the exclusion of PUMAs that adopted SC before 2010. Cox and Miles (2013) show that early adopters were selected into the program based on proximity to the Mexican border, the share of the Hispanic population, and the presence of 287(g) programs. Second, I examine the robustness of the main results to the exclusion of PUMAs located in Arizona state. In 2010, the State of Arizona passed measure SB 1070, one of the nation's most stringent immigration enforcement programs.

The sample period in these studies overlaps with the timing of the Great Recession, prompting concerns that the main results might be influenced by local area's economic conditions. Following East et al. (2018), I include the quadratic trend in the 2002-2006 change in local housing prices in the PUMA into the main specification.[13] The results prove robust to this modification too (column 3). Finally, I show that the estimates stay stable if I control for PUMA-specific time trend (Panel D).

Next, I examine the validity of the identification strategy using placebo test. I reproduce the analysis by focusing on married elderly that, ex ante, I believe should be less sensitive to immigrants' deportations. Examining the results for this demographic group shows that the policy exhibits small, negative, and statistically insignificant effects on their coresidence with their adult child and on coresidence with someone (Table 7). This is plausible, as elderly couples may maintain their independence by compensating for one another. This observation is also consistent with the fact that spouses are often the first in line to help frail or ill partner (Wolff and Kasper, 2006; Pinquart and Sörensen, 2011).

In Table 8, I show that SC didn't impact the single elderly's other types of living arrangements, such as residing in nursing homes. I report the estimates of Secure Communities on the probability of single elderly individuals living in nursing homes, focusing on all PUMAs

[13]The index is reported based on the year 2000. Therefore I estimate the change in housing prices between 2002 and 2006

(column 1) and on PUMAs with at least one Hispanic low-educated foreign-born resident in the ACS 2005 (column 2). The estimates are smaller compared to the coresidence living arrangement and are statistically insignificant at conventional levels.

Lastly, I examine whether SC's positive effect on elderly coresidence is larger in areas with a higher concentration of immigrant workforce in the private household industry. For this exercise, I interact the SC indicator with the 2005 share of household service workers born in Central America or Mexico, as well as the share of Hispanic household service workers in the ACS 2005. If elderly living arrangements are impacted through changes in the private household market, we would expect to see a more positive effect on coresidence in areas that hire more immigrants in this sector. The point estimates on the interaction terms for both types of elderly coresidence are positive, statistically significant, and larger than the SC coefficient, suggesting that SC's impact on coresidence is greater in areas with a larger share of Hispanic and Mexican or Central American workforce contributing to the household industry (Table 9). Focusing on column 1, Panel A of Table 9, I find a 0.55 percentage point increase in coresidence with an adult child, which translates to a 2.4% increase relative to the mean. In a PUMA with a one standard deviation higher intensity in the 2005 share of household service workforce born in Central America or Mexico, the effect is a 0.7 percentage point increase (a 3.2% increase relative to the mean). When analyzing intensity measure of 2005 share of Hispanic foreign-born workforce the similar strong positive pattern is revealed.

To sum up, a variety of robustness checks support my main results supporting the validity of the identification strategy. In addition, the placebo tests reveal precise null effects, confirming that the positive impact of immigration enforcement on coresidence does not simply seem to arise by chance. Finally, the analysis by intensity measure provides suggestive evidence of a positive effect of SC on coresidence through changes in the household service market. In what follows, I will discuss this potential mechanism in detail.

6 Mechanism

6.1 Impact of Secure Communities on Private Household Industry

Thus far, I have documented that the intensification of SC contributed to the increasing likelihood of single elderly's coresidence, wherein an elderly person lives either with an adult child or with someone rather than living alone. This finding also appears robust to a number of identification tests. One potential explanation for this is a declined labor supply and, thus, increased cost of services in the private household industry. As argued in the background, a complex spectrum of support is needed to facilitate aging in place. As SC increases the risk of deportation and raises apprehension, the labor supply of migrant workers in the private household industry is expected to decline. By basic microeconomic theory, the reduced labor supply should push wages up, thus increasing the price of services. As the services become less affordable, elderly individuals in need of caregiving and household maintenance support may start looking for alternative options, such as living with their children or other relatives who can assist them with their daily routine.

To investigate this hypothesis, I examine the labor market outcomes of workers in the private household industry. I begin by quantifying the impact of SC on the total number of workers, as well as the total hours worked by all workers and specifically by low-skilled and likely undocumented immigrant workers employed in this industry. Similar to other researchers, I define undocumented immigrants as those with less than a high school education and born outside the United States. I estimate a difference-in-differences model of the following form:

$$Y_{pt} = \beta_1 SC_{pt} + X'_{pt}\delta + \mu_p + \theta_t + \varepsilon_{pt} \tag{4}$$

The difference between equation 4 and equation 2 is that the dependent variable is aggregated to the PUMA level. Additionally, I estimate the model using survey years 2005-

2014 to allow for an extra pre-SC period. I sum the total number of workers and total hours worked by workers of working age (20-64) in the private household sector in PUMA p and year t. Then, I divide the PUMA-by-year total number of workers and total hours of work by the total population in the PUMA for that year, and then multiply by 100. Conducting the analysis at the PUMA level rather than the individual level helps assess SC's effect on changes in the private household market.

The vector X'_{pt} includes the PUMA-level Bartik-style measures of labor demand that are based on five working-age groups: the sample of immigrants, the sample of low-skilled individuals, the sample of high-skilled individuals, the sample of foreign-born adults, and the sample of low-skilled foreign-born people. X'_{pt} also includes controls for the presence of local 287(g) programs in PUMA.

Panel A of Table 10 presents the results on the effect of SC on the number of workers in the private household sector, focusing on different demographic groups. The point estimates for all demographic groups are negative but statistically insignificant. As Table 1 shows, the private household sector largely employs maids and housekeepers, personal care workers, and home health aides, and these professions are typically held by female workers. The resulting insignificant effect of SC on the number of workers is perhaps not surprising, given that the vast majority of jobs in the private household sector are taken by women, while male immigrants were primarily those deported from the country. In Panel B, I examine the effect of SC on total hours worked by all workers (column 1), low-educated workers (column 2), low-educated foreign-born workers (column 3), low-educated Hispanic foreign-born workers (column 4), and low-educated individuals born in one of the Central American countries or Mexico (column 5)[14]. Negative effects are observed across all five samples. The results depict consistent negative effects across all samples. There is a relatively small and less precisely estimated effect in columns (1) and (3), representing the sample of all workers and the sample of low-educated foreign-born workers, suggesting a decrease in hours by 5.2% and

[14]In 2011, 73% of total undocumented immigrants were from Mexico, El Salvador, Guatemala, and Honduras (Hoefer et al., 2012)

12.6%, respectively. The last two columns, which explore the effect on samples most likely populated by undocumented immigrants and thus more likely impacted by the SC program, show large and significant reductions in hours worked by low-educated Hispanic foreign-born workers (18.4%) and low-educated Central American and Mexican immigrants (17.1%). My estimates are consistent with findings from Almuhaisen et al. (2024), who report that SC reduced total hours of work by low-educated immigrants from Central American countries and Mexico employed in selective occupations in the home health and private household sectors by 23.2

My estimates are consistent with findings from Almuhaisen et al. (2024), who report that SC reduced total hours of work by low-educated immigrants from Central American countries and Mexico employed in selective occupations in the home health and private household sectors by 23.2%.

The estimates presented in Table 10 are unbiased under a standard parallel trends assumption: that the labor supply of likely undocumented immigrants in the private household industry would have evolved similarly across PUMAs in the absence of SC. I test this parallel trends assumption with an event study specification. Figure 8 reports the event study estimates for low-educated workers across three samples: all workers, workers born in Central America or Mexico, and Hispanic foreign-born workers. As discussed earlier, the specification includes all event dummies with two reference periods, but I only report estimates for five years before and four years after the enactment of SC. Figure 8 suggests no pre-trends and provides evidence of a significant decrease in labor supply following SC, which is more pronounced in the sample of Central American and Mexican workers.

Given the reduction in immigrants' labor supply in the private household sector, we expect the wages of workers in this industry to increase. To investigate whether SC impacted wages, I estimate equation 2 with the dependent variable being the real hourly earnings of worker i in the private household industry, living in PUMA p and year t. In Table 11, I present the results of the relationship between SC and the wages of workers in the private

household sector.

I find positive point estimates for the sample of all workers in this sector (column 1) and also for the lower-skilled workers (column 2). However, these effects are not statistically significant. When focusing on workers aged 24-60 (column 3), the point estimates are higher and statistically significant (p-value=0.04). These results suggest that a 1% decline in the working hours of likely undocumented workers in private households leads to a 0.5% increase in the hourly wages of the low-educated workforce in this industry (0.085/18.36). These results closely align with prior literature. East and Velásquez (2022) suggests that a 1% decrease in the working hours of likely undocumented females leads to roughly a 1% increase in hourly wages for low-educated females working in household services. Similarly, Cortes (2008) shows that a 1% increase in the low-skilled immigrant labor force decreases the price of immigrant-intensive services, including domestic services, by 0.2%.

Given the reduction in labor supply by likely undocumented immigrants in the private household industry at the extensive margin, it suggests that these workers did not switch to other industries or exit the labor force entirely. This indicates that labor supply is plausibly impacted by other factors such as the chilling effect. If this is true, we should see a stronger effect on the labor supply decisions of likely undocumented immigrants in areas with a larger concentration of immigrants, where fear of deportation is stronger. To test this hypothesis, I examine the labor supply behavior of workers in this sector by the intensity of treatment. Specifically, I replicate the results of private household workers' labor supply decisions by adding three types of interactions separately to each specification: an interaction of the SC indicator with the share of low-educated population born in Central America or Mexico, an interaction of the SC indicator with the share of low-educated foreign-born Hispanic population, and an interaction of the SC indicator with the presence of a sanctuary city. Sanctuary cities or counties are jurisdictions where local governments have adopted policies to limit cooperation with federal immigration authorities. These policies can include discouraging local law enforcement from reporting immigration status, unless

it's part of a serious crime investigation. Sanctuary cities may also limit the length of immigration detainees and prevent federal agents from taking people into custody. If fear of deportation is a primary driver of the reduced labor supply decision by undocumented immigrants, then likely undocumented workers in sanctuary cities should have less fear and thus exhibit a lower response to SC.[15]

Table A.2 presents the results of total hours worked by low-educated working-age workers: foreign-born, Hispanic foreign-born, and workers born in Central America or Mexico, by the intensity of treatment. As panels (A) and (B) show, the negative effect of SC on labor supply is larger in PUMAs where there is a higher proportion of private household workers born in Central America and Hispanic foreign-born workers. Moving to Panel (C), which explores the role of sanctuary cities I find that the point estimates of SC with sanctuary city are positive and statistically insignificant for the sample of low-educated foreign-born workforce indicating that the main effects on labor supply are driven by locations with no sanctuary policies. For the other two samples in columns (2) and (3), the point estimates on the intensity measure are positive. Interpreting the findings related to the sample of Hispanic foreign-born workers, there is a 0.26 percentage point decline in hours worked at the mean share of low-educated Hispanic foreign-born (a 21% reduction relative to the mean). In PUMAs with sanctuary cities, the effect is a 0.18 percentage point decline (a 14.4% reduction relative to the mean).

Expanding on these findings, we should see more positive effect on coresidence in areas with likely undocumented immigrants, and minimal to no effect in sanctuary cities. To test this hypothesis, I perform the same intensity analysis focusing on coresidence of elderly with an adult child and with someone in Table A.3. The results confirm the hypothesis by displaying larger point estimates on the interaction of SC indicator with share of low-educate Hispanic foreign-born population and also interaction of SC indicator with low-

[15] I explore data and information about sanctuary cities provided by ICE. The details could be found here: https://www.ice.gov/doclib/ddor/ddor2017_02-04to02-10.pdf. Similar to continuous SC variable, I construct PUMA-population weighted sanctuary city variable.

educated population born in Central America or Mexico (Panels A and B). I find a stronger effect on coresidence with someone who could include either family or non-family member. For example, SC increased incidence of coresidence in PUMAs with the average share of Hispanic foreign-born population by by 2.6%. In a PUMA with intensity one standard deviation higher, the effect on coresidence with family or non-family is 3.6% relative to the sample mean. Moving to the Panel C, I find that almost all of the main effects in coresidence are driven by locations with no sanctuary policies.

7 Conclusion

The necessity of Secure Communities (SC) was justified as a tool to reduce crime and make communities safer. However, its implementation led to a number of unintended consequences. In this paper, I look at one implication for U.S.-born individuals - namely, SC's impact on the structure of families with an elderly relative. Exploiting spatial and temporal variation introduced by SC along with the person-level data from the American Community Survey, I estimate difference-in-differences and event study models with location and time fixed effects. I find that the implementation of the policy has led to an increased incidence of coresidence among two specific groups: U.S.-born single elderly individuals and U.S.-born white elderly individuals. Elderly who are aged 80 and older have a great demand for a wide range of home-based services. The prevalence of an immigrant workforce in the private household sector allows families with an elderly individual to outsource household services at affordable costs. The negative shock on the labor supply of immigrants caused by SC disturbed the life routines of people who rely on immigrants' services as they are not able to maintain their households independently or do basic activities on their own. The empirical analysis in this paper supports this hypothesis.

To provide support that changes in the private household sector are an important mechanism behind the coresidence of elderly, I estimate the effect of the policy on the labor supply

of undocumented immigrants in this sector. I find that SC reduced the total hours of work supplied by undocumented immigrant workers and thus increased the wages of low- and medium-skilled workers in this sector. Expensive household services may affect decisions over living arrangements. Coresidence allows families to save on household and caregiving services. However, coresidence also has further economic consequences on adult children of the elderly, reducing their labor market outcomes due to time spent on informal care. Given the growing demand for caregiving services caused by increasing life expectancy, the findings of this paper call for further research into the unintended consequences of immigration enforcement policies on elderly Americans and their families.

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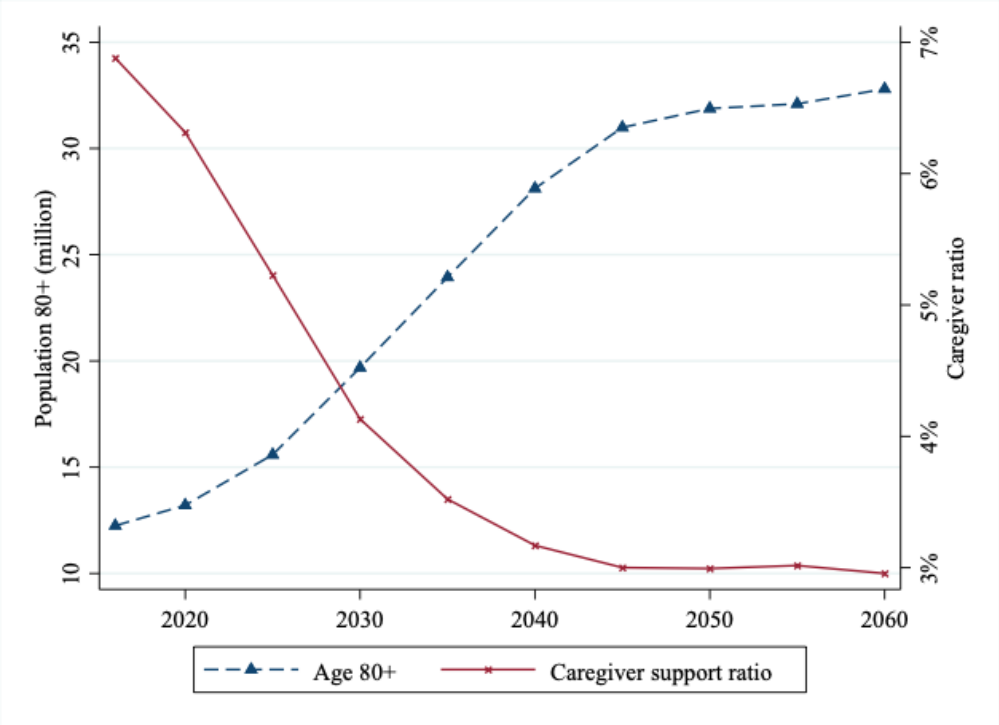
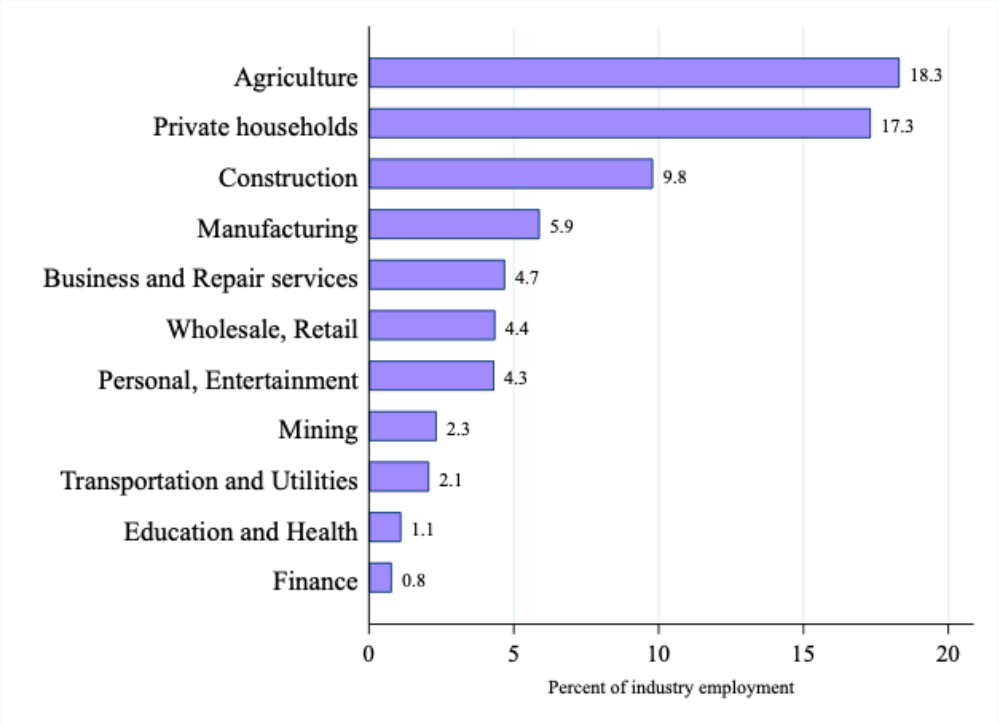
8 Figures

Figure 1: Projected Growth of Elderly Population and Declining Caregiver Support Ratio



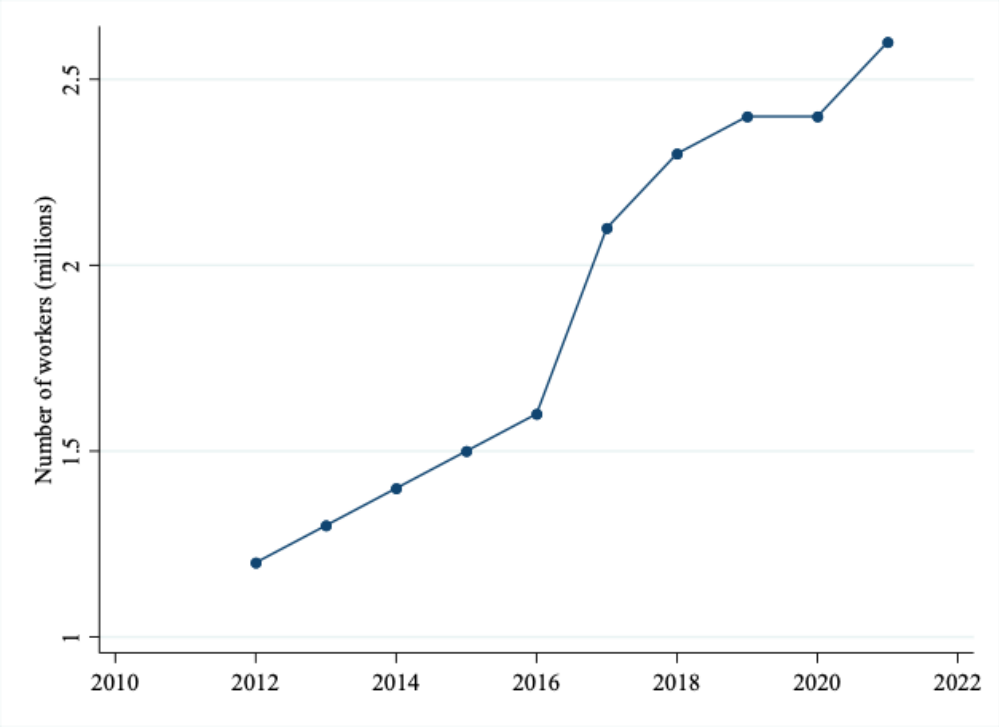
Notes: *The figure plots the projection of the 80+ population (navy dashed line), and the caregiver support ratio (solid red line). The caregiver support ratio is calculated by dividing the population aged 45-64 by the population aged 80 and over.* ***Data source:*** *U.S. Census 2017 National Population Projections Tables. https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html*

Figure 2: Percent of Industry Workers that are Likely Undocumented Immigrants



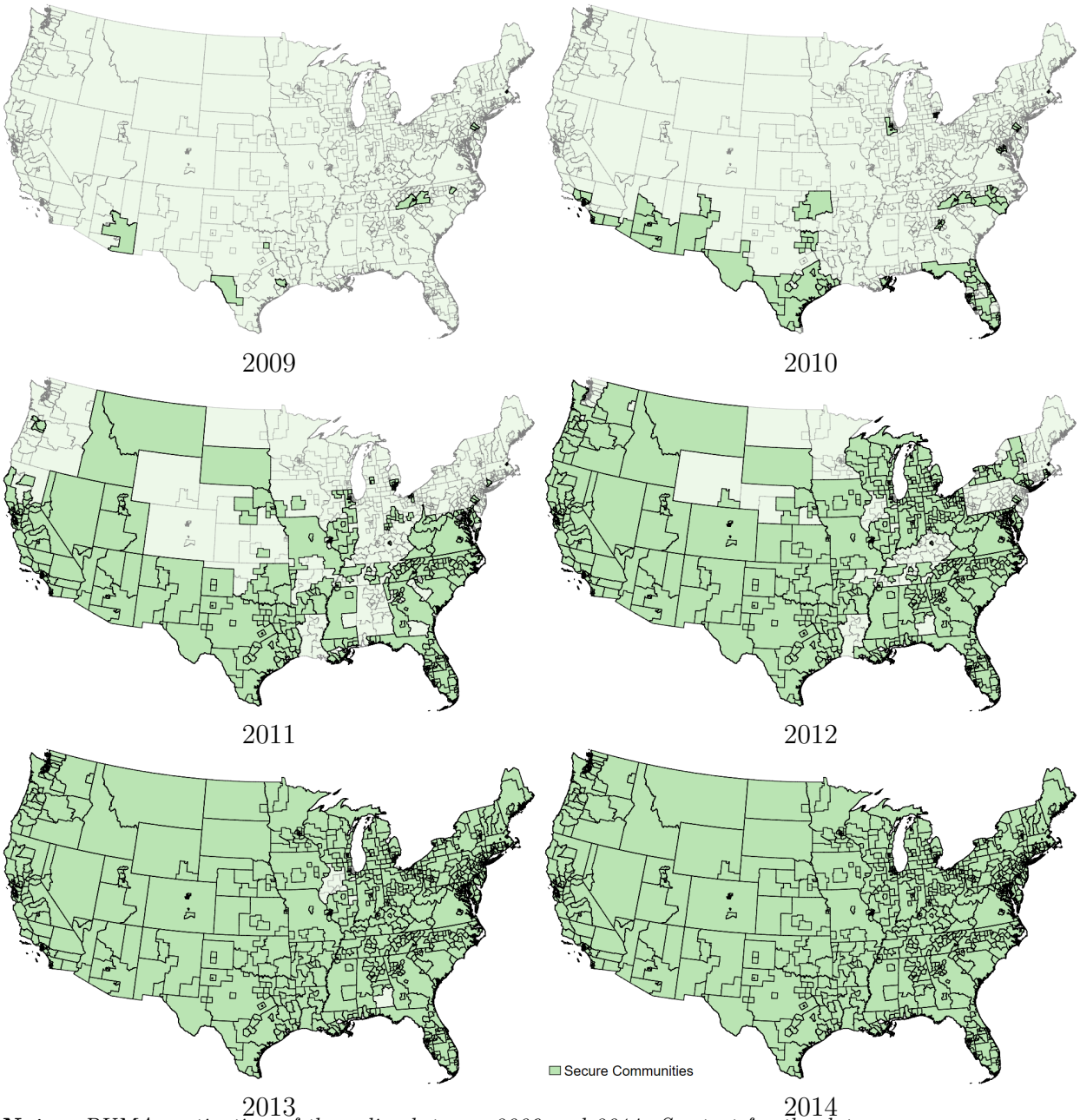
Notes: *The graph plots the percentage of likely undocumented immigrants by industry, based on ACS 2005. Undocumented immigrants are defined as individuals with low education (less than high school) who are foreign-born. The results are weighted using ACS person weights.*

Figure 3: Employment of Home Care Workers



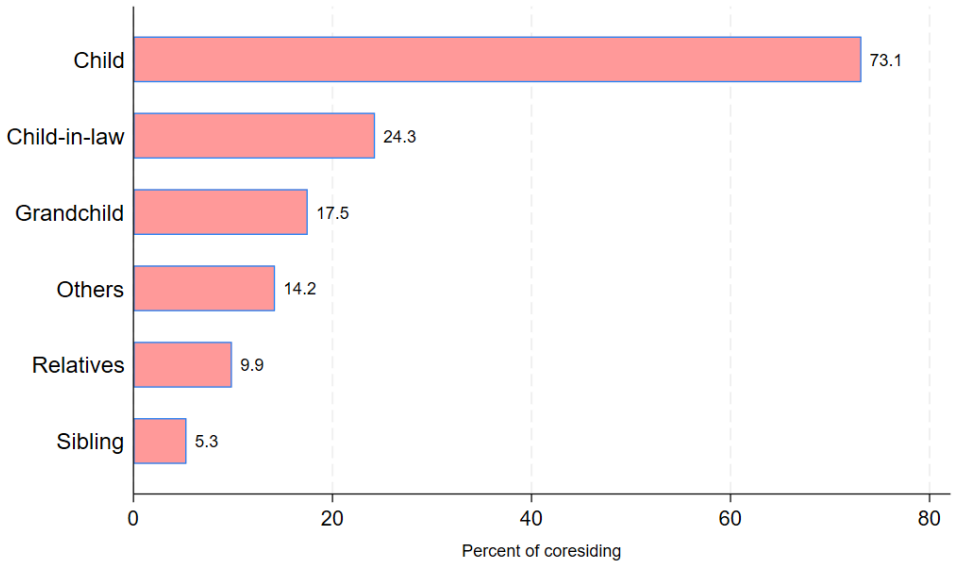
Notes: *The figure plots employment of home care workers between 2012-2021. Home care workers include all direct care workers (personal care aides, home health aides, and nursing assistants. Home care workers include direct care workers who work in two industries: Home Health Care Services and Services for the Elderly and People with Disabilities. Data is derived from http://www.phinational.org/policy-research/workforce-data-center/.*

Figure 4: Secure Communities Activation Between 2009 and 2014



***Notes**: PUMAs activation of the policy between 2009 and 2014. See text for the data source*

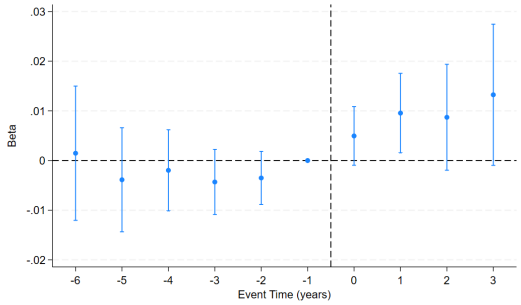
Figure 5: Household Member's Relationship to Elderly



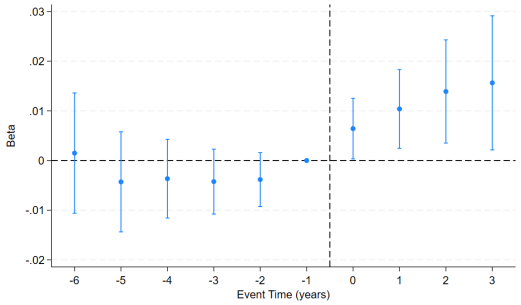
Notes: *The sample is restricted to households with at least one single individual aged 80 and over who is a U.S. citizen and does not reside alone. The individual also must not be residing in group quarters in the ACS 2006-2014. Additionally, the youngest household member must be at least 16 years old.*

Figure 6: Event-Study Estimates of the Effect of SC on the Probability of Single Elderly Coresidence

(a) With Child



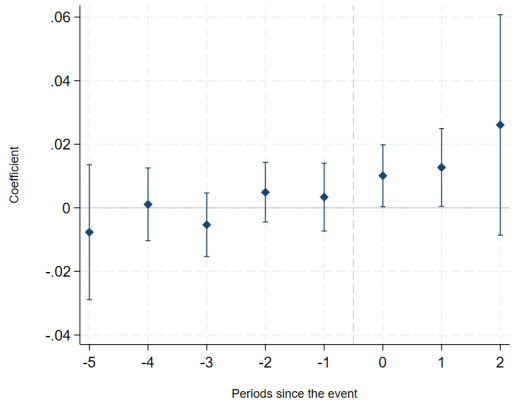
(b) With Family/Non-Family



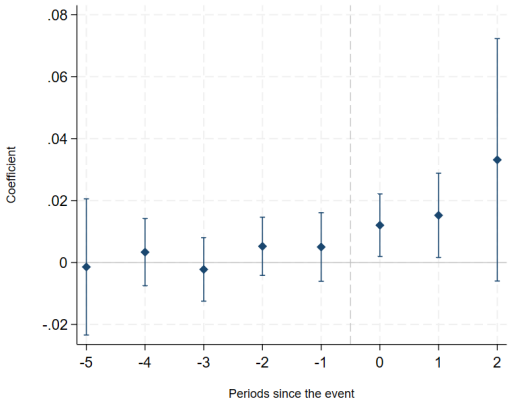
Data are from ACS 2006-2014. An event study model is estimated for all available years and dropped two pre-period to avoid multicollinearity with the event dummies, year, and PUMA fixed effects (Schmidheiny and Siegloch, 2023; Borusyak and Jaravel, 2017). I report estimates from period -6 to +3, because I observe only 336 PUMAs in the event time -7, and 162 PUMAs in the event time +4. The regressions include PUMA fixed effect, year fixed effect, vector of demographic controls, controls for presence of 287(g) programs, Bartik-style measures of labor demand, and standard errors are clustered at the PUMA level. Results are weighted using ACS person-level weights.

Figure 7: Effect of SC on the Probability of Single Elderly Coresidence. Robustness to Callaway and Sant'Anna (2021) estimator

(a) With Child



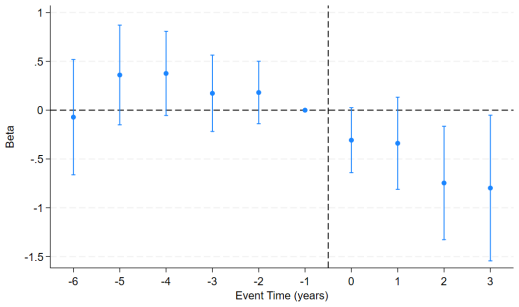
(b) With Family/Non-Family



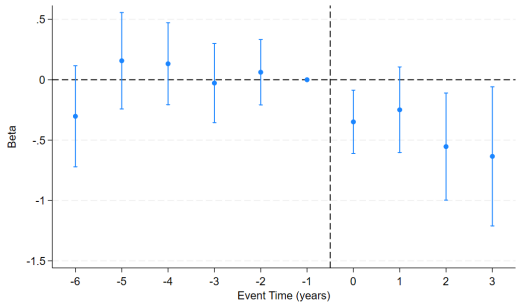
Data are from ACS 2006-2014. The figures plot the event-study estimates using Callaway and Sant'Anna (2021) method of the effect of SC on coresidence (a) with an adult child and (b) with family or non-family member(s). Specifications include demographic controls.

Figure 8: Event-Study Estimates of the Effect of SC on the Labor Supply of Low-Educated Workers in the Private Household Industry

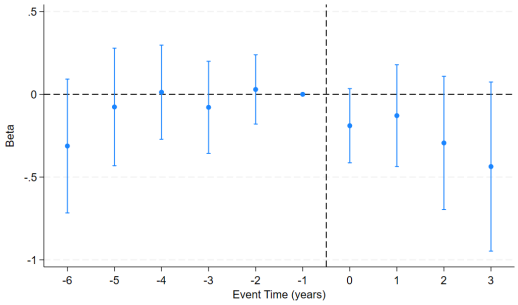
(a) All Low-Educated



(b) Born in Central America or Mexico

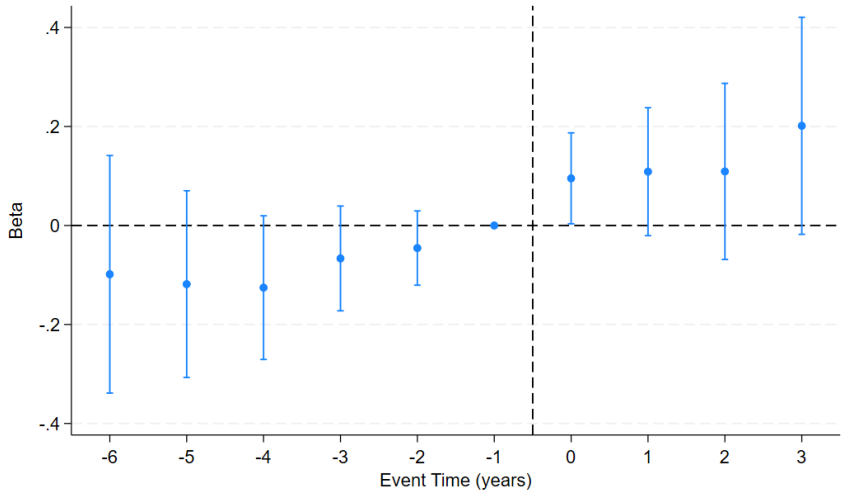


(c) Hispanic Foreign-Born



Data are from ACS 2005-2014. An event study model is estimated for all available years, dropping two pre-periods to avoid multicollinearity with the event dummies, year, and PUMA fixed effects (Schmidheiny 2023; Borusyak 2017). Estimates are reported from period -6 to +3 because there are only 336 PUMAs in the event time -7 and 162 PUMAs in the event time +4. The sample is limited to workers with less than a high school degree. The yearly hours worked of private household service workers (a), workers born in Central America or Mexico (b), and Hispanic foreign-born workers (c) are divided by PUMA population and multiplied by 100. The regressions are weighted using PUMA 2000 population and include PUMA-year controls, PUMA fixed effects, and year fixed effects. The PUMA-year controls include labor demand controls and 287(g) programs. Standard errors are clustered at the PUMA level.

Figure 9: Event-Study Estimates of the Effect of SC on Hourly Wages of Private Household Workers



Data are from ACS 2005-2014. The figure presents event study estimates of the effect of Secure Communities from a regression of the natural log of real hourly wages of individuals in the private household sector. The sample is limited to individuals aged 24-60 who report their industry of work as the private household sector, whose highest education is high school, and whose income is not imputed. The event study regression is estimated for all available years, omitting two pre-periods to avoid multicollinearity. The regressions control for workers' demographic characteristics, labor demand, state 287(g) immigration policies, PUMA fixed effects, and year fixed effects. The regressions are weighted using ACS person-level weights, and standard errors are clustered at the PUMA level

9 Tables

Table 1: Occupations of Low-Educated Workers in the Private Household Industry, ACS 2005

	U.S. born (%)	Likely undocumented immigrants (%)
Maids and housekeeping cleaners	44.04	78.6
Childcare workers	33.85	9.86
Personal care workers	12.86	6.20
Nursing, psychiatric, and home health aides	2.00	1.12
Laborers (except construction)	1.14	1.95
Other	6.11	2.27
Direct care workers	14.86	7.32

Notes: *Column 1 reports the percentage of U.S. born workers employed in occupations in private household industry who have less than high-school education. Column 2 reports same outcome for likely undocumented immigrants who are foreign born and with less than high-school education. Direct care workers are Nursing, psychiatric, and home health aid, and Personal care workers (Zallman et al., 2019). The outcomes are weighted using ACS indivudual-level weights.*

Table 2: Summary Statistics of Single Elderly

	mean(st.dev)
Age	86.00
	(4.45)
Female	0.77
	(0.42)
Widow	0.79
	(0.41)
Divorced	0.10
	(0.30)
Never married	0.06
	(0.24)
Disable	0.68
	(0.47)
Difficulty to live independently	0.47
	(0.50)
Less than high school	0.28
	(0.45)
High school only	0.46
	(0.50)
College and more	0.14
	(0.34)
Black	0.09
	(0.28)
White	0.83
	(0.38)
Hispanic	0.05
	(0.22)
Employed	0.02
	(0.16)
Coresides:	
Alone in own home	0.61
	(0.49)
Nursing home	0.13
	(0.34)
Child, child-in-law	0.23
	(0.42)
Family and relatives	0.25
	(0.43)
Family and non-family	0.26
	(0.44)
N	786656

Notes: *Data are from ACS 2006-2014. The sample includes U.S.-born individuals aged 80 and over, including those who reside in group quarters. The results are weighted using ACS individual-level weights.*

Table 3: Relationship Between Coresidence and Informal Care of Individuals Aged 80 and Older in the HRS

	Coreside	Not coreside
At least one hour of care in the past month	0.47	0.16
At least 20 hours of care in the past month	0.42	0.10
Mean hours of care in the past month	117	13
N	12740	

Notes: *Data are from the Health and Retirement Survey 1994-2010. The sample includes unmarried individuals aged 80 and over.*

Table 4: Effect of SC on the Probability of Single Elderly Coresidence

	With Child	With Family/Non-Family
A.ALL PUMAs		
Secure Communities	0.006**	0.007***
	(0.002)	(0.003)
Mean Y	0.23	0.26
P-Value SC	0.01	0.01
% Effect	2.78	2.72
N	767033	767033
B.PUMAs with a foreign-bon low-educated Hispanic(s)		
Secure Communities	0.009***	0.009***
	(0.003)	(0.003)
Mean Y	0.23	0.27
P-Value SC	0.00	0.00
% Effect	3.72	3.35
N	667052	667052

Notes: *Data are from ACS 2006-2014. The estimates in each column are from a linear probability model where the dependent variable is whether an individual coresides with an adult child (column 1) or with any family member, relative, or non-relative (column 2). The sample includes individuals aged 80 and above who are U.S. citizens, not employed, and report not having a spouse. Each regression includes year and PUMA fixed effects, as well as demographics of the elderly. Panel B further adds PUMA-level controls for labor demand (Bartik-style labor demand) and controls for the presence of state immigration policies (187(g)). Panel C restricts the analysis to PUMAs with at least one Hispanic foreign-born individual with less than a high school degree in ACS 2005. Results are weighted using ACS individual-level weights, with standard errors clustered at the PUMA level.*

Table 5: Effect of SC on the Probability of Single Elderly's Coresidence with an Unemployed Person or Person out of the Labor Force

	Unemployment	Not in labor force
Secure Communities	0.003***	0.002
	(0.001)	(0.002)
Mean Y	0.02	0.08
P-Value SC	0.00	0.24
% Effect	16.88	2.93
N	667052	667052

Notes: *Data are from ACS 2006-2014. The dependent variable is whether an 80-plus years old single individual coresides with a person who is within age range of 30-60 and the person is unemployed (column 1) or not in the labor force (column 2). The models include year fixed effect, PUMA fixed effect, controls for state 287(g) programs, labor demand, and demographic controls. The sample is limited to PUMAs with at least one Hispanic foreign-born individual with less than a high school degree in ACS 2005. Results are weighted using ACS person-level weights and standard errors are clustered at PUMA level.*

Table 6: Effect of SC on the Probability of Single Elderly Coresidence. Robustness Check

	With Child	With Family/Non-Family
A. Drop Arizona		
Secure Communities	0.009***	0.009***
	(0.003)	(0.003)
Mean Y	0.23	0.27
P-Value SC	0.00	0.00
% Effect	4.02	3.53
N	654096	654096
B. Drop border PUMAs adopted early		
Secure Communities	0.008***	0.009***
	(0.003)	(0.003)
Mean Y	0.23	0.27
P-Value SC	0.00	0.00
% Effect	3.58	3.39
N	651357	651357
C. Quadratic treand HPI		
Secure Communities	0.008***	0.009***
	(0.003)	(0.003)
Mean Y	0.23	0.27
P-Value SC	0.00	0.00
% Effect	3.70	3.24
N	667052	667052
D. Linear trend		
Secure Communities	0.006**	0.006**
	(0.003)	(0.003)
Mean Y	0.23	0.27
P-Value SC	0.02	0.05
% Effect	2.82	2.18
N	667052	667052

Notes: *Data are from ACS 2006-2014. All regressions include year fixed effects, PUMA fixed effects, controls for state 287(g) programs, labor demand controls, and demographic controls. Panel A excludes PUMAs located in the state of Arizona. Panel B excludes PUMAs that are located at the U.S.-Mexico border and also activated the policy in 2008-2009. Panel C adds quadratic trends multiplied by the pre-period change in housing prices. Panel D controls for PUMA-specific time trends. The analysis is limited to PUMAs with at least one Hispanic foreign-born individual with less than a high school degree present in ACS 2005. Results are weighted using ACS person-level weights, and standard errors are clustered at the PUMA level.*

Table 7: Effect of SC on the Probability of Married Elderly's Coresidence

	With Child	With Family/Non-Family
Secure Communities	0.002	0.002
	(0.004)	(0.004)
Mean Y	0.12	0.13
P-Value SC	0.67	0.64
% Effect	1.33	1.42
N	348484	348484

Notes: *Data are from ACS 2006-2014. The sample is limited to U.S. citizens aged 80 and older who are married and not employed. All regressions include year fixed effects, PUMA fixed effects, controls for 287(g) programs, labor demand controls, and demographic controls. The analysis is limited to PUMAs with at least one Hispanic foreign-born individual with less than a high school degree present in ACS 2005. Results are weighted using ACS person-level weights, and standard errors are clustered at the PUMA level.*

Table 8: Effect of SC on the Probability of Single Elderly Living in Nursing Home

	All Areas	Areas with Hispanic Foreign-Born LE Residents
Secure Communities	0.002	0.004*
	(0.002)	(0.002)
Mean Y	0.14	0.13
P-Value SC	0.24	0.09
% Effect	1.84	2.88
N	767033	667052

Notes: *Data are from ACS 2006-2014. The sample is limited to single elderly individuals who are not employed and excludes elderly non-citizens. The dependent variable is whether an individual resides in a nursing home. All regressions include year fixed effects, PUMA fixed effects, controls for 287(g) programs, labor demand controls, and demographic controls. Column 1 estimates the model for all PUMAs. Column 2 further restricts the analysis to PUMAs with at least one Hispanic foreign-born individual with less than a high school degree in ACS 2005. Results are weighted using ACS person-level weights, with standard errors clustered at the PUMA level.*

Table 9: Heterogeneous Effect of SC on the Probability of Coresidence by Intensity of Treatment

	With Child	With Family/Non-Family
Secure Communities	0.005**	0.006**
	(0.003)	(0.003)
SC*(Share Household Service Workers Born in CA/MX)	0.673*	0.806**
	(0.376)	(0.400)
Mean Y	0.23	0.26
Mean Intensity	0.00	0.00
SD Intensity	0.00	0.00
β–Mean Int	0.0055	0.0063
β–1 SD Higher Int	0.0073	0.0085
P-value SC	0.04	0.03
P-value SC-intensity	0.07	0.04
N	767033	767033
Secure Communities	0.005*	0.005**
	(0.003)	(0.003)
SC*(Share Hispanic Household Service Workers)	0.800**	0.881**
	(0.327)	(0.356)
Mean Y	0.23	0.26
Mean Intensity	0.00	0.00
SD Intensity	0.00	0.00
β–Mean Int	0.0052	0.0060
β–1 SD Higher Int	0.0076	0.0086
P-value SC	0.07	0.05
P-value SC-intensity	0.01	0.01
N	767033	767033

Notes: *Data are from ACS 2006-2014. The sample includes single US citizens aged 80 years and older. Shares of workers in the private household sector are calculated using the 2005 ACS. Panel A estimates the share as the total number of working-age individuals in a PUMA born in Central America or Mexico who report their industry of work as the private household sector divided by all workers in that PUMA. Panel B calculates similar shares, focusing on Hispanic foreign-born workers. All models include PUMA fixed effects, year fixed effects, demographic controls, PUMA-level controls for labor demand, and state immigration policy 287(g). Standard errors are clustered at the PUMA level, and results are weighted using ACS person-level weights.*

Table 10: Effect of SC on the Private Household Sector

	All	LE	LE Foreign-Born	LE Hispanic Foreign-born	LE Born in CA/MX
*A: (Total # of workers / Total PUMA Pop) *100*					
Secure Communities	-0.012	-0.007	-0.004	-0.005	-0.004
	(0.011)	(0.005)	(0.005)	(0.003)	(0.004)
Mean Y	0.44	0.12	0.08	0.05	0.07
P-Value SC	0.290	0.169	0.424	0.121	0.309
% Effect	-2.65	-6.25	-4.78	-11.40	-6.57
N	10780	10780	10780	10780	10780
*B: (Total # of hours worked/ Total PUMA Pop) *100*					
Secure Communities	-0.676*	-0.431**	-0.304*	-0.230**	-0.333**
	(0.366)	(0.171)	(0.163)	(0.110)	(0.144)
Mean Y	13.06	3.30	2.41	1.25	1.94
P-Value SC	0.065	0.012	0.063	0.037	0.021
% Effect	-5.18	-13.06	-12.58	-18.36	-17.12
N	10780	10780	10780	10780	10780

Notes: *Data are from ACS 2005-2014. The samples in all columns are limited to individuals aged 20-64 who report their industry of work as private household. In Panel A, the dependent variable is the PUMA-level total number of workers by respective demographic group divided by the working-age contemporaneous PUMA population and multiplied by 100. Panel B shows the total number of hours worked by respective demographic group scaled by the PUMA contemporaneous population and multiplied by 100. Low-educated workers are defined as those with less than a high school education. All regressions include year fixed effects, PUMA fixed effects, controls for 287(g) programs, and Bartik-style measures of labor demand. Results are weighted using PUMA population in 2000, and standard errors are clustered at the PUMA level.*

Table 11: Effect of SC on Hourly Wages of Workers in the Private Household Sector

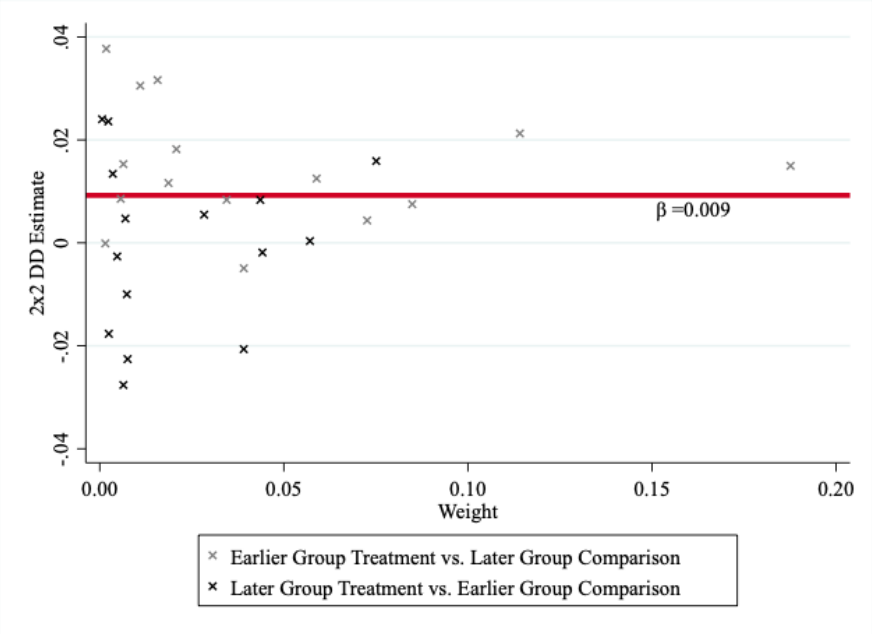
	All	With High School and Lower	With High School and Lower (age 24-60)
Log(Hourly Wages)			
Secure Communities	0.006	0.041	0.085**
	(0.030)	(0.037)	(0.041)
Mean Y	2.29	2.25	2.31
P-Value SC	0.83	0.27	0.04
N	29859	18435	13506

Notes: *Data are from ACS 2005-2014. The sample includes individuals aged 20-64, who report their industry of work as private household. The dependent variable is real hourly earnings (not imputed) of all workers (column 1), and workers with high school or lower level of education (column 2), and workers with high school and lower education whose age is 24-60. All regressions include year fixed effect, PUMA fixed effect, demographic controls, controls for 287(g) programs, and Bartik measures of labor demand. Results are weighted using ACS person-level weights, and standard errors are clustered at PUMA level.*

Appendix A Additional Results

Figure A.1: Goodman-Bacon Decomposition Diagnostic

	Avg DD	Weight
Earlier vs Later Treated	0.013	0.67
Later vs Earlier Treated	0.002	0.33



Notes: *The sample is restricted to single individual aged 80 and over who is a U.S. citizen in the ACS 2006-2014. The figure plots Bacon decomposition diagnostics for coresidence with an adult child. The table decomposes the overall difference-in-differences (DD) estimate and the total weights contributed by earlier vs. later treated comparisons and later vs. earlier treated comparisons. The figure visually portrays 2x2 estimates by two types of comparisons.*

Table A.1: Correlation of 2000-2005 Changes in PUMA Characteristics and SC Start Date

	Mean change in characteristics	Standard deviation	Estimate
Change % with college	0.014	0.0209	3.949
			(2.75)
Change % with masters	0.077	0.02	6.087
			(4.115)
Change % with Ph.D.	0.011	0.014	15.43
			(10.01)
Change % women with college	0.0086	0.0139	-2.054
			(4.068)
Change % women with Masters	0.006	0.0093	0.951
			(6.327)
Change % women with Ph.D.	0.0007	0.0028	-13.96
			(17.95)
Change % citizen	0.0063	0.0372	-1.47
			(1.177)
Change % non-citizen	0.0084	0.0251	-5.482***
			(1.638)
Change % with children	-0.0209	0.0293	-0.205
			(1.191)
Change % U.S.-born elderly	0.0036	0.0073	-4.305
			(11.892)
Change % U.S.-born elderly living with a child	-0.042	0.068	0.392
			(0.501)
Change housing prices	34.78	25.47	-0.010***
			(0.002)
Change unemployment rate	1.085	1.121	-0.059
			(0.002)
Change % labor force participation	0.764	3.016	-0.013
			(0.012)
Mean Y			2011.72
R-Squared			0.07
Observations			1078

Notes: *Data are from ACS 2005, 2000 Census, Bureau of Labor Statistics (county unemployment rate), Federal Housing Finance Agency (housing price index). I report β coefficients from the regression $SCyear_p = \alpha + \beta \Delta W_p' + \varepsilon_p$. $SCyear_p$ is the first year SC was activated in PUMA p. ΔW_p is 2000-2005 change in PUMA-level characteristics.*

Table A.2: Effect of SC on the private household sector. Heterogeneity by internsity measures.

	LE Foreign-Born	LE Hispanic Foreign-Born	LE Born in CA/MX
*A. (Total # Hours Work in Household Services / Total PUMA Pop) *100*			
SC	0.173	0.159	0.164
	(0.178)	(0.110)	(0.156)
SC*(Share LE Born in CA/MX)	-1.764***	-1.440***	-1.839***
	(0.430)	(0.375)	(0.435)
Mean Y	2.41	1.25	1.94
Mean Intensity	0.09	0.09	0.09
SD Intensity	0.19	0.19	0.19
β–Mean Int	0.01	0.02	-0.01
β–1 SD Higher Int	-0.32	-0.25	-0.35
N	10780	10780	10780
*B. (Total # Hours Work in Household Services / Total PUMA Pop) *100*			
SC	0.087	0.077	0.106
	(0.170)	(0.101)	(0.147)
SC*(Share LE Foreign-Born Hispanics)	-1.850***	-1.454***	-2.072***
	(0.462)	(0.428)	(0.470)
Mean Y	2.41	1.25	1.94
Mean Intensity	0.07	0.07	0.07
SD Intensity	0.16	0.16	0.16
β–Mean Int	-0.05	-0.03	-0.05
β–1 SD Higher Int	-0.34	-0.26	-0.37
N	10780	10780	10780
*C. (Total # Hours Work in Household Services / Total PUMA Pop) *100*			
SC	-0.314*	-0.267**	-0.371**
	(0.162)	(0.111)	(0.144)
SC*Sanctuary Cities	0.156	0.549**	0.574**
	(0.336)	(0.239)	(0.278)
Mean Y	2.41	1.25	1.94
Mean Intensity	0.02	0.02	0.02
SD Intensity	0.14	0.14	0.14
β–Mean Int	-0.31	-0.26	-0.36
β–1 SD Higher Int	-0.29	-0.18	-0.28
N	10780	10780	10780

Notes: *Data are from ACS 2006-2014. The sample includes individuals aged 20-64 who report their industry of work as private household. The data is collapsed to the PUMA by year level for each using the survey weights. Column 1 shows the results for all low-educated worked in private household sector. COlumn 2 further restricts to foreign-born workers. Columns 3 and 4 are further restricted to Hispanic foreign-born and born in Central Americ or Mexico. Panel A shows the results of the baseline model adding an interaction of SC with the share of the PUMA working-age population composed of individuals born in Central America or Mexico. Panel B shows the baseline model adding an interaction with the PUMA working-age population that is Hispanic, low-educated, and foreign-born. Panel C shows the baseline model adding an interaction of SC with the indicator of sanctuary city. The model includes PUMA fixed effects, year fixed effects, and PUMA-year controls. PUMA-year controls include labor demand controls and 287(g) programs. Results are weighted using PUMA-level population in 2000. Standard errors are clustered at the PUMA level and shown in parentheses.*

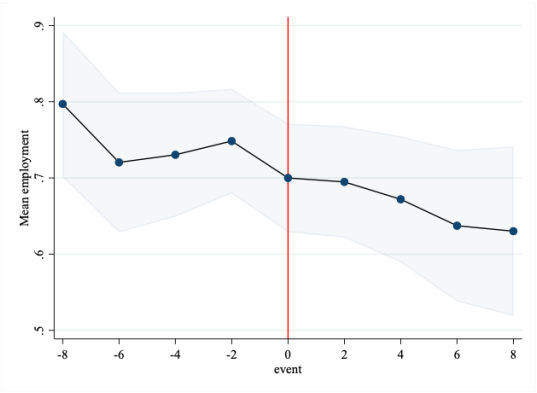
Table A.3: Effect of SC on the Probability of Single Elderly's Coresidence. Heterogeneity by Intensity Measures.

	An adult child	Family/Non-Family
A. SC × Share of LE Born in CA/MX		
Secure Communities	0.005*	0.005
	(0.003)	(0.003)
SC x Share of LE Born in CA/MX	0.012*	0.017**
	(0.007)	(0.007)
Mean Y	0.23	0.27
Mean Intensity	0.11	0.11
SD Intensity	0.19	0.19
β–Mean Int	0.0067	0.0064
β–1 SD Higher Int	0.0090	0.0096
Observations	667052	667052
B. SC × Share of LE Foreign-Born Hispanics		
Secure Communities	0.006**	0.006*
	(0.003)	(0.003)
SC x Share of LE Foreign-Born Hispanics	0.011	0.017**
	(0.008)	(0.008)
Mean Y	0.23	0.27
Mean Intensity	0.08	0.08
SD Intensity	0.16	0.16
β–Mean Int	0.0072	0.0070
β–1 SD Higher Int	0.0090	0.0097
Observations	667052	667052
C. SC × Sanctuary City		
Secure Communities	0.009***	0.009***
	(0.003)	(0.003)
SC x Sanctuary City	0.000	-0.002
	(0.005)	(0.006)
Mean Y	0.23	0.27
Mean Intensity	0.02	0.02
SD Intensity	0.14	0.14
β–Mean Int	0.0085	0.0091
β–1 SD Higher Int	0.0085	0.0088
Observations	667052	667052

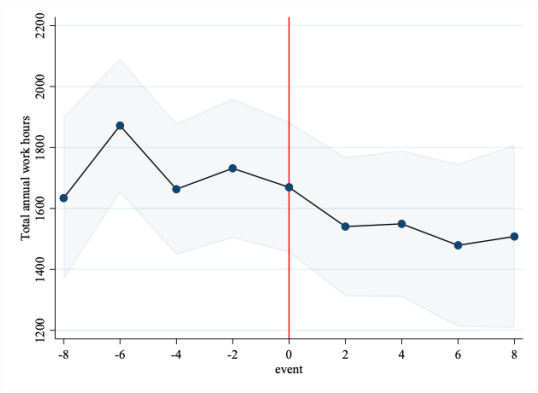
Notes: *Data are from ACS 2006-2014. The sample includes single unemployed U.S. citizen elderly aged 80 and above. Panel A shows the results of the baseline model adding an interaction of SC with the share of the PUMA working-age population composed of individuals born in Central America or Mexico. Panel B shows the baseline model adding an interaction with the PUMA working-age population that is Hispanic, low-educated, and foreign-born. Panel C shows the baseline model adding an interaction of SC with the indicator of sanctuary city. The model includes PUMA fixed effects, year fixed effects, PUMA-year controls, and demographic controls. PUMA-year controls include labor demand controls and 287(g) programs. Individual demographic controls include age, educational attainment, disability, race, and poverty. Results are weighted using individual-level weights from the ACS. Standard errors are clustered at the PUMA level and shown in parentheses.*

Figure A.2: Labor market outcomes following caregiving

(a) Employment



(b) Annual hours worked



Data are from PSID for 2001-2019. The sample is restricted to individuals who are 30-60 years old and whose parents are aged 75 and over. The event zero indicates the year when an individual has started to reside with an elderly parent. The sample is restricted to the individuals with at least 2 years of pre and post observations. The graph plots the average outcomes reported in panels (a) and (b).