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 U.S.-born elderly people. Older adults often rely on outsourcing private household services. As illustrated in Figure 2, over 17% of workers in the private household sector are likely undocumented immigrants. Previous research found that SC led to a decline in employment and hours worked by undocumented immigrants (East et al., 2018; Valdivia, 2019; East and Velásquez, 2022). Thus, decreased labor supply in the household industry through restricted immigration enforcement policy should increase the cost of outsourcing household services. This, in turn, may compel elderly individuals to either seek formal assistance from agencies at a higher cost or turn to family and friends for support. While the latter is usually unpaid, being a caregiver for a family member comes at the cost of reduced work hours at a formal job or results in exiting the labor force entirely (Van Houtven et al., 2013; Skira, 2015; Fahle and McGarry, 2018; Maestas et al., 2020).

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

Exploiting a quasi-experimental staggered rollout of SC across locations and over time, this paper examines the 80-plus-year-old residents' ability to live independently. Specifically, I look into whether these individuals are more likely to live with family, relatives, or friends 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 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 Bacon decomposition (Goodman-Bacon, 2021). Furthermore, I show that the results are robust to a number of identification tests.

I estimate the spillover effect of the policy by focusing on two samples: single, and non-Hispanic white, both aged 80 and above, who are U.S.-born and not employed. I narrow the sample to these demographic groups for specific reasons. First, single elderly individuals, lacking spousal support, are more likely to require informal care. Second, non-Hispanic white (hereafter referred to as White) individuals are less likely to live in extended-family households compared to other demographic groups (Burr and Mutchler, 1993; Himes et al., 1996). Thus, these two demographic groups are more likely to be affected by changes in the cost of household services.

The main finding is that the presence of SC in a local area increased the likelihood of elderly individuals residing with someone else. For married individuals, this effect extended beyond a spouse. Specifically, the results indicate that the incidence of coresidence of single elderly individuals with their family members and relatives increased by 0.7 percentage points (3% increase relative to the sample mean), and with anyone, including non-family members,

by 0.8 percentage points (3.1% increase relative to the sample mean). These numbers are even higher for white elderly. As further evidence that elderly individuals are more sensitive to immigration policies, I identify two comparison groups that should be less impacted by changes in private household sector: (1) married U.S.-born elderly, and (2) foreign-born older adults. I show a small and insignificant effect of SC on the incidence of coresidence of these groups.

I then proceed to analyze with whom the elderly are likely to reside. If SC raised the likelihood of the elderly not living alone, and instead sharing a home with family members and 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 11.9% 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 contributes to the literature 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 of documented immigrants (Alsan

and Yang, 2018), and worker complaints in Hispanic workplaces (Grittner and Johnson, 2021). While the existing literature indicates unintended negative consequences on both natives and naturalized immigrants, this paper complements these studies by (1) exploring new and unexplored outcomes—specifically, living arrangements of U.S.-born elderly—and (2) providing evidence that the effect is driven by the declined labor supply among likely undocumented immigrants in the private household industry.

Second, my work also contributes to the literature on immigration and aging. Emerging research has found that an increased supply of low-skilled immigrants has led people aged 65 and up to stay in their own homes for 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 to this research, I study the living arrangements of the elderly due to the outflow of immigrants using SC as a natural experiment. The outcome caused by the outflow versus by inflow of immigrants is likely to be asymmetric. This is because the recently arrived workforce needs time to adjust to the new labor market conditions and thus leads to a different symmetric effect than the removal of adapted labor force (Lee et al., 2022). Furthermore, I show the effect of the policy on the population groups that are most vulnerable to the implementation of immigration enforcement programs - those aged 80 and over and single, as well as those aged 80 and over and white.

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.[2] 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 living (ADL) or instrumental activities of daily living (IADL) hired paid informal home-based services (Van Houtven et al., 2020).[3] 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

[2]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).

[3]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

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%)).[4] 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. As found by Butcher et al. (2021), the availability of low-educated foreign-born labor helps many elderly people age at home as they can outsource in-home care services at an affordable cost.

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

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

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.[5] 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. 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. 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.[6] 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, and had 287(g) agreements in place.[7] According to Cox

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

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

[7]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

and Miles (2013), the early operation of SC is not linked to the area's economic conditions, crime rate, and the local attitude toward immigration enforcement. PUMAs adopting the policy later, in 2010 and beyond, exhibit more random timing. While the main specifications include all PUMAs, I conduct robustness checks by excluding early-adopter areas to test for potential selection bias into the program.

The identification strategy described in more detail below relies on the assumption that the timing of the policy adoption in a local area can not 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 Public Use Microdata Area 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 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). Thus, I conclude that these results support that the implementation of the policy likely occurred randomly.

enforcement officers to perform certain functions to enhance federal immigration law, including interviewing immigration status, detaining non-citizens, and investigating information on individuals.

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 construct two samples: (1) single U.S.-born individuals aged 80 and above who are not employed, and (2) non-Hispanic white U.S.-born individuals aged 80 and over, also not employed. One potential concern when restricting the sample to single elderly is that single people might not have children. However, data from the Health and Retirement Survey shows that 87% of single individuals aged 65 and over have children. Moreover, in my sample, only 6% of single individuals were never married, while about 79% are widowed. Appendix A.2 presents the results for the widowed sample, indicating similar findings to those observed in the single sample.

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. In a scenario where a single elderly person is the head of the family, other members are categorized as a child, child-in-law, grandchild, sibling, friend, visitor, or other non-relatives. Alternatively, the household head may be a child or child-in-law, and the elderly person's status is indicated as a parent or parent-in-law. Another possibility is where an elderly person is listed as another relative or non-relative. Based on different statuses of an elderly individual within the household, four binary variables are constructed: (a) an elderly person coresides with an adult child, (b) an elderly person coresides with an adult child or child-in-law, (c) an elderly person coresides with any family member or relative(s), and (d) an elderly person coresides with either a family member, relative(s), or non-relative(s). The sample of coresiding members isrestricted to those aged 30-65 to capture potential caregivers.[8] In the case of the non-Hispanic white sample, a spouse of an elderly person is not considered a coresiding member.

Since the primary goal of this paper is to test the indirect effect of SC and its impact on coresidence among the elderly, I restrict the sample to households with U.S.-born elderly individuals. 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 U.S.-born single individuals and also omits elderly who reside alone. 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. Lastly, a substantial number of relatives (9.9%) and nonrelatives (14.2%) reside with the elderly person, while only in 5.3% of the households the elderly live with siblings.

Summary statistics for the samples of single and white elderly are presented in Table 2. All results are weighted using the ACS person weight variable. On average, single individuals are 86 years old. The white sample is slightly younger, with the average age of 85.3 years

[8] 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.

old. The marital status varies across samples. The single sample comprises 79% widowed, 10% divorced, and 6% never married individuals. In contrast, the white sample includes approximately 52% widowed, 34% married, 6% divorced, and 4% never married. There are more women among the singles, 77% vs. 63%. More females reflect the fact that women often outlive their spouses. The ACS asks respondents about six disability types: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty. Respondents who report at least one out of the six disability types is considered to have a disability. As such, about 68% of the singles and 62% of the whites report at least one form of disability. Moreover, 47% of the single respondents report not being able to live alone, with the smaller percentage of whites (38%), which is captured by variables "self-care difficulty" or "independent living difficulty". Moreover, a higher percentage of individuals in the white sample possess college or advanced degrees compared to their single counterparts (18% vs. 14%).

In terms of living arrangements, a larger proportion of single individuals, on average, reside with their adult child compared to white elderly individuals (21% vc 16%). Similarly, about a quarter of single individuals share their residence with someone who could be either a family member, relative, or non-relative.

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:

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

$SecCom_{it}$ is equal to one if Secure Communities program is implemented in county i at year t. $CountyPop_{it}$ is the population of the county i that adopted the policy at time t. $PUMAPop_{pt}$ 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 Secure Communities policy was in effect for the entire 12 months

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.[9]

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 reduction of labor supply in the private household industry is caused by: (1) forced removal of undocumented immigrants, (2) voluntary out-

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

migration of immigrants, and (3) decreased labor supply by immigrants due to "chilling effects".

To measure whether changes in the private household industry are driving a positive effect on coresidence among elderly, I examine the labor supply decisions of likely undocumented immigrants in the household industry. I construct a sample of working age immigrants in this industry and estimate the direct effect of SC on the total number of work hours provided by likely undocumented immigrants in the sector by PUMA and year. Next, I estimate the effect of SC on the cost of household services. I proxy the cost of household services with 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 U.S.-born 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 a minimum of ten working-age Hispanic non-citizens 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 gender, age, age squared, education (higher than a high school degree), race (Black), a dummy variable for disabled status, and a dummy for being in poverty. 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.

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). The model generates a DiD coefficient which is a weighted average of all possible two-group/two-period DiD estimators. In the case of SC, all PUMAs were eventually treated, so the design involves a comparison of early-treated units with later, and also, early-treated units become a comparison group to the later-treated units. As discussed in the literature, the potential for bias estimate is greatest when a portion of the average treatment effect on treated is estimated using the second grouping. To test whether heterogeneous treatment effects are causing a biased

estimate, I implement the Goodman-Bacon decomposition. The decomposition 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 0.68 in the overall two-way fixed effect estimate. In contrast, the potentially problematic two-by-two comparison, when earlier-treated units are comparison group, produce an average effect close to zero and receives a lower weight.

To further test the validity of the identification strategy, I estimate 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 (panel A), and for the sample of whites who are also not employed (panel B). In columns 1-4, the dependent variable is one of four measures of coresidence: coresidence with an adult child, coresidence

with an adult child or child-in-law, coresidence with either a family member or relatives (including an adult child or child-in-law), and coresidence with any individuals listed in columns 1-3 or with non-relatives.

The estimates in all four columns are positive and statistically significant, indicating that Secure Communities (SC) heightened the probability of coresidence among single elderly individuals aged 80 and over who are not employed. Specifically, SC increased the likelihood of coresiding with an adult child by 0.6 percentage points, representing a 2.8% increase relative to the sample mean. Additionally, the probability of coresidence with family member(s) or relative(s) rose by 0.7 percentage points, signifying a 3% increase relative to the sample mean. This result aligns with expectations, as single individuals, predominantly represented by widowed and divorced individuals, are more likely to require caregiving support, which is often provided by an elderly individual's adult child or other relatives.

In Panel B of Table 4, I present estimates of SC's impact on the incidence of coresidence for individuals aged 80 and over, not employed, and non-Hispanic white. All four columns show positive and statistically significant estimates, indicating a 3.33% increase (0.6 percentage points) in the likelihood of older individuals to coreside with family members and relatives. Comparing these coefficients with the estimates in Panel A reveals that the coresidence patterns for single elderly individuals are slightly larger, suggesting a greater sensitivity of living arrangements for single individuals to immigration enforcement

Figure 7 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 individuals' coresidence with a child or child-in-law or both (panel A) and coresidence with someone who could be either family/relatives or non-relatives (panel B). Similar outcomes are plotted for non-Hispanic white elderly in panels C and D. 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.

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 between 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 63. The SC coefficient is 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 13.8%. 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.1 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.[10] 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.

[10]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.[11] The results prove robust to this modification too (column 3). Finally, I account for pre-trends by estimating equation 2 with the vector $\lambda W'p * t$, which contains 2000 PUMA level unemployment rate, share of elderly, share of working-age citizens, share of working-age noncitizens, share of working age Black, share of working-age college-educated population, share of working-age low-educated population, housing price index interacted with linear time trends. Column (4) of Table 6 show that the estimates stay stable. (Wolfers, 2006; Neumark et al., 2014).

Next, I examine the validity of the identification strategy using placebo tests. I reproduce the analysis by focusing on two samples that, ex ante, I believe should be less sensitive to immigrants' deportations: married elderly individuals and foreign-born older people. First, examining the results for foreign-born individuals in Table 7, negative estimates of the effect of SC on coresidence with family and relatives are observed, but these estimates are not statistically significant (p-value is above 0.10). This echoes previous literature findings indicating that immigrants, especially those from Mexico and Central America, are more likely

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

to live with family later in life (Wilmoth, 2001). Thus, the implementation of SC was anticipated to have minimal to no effects on the living arrangements of this population group, accustomed to living in multigenerational family households. Turning to Table 8, the policy exhibits small, negative, and statistically insignificant effects on the coresidence of married elderly individuals. 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).

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.

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 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 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 adopt a similar empirical strategy to that employed by East and Velásquez (2022). They studied the impact of SC on the labor market outcomes of high-skilled women with young children and found that the declined labor supply of these women is driven by the reduced labor supply of undocumented female workers in two household service occupations: maids, housekeepers, and childcare workers. This paper finds that he incidence of coresidence among elderly people has increased in response to SC, prompting the question of which channel drives this result. As argued in the background, a complex spectrum of support is needed to facilitate aging in place. To address this, I examine the labor market outcomes of workers in the private household industry. I begin by quantifying the impact of SC on the 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:

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

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. To construct Y_{pt}, I sum the total hours worked by low-skilled 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 hours of work by the total population in PUMA and year and then multiply by 100. Constructing analysis at the PUMA level rather than at 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.

Table 9 presents the results on the effect of SC on the total hours worked for the sample of all foreign-born workers (column 1), Hispanic foreign-born workers (column 2), and individuals born in one of the Central American countries or Mexico (column 3)[12]. Negative effects are observed across all three samples. The findings suggest that SC reduced hours worked by low-skilled foreign-born workers by about 0.32 hours, by Hispanic foreign-born by about 0.23 hours, and by workers migrated from Central America or Mexico by 0.36 hours. The estimates are statistically significant, albeit marginally at the 10 percent level for the foreign-born and Hispanic foreign-born samples. These results indicate that the sector experienced a reduction in labor supply following SC activation.

The estimates presented in Table 9 are unbiased under a standard parallel trends assumption: that the labor supply of likely undocumented immigrants in the private household industry should have evolved similarly across PUMAs in the absence of SC. I test the parallel trend assumption with an event study specification. Figure 8 reports the event study estimates for low-educated foreign-born workers in Panel A and the same estimates for low-educated workers born in Mexico or one of the Central American countries in Panel B. As discussed earlier, the specification includes all event dummies with two reference periods, but I only report estimates five years before and four years after SC enactment. Figure 8 suggests no pre-trends and evidence of a significant decrease in labor supply following SC.

Given the reduction of immigrants' labor supply in the private household sector, we expect the wages of workers in this industry to increase. To find out 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 10, 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, the effect is not

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

statistically significant.

Table 11 further restricts the sample to low-educated private household workers aged 25-60 (column 1) and also to female workers of the same age. This specific focus on these demographic groups magnifies the effect of SC on workers who are likely to have higher labor force participation, especially considering that most workers in this industry are female. Estimates with this sample modification turned out to be positive and statistically significant, providing a more precise estimate of the effect of SC on the real earnings of low-educated female workers. My 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 (0.06/12.24). These results closely align with the findings of 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%.

Next, I test the parallel pre-trend assumption. Figure 9 depicts the estimates of the event study corresponding to the results in Table 11. In support of the results from the difference-in-differences model, the event study estimates reveal no differential pre-trends before SC and a significant treatment effect.

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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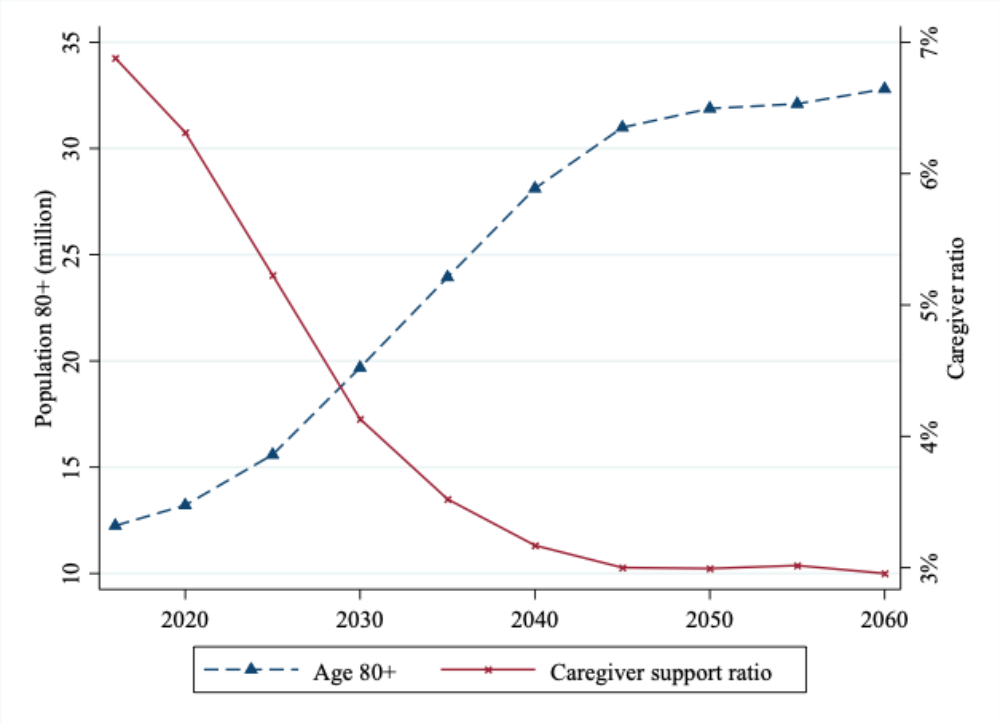
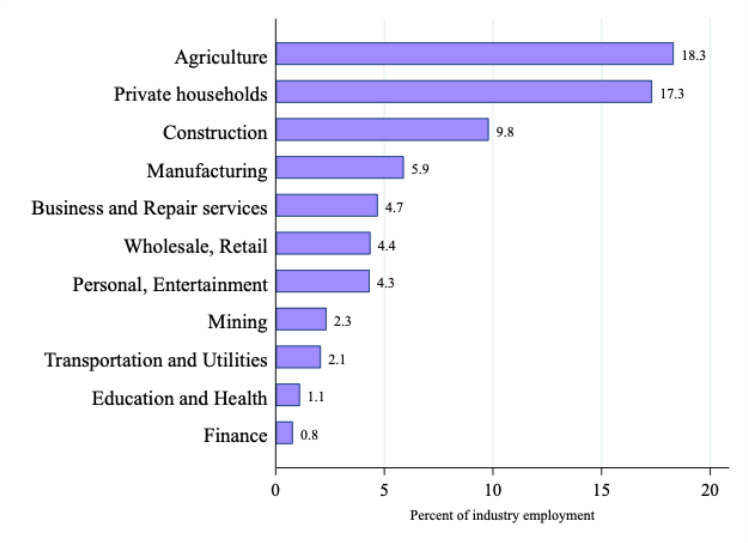
8 Figures

Figure 1: Projected growth of elderly population and declining caregiver support ratio



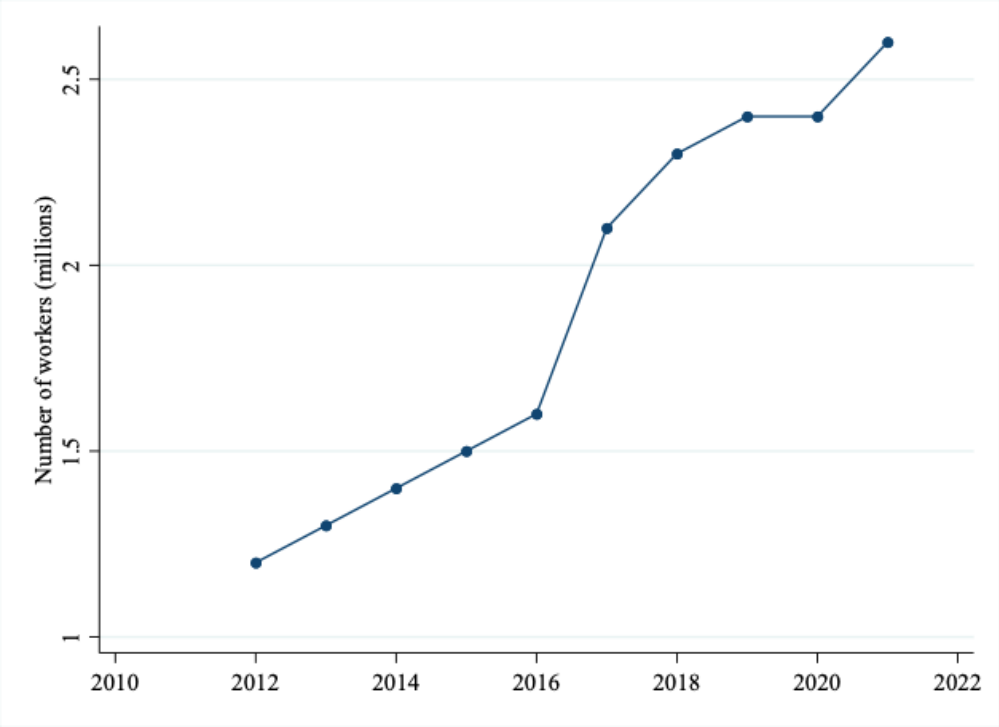
Notes: *The figure plots the projection of the 80+ population (navy dashed line), and the caregiver support ratio (solid red line). The caregiver support ratio is calculated by dividing the population aged 45-64 by the population aged 80 and over.* ***Data source:*** *U.S. Census 2017 National Population 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



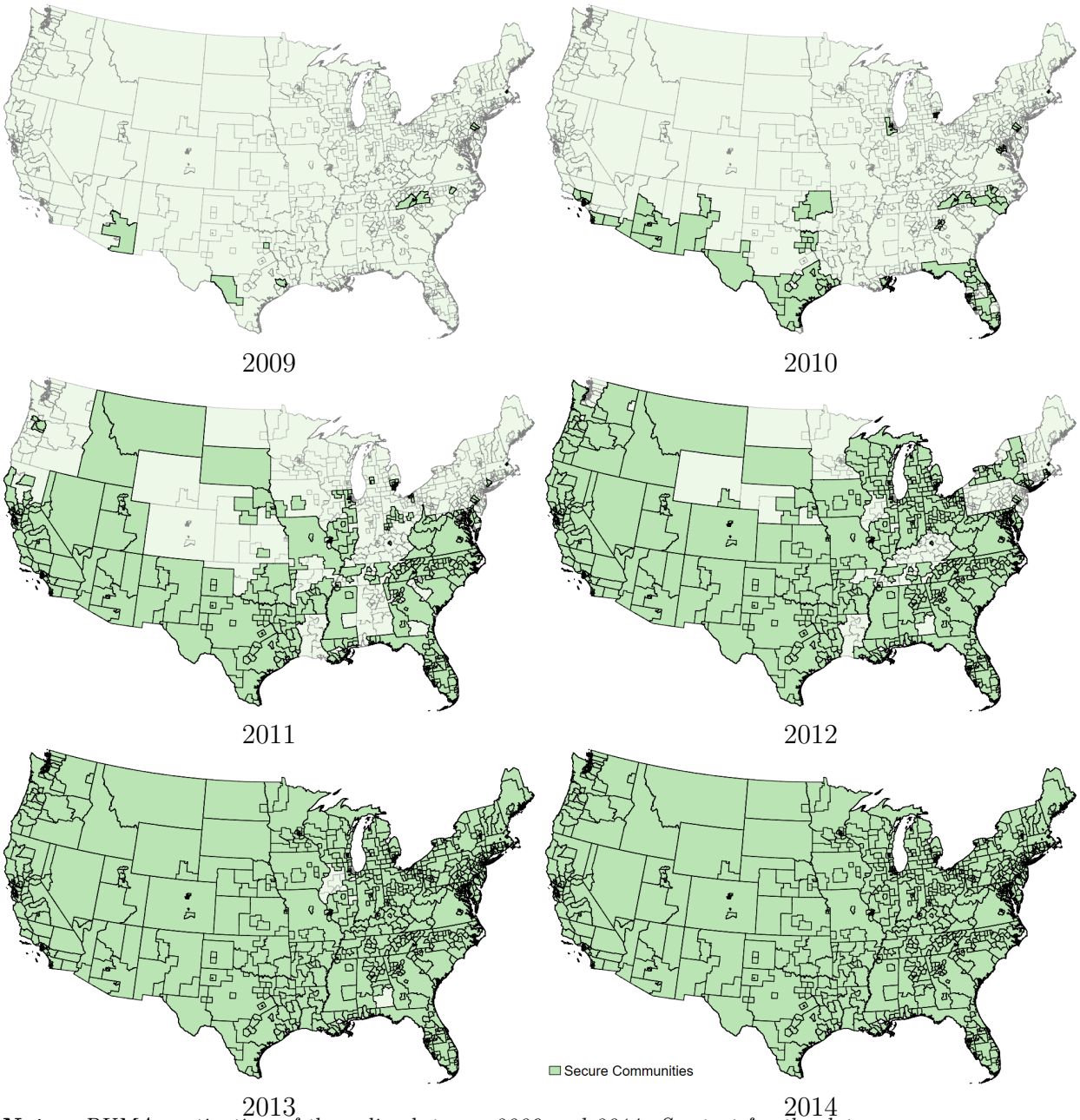
Notes: *The graph plots the percentage of likely undocumented immigrants by industry, based on ACS 2005. Undocumented immigrants are defined as individuals with low education (less than high school) who are foreign-born. The results are weighted using ACS person weights.*

Figure 3: Employment of home care workers



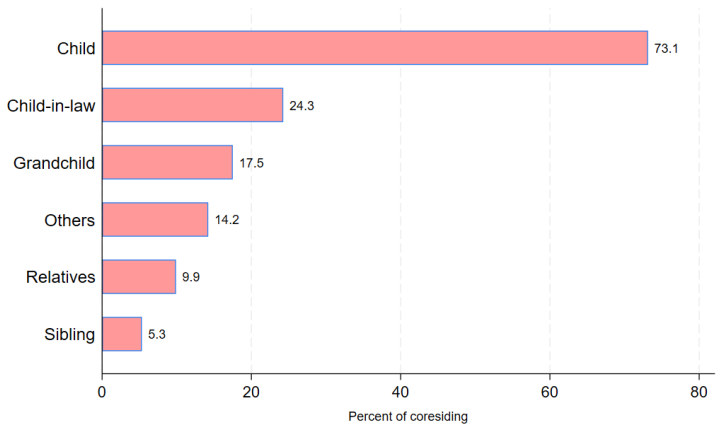
Notes: *The figure plots employment of home care workers between 2012-2021. Home care workers include all direct care workers (personal care aides, home health aides, and nursing assistants. Home care workers include direct care workers who work in two industries: Home Health Care Services and Services 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*

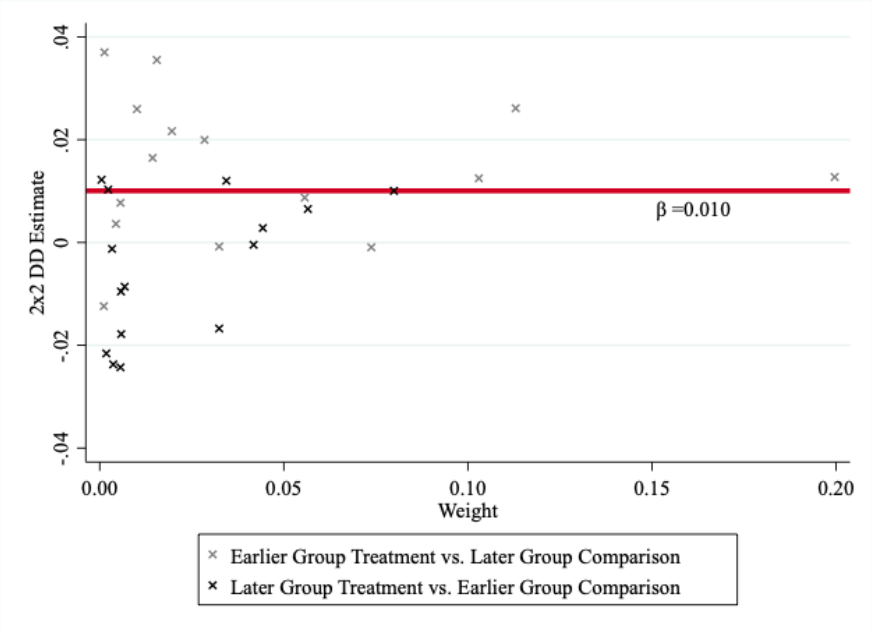
Figure 5: Household member's relationship to the single elderly



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

Figure 6: Goodman-Bacon decomposition diagnostic

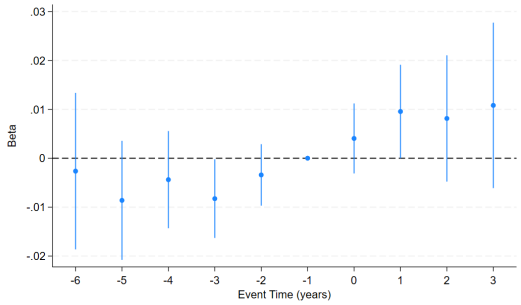
	Avg DD	Weight
Earlier vs Later Treated	0.014	0.68
Later vs Earlier Treated	0.002	0.32



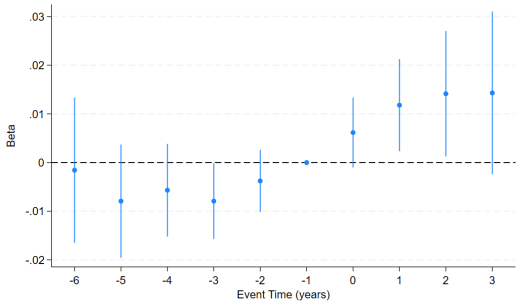
Notes: *The sample is restricted to single individuals aged 80 and over in the ACS 2006-2014. The table decomposes the overall DD estimate and total weights contributed by earlier vs. later treated comparisons and later vs.earlier treated comparisons. Figure visually portrays 2x2 estimates for earlier vs. late, and late vs. earlier treated PUMAs.*

Figure 7: Event-study estimates of SC effect on probability of coresidence of elderly individuals aged 80 and over

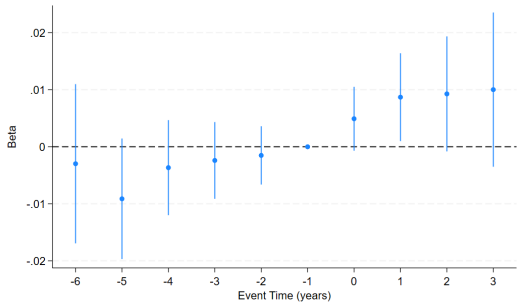
(a) Single: coresides with child/child-in-law



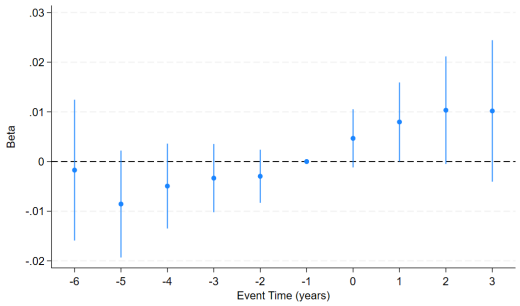
(b) Single: coresides with someone



(c) White: coresides with child/child-in-law



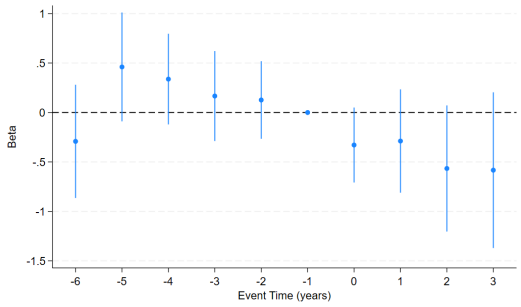
(d) White: coresides with someone



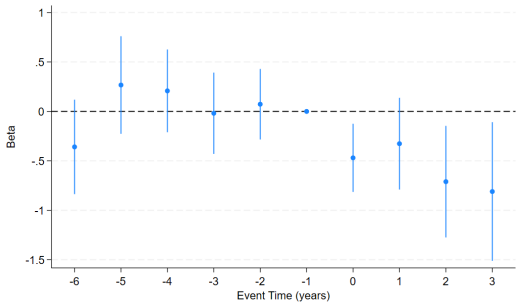
Data are from ACS 2006-2014. An event study model is estimated for all available years and dropped two pre-period to avoid multicollinearity with the event dummies, year, and PUMA fixed effects (Schmidheiny and Siegloch, 2023; Borusyak and Jaravel, 2017). I report estimates from period -6 to +3, because 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 8: Event-study estimates of SC effect on labor supply of low-educated workers in households services

(a) Foreign-born



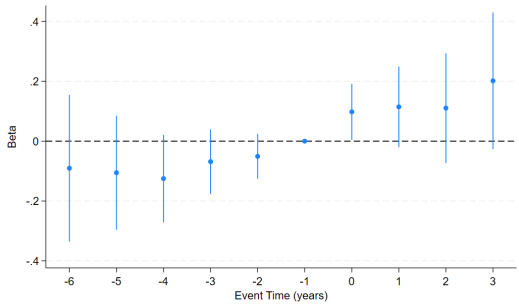
(b) Born in Central America and Mexico



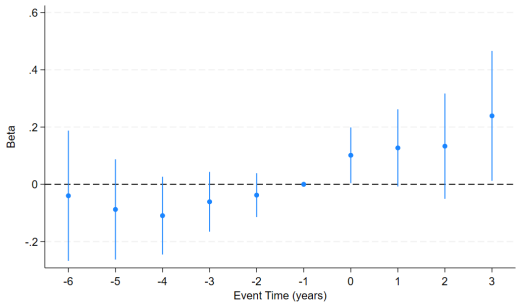
Data are from ACS 2005-2014. An event study model is estimated for all available years, dropping two pre-periods to avoid multicollinearity with the event dummies, year, and PUMA fixed effects (Schmidheiny and Siegloch, 2023; Borusyak and Jaravel, 2017). Estimates are reported from period -6 to +3 because there are only 336 PUMAs in the event time -7 and 162 PUMAs in the event time +4. The yearly hours worked of private household service workers with less than a high school degree and foreign-born workers (left figure) and those born in Central America and Mexico (right graph) 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 SC effect on hourly wages of low-skilled workers

(a) Low-educated



(b) Female low-educated



Data are from ACS 2005-2014. The figure presents event study estimates of the effect of SC from a regression of the natural log of real hourly wages of individuals in private households sectors. The low-skilled labor force is individuals aged 25-60, who report their industry of work as private household sector, and whose income is not imputed. The event study regression is estimated for all available years, and omits two pre-periods to avoid multicollinearity. The regressions controls for workers' demographic characteristics, PUMA-year controls, PUMA fixed effects, and year fixed effects. The regression is weighted using ACS person-level weights, and includes PUMA and year fixed effects. Standard errors are clustered at PUMA level.

9 Tables

Table 1: Occupations of low-educated workers in 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 for U.S.-born elderly individuals

	Single	White
Age	86.02	85.33
	(4.45)	(4.29)
Female	0.77	0.63
	(0.42)	(0.48)
Married	0.00	0.34
	(0.00)	(0.48)
Widowed	0.79	0.52
	(0.41)	(0.50)
Divorced	0.10	0.06
	(0.30)	(0.24)
Never married	0.06	0.04
	(0.24)	(0.19)
Disable	0.68	0.62
	(0.47)	(0.49)
Difficulty to live independent	0.47	0.38
	(0.50)	(0.49)
Less than high school	0.27	0.21
	(0.44)	(0.40)
High school only	0.47	0.48
	(0.50)	(0.50)
College and more	0.14	0.18
	(0.34)	(0.38)
Black	0.09	0.00
	(0.29)	(0.00)
White	0.86	1.00
	(0.35)	(0.00)
Hispanic	0.03	0.00
	(0.18)	(0.00)
Employed	0.03	0.03
	(0.16)	(0.18)
Institutionalized	0.14	0.09
	(0.34)	(0.29)
Coresides with:		
Alone	0.72	0.49
	(0.45)	(0.50)
Only spouse	0.00	0.31
	(0.00)	(0.46)
Child, child-in-law	0.21	0.16
	(0.41)	(0.36)
Family, relatives or nonrelatives	0.25	0.18
	(0.43)	(0.38)
Observations	724866	978444

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 80-plus years old individuals 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
Observations	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 coresidence. Age 80 or older

	An adult child	+ A child-in-law	+Family and relatives	+ Non-relatives
A. Single				
SC	0.006**	0.006*	0.007**	0.008**
	(0.003)	(0.003)	(0.003)	(0.003)
Mean Y	0.22	0.22	0.24	0.26
P-Value SC	0.05	0.05	0.02	0.02
% Effect	2.76	2.66	2.96	3.07
Observations	533632	533632	533632	533632
B. White				
SC	0.005**	0.005**	0.006**	0.006**
	(0.002)	(0.002)	(0.002)	(0.003)
Mean Y	0.16	0.16	0.18	0.18
P-Value SC	0.02	0.02	0.02	0.02
% Effect	3.33	3.31	3.33	3.29
Observations	708337	708337	708337	708337

Notes: *Data are from ACS 2006-2014. The estimates in each column are from a linear probability model in which the dependent variable are whether an individual coresides with an adult child (column 1), an adult child or child-in-law (column 2), any relatives or family members including those in column (1) and (2) and excluding a spouse (column 3), with anyone who could be a family member, a relative or non-relative, excluding a spouse (column 4). Panel (A) includes single individuals aged 80 and over who are not employed and U.S.-born residents. Panel (B) is restricted to non-Hispanic white individuals, who are 80 and older and also not employed and U.S.-born. All regressions include year fixed effect, PUMA fixed effect, controls for 287(g) programs, controls for labor demand, and demographic controls. Results are weighted using ACS individual-level weights. Standard errors are clustered at PUMA level.*

Table 5: Effect of SC on probability of single elderly's coresidence with an unemployed person or persor out of labor force

	Unemployed	Not in labor force
SC	0.003**	0.002
	(0.001)	(0.002)
Mean Y	0.02	0.09
P-Value SC	0.02	0.42
% Effect	13.82	2.09
Observations	441968	441968

Notes: *Data are from ACS 2006-2014. The dependent variable is whether an 80-plus years old individual coresides with a person who is within age range of 30-62 and the person is unemployed. The sample excludes institutionalized individuals. The regressions include year fixed effect, PUMA fixed effect, controls for state 287(g) programs, and demographic controls. Results are weighted using ACS person-level weights and standard errors are clustered at PUMA level.*

Table 6: Robustness check: Dependent variable is elderly coresides with a family or relative(s). Age 80+ and single

	Drop early adopt	Drop Arizona	Quadratic trend HPI	Linear trend
SC	0.007**	0.008**	0.006*	0.006*
	(0.003)	(0.003)	(0.003)	(0.003)
Mean Y	0.24	0.24	0.24	0.24
P-Value SC	0.03	0.02	0.05	0.06
% Effect	2.88	3.10	2.59	2.51
N	531646	521668	533632	533632

Notes: *Data are from ACS 2006-2014. All regressions include year fixed effect, PUMA fixed effect, controls for state 287(g) programs, labor demand controls, and demographic controls. Column 1 excludes PUMAs activated policy in 2008-2009. Column 2 excludes PUMAs located in Arizona. Column 3 adds quadratic trends multiplied by the pre-period change in housing prices. Results are weighted using ACS person-level weights and standard errors are clustered at PUMA level.*

Table 7: Effect of SC on the probability of foreign-born elderly's coresidence with a family/relative.

	Age 75+	Age 80+
Coresides with		
SC	0.005	0.004
	(0.005)	(0.007)
Mean Y	0.40	0.40
P-Value SC	0.35	0.54
% Effect	1.24	1.07
Observations	187225	110032

Notes: *The sample is limited to foreign-born 75+ and 80+ years old individuals in the ACS 2006-2014. All regressions include year fixed effect, PUMA fixed effect, controls for 287(g) programs, Bartik stule measures of labor demand, and demographic controls. Results are weighted using ACS person-level weights and standard errors are clustered at PUMA level.*

Table 8: Effect of SC on the probability of married U.S.-born elderly's coresidence.

	An adult child	An adult child	+Family and relatives	+Family and relatives
Coresides with				
SC	0.005	0.005	0.005	0.004
	(0.004)	(0.004)	(0.004)	(0.004)
Mean Y	0.10	0.10	0.11	0.11
P-Value SC	0.21	0.19	0.26	0.39
% Effect	4.74	4.98	4.29	3.16
Observations	278173	278173	278173	278173

Notes: *Data are from ACS 2006-2014. The sample is limited to 80+ years old U.S.-born married individuals who are not employed. All regressions include year fixed effect, PUMA fixed effect, controls for 287(g) programs, controls for labor demand, and demographic controls. Results are weighted using ACS person-level weights and standard errors are clustered at PUMA level.*

Table 9: Effect of SC on labor supply of low-educated workers in private households sector

	Foreign-born	Hispanic foreign-born	Born in CA/MX
*(Total Work Hours in Household Services / Total PUMA Pop) *100*			
SC	-0.320*	-0.231*	-0.358**
	(0.178)	(0.120)	(0.158)
Mean Y	2.61	1.36	2.10
P-Value SC	0.073	0.054	0.024
% Effect	-12.24	-17.04	-17.06
Observations	10780	10780	10780

Notes: *Data are from ACS 2005-2014. The samples in all three columns are limited to individuals aged 20-64, with less than a high school education, and who report their industry of work as private household. The dependent variable is total hours of work by all foreign-born workers in private household sector, by Hispanic foreign-born workers, and by workers born in Central America and Mexico by PUMA and by year. The outcomes are scaled by contemporaneous PUMA population and multiplied by 100. All regressions include year fixed effect, PUMA fixed effect, 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 PUMA level.*

Table 10: Effect of SC on hourly wages of workers in private household sector

	All	Low-educated
Log(Hourly Wages)		
SC	0.010	0.054
	(0.030)	(0.037)
Mean Y	2.31	2.27
P-Value SC	0.73	0.15
Observations	28548	17219

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). 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.*

Table 11: Effect of SC on hourly wages of workers in private household sector, age 20-60

	Low-educated	Low-educated female
Log(Hourly Wages)		
SC	0.064*	0.077**
	(0.038)	(0.039)
Mean Y	2.26	2.25
P-Value SC	0.09	0.05
Observations	15871	14001

Notes: *Data are from ACS 2005-2014. The sample includes individuals aged 25-60, who report their industry of work as private household. The dependent variable is real hourly earnings (not imputed) of workers with high school or lower level of education (column 1), and female workers with high school and less education (column 2). All regressions controls for 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

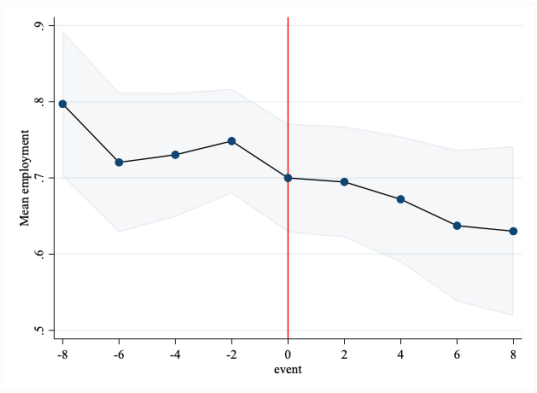
Table A.1: Correlation of 2000-2005 changes in PUMA characteristics and SC start date

	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

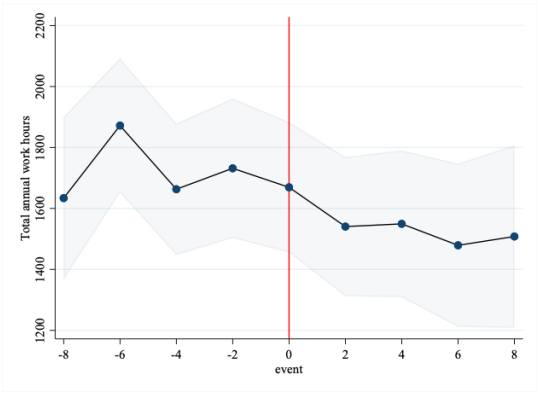
Notes: *Data are from ACS 2005, 2000 Census, Bureau of Labor Statistics (county unemployment rate), Federal Housing Finance Agency (housing price index). I report β coefficients from the regression $SCyear_p = \alpha + \beta \Delta W_p' + \varepsilon_p$. $SCyear_p$ is the first year SC was activated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

Figure A.1: 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).

Table A.2: Effect of SC on the probability of coresidence. Age 80 or older

	An adult child	+ A child-in-law	+Family and relatives	+ Non-relatives
Widowed				
SC	0.006*	0.006*	0.006*	0.007*
	(0.003)	(0.003)	(0.004)	(0.004)
Mean Y	0.24	0.24	0.26	0.27
P-Value SC	0.07	0.07	0.07	0.05
% Effect	2.70	2.64	2.42	2.61
N	421542	421542	421542	421542

Notes: *Data are from ACS 2006-2014. The estimates in each column are from a linear probability model in which the dependent variable are whether an individual coresides with an adult child (column 1), an adult child or child-in-law (column 2), any relatives or family members including those in column (1) and (2) and excluding a spouse (column 3), with anyone who could be a family member, a relative or non-relative, excluding a spouse (column 4). The sample includes widowed individuals aged 80 and over who are not employed and U.S.-born residents. All regressions include year fixed effect, PUMA fixed effect, controls for 287(g) programs, controls for labor demand, and demographic controls. Results are weighted using ACS individual-level weights. Standard errors are clustered at PUMA level.*