Senior Migration, Local Economic Development and Spatial Concentration*

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Abstract

We document that migration flows upon retirement are predominantly from richer, more urban to poorer, more rural regions. In theory, the local economic implications of senior in-migration are ambiguous, while empirically there is little existing evidence on whether attracting mobile seniors can be an effective tool to promote economic development among lagging regions. We combine a unique collection of microdata from France with a new empirical strategy to fill this gap. We find that senior inflows have significant positive effects on the local economy over the course of a decade, including increases in the working-age population, total employment, GDP, average incomes, fiscal revenues and housing construction. These effects are particularly pronounced among initially poorer regions. They are accompanied by an increase in the share of services in the local economy, driven by employment growth in health, food services and retail sectors. Combining these estimates with observed region-to-region net migration flows, we find that mobile seniors have become a significant force for reducing the concentration of employment and GDP across regions.

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1 Introduction

The share of the population above the retirement age is rising globally, and societies in OECD countries are aging rapidly in particular (OECD, 2024). As seniors also represent disproportionate shares of wealth and purchasing power, understanding the consequences of their behavior for economic outcomes is central. One overlooked characteristic of seniors is that their migration decisions follow different patterns than those of the working-age population. Because they no longer participate in the labor market, seniors can arbitrage spatial differences in the cost of living and local amenities by migrating from on average richer and more urban to poorer, more rural regions. In this context, both local and national governments have increasingly implemented policies and publicity campaigns to attract mobile seniors to their jurisdictions.[1] But so far, many policies aimed at promoting local economic development among lagging regions have had a mixed track record.[2]

Seniors spend locally, but do not enter the labor force. In theory, attracting pensioners could thus generate additional local demand without triggering potential labor-market competition from working-age migration. At the same time, an influx of retirees may tilt production toward a subset of non-traded local services, giving rise to concerns about the decline of manufacturing production and economic dynamism in the medium and long-term.[3] On the empirical side, while a large literature studies the implications of working-age migration for local labor markets (e.g., recent work by Monras, 2020; Burstein, Hanson, Tian and Vogel, 2020; Derenoncourt, 2022; Galaasen, Kostøl, Monras and Vogel, 2025; Dustmann, Otten, Schönberg and Stuhler, 2025),[4] there is little existing evidence on the local economic effects of senior immigration. Part of this is due to challenges for both measurement and identification. We rarely have access to information on granular migration inflows and outflows within countries, broken up by age and retirement status, that cover the population of movers instead of small samples, span a long, consistent historical panel of locations, and can be combined with data on a comprehensive vector of local economic outcomes. Furthermore, migration flows of seniors are not exogenous and, as we document, tend to flow in the opposite direction of working-age migrants –toward initially less dense and poorer regions.

To fill this gap, we combine a unique collection of microdata from France with a new empirical strategy to estimate the local economic effects of senior net migration inflows. We use this em-

[1] See, e.g., Kallin, Levy and Munoz (2025) for an analysis of recent age-specific tax breaks for cross-border senior migrants implemented across several EU countries.

[2] See, e.g., Neumark and Simpson (2015); Austin et al. (2018); Ehrlich and Overman (2020).

[3] These concerns are similar to the case of tourism flows, where visitors spend locally without working. In theory, the economic implications have been shown to be ambiguous, depending *inter alia* on assumptions about economies of scale within and between expanding and contracting sectors. See, e.g., Copeland (1991); Faber and Gaubert (2019).

[4] Also see Borjas (2014), Dustmann, Schönberg and Stuhler (2016), Peri (2016) and Dustmann and Schönberg (2025) for recent reviews of this literature.

pirical setting to answer two main research questions: (i) Can policies that facilitate or incentivize senior mobility promote economic development among lagging regions?; and (ii) Have the observed migration patterns of seniors over recent decades been a force for the diffusion of economic activity in space, or have they reinforced its concentration?[5] We use historical census data covering the full population of France with individual-level information on age, retirement status, residence location, and mobility since the last census round. We measure retiree (net) migration flows and a rich set of economic outcomes in a balanced panel of roughly 3,300 French municipalities ("*cantons*") from 1962 to 2008.

We begin by documenting two stylized facts about senior migration that motivate the empirical analysis. First, although migration rates typically decline with age over the adult life cycle, there is a surge in the likelihood of moving as individuals approach the legal retirement age, especially for longer-distance cross-regional migration. This uptick in mobility upon retirement implies that, ceteris paribus, regions with a larger cohort of individuals reaching retirement age tend to witness more pronounced retiree outflows compared to other areas. Second, seniors on average move in the opposite direction of the working-age population. We find that migration flows after retirement are predominantly from richer, high-density to poorer, more rural regions. For instance, cantons in the bottom 10% of population density or GDP per capita receive net senior inflows over the course of a decade representing on average about 2.5% of their initial local population, while over the same period cantons in the top 10% of population density or GDP per capita lose population due to net outflows of retirees.

Motivated by these facts, we develop an identification strategy to estimate the effect of senior net inflows on intercensal changes in local economic outcomes. A widely used approach in the existing literature on the labor market effects of immigration is to rely on economic shocks in origin regions that are connected through (past) migration flows to particular destinations (exposure weights) in a linear shift-share instrumental variable design ("SSIV").[6] A common challenge of this approach is that it can be hard to distinguish exposure to shocks through migration and through other economic ties, such as bilateral trade and investment linkages, and spatially correlated shocks more generally. In our setting, we are able to propose a design that can, in principle, fully account for confounding bilateral exposure to economic shocks at the origin.

Instead of using labor market "push factors" at the origin, we exploit time variation in the predicted size of newly retired pensioner cohorts across origin regions. Predictions are based on the past population age structure across origins –defined at the level of roughly 300 French commuting zones– combined with national age-by-sex mortality rates to project it forward in time. We combine this

[5] We refer to retirees, pensioners and seniors interchangeably in what follows.
[6] E.g., recent work by Monras (2020); Derenoncourt (2022); Galaasen, Kostøl, Monras and Vogel (2025).

variation in origin retirement waves with destination (canton)-level exposure weights using past retiree migration flows between origin commuting zones and roughly 3300 French destination cantons. This allows us to estimate effects after conditioning on a destination's exposure –using the same bilateral exposure weights– to other potentially confounding economic shocks across origin regions, such as initial levels or growth rates in GDP and population. To further limit concerns about spatially correlated shocks, our IV focuses on longer-distance moves excluding retiree migration flows originating within the province (*departement*) of the destination canton. Following recent work on SSIV designs (e.g., Borusyak et al., 2022; Borusyak and Hull, 2023), we control for the destination-level sum of the exposure weights –summarizing the past overall attractiveness of a destination to incoming retirees nationwide– interacted with census-round (time) fixed effects.[7] To address concerns about similar age structures between connected origin-destination pairs (and, thus, potentially correlated retirement waves), we also control for the predicted local change in a destination's own stock of pensioners since the last census round, using the same age-structure projection technique. We can thus isolate the effects of in-migrating pensioners in a location, separately from changes driven by local population aging.

Using this design, we find that senior net immigration over the course of a decade leads to significant positive effects on the local economy relative to other regions. We find that a one standard deviation increase in the local (initial) population due to senior immigration –corresponding to a 2% increase relative to the initial local population– increases total local employment by about 5.5% and the local population by 4.5%. The employment effect is slightly stronger for women (+6.4%) compared to men (+5.2%). These effects are in part driven by significant crowding-in effects of mobile pensioners on other, younger residents. We find that a one standard deviation increase in local net immigration of seniors leads to a 4% increase in the local working-age population. We also find that the effect of (gross) senior inflows on net inflows is more than 1-for-1 (1-for-1.2), suggesting that senior inflows also slightly increase the local senior population by reducing their outflows. As a result of these knock-on effects, the share of the local population that is retired (the dependency ratio) does not increase significantly over the course of a decade – again distinguishing our object of interest from the impact of local population aging.

We then study the effects on the local economy that underlie these observed population and employment responses. We find that a one standard deviation increase in senior net inflows relative to the initial local population (+2%) increases local GDP by about 6% and GDP per capita by about 3% relative to other regions.[8] Using data from historical tax records, we find that average incomes

[7]Using the terminology of Borusyak and Hull (2023), this corresponds to *recentering* the IV in the context of the linear SSIV design.

[8]The slight discrepancy between the effects on population, GDP and GDP per capita (beyond rounding) are due to different data sources and slightly different samples. Point estimates of the effect on population are based on the

increase by about 4%. While we do not have information on the implied increase in local spending due to outlays by pensioners, the multiplier effect relative to the increases in the local population and employment seem squarely in line with recent estimates of local fiscal multipliers.[9]

These economic gains are accompanied by an increase in the share of non-traded activity (services) in local employment, which we estimate to increase by about 1 percentage point for a one standard-deviation increase in net pensioner inflows relative to the initial local population. This is driven mainly by increases in employment in the health, food services, and retail sectors of the local economy, accounting for about .85 percentage points of the total increase in the services share (+1pp). Importantly, we find that the expansion of these sectors does not come at the expense of negative employment growth in traded sectors. We find insignificant effects on employment growth in manufacturing sectors, not statistically distinguishable from zero. While we thus find evidence of changes in the sectoral composition of production toward local services over the course of a decade, we find no evidence that, as a result, senior inflows decrease overall economic growth, employment or local incomes –we find significant gains in each.

Corroborating these sectoral implications, we also make use of firm-level microdata from two recent intercensal changes –1990-1999 and 1999-2008– to estimate effects on worker earnings in the traded and non-traded sectors of the local economy. While we cannot fully account for potential changes in worker selection, we use firm-level changes in median annual gross or net earnings among full-time-only employees to limit such concerns. We find that within-firm median worker earnings increase by about 4.5% for firms in the services sector in the wake of a one standard deviation increase in senior inflows. In contrast, we find statistically insignificant effects on median worker earnings among traded-sector (manufacturing) firms.

Recent work on the effects of immigration on labor markets in the US has highlighted the role of employment increases in the construction sector for local multipliers (Howard, 2020). We investigate how pensioners' migration affects the local economy through demand for housing. Using administrative records from France's national registry of residential properties, we find that a one standard deviation increase in senior inflows increases the number of single-family properties by about 7.5%, and multi-family properties by about 5%, slightly larger than but consistent with the large estimated population growth effects. Local fiscal revenues from both land and property taxes increase by about 14% in our estimation. While the direct plus knock-on effects on local population and employment thus clearly translate into the local housing market, we find that employment increases in construction are not the main driver of the local economic expansion: the share of

census microdata, while local GDP and GDP per capita are based on historical data from Cagé and Piketty (2023).

[9] See, e.g., Nakamura and Steinsson (2014). The multipliers for local employment or population on GDP would be roughly 1.1 and 1.3, respectively, in our setting.

employment in construction increases, but this accounts for a minor part of the increase in total local employment.

The validity of our empirical design relies on the assumption that decadal shocks to senior out-migration across origins (commuting zones) are not related to destination-level changes in economic outcomes through other channels than predicted inflows. To assess its validity further, we report results both before and after including a full set of exposure-weighted control variables. Using the same lagged origin-destination exposure weights used in the SSIV (past bilateral senior migration linkages), we condition our specifications on local exposure to pre-existing economic levels or growth rates of origin-level economic outcomes, as well as exposure to France's main economic center (Ile de France). We also implement falsification tests to examine whether changes in economic outcomes across destination cantons correlate with future inflows of retirees predicted by the instrument. In contrast to the contemporaneous intercensal changes discussed above, we find statistically insignificant point estimates (with similar standard errors) for these pre-trends.

After presenting the average effects on local economic outcomes, we also investigate to what extent inflows of pensioners affect local economies differently across percentiles of initial GDP per capita. It could be the case that the incidence of a given inflow of pensioners (as a fraction of the local initial total population) differs as a function of the structure of the local economy, with implications for the distributional effects across space. To this end, we interact the inflow variable (and its instrument) with an indicator for the percentile (1-100) of cantons in the past census round's distribution of GDP per capita (before the shock). We find that the arrival of mobile seniors has significantly more pronounced positive effects on the local economy among initially poorer destinations. A one standard-deviation increase in the initial population due to the arrival of seniors (+2%) on average leads to a roughly 4.5% increase in local employment and GDP among destinations at the 90th percentile of initial GDP per capita, while these effects increase to roughly 7% for employment and 8.5% for GDP among destinations at the 10th percentile of initial GDP per capita.

In the final part, we then use these estimates to quantify the effect of observed senior migration flows over recent decades on the concentration of economic activity in space. The analysis above estimates relative regional changes in economic outcomes due to variation in the arrival of mobile pensioners. We use the estimated effects (allowing for regional heterogeneity), to predict the implications of senior migration on *relative* regional growth in employment or GDP across cantons at different initial percentiles of the regional income or density distribution. For migration flows realized between 1999-2008, we find that regions below the median of initial population density or GDP per capita benefited by around +2.5% in relative local employment and +3% in relative local GDP compared to a scenario with zero net flows of pensioners over this period. While the evidence we present does not speak to the aggregate economic implications of population aging, it informs how the rise of senior migration affects the distribution of economic activity across regions.

Overall, our findings suggest that mobile seniors have grown to become a significant force for reducing the concentration of employment and production in space over the past decades. Our findings also serve to draw attention to a potentially promising new set of policy tools for promoting local economic development among lagging regions. While regional policies aimed at attracting industrial production to poor regions are costly, complex and have had a mixed track record ("cathedrals in the desert", Wickham (2020)), policies aimed at facilitating the mobility of seniors across regions, investing in local amenities and infrastructure targeted at seniors, and regional publicity campaigns would seem in principle to be much more feasible to consider.

Our paper relates to different strands of the literature.[10] First, we contribute to two literatures that have been mostly separate to this point: the literature on the local labor market implications of immigration (e.g., Borjas, 2003; Ottaviano and Peri, 2012), and the literature on the regional and country-level implications of population aging (Aiyar et al., 2016; Cravino et al., 2022; Hopenhayn et al., 2022; Maestas et al., 2023). The former focuses on labor supply shocks stemming from the immigration of workers.[11] The latter has focused on the (negative) labor supply shock triggered by regional or nationwide population aging. The notion that senior migration, conditional on local aging, could boost local economic activity has been an important motivation for a recent wave of policies aimed at attracting retirees (including through age-specific tax breaks, building out senior amenities and publicity campaigns). But in theory, the local economic implications of senior migration are ambiguous. To the best of our knowledge, this paper presents the first evidence on these questions, and our findings suggest that mobile seniors can bring a significant boost to the local economy relative to other regions, particularly among relatively rural and initially less developed regions –a force that is also projected to grow over time due to population aging.

Our study also relates to the broader literature on the evolution and determinants of spatial disparities. While there has been a surge of research on the spatial sorting of *workers* (summarized by Diamond and Gaubert, 2022), the location choices of retirees have received much less attention

[10] We also relate to a recent literature on the implications of tourism (Eilat and Einav, 2004; Sequeira and Macas, 2008; Fuchs et al., 2022). Tourists, like pensioners, spend locally but do not participate in the labor market. As Faber and Gaubert (2019) show, this local spending 'windfall' can in theory have positive or negative medium to long-term effects, both locally and in the aggregate. Mobile pensioners are similar in this respect, but they also differ from tourism in several important ways: seniors have different spending patterns than tourists; their mobility decision tends to be permanent, so they enter the local housing market; they use local public services including health care; and they contribute to fiscal externalities through local tax payments.

[11] Berbée et al. (2022) have used inflows of refugees as a way to estimate the effects of local demand shocks. Dustmann et al. (2017) and Muñoz (2024) isolate the labor supply from labor demand components of immigration by focusing on temporary migrants. Burstein et al. (2020), Albert and Monras (2022) and Galaasen et al. (2025) also study how the selection and characteristics of migrants shape the labor-market implications of immigration.

in spatial models, with a few recent exceptions.[12] Our findings underscore a clear distinction to the large body of work emphasizing the role of agglomeration economies, labor-market forces and working-age migration in driving increases in the spatial concentration of economic activity over time (Moretti, 2012; Diamond, 2016). In contrast, our study presents evidence that the migration choices of mobile seniors have grown to become a significant force for reducing the concentration of employment and production in space over the past decades. These findings also speak to recent debates on whether lagging regions could benefit from new forms of mobility, such as remote work, effectively decoupling local incomes and spending from the local production environment. Like remote workers, retirees bring purchasing power that is largely detached from the strength of local labor markets, allowing us to isolate the role of local demand in shaping regional outcomes across decades.

The remainder of the paper proceeds as follows. Section 2 describes the empirical context and the database that we have assembled. Section 3 uses the data to present stylized facts about senior migration. Section 4 lays out the empirical design. Section 5 presents the estimation results. Section 6 uses the estimates to quantify the implications of senior migration flows on the spatial concentration of employment and production. Section 7 concludes.

2 Institutional context and data

2.1 Senior migration in France

We study the implications of senior migration patterns for local economic development and spatial inequalities within the largest aging economy in the world: Europe. The share of working-age individuals in the EU is shrinking, while the number of older people has been growing steadily. This pattern is expected to continue in the next decade, as the so-called "baby-boom" generation completes its move into retirement. Currently, one in five Europeans is 65 years or older. By 2050, this proportion is projected to reach close to one third.

Our empirical analysis focuses on France, where the data environment allows us to study this question over a long time period and at granular spatial scale. France is one of the largest European economies and is characterized by the same demographic trends as Europe as a whole. In 2023, 26% of French individuals were aged above legal retirement (60 or more). The number of retirees in France has increased dramatically since the 1960s (the start of our analysis) in both absolute and relative terms. As shown in Figure 1, the number of people above 60 more than doubled over the

[12] Komissarova (2022) builds a spatial equilibrium model to study the life cycle component of location choices for retirees. Bilal and Rossi-Hansberg (2021) study inter-temporal trade-offs in migration decisions, although they focus on active labor market participants. Ahlfeldt et al. (2025) use rich administrative microdata from Copenhagen to document how location choices within cities evolve over the lifecycle.

period of analysis.

In addition to being an aging economy, France offers several advantages to study the question of senior migration. First, there are few institutional barriers to migration within the country, for seniors as well as working-age movers. No legal restrictions to mobility prevent households from migrating. Capital gains taxes on the sale of a primary residence are entirely tax-exempt, limiting potential lock-in effects. The French healthcare system is universal and administered at the national level: retirees can consume healthcare services wherever they live without the need to register or switch insurance plans upon moving.[13] Eligibility and conditions for most social benefits are also administered by the central government, ensuring low-income seniors receive payments irrespective of their region of residence.[14] Finally, the various pension systems are administered by national authorities, and retirees receive their fixed nominal monthly pensions regardless of the region (or country) they choose to live in after retirement.

Second, French retirees draw their pensions annually from a defined-benefits, pay-as-you-go system, with income taxation only operating at the national level. This means that there is little uncertainty about the nominal value of the post-tax pensions seniors receive once they retire. This facilitates relocation decisions upon retirement, as well as the interpretation of our local economic effects. Third, there are binding statutory retirement age rules in France. Individuals need to reach a minimum statutory age to be allowed to draw their pension.[15] As a result, retirement decisions tend to be highly concentrated around the same age nationwide. This allows us to predict retirement events using an age cutoff, although we do observe both retirement status and age in our dataset.

While this paper studies senior migration patterns in France, we note that the characteristics outlined above are common across many countries. In the U.S., individuals aged 65 or older can freely move across state borders; primary residences are mostly exempt from capital gains taxation; Social Security benefits are not attached to a State of residence; and while income taxes do vary by state, seniors are covered by a nationwide healthcare insurance plan (Medicare) and can access health services in any U.S. state. In Europe, most countries, like France, have universal healthcare systems with no restrictions for movers. In fact, even EU citizens from other countries have free mobility across EU countries and are covered by the healthcare system of the destination country.[16]

[13] The same holds for working-age movers.

[14] One exception is the Personalized Autonomy Benefit (APA in French abbreviation), which is administered locally but funded by the central government.

[15] The statutory eligibility age (SEA, minimum claiming age) is binding for many French workers. Alternatively, as explained in, e.g., Rabaté (2019), workers can draw a full pension at retirement age (FRA) if they accumulated sufficiently many work credits, counted in quarters of employment.

[16] This is because the coordination of social security systems, including cross-border transfers of eligibility, is enshrined in EU law.

This implies that institutional barriers to the *international* migration of retirees are also low in Europe. Indeed, many EU countries such as Portugal, Italy, or Greece, have implemented specific tax schemes to attract foreign retirees to foster local economic development. Strong controversies exist regarding the net benefits of such policies, especially among local economies that are net receivers of cross-border pensioners. Our results directly contribute to these policy debates, as we set out to provide the first evidence on the effect of senior migration inflows on local economies.

2.2 Data

We build a historical database at the local level to study the migration patterns of retirees and their effects on destination regions. Our primary, time-consistent units of observations are 3,326 *cantons*, which correspond to historical municipality boundaries capturing a number closely connected communities ("communes"), and are comparable in size to the smaller half of US counties.[17] In addition to cantons, we consider two supplemental geographic units. In terms of higher levels of regional aggregation, we define migrant origins as 305 commuting zones in France (as of 2020) according to the classification by INSEE. Each commuting zone encompasses on average about 11 cantons. We also consider longer-distance moves straddling the borders of the 95 French *departements*. Each department encompasses, on average, around 35 cantons. Departments fall into 22 larger *regions* covering the whole of France.

We first assemble all waves of the restricted-use, full-count microdata from the French Census starting in 1962. Census waves occurred in 1962, 1968, 1975, 1982, 1990, 1999, and 2008.[18] The census data provide us with individual-level information on residence location at the ZIP code (*commune*) level, age, marital status, employment and housing status, and mobility since the last Census wave.

We use the individual-level full-count Census data to construct a matrix of bilateral migration flows by age since 1960 across all French cantons, since the Census asks a question about the residence location as of the prior Census as well as the current location.[19] We also use the Census microdata to construct local measures of employment in aggregate and separately by sector at the canton level.

We complement the Census full-count data with additional municipality-level historical outcomes

[17]On average, there are 9 communities per canton. The average population of a canton in 2010 was about 16,000 inhabitants.

[18]Starting after 2008, the French statistical agency switched to a rotating national census that does not provide information on migration flows for more than 1 year.

[19]Until 1999, the Census only requested information on the municipality of residence as of the prior Census wave; we thus ignore multiple migration events that may have occurred during the intercensal period. In 2008, the Census requests information on residence location five years earlier. To make these flows comparable to changes in local outcomes from one census round to another (from 1999 to 2008), we multiply the observed migration flows by a factor of 9/5 in the 2008 census (point estimates of the effects of migration would be slightly inflated otherwise).

assembled by Cagé and Piketty (2023), including measures of GDP, GDP per capita, fiscal revenues, and average municipal income per capita (historically apportioned for earlier years from observed taxable property values and local taxable income measures). We aggregate those outcomes at the level of the canton. We also measure the flow of residential construction across census waves using records from the *Base de Données Nationale des Bâtiments*, which provides information on the current stock of all residential buildings in France. We impute the growth rate of single- and multi-family homes in a given canton over time using currently existing buildings, defining housing construction for the period t to $t+k$ as the sum of all currently existing buildings with a reported construction year in the $(t, t+k)$ interval.

We also obtained access to individual level Social Security administrative data (the *DADS* files, used for example by Abowd et al. (1999)) on all private sector employees and establishments in France, spanning the three census waves 1990, 1999 and 2008. From these records, we construct an establishment-level panel dataset with information on establishment-level net and gross median annual earnings for full-time-only employees, firm identifiers, sector of activity, and the canton where the establishment is located.

For all canton-level outcomes –based on Census data or additional datasets–, we compute intercensal changes in these outcomes as long differences (growth rates), which provide the main dependent variables of interest in the regression analysis of the following section.

3 Stylized facts on senior migration patterns

This section uses the dataset described above to describe senior migration patterns in France. These insights motivate our empirical analysis and preview the spatial variation in senior migration flows we use in the analysis.

Seniors have a higher propensity to migrate upon retirement In Figure 2, we start by plotting average migration rates by age, including around the time of retirement. The y-axis represents the percentage of individuals from the 2008 census who moved within the past five years, while the x-axis categorizes these individuals into age groups based on that year's census. In Panel A, we analyze all moves across French communes, while Panel B specifically focuses on moves across departments (i.e., excluding within-department moves).

There are two main insights from this figure. First, migration rates trend downwards with age, capturing the fact that older individuals are less mobile than their younger counterparts.[20] Second, there is a distinct uptick in migration rates coinciding with retirement, with the highest frequency of moves observed around the (then) minimum legal retirement age of 60. We note that migration

[20] This has been shown to be true in the U.S. too, see e.g. Molloy et al. (2011).

rates start to increase in the five years or so prior to the official retirement age.

This trend may be attributed to several factors, including the variability of retirement rules among individuals, or it could reflect individuals' anticipation of their retirement and their propensity to relocate during the years leading up to their exit from the workforce.[21] We also observe that this rise in migration rates around retirement is particularly pronounced when we focus on cross-department moves in Panel B, indicating that relocation events around retirement typically involve longer-distance moves than usual. Indeed, on average, retirees move approximately 50 kilometers further than individuals of working-age conditional on the decision to relocate.

Seniors move in the opposite direction of working-age migrants Next, we analyze the spatial distribution of senior migration flows. Figure 3, Panel A, displays the geography of net mobility flows (inflows - outflows) of pensioners across French cantons during the last decade of our dataset (1999-2008) relative to their initial total population in 1999. We define pensioners as retired individuals (as registered by the census) aged 55 and above. Migration flows of pensioners are very heterogeneously distributed across the French territory. The map shows that urban centers, such as the Ile-de-France region around Paris, experience substantial net outflows of pensioners. By contrast, coastal areas in the West and the South experience positive net inflows of pensioners. In terms of magnitudes, many cantons located in the North and North-East of France lose a meaningful fraction of their initial populations due to senior out-migration (up to 12-15%), while many cantons located in more central, rural areas, attracted significant numbers of retirees during this period. Panel B shows the analog figure for the net migration flows of working-age individuals (i.e., individuals aged 15-54 who are not retired). Unlike retirees, working-age individuals tend to flow towards major urban centers (e.g., Toulouse, Lyon or Bordeaux) and to leave rural areas, especially cantons located in the center and south-west of France.

To better characterize which local areas attract mobile pensioners, we rank each French canton by population density or GDP per capita in a given census year. We then plot in Figure 4 both gross and net migration flows of pensioners by percentiles of initial population density (Panel A) and GDP per capita (Panel B) across cantons, for the most recent intercensal period in our database (1999-2008). We measure gross and net migration flows of pensioners relative to the initial total canton population, capturing the percentage change in the initial local population due to senior inflows. The figure reveals a significant negative gradient in senior migration patterns with respect to both the destinations' initial population density and percentiles of per-capita GDP. Cantons in the bottom 10% of population density or GDP per capita receive net pensioner migration inflows over the course of a decade, representing on average about 2.5% of their initial local population,

[21] The probability to retire starts to increase around 55 years old, with roughly 15% of individuals at age 55 being retired.

while over the same period cantons in the top 10% of the population density or GDP per capita lose population due to net outflows of retirees.

Figure 5 presents a comparison of regions that receive relatively more mobile pensioners or more mobile working-age individuals. We compute the proportion of incoming movers in each of three age categories—young-age (10 to 25), working-age (25 to 54), and seniors (55 and above)—for each canton in France. We then plot those fractions on the y-axis of Figure 5, while the x-axis denotes the population density in the destination canton. A clear decreasing pattern emerges when focusing on retirees: seniors account for a large share of movers in rural areas, but for a small share in the densest regions. By contrast, younger individuals represent a larger fraction of total inflows in urban areas.

Overall, Figures 4 and 5 show that migration flows after retirement are predominantly from richer, more urban to poorer, more rural regions. This is opposite to what is observed for migration flows of working age individuals. This distinctive pattern has also become more pronounced over time: cantons in the bottom fifty percent of population density or GDP per capita received, on average, almost zero net inflows of pensioners before the 1980s. On top of that, the fraction of the population (and migrants) accounted for by seniors has grown secularly over time, and is expected to continue expanding in most middle and high-income countries going forward.

4 Empirical strategy

We set out to study the consequences of net pensioner inflows on changes in local economic outcomes ($y_{i,t}$) in canton i, from one Census wave to the next, $\Delta y_{i,t} = \frac{y_{it} - y_{i,t-k}}{y_{i,t-k}}$, with k indicating the number of years between censuses. Following from the discussion in Section 2 above, the baseline regression sample will be based on 5 intercensal changes between 1968-2008 for a balanced number of 3326 cantons in France.[22]

Our independent variable of interest $\frac{\text{Net Inflow}_{i,t}}{\text{Population}_{i,t-k}}$ is the ratio of senior net inflows into a canton during an intercensal period over the initial local population in the prior census period (k years earlier). It measures the percentage growth in the local population that can be attributed, ceteris paribus, to the in-migration of seniors over the period. By an accounting identity, the senior gross inflow into i can also be re-defined as a "shift-share" variable, combining outflows (emigrating seniors) from origin region j with observed bilateral migration shares:

$$\frac{\text{Inflow}_{i,t}}{\text{Population}_{i,t-k}} = \frac{1}{\text{Population}_{i,t-k}} \sum_j \frac{\text{Inflow}_{i,j,t}}{\text{Outflow}_{j,t}} \times \text{Outflow}_{j,t},$$

[22] We do not use changes between the 1962 and 1968 census waves as outcomes, as our SSIV strategy below requires (double-lagged) information from previous census rounds.

where i indexes destinations at the level of cantons and j indexes origin regions at the level of 305 commuting zones in France (a matrix of roughly 3300×300 bilateral ji pairs). It is apparent from this equation that two main sources of endogeneity could arise if we were to estimate the effects of pensioner inflows using ordinary least squares. First, the share of migration flows from origin region j directed to destination canton i, $\frac{\text{Inflow}_{i,j,t}}{\text{Outflow}_{j,t}}$, could be correlated with unobserved determinants of local outcomes in the destination i at time t. This would be the case if seniors across origins j on average elect to migrate to, for example, relatively slow-growing (or more dynamic) regions. Second, the decision to out-migrate from origin regions, which determine the magnitude of $\text{Outflow}_{j,t}$, could be correlated with changes in economic outcomes in the destination canton i –either because pull factors in the destination affect the migration choice at the origin; or because economic shocks occurring at the origin that trigger out-migration are themselves correlated with or causally lead to changes in outcomes in destinations that are more strongly connected through migration.

Shift-share instrumental variable and baseline specification As documented in the previous section, there is an uptick in inter-regional migration that is concentrated around the time of the statutory retirement age. We can, thus, combine time variation in the arrival of newly retired pensioner cohorts across origin regions in France (commuting zones excluding the department of the destination canton, $j \neq d_i$), with pre-determined, persistent bilateral senior migration linkages across locations.

To start with, we can write the SSIV variable as follows:

$$\frac{\widehat{\text{Inflow}}_{i,t}}{\widehat{\text{Population}}_{i,t-k}} = \frac{1}{\widehat{\text{Population}}_{i,t-k}} \sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\text{Outflow}_{j,t-k}} \times \widehat{\text{Outflow}}_{j,t}$$

where $\widehat{\text{Outflow}}_{j,t} = \sum_{a=a_R-k}^{a_R} \text{Pop}_{j,a,t-k} \Pi_{l=a}^{a+k}(1-m_l)$ is the predicted number of people newly crossing the retirement age ($a_R = 60$) in each origin j between the two census rounds $t-k$ to t. To compute this predicted number of newly retired individuals, we roll forward the initial age distribution in each origin commuting zone after adjusting for age-by-sex-by-year nationwide mortality rates (m_l) obtained from France's statistical agency at the beginning of each census round.

In the denominator, $\widehat{\text{Population}}_{i,t-k} = \sum_{a=0}^{100} \text{Pop}_{i,a,t-2k} \Pi_{l=a}^{a+k}(1-m_l) + \hat{B}_{t-2k,t-k}$ is the predicted number of local residents in destination canton i in the previous census period, $t-k$. This prediction is based on rolling forward the age distribution *two* census periods before ($\text{Pop}_{i,a,t-2k}$), again using nationwide mortality rates.[23] We use predicted (rather than actual) values of local

[23]The population prediction also incorporates predicted local births between the last two censuses $\hat{B}_{t-2k,t-k}$ computed from nationwide year-specific birth rates multiplied by the initial local population of child-bearing age.

populations in the denominator in order to break the otherwise mechanical correlation (including measurement error) between the OLS variable $\frac{\text{Inflow}_{i,t}}{\text{Population}_{i,t-k}}$ and our instrument in the expression above –which could artificially inflate the strength of the first stage.

We can now re-write this expression in a way that clarifies the origin-level shocks and the origin-destination-level exposure weights that we leverage for identification:

$$\frac{\widehat{\text{Inflow}}_{i,t}}{\widehat{\text{Population}}_{i,t-k}} = \sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}} \times \frac{\widehat{\text{Outflow}}_{j,t}}{\text{Outflows}_{j,t-k}} \tag{1}$$

Identification here is based on the interaction between origin-level shocks, $\frac{\widehat{\text{Outflow}}_{j,t}}{\text{Outflow}_{j,t-k}}$, that are the predicted arrival rates of new senior migrants relative to the origin's past outflows between the last census round and the round before that one (from $t-2k$ to $t-k$), and destination-level exposure weights, $\frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}$, that are the fraction of past senior migration flows (from $t-2k$ to $t-k$) between the origin and the destination over the destination canton's (predicted) initial population at the beginning of the last census.

Since some cantons in France may always be connected to large origin regions or may be particularly attractive for senior migrants across all origin regions –such that the exposure weights do not sum to an equal constant across cantons in France, and the overall magnitude of past senior inflows varies–, we *recenter* the linear SSIV by controlling for the canton-level sum of the exposure weights: $\sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}$.

This recentering control is included in both the first and second stages of the regressions. It conditions on past arrivals of retirees in canton i from all origin regions outside the home department, and allows us to only use the 'innovation' relative to this expected local exposure for identification over time. We include two additional controls as part of our baseline IV specification. First, we control for the predicted change in a local destination i's aging. This addresses the potential concern that demographic structures at the origins that are most connected to a given destination canton may be correlated with a local population age structure, due to e.g. spatial correlation. If that were true, then higher predicted inflows of seniors stemming from origin retirement waves could be systematically correlated with local aging in the destination canton (a negative labor supply shock that would confound our estimation). To address this, we predict local aging using the initial age distribution and age-by-sex nationwide mortality rates: $\Delta\widehat{\text{Seniors}}_{i,t} = \frac{\widehat{\text{Seniors}}_{i,t} - \text{Seniors}_{i,t-k}}{\text{Seniors}_{i,t-k}}$. Second, while conditioning on the sum of exposure weights as discussed above is the correct way to recenter our linear SSIV, for completeness we also include the sum of the past outflow shares $\sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\text{Outflow}_{j,t-k}}$ in the first and second stages of the baseline specification.

Threats to identification and full specification There may remain two main potential concerns that we address. First, it could be the case that (i) changes in newly retired seniors across origin regions are correlated with (or causing) origin-level economic conditions, while (ii) it is also the case that being connected by past bilateral senior migration is correlated with origin-destination connections through trade, investment, or non-senior migration. In such a scenario, the senior migration shock at the origin could happen concurrently with economic shocks, and these would also affect connected destination cantons through other linkages.

Fortunately, our empirical design allows us to condition directly on origin-level economic shocks that may affect destination cantons differently. In particular, following recent contributions by e.g. Borusyak et al. (2022) and Borusyak and Hull (2023), we condition on such origin-level confounders by applying the same bilateral matrix of exposure weights that we use in the SSIV in expression (1) above. We then report first- and second-stage estimation results both before and after we condition on destination-level exposure to either initial levels of, or growth rates in, economic outcomes across the origin regions.

We compute: $\sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}} \times X_{jt}$, where X_{jt} are either initial log levels of total population and GDP or growth rates of population and GDP between census rounds. The identifying assumption is, thus, that a canton's exposure to predicted retirement shocks across $j \neq d_i$ affects canton i only through senior immigration, conditional on exposure to levels or changes in economic conditions across origins. One of the major advantages of our empirical strategy is that we are thus able to condition on the origin-level economic shocks (that could affect cantons connected by migration differently) which have traditionally served as the 'push'-factors in SSIV designs for migration flows.

Second, one may be concerned about the concentrated nature of France's economic activity in space. In particular, the Ile-de-France region, a group of 8 departments and 26 commuting zones as of 1990, accounts for roughly one third of national GDP and one quarter of national employment. To the extent that this region explains the majority of migration inflows across a large number of connected cantons, and that our exposure-weighted controls for levels and changes in economic conditions may not fully capture violations of the exclusion restriction, we also include a control for each canton's (senior migration-weighted) exposure to the Ile-de-France region in each period –including a dummy variable in the X_{jt} in the expression just above. This control thus effectively conditions on regional variation in senior migration-weighted exposure to the main economic center of France.

Finally, to allow for the changing role of the sum of exposure weights in shaping local economic outcomes in France over time, we also report first and second-stage estimates before and after interacting the recentering control with census-round fixed effects.

First and second stages The first-stage specification regresses actual net inflows on predicted inflows, recentering the SSIV by including the sum of exposure weights $\sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}$, plus a vector of controls $\text{Ctrls}_{i,t}$:

$$\frac{\text{Inflow}_{i,t}}{\text{Population}_{i,t-k}} = \beta_1 \frac{\widehat{\text{Inflow}_{i,t}}}{\widehat{\text{Population}}_{i,t-k}} + \beta_2 \sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}, + \beta_3' \,\text{Ctrls}_{i,t} + \alpha_{rt} + \epsilon_{it}$$

The reduced-form specification has growth rates of local economic outcomes, $\Delta y_{i,t} = \frac{y_{it} - y_{i,t-k}}{y_{i,t-k}}$, on the left-hand side regressed on the predicted senior inflow and the same set of controls.

$$\Delta y_{i,t} = \gamma_1 \frac{\widehat{\text{Inflow}_{i,t}}}{\widehat{\text{Population}}_{i,t-k}} + \gamma_2 \sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}, + \gamma_3' \,\text{Ctrls}_{i,t} + \alpha_{rt} + \epsilon_{it}$$

In our baseline specification, the vector $\text{Ctrls}_{i,t}$ includes the predicted change in the local stock of retirees, $\Delta \widehat{\text{Seniors}}_{i,t} = \frac{\widehat{\text{Seniors}}_{i,t} - \text{Seniors}_{i,t-k}}{\text{Seniors}_{i,t-k}}$, and the sum of outflow shares across departments, $\sum_{d \neq d_i} \frac{\text{Inflows}_{\,i,d,t-k}}{\text{Outflows}_{\,d,t-k}}$.

In the full specification, we allow for period-specific recentering by interacting $\sum_{j \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}}$ with time fixed effects such that β_2 and γ_2 become $\beta_{2,t}$ and $\gamma_{2,t}$, and control for exposure-weighted economic levels or changes across origin regions or the Ile de France economic center, $\sum_{k \neq d_i} \frac{\text{Inflow}_{i,j,t-k}}{\widehat{\text{Population}}_{i,t-k}} \times X_{jt}$.

All regressions include a set α_{rt} of region-by-census round fixed effects for 22 administrative regions in France. These are aimed at conditioning on different trends in outcomes across broader regions in France (e.g. conditioning on differences in average changes between more/less coastal regions, etc.). We cluster the standard errors at the level of cantons that we observe across 5 census rounds (covering migration flows and changes in local economic outcomes between 1968-2008). Recent work by e.g. (Adao et al., 2019) has pointed out that region-level clustering may not properly account for the autocorrelation structure in SSIV designs. Following their recommended procedure, we also report standard errors that account for the structure of exposure weights across destination cantons i, while allowing for correlated out-migration shocks across destinations j within the 95 French departements.

5 Results

This section reports the main estimation results and robustness checks of our empirical analysis using the strategy described in the previous section.

First stage Table 1 starts by displaying the first stage results from the SSIV described in Equation (1). As reported in the table, all specifications include the right-hand side of our baseline specification, including the sum of exposure weights –conditioning on variation in past senior inflows from other departments–, predicted changes in local aging and the sum of outflow shares. Our IV approach consistently employs a conservative 'leave-out' methodology, where we exclude within-department moves when predicting pensioner inflows. Despite this exclusion of nearby movers, predicted inflows of pensioners are a strong predictor of actual gross and net senior migration inflows. The instrument remains strong in the full specification in columns 3 and 6, allowing for time-varying effects of past total migration inflows (sum of exposure weights interacted with census-round fixed effects) and conditioning on exposure-weighted economic shocks across origin regions and exposure to France's economic center of Ile-de-France.

The point estimates of the effect of predicted inflows on realized net inflows are slightly more pronounced than those for gross inflows across all specifications. This is indicative of the possibility that senior inflows could crowd in local seniors, reducing outflows relative to other regions, such that net flows increase by slightly more than 1-for-1 with gross inflows. We return to this as part of the analysis of the local effects on population and employment below.

Panel A of Figure 6 summarizes graphically the first-stage relationship between predicted and observed pensioner net inflows in the full specification, displaying a significant, positive, and roughly linear relationship between the instrument and net senior migration inflows. Panel B of Figure 6 presents the reduced-form relationship between the growth rate of local GDP on the left-hand side and the full IV specification in Equation 4 on the right-hand side.

Local population and employment Table 2 presents OLS and IV results from regressing the intercensal growth rate of canton-level total population and employment on the net inflows of mobile pensioners relative to the initial population, both in the baseline and full IV specifications. The coefficient on the net inflow variable are positive and statistically significant across all specifications. The IV point estimates are positive and somewhat larger than the OLS estimates. This is consistent with the concern that retirees may elect to move to more rural areas with slower economic growth on average, a fact emphasized in the descriptive evidence summarized in Figure 4. Not accounting for this source of endogeneity could lead us to underestimate the positive effect of pensioner inflows on local employment growth in destination regions. Standard errors clustered at the level of cantons are quite similar (sometimes either slightly larger or smaller) compared to the reported standard errors which follow recent work by Adao et al. (2019). In our preferred (full) specification, a one standard-deviation increase in senior inflows relative to the initial population –on average, a 2% increase relative to the initial population– increases the local population by on average 4.5% and total local employment by about 5.5%.

To better understand the mechanisms driving the effect on local total population and employment growth, Table 3 presents additional results. These effects are in part driven by significant crowding-in effects of mobile pensioners on other, younger residents. We find that a one standard deviation-increase in local net senior inflows leads to a 4% increase in the local working-age population. These crowding-in effects could be driven by increased demand for local non-tradable and labor-intensive services following the arrival of new retirees in a region –an explanation we return to when examining patterns of sectoral reallocation. Employment gains are slightly larger for women (+6.4%) than for men (+5.2%). Again, this pattern may reflect increased demand in relatively female-intensive services sectors, or complementarity effects arising from the provision of informal childcare when seniors relocate closer to their children.

In line with the knock-on effects on population and employment, the share of retirees in the local population (i.e., the dependency ratio) does not increase significantly over the course of a decade following a shock to senior migration inflows. Hence, senior migration does not necessarily worsen local population aging, as the arrival of retirees is accompanied by sufficiently large adjustments in the working-age population and employment over this time horizon.

In the final columns of Table 3, we replace the independent variable (net inflows) with gross senior inflows relative to the initial population. We estimate the effect of gross inflows on net inflows, to investigate whether the arrival of migrating seniors could either crowd in or crowd out local seniors –decreasing or increasing outflows by local seniors. We estimate that a one percent increase in the initial local population due to gross inflows of seniors leads to a 1.2% increase in effective (net) inflows of seniors. This slightly more than one-for-one coefficient indicates a crowding-in effect among local seniors. One potential explanation is that retirees like to live near other retirees, either due to homophily (e.g. Diamond, 2016) –a taste for “retiree communities"–, or because age-specific amenities are endogenously formed in response to pensioner inflows.[24] Absent effects on local death rates (which we do not find), the estimated increase in the local number of seniors may stem from lower outflows, revealing an implicit improvement in the amenity value of the location for incumbent pensioners.

Local economic effects Next, we investigate the local economic changes underlying the effects on the local population and employment. In Table 4, we report the 2nd-stage IV point estimates of

[24] See, e.g., Komissarova (2022) for a model of endogenous amenity formation in response to demographic composition.

the full specification for 10 distinct local economic outcomes. We start with total local value added (GDP), which we find increases by about 6% in the aftermath of a one standard-deviation increase in senior net inflows relative to the initial population (+2%). GDP per capita, as measured in the historical database by Cagé and Piketty (2023), increases by about 3%. If we, instead, subtracted the effect on total GDP growth by our estimated effect on local population growth using the census data (involving different sources and slightly different samples), we would obtain a slightly lower effect on GDP per capita of about 1.5%. Cagé and Piketty (2023) also provide panel data on local average incomes based on historical tax records in France starting from our census wave in 1982 (using three inter-censal changes instead of five). Using these measures of taxable incomes and the shorter panel for which they are available, we find that average incomes increase by about 4%, roughly in line with the estimated effects on the consistent long-term series of GDP per capita.

In columns 4-7, we turn to estimating the consequences for the local housing market. The administrative records from France's national registry of residential properties allow us to measure housing construction between census waves. We find that a one standard-deviation increase in senior in-migration relative to the initial population increases the number of single-family properties by about 7.5%, and multi-family properties by about 5%. In line with this, local fiscal revenues from both land and property taxes increase by about 14% in our estimation, even though one should note that for these two outcome variables AKM standard errors appear meaningfully larger, such that the effects are statistically significant only for the baseline cluster-robust standard errors. In line with the estimated increase in local population, employment and incomes, the local housing market and property tax base appear to expand as a result net senior inflows. This expansion may reflect the direct effect of additional housing demand from incoming seniors and the crowd-in effect resulting from working-age population growth. It may also reflect changes in housing consumption– such as reductions in household size and higher per-capita square footage– resulting from the increased incomes caused by senior in-migration.

In the final columns of Table 4, we turn to the estimation of sectoral reallocation in employment. The economic gains in population, employment and local output per capita are accompanied by a significant increase in the share of non-traded economic activity (services) in the local economy, which we estimate to increase by about 1 percentage point for a one standard-deviation increase in net pensioner inflows relative to the initial local population. This result complements previous studies in the cross-section of countries showing that population aging in a given country is associated with a rise in the service share in that country's GDP (Siliverstovs et al., 2011; Cravino et al., 2022). Here, we show that the growth in the local population of retirees driven by long-distance inflows of pensioners causes a relative expansion of the service sector, even after conditioning on *local* population aging. We find that this effect is driven mainly by increases in employment in the health, food services and retail sectors of the local economy, accounting for about .85 percentage points of the total increase in the services share (+1pp).

One way in which the local services sectors could expand is at the expense of traded goods sectors (manufacturing employment). This would be the case in the standard neoclassical models of the 'Dutch disease' (Copeland, 1991). On the other hand, the significant knock-on effects on the local working-age population over time, in addition to potential within and cross-sector agglomeration forces (Faber and Gaubert, 2019), could counteract any loss of competitiveness in local traded output due to senior inflows. In the final column of Table 4, we investigate these questions by estimating the effect on employment growth in local manufacturing sectors. We find a statistically insignificant and slightly positive point estimate for manufacturing employment growth, suggesting that the expansion of local employment in the services sectors does not on average come at the expense of local employment losses in manufacturing.

To corroborate these sectoral implications, we also make use of firm-level microdata from two recent intercensal changes –1990-1999 and 1999-2008– and estimate the effects on worker earnings in the traded and non-traded sectors of the local economy. In the absence of exhaustive individual worker-level panel data, we cannot fully account for potential changes in worker selection. We use establishment-level changes in median annual gross or net earnings among full-time-only employees to limit concerns about changes in worker selection as best we can. In Table 5, we find that median worker earnings increase by about 4.5% in the services sector in the wake of a one standard-deviation increase in senior immigration. In contrast, we find slightly negative but statistically indistinguishable from zero effects on median worker earnings among traded-sector (manufacturing) firms. Overall, the effects on sector-specific wages appear consistent with senior migration boosting demand for workers in occupations in the services industry, particularly those catering to their consumption preferences.

Finally, recent work by Howard (2020) in the US has highlighted the role of the construction sector in driving the effects of (working-age) migration on local employment. In our context the direct and knock-on effects on local population and employment clearly translate into higher overall demand for local housing, as we discuss above when examining effects on the housing stock and property tax revenue. Nevertheless, we do not find that increases in employment in the construction sector explain a large part of the local economic expansion. The share of employment in construction does increase significantly, but this accounts for only a minor part of the total increase in local services employment.

Robustness We present additional robustness checks for the main results presented above. To address the concern that our SSIV could be correlated with canton-specific characteristics that had time-varying effects on local economic dynamism, we conduct a falsification test by regressing changes in local economic outcomes on *future* predicted exposure to senior migration.

If our SSIV design is valid conditional on re-centering and controls, then there should be no correlation between predicted future pensioner inflows and previous local changes in economic outcomes. To assess such "pre-trends" in the data, we estimate the reduced-form specification on identical samples of cantons and census waves (four out of five inter-censal changes for which we can compute future predicted inflows) with either contemporaneous or future predicted senior inflows on the right-hand side. Table 6 presents the results.

For our main outcomes –effects on total population, employment, working-age population, GDP and GDP per capita– we report the reduced-form specification with both contemporaneous and future predicted inflows on the right-hand side. For example, we regress employment growth between 1990-1999 on predicted pensioner inflows (the IV) over the period 1999-2008. Reassuringly, none of the coefficients for the pre-trends specifications are statistically significant. The placebo coefficients regressing contemporaneous outcomes on future inflows are also closer to zero, and sometimes of opposite sign, compared to the estimated effects of the inflows instrument for contemporaneous intercensal changes in local economic outcomes. Like any tests for pre-trends, this exercise does not rule out the possibility that other *simultaneous* shocks contribute to the relationship between current local economic growth and increased (predicted) retiree inflows, but it demonstrates that this relationship did not exist in decades preceding shocks in the arrival of new retirees and thus does not stem from e.g. long-term persistence in economic growth in (likely) receiving areas.

Heterogeneous effects After documenting the average effects, we also test for the potential presence of regional heterogeneity in the local implications of retiree immigration.[25] In particular, we ask whether initially poorer regions are affected differently compared to richer regions by the same fraction of senior inflows relative to the initial population. We thus run our baseline regression adding an interaction term between the main explanatory variable and a canton's percentile in the initial distribution of GDP per capita (at the beginning of the intercensal change in question). In the IV regressions, we now instrument for both the main effect and the interaction term. The results are presented in Table 7.

[25] In addition to the results reported here, we also test whether the inflows of domestic senior migrants have different effects compared to cross-border (international) senior migrants. To instrument for foreign pensioner inflows, we use origin-level shocks at the level of 55 countries that report positive inflows of retired people during each of our 5 intercensal changes. We find that the overall effects on local outcomes that we report above are mainly driven by pensioner arrivals from domestic origins, with insignificant effects for foreign senior arrivals. This could either be due to relatively minor inflows of cross-border migrants compared to domestic flows (lacking precision), or in part due to the fact that foreign senior inflows to France have meaningfully changed over the course of our estimation sample (with the majority stemming from low-income former French colonies in the earlier decades while shifting more toward migrants from other developed European countries in more recent ones).

We find that the arrival of mobile seniors has more pronounced positive effects on the local economy among initially poorer destinations. A one standard-deviation increase in the initial population due to the arrival of seniors (+2%) on average leads to a roughly 4.5% increase in local employment and GDP among destinations at the 90th percentile of initial GDP per capita, and these effects increase to roughly 7% for employment and 8.5% for GDP among destinations at the 10th percentile of initial GDP per capita.

As we will touch on in the descriptive evidence below, part of the stronger local gains due to senior inflows among initially poorer regions could be due to larger average income and spending differential between mobile seniors and the incumbent population at the destination –such that a given inflow relative to the initial population represents a larger relative increase in local demand. The presence of significant heterogeneity in the inflow effect will also matter for the implications of senior migration flows for the distribution of production and employment across regions, to which we turn in the final section.

Characterization of the LATE One important question about the findings reported above is to what extent the effects based on our SSIV design are representative of the population that we aim to study. In particular, we exploit plausibly exogenous variation in the inflows of new (recent) pensioners who chose to relocate outside their previous department of residence. As a result, our IV estimates capture the impact of relatively longer-distance migrants by relatively recent (younger) retirees –relative to the full population of senior migrants. To better characterize the LATE identified by our main IV strategy, Table 8 reports descriptive statistics on French pensioners in our data across different subpopulations and location characteristics.

In Panel A of Table 8, we use the universe of pensioners in our 5 census rounds to compare average individual characteristics between non-mover seniors (those wo did not report moving to another canton since the last census), mover seniors (those who do) and longer-distance mover seniors (those who report moving to another departement). The compliers in our IV design are based on the latter category. For each senior outcome, we report sample averages and standard errors. First, movers are slightly younger, more educated, more likely male, less likely in a couple and less likely to be homeowners compared to non-mover seniors. The comparison that is the most relevant for the interpretation of our 2nd-stage IV results is the comparison between longer-distance movers and all movers (i.e., the population of interest in our analysis). Here, we find that longer-distance senior movers are on average slightly younger (68.5 vs. 69.2 years), more educated (6.9 vs. 6.4 years of education), more likely to be male (41 vs. 40%), more likely to be in a couple (61 vs. 57%) and more likely to be homeowners in their new destination (60 vs. 54%) compared to the overall population of mobile seniors.

In Panel B, we compare both the types of destination regions (cantons) between all mobile seniors vs. longer-distance movers, as well as the differential between origin-destination regional pairs for the same two groups of mobile seniors. We find that longer-distance movers come from on average larger, richer and denser origins –even though in percentage terms those differences are relatively minor–, while differences in the destinations are on average very minor. Consistent with this, we find that the differences (origin minus destination) in origin-destination pairs are slightly more pronounced for longer-distance movers compared to the overall population of mobile seniors. On average, mobile seniors experience a 42% decline in the size of the local economy (GDP), a 11% decline in GDP per capita and a 61% reduction in population density after moving to a new canton.[26] For the group of senior movers that cross departements, those differentials become more pronounced: a 58% decline in the size of the local economy (GDP), a 19% decline in GDP per capita and a 78% reduction in population density.

In Panel C of Table 8, we then investigate how either all or just longer-distance mobile seniors on average compare to the local (incumbent) population of seniors in the destination –those who did not report moving since the last census round. Comparing all immigrant seniors to local incumbents in Column 1, we find that migrants are on average significantly younger by about 2 years of age, more educated by about 0.8 years of education, more likely to be male by 1 percentage point, less likely to be in a couple by 3 percentage points and 10 percentage points less likely to be a homeowner in the destination. When focusing on longer-distance movers only, we find that age, education and gender differences are slightly more pronounced (3 years younger, 1.4 years more educated and 2 pp more likely to be male), while longer-distance migrants are slightly more likely to be in a couple compared to local seniors (+2pp) and they are 8pp less likely to be a homeowner in the destination compared to local non-moving seniors.

In summary, our IV estimates capture the effects of senior inflows among relatively younger and more educated movers, who arrive from slightly denser and richer origins and experience a larger (negative) gradient in origin-destination comparisons of economic importance and local incomes per capita. On each of those dimensions, however, the reported differences are relatively minor in terms of magnitudes.

6 Quantification

We have presented evidence suggesting that senior immigration leads to meaningful increases in the local total population, employment, GDP and incomes over the course of about a decade relative to regions with less senior inflows. We now set out to answer an additional set of questions about the implications of the rise of senior migration flows on the concentration of employment and production in space –relative to a scenario with immobile pensioners (zero net senior migration

[26] The table reports changes in log points, while these figures are based on converting those to percent changes.

flows).

To do so, we make use of the estimated effects on relative regional outcomes from the previous section in combination with observed net region-to-region flows of seniors over the most recent intercensal period 1999-2008 in France. For each local economic outcome y_{it}, we compute:

$$(2) \qquad \widehat{\left(\frac{\triangle y_{i,t}}{y_{i,t-k}} - \overline{\frac{\triangle y_{i,t}}{y_{i,t-k}}}^{t}\right)} = \left(\frac{\text{Netflows}_{i,t}}{\text{Population}_{i,t-k}} - \overline{\frac{\text{Netflows}_{i,t}}{\text{Population}_{i,t-k}}}^{t}\right) \times \hat{\beta_{yi}},$$

where $\hat{\beta_{yi}}$ are the estimated effects of $\frac{\text{Netflows}_{i,t}}{\text{Population}_{i,t-k}}$ on outcomes $\frac{\triangle y_{i,t}}{y_{i,t-k}}$ from Table 7, allowing for heterogeneity across destinations i that we have estimated as a function of initial percentiles of cantonal GDP per capita. Note that in this quantification exercise we remain agnostic on the aggregate implications of senior migration, and instead quantify the implications on relative regional economic outcomes that we then project on the initial distribution of regional GDP per capita or population density across cantons in France.

Panel A of Figure 7, plots the predicted effects on relative local total employment and regional GDP growth across percentiles of cantons by initial population density over the period 1999-2008, the most recent intercensal period in our database, going from more rural on the left to more urban on the right of the x-axes. Panel B of Figure 7 presents the same counterfactuals, but now projected onto initial percentiles of GDP per capita across cantons, going from poorer on the left to richer on the right of the x-axes.

We find that the observed migration flows of retired seniors in France during that decade have led to a significant redistribution of economic activity from initially denser and richer to initially more rural and poorer regions. Our findings indicate that mobile seniors have grown to play a meaningful role in diminishing spatial disparities in economic activity over the past decades. The average predicted contribution to relative growth rates among cantons that are below the median population density or GDP per capita as of 1999 was a 2.5% increase in local employment and a 3% increase in local GDP compared to a scenario with zero net migration flows of pensioners over this period.

While this simple quantification exercise does not speak to the aggregate effects of population aging, it suggests that mobile pensioners themselves have become a discernible force reducing the concentration of employment and production in space over recent decades.

7 Conclusion

The world is aging quickly and the fraction of retirees in both the total population and migration flows are expected to grow over the coming decades. At the same time, both local and national governments have been increasingly active in rolling out policy campaigns aimed at attracting mobile retirees to their jurisdictions. In this context, understanding the economic impact of mobile seniors on local economies has become a question of relevance for policy-making –perhaps especially so given that the observed migration decisions of seniors are in the opposite direction of working-age migrants: toward more rural and initially poorer regions.

Two central questions that arise in this setting are (i) whether attracting mobile seniors or facilitating their migration can be a viable policy strategy to support local economic development among lagging regions, and (ii) whether the observed migration decisions of seniors have contributed to reducing or reinforcing the concentration of economic activity in space. In this paper, we set out to provide the first empirical evidence to inform these questions. To do so, we combine a unique collection of microdata from France with a new instrumental variable strategy to estimate the local economic implications of senior immigration.

We find large, positive effects on population, employment, housing construction and incomes due to domestic senior inflows, with the crowding-in of younger population and a relative expansion of local services underlying these gains. Overall, senior migration partly counteracts the "great divergence" between dense, skilled areas and the rest of the country, somewhat equalizing economic activity and income growth across regions by reallocating demand from richer origin to poorer, more rural destination localities. In a context where many policies to promote economic development among lagging regions have had mixed track records, these results also serve to draw attention to a potentially promising new set of policy tools related to senior migration, a phenomenon that is only projected to grow in importance over the coming decades and across both advanced and emerging economies.

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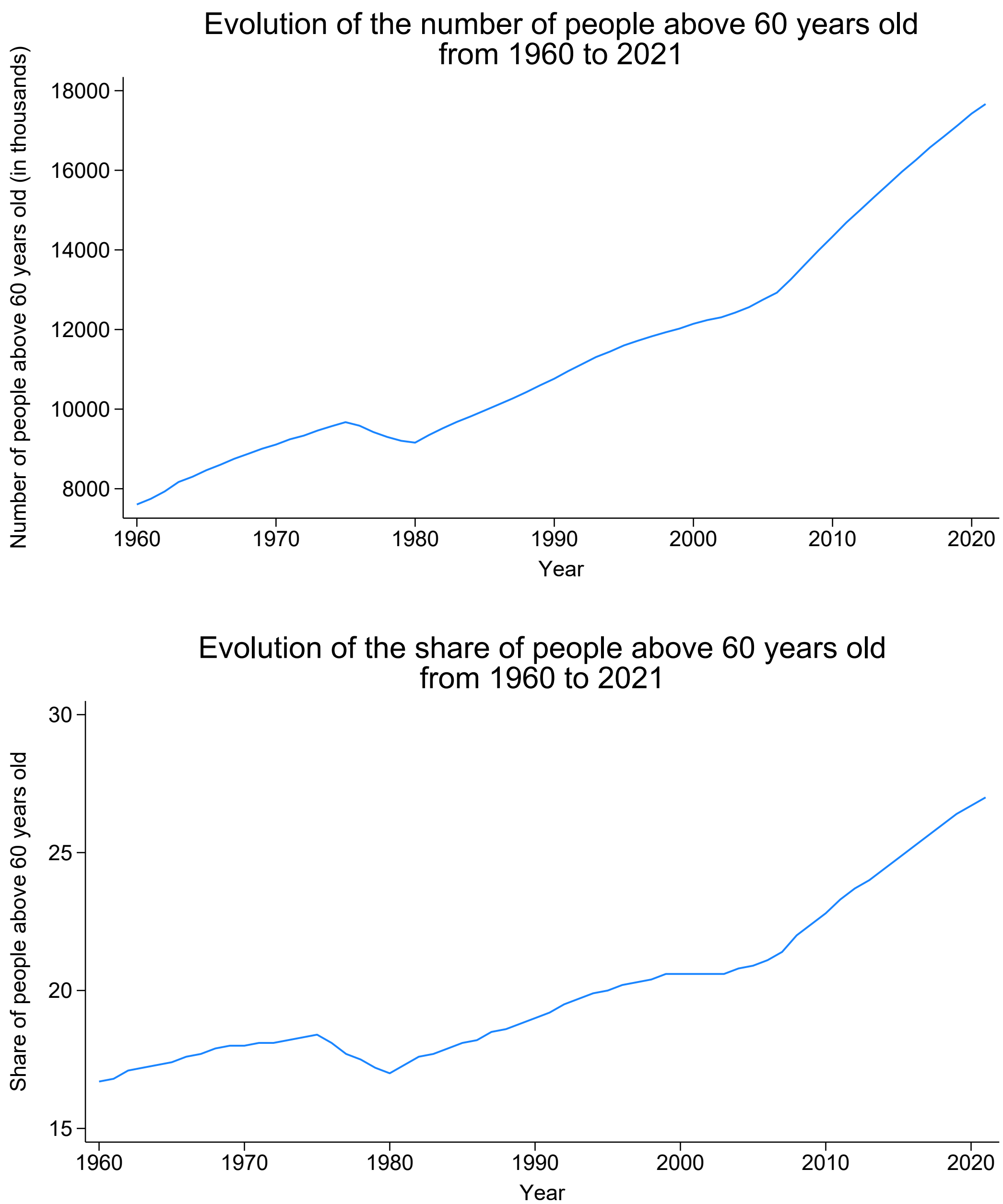
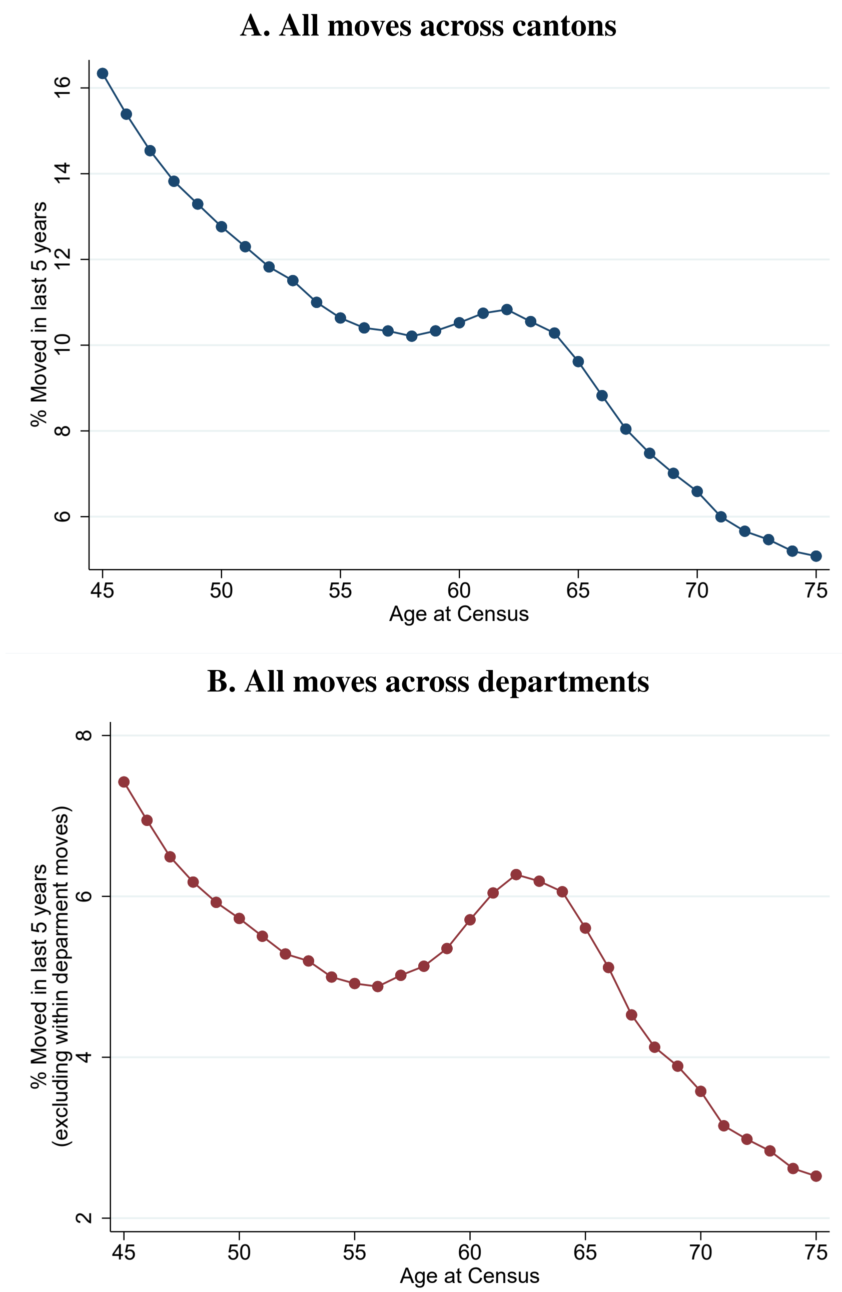
8 Figures and Tables

Figure 1: **Population aging in France**



Notes: This figure describes the evolution of the French population aged over 60 for the period 1960-2021. It is based on INSEE data. Panel A shows the total number of people over 60 living in mainland France from 1960 to 2021. Panel B shows the evolution of the share of the population over 60 living in mainland France for the period 1960-2021.

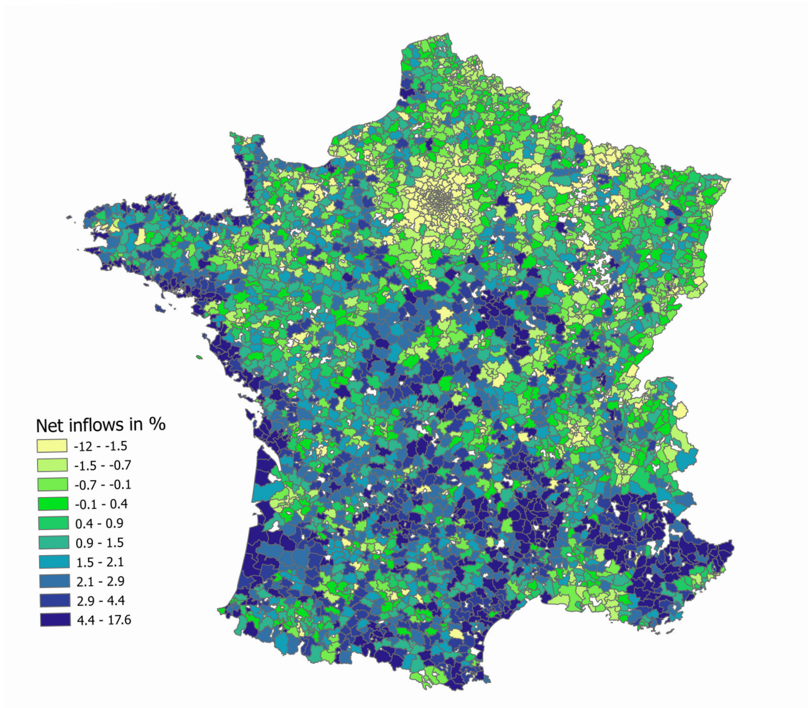
Figure 2: **Senior migration around the time of retirement**



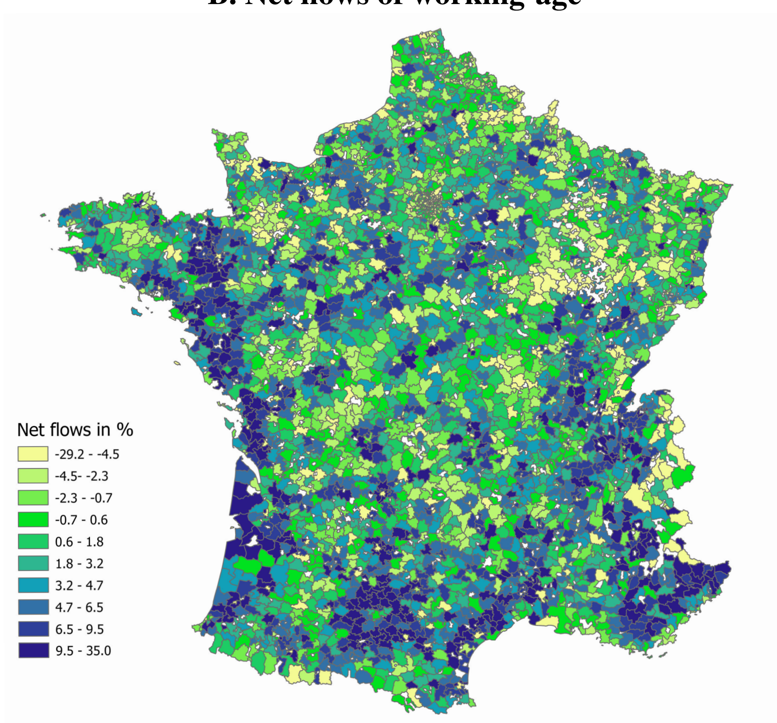
Notes: This figure shows migration rates by age from the population census in 2008. Panel A includes all moves across cantons (but not within), i.e. both moves between two cantons of different departments and moves between two cantons of the same department in the last 5 years. The percentage for each age was calculated as the ratio of the total number of moves in the last 5 years to the population of that age in 2008. Panel B presents the same statistics, except that this graph excludes within-department moves.

Figure 3: **Net migration flows in France**

A. Net flows of pensioners



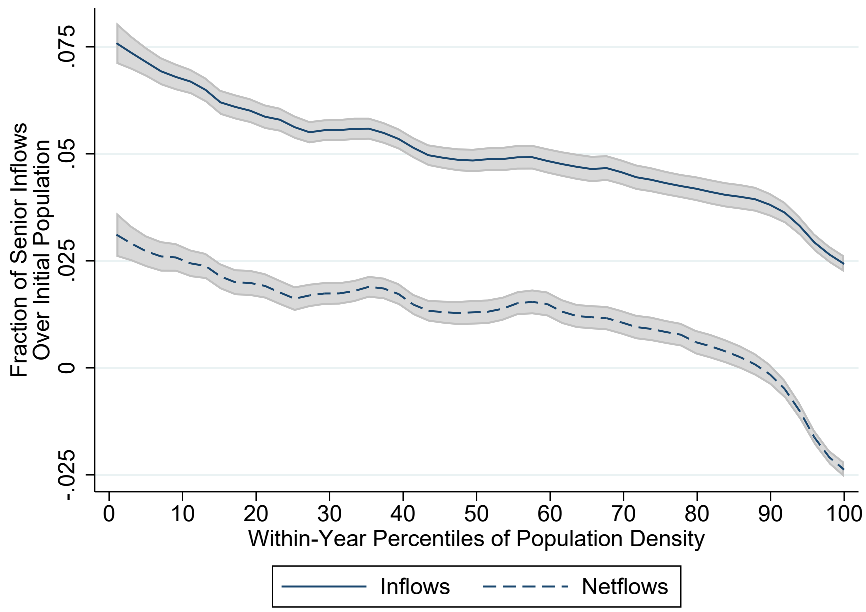
B. Net flows of working-age



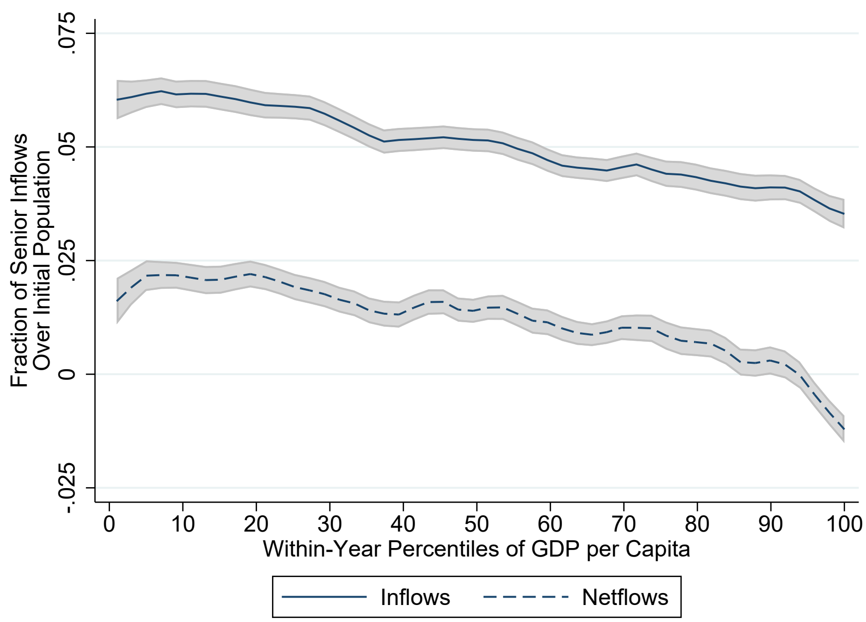
Notes: This figure depicts the net migration flows in all French cantons over the most recent intercensal period 1999-2008 in our data. Panel A maps the net flows of pensioners (i.e. people aged 55 and over who are not working) over the initial population of pensioners in 1999. Panel B shows the same graph, but for the working age population. The legends indicate deciles, with percentages (1=1%) shown.

Figure 4: **Seniors move to less dense and poorer regions**

A. Flows of pensioners by population density

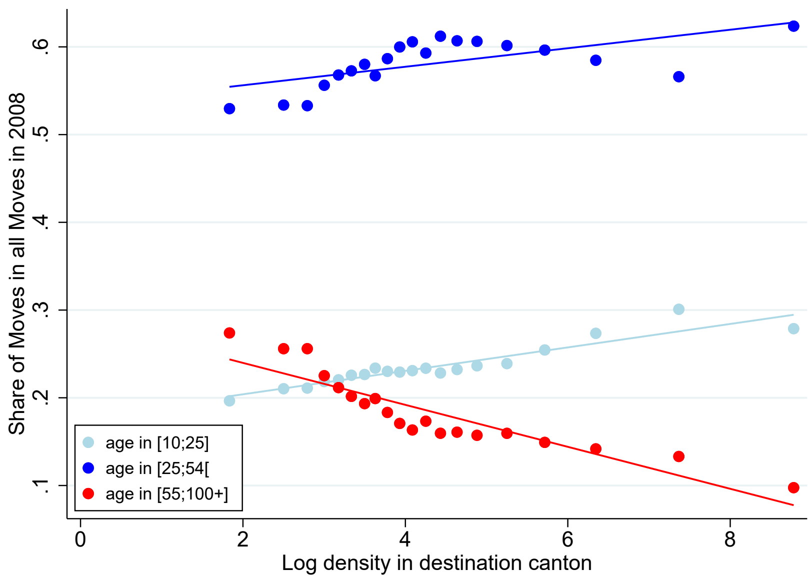


B. Flows of pensioners by GDP per capita



Notes: Figure plots on the y-axis the fraction of gross and net inflows of pensioners (i.e., people aged 55 and over who are not working) in the most recent census period of our database (1999-2008) relative to the initial 1999 total canton population. On the x-axis, we have percentiles (1-100) of initial canton-level population density (Panel A) or GDP per capita (Panel B). Estimates are based on local polynomial regressions with 95% confidence intervals in shaded areas.

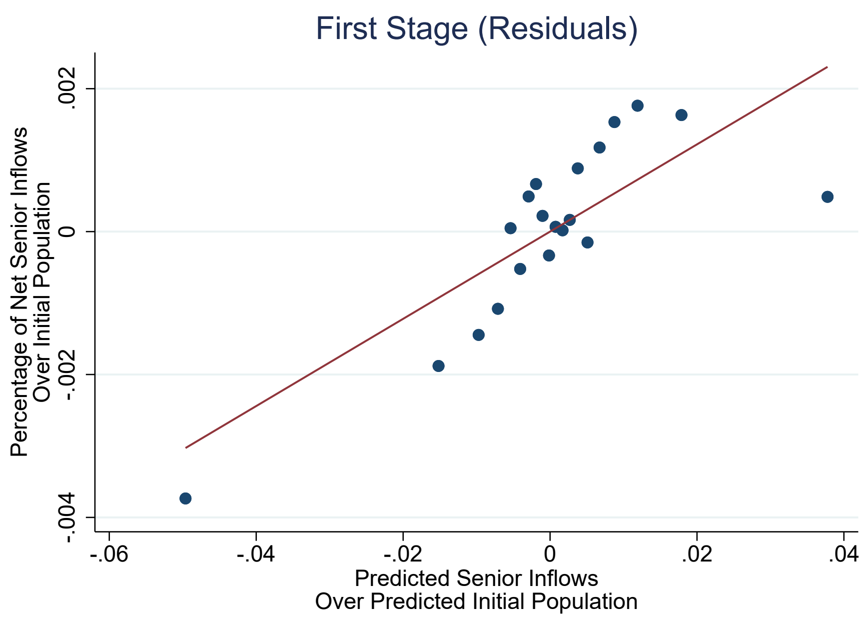
Figure 5: **Seniors move in opposite direction of working-age population**



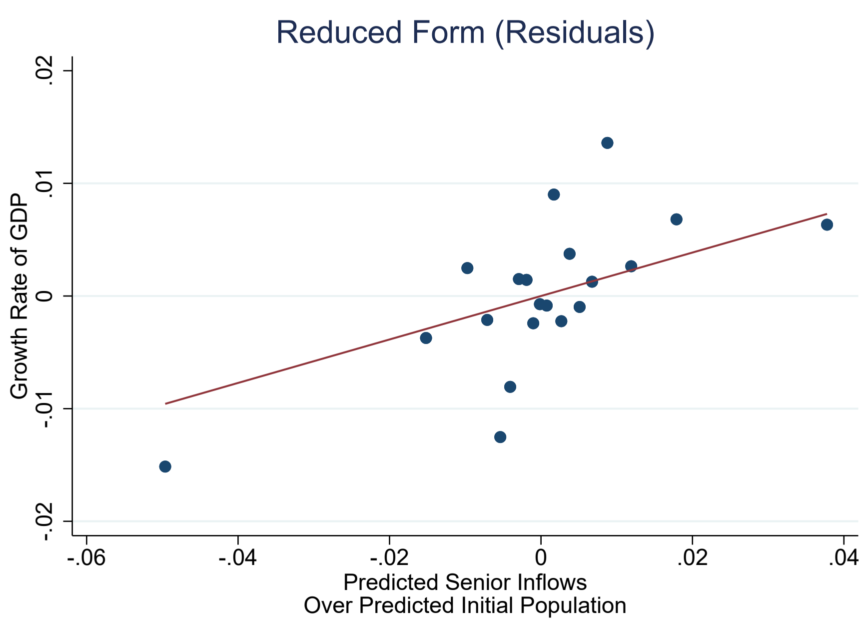
Notes: This graph displays the moves of three age categories by canton size. It calculates, for each canton, the share of moves in each of the three age categories among all moves in that destination canton in 2008.

Figure 6: **First-stage and reduced-form relationships**

A. First stage



B. Reduced form

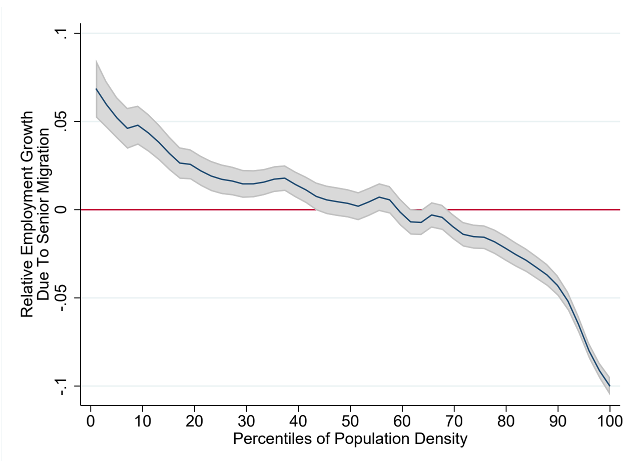


Notes: Figure presents binned scatter plots for the first-stage (Panel A) and the reduced-form (Panel B) regressions of the IV design. Both x and y-axes are residuals from regressions of the displayed variables on region-by-census round fixed effects and the set of controls in the full specification (including the sum of the exposure weights interacted with period fixed effects) as discussed in Section 4. The sample includes 5 intercensal changes between 1968-2008 for a balanced number of 3326 cantons in France. See Sections 4 and 5 for discussion.

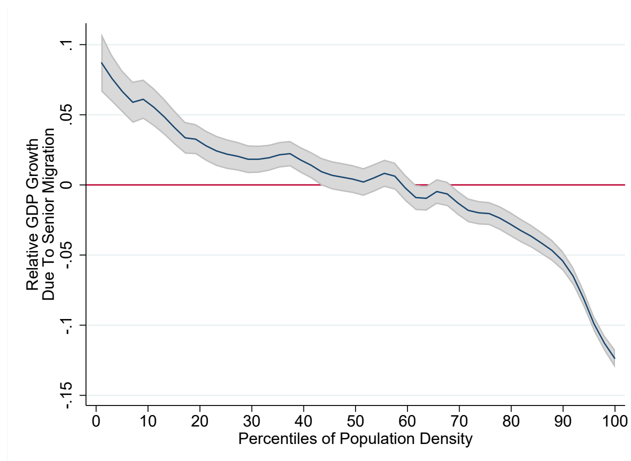
Figure 7: **Implications of senior migration for relative employment and GDP**

A. Across percentiles of initial population density

A1. Employment growth

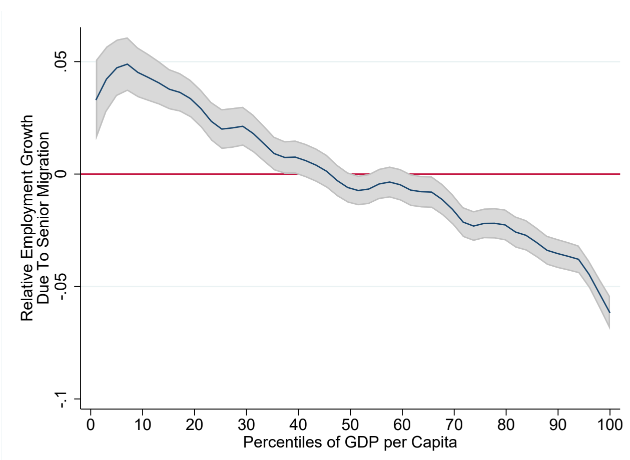


A2. GDP growth

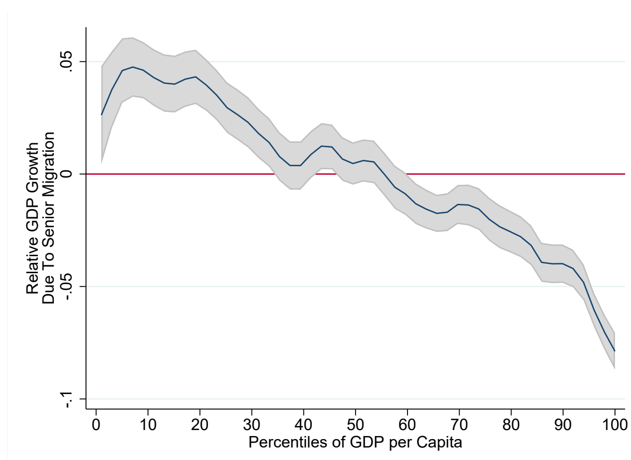


B. Across percentiles of initial GDP per capita

B1. Employment growth



B2. GDP growth



Notes: The figure describes the implications of senior migration on relative employment and GDP growth across French cantons between 1999 and 2008. The x-axis shows percentiles of population density (Panel A) or GDP per capita (Panel B) across cantons measured in the initial period 1999. Estimates are based on observed net flows that we combine with the heterogeneous effects of net flows from Table 7. The plotted functions are based on local polynomial regressions with 95% confidence intervals in shaded areas. See Section 6 for discussion.

Table 1: **First-stage regressions**

VARIABLES	(1) Inflows/Pop_t-1	(2) Inflows/Pop_t-1	(3) Inflows/Pop_t-1	(4) Netflows/Pop_t-1	(5) Netflows/Pop_t-1	(6) Netflows/Pop_t-1
Pred Inflows/Pred Pop_t-1	0.054***	0.026***	0.050***	0.083***	0.030***	0.061***
	(0.004)	(0.005)	(0.007)	(0.005)	(0.005)	(0.008)
Sum of Weights	0.658***	0.744***	0.732	0.252***	0.540***	1.262
	(0.022)	(0.025)	(1.202)	(0.026)	(0.029)	(1.281)
Pred G Seniors	-0.031***	-0.027***	-0.026***	-0.041***	-0.026***	-0.026***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Sum Outflow Shares	-1.767***	-2.077***	-2.237***	-3.871***	-3.396***	-3.570***
	(0.230)	(0.220)	(0.234)	(0.659)	(0.421)	(0.452)
Exposure to PopGrowth			1.058**			0.266
			(0.452)			(0.481)
Exposure to GDPGrowth			-0.270*			-0.251
			(0.154)			(0.169)
Exposure to LogPop_t-1			0.005			-0.052
			(0.095)			(0.100)
Exposure to LogGDP_t-1			-0.059			0.015
			(0.076)			(0.082)
Exposure to Ile-de-France			0.322***			0.268***
			(0.063)			(0.068)
Sum of Weightsx1982			0.122			0.124
			(0.087)			(0.093)
Sum of Weightsx1990			-0.164			-0.236
			(0.151)			(0.164)
Sum of Weightsx1999			-0.282			-0.382
			(0.215)			(0.237)
Sum of Weightsx2008			-0.005			-0.287
			(0.231)			(0.250)
Observations	16,630	16,630	16,630	16,630	16,630	16,630
R-squared	0.662	0.695	0.701	0.468	0.549	0.552
Year FE	✓	.	.	✓	.	.
Region-Year FE	.	✓	✓	.	✓	✓
Baseline specification	✓	✓	.	✓	✓	.
Full specification	.	.	✓	.	.	✓
N cantons	3326	3326	3326	3326	3326	3326

Notes: This table summarizes the first-stage relationship described by Equation 4. Columns 3 (inflows) and 6 (net flows) include Census region-year fixed effects and the full specification of controls. The sample includes 5 intercensal changes between 1968-2008 for a balanced number of 3326 cantons in France. Robust standard errors clustered at the level of cantons are in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. See Sections 4 and 5 for discussion.

Table 2: **Implications of senior migration for local population and employment (1)**

VARIABLES	(1) G Pop OLS	(2) G Pop IV	(3) G Pop IV	(4) G Emp OLS	(5) G Emp IV	(6) G Emp IV
Netflows/Pop_t-1	1.798***	3.073***	2.240***	1.891***	2.421*	2.796***
	(0.114)	(1.128)	(0.762)	(0.128)	(1.373)	(0.977)
AKM SE	.	[0.557]	[0.803]	.	[1.410]	[1.062]
Region-Year FE	✓	✓	✓	✓	✓	✓
Baseline specification	.	✓	.	.	✓	.
Full specification	.	.	✓	.	.	✓
Obs	16630	16630	16630	16630	16630	16630
N cantons	3326	3326	3326	3326	3326	3326
F-stat		31.83	60.94		31.83	60.94

Notes: G Pop and G Emp indicate intercensal growth rates of canton-level population and total employment, respectively. All columns include region-by-time fixed effects. OLS regressions include no additional controls. IV specifications include different sets of controls in the baseline and full specification as displayed in Table 1 and discussed in Section 4. The sample includes 5 intercensal changes between 1968-2008 for a balanced number of 3326 cantons in France. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. Standard errors in square brackets are computed following Adao et al. (2019), where we also allow the shocks to be correlated across origins within the roughly 90 French departements. See Section 5 for discussion.

Table 3: **Implications of senior migration for local population and employment (2)**

VARIABLES	(1) G Pop WA OLS	(2) G Pop WA IV	(3) G Emp Women OLS	(4) G Emp Women IV	(5) G Emp Men OLS	(6) G Emp Men IV	(7) D (Seniors/Pop) OLS	(8) D (Seniors/Pop) IV	(9) Netflows/Pop_t-1 OLS	(10) Netflows/Pop_t-1 IV
Netflows/Pop_t-1	1.931***	2.057**	2.432***	3.174**	1.645***	2.602***	-0.113***	0.114		
	(0.130)	(0.941)	(0.162)	(1.264)	(0.116)	(0.897)	(0.014)	(0.159)		
Inflows/Pop_t-1									0.847***	1.222***
									(0.007)	(0.107)
AKM SE	.	[1.085]	.	[1.380]	.	[0.954]	.	[0.213]	.	[0.082]
Region-Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full specification	.	✓	.	✓	.	✓	.	✓	.	✓
Obs	16630	16630	16630	16630	16630	16630	16630	16630	16630	16630
N cantons	3326	3326	3326	3326	3326	3326	3326	3326	3326	3326
F-stat		60.94		60.94		60.94		60.94		55.32

Notes: 'G' indicates the intercensal growth rate and 'D' indicates changes in outcomes. Pop WA stands for working-age population (ages 15–55). All specifications include region-by-time fixed effects. OLS regressions include no additional controls. IV specifications use the full specification as displayed in Table 1. The sample includes 5 intercensal changes between 1968–2008 for a balanced number of 3326 cantons in France. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. Standard errors in square brackets are computed following Adao et al. (2019), where we also allow the shocks to be correlated across origins within the roughly 90 French departements. See Section 5 for discussion.

Table 4: **Implications of senior migration for local economy**

VARIABLES	(1) G GDP IV	(2) G GDPpc IV	(3) G Avg Income IV	(4) G LandTax Rev IV	(5) G PropTax Rev IV	(6) G Multi-Unit IV	(7) G Single-Unit IV	(8) D Serv Share IV	(9) D Constr Share IV	(10) D Health+Retail Share IV	(11) G Manu Emp IV
Netflows/Pop_t-1	3.160***	1.443***	2.209***	6.912***	6.890***	2.479***	3.833***	0.523**	0.007***	0.444*	0.516
	(0.768)	(0.516)	(0.794)	(2.055)	(1.783)	(0.450)	(0.593)	(0.248)	(0.003)	(0.237)	(0.385)
AKM SE	[0.775]	[0.470]	[0.637]	[5.176]	[5.031]	[0.436]	[0.635]	[0.241]	[0.003]	[0.227]	[0.406]
Region-Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full specification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Obs	16628	16524	9916	9870	9870	16504	16504	13304	13278	13304	13295
N cantons	3326	3306	3306	3290	3290	3306	3306	3326	3325	3326	3326
F-stat	60.96	62.04	51.17	50.36	50.36	60.94	60.94	56.09	57.45	56.09	60.07

Notes: 'G' indicates the intercensal growth rate and 'D' indicates changes in outcomes. All columns include the full specification as displayed in Table 1. Columns 1–5 use outcome variables provided by Cagé and Piketty (2023). G Multi-Unit and G Single-Unit are growth rates in the stock of multi- or single-family properties. Serv Share is the share of non-tradable employment in total employment, Const Share is the share of construction employment in total employment, and Health+Retail Share is the share of employment in health and retail sectors in total canton employment. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. Standard errors in square brackets are computed following Adao et al. (2019), where we also allow the shocks to be correlated across origins within the roughly 90 French departements. See Section 5 for discussion.

Table 5: **Implications for worker earnings**

VARIABLES	(1) G Gross Earnings IV Services	(2) G Gross Earnings IV Manufacturing	(3) G Net Earnings IV Services	(4) G Net Earnings IV Manufacturing
Netflows/Pop_t-1	2.255*	-0.918	2.337*	-0.998
	(1.245)	(1.050)	(1.252)	(1.007)
Observations	664,463	264,633	664,463	264,633
Region-Year FE	✓	✓	✓	✓
Full specification	✓	✓	✓	✓
N cantons	3326	3326	3326	3326
F-stat	16.51	39.56	16.51	39.56

Notes: Table presents results from firm-level data on median worker gross annual earnings (columns 1 and 2) or median net annual earnings (columns 3 and 4) from the DADS microdata. The sample includes all French workers for two intercensal changes in 1990-1999 and 19999-2008. The median earnings are based on full-time employees only. The left-hand side in columns 1 and 3 are firm-level growth rates in median full-time earnings for non-tradable sectors (services). Columns 2 and 4 use firm-level growth rates of median full-time earnings for the tradable sectors (manufacturing). All columns include the full specification as displayed in Table 1. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. AKM standard errors in the firm-level regressions could not be computed due to lack of RAM on the secure-access server. See Section 5 for discussion.

Table 6: **Implications of senior migration: falsification tests**

VARIABLES	(1) G Pop Red Form	(2) G Pop Red Form	(3) G Emp Red Form	(4) G Emp Red Form	(5) G Pop WA Red Form	(6) G Pop WA Red Form	(7) G GDP Red Form	(8) G GDP Red Form	(9) G GDPpc Red Form	(10) G GDPpc Red Form
Pred Inflows/Pred Pop_t-1	0.158***		0.136**		0.120*		0.171***		0.097***	
	(0.053)		(0.065)		(0.064)		(0.050)		(0.032)	
Future Pred Inflows/Pred Pop_t-1		-0.042		0.109		-0.009		-0.083		-0.019
		(0.058)		(0.070)		(0.069)		(0.066)		(0.046)
Observations	13,304	13,304	13,304	13,304	13,304	13,304	13,302	13,302	13,220	13,220
Region-Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full specification	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
N cantons	3326	3326	3326	3326	3326	3326	3326	3326	3306	3306

Notes: 'G' indicates the intercensal growth rate. The independent variable in the first row is the SSIV defined in equation (1). The second row is the same SSIV, but computed for the intercensal change in the future (the lead of the first row). 'Ctrls' indicates the inclusion of the full vector of controls, as displayed in Table 1. All columns include the full specification as displayed in Table 1. The sample includes 4 intercensal changes between 1968–1999. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. See Section 5 for discussion.

Table 7: **Heterogeneity across percentiles of initial GDP per capita**

VARIABLES	(1) G Pop IV	(2) G Emp IV	(3) G Pop WA IV	(4) G GDP IV	(5) G GDPpc IV
Netflows/Pop_t-1	2.756***	3.533***	2.906***	4.535***	2.077***
	(0.801)	(1.035)	(0.980)	(0.865)	(0.545)
(Netflows/Pop_t-1)xGDPpcPercentile	-0.013***	-0.017***	-0.019***	-0.025***	-0.012***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.002)
GDPpcPercentile	0.002***	0.002***	0.002***	0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	16,630	16,630	16,630	16,628	16,524
Region-Year FE	✓	✓	✓	✓	✓
Full specification	✓	✓	✓	✓	✓
N cantons	3326	3326	3326	3326	3306
F-stat	30.62	30.62	30.62	30.62	30.78

Notes: 'G' indicates the intercensal growth rate. PCtileGDPcap are percentiles (1–100) of canton-level GDP per capita at the beginning of each intercensal change. We instrument for both main and interaction terms by replacing observed with predicted pensioner inflows. The sample includes 5 intercensal changes between 1968–2008. All columns include the full specification as displayed in Table 1. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. See Section 5 for discussion.

Table 8: **Characterization of the estimated LATE**

Panel A: Non-mover Pensioners vs. Mover Pensioners vs. Long-distance Mover Pensioners

	Non-mover Pensioners	Mover Pensioners	Department Movers (pensioners)
Age	70.92***	69.23***	68.47***
	(0.00)	(0.01)	(0.01)
Education (in years)	5.73***	6.36***	6.86***
	(0.00)	(0.00)	(0.00)
Men	0.40***	0.40***	0.41***
	(0.00)	(0.00)	(0.00)
Couple	0.61***	0.57***	0.61***
	(0.00)	(0.00)	(0.00)
Owner	0.68***	0.54***	0.60***
	(0.00)	(0.00)	(0.00)
Observations	25666507	4238340	2457518

Panel B: Destination cantons of Mover Pensioners vs. Long-distance Mover Pensioners

	Mover Pensioners	Department Movers (pens.)
GDP in absolute terms (million euros) destination	1481.35	1532.53
GDP in absolute terms (million euros) origin	2642.20	3213.95
GDP per capita destination	26027.14	25962.72
GDP per capita origin	30349.27	33692.09
Density of population destination	2025.36	2054.79
Density of population origin	4546.17	6303.16
Log difference GDP	-0.55	-0.86
Log difference GDP per cap	-0.12	-0.21
Log difference density	-0.95	-1.51

Panel C: Comparing Mover Pensioners to Pensioners in Destination

	Mover pensioners	Department Movers (pensioners)
Age	-1.99***	-3.03***
	(0.04)	(0.04)
Education (in years)	0.83***	1.38***
	(0.02)	(0.02)
Men	0.01***	0.02***
	(0.00)	(0.00)
Couple	-0.03***	0.02***
	(0.00)	(0.00)
Owner	-0.10***	-0.08***
	(0.00)	(0.00)

Notes: Results are based on census microdata pooled across 6 waves between 1968-2008. Panel A shows sample averages for the three different groups of pensioners in France. Panel B shows averages at the canton (destination) level for the two different groups of pensioners, as well as differences between origin and destination cantons for the movers. Panel C shows average differences in characteristics between pensioners who moved to a canton to those who did not move over the same period. Robust standard errors clustered at the level of cantons in parentheses. *, ** and *** indicate p<.1, p<.05 and p<.01. See Section 5 for discussion.