DIVERSIFYING THE SUBURBS: RENTAL SUPPLY AND SPATIAL INEQUALITY

Konhee Chang
University of California, Berkeley

Link to the latest version
Job market paper

This paper studies how rental housing supply shapes residential segregation and spatial inequality by leveraging the entry of large-scale corporate single-family rental landlords as a supply shifter. Using property-level data on tenants, home prices, rents, and acquisition timing, I show that increasing rental supply in American suburbs, where rentals are scarce and expensive relative to owner-occupied housing, reduces segregation by enabling lower-income, disproportionately non-White renters to move into neighborhoods where they otherwise could not afford to own. In response, nearby incumbent households are more likely to move out, perceiving renters as a disamenity. Large-scale landlords expand rental supply by converting owner-occupied homes into rentals, exploiting cost efficiencies from geographic concentration. I quantify this mechanism by estimating local scale economies from landlords' willingness to pay for spatial clustering. To assess the distributional consequences, I develop and estimate a quantitative spatial equilibrium model with segmented housing markets. Reallocating owner-occupied homes to rentals lowers rents and benefits down payment-constrained households. However, the median household loses from forgone non-pecuniary homeownership benefits and endogenous amenities.

JEL: R21, R23, R31, J15, H00, I30, G51.
Keywords: Segregation, Spatial inequality, Housing, Financial constraints.

Haas School of Business, University of California, Berkeley, 2220 Piedmont Avenue, Berkeley, CA 94720 (e-mail: konhee@berkeley.edu). I am grateful to Cecile Gaubert, Amir Kermani, Nick Tsivanidis, Nancy Wallace, and Danny Yagan for their guidance and support throughout the years. I thank Grace Choi, Ben Faber, Troup Howard, Prasad Krishnamurthy, Hilary Hoynes, Ali Kakhbod, Jaeyeon Lee, Antoine Levy, Yunbo Liu, Ulrike Malmendier, Evan Mast (discussant), Peter Maxted, Tim McQuade, Ted Mermin, John Mondragon, Mathilde Muñoz, Manisha Padi, Franklin Qian (discussant), Michael Reher, Andrés Rodríguez-Clare, Jesse Rothstein, Holger Sieg, and David Sraer, as well as the organizers and participants of the Berkeley trade lunch and the real estate, finance, and public finance seminars, the 2023 Regional/Urban/Housing/Spatial Brownbag Series, the 2024 AREUEA/ASSA Doctoral Poster Session, the 2024 North American Meeting of the UEA, the 2025 European Meeting of the UEA, and the 2025 SFS Cavalcade for their generous feedback.

1. Introduction

Extensive research has established that neighborhoods have causal effects on a wide range of household outcomes (Chetty et al. 2014; Chyn and Katz 2021). Yet in the United States, access to neighborhoods with high-quality schools, low crime, and intergenerational mobility often depends on the ability to own a home. The housing stock in American suburbs is predominantly composed of single-family homes, 85% of which were owner-occupied as of 2011 (Glaeser 2011). However, for many renters—particularly younger, lower-income, and non-White households—financial barriers such as down payment constraints prevent them from becoming homeowners. As a result, the geography of rental supply plays a central role in shaping residential mobility.

This paper studies how the availability of rental housing affects residential segregation and spatial inequality. I leverage a major shift in U.S. housing markets following the Great Recession: the entry of large-scale corporate landlords into the single-family rental (SFR) market. These landlords acquired large numbers of existing suburban homes and supplied them as rentals. This shift provides a unique opportunity to study the spatial and welfare consequences of expanding rental supply. First, the scale and geographic concentration of corporate acquisitions generated sizable increases in rental availability in suburbs where it had historically been scarce. Second, unlike traditional rental development which typically involves new multifamily construction, the reallocation of existing homes into rentals shifted housing tenure, own or rent, without significantly altering other neighborhood characteristics such as density or the built environment, that might otherwise confound analysis (Diamond and McQuade 2019; Gyourko and McCulloch 2024).

I proceed in two steps. In step 1, I empirically estimate the effects of converting owner-occupied housing into rentals on residential segregation and housing affordability. A key empirical challenge is that landlord entry is non-random. To address this, I assemble new data on acquisitions by 23 corporate SFR landlords and merge them with a property-level panel on tenant demographics, rents, and transaction prices. I show that firms geographically cluster acquisitions around their initial entry locations to realize local operating scale, which generates plausibly exogenous variation in the timing and location of rental expansion, conditional on broader market trends. I estimate the direct effects of landlord entry using event studies at the property level, leveraging variation in acquisition timing while controlling for neighborhood trends and composition effects using Census tract-by-time

and property fixed effects. Across a range of property-level outcomes, I document parallel pre-trends followed by sharp changes after acquisition.

In step 2, I evaluate the distributional consequences of rental reallocation using a quantitative spatial equilibrium model. There are three key innovations in the model. First, the model features segmentation between the owner-occupied and the rental segments and landlord scale economies in a spatial context. To supply rental housing, landlords face location-specific operating costs which decrease with their local scale. Second, households face financial constraints to choosing location and housing tenure. Households are heterogeneous in wealth and preferences, and their choice set is endogenously determined by their wealth and local home prices. Third, amenities are tenure-specific and endogenous to local tenure composition. This allows households to derive additional (or lower) utility from owning relative to renting in the same location. Moreover, the endogenous amenity component captures how the attractiveness of a neighborhood responds to changes in the demographic and tenure composition (Bayer et al. 2024; Diamond 2016).

At the outset, it is unclear how or whether at all reallocating owner-occupied homes to rentals affects tenant composition. In a frictionless housing market, where there is no segmentation between ownership and rental markets and no binding financial constraints on homeownership, households can freely choose to rent or own any home in any neighborhood (Greenwald and Guren 2021). In that case, the observed spatial distribution of renters and owners would reflect the equilibrium, utility-maximizing choices of households with heterogeneous preferences. However, in the presence of financial constraints and housing market segmentation, shifts in the tenure status of a property can affect residential sorting by changing barriers to moving to more preferred neighborhoods. Moreover, converting an owner-occupied home to a rental can influence the demographic composition of other homes in the neighborhood through amenity spillovers and equilibrium changes in home prices and rents.

I have three strands of empirical findings. First, converting owner-occupied homes to rentals reduces residential segregation. This effect is driven by the in-migration of lower-income, disproportionately non-White renters into properties and neighborhoods where they could not afford to buy, consistent with financial constraints on homeownership being barriers to neighborhood entry. Second, the arrival of renters induces incumbent households who live in nearby homes to move out. This pattern is not explained by sales to corporate

landlords, transitory migration, or capital gains, suggesting that households sort based on neighbor preferences. Third, rents decline as rental supply expands, while home prices rise due to a coinciding reduction in the supply of owner-occupied housing. Nearly 70% of properties that landlords acquire are previously owner-occupied, and homeownership decreases by 2 percentage points on average in Census tracts where corporate landlords acquire at least 10 properties. Rents decline by 2%, and the cost of buying a home for prospective homeowners increases by a similar magnitude.

The property-level effects aggregate up to an increase in the non-White share of residents and a reduction in residential segregation at the Census tract-level. To estimate these neighborhood-level effects, I leverage variation in the timing of landlord entry across Census tracts within a county. This requires a stronger identifying assumption: that parallel trends hold at the tract-level rather than at the property-level. Supporting this assumption, I find no evidence of differential pre-trends, consistent with institutional context. Corporate landlords typically entered markets through bulk transactions that gave them limited control over the precise location and timing of initial purchases. Subsequent acquisitions were rapid and geographically concentrated around these entry points to achieve local operating scale. These patterns suggest that tract-level entry decisions within a county was unlikely to have been driven by tract-specific shocks or preexisting trends in residential sorting.

These empirical findings suggest that changes in housing costs alone fail to capture broader welfare impacts of reallocating owner-occupied housing to rentals. Rental reallocation also affects who can access which neighborhoods and endogenously changes neighborhood amenities.

I incorporate these general equilibrium effects into a quantitative spatial model of residential sorting, and use the estimated model to assess the distributional consequences of rental reallocation across the household wealth distribution. Local property owners are endowed with one unit of housing and choose between selling the property to an aspiring homeowner and renting it out by incurring location-specific operating costs. Households either rent or buy one unit of housing. A representative large-scale corporate landlord enters the market by purchasing properties from existing homeowners and landlords.

Acquiring additional properties reduces average operating costs through local scale economies, consistent with descriptive evidence from property-level expense data. However, local expansion becomes increasingly costly due to an upward-sloping supply of ex-

isting homes. This arises from heterogeneity in incumbent owners' willingness to sell. To expand, the corporate landlord must offer higher prices to induce sales from homeowners with stronger neighborhood preferences or landlords with high profitability. Weighing these trade-offs, the corporate landlord chooses an optimal scale in each location, expanding rental supply in the markets they enter.

I estimate the strength of local scale economies from landlords' willingness to pay for geographic concentration. A repeat-sales design shows that corporate landlords pay an average 9% acquisition premium, which increases with a landlord's expansion in a local market. The baseline estimate implies that a landlord owning 50 units within a Census tract earns 4% higher profit than 50 individual landlords combined. I estimate the remaining elasticities using the Generalized Method of Moments (GMM), with exposure to corporate SFR landlords as the instrument. The elasticity of amenities with respect to neighborhood composition is identified from the demographic shift caused by corporate landlords converting owner-occupied homes to rentals. Decreases in equilibrium rents and increases in home prices provide variation in rental return that identifies elasticity of rental supply.

Given the estimated elasticities, I recover the location and housing tenure-specific amenities that rationalize the observed data as an equilibrium of the model. This exercise reveals that non-pecuniary benefits of homeownership are substantial. On average, homeownership yields 30% greater amenity value than renting in the same location. I also recover the location-specific costs of supplying rentals and find that they are higher in suburban areas than in urban areas. One potential driver of this cross-sectional heterogeneity is the high cost of maintaining and managing geographically dispersed single-family homes compared to multifamily buildings (Mayer and Shiller 2006).

I simulate the entry of corporate landlords and find that it is progressive, but hurts the median household. Lower rents and reduced barriers to high-amenity neighborhoods benefit low-wealth households, who are predominantly renters due to binding financial constraints. However, households who could marginally afford to own are priced out of homeownership and lose out from foregone homeownership amenities. Because of the non-pecuniary benefits of homeownership, a one-unit decrease in owner-occupied supply generates larger losses than the corresponding gains from a one-unit increase in rental supply. High-wealth households are relatively price-insensitive, but still lose due to disutility from living near renters.

I also evaluate policies that regulate local rental markets. Rental caps that limit the rental share to 40% of the local housing stock distort tenure decisions and reduce household welfare by 1% on average. Requiring large-scale landlords to sell a portion of their portfolio back to the market benefits middle-wealth households by expanding the supply of homes to homebuyers who prefer and can afford to own. However, this policy harms low-wealth households who depend on renting and for whom homeownership remains out of reach.

Extensive literature shows that neighborhoods causally affect a wide range of long-run outcomes, including education, earnings, and intergenerational mobility (see Chyn and Katz 2021 for a survey of the literature). At the same time, there are large and persistent disparities in households' access to high-opportunity neighborhoods (Rothstein 2017). In response, governments have implemented a range of desegregation interventions, including relocation programs (Chetty et al. 2016; Chyn et al. 2025) and affordable housing construction (Diamond and McQuade 2019; Cook et al. 2025). However, these programs are often costly, politically contentious, and difficult to scale. In contrast, I show that corporate landlords, operating through the private market and without direct subsidy, have reduced residential segregation by expanding rental access in high-amenity neighborhoods. This finding contributes to the growing literature on how private landlords shape housing and neighborhood access (Bergman et al. 2024; Bézy et al. 2024).

A growing body of literature studies SFR landlords (Austin 2022; Barbieri and Dobbels 2025; Billings and Soliman 2025; Coven 2025; Gorback et al. 2025; Gurun et al. 2023; Hanson 2024; Ihlanfeldt and Yang 2021; Lee and Wylie 2024; Mayock and Vosters 2024; Mills et al. 2019; see Appendix Section A.1). I assemble unique property-level panel data linking tenant demographics, rents, and transaction prices and present property-level event-study evidence that landlord entry reduces segregation, lowers rents, and raises home prices. I also provide the first empirical estimate of local scale economies in rental supply. Embedding these findings in a structural model, I conduct welfare analysis of corporate SFR landlords as well as rental housing policies that are relevant to broader contexts. The model captures multiple dimensions of welfare, including housing costs, spatial sorting, endogenous amenities, and homeownership preferences.

Policymakers across the political spectrum including Kamala Harris and JD Vance have proposed legislation to restrict corporate landlords, motivated by concerns that institutional investors crowd out prospective homebuyers. My findings from the spatial equilibrium

model help explain the widespread voter support for such proposals (Elmendorf et al. 2024). Households prefer to own. Yet I highlight how policies that restrict rental supply are regressive as they disproportionately impact financially constrained households who depend on renting to access neighborhoods.

Finally, my model builds on the quantitative spatial equilibrium literature reviewed by Redding and Rossi-Hansberg (2017). I extend this framework by modeling financial constraints on homeownership as endogenous choice set restrictions. This connects most directly to recent work on the role of housing in shaping spatial sorting and inequality (Almagro et al. 2024; Bayer et al. 2007; Couture et al. 2024; Diamond 2016; Diamond and Gaubert 2022; Gechter and Tsivanidis 2023; Hsieh and Moretti 2019; Mabille 2023; Parkhomenko 2025). Additionally, I introduce frictions in rental housing supply and model landlords' local scale economies, contributing to the growing real estate and household finance literature that studies housing market segmentation (Calder-Wang 2022; Fonseca et al. 2024; Greenwald and Guren 2021; Gupta et al. 2024; Levy 2022).

2. Data

Central to my analysis is a newly constructed property-level dataset on ownership, prices, rents, and tenant composition. I assemble this dataset by combining housing deeds, assessor records, rental listings, and address histories. I summarize each data source below and provide further details in Appendix Section B.1.

Property transactions, prices, rents, and characteristics. Property transaction and assessor data are obtained from ATTOM. The assessor data contain detailed property characteristics including the number of bedrooms and bathrooms, size of the garage, and heating system, as well as the property's latitude and longitude. Housing deeds provide information such as transaction prices and associated mortgages for each property sale for the near universe of transactions in the United States dating back to 2003.

I use buyer names and mailing addresses to identify properties acquired by corporate SFR landlords. Identifying corporate SFR landlords remains challenging because investors often use multiple names. Previous studies rely on lists of investor names and addresses gathered from internet searches and Form 10-Ks. I complement this approach by using an external North Carolina dataset that identifies property-level purchases by corporate SFR landlords. Using these datasets, I create a property-level panel of ownership. I focus on 23

large-scale SFR landlords operating in Florida, Georgia, North Carolina, and South Carolina that have a significant presence in these markets.[1]

Granular rent data in the U.S. housing market are challenging to obtain. Publicly available data sources often lack sufficient geographic and time-series coverage (e.g., the Zillow Observed Rent Index only begins in 2014 and only for a subset of ZIP Codes) or fail to account for underlying property quality (e.g., the American Community Survey).[2] To overcome these limitations, I leverage property-level rental listings from the Multiple Listing Service (MLS) obtained from Altos Research. This dataset covers the entire United States from 2010 onwards and contains the latitude and longitude of each property as well as property characteristics. This allows me to estimate rent changes while controlling for property quality and granular location-time fixed effects.

Household address histories and characteristics. I merge property-level data with residential history data from Data Axle. Using the address history information, I track the origin location of households moving into corporate-owned properties, as well as migration decisions of other households in the neighborhood. This dataset also provides demographic information on households residing in each property. Race is inferred from the name of the head of the household. Other information such as the age of the head of household, household income, household wealth, and number of children are estimated by the data vendor based on proprietary data sources including voter registration and vehicle purchases.[3]

Property-level operating costs. Corporate SFR landlords rely on commercial mortgages to finance property acquisitions. I use data on commercial mortgage loans to corporate SFR landlords that are securitized in the Commercial Mortgage-Backed Securities (CMBS) market. This dataset, provided by TREPP, includes time-varying, property-level data such as operating costs.

---

[1] Details on the methodology for identifying corporate single-family rental (SFR) landlords are provided in Appendix Section B.2.

[2] Due to these limitations, recent studies use the 1-year American Community Survey (ACS) Public Use Microdata Sample (PUMS), which provides unit-level contract rent and property characteristics for a 1% sample of households (Ruggles et al. 2023). However, the most granular level of geography available in PUMS data is a Public Use Microdata Area (PUMA), which can span one or more counties in sparsely populated suburbs. Due to this lack of geographic specificity, I leverage the MLS data in my baseline analysis and use the PUMS data for robustness.

[3] Existing literature uses a similar dataset to study how rent control affects household sorting (Diamond et al. 2019) and patterns of household migration in response to COVID-19 (Ramani and Bloom 2022).

Neighborhood characteristics. I obtain neighborhood-level characteristics, such as homeownership and demographic composition, from the 5-year American Community Survey (ACS). I primarily use data at the Census tract- and ZIP Code-levels.

Household wealth distribution. I use household wealth data from the 2013 Survey of Consumer Finances (SCF) for my quantitative analysis. The SCF is well suited for this analysis because it observes households as the unit of analysis. Moreover, SCF disaggregates household wealth into subcategories including housing wealth.

3. Background

Housing stock in American suburbs is predominantly composed of owner-occupied single-family homes. Zoning regulations often limit the supply of rental housing in the form of large multifamily structures (Glaeser 2011; Gyourko and Molloy 2015; Mayer and Shiller 2006). Traditionally, rental housing in these neighborhoods was provided by local "mom-and-pop" landlords who own a small number of single-family rentals.

3.1. *Corporate Single-Family Rental (SFR) Landlords in American Suburbs*

This landscape changed when corporate SFR landlords began acquiring suburban single-family homes in 2012 (Panel A, Figure 1). These landlords are unique in two ways. First, they own a large number of single-family homes, unlike local, small-scale landlords. Second, they primarily acquire existing single-family homes and operate them as rentals. This sets them apart from the majority of other large-scale landlords who develop new multifamily structures in urban areas.[4]

This entry was driven by two key factors (Panel B, Figure 1). First, bulk sales of properties beginning in 2012 made building geographically concentrated rental portfolio easier. In the aftermath of the 2008 Housing Crisis, foreclosed properties were sold in bundles, with some sales facilitated by a government-led program launched in 2012 by the Federal

[4] In recent years, large-scale corporate landlords have started to build entirely new Build-to-Rent (BTR) subdivisions composed of single-family homes for rentals. Most of this activity is concentrated in the post-COVID-19 period, which is outside the scope of my analysis. However, the economic mechanisms that I highlight in Sections 6 and 7 help rationalize landlords' decision to build instead of rely on purchasing existing homes. I show substantial gains from local scale economies, which is offset by increasing costs of acquisition due to the upward sloping supply of existing homes. This implies that after a certain point, BTR offers landlords greater geographic concentration to achieve scale economies and lower acquisition costs compared to purchasing existing homes.

Housing Finance Agency (FHFA) (Federal Housing Finance Agency 2012). These sales reduced the search and transaction costs associated with acquiring individual properties, allowing large-scale landlords to quickly build local scale. Second, the rent-backed securitization market lowered large-scale landlords' financing costs. In 2013, Invitation Homes completed the first-ever CMBS securitization, obtaining loans backed by future rental income streams. Similar securitizations followed, including a 2017 securitization backed by Fannie Mae. These securities provided large-scale single-family rental landlords with cheap capital that neither small-scale landlords nor large-scale landlords before 2013 had access to.[5]

The growth of landlords in neighborhoods that had widely been considered "homeowners' neighborhoods" have generated scrutiny among policymakers across the political spectrum. See for example quotes by JD Vance—"[Corporate landlords] completely crowd out the availability for homes for people who want to just buy a piece of their community"—and by Kamala Harris—"Community after community feels taken advantage of by Wall Street investors and distant landlords" (O'Donnell 2024).

The central concern that has been raised is that large-scale landlords compete with prospective homebuyers to buy homes, making homeownership more difficult to achieve.[6] Senate Bill 3402, End Hedge Fund Control of American Homes Act, would force landlords to sell 10% of their existing portfolio each year until they are fully divested. Senate Bill 2224, Stop Predatory Investing Act, would prohibit landlords who acquire 50 or more single-family homes from claiming interest or depreciation deductions.[7] Similar efforts to regulate large-scale landlords have been made at local levels, with some homeowners associations (HOAs) adopting rental caps that explicitly limit the supply of rental housing at a specific rate (Alvarenga 2024; Parker and Friedman 2024).

---

[5] A related literature studies other classes of real estate investors who share similar features with corporate SFR landlords. One strand of literature studies a broader class of post-crisis corporate investors including speculators and flippers and find that they helped with price recovery (Lambie-Hanson et al. 2022), had positive price spillovers (Ganduri et al. 2023), and are more likely to be buy-and-hold investors as opposed to short-term investors in search of capital gains (Garriga et al. 2023). Another related literature studies out-of-town buyers who drive up prices (Gorback and Keys 2020), displace local residents (Li et al. 2024), and incur welfare losses for renters (Favilukis and van Nieuwerburgh 2021).

[6] I survey recently proposed bills and policies in Appendix Section A.2.

[7] The Kamala Harris campaign backed the Stop Predatory Investing Act. Despite not offering official endorsement, JD Vance advocated for similar regulations, saying that the bill is "pointing in the right direction which is we need to make it harder for institutional buyers" (Rantala 2023).

3.2. *Geographic Concentration Matters*

It is worth noting that there were earlier attempts to institutionalize the single-family rental sector. Between 2003 and 2008, an investment management firm Redbrick Partners acquired hundreds of homes across the United States and rented them (Hagerty 2005). However, within a few years, the company "concluded that it is too costly to manage those homes" and sold off all their properties (Hagerty 2008). Tom Skinner, the company's founder, cited the high costs of owning and managing a geographically scattered set of single-family homes as the reason for this failure, stating that "fixing leaky toilets and other common problems is much more complicated in a diverse array of homes than in an apartment building where fixtures are standard and the manager can walk from unit to unit."[8]

The Redbrick Partners anecdote highlights both the high operational costs associated with supplying rentals in the suburbs, and the potential efficiency gains from geographic concentration. Consistent with this intuition, corporate SFR landlords that I study concentrated their operation geographically. Panels C and D of Figure 1 show the total number of properties acquired by corporate SFR landlords in each ZIP Code from 2012 to 2013 and from 2012 to 2020, respectively. After entering the suburbs of major metropolitan areas in the Southern states between 2012 and 2013 (Figure 1, Panel C), landlords engaged in minimal geographic diversification in subsequent years (Figure 1, Panel D). Instead, they increase concentration in their initial areas of entry or expand radially outward to adjacent locations. Landlord-level regressions confirm this observation. Each additional property acquired by a corporate SFR landlord in a given Census tract predicts the purchase of 0.4 more properties in that Census tract the next year.[9]

---

[8] See also Tom Skinner's interview with Robert Shiller (Mayer and Shiller 2006):

> Robert Shiller: But, strangely, there are very few professionals who invest in single-family homes. Why not? I spoke to Thomas Skinner, managing partner and founder of Redbrick Partners, which, although it bills itself as the biggest institutional investor in and manager of single-family homes in the United States, owns only about 1,000 homes. Skinner told me that about a third of all rentals in the United States are single-family homes, but that virtually all of these are managed by very small mom-and-pop operations. He told me, "It is operationally complex to put together an organization that owns and manages hundreds or thousands of geographically dispersed housing units."

[9] It is *ex ante* unclear whether geographic clustering is the dominant strategy for corporate SFR landlords. On the one hand, clustering limits the financial gains from diversification, reducing landlords' ability to mitigate risks from local housing and labor market shocks. Furthermore, geographic concentration can lead to cannibalization in the rental market. On the other hand, local scale economies arise from geographic concentration. The observed pattern of geographic concentration suggests that corporate landlords value the scale economies

This geographic concentration is associated with operating efficiencies. I use property-level data on operating expenses such as maintenance and property management costs obtained from CMBS prospectuses and find that they decrease in the landlord's local scale. Appendix Figure A.1 shows binned scatter plot of property-level operating expenses against landlord's local scale, controlling for property fixed effects. Property-level operating costs decrease linearly in the landlord's size of operation at the ZIP Code-, the county-, and the city-levels.

Neighborhoods where landlords concentrate their operation previously had few *and* expensive rentals prior to corporate SFR landlord-entry. Panels E and F of Figure 1 show high Census tract-level homeownership rates (i.e., limited rental supply) and low price-to-rent ratios (i.e., rents high relative to home prices) as of 2011, respectively.

Implications for the spatial model. In the spatial model in Section 6, I capture the cross-sectional heterogeneity in equilibrium rental supply and rents (e.g., low supply *and* high prices in the suburbs) by allowing the costs of supplying rental housing to be location-specific. I recover these model unobservables using the quantified model and find that they are indeed high in the suburbs.[10] Also, I model corporate landlords' local scale economies. In Section 7, I show that corporate landlords exhibit high willingness to pay in property acquisitions to achieve geographic concentration and estimate the strength of local scale economies using a revealed-preference approach.

4. Empirical Research Design

4.1. *Estimating Effects on Property and Tenant Characteristics*

I estimate how the entry of corporate landlords affects homeownership and neighborhood demographics, including racial composition and household income using property-

motive over potential gains from diversification. Consistent with this, Invitation Homes, one of the largest corporate SFR landlords, reports that they designed their portfolios to "capture the operating benefits of local density as well as economies of scale that [they] believe cannot be readily replicated," "through disciplined market and asset selection" (Invitation Homes Inc. 2017). Similarly, American Homes 4 Rent states that they "believe that in-house property management enables [them] to optimize rental revenues, effectively manage expenses, realize significant economies of scale, and standardize brand consistency" (American Homes 4 Rent 2019).

[10] A related real estate and housing literature documents and investigates the sources of the time-series and spatial dispersion in homeownership rates and rental yields in the United States (Demers and Eisfeldt 2022; Desmond and Wilmers 2019; Diamond and Diamond 2024; Halket 2024; Kermani and Wong 2024).

level event studies. The empirical challenges are clear. First, landlord entry may be correlated with pre-existing neighborhood-level trends. For example, landlords may have entered neighborhoods with rising rental housing demand and would have had a decline in homeownership regardless of their entry. Second, local housing stock and demographic compositions change over time. Accordingly, aggregate data such as the median household income of a neighborhood mask changes that are due to composition effects.

To address these concerns, I assemble property- and household-level data from housing deeds, rental listings, and address histories. I estimate the direct effects of corporate landlords on property-level outcomes using property-level event studies, while controlling for granular neighborhood trends and composition effects using property fixed effects. I exploit variation in when landlords acquire each property and estimate the following event-study regression.

$$\textit{Characteristic}_{it} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Purchase}_{it}^{k}}_{\equiv \mathbb{1}\{t - \textit{Year SFR Purchased } i = k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Year}} + \epsilon_{it} \quad (1)$$

Years Since SFR Purchase$_{it}$ represents the relative time to the year that a corporate SFR landlord acquires property i. Census tract-year fixed effects $\zeta_{g(i)t}$ control for common neighborhood-level trends. I include property fixed effects α_i to account for unobserved, time-invariant property characteristics.

Identification relies on the parallel trends between the acquired properties and other properties within the same neighborhood, defined as a Census tract: in the absence of a corporate SFR landlords, the characteristics of properties purchased by a corporate landlord (and those of households living in these properties) and other properties would have followed similar trends as those of other properties in the same neighborhood. When this assumption is satisfied, β estimates the direct effects of corporate SFR landlords on property-level outcomes.

4.2. *Estimating Effects on Nearby Incumbents*

I estimate how incumbent households respond to the arrival of new renters, leveraging household-level variation in the exposure to new renters. The variation comes from incumbent households' *ex ante* proximity to properties that are eventually purchased by a corporate SFR landlord and subsequently rented out. I control for neighborhood trends at

the Census tract-level. Conceptually, I compare two households who live in the same neighborhood, but are differentially exposed to new renters because some households happen to live in properties that are physically closer to those targeted by corporate landlords than others. This research design isolates the effects of renter entry from broader neighborhood-wide changes that affect all incumbents, such as changes in school quality, which can also have direct effects on households' neighborhood choice (Bayer et al. 2024).

Leveraging the panel nature of the data, I show that there are no significant "pre-trends." The exposure to new renters affects incumbent households' migration decision only after the renters actually move in. Formally, I estimate a series of cross-sectional regressions of the following form.

$$\mathbb{1}\{\textit{Household Move Out}\}_{it} = \beta \ln \textit{Distance to Nearest SFR}_i + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Time}} + \epsilon_{it} \quad (2)$$

Distance to Nearest SFR$_i$ represents the Euclidean distance between property i and the nearest property acquired by a corporate SFR landlord. I estimate equation (2) separately for each "event" year within a range of years before and after the entry of corporate SFR landlords. $\zeta_{g(i)t}$ is Census tract-year or Census tract-quarter fixed effects, depending on the specification.

To avoid mechanical effects, I exclude households who ever sell to a corporate SFR landlord from the estimation sample. In the baseline specification, I also restrict the sample to households residing in the same property for at least four years prior to the corporate landlord entry. Thus, transitory households do not affect the results and the migration effects are estimated from incumbent households who have belonged to the local community for an extended period.

4.3. *Estimating Neighborhood-level Effects*

Since corporate SFR landlords in my sample rely on purchasing existing homes, the entry of corporate landlords is a negative shock to the supply of owner-occupied housing to prospective homebuyers. At the same time, corporate landlords supply these homes as rentals, shifting out rental supply. This reallocation has parallels with how the entry of Airbnb leads to landlords reallocating homes away from the long-term rental segment to the short-term rental sector (Calder-Wang 2022).

I estimate the procompetitive effects of corporate landlord entry on local prices and rents leveraging a property-level panel of transaction prices and listed rents. Since these effects operate at the housing market-level, they affect prices and rents of all properties in the neighborhood and not just those of properties acquired by a corporate SFR landlord. Accordingly, the estimating equation differs from the property-level event-study regression in equation (1). Instead of the treatment being defined as whether a property is acquired by a corporate SFR landlord, the treatment variable is a binary variable indicating whether the landlord entered the Census tract where the property is located.

$$\ln \textit{Housing Cost}_{ijt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{=\mathbb{1}\{t-\textit{Year SFR Entered } j=k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + \epsilon_{ijt} \qquad (3)$$

Years Since SFR Entry$_{jt}$ represents the relative time to the year that corporate SFR landlords first purchase a property in Census tract j. The dependent variable $\ln$ *Housing Cost*$_{ijt}$ is the log of either sales price or listed rent of property i in Census tract j at time t. To add credibility to the parallel trends assumption, I control for geographic time trends using county-year fixed effects $\zeta_{g(j)t}$. The identification assumption is that in the absence of corporate landlord entry, properties located in Census tracts with landlord entry would have evolved similarly to properties located in other Census tracts.

Identification does not assume random entry of landlords. Instead, the identification assumption is that in the absence of corporate landlord entry, properties located in Census tracts with and without landlord entry would have evolved similarly, conditional on fixed effects and time-invariant *ex ante* covariates. To increase credibility of the parallel trends assumption, I show balance of key covariates, share White households and median household income, between Census tracts where landlords enter in 2012, and those where they do not (Table 1). Although balance of covariates is not required for identification, these checks reinforce confidence that the tracts (or the properties located within the tracts) with and without corporate landlord entry would not have differed systematically in outcomes.

Institutional details support the credibility of the parallel trends assumption. As described in Section 3, corporate landlords were limited in their scope to select specific Census tracts based on anticipated, tract-specific trends. First, corporate landlords initially relied on bulk sales to acquire properties. These often involved pre-packaged pools of properties chosen by the seller (e.g., FHFA), which restricts the landlords' ability to cherry pick spe-

cific properties or Census tracts (Ganduri et al. 2023). Second, once corporate landlords enter a Census tract, they expanded radially outward to adjacent tracts due to the localized nature of scale economies. These strategies differ from approaches that involve selecting neighborhoods in other regions based on pre-existing trends. However, corporate landlords did pick which broad regions to enter, for example, by choosing whether or not to participate in bulk sales. Notably, they did not enter declining regions where they expected a weak demand. This broader region-level selection effects are absorbed by county-level fixed effects in my research design.

The inclusion of property fixed effects α_i controls for time-invariant property characteristics. This is to address the concern posed earlier regarding the changing housing stock composition of a neighborhood over time. This concern is particularly salient when estimating the effects of corporate SFR landlord entry on rents and prices. SFR properties may belong to a higher quality segment compared to existing rental properties in the neighborhood, making inference using aggregate data challenging. For instance, corporate SFR landlords rent out an entire house, unlike some smaller mom-and-pop landlords who may rent out individual rooms in a single-family home or an Accessory Dwelling Unit (ADU) attached to the main property. As a result, corporate landlord entry may raise aggregate median rent mechanically because the median rental property after the entry of corporate SFR landlords is simply a higher quality property than the median rental property before the entry. My approach controls for composition effects and compares the same property over time by including property fixed effects.[11]

It is worth emphasizing why I focus on the procompetitive effects of landlords, and not the direct effects of landlords on rents of the properties they purchase. The goal of this exercise is to estimate how corporate landlords affect local rents and prices, not whether corporate landlords themselves charge higher or lower rents compared to other landlords. I argue that changes in local housing costs are the relevant measures for assessing changes in neighborhood affordability, which is the focus of this study. Moreover, as discussed above, my identification relies on repeated listings of the same property to control for the underlying quality of a property. However, few properties purchased by a corporate SFR landlord are already rentals, leaving only few observations to implement this design on

[11] Using a similar research design that leverages product-level data and market-level treatment, Atkin, Faber and Gonzalez-Navarro (2018) estimate the procompetitive effects of Walmart entry on grocery prices charged by domestic stores.

these properties.[12]

Finally, I show that property-level effects on tenant composition aggregate to neighborhood-level changes. To do this, I implement an event-study design similar to equation (3), but use aggregate data from the ACS at the Census tract-level.

$$\textit{Tract Characteristics}_{jt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{=\mathbb{1}\{t-\textit{Year SFR Entered } j = k\}} + \underbrace{\alpha_j}_{\text{Census tract}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + \epsilon_{jt} \tag{4}$$

Years Since SFR Entry$_{jt}$ represents the relative time to the year that a corporate SFR landlord first acquires a property in Census tract j. County-year fixed effects $\zeta_{g(j)t}$ control for broader geography trends. Identification relies on the conditional parallel trends assumption as in equation (3): absent the entry of corporate SFR landlords, Census tracts with and without the entry, but within the same county, would have exhibited similar trends.

5. Empirical Results

This section presents key empirical results. (1) Corporate SFR landlords cause a large-scale reallocation of homes from the owner-occupied segment to the rental segment (2) enabling financially constrained, younger, and non-White households to move in, which reduces residential segregation. (3) Nearby incumbents sort out of the neighborhood based on their exposure to new renters. (4) Local home prices increase while rents decrease.

5.1. *Reallocation of Owner-Occupied Housing to Rentals ("First-Stage")*

The first step in my analysis is to show that corporate SFR landlords reallocate owner-occupied housing to rentals and decrease local homeownership. In other words, landlord entry is a supply shifter in the rental market. At first, it might seem obvious that landlords reduce the stock of owner-occupied housing when they acquire properties. However, the effect depends on which properties landlords purchase. If corporate SFR landlords primarily acquire properties that are already renter-occupied, their entry changes the identity of the

[12] In addition, corporate SFR landlords often renovate the properties they purchase, installing the same new smart key, heating, and air conditioning systems. These renovations ensure homogeneity across the landlord's portfolio, which gives them cost efficiencies in property maintenance and management in the long run. Accordingly, without knowing the exact costs of the renovations, it is difficult to isolate the effects of corporate SFR landlord entry on rents net of price effects due to changes in the underlying characteristics of a property.

landlords without necessarily affecting the properties' tenancy status. Moreover, landlords may sell their properties back to the market, in which case there will not be a sustained reallocation of homes in the long-run.

I leverage data on the tenancy status of each property and exploit variations in the timing of each property's sale to a corporate SFR landlord. I identify the exact date a property is sold to a corporate SFR landlord using housing transactions data and infer whether a property is owner-occupied or renter-occupied from annual property assessment data. I then estimate equation (1), property-level event-study regression where the dependent variable is a binary variable indicating whether a property is owner-occupied.

Panel A of Figure 2 presents the results. I highlight two key takeaways. First, the negative effects on the owner-occupancy status are large and immediate, indicating that a significant fraction of properties purchased by corporate SFR landlords are converted from owner-occupied to rental properties. Approximately 70% of properties acquired by corporate landlords were previously owner-occupied, implying that these acquisitions result in reallocation of homes to rentals, rather than a mere change in the landlord's identity.[13] Second, the effects persist for at least six years following the sale. This indicates that the properties purchased by a corporate SFR landlord remain in the rental market rather than returning to the homeownership segment. This observation aligns with empirical evidence and institutional background that suggest that corporate SFR landlords are long-term yield investors as opposed to short-term capital gains investors such as speculators and flippers (Garriga et al. 2023).[14]

The conversion of owner-occupied homes to rentals aggregates to neighborhood-level decline in homeownership. I exploit the staggered entry of corporate SFR landlord across neighborhoods and estimate the Census tract-level event-study equation (4). The dependent variable is the homeownership rate from the 5-year ACS.

Panel B of Figure 2 presents the results. Following the entry of corporate SFR landlords, local homeownership declines and the effect persists for at least six years beyond the initial year of entry. This sustained drop in homeownership is consistent with property-level evidence indicating that few properties acquired by corporate SFR landlords are sold back

[13] The gradual decline in homeownership following the discrete jump is likely due to property assessments not occurring annually.

[14] Landlords also often face frictions in selling properties due to FHFA-imposed restrictions on bulk sale acquisitions and rules regarding collateral replacement in Commercial Mortgage-Backed Securities (CMBS) transactions.

to the market.[15] Additionally, there are no significant pre-trends, suggesting that Census tracts with landlord entry were not trending differently from other tracts in the county.[16]

Panel A of Table 2 reports the results pooling all periods after the entry of corporate SFR landlords into a single post-period binary indicator. On average, homeownership decreases by 0.9 percentage point in any Census tract that corporate SFR landlords enter from the baseline 2011 homeownership rate of 67%. Restricting to Census tracts where corporate landlords purchase at least 10 properties, homeownership decreases on average 2 percentage points.

5.2. *In-Migration of Households*

The core of my empirical analysis is understanding how spatial sorting patterns change when owner-occupied homes are reallocated to rentals. I first turn to the in-migration of households. Do the characteristics of households who move into the neighborhood change when more rental housing is made available in the neighborhood?

Black, younger, and financially constrained households move into the properties. To examine the characteristics of households who move in, I leverage property-household-level panel which I construct by merging household address history data with property-level data. From this dataset, I observe the characteristics of tenants residing in each property over time.

The dependent variables are various household characteristics. I infer the race of the head of the household from their name, and construct an indicator variable for whether they are Black. Other characteristics such as the age of the head of the household, household income, and household wealth are estimated by the data vendor as described in Section 2. Combining this information with property-level information, I construct measures that

[15] This evidence further suggests that neither new construction of owner-occupied housing nor the reconversion of rental properties back to owner-occupied status offsets the initial reallocation caused by corporate SFR landlords.

[16] I also estimate a long-difference specification, measuring the change in homeownership from the year prior to any property acquisitions by corporate SFR landlords, 2011, to 2020 against the corresponding change in corporate activity over this period. Note that corporate activity is mechanically zero in 2011.

$$\Delta \textit{Homeownership}_{j,2011-20} = \alpha + \beta \Delta \textit{SFR Share}_{j,2011-20} + \epsilon_j$$

Appendix Figure 2 reports these results, showing that homeownership decreases linearly with corporate landlord activity at the Census tract-level.

indicate whether a household faces financial constraints on homeownership. The Payment-to-Income (PTI) ratio is the monthly mortgage payment relative to household income. Conventional mortgages in the United States often require a PTI ratio at or below 43%. Assuming that households put down 20% of the house price as down payment and finance the rest through debt financing, I construct a binary variable indicating whether the household satisfies this constraint. Another constraint that households face is the down payment constraint: households must have enough liquid wealth to afford the down payment.[17] To capture this margin, I construct home price-to-household wealth ratio.

I estimate equation (1), property-level event studies, and report the results in Figure 3. Panel A of Figure 3 show that households who move into the properties purchased by corporate SFR landlords are two percentage points more likely to be Black compared to the incumbents. Panels B through F of Figure 3 show that the main channel for this in-migration pattern is household financial constraints. Households moving into these rental properties are 30% less likely to have satisfied the conventional PTI limit required to buy the home they live in (Panel B, Figure 3). These households have higher home price-to-household wealth ratio, suggesting that Loan-to-Value (LTV) limit is also more likely to be a binding constraint (Panel C, Figure 3). Consistent with this, the new renters have lower income (Panel D, Figure 3), lower wealth (Panel E, Figure 3), and are younger (Panel F, Figure 3).

Desegregation. The property-level results support the notion that households moving into SFR properties are financially constrained and that demographic characteristics such as race, often serve as strong proxies for financial constraints. Do these property-level effects aggregate up to neighborhood-level changes? To answer this question, I estimate equation (4), Census tract-level event studies, using measures of residential segregation as outcomes.

Panels A through C of Figure 4 present the results. After the entry of corporate SFR landlords, Census tract-level share of non-White households increases (Panel A, Figure 4). This raises White households' exposure to Black households (Panel B, Figure 4). Moreover, White and Black households become more evenly distributed across Census blocks, within the Census tract where landlords enter (Panel C, Figure 4). Panel A of Table 2 report the results pooling all periods after the entry of corporate SFR landlords into a single post-period binary indicator. On average, the non-White share increases by one percentage point in the

[17] To avoid paying for the Private Mortgage Insurance (PMI), households conventionally must put at least 20% of the house price as down payment.

Census tracts where corporate landlords enter and purchase at least 10 properties from the baseline share of 29% in 2011.

Evidence of directed migration. Appendix Figure A.7 shows a binned scatter plot of the median income of the destination Census tract against the median income of the origin Census tract for households who move in. Renters who move into a corporate landlord-owned property move in from neighborhoods with a lower median income compared to other movers. In other words, SFR renters experience a larger increase in neighborhood income upon moving.

Discussion. Results presented in this section show that converting owner-occupied housing to rentals lowers the barriers for financially constrained renters to move to desirable neighborhoods. Households who might otherwise find it difficult to move into the neighborhood because they cannot afford to own move in as renters.[18]

5.3. *Out-Migration of Incumbents*

While the in-migration of households into rental properties is the most direct channel through which rental reallocation affects spatial sorting, equilibrium neighborhood composition also depends on how incumbent households respond to the arrival of new neighbors. In suburban contexts, homeowners' antagonism toward renters is often cited as one of the key drivers of the NIMBY ("Not In My Back Yard") movement, which seeks to limit housing supply through policies such as single-family zoning (Gyourko and McCulloch 2024). Motivated by this, I examine whether incumbent households respond to the arrival of new renters by moving out of the neighborhood all together.

I estimate equation (2) leveraging variation in *ex ante* proximity of incumbent households to properties that are eventually purchased by a corporate SFR landlord and subsequently rented out. Figure 5 reports the results. Households closer to new rental properties move out at a higher rate than other households in the same neighborhood who live farther away. A 1% increase in distance to the nearest SFR property is associated with a 1 percentage point decrease in the likelihood of moving out. This out-migration is not driven by aggregate neighborhood-level changes such as changes in local home prices, which are

[18] Consistent with my findings, a survey of households who live in corporate landlord-owned SFRs shows that suburban amenities such as good schools, and financial constraints on homeownership such as down payment constraints as one of the key reasons why these households rent in the suburbs (Galante et al. 2018).

absorbed in Census tract-by-year or Census tract-by-quarter fixed effects, depending on the specification.

This effect is not mechanically driven by households selling to corporate landlords, as the estimation sample is composed only of households who never sell to a corporate landlord. Moreover, in the baseline specification, I consider only households who have lived in the same neighborhood for at least four years prior to the entry of landlords. Thus, the out-migration effects are estimated from long-term residents who have attachment to the neighborhood.

Prior to the entry of corporate SFR landlords, the distance to properties that would eventually become rentals does not influence households' out-migration decisions. This rules out the possibility that the properties more exposed to the landlords are located in sections of the neighborhood where turnover is already high or is trending up even before the entry of landlords. Results are robust to the specification where I explicitly control for transaction price, suggesting that very local differences in capital gains do not explain the out-migration.

Discussion. The out-migration of incumbents in response to the presence of renters nearby provides supporting evidence to the popular narrative that incumbent households perceive renters as disamenities and seek to curb their entry (Dewan 2013; Diamond and McQuade 2019). This endogenous amenities channel is crucial in understanding the patterns of spatial sorting of renters and homeowners.

5.4. *Equilibrium Procompetitive Effects on Local Rents and Home Prices*

Finally, rental reallocation can affect spatial sorting through general equilibrium changes in local housing costs. Corporate landlords have the opposite supply effects in the owner-occupied market and the rental market. They reduce the supply of homes available for purchase, but shift out the rental housing supply.

I estimate the procompetitive effects of the entry of corporate landlords using property-level data on listed rents and transaction prices. I estimate equation (3) and report the results in Figure 6.

The entry of corporate SFR landlords into neighborhoods where rental supply is previously scant and expensive puts a downward pressure on rent. Landlord entry leads to a moderate decrease in rent (Panel A, Figure 6). At the same time, home prices increase, consistent with widespread concerns that landlords crowd out prospective homebuyers (Panel

B, Figure 6). Panels B and C of Table 2 report the results where I pool all periods after the entry of corporate SFR landlords into a single post-period binary indicator. On average, rents decreases by 2.3% and prices increase by 2.2% in Census tracts where corporate landlords purchase at least 10 properties. Both the rent (1.3% decrease) and price (0.9% increase) effects are more muted when not restricted to Census tracts where corporate landlords purchase at least 10 properties.

Discussion. The result that rents decrease may be surprising given the public discourse around corporate SFR landlords. Critics have argued that landlords exert pricing power and drive up rents. However, despite the local scale achieved by large landlords, the average Herfindahl-Hirschman Index (HHI) at the Census tract-level is below 100, compared to certain Census tracts in New York City where it exceeds 2,500 (Calder-Wang and Kim 2024; Watson and Ziv 2024). This is because the suburban single-family rental sector remains dominated by atomistic landlords, resulting in much lower market concentration than in the urban multifamily sector. Furthermore, large-scale landlords compete with one another. In my sample alone, 23 large-scale landlords compete with one another, resulting in few Census tracts having a single landlord whose market share exceeds 5% of the total rental supply. My results are consistent with the findings in Barbieri and Dobbels (2025) and Coven (2025) who find that the reallocation effects of corporate landlords on local rents (↓) dominate the pricing power effects (↑).[19]

6. A Spatial Model with Segmented Housing Markets

Empirical findings presented in the previous section suggest that changes in home prices and rents alone do not fully capture the welfare and distributional effects of converting owner-occupied homes to rentals. Beyond prices, rental reallocation alters spatial sorting through its interaction with financial constraints and endogenous amenities.

To incorporate the various channels of welfare, I develop a spatial equilibrium model of neighborhoods with segmented ownership and rental markets. On the demand side, the model features households with heterogeneous initial wealth who sort into neighborhoods while facing financial constraints on homeownership. Homeowners prefer to live near other

[19] Gurun, Wu, Xiao and Xiao (2023) find that increased market concentration resulting from mergers of corporate SFR landlords leads to higher rents. They attribute part of this to potential improvements in neighborhood amenities, such as reduced crime.

homeowners and endogenously respond to changes in neighborhood demographic composition. On the supply side, landlords provide rental housing while facing neighborhood-specific costs. Corporate landlords benefit from economies of scale by operating a large number of rental properties, which affords them cost efficiencies relative to individual mom-and-pop landlords. However, they encounter increasing marginal costs of expanding within a neighborhood due to the upward sloping supply of existing homes.

6.1. *Setup*

Neighborhoods are indexed by $j \in \{1, \ldots, J\}$. Each neighborhood contains two types of housing differentiated by tenure $h \in \{\underline{o}wn, \underline{r}ent\}$. The total housing stock in neighborhood j is fixed, but the tenure composition is endogenously determined such that ownership stock H_{jo} and rental stock H_{jr} stock sum up to $\bar{H}_j$. Households, indexed by ω, are heterogeneous in their initial endowment m^ω, drawn from an exogenous, economy-wide wealth distribution $\Phi(m)$. Thus, the initial distribution of households across the wealth spectrum, $L(m)$, forms the total population $\bar{L} = \int_m L(m)\ dF(m)$. Two types of absentee landlords supply rental housing: a mass of atomistic landlords indexed by ι and a large-scale, global landlord indexed by g.

The model features two stages. At the start of the first stage, absentee property owners are each endowed with one unit of housing. They maximize returns by deciding between selling the property to a household and renting it out and becoming a landlord. Because these landlords are tethered to their property, I refer to them as "local" landlords although they are absentee by design. Households consume one unit of housing in their chosen location and housing tenure pair.

In the second stage, a representative corporate landlord enters the housing market unexpectedly. This corporate landlord differs from atomistic local landlords in that they can own more than one property and operate in multiple locations. I refer to this landlord as the "global" landlord. The global landlord does not have an initial endowment of homes, so they must acquire existing homes from incumbent owners. Acquiring more homes benefits landlords through local scale economies. Operating costs decrease in the size of the landlord's rental portfolio within each location. However, property acquisition costs increase with scale and the global landlord faces increasing marginal market penetration costs. This is because incumbent owner heterogeneity generates upward sloping supply of existing

homes. Weighing these benefits and costs associated with scaling up, the global landlord optimally determines the scale of its rental portfolio in each location. Thus, in the second stage, rental housing is supplied by both local atomistic landlords and the global landlord. Households and local landlords re-optimize in response to the unanticipated entry of the global landlord.[20]

6.2. *Key Elements of the Model*

I begin by describing the key elements of housing demand and supply in the model: financial constraints on homeownership for households and location- and landlord-scale-specific operating costs.

Financial constraints on homeownership. Financial constraints limit households' ability to own a home. Household ω can only own in neighborhoods where their initial endowment m^{ω} is at least a certain fraction of the local house price p_{jo}.[21] Specifically, the set of neighborhoods where a household with endowment m can choose to become a homeowner, $\mathcal{O}(m)$, is endogenously determined by local house price p_{jo}, endowment m, and an exogenous parameter θ that determines the stringency of financial constraints on homeownership.

$$\mathcal{O}(m) = \{j : m \geq (1-\theta)p_{jo}\} \tag{5}$$

There is no explicit constraint on renting. Then, the set of location-tenure pairs (j, h) that a household with endowment m can choose from, $\mathcal{I}(m)$, is the union of neighborhoods where they can own a home and those where they can rent.

$$\mathcal{I}(m) = \{(j, o) : j \in \mathcal{O}(m)\} \cup \{(j, r) : j \in \{1, \ldots, J\}\} \tag{6}$$

Local scale economies in rental supply. Landlord ι incurs an *ad valorem* iceberg operating cost c_j^{ι} that is composed of a location fundamental term $\bar{c}_j$ and a component that depends on the landlord ι's local scale H_j^{ι}, the total number of properties that the landlord owns in

[20] The model features a single global landlord, abstracting from competition among large-scale landlords.
[21] This restriction resembles a down-payment constraint or a Loan-to-Value (LTV)" limit, which is a significant barrier for many prospective homebuyers. In a survey of single-family rental tenants, 64% reported that the inability to afford a down payment and closing costs was their main barrier to homeownership, compared to other factors such as low credit scores (52%) (Galante et al. 2018). See also Goodman, McCargo, Golding, Bai and Strochak (2018).

j.

$$c_j^\iota(H_j) = \bar{c}_j \cdot (H_j^\iota)^{-\mu} \tag{7}$$

$\mu \in [0, 1)$ governs the extent to which operating costs decrease with local scale, capturing the strength of local scale economies in rental supply. This formulation is motivated by the descriptive evidence of local scale economies, which I describe in Section 3.2.

6.3. *The Economy Before the Global Landlord Entry*

In stage 1, households choose where to live and whether to own or rent. Housing is supplied entirely by atomistic absentee property owners who decide whether to sell their property to a prospective homeowner or rent it out to renters. This is the initial state of the economy before the global landlord-entry. I describe the households' and property owners' choice problems. I suppress stage superscripts for simplicity.

Households. Household ω with initial endowment m^ω chooses where to live (j) and whether to own or rent (h) by paying for one unit of housing p_{jh} to maximize their indirect utility.

$$v_{jh}^\omega = B_{jh}(w_j + m^\omega - p_{jh})\eta_{jh}^\omega \tag{8}$$

Location-tenure pair (j, h) provides location-tenure-specific amenities B_{jh}, wage w_j, and idiosyncratic amenities η_{jh}^ω. The difference between homeownership amenities B_{jo} and rental amenities B_{jr} captures households' preferences for homeownership relative to renting in location j. This formulation allows households to derive non-pecuniary benefits from homeownership that are location-specific.[22]

Amenities B_{jh} consist of a fundamental term $\bar{B}_{jh}$ and an endogenous component that depends on the tenure composition of the neighborhood. This is motivated by the empirical findings in Section 5.3 showing the out-migration of incumbent households in response to

[22] Popular narratives suggest that these benefits may be substantial. In a recent survey, 89% of Americans responded that "owning a home is either essential or important to their vision" of achieving the "American dream" (Wolfe 2024). See also Goodman and Mayer (2018).

incoming renters.

$$B_{jh} = \bar{B}_{jh} \cdot \left(\frac{L_{jh}}{L_{jh^-}} \right)^{\rho} \tag{9}$$

L_{jh} is the total number of households who have the same housing tenure status and L_{jh^-} is that of households with the opposite housing tenure. ρ captures households' homophily preferences.[23] Idiosyncratic preferences η^{ω}_{jh} are distributed type-II extreme value with shape parameter $\nu > 1$. The scale parameter is normalized to 1, as it simply enters multiplicatively with B_{jh}.

Extreme value preference shocks yield a straightforward expression for the equilibrium share of households with endowment m who choose location-tenure (j, h).

$$\lambda_{jh}(m) = \frac{(B_{jh}(w_j + m - p_{jo}))^{\nu}}{\sum_{(k,s)\in\mathcal{I}(m)} (B_{ks}(w_k + m - p_{ks}))^{\nu}} \tag{10}$$

With unit housing demand, the aggregate housing demand H^D_{jh} given by integrating wealth-specific housing demand over the household wealth distribution equals total population L_{jh}.

$$H^D_{jh} = \int_m H^D_{jh}(m)\, dF(m) = L_{jh} \qquad H^D_{jh}(m) = \lambda_{jh}(m) \cdot L(m) = L_{jh}(m) \tag{11}$$

Atomistic property owners and landlords. In stage 1, all landlords are atomistic property owners who are endowed with exactly one unit of housing. Thus, landlords in j all face the same operating cost $\bar{c}_j$ if they choose to become a landlord.[24] However, property owner ι has heterogeneous idiosyncratic productivity in rental provision ϵ^{ι}_j which enters the rental returns R^{ι}_j multiplicatively.

$$R^{\iota}_j = \frac{p_{jr}}{c^{\iota}_j} \epsilon^{\iota}_j \tag{12}$$

[23] Homophily preferences for tenure status may be driven by socioeconomic characteristics that are proxied by a household's tenure status such as their level of education (Diamond 2016), race (Bayer et al. 2024), and political affiliations (McCartney et al. 2024). However, I do not impose any restriction on the sign of ρ in both theory and the quantitative model. $\rho < 0$ would imply reverse-homophily.

[24] The local landlord's operating cost is a special case of the global landlord's cost function: $\bar{c}_j \cdot (1)^{-\mu} = \bar{c}_j$. Similarly, if $\mu = 0$, there are no returns to scale, and the global landlord faces the same costs as atomistic landlords: $\bar{c}_j \cdot (H_j)^0 = \bar{c}_j$.

Property owner ι can either sell their property to a homeowner or rent it out and become an absentee landlord. And so, property owner ι makes a discrete choice between selling their property at price p_{jo} or renting it out and earning R_j^ι. Assuming ϵ_j^ι follows a type-II extreme value distribution with shape parameter κ, the total rental supply provided by atomistic landlords is expressed as the following.

$$H_{jr}^{S,local} = \underbrace{\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa + 1}}_{\equiv \pi_{jr}^{local}} \cdot \bar{H}_j \tag{13}$$

Market clearing in stage 1. The equilibrium in stage 1 is given by the vector of home prices and rents, $\mathcal{P} = \{p_{jo}, p_{jr}\}$, consisting of $2 \times J$ unknowns that clear the ownership and rental markets between households and landlords, resulting in $2 \times J$ equations.

Definition 1. *Given parameters $\{\theta, \nu, \rho, \kappa, \mu\}$, location characteristics $\{B_{jh}, w_j, \bar{c}_j, \bar{H}_j\}$, and an exogenous wealth distribution $\Phi(m)$, a spatial equilibrium of the model is a distribution of location and tenure choice by endowment $\{H_{jh}^D(m)(\mathcal{P})\}$, landlords' housing supply $\{H_{jh}^{S,local}(\mathcal{P})\}$, and housing costs $\mathcal{P} = \{p_{jo}, p_{jr}\}$ such that: (1) households choose the location and tenure pair (j, h) that maximize their utility; (2) atomistic property owners make an optimal investment decision; (3) rental markets clear; (4) homeownership markets clear; and (5) local population sums up to total population.*

I reproduce the equilibrium equations in Appendix Section D.1.

6.4. *The Economy After the Global Landlord Entry*

At the beginning of stage 2, a representative global landlord enters the economy unexpectedly, taking the stage 1 equilibrium as given. I index the global landlord by g.

Representative global landlord. Since the global landlord starts out without any property endowment, it must acquire existing properties from incumbent owners, i.e., stage 1 homeowners and local landlords. The costs of acquiring properties constitute the global landlord's market penetration costs (Arkolakis 2010).

The global landlord faces increasing marginal market penetration costs because heterogeneities across incumbent property owners generate upward sloping supply of existing

homes. For the global landlord to acquire more properties in neighborhood j, they must buy from either incumbent homeowners with stronger idiosyncratic preferences ν_{jo}^{ω} for the neighborhood or local landlords who have a higher idiosyncratic profitability ϵ_j^{ι}. To induce more inframarginal incumbent owners to sell, the corporate landlord must pay increasingly higher prices. In Appendix Section D.2, I describe the model structure underlying these increasing costs.[25]

Let $p_j(h^g)$ be the marginal cost of acquiring the h^g-th property in the global landlord's rental portfolio in j. Increasing marginal market penetration cost implies the following.

$$mpc_j(h^{g'}) > mpc_j(h^g) \geq mpc_j(1) = p_{jo} \;\; \forall \; h^{g'} > h^g \tag{14}$$

The global landlord chooses the number of properties to acquire H_j^g that maximizes their profits $\Pi_j^g(H_j^g)$, balancing increasing marginal market penetration costs against operational scale benefits of scale.

$$H_j^{g^*} = argmax_{H_j^g} \, \Pi_j^g(H_j^g) = H_j^g \cdot \frac{p_{jr}}{\bar{c}_j \cdot (H_j^g)^{-\mu}} - \sum_{h=1}^{H_j^g} mpc_j(h) - F_j \tag{15}$$

F_j is location-specific fixed cost of entry. A high F_j can prevent landlord entry where even the optimal scale would yield negative profits.[26] Solving the global landlord's profit maximization problem yields an equation that links the landlord's scale to endogenous acquisition prices and the strength of returns to local scale in rental supply.[27]

$$H_j^{g^*} = \left(\frac{mpc_j(H_j^{g^*}) \cdot \bar{c}_j}{p_{jr}} \cdot \frac{1}{1+\mu} \right)^{\frac{1}{\mu}} \Leftrightarrow mpc_j(H_j^{g^*}) = (1+\mu) \cdot \left(\frac{p_{jr}}{\bar{c}_j} \right) \cdot (H_j^{g^*})^{\mu} \tag{16}$$

Market clearing in stage 2. The equilibrium in stage 2 is characterized by the vector of home prices, rents, and the global landlord's acquisition prices, $\mathcal{P}^2$, consisting of $3 \times J$ unknowns. These prices jointly clear the "re-sales" market between stage 1 incumbent

[25] Increasing marginal market penetration cost limits the global landlord's ability to expand.

[26] The "shock" that leads to corporate SFR landlord entry in the model is a negative shock to the fixed cost of entry. This is motivated by the evidence I present in Section 3 that the bulk sales of geographically concentrated properties following the foreclosure crisis facilitated partially through the 2012 FHFA REO-to-Rental pilot program and cheap capital supplied through the CMBS market starting 2013 made it easier and cheaper for corporate SFR landlords to build initial scale.

[27] See Appendix Section D.2.

owners and the representative global landlord and the stage 2 ownership and rental markets between households, local landlords, and the global landlord, yielding $3 \times J$ equations.

I state the equilibrium definition, and reproduce the equilibrium equations in Appendix Section D.4. Additional details on model predictions and comparative statics are provided in Appendix Section D.5.

7. Estimating Strength of Local Scale Economies in Rental Supply

I estimate the model parameters in two steps. First, I estimate μ, which governs the strength of local scale economies. Second, I estimate the remaining parameters using GMM.

In this section, I describe how I estimate μ using a revealed-preference approach and present the results. I derive a model-consistent estimating equation that relates μ to landlords' willingness to pay to expand. I then estimate landlords' willingness to pay for new property acquisitions using a repeat-sales design. I describe the estimation procedure for the remaining parameters in Section 8.

7.1. *Estimating Equation*

The model yields an intuitive estimating equation that directly relates μ to the corporate SFR landlords' endogenous market penetration cost. I derive equation (17) from the corporate landlord's optimization problem equation (16).[28]

$$\ln mpc_j^\iota(H_j^\iota) - \ln \underbrace{mpc_j^\iota(1)}_{=p_{jo}} = \mu \ln H_j^\iota \tag{17}$$

This equation relates the endogenous price premium μ that landlord g pays to acquire properties and achieve local scale H_j^g relative to the market price. The intuition is that the larger the operational gains from local expansion (i.e., a large μ), the larger the incentives for corporate SFR landlords to expand and vice versa.

---

[28]

$$\begin{aligned} \ln mpc_j^g(H_j^g) &= \mu \ln H_j^g + \alpha_j \\ \ln mpc_j^g(1) &= \mu \ln 1 + \alpha_j \\ \ln mpc_j^g(H_j^g) - \ln mpc_j^g(1) &= \mu \ln H_j^g \end{aligned}$$

7.2. *Estimating Landlords' Willingness to Pay Using a repeat-sales Design*

I estimate μ based on landlords' revealed willingness to pay to expand their local scale. I begin by estimating corporate SFR landlords' *average* willingness to pay. To do so, I leverage repeated sales of a property. The research design controls for unobserved property characteristics using property fixed effects, in addition to a rich set of observed hedonics and local housing market trends.

$$\ln \textit{Price}_{ist} = \beta \textit{SFR Buyer}_{ist} + \underbrace{\underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}}}_{\equiv \chi_{it}} + \epsilon_{ist} \tag{18}$$

SFR Buyer$_{ist}$ is a binary variable indicating whether the buyer of property i in transaction s occurring in time t, is a corporate SFR landlord. Property fixed effects α_i control for time-invariant characteristics of property i (e.g., whether the house is south-facing). Hedonic-time controls account for time-varying property characteristics (e.g., a garage renovation) not captured by property fixed effects, as well as changes in the market value of the same characteristic over time (e.g., the higher value that a large garage which can double as a home office has in 2020 compared to 2012). Lastly, I control for geography-specific trends using fixed effects at various levels, ranging from the ZIP Code-year-level to the street-month-level.

The identifying assumption is that conditional on controls and geography-time fixed effects, the identity of the buyer, *SFR Buyer*$_{ist}$, does not correlate with unobserved characteristics of the transaction that also affect prices. When this assumption holds, equation (18) identifies the parameter of interest β, the percent price premium that corporate SFR landlords pay to acquire properties.

A threat to identification is unobserved transaction or property characteristics ϵ_{ist} that correlate with both transaction prices and whether the buyer is a corporate SFR landlord. For unobserved characteristics to pose a threat to identification, such features must be time-variant, omitted from the set of hedonics already included in the model, and cannot be common local market trends. Otherwise, they are controlled for by property fixed effects, hedonic-time fixed effects, and geography-time fixed effects, respectively. One such scenario is when corporate landlords are particularly good at identifying properties that are *momentarily* in a good shape due to unobserved factors (e.g., the current tenant took great

care of the lawn). In Appendix Section C.1, I discuss this hypothesis and show evidence suggesting that such bias is unlikely.

Next, I bring equation (17) to the data and estimate μ. I extend equation (18), the baseline repeat-sales regression, and leverage time-variation in a landlord's scale within a neighborhood.

$$\ln \textit{Price}_{islt} = \mu \textit{Local Scale}_{slg(i)t} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\alpha_l}_{\text{Landlord}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}} + \epsilon_{islt} \quad (19)$$

Local Scale$_{slg(i)t}$ is a time-varying measure of the landlord's local portfolio size, defined as the size of landlord l's rental portfolio in location $g(i)$ at the time property i is acquired in transaction s. The coefficient μ represents the price premium that corporate SFR landlords pay to expand in the local market.

7.3. *Estimation Results*

I estimate equation (18), the baseline repeat-sales design, and report the results in Table 3. Across a range of specifications that incorporate geography-by-time fixed effects at various levels, I consistently find that corporate SFR landlords pay an approximately 9% premium over other buyers. In the baseline specification, which includes property fixed effects, hedonic-time controls, and ZIP Code-year fixed effects, the corporate landlord premium is 10.4% (Column 2, Table 3). In the most restrictive specification, which includes street-month fixed effects, the premium is slightly attenuated to 8.7% (Column 6. Table 3). The R^2 is consistently high, ranging from 86.2% to 96.3%.

The sign and the magnitude of the observed purchase premium are surprising for two reasons. First, corporate SFR landlords are "all cash" buyers from the perspective of home sellers, and existing research shows that cash buyers pay on average 11% *discount* compared to mortgaged buyers (Reher and Valkanov 2024).[29] Second, corporate SFR landlords often rely on algorithms to identify and price properties they purchase (Invitation Homes Inc. 2021; Raymond 2024). Existing literature studies *iBuyers* who rely on similar algorithms and find that they pay a 4% *discount* (Buchak et al. 2022).[30] By extension of logic, these

[29] Reher and Valkanov (2024) attribute this finding to home sellers' aversion to uncertainties associated with mortgaged offers. Corporate SFR landlords also often use commercial mortgages and are not true cash buyers, but they do not pose a similar transaction risk that buyers with a conventional residential mortgage pose.

[30] In Appendix Section C.1, I show that the corporate SFR landlords' purchase premium is robust to controlling

results suggest that corporate SFR landlords are expected to acquire properties at a discount not a premium.

Nevertheless, the 9% premium paid by corporate SFR landlords is consistent with anecdotal evidence from the industry. In an interview, a director at a major corporate SFR landlord expressed that they are willing to pay 10% above market price for properties "in [their] buy box" (Jodka 2022).[31] This anecdote also highlights what drives corporate landlords' high willingness to pay. Landlords have sticky preferences, and are willing to pay a high price and to acquire properties where they want them.

I estimate landlords' willingness to pay to expand using equation (19) and report the results in Table 4. In the preferred specification, doubling landlords' local scale at the Census tract-level is associated with a 0.9% additional price premium (Column 1, Table 4). This result suggests that a landlord who operates 50 properties has profits that are approximately 4% larger than the profits of 50 atomistic landlords combined. Using non-parametric bins for landlord scale instead of a continuous measure yields similar results. The price premium associated with the first 50 purchases are not statistically significantly different from zero (Columns 3 and 4, Table 4). The premium is significant and progressively more positive in each subsequent bins of purchase.

These findings rule out misinformation as a potential driver of the corporate SFR landlords' purchase premium. If landlords "overpay" because they are misinformed about the underlying collateral value, the price premium should disappear as the landlord expands in the neighborhood and gain more local expertise, rather than growing larger over time.[32]

Returns to local scale diminish with the geographic dispersion (i.e., the distance between properties) of a landlord's portfolio. Column 2 of Table 4 report results for the same regression where landlord scale is defined at the ZIP Code-level, a larger geographic unit than a typical Census tract. The price premium associated with the continuous scale measure is 0.4%, less than half of the baseline Census tract-level estimate. The purchase premium

---

for cash purchases and in subsample analyses limited to non-distress sales and properties never involved in distress sales.

[31] The "buy box" is an industry term used to specify properties within an investor's target in terms of locations and property characteristics.

[32] Corporate landlords who are out-of-town investors may overestimate property values by failing to account for local factors (Chinco and Mayer 2016). However, results showing that the purchase premium increases with landlords' local scale, a proxy for prior exposure to and experience in the local market, suggest that adverse selection or misinformation is unlikely to explain their "overpayment." I discuss the misinformation channel in more detail in Appendix Section C.1.

estimated using non-parametric bins is also smaller, though it also increases with landlord scale, consistent with the Census tract-level results (Columns 5 and 6, Table 4). Overall, the premium associated with Census tract-level scale is three times larger than that with ZIP Code-level scale.

8. Model Quantification and Estimation

In this section, I describe how I quantify and estimate the rest of the model. I externally calibrate a subset of parameters using empirical moments and values from existing literature. Then, I estimate the remaining model elasticities using structural equations derived from the model. This step also involves recovering structural residuals that rationalize the data as an equilibrium of the model through the model inversion procedure.

8.1. *Inputs to the Quantitative Model and Calibration*

I obtain data on local population L_{jh}, income w_j, and housing costs p_{jh} from the 5-year ACS. The unit of geography j is a Census tract. Consistent with my reduced-form analyses, I use data for all Census tracts within Florida, Georgia, North Carolina, and South Carolina. Households' wealth distribution $\Phi(m)$ is calibrated from the 2013 SCF by forming 100 equal sized bins of wealth. I leverage household-level information about housing wealth to infer homeownership rates across the household wealth distribution and use it to validate the model.[33] θ captures the stringency of financial constraints on homeownership. I calibrate $\theta = 0.8$ to match the LTV requirement for conventional mortgages in the United States.[34] ν governs the dispersion in households' idiosyncratic preferences for housing markets and captures the sorting elasticity of housing demand.[35] I calibrate $\nu = 3.0$ following Couture, Gaubert, Handbury and Hurst (2024).

8.2. *Estimation and Model Inversion*

I estimate the remaining elasticities ρ and κ using GMM. The model inversion procedure that recovers location-tenure-specific amenities B_{jh} and costs of supplying rental housing

[33] I describe the procedures for normalizing the "stock" (m, p_{jo}) and the "flow" (w_j, p_{jr}) variables in Appendix Section D.6.
[34] This replicates how conventional mortgages require households to put down a down payment of at least 20% of the home price to avoid insurance costs.
[35] The unit housing demand assumption yields non-homotheticities in housing demand.

$\bar{c}_j$ is intertwined with model estimation. First, the estimation of the strength of endogenous amenities ρ takes the vector of amenities B_{jh} as input. Second, the vector of $\bar{c}_j$ depends on the estimated κ. I first discuss estimation steps for ρ and κ, and describe the model inversion procedure afterwards.

Estimating ρ and κ using GMM. Homophily preferences parameter ρ captures the strength of endogenous sorting of homeowners and renters in response to changes in neighborhood tenure composition. I take double-differences of equation (9) and derive the following linear estimating equation.

$$\Delta \ln \left(\frac{B_{jo}}{B_{jr}} \right) = \underbrace{\Delta \ln \left(\frac{\bar{B}_{jo}}{\bar{B}_{jr}} \right)}_{=0} + 2\rho \Delta \ln \left(\frac{L_{jo}}{L_{jr}} \right) + X_j \beta + \Delta \epsilon_j \tag{20}$$

The Δ-notation denotes relative change ($\Delta \ln x \equiv \ln \frac{x'}{x}$). The first difference (ΔB_{jh}) is with respect to time and the second difference ($\frac{B_{jo}}{B_{jr}}$) is with respect to housing tenure. Fundamental amenities ($\bar{B}_{jh}$) are assumed to be time-invariant and cancel out from time-differencing. And so, the resulting variation in location-tenure amenities across two equilibria are attributed to changes in the tenure composition.

The shape parameter κ of atomistic local landlords' idiosyncratic profitability distribution governs the elasticity of relative rental supply with respect to relative rents (i.e., rental yield). Intuitively, κ measures the slope of the tenure supply curve, i.e., how elastically landlords reallocate owner-occupied housing to rentals in response to changes in rental yield $\frac{p_{jr}}{p_{jo}\bar{c}_j}$. I derive the odds ratio from equation (13) which yields the following estimating equation.

$$\Delta \ln \left(\frac{\pi_{jr}^{local}}{1 - \pi_{jr}^{local}} \right) = \kappa \Delta \ln \left(\frac{p_{jr}}{p_{jo}} \right) + X_j \beta + \Delta \epsilon_j \tag{21}$$

The first difference (Δ) is with respect to time, and $\bar{c}_j$ drops out of the equation.

The main identification challenge for estimating ρ and κ is reverse causality. For example, homeowner share in j may change *because* of unobserved changes in the relative attractiveness of owning of a home there $\Delta \epsilon_j$, not the other way around. However, such shocks must differentially affect the attractiveness of owning and renting. Because of second differencing, shocks that affect both homeownership and rental amenities do not pose a

threat to identification. Similarly, rental yield $\frac{p_{jr}}{p_{jo}}$ is an endogenous outcome of supply and demand and can change due to changes in quantity $\frac{\pi_{jr}^{local}}{1-\pi_{jr}^{local}}$.

To overcome this challenge, I use a neighborhoods' exposure to corporate SFR landlords as instrument to obtain plausibly exogenous variation in housing tenure composition and rental yield. The underlying idea for the identification of ρ is that corporate landlords shift the composition of homeowners and renters in a neighborhood independent of unobserved demand factors. Similarly, the entry of corporate landlords negatively affects the profitability of local atomistic landlords by pushing up local home prices and lowering rents, but not other factors that may affect the productivity of local landlords and their returns. This provides variation to identify κ.

I estimate the parameters using the two-step GMM estimation. The moment conditions are as follows.

$$\mathbb{E}\left[Z_j \times \Delta\epsilon_j\right] = 0 \qquad\qquad Z_j \in \begin{Bmatrix} \mathbb{1}\{\textit{SFR Entry}\}_j \\ \textit{SFR Exposure}_j \end{Bmatrix} \tag{22}$$

$\mathbb{1}\{\textit{SFR Entry}\}_j$ is a binary variable for whether a corporate landlord enters j. $\textit{SFR Exposure}_j$ is j's exposure to corporate landlords as defined as the total number of properties acquired by the landlords, relative to the total number of properties in 2011. The validity of the instruments relies on its relevance and exogeneity conditional on additional fixed effects. Reassuringly, event-study analyses show a lack of pre-trends in $\Delta\frac{B_{jo}}{B_{jr}}$ prior to the entry of corporate SFR landlords, but a sharp change afterwards.

I present the results in Table 5. I estimate the strength of endogenous amenities with respect to housing tenure $\rho = 0.130$ and the elasticity of rental conversion with respect to rental profitability $\kappa = 1.849$. To the best of my knowledge, both of these parameter estimates are new to the literature.

Recovering B_{jh} and $\bar{c}_j$ through model inversion. Amenities B_{jh} are structural residuals of the model that rationalize the location-tenure distribution of households, L_{jh}, observed in the data. With data and calibrated parameters in hand, I use the structure of the model to invert out B_{jh}.[36] To find $\{B_{jh}\}$, I begin with a guess of $\{\tilde{B}_{jh}\}$ and employ the iterative process described in Appendix Section D.7. Note that recovering these composite amenities

[36] See Appendix Section D.7 for details.

does not require pinning down the value of ρ.

Location-specific costs of rental supply $\bar{c}_j$ rationalize the housing stock composition observed in the data. It can be inverted out directly from observed prices and quantities using equation (13). I use data from the economy prior to the entry of corporate SFR landlords (2011) and use the baseline estimate of κ.

$$\bar{c}_j = \left(\frac{H_{jr}^{S,local}}{\bar{H}_j - H_{jr}^{S,local}} \right)^{-\frac{1}{\kappa}} \cdot \frac{p_{jr}}{p_{jo}} \tag{23}$$

Discussion. The recovered model unobservables reveal two key insights. First, non-pecuniary benefits of homeownership, B_{jo} relative to B_{jr}, are substantial. On average, the amenities associated with homeownership are 30% greater than those associated with renting in the same location. This finding helps rationalize survey evidence showing that most Americans prefer owning to renting and broad public approval of policies that promote homeownership such as down payment subsidies (Elmendorf et al. 2024). Furthermore, this result is consistent with prior literature that finds that households prefer homeownership for various non-financial reasons (Glaeser and Shapiro 2003; Goodman and Mayer 2018).

Second, the recovered location-specific costs of supplying rentals imply that operating a rental business is costlier in the suburbs than in urban areas. Specifically, costs in the suburban neighborhoods where corporate SFR landlords enter are on average 20% larger than those in other neighborhoods. This suggests that *ex ante* scarcity of rental housing and the high rents in the suburbs observed in the data are partially driven by the high costs for landlords.

8.3. *Model Validation*

I test whether the estimated model replicates key facts about the U.S. housing markets and neighborhoods. Table 6 summarizes model unobservables and parameter estimates that I choose for my baseline specification of the quantitative model. The model successfully matches two strands of untargeted moments that are central to this paper. First, households with little wealth have limited housing wealth (Campbell 2006). The SCF data show that households who belong to the bottom twenty percentile of the wealth distribution have nearly zero housing wealth. The model replicates this fact (Panel A, Figure 7). Second, the model replicates the key spatial sorting pattern observed in the data: wealthy households

disproportionately live in expensive neighborhoods. In both the data (SCF 2011) and the model, the elasticity of house price with respect to household wealth is 0.46.

9. Distributional Effects of Rental Reallocation

Using the estimated model, I evaluate the welfare and spatial consequences of the entry of corporate SFR landlords and counterfactual housing policies. I find that rental reallocation is progressive, benefitting low-wealth households. However, middle-wealth households are the main losers. They are priced out of homeownership and lose access to its non-pecuniary benefits. Policies that limit rental supply disproportionately hurt low-wealth households who predominantly rent because they face binding financial constraints on homeownership.

The spatial framework yields the following expression for representative utility of households with endowment m.

$$V(m) = \left(\sum_{(k,s)\in\mathcal{I}(m)} (\underbrace{B_{ks}(w_k + m - p_{ks})}_{\equiv u_{ks}})^{\nu} \right)^{\frac{1}{\nu}} \tag{24}$$

The change in expected utility ($\frac{V'}{V}$) can be decomposed into two components: (1) changes in the cost-of-living and neighborhood characteristics among neighborhoods where households have access to in both the initial and the new equilibria; (2) changes due to an expansion or contraction of households' choice set due to price changes.[37]

9.1. *The Impacts of Corporate SFR Landlords*

I simulate the entry of corporate SFR landlords as a negative shock to the local cost of rental supply, consistent with the evidence on operational gains that large-scale landlords achieve from local scale. I calibrate the scale of the shock by what is implied by the observed scale of corporate-landlord activity across different neighborhoods given the estimated μ. I describe the algorithm for solving for the counterfactual equilibrium in Appendix Section D.8.

[37] To allow for incumbent households to gain from house price appreciation, I consider an extension where local home price changes are rebated back to homeowners (Couture et al. 2024). See Appendix Section D.8 for details.

Homeownership. Panel B of Figure 7 shows overall decline in homeownership across the household wealth distribution after the entry of corporate landlords. This effect is particularly concentrated among lower-middle-wealth households who experience a 1.6 percentage point decline in homeownership on average. This group of households is most likely to be constrained by financial barriers to homeownership, even with small changes in house prices (i.e., "marginal homebuyers"). Corporate SFR landlords reduce homeownership supply and raise prices, pricing out these prospective homebuyers.

Low-wealth households experience zero to minimal changes in their access to homeownership. This is because they are unable to afford homeownership even in the absence of corporate SFR landlords due to insufficient wealth. These households are "always renters" due to severe financial constraints.

Spatial sorting. Panels C and D of Figure 7 highlight the spatial consequences of corporate SFR landlords. The increase rental housing supply allows low-wealth households to move into high-amenity neighborhoods (Panel C, Figure 7) predominantly as renters (Panel D, Figure 7). This finding is consistent with the empirical findings in Section 5.2 showing that financial constraints on homeownership prevent renters from moving to high-amenity suburbs, and that increasing rental housing supply reduces barriers to moving to desirable neighborhoods.

Welfare. Panel E of Figure 7 presents the welfare consequences of the entry of corporate SFR landlords. Low-wealth, always-renter households experience a 0.9% increase in welfare due to lower rents and from sorting into higher-amenity neighborhoods. However, the middle-wealth households who are marginally eligible to afford a home suffer a welfare loss from being priced out of the neighborhood they prefer to live in. Because of non-pecuniary benefits of homeownership, most of these households own in other cheaper, less preferred neighborhoods. Wealthy households who are relatively price-insensitive still suffer due to endogenous dispreferences for neighboring renters.

Panel F of Figure 7 shows the welfare results from a counterfactual exercise where I rebate capital gains from house price appreciation back to the homeowners. Capital gains reverse the fortune for lower-middle-wealth households. Incumbent homeowners benefit from the higher home prices, which offset the negative welfare effects of prospective homeowners being priced out of the homeownership market. For high-wealth households,

capital gains from house price appreciation similarly attenuate their welfare loss, but negative spillovers from renter neighbors still incur a welfare loss.

9.2. *The Impacts of Counterfactual Policies that Restrict Rental Supply*

Finally, I use the model for policy evaluation. I simulate two forms of rental restriction policies. Rental cap policies set an upper limit on the fraction of rental housing that can be supplied in the neighborhood. I simulate this policy by imposing a 40% rental cap at the Census tract-level.[38] Rental caps distort household decisions and incurs a welfare loss across all levels of wealth (Panel A, Figure 8). On average, households suffer on average 1% welfare loss. However, this aggregate result masks substantial heterogeneity. Low-wealth households who are predominantly renters are particularly harmed by the policy because most of them are renters, and directly targeted by the policy that explicitly curbs rental supply.

Senate Bill 3402, End Hedge Fund Control of American Homes Act, would force corporate landlords to reduce their supply by 10% each year until they are fully divested. Forcing landlords to sell 10% of their stock across all neighborhoods benefits middle-to-high-wealth households at the expense of low-wealth households, relative to the equilibrium where corporate SFR landlords enter in the absence of such policy (Panel B, Figure 8). Households who both prefer and have the means to own benefit from an increase in the stock of homes for purchase, while low-wealth households face heightened barriers to accessing desirable neighborhoods.

10. Conclusion

This paper provides empirical and theoretical evidence on the importance of rental housing supply in reducing spatial inequality. Leveraging the entry of large-scale corporate landlords and granular microdata on home prices, rents, and tenant demographics, I show that expanding rental supply in American suburbs where rentals are historically scarce, lowers rents and reduces barriers for financially constrained households to access desirable areas. However, this reallocation reduces the supply of owner-occupied homes, driving up prices

[38] Implementing rental caps is a hotly debated issue in some neighborhoods (Parker and Friedman 2024). Data on HOA bylaws that I hand-collected reveal that rental caps are prevalent in the suburbs. In the suburbs of Atlanta, Georgia, several HOAs imposed a 10% rental cap in 2024, which is significantly more stringent than the policy I simulate.

and pricing out some prospective homebuyers. Additionally, due to homophily preferences, incumbent homeowners are more likely to move out in response to the entry of renters.

Recent policy proposals have sought to restrict institutional single-family rental investors and limit rental supply. My model shows that the non-pecuniary benefits of homeownership are large, such that the median household benefits from policies that curb the conversion of owner-occupied homes into rentals. But a large fraction of disproportionately non-White and younger U.S. households rent because they face binding financial constraints that limit access to homeownership. These households benefit from expanded rental supply, which improves access to higher-amenity neighborhoods.

One reason rental housing is scarce and expensive in the suburbs is the high cost of supplying rentals. Large-scale landlords change this landscape by leveraging operating efficiencies from local scale.

Ultimately, my findings highlight a core issue: insufficient rental supply makes access to neighborhoods unequal. While corporate landlords provide one way of diversifying American suburbs, they are hotly contested. This paper quantifies the various economic and non-pecuniary tradeoffs that occur when private landlords supply rentals by converting owner-occupied homes and provide insight to guide policy development.

References

112nd Congress (2nd), "An Examination of the Federal Housing Agency's Real Estate Owned (REO) Pilot Program," 2012. [A.5]

Almagro, Milena, Eric Chyn, and Bryan A. Stuart, "Neighborhood Revitalization and Inequality: Evidence from Chicago's Public Housing Demolitions," 2024. [6]

Alvarenga, Emily, "County to Crack Down on Corporate Homebuyers and Landlords Amid Record Prices," *The San Diego Union-Tribune*, 2024. [9]

American Homes 4 Rent, "Form 10-K," 2019. [11]

Arkolakis, Costas, "Market Penetration Costs and the New Consumers Margin in International Trade," *Journal of Political Economy*, 2010, *118* (6), 1151–1199. [27]

Atkin, David, Benjamin Faber, and Marco Gonzalez-Navarro, "Retail Globalization and Household Welfare: Evidence from Mexico," *Journal of Political Economy*, 2018, *126* (1), 1–73. [15]

Austin, Neroli, "Keeping Up with the Blackstones: Institutional Investors and Gentrification," *Available at SSRN 4269561*, 2022. [5 and A.2]

Avenancio-León, Carlos F and Troup Howard, "Assessment Gap: Racial Inequalities in Property Taxation," *The Quarterly Journal of Economics*, 2022, *137* (3), 1383–1434. [A.7]

Barbieri, Felipe and Gregory Dobbels, "Market Power and the Welfare Effects of Institutional Landlords," 2025. [5, 22, A.1, and A.2]

Bayer, Patrick, Fernando Ferreira, and Robert McMillan, "A Unified Framework for Measuring Preferences for Schools and Neighborhoods," *Journal of Political Economy*, 2007, *115* (4), 588–638. [6]

_ , Marcus D. Casey, W. Ben McCartney, John Orellana-Li, and Calvin S. Zhang, "Distinguishing Causes of Neighborhood Racial Change: A Nearest Neighbor Design," Working Paper 30487, National Bureau of Economic Research March 2024. [2, 13, and 26]

Berger, David, Nicholas Turner, and Eric Zwick, "Stimulating Housing Markets," *Journal of Finance*, 2020, *75* (1), 277–321. [A.7]

Bergman, Peter, Raj Chetty, Stefanie DeLuca, Nathaniel Hendren, Lawrence F. Katz, and Christopher Palmer, "Creating Moves to Opportunity: Experimental Evidence on Barriers to Neighborhood Choice," *American Economic Review*, 2024, *114* (5), 1281–1337. [5]

Billings, Stephen B. and Adam Soliman, "Social Spillovers in Homeownership: Evidence from Institutional Investors," *Available at SSRN 4649479*, 2025. [5 and A.2]

Buchak, Greg, Gregor Matvos, Tomasz Piskorski, and Amit Seru, "Why is Intermediating Houses so Difficult? Evidence from iBuyers," Working Paper 28252, National Bureau of Economic Research July 2022. [31]

Bézy, Thomas, Antoine Levy, and Tim McQuade, "Insuring Landlords," 2024. [5]

Calder-Wang, Sophie, "The Distributional Impact of the Sharing Economy on the Housing Market," *Available at SSRN 3908062*, 2022. [6 and 13]

_ **and Gi Heung Kim**, "Algorithmic Pricing in Multifamily Rentals: Efficiency Gains or Price Coordination?," 2024. [22]

Campbell, John Y., "Household Finance," *Journal of Finance*, 2006, *61* (4), 1553–1604. [36]

Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz, "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment," *American Economic Review*, 2016, *106* (4), 855–902. [5]

_ **,** _ **, Patrick Kline, and Emmanuel Saez**, "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," *The Quarterly Journal of Economics*, 2014, *129* (4), 1553–1623. [1]

Chinco, Alex and Christopher Mayer, "Misinformed Speculators and Mispricing in the Housing Market," *The Review of Financial Studies*, 2016, *29* (2), 486–522. [32 and A.8]

Chyn, Eric and Lawrence F. Katz, "Neighborhoods Matter: Assessing the Evidence for Place Effects," *Journal of Economic Perspectives*, 2021, *35* (4), 197–222. [1 and 5]

_ **, Robert Collinson, and Danielle Sandler**, "The Long-Run Effects of America's Largest Residential Racial Desegregation Program: Gautreaux," Working Paper, National Bureau of Economic Research January 2025. [5]

Cook, Cody, Pearl Z. Li, and Ariel J. Binder, "Where to Build Affordable Housing? Evaluating the Tradeoffs of Location," 2025. [5]

Couture, Victor, Cecile Gaubert, Jessie Handbury, and Erik Hurst, "Income Growth and the Distributional Effects of Urban Spatial Sorting," *The Review of Economics Studies*, 2024, *91* (2), 858–898. [6, 33, 37, and 65]

Coven, Joshua, "The Impact of Institutional Investors on Homeownership and Neighborhood Access," *Available at SSRN 4554831*, 2025. [5, 22, A.1, and A.2]

DeFusco, Anthony A., Charles G. Nathanson, and Eric Zwick, "Misinformed Speculators and Mispricing in the Housing Market," *Journal of Financial Economics*, 2022, *146*, 205–229. [A.7]

Demers, Andrew and Andrea L. Eisfeldt, "Total Returns to Single-Family Rentals," *Real Estate Economics*, 2022, *50* (1), 7–32. [11]

Desmond, Matthew and Nathan Wilmers, "Do the Poor Pay More for Housing? Exploitation, Profit, and Risk in Rental Markets," *American Journal of Sociology*, 2019, *124* (4), 1090–1124. [11]

Dewan, Shaila, "As Renters Move In, Some Homeowners Fret," *The New York Times*, 2013. [21]

Diamond, Rebecca, "The Determinants and Welfare Implications of US Workers' Diverging Location Choices by Skill: 1980-2000," *American Economic Review*, 2016, *106* (3), 479–524. [2, 6, and 26]

_ **and Cecile Gaubert**, "Spatial Sorting and Inequality," *Annual Review of Economics*, 2022, *14*, 795–819. [6]

_ **and Tim McQuade**, "Who Wants Affordable Housing in Their Backyard? An Equilibrium Analysis of Low-Income Property Development," *Journal of Political Economy*, 2019, *127* (3), 1063–1117. [1, 5, and 21]

_ **and William F. Diamond**, "Racial Differences in the Total Rate of Return on Owner-Occupied Housing," Working Paper 32916, National Bureau of Economic Research September 2024. [11]

_ **, Tim McQuade, and Franklin Qian**, "The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco," *American Economic Review*, 2019, *109* (9), 3365–3394. [7]

Elmendorf, Christopher S., Clayton Nall, and Stan Oklobdzija, "What State Housing Policies Do Voters Want? Evidence from a Platform-Choice Experiment," 2024. [6, 36, and A.2]

Favilukis, Jack and Stijn van Nieuwerburgh, "Out-of-Town Home Buyers and City Welfare," *Journal of Finance*, 2021, *76* (5), 2577–2638. [9]

Federal Housing Finance Agency, "An Examination of the Federal Housing Finance Agency's Real Estate Owned (REO) Pilot Program," 2012. [9]

Finlay, John and Trevor C. Williams, "Housing Demand, Inequality, and Spatial Sorting," *Available at SSRN 3635035*, 2022. [A.19]

Fonseca, Julia, Lu Liu, and Pierre Mabille, "Unlocking Mortgage Lock-In: Evidence From a Spatial Housing Ladder Model," *Available at SSRN 4874654*, 2024. [6]

Francke, Marc, Lianne Hans, Matthijs Korevaar, and Sjoerd van Bekkum, "Buy-to-Live vs. Buy-to-Let: The Impact of Real Estate Investors on Housing Costs and Neighborhoods," *Available at SSRN 4480261*, 2023. [A.1]

Galante, Carol, Carolina Reid, and Rocio Sanchez-Moyano, "The Rise of Single-Family Rentals After the Foreclosure Crisis: Understanding Tenant Perspectives," 2018. [20 and 24]

Ganduri, Rohan, Steven Chong Xiao, and Serena Wenjing Xiao, "Tracing the Source of Liquidity for Distressed Housing Markets," *Real Estate Economics*, 2023, *51* (2), 1–33. [9 and 15]

Garriga, Carlos, Pedro Gete, and Athena Tsouderou, "Investors in Housing Markets: Comparing Two Booms," *Available at SSRN 4687727*, 2023. [9 and 17]

Gechter, Michael and Nick Tsivanidis, "Spatial Spillovers from Urban Redevelopments: Evidence from Mumbai's Textile Mills," 2023. [6]

Glaeser, Edward L., "Rethinking the Federal Bias Toward Homeownership," *Cityscape: A Journal of Policy Development and Research*, 2011, *13* (2), 5–37. [1 and 8]

_ **and Jesse M. Shapiro**, "The Benefits of the Home Mortgage Interest Deduction," *Tax Policy and the Economy*, 2003, *17*, 37–82. [36]

Goodman, Laurie, Alanna McCargo, Edward Golding, Bing Bai, and Sarah Strochak, "Barriers to Accessing Homeownership: Down Payment, Credit, and Affordability," Note, Urban Institute September 2018. [24]

_ **and Karan Kaul**, "Fannie Mae's Financing of Single-Family Rentals: Good Pilot, but Plenty to Think About," Note, Urban Institute February 2017. [50]

Goodman, Laurie S. and Christopher Mayer, "Homeownership and the American Dream," *Journal of Economic Perspectives*, 2018, *32* (1), 31–58. [25 and 36]

Gorback, Caitlin and Benjamin Keys, "Global Capital and Local Assets: House Prices, Quantities, and Elasticities," Working Paper 27370, National Bureau of Economic Research June 2020. [9]

_ **, Franklin Qian, and Zipei Zhu**, "Impact of Institutional Owners on Housing Markets," 2025. [5 and A.2]

Greenwald, Daniel and Adam Guren, "Do Credit Conditions Move House Prices?," Working Paper 29391, National Bureau of Economic Research October 2021. [2 and 6]

Gupta, Arpit, Christopher Hansman, and Pierre Mabille, "Financial Constraints and the Racial Housing Gap," *Available at SSRN 3969433*, 2024. [6]

Gurun, Umit G., Jiamin Wu, Steven Chong Xiao, and Serena Wenjing Xiao, "Do Wall Street Landlords Undermine Renters' Welfare?," *The Review of Financial Studies*, 2023, *36* (1), 70–121. [5, 22, and A.2]

Gyourko, Joseph and Raven Molloy, "Regulation and Housing Supply," *Handbook of Regional and Urban Economics*, 2015, *5*, 1289–1337. [8]

_ **and Sean E. McCulloch**, "The Distaste for Housing Density," Working Paper 33078, National Bureau of Economic Research October 2024. [1 and 20]

Hagerty, James R., "Entrepreneurs' Unusual Tactic: Buying Up Homes by Hundreds," *The Wall Street Journal*, 2005. [10]

_ , "Beware the Foreclosure Allure," *The Wall Street Journal*, 2008. [10]

Halket, Jonathan, "The Cross-Section of Housing Returns," 2024. [11]

Hanson, Sebastian, "Institutional Investors in the Market for Single-Family Housing: Where Did They Come from, Where Did They Go?," 2024. [5 and A.2]

Hsieh, Chang-Tai and Enrico Moretti, "Housing Constraints and Spatial Misallocation," *American Economic Journal: Macroeconomics*, 2019, *11* (2), 1–39. [6]

Ihlanfeldt, Keith and Cynthia Fan Yang, "Single-Family Rentals and Neighborhood Racial Integration," *Journal of Housing Economics*, 2021, *53*, 101780. [5 and A.1]

Invitation Homes Inc., "Form 10-K," 2017. [11]

_ , "Buying Homes Based on Location and Residents' Needs," 2021. [31]

Jodka, Aaron, "Institutional Investors Benefit from Trended Appreciation and Bulk Purchases in SFR Market," March 2022. [32]

Kermani, Amir and Francis Wong, "Racial Disparities in Housing Returns," Working Paper 29306, National Bureau of Economic Research March 2024. [11 and A.7]

Lambie-Hanson, Lauren, Wenli Li, and Michael Slonkosky, "Real Estate Investors and the U.S. Housing Recovery," *Real Estate Economics*, 2022, *50* (6), 1425–1461. [9]

Lee, Keyoung and David Wylie, "Institutional Investors, Rents, and Neighborhood Change in the Single Family Residential Market," 2024. [5]

Levy, Antoine, "Housing Policy with Home-Biased Landlords: Evidence from French Rental Markets," 2022. [6]

Li, Zhimin, Leslie Sheng Shen, and Calvin Zhang, "Local Effects of Global Capital Flows: A China Shock in the U.S. Housing Market," *The Review of Financial Studies*, 2024, *37* (3), 761–801. [9]

Ma, Lei, "When Institutional Investors Come To Town: The Local Effects of Buy-to-Rent Properties," 2024. [A.2]

Mabille, Pierre, "The Missing Homebuyers: Regional Heterogeneity and Credit Contractions," *The Review of Financial Studies*, 2023, *36* (7), 2756–2796. [6]

Mayer, Christopher and Robert J. Shiller, "Bubble, Bubble, Where's the Housing Bubble?: Comments and Discussion," in Margaret Hwang Smith and Gary Smith, eds., *Brookings Papers on Economic Activity*, Vol. 2006, Washington, D.C.: Brookings Institution Press, 2006, pp. 51–67. [4, 8, and 10]

Mayock, Tom and Kelly Vosters, "Single-Family Rentals as a Pathway for Access to High-Performing Public Schools," *Available at SSRN 4831525*, 2024. [5 and A.1]

McCartney, W. Ben, John Orellana-Li, and Calvin S. Zhang, "Political Polarization Affects Households' Financial Decisions: Evidence from Home Sales," *Journal of Finance*, 2024, *79* (2), 795–841. [26]

Mills, James, Raven Molloy, and Rebecca Zarutski, "Large-Scale Buy-to-Rent Investors in the Single-Family Housing Market: The Emergence of a New Asset Class," *Real Estate Economics*, 2019, *47* (2), 399–430. [5]

O'Donnell, Katy, "Two Presidential Candidates Agree on Something: The Source of the Housing Crisis," *Politico*, 2024. [9]

Parker, Will and Nicole Friedman, "Homeowner Groups Seek to Stop Investors From Buying Houses to Rent," *The Wall Street Journal*, 2024. [9 and 39]

Parkhomenko, Andrii, "Homeownership, Polarization, and Inequality," 2025. [6]

Ramani, Arjun and Nicholas Bloom, "The Donut Effect of COVID-19 on Cities," Working Paper 28876, National Bureau of Economic Research December 2022. [7]

Rantala, Lisa, "During Ohio's Housing Crisis, Bills Targeting Institutional Investors Lack Needed Support," *WSYX*, 2023. [9]

Raymond, Lindsey, "The Market Effects of Algorithms," 2024. [31]

Redding, Stephen J. and Esteban Rossi-Hansberg, "Quantitative Spatial Economics," *Annual Review of Economics*, 2017, *9*, 21–58. [6]

Reher, Michael and Rossen Valkanov, "The Mortgage-Cash Premium Puzzle," *Journal of Finance*, 2024, *79* (5), 3149–3201. [31 and A.8]

Rothstein, Richard, *The Color of Law: A Forgotten History of How Our Government Segregated America*, New York, NY: Liveright, 2017. [5]

Ruggles, Steven, Sarah Flood, Matthew Sobek, Danika Brockman, Grace Cooper, Stephanie Richards, and Megan Schouweiler, *IPUMS USA: Version 13.0 [dataset]*, Minneapolis, MN: IPUMS, 2023. [7]

Watson, Luke C. and Oren Ziv, "A Test for Pricing Power in Urban Housing Markets," 2024. [22]

Wolfe, Rachel, "The American Dream Feels Out of Reach for Most," *The Wall Street Journal*, 2024. [25]

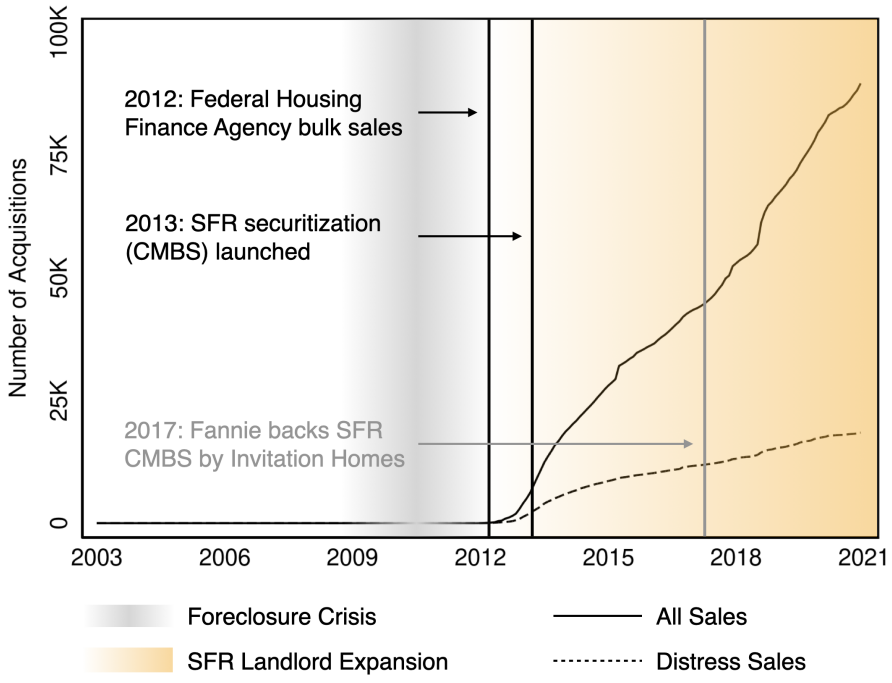
Figures

Figure 1. Corporate SFR Landlords' Entry and Concentration

A. A Typical Corporate SFR Home (Source: Author)



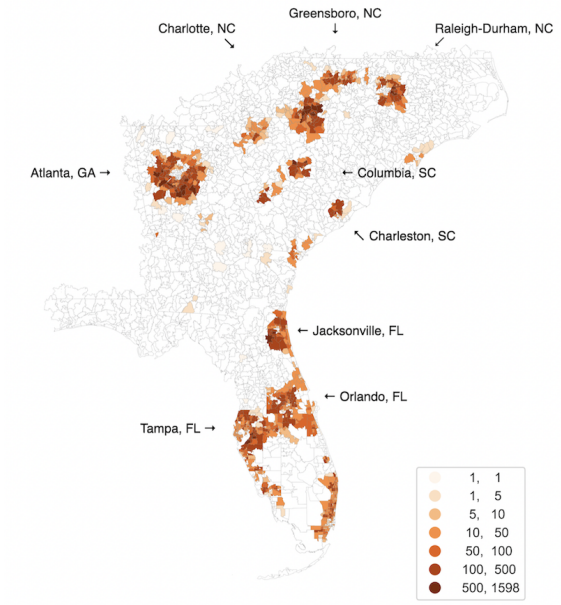
B. Cumulative Acquisitions



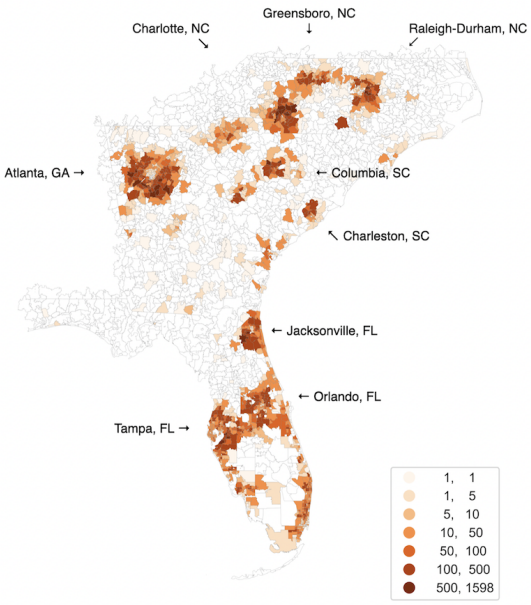
(continued on next page)

Corporate SFR Landlords' Entry and Concentration (cont'd)

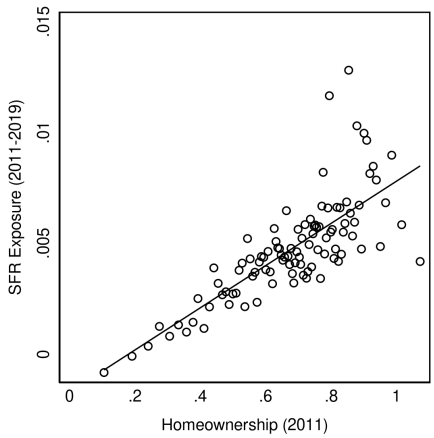
C. Cumulative Acquisitions (2012 to 2013)



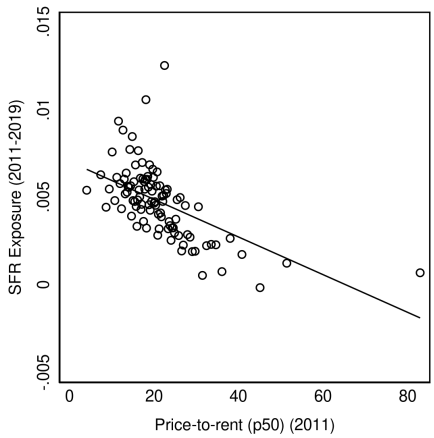
D. Cumulative Acquisitions (2012 to 2020)



E. *Ex Ante* Homeownership



F. *Ex Ante* Relative Price



Notes. This figure shows corporate SFR landlords' entry and expansion across time and space. Panel A shows a standard single-family rental property owned by a corporate landlord, captured from my tour of the property. Panel B shows the cumulative count of property acquisitions by one of the 23 large-scale corporate SFR landlords operating in Florida, Georgia, North Carolina, and South Carolina. The solid line represents all types of acquisitions while the dotted line represents acquisitions from distress sales (e.g., foreclosures). Distress sales purchases constitute a small portion of total acquisitions in more recent years. Major events in the timeline are as follows.

(continued on next page)

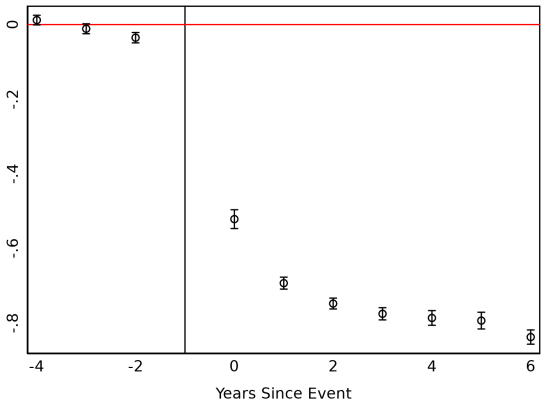
- *2012*: Private equity firm Blackstone founds Invitation Homes, one of the largest of the corporate SFR landlords to date. Several corporate SFR landlords acquire their initial bundle of properties through bulk purchases of foreclosed properties. Bulk sales were partially facilitated by federal policies introduced in response to the Foreclosure Crisis. In 2012, FHFA launched the REO-to-Rental pilot program, which auctioned off bundles of geographically concentrated foreclosed properties to investors. The program was designed to help local housing markets recover from the foreclosure crisis by providing liquidity from real estate investors. Consistent with this policy objective, the FHFA required winning bidders to supply the acquired properties as rentals for a minimum of three years before they could sell them back.
- *2013*: Invitation Homes issues the first SFR securitization in the CMBS market. Many more SFR securitizations follow, providing corporate SFR landlords with cheaper financing to expand their rental portfolio.
- *2017*: Fannie Mae guarantees SFR securitization issued by Invitation Homes. Financing from the Government-Sponsored Enterprise (GSE) removes the default risk for investors who provide funding to corporate landlords like Invitation Homes, which further "reduce borrowing costs and improve funding stability" (Goodman and Kaul 2017).

Panels C and D show the cumulative number of properties that corporate SFR landlords acquire at the ZIP Code-level from 2012 to 2013 and from 2012 to 2020, respectively. I highlight two key facts. First, SFR landlords entered the suburbs of major metropolitan areas in the Southern states such as Atlanta, Georgia and Charlotte, North Carolina. Second, corporate SFR landlords grew their operation over time by increasing concentration in their initial location of entry or expanding radially outward from their initial location to adjacent locations. Panels E and F show *ex ante* characteristics of Census tracts where institutional SFR landlords enter. The y-axis is the share of properties purchased by a corporate SFR landlord buyer between 2011 and 2019 relative to the total number of houses in the Census tract as of 2011. The x-axis is the homeownership rate (Panel E) and the price-to-rent ratio (Panel F). These figures highlight that corporate SFR landlords have the highest concentration in Census tracts where homeownership is previously high (i.e., rental share is low) and rents are expensive relative to home prices. In the model I present in Section 6, I discuss how cross-sectional heterogeneities in the location-specific cost of supplying rentals (and in homeownership preferences) can drive the dispersion of equilibrium homeownership rates and relative rents.

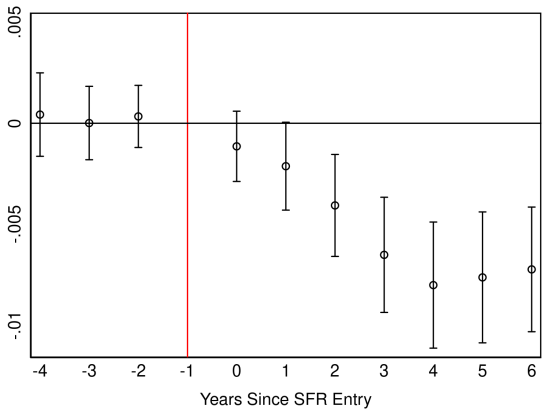
Return to Section 3.

Figure 2. Reallocation of Owner-Occupied Housing to Rentals ("First-Stage")

A. Owner-Occupancy Status (Property)



B. Homeownership (Census Tract)



Notes. This figure summarizes the impact of corporate SFR landlords on homeownership. Panel A reports results from property-level event study.

$$\mathbb{1}\{\textit{Unit is Owner-Occupied}\}_{it} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Purchase}_{it}^{k}}_{\equiv \mathbb{1}\{t - \textit{Year SFR Purchased } i = k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Year}} + \epsilon_{it}$$

Years Since SFR Purchase$_{it}$ is the relative time to the year in which a corporate SFR landlord purchases property i. Consistent with the estimated effects, I find descriptively that approximately 70% of the properties purchased by a corporate SFR landlord were previously owner-occupied housing. Property-level homeownership status is inferred from the property assessment panel by comparing the physical address (i.e., the property location) to the owner's mailing address. Panel B presents results from a Census tract-level event study.

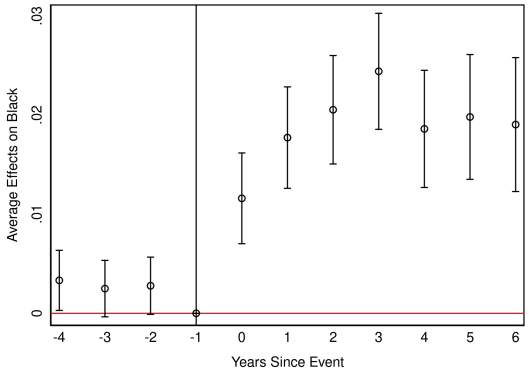
$$\textit{Homeownership}_{jt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{= \mathbb{1}\{t - \textit{Year SFR Entered}_j = k\}} + \underbrace{\alpha_j}_{\text{Census tract}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + X_j\gamma + \epsilon_{jt}$$

Years Since SFR Entry$_{jt}$ is the relative time, in number of years, to the year in which a corporate SFR landlord first purchases any property in Census tract j. Both neighborhood-level results suggest that the property-level changes in the homeownership status aggregates up to a neighborhood-level decrease in homeownership. Neighborhood-level homeownership data come from the aggregated 5-year ACS. The earliest available Census tract-level dataset is from 2009.

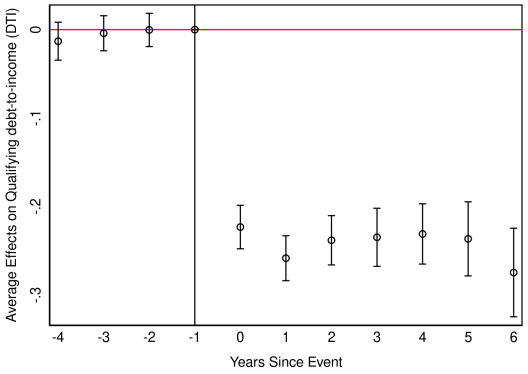
Return to Section 5.1.

Figure 3. In-Migration of Financially Constrained Households into SFR Properties

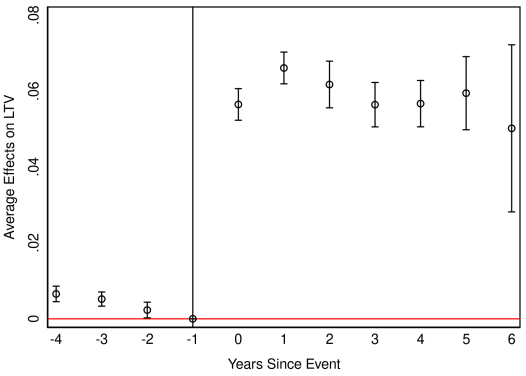
A. Head of the Household is Black



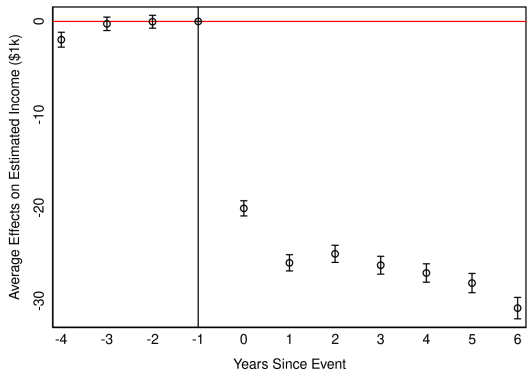
B. Household Payment-to-Income Below 35%



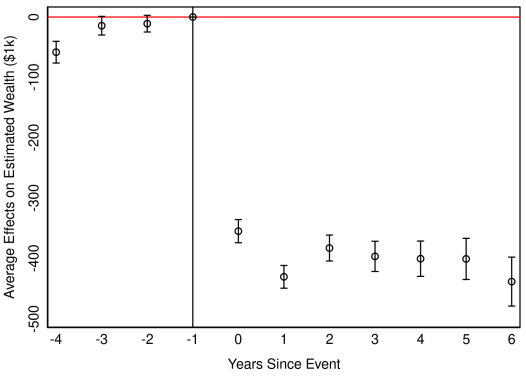
C. Home Price-to-Household Wealth Ratio



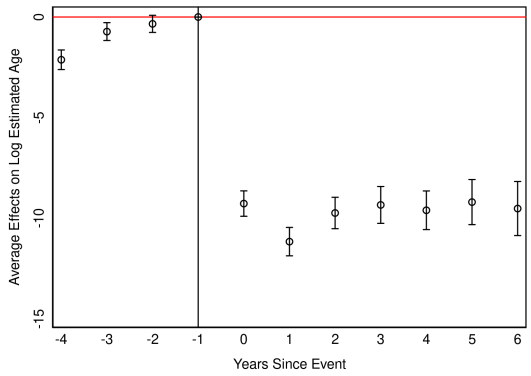
D. Household Income



E. Household Wealth



F. Age of Head of the Household



(continued on next page)

In-Migration of Financially Constrained Households into SFR Properties (cont'd)

Notes. This figure summarizes the effects of corporate SFR landlords on the spatial sorting of households. Results presented are from the following property-household-level event-study regression.

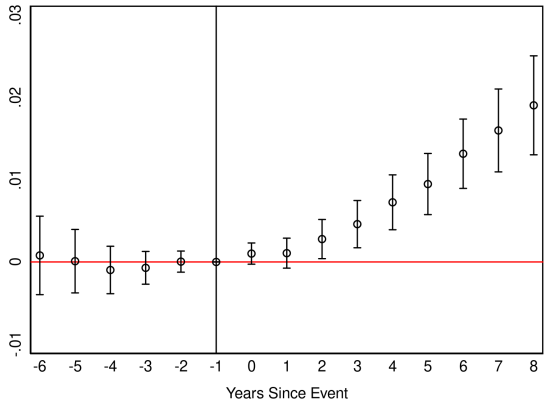
$$\textit{Household Characteristics}_{it} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Purchase}_{it}^{k}}_{\equiv \mathbb{1}\{t - \textit{Year SFR Purchased } i = k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Year}} + \epsilon_{it}$$

Years Since SFR Purchase$_{it}^{k}$ is the relative time, in number of years, to the year in which a corporate SFR landlord purchases property i. The data are from the property-household-level address history data from Data Axle. Household characteristics are estimated by Data Axle using various data sources including surveys. To focus on households who move into a corporate SFR landlord-owned property, I restrict the sample to investor-owned properties whose tenancy changes within the first three years of the purchase by the investor. Panel A shows that households who move into an SFR investor-owned property are more likely to be Black compared to incumbent households. Panel B shows that households moving in are likely to face a binding leverage constraint as measured by whether they meet the Payment-to-Income (PTI) ratio requirement for a conventional GSE loan. Panel C shows that households have lower wealth relative to home prices, a proxy for whether the household would face down payment constraints. These households have lower incomes (Panel D), less wealth (Panel E), and are younger (Panel F) than incumbents.

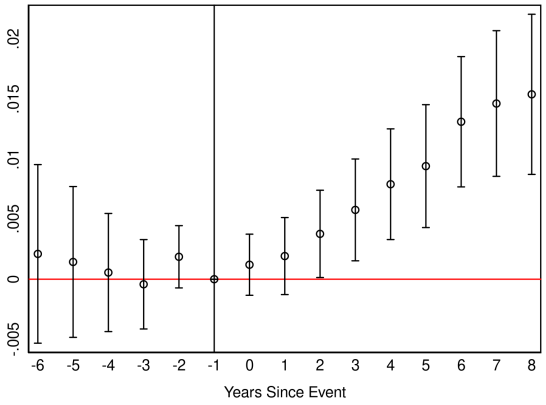
Return to Section 5.2.

Figure 4. Census Tract-Level Desegregation

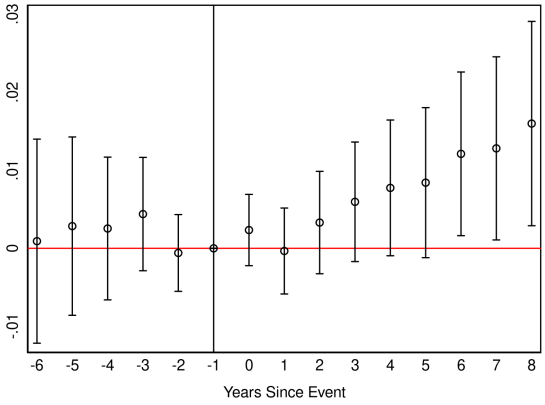
A. Non-White Share



B. White-Black Exposure



C. Evenness of Racial Distribution



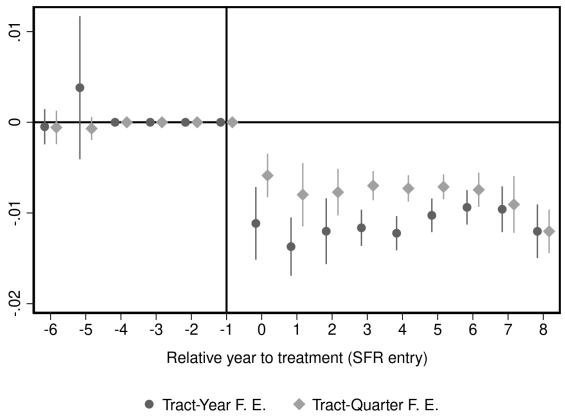
Notes. I evaluate whether corporate SFR landlords have an aggregate effect on neighborhood composition by estimating the following event-study regression.

$$\textit{Segregation}_{jt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{=\mathbb{1}\{t-\textit{Year SFR Entered}_j = k\}} + \underbrace{\alpha_j}_{\text{Census tract}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + \epsilon_{jt}$$

Years Since SFR Entry$_{jt}$ denotes the number of years relative to when a corporate SFR landlord first purchased any property in Census tract j. The dataset is constructed from the 5-year Census tract-level ACS. Panel A shows that the non-White share at the Census tract level increases. Panels B and C show a reduction in racial segregation at the Census tract level, as measured by White-Black exposure and the evenness of the racial distribution.

Return to Section 5.2.

Figure 5. Out-Migration of Incumbents More V.S. Less Exposed to New Renters



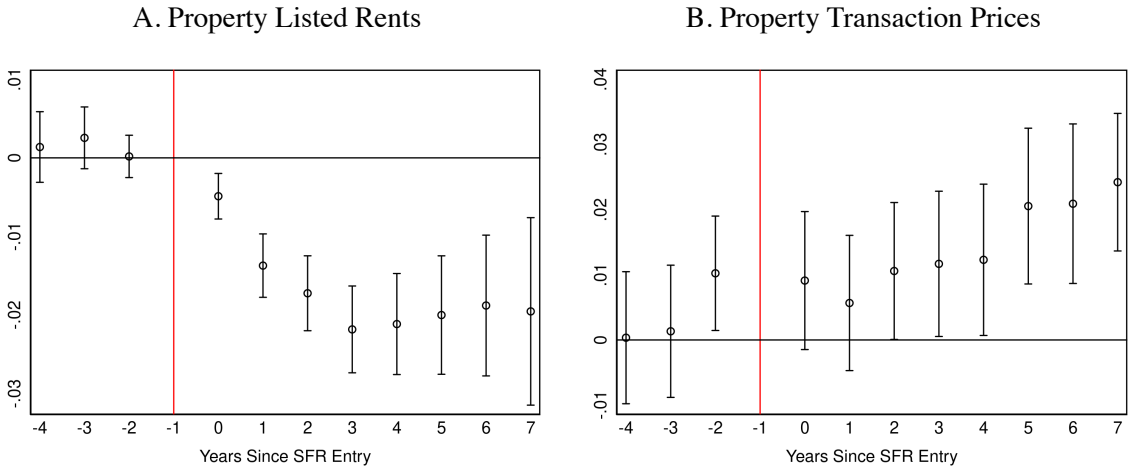
Notes. This figure shows incumbents' migration response to new renters. I compare the propensity of households more exposed to new renters to move out, versus those in the same neighborhood who are less exposed. Results are estimated from the following cross-sectional regression.

$$\mathbb{1}\{\textit{Household Move Out}\}_{it} = \beta \ln \textit{Distance to Nearest SFR}_i + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Time}} + \epsilon_{it}$$

Distance to Nearest SFR Property$_{it}$ measures the physical distance between property i and the nearest property that is purchased by a corporate SFR landlord. I estimate the β separately for each year within a window of time before and after the entry of corporate SFR landlords into Census tract $g(i)$. In the years before the entry of corporate SFR landlords, the distance between property i and the nearest property that *eventually* becomes an SFR property does not affect the household's likelihood of moving. However, sharply after the entry of corporate landlords, greater distance to the nearest SFR property is associated with a significantly lower propensity to move. In other words, the physically farther a household is from an SFR property, the more likely they are to stay in the same neighborhood. These results indicate that incumbents more exposed to new renters are more likely to move out of the neighborhood, controlling for neighborhood-level demographic composition (i.e., Census tract-year fixed effects). One might be concerned that corporate SFR landlords' high willingness to pay for geographic concentration (Section 7) might be mechanically driving these results. I address this concern by excluding from the sample all properties that are ever purchased by corporate SFR landlords.

Return to Section 5.3.

Figure 6. Procompetitive Effects on Local Rents and Prices



Notes. This figure summarizes the effects of corporate SFR landlords on housing costs. Panels A and B present results from property-level event studies.

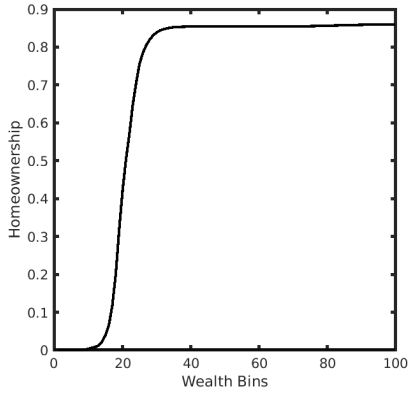
$$\ln \textit{Housing Cost}_{ijt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{=\mathbb{1}\{t-\textit{Year SFR Entered } j=k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + \epsilon_{ijt}$$

Years Since SFR Entry$_{jt}$ denotes the number of years relative to when a corporate SFR landlord first purchased any property in Census tract j. $\ln$ *Housing Cost*$_{ijt}$ represents either the listed rent from the Multiple Listing Service (MLS) or the transaction price from housing deeds. Property fixed effects α_i control for the underlying quality of the property.

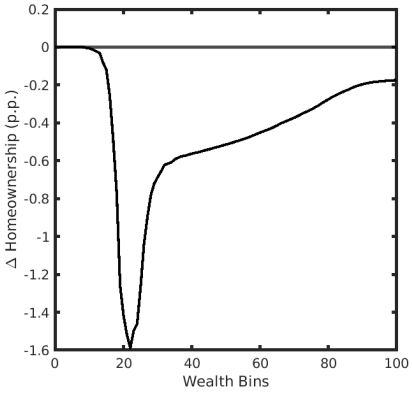
Return to Section 5.4.

Figure 7. Distributional and Spatial Sorting Effects of Rental Reallocation

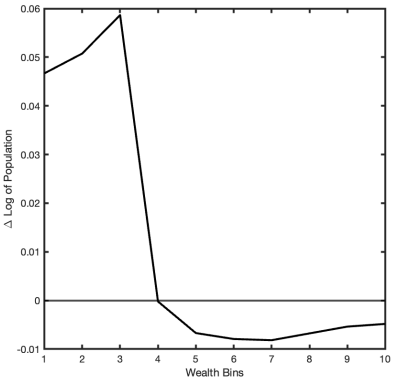
A. *Ex Ante* Homeownership



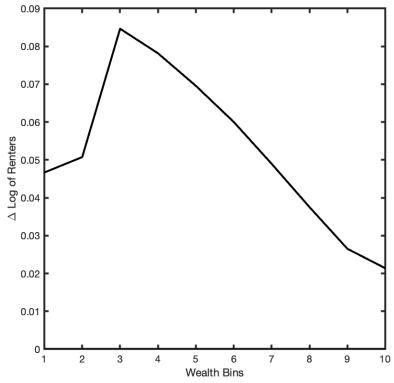
B. Δ Homeownership



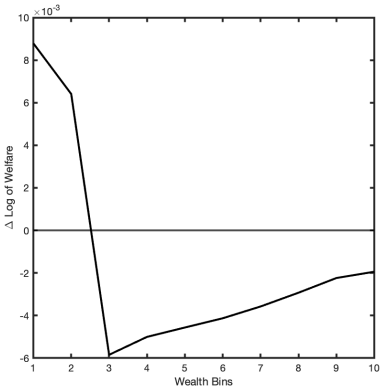
C. $\Delta L_{jh}(m)$ in High-Amenities Location



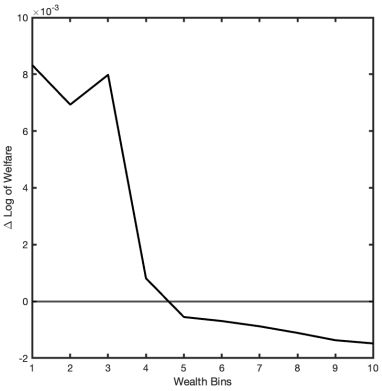
D. $\Delta L_{jr}(m)$ in High-Amenities Location



E. Δ Welfare



F. Δ Welfare w/ Cap. Gains



(continued on next page)

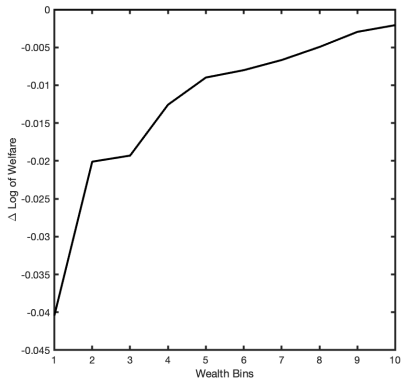
Distributional and Spatial Sorting Effects of Rental Reallocation (cont'd)

Notes. This figure summarizes the effects of corporate SFR landlords on welfare and the spatial sorting of heterogeneous households. Panel A shows the *ex ante* homeownership rates across the wealth distribution. Panel B shows the changes in those rates following corporate landlord entry. Households in the bottom wealth deciles are predominantly renters due to binding financial constraints: few neighborhoods have sufficiently low home prices for these households to meet the down payment requirement. Panels C through F summarize the spatial and welfare consequences of corporate landlord entry. Panel C highlights the spatial consequences of increasing rental supply in the suburbs. Households in the bottom wealth deciles move into high-price, high-amenity neighborhoods that were previously out of reach. Panel D shows that this shift is driven by a large increase in the renter population in those neighborhoods. Panel E shows changes in welfare ($\ln \frac{U'(m)}{U(m)}$) across the wealth distribution. Low-wealth households benefit from lower rents due to increased rental supply, which reduces their housing burden and improves access to high-price and high-amenity suburbs. Middle-wealth households, however, suffer a welfare loss from a reduction in ownership housing supply. Panel F presents changes in welfare, but with capital gains from home price appreciation redistributed to homeowners. These gains partially offset the welfare loss for middle-wealth households.

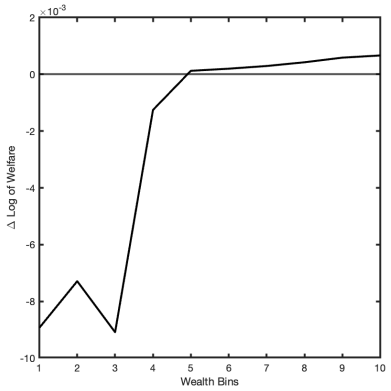
Return to Section 9.1.

Figure 8. Distributional and Spatial Sorting Effects of Rental Restriction Policies

A. Δ Welfare w/ Rental Caps



B. Δ Welfare w/ Universal Rental Reduction



Notes. *Notes*. This figure summarizes the welfare effects of counterfactual policies that limit rental supply. Panel A shows changes in welfare resulting from a rental cap policy that limits rental supply to 40% of local housing stock. Relative to the baseline economy without rental cap or corporate SFR landlord entry, rental caps distort household decisions and lead to a 1% decrease in aggregate welfare. Panel B shows results from a policy that forces large-scale landlords to sell a portion of their portfolio back to the market. Compared to the equilibrium with corporate SFR landlords, this policy increases aggregate welfare by expanding the housing supply available to homebuyers who prefer and can afford to own. However, low-wealth households who already could not afford homeownership lose out from the loss of rental housing.

Return to Section 9.2.

Tables

Table 1. Corporate SFR Landlord Entry and *Ex Ante* Covariates

	(1)	(2)	(3)
Share Non-White			
	0.072	0.061	0.061
	(0.045)	(0.037)	(0.037)
Household Income			
	1831.189	-1459.614	-1436.281
	(2448.403)	(3655.021)	(3655.264)
State F. E.	×		
County F. E.		×	×
Predicted Entry			×
N	6910	6883	6883
R-squared	0.208	0.458	0.461

Notes. This table reports the relationship between *ex ante* Census tract-level characteristics and the likelihood of corporate landlord entry, controlling for broader geography fixed effects. I estimate the following cross-sectional regression

$$\ln \textit{Landlord Entry}_j^{2012} = \beta \textit{Tract Characteristics}_j^{2011} + \underbrace{\zeta_{g(j)}}_{\text{Broader Geography}} + \epsilon_j$$

Each observation is a unique Census tract j. Standard errors, clustered at the county level, are reported in parentheses.

Return to Section 4.

Table 2. Effects of Corporate SFR Landlords on Neighborhoods

A. Homeownership and Demographic Composition

	Dependent Variable: Census tract characteristics			
	Homeownership		Share non-White	
	(1)	(2)	(3)	(4)
Landlord Entry	-0.009***	-0.020***	0.003***	0.010***
	(0.001)	(0.002)	(0.001)	(0.002)
County-Year F. E.	×	×	×	×
10+ Props.		×		×
N	122,000	82,527	122,288	82,815
R-squared	0.960	0.962	0.970	0.971

B. Rent

	Dependent Variable: Log of Rent		
	(1)	(2)	(3)
Landlord Entry	-0.006***	-0.009***	-0.023***
	(0.002)	(0.001)	(0.002)
Property F. E.		×	×
County-Year F. E.	×	×	×
10+ Props.			×
N	8,466,462	6,846,977	4,517,675
R-squared	0.520	0.891	0.893

C. Price

	Dependent Variable: Log of Price		
	(1)	(2)	(3)
Landlord Entry	0.013***	0.013***	0.022***
	(0.001)	(0.001)	(0.002)
Property F. E.		×	×
County-Year F. E.	×	×	×
10+ Props.			×
N	14,492,509	9,745,127	7,020,564
R-squared	0.401	0.800	0.800

Notes. This table presents the effects of corporate SFR landlord entry on homeownership, housing costs, and the demographic composition of neighborhoods. I estimate the static difference-in-differences version of equations (1), (3), and (4), property-level and Census tract-level event-study regressions, where all periods following the entry of corporate SFR landlords are pooled into a single post-entry indicator. Figures 2, 4, and 6 present the corresponding event-study plots.

Return to Sections 5.1, 5.2, and 5.4.

Table 3. Price Premium Associated with Corporate SFR Landlord Acquisitions

	Dependent Variable: $\ln Price$					
	(1)	(2)	(3)	(4)	(5)	(6)
SFR Buyer	0.126	0.103	0.095	0.091	0.082	0.086
	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)	(0.009)
Sample	2012-20	2012-20	2012-20	2012-20	2012-20	2012-20
Property F. E.	×	×	×	×	×	×
Hedonic-Time F. E.		×	×	×	×	×
Zip-Year F. E.	×	×				
Zip-Quarter F. E.			×			
Zip-Month F. E.				×		
Tract-Month F. E.					×	
Street-Month F. E.						×
N	3,167,354	3,166,406	3,154,186	3,115,871	2,751,366	459,172
R-squared	0.861	0.872	0.883	0.898	0.918	0.963

Notes. This table reports estimates of corporate SFR landlords' willingness to pay. I estimate the following repeat-sales regression.

$$\ln \textit{Price}_{ist} = \beta \textit{SFR Buyer}_{ist} + \underbrace{\underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}}}_{\equiv \chi_{it}} + \epsilon_{ist}$$

Each observation is a unique property sale s of property i in time t. The dependent variable is the log of transaction price. The coefficient β captures the price premium paid by corporate SFR landlords relative to other buyers. Column 1 includes property fixed effects and ZIP Code-year fixed effects. Columns 2 through 6 additionally include time-varying hedonic characteristics and increasingly granular geography-time fixed effects. Hedonic controls include bins for the number of years since construction and renovation, property size, number of bedrooms and bathrooms, indicators for multistory structure, heating and garage types, and construction quality. Standard errors are clustered at the property level and reported in parentheses.

Return to Section 7.3.

Table 4. Price Premium Associated with Corporate SFR Landlord Expansion

	Dependent Variable: $\ln Price$					
	(1)	(2)	(3)	(4)	(5)	(6)
Log of Local Scale (Tract)	0.0095***					
	(0.0030)					
Log of Local Scale (ZIP)		0.0042				
		(0.0029)				
1-50 Properties (Tract)			0.0227**	0.0153		
			(0.0093)	(0.0096)		
51-100 (Tract)			0.0787***	0.0981***		
			(0.0200)	(0.0199)		
101-150 (Tract)			0.1666***	0.2353***		
			(0.0319)	(0.0332)		
151+ (Tract)			0.1743***	0.2091***		
			(0.0330)	(0.0343)		
1-50 Properties (ZIP)					0.0184	0.0023
					(0.0175)	(0.0176)
51-100 (ZIP)					0.0225	0.0059
					(0.0194)	(0.0196)
101-150 (ZIP)					0.0718***	0.0729***
					(0.0221)	(0.0221)
151+ (ZIP)					0.0869***	0.0905***
					(0.0224)	(0.0224)
Property F. E.	×	×	×	×	×	×
Tract-Month F. E.	×	×	×		×	
Tract-Year F. E.				×		×
N	2,797,719	2,797,719	2,797,719	3,164,061	2,797,719	3,164,061
R-squared	0.923	0.923	0.923	0.873	0.923	0.873

Notes. This table reports estimates of corporate SFR landlords' willingness to pay to expand in a local housing market. I estimate the following repeat-sales regression.

$$\ln \textit{Price}_{islt} = \mu \textit{Local Scale}_{slg(i)t} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\alpha_l}_{\text{Landlord}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}} + \epsilon_{islt}$$

Each observation is a unique property sale s of property i in time t involving buyer l. The coefficient of interest, μ, represents the percent price premium paid by corporate SFR landlords with a 1% larger local scale, relative to a baseline buyer with scale equal to one. Standard errors are clustered at the property level and reported in parentheses.

Return to Section 7.3.

Table 5. Parameter Estimates

Parameter	Interpretation	Estimate	Source
ρ	Endogenous amenities	0.130	GMM
		(0.016)	
κ	Rental housing supply elasticity	1.849	GMM
		(0.455)	
μ	Local scale economies	0.010	Column 1, Table 4
		(0.003)	

Notes. This table reports results from the GMM procedure using exposure to corporate SFR landlords as the instrument. ρ is the elasticity of endogenous amenities with respect to neighborhood (Census tract) composition. The demographic shift caused by corporate landlords converting owner-occupied housing to rentals identifies this parameter. κ is the rental supply elasticity. Changes in rental returns, driven by lower rents and higher home prices, provide the variation needed to identify this parameter.

Return to Section 8.2.

Table 6. Summary of Model Unobservables and Parameters in the Baseline Model

Parameter	Interpretation	Source
Housing demand		
$\theta = 0.8$	Leverage constraint	LTV limit for conventional GSE loans
$\nu = 3$	Residential sorting elasticity	Couture, Gaubert, Handbury and Hurst (2024)
$\rho = 0.1$	Endogenous amenities	Variation in tenure composition from exposure to SFR (See Table 5)
$\bar{B}_{jh}$	Location-tenure amenities	Model inversion
Housing supply		
$\kappa = 1.8$	Rental housing supply elasticity	Variation in rental yield from exposure to SFR (See Table 5)
$\mu = 0.01$	Returns to scale in rental supply	Landlords' willingness to pay to expand (See Table 4)
$\bar{c}_j$	Cost of rental supply	Model inversion

Notes. This table summarizes key parameters and model unobservables in the quantitative model. Model inversion reveals three key findings. First, non-pecuniary benefits of homeownership are substantial. Amenities from owning in a given location are, on average, 40% greater than those from renting in the same location ($\bar{B}_{jo}/\bar{B}_{jr}$), corresponding to an estimated 34% increase in utility. Second, landlords tend to enter high-amenity neighborhoods. Average neighborhood amenities (i.e., $(\bar{B}_{jo} + \bar{B}_{jr})/2$) are 9% higher in Census tracts where landlords enter compared to those where they do not, with a t-statistic of 21.1. Third, landlords disproportionately enter neighborhoods where rental supply is more frictional: the cost of supplying rentals ($\bar{c}_j$) is 24% higher in tracts where landlords enter, with a t-statistic of 14.3.

Return to Section 8.2.

APPENDIX TO "DIVERSIFYING THE SUBURBS: RENTAL SUPPLY AND SPATIAL INEQUALITY"

Konhee Chang
University of California, Berkeley

Link to the latest version

Contents

A Additional Literature and Institutional Details **A.1**
A.1 Survey of Literature on Rental Investors
A.2 Bills Proposed to Regulate Single-Family Rental (SFR) Landlords
A.3 Institutional Context Highlighting the Importance of Local Scale

B Data Appendix **A.5**
B.1 Variable Sources
B.2 Data Linkages and Sample Construction

C Empirical Appendix **A.8**
C.1 Additional Purchase Premia Results
C.2 Additional Results Using Public Use Microdata Sample (PUMS)

D Model Appendix **A.10**
D.1 Market Clearing in Stage 1
D.2 Increasing Market Penetration Cost and the Global Landlord's Problem
D.3 An Alternative Model Structure
D.4 Market Clearing in Stage 2
D.5 Equilibrium Properties and Comparative Statics
D.6 Constructing Data for the Quantitative Model
D.7 Model Inversion Procedure
D.8 Details About Counterfactual Exercises

E Additional Figures **A.23**

F Additional Tables **A.34**

A. Additional Literature and Institutional Details

A.1. *Survey of Literature on Rental Investors*

The main contribution of this paper is threefold. First, I show property-level and neighborhood-level event-study evidence that increasing rental housing supply reduces residential segregation and that the incumbents endogenously move out in response. Second, I find that large-scale corporate single-family rental (SFR) landlords expand rental housing supply by achieving operating efficiencies through geographic concentration. I estimate the strength of local scale economies using a revealed-preference approach. Lastly, I embed these empirical findings in a quantitative spatial equilibrium model to structurally analyze the welfare effects.

My results on the in-migration of financially constrained households are consistent with cross-sectional evidence in other studies. Coven (2025) shows that residents of corporate SFR units are poorer than other residents in the same neighborhood. Ihlanfeldt and Yang (2021) find that neighborhoods where the share of single-family rentals increases see a coinciding decline in racial segregation and Mayock and Vosters (2024) show that an increase in single-family rentals in North Carolina allowed families to move their kids to better school districts. I establish property-level event-study evidence that after corporate SFR landlords purchase a property, the likelihood of financially constrained households moving into the property increases sharply. To this end, my empirical evidence complements findings by Francke et al. (2023) showing how a Dutch policy banning rental investors prevented the in-migration of younger and lower-income households.

To the best of my knowledge, this paper conducts the first welfare and distributional analyses of rental reallocation using a quantitative spatial equilibrium model. The model features endogenous amenities, households' non-pecuniary benefits of homeownership, and location-specific cost of rental supply, which are important for counterfactual and welfare analyses. Furthermore, I model local scale economies of large landlords. Barbieri and Dobbels (2025) and Coven (2025) model scale economies of institutional investors, but abstract away from the spatial dimension of scale economies. I demonstrate the importance of geographic concentration in achieving scale economies using property-level operating expenses data and quantify the strength of local scale economies leveraging landlords' willingness to pay to expand, which I estimate using a repeat-sales design.

Contemporaneous works in the real estate literature find mixed results on how corporate SFR landlords affect rents. Barbieri and Dobbels (2025) and Coven (2025) find that rents decrease following the entry of institutional landlords into neighborhoods. Hanson (2024) finds that the entry of institutional landlords leads to an increase in rents, using aggregate rent indices at the Core-Based Statistical Area (CBSA) level. Gorback, Qian and Zhu (2025) construct rent indices at the Census tract-level using property-level data and find that corporate landlords decreased rents in earlier periods, consistent with my finding, although they find the opposite effects in the post-COVID period, which is outside my estimation sample. I provide property-level evidence that local rents *decrease* following the entry of corporate SFR landlords into the Census tract, using property listing-level rent data and a repeat-rent event-study design. This repeat-rent, event-study approach has the advantage of exploiting granular variation across small geographies (i.e., Census tracts) than what is usually available when using aggregate data, while still controlling for broader regions trends at the county-level. Furthermore, this design controls for composition effects using property fixed effects. Finally, I show a lack of significant pre-trends for credible identification.

Another strand of the literature studies the consolidation of institutional landlords and finds that mergers increase rent (Austin 2022; Gurun et al. 2023). However, the focus of this paper is the first-order effects of the increase in total rental supply, not the change in ownership concentration. All aforementioned papers find positive effects of rental investors on local home prices. However, a separate set of papers finds negative local price spillover (Billings and Soliman 2025), but positive spillovers on house price *growth* (Ma 2024) of institutional landlords onto properties within a 500 feet radius. Using property transaction-level data and a repeat-sales design, I show that corporate SFR landlords lead to an increase in home prices. Furthermore, I find that corporate SFR landlords exhibit a high willingness to pay to achieve scale economies. This provides direct evidence of the difficulties households face when competing with corporate landlords in the purchase market.

A.2. *Bills Proposed to Regulate Single-Family Rental (SFR) Landlords*

Regulating corporate landlords has garnered strong bipartisan support. Elmendorf, Nall and Oklobdzija (2024) survey 5,000 households and find that policies restricting 'Wall Street' buyers are the second most popular among both housing and non-housing policy proposals, just behind regulating drug prices. In response, lawmakers at both the federal

and state levels have proposed bills that would regulate corporate SFR landlords. I review these policies here.

1. Stop Predatory Investing Act

    - Sponsored by Senators Sherrod Brown (D-OH), Ron Wyden (D-OR), Tina Smith (D-MN), Jeff Merkley (D-OR), Jack Reed (D-RI), John Fetterman (D-PA), Elizabeth Warren (D-MA), and Tammy Baldwin (D-WI).
    - Disallows interest or depreciation deductions for investors who acquire 50 or more new single-family rental homes after the date of enactment.
    - Endorsed by Democratic presidential candidate Kamala Harris.

2. End Hedge Fund Control of American Homes Act

    - Sponsored by representative Adam Smith (D-WA) and Senator Jeff Merkley (D-OR).
    - Requires current hedge fund landlords to sell at least 10% of their single-family home portfolio per year, so they completely divest over 10 years.
    - Imposes a tax penalty equal to 50% of fair market value on future hedge fund purchases.

3. American Neighborhoods Protection Act of 2023

    - Sponsored by representatives Jeffrey Jackson (D-NC) and Alma Adams (D-NC).
    - Imposes a tax of $10,000 per number of single-family homes owned over 75.

4. Ohio Senate Bill 76 Levy a Tax on Certain High-volume Landlords

    - Sponsored by state senators Louis W. Blessing, III (R), Nickie J. Antonio (D), Hearcel F. Craig (D), Paula Hicks-Hudson (D), and Catherine D. Ingram (D).
    - Imposes a tax on landlords who own 50 or more single-family, two-family, or three-family properties within a county.

5. California AB2584 Single-family residential real property: corporate entity: ownership

- Sponsored by representatives Jeffrey Jackson (D-NC) and Alma Adams (D-NC).
- Prohibits landlords who own more than 1,000 single-family properties from acquiring more properties.

A.3. *Institutional Context Highlighting the Importance of Local Scale*

1. Laurie Goodman, Senior Managing Director at Amherst Securities Group, LP, in an interview about FHFA's REO-to-Rental pilot program.

> *I think there is a fair amount of money in the wings waiting to buy, investors doing cash raises to buy properties on a large scale…But that means they have to build out a rental organization; it means they build out a management company, because if you're accumulating a hundred homes in Dallas that's very different than running a multifamily building.*

2. Representative David Schweikert (R-AZ), speaking of the importance of scale in the context of REO-to-Rental pilot program.

> *Okay. Our models used to always say that we would not even break even until we hit 200 houses in a pool. Just because of the—and that also mattered on our geographic distribution—just because of our property management mechanics. But, ultimately, you may have a group of dentists that all get together and they want to buy 25 houses. God bless them. You may have a REIT that says, we're not playing unless you can give us 1,000 properties and in a geographic, major urban area, because that's the type of money we have to park for our fees and management.*

3. Mary R. Kenney, Executive Director, Illinois Housing Development Authority (IHDA), voicing skepticism about the efficacy of REO-to-Rental program in Chicago due to the lack of geographic concentration of properties in foreclosure.

> *A scattered approach will not be effective. Our understanding is that there are currently 99 properties in the Chicago region, scattered throughout the region. This is not enough to provide a critical mass, will be difficult to manage by the investor, and will likely have no effect on any given neighborhood.*

4. Michael Stegman, counselor to the Secretary of the Treasury for housing finance policy, speaking about the requirements for investors in the REO-to-Rental pilot program (112nd Congress 2nd).

> *I'll highlight just three important requirements of the qualification and bidding process. First, investors who lack [the] experience and expertise to successfully manage [large] numbers of scattered-site properties, who don't have experience in the communities in which the portfolios are located, or who have a history of behavior that could lead to bad results, as Ms. Burns said, will not be eligible to participate. Qualified bidders must agree to provide tenants, out of its own funds, housing counseling and credit repair services, and to provide credit bureaus necessary documentation of tenants' rent, timely rent payments, to help boost their credit scores.*
>
> *Second, effective operating guidelines and compliance and reporting requirements will be part of the contractual agreement between the Enterprise and the investors. We are mindful that this pilot is a transaction between a private seller and private investors, and not a government program. But nevertheless, it is in the interest of the Enterprises, and FHFA, and the taxpayers that properties be well-maintained and the commitments made by winning bidders will be kept.*
>
> *Finally, requiring a minimum of 3 years of rental occupancy before the majority of homes can be sold is critical to achieving market stabilization goals and attracting capital sources, management expertise, and investors with longer-term investment horijons that FHFA is seeking from its successful bidders.*

B. Data Appendix

B.1. *Variable Sources*

Variables from data sources merged using property address.

- ATTOM property-level transactions data
  - Transaction price

  - Buyer name
  - Buyer mailing address
  - Property address
- ATTOM property-level assessment data
  - Property tenancy status
  - Property address
- Data Axle household-level data
  - Race inferred from name of head of the household
  - Estimated income, wealth, and age
  - Household address
- Multiple Listing Service (MLS) property-level rent data
  - Rental listing price
  - Property address

Other supplementary data sources.

- TREPP commercial mortgage data
  - Property-level operating expenses
  - Cost of capital from securitization
- Survey of Consumer Finances (SCF)
  - Household net wealth
- American Community Survey (ACS); Census tract-level and ZIP Code-level
  - Median income
  - Racial composition of a neighborhood

B.2. *Data Linkages and Sample Construction*

Identifying institutional investors. I identify 23 large-scale corporate landlords using names and addresses associated with property owners and buyers using the following procedure.

1. Use external data ('master data') identifying properties owned by one of 23 large-scale corporate landlords in North Carolina.
2. Extract buyer names and buyer addresses associated with properties in the master data.
3. Search for property transactions in North Carolina, South Carolina, Georgia, and Florida involving names and addresses in the master data.
4. Extract additional names and addresses.

See Table A.1 for examples.

Sample selection for the repeat-sales analyses. I construct the baseline sample following conventions in the existing real estate literature (Avenancio-León and Howard 2022; Berger et al. 2020; DeFusco et al. 2022; Kermani and Wong 2024).

- Residential properties classified as single-family home, condominium, duplex, or apartment
- Include only resales and new construction
- Include only arm's length transactions
- Include only full consideration transactions
- Remove non-unique transaction id
- Remove transaction value ≤ 0
- Remove duplicate transaction (same property $\times$ buyer $\times$ seller $\times$ transaction value, but different date), keep only the earliest observation
- Remove if transaction value $<$ \$5,000
- Remove if transaction value $>$ \$1,000,000

C. Empirical Appendix

C.1. *Additional Purchase Premia Results*

Cash purchases do not explain purchase premium. Reher and Valkanov (2024) documents a substantial mortgage-cash premium in real estate markets where mortgaged buyers pay an average of 11% premium compared to cash buyers. They attribute this finding to seller preferences. Home sellers perceive the transaction risk of mortgaged offers to be large and are willing to sell to cash buyers at a deep discount.

Most transactions involving a corporate SFR landlord buyer are cash transactions, because corporate landlords often rely on bulk financing through mortgage securitization and other non-mortgage financing such as private equity. Therefore, it is unlikely that the mortgage-cash premium explains the 9% premium that corporate SFR landlords pay to acquire properties. Yet I replicate the repeat-sales specification in Reher and Valkanov (2024) and control for whether a transaction involves a mortgage. The price premium is robust to controlling for mortgage use. Furthermore, across various levels of fixed effects, I roughly match the 11% mortgage-cash premium. Appendix Table A.3 presents the results.

Distress sales and properties do not explain purchase premium. One may be concerned that corporate SFR landlords' reliance on purchasing distress properties in their earlier years of operation explains the observed purchase premium. I estimate the baseline repeat-sales specification for the sample of transactions that are non-distress sales (Appendix Table A.4) and for the sample of properties that were never involved in a distress sale (Appendix Table A.5).[39] The results are robust to these subsample analyses.

Misinformation does not explain purchase premium. Chinco and Mayer (2016) finds that out-of-town second-house buyers overpay for the same house due to misinformation. One may be concerned that corporate SFR landlords similarly overpay due to inaccurate information about local housing markets and the collateral values due to their being out-of-town buyers and their reliance on algorithmic buying. This hypothesis would also suggest that misinformation drives corporate SFR landlords to initially overpay, but that they learn to correct themselves over time as they gain more experience in local housing markets.

[39] I define distress sales as transactions in foreclosure auctions, short sales, and Real Estate Owned (REO) liquidations.

Appendix Table A.6 presents results that are contrary to this logic. Corporate SFR landlords pay higher and higher prices in local markets as they gain more and more experience in the market across time (Columns 1 and 2, Appendix Table A.6) and pay higher prices in markets where they *ex post* have more experience (Columns 3 and 4, Appendix Table A.6).

Column 1 of Table A.6 shows that the price premium increases with the corporate SFR landlord's local market penetration, defined as the rolling sum of transaction shares in the same location prior to each new transaction. A one percentage point increase in a landlord's transaction share leads to 2.5% purchase premium. Column 2 of Table A.6 shows results using a yearly resetting rolling sum. A one percentage point increase in the transaction share of a landlord in the same year leads to a 0.09% purchase premium. Columns 3 and 4 of Table A.6 present results using *ex post* measures of market penetration, i.e., a landlord's cumulative transaction share as of 2020. These findings suggest that corporate SFR landlords' expansionary motives in a given local market entirely explain their purchase premium.

C.2. *Additional Results Using Public Use Microdata Sample (PUMS)*

I complement price and rents analyses with publicly available data from the 1-year ACS Public Use Microdata Sample (PUMS). PUMS data are a repeated cross-section and thus, property fixed effects cannot be included to control for unobserved quality. To overcome this challenge, I estimate the following housing market-level event study.

$$\ln \textit{Housing Cost}_{i(jq)t} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}^{k}_{(jq)t}}_{=\mathbb{1}\{t-\textit{Year SFR Entered}_{(jq)}=k\}} + \underbrace{\alpha_{(jq)}}_{\text{Housing Market}} + \underbrace{\zeta_{g(jq)t}}_{\text{State-Time}} + \epsilon_{i(jq)t} \tag{A.1}$$

(jq) indicates a housing market, defined as a Public Use Microdata Area (PUMA) region interacted with quality segment. In the baseline housing-market-level specification, I define quality segment by the number of bedrooms.

Panels A and B of Figure A.4 show that relative rents and rents decrease in the eight years subsequent to corporate SFR landlord entry, respectively. The magnitude of the effects are similar to what I find in the baseline repeat-rent event-study design using MLS data.

D. Model Appendix

D.1. *Market Clearing in Stage 1*

1. Households choose the location and tenure pair (j, h) that maximize their utility;

$$\begin{aligned} H_{jh}^D(m) &= \underbrace{\frac{(B_{jh}(w_j + m - p_{jh}))^\nu}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}(w_k + m - p_{ks}))^\nu}}_{=\lambda_{jh}(m)} \cdot L(m) \\ H_{jh}^D &= \int_m H_{jh}^D(m)\, dF(m) \end{aligned} \tag{A.1}$$

2. local landlords make an optimal investment decision;

$$H_{jr}^{S,local} = \underbrace{\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa + 1}}_{\equiv\pi_{jr}^{local}} \cdot \bar{H}_j \tag{A.2}$$

3. rental markets clear;

$$H_{jr}^D = H_{jr}^S = H_{jr}^{S,local} \tag{A.3}$$

4. homeownership markets clear; and

$$H_{jo}^D = H_{jo}^S = \bar{H}_j - H_{jr}^S \tag{A.4}$$

5. local population sums up to total population.

$$\sum_{(j,h)} L_{jh} = \sum_{(j,h)} H_{jh}^D = \bar{L} \tag{A.5}$$

D.2. *Increasing Market Penetration Cost and the Global Landlord's Problem*

Decision to sell by stage 1 incumbents. At the start of stage 2, homes are owned by either households who chose to own a home in stage 1 (owner-occupiers) and local atomistic prop-

erty owners who rent out their property in stage 1 (landlords). Let $m\bar{p}c_j$ be the maximum acquisition cost that the global landlord are willing to pay in j to buy existing properties. At that price, incumbent property owners decide between selling their property to the global landlord and making capital gains $\Delta_j = m\bar{p}c_j - p_{jo}$ or sticking to their initial choice, and forgoing capital gains. The incumbent owners' willingness to sell their property determines the slope of the supply curve that the global landlord faces.

Supply from stage 1 homeowners. Incumbent homeowners decide between sticking with their stage 1 decision (j^1, o) and selling to the global landlord at most $m\bar{p}c_{j^1}$, then re-choosing $(k, s) \neq (j^1, o)$.

$$\max \left(\underbrace{B_{j^1 o}(w_{j^1} + m - p_{j^1 o})\eta^{\omega}_{j^1 o}}_{\textit{Utility from staying}}, \underbrace{\max_{(k,s)\neq(j^1,o)\in\mathcal{I}(m+\Delta_j)} B_{ks}(w_k + m + \Delta_{j^1} - p_{ks})\eta^{\omega}_{ks}}_{\textit{Utility from selling and choosing a different pair}} \right) \tag{A.6}$$

Homeowners with a sufficiently high idiosyncratic preference for (j^1, o), $\eta^{\omega}_{j^1 o}$, stay and forgo capital gains. These homeowners choose (j^1, o) despite having more attractive outside options that capital gains enable them to choose from. The more marginal homeowners who have a smaller $\eta^{\omega}_{j^1 o}$ sell to the global landlord and re-choose $(k, s) \neq (j^1, o)$.

The mass of (j, o) homeowners with endowment m who would sell and move out given $m\bar{p}c_j$ can be written as follows.

$$\begin{aligned}
&H_{jo\to!(jo)}(m)(m\bar{p}c_j) \\
&= H_{jo}(m) \cdot P(\text{Choose } !(jo) \text{ given } m\bar{p}c_j \mid \text{Chose } (j,o)) \\
&= H_{jo}(m) \cdot \left(1 - \frac{P(\text{Choose } (j,o) \text{ given } m\bar{p}c_j \ \cap \ \text{Chose } (j,o))}{P(\text{Chose } (j,o))}\right) \\
&= H_{jo}(m) \cdot \left(1 - \frac{P(\text{Choose } (j,o) \text{ given } m\bar{p}c_j)}{P(\text{Chose } (j,o))}\right) \\
&\approx H_{jo}(m) \cdot \left(1 - \min\left(\frac{\sum_{(k,s)\in\mathcal{I}(m+\Delta_j)}(B_{ks}(w_k + m + \Delta_j - p_{ks}))^{\nu}}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}(w_k + m - p_{ks}))^{\nu}},\ 1\right)\right)
\end{aligned} \tag{A.7}$$

Note that the joint probability of choosing (j, o) under better and worse outside options—with and without capital gains—simplifies to the probability of choosing (j, h) under better

outside options.

$$
\begin{aligned}
&P(\text{Choose } (j,o) \text{ given } m\bar{p}c_j \cap \text{ Chose } (j,o)) \\
&= P(\underbrace{B_{jo}(w_j + m + \Delta_j - p_{jo})\eta^{\omega}_{jo} > \max_{(k,s)\neq(j,o)\in\mathcal{I}(m+\Delta_j)} B_{ks}(w_k + m + \Delta_j - p_{ks})\eta^{\omega}_{ks}}_{(j,o) \textit{ is the best option given better outside options}} \\
&\quad \cap \underbrace{B_{jo}(w_j + m - p_{jo})\eta^{\omega}_{jo} > \max_{(k,s)\neq(j,o)\in\mathcal{I}(m)} B_{ks}(w_k + m - p_{ks})\eta^{\omega}_{ks})}_{(j,o) \textit{ was the best option}} \\
&= P(B_{jo}(w_j + m - p_{jo})\eta^{\omega}_{jo} > \max_{(k,s)\neq(j,o)\in\mathcal{I}(m+\Delta_j)} B_{ks}(w_k + m + \Delta_j - p_{ks}))\eta^{\omega}_{ks} \\
&= P(\text{Choose } (j,o) \text{ given } m\bar{p}c_j)
\end{aligned}
\tag{A.8}
$$

when $m\bar{p}c_j \geq p_{jo}$.[40] $H_{jo\to!(jo)}(m)(m\bar{p}c_j)$ increases in $m\bar{p}c_j$. The more the global landlord pays, the more inframarginal homeowners they can induce to sell to them.

Supply from stage 1 landlords. Incumbent landlords decide between selling their property to the global landlord and continuing to rent out their property as a landlord.

$$
\max\left(\frac{p_{jr}}{\bar{c}_j}\,\epsilon^{l}_{j},\ m\bar{p}c_j\right) \tag{A.9}
$$

Similar to homeowners, incumbent landlords with ϵ^{l}_{j} high enough to such that they have higher idiosyncratic returns even compared to the higher price the global landlord is willing to pay, continue to be a landlord. The more marginal landlords sell to the global landlord and exits the rental market.

$$
H^{S,local\to global}_{jr} = H^{S,local}_{jr} - \underbrace{H^{S,local}_{jr} \cdot \left(\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^{\kappa}}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^{\kappa}+1} - \frac{\left(\frac{p_{jr}}{m\bar{p}c_j\bar{c}_j}\right)^{\kappa}}{\left(\frac{p_{jr}}{m\bar{p}c_j\bar{c}_j}\right)^{\kappa}+1}\right)}_{\textit{Outflow of local landlords}} \tag{A.10}
$$

Similarly, the more the global landlord pays, the more incumbent landlords are willing to sell.

[40] Note that if the global landlord offers $m\bar{p}c_j < p_{jo}$, no homeowner has the incentive to sell to the global landlord such that $P(\text{Choose } (j,o) \text{ given } m\bar{p}c_j \cap \text{ Chose } (j,o)) = 1$.

Supply curve of existing homes faced by the global landlord. The supply of existing homes to the global landlord at acquisition cost $m\bar{p}c_j$ is the sum of incumbent homeowners and incumbent landlords who sell their property to the global landlord. Supply by incumbent homeowners is governed by the strength of residential elasticity ν. Supply by incumbent local landlords is governed by rental supply elasticity κ.

This formulation does not yield a closed form expression for the supply of existing homes. This is mainly due to (1) the changes in the choice sets of households $\mathcal{I}(m^2)$ and (2) endogenous price changes.

The global landlord's problem. The global landlord chooses H_j^g such that the marginal market penetration cost equals the marginal revenue net of iceberg operating costs.

$$\Pi_j^g(H_j^g) = H_j^g \cdot \frac{p_{jr}}{\bar{c}_j \cdot (H_j^g)^{-\mu}} - \sum_{h=1}^{H_j^g} mpc_j(h) - F_j \quad \textit{Profits} \tag{A.11}$$

$$(1+\mu) \cdot \frac{p_{jr}}{\bar{c}_j} \cdot (H_j^g)^{\mu} \quad \textit{Marginal net revenue} \tag{A.12}$$

$$mpc(H_j^g) \quad \textit{Marginal market penetration cost} \tag{A.13}$$

$$H_j^{g^*} = \left(\frac{mpc_j(H_j^{g^*}) \cdot \bar{c}_j}{p_{jr}} \cdot \frac{1}{1+\mu} \right)^{\frac{1}{\mu}} \quad \textit{Optimal scale} \tag{A.14}$$

D.3. *An Alternative Model Structure*

A simpler, alternative formulation is one in which the supply of homes to the global landlords comes entirely from local landlords who are initially endowed with the housing stock. This setup is completely static and simultaneous, in the sense that it forgoes the two stage setup. There is one static equilibrium *without* the global landlord and another *with* the global landlord. All properties are acquired from atomistic incumbent property owners who are endowed with one unit of housing and make a discrete choice decision between selling the property and renting it out.

This setup omits homeowner sales to the global landlord, but provides an intuitive closed-form expression for the increasing market penetration cost that the global landlord

faces.

$$
\begin{aligned}
H_j\left(m\bar{p}c_j\right) &= \frac{1}{\left(\frac{p_{jr}}{m\bar{p}c_j\bar{c}_j}\right)^{\kappa}+1}\cdot\bar{H}_j \\
\frac{\bar{H}_j - H_j\left(m\bar{p}c_j\right)}{H_j\left(m\bar{p}c_j\right)} &= \left(\frac{p_{jr}}{m\bar{p}c_j\bar{c}_j}\right)^{\kappa} \\
m\bar{p}c_j &= \left(\frac{H_j\left(m\bar{p}c_j\right)}{\bar{H}_j - H_j\left(m\bar{p}c_j\right)}\right)^{\frac{1}{\kappa}}\cdot\frac{p_{jr}}{\bar{c}_j}
\end{aligned}
\tag{A.15}
$$

Then, the global landlord's profit is given as follows.

$$
\Pi_j^g(H_j^g) = \frac{p_{jr}}{\bar{c}_j}\cdot H_j^g\cdot\left((H_j^g)^{\mu} - (H_j^g)^{\frac{1}{\kappa}}\cdot(\bar{H}_j - H_j^g)^{-\frac{1}{\kappa}}\right) \tag{A.16}
$$

This generates a profit curve that is inverse-U shaped in landlord scale. Appendix Figure A.9 demonstrates this. Given parameter values $\bar{H}_j = 1000$, $\mu = 0.014$, $\kappa = 1.8$, and $F_j = 100$, the global landlord's profit peaks at around 300 properties. With larger returns to scale $\mu = 0.028$, the profit curve bows out. With larger fixed cost $F_j = 200$, the global landlord makes negative profits even at their optimal scale.

D.4. *Market Clearing in Stage 2*

Definition 2. *Given parameters $\{\theta, \nu, \rho, \kappa, \mu\}$, location characteristics $\{B_{jh}, w_j, \bar{c}_j, \bar{H}_j\}$, and an exogenous wealth distribution $\Phi(m)$, a spatial equilibrium of the model is a distribution of location and tenure choice by endowment $\{H_{jh}^D(m)(\mathcal{P}^2)\}$, landlords' housing supply $\{H_{jh}^{S,local}(\mathcal{P}^2), H_j^g\}$, and housing costs $\mathcal{P}^2 = \{p_{jo}^2, p_{jr}^2, mpc_j(H_j^g)\}$ such that: (1) households choose the location and tenure pair (j,h) that maximize their utility; (2) atomistic property owners and the global landlord makes an optimal investment decision; (3) rental markets clear; (4) homeownership markets clear; and (5) local population sums up to total population.*

1. Households choose the location and tenure pair (j, h) that maximize their utility;

$$\begin{aligned} H_{jh}^{D,2}(m) &= \underbrace{\frac{(B_{jh}^2(w_j + m - p_{jh}^2))^\nu}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}^2(w_k^2 + m - p_{ks}^2))^\nu}}_{=\lambda_{jh}^2(m)} \cdot L(m) \\ H_{jh}^{D,2} &= \int_m H_{jh}^{D,2}(m)\, dF(m) \end{aligned} \tag{A.17}$$

2. local landlords and the global landlord makes an optimal investment decision;

$$H_{jr}^{S,local,2} = \underbrace{\frac{\left(\frac{p_{jr}^2}{p_{jo}^2 \bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}^2}{p_{jo}^2 \bar{c}_j}\right)^\kappa + 1}}_{\equiv \pi_{jr}^{local,2}} \cdot \bar{H}_j \tag{A.18}$$

3. the global landlord makes an optimal investment decision;

$$H_j^{g^*} = \left(\frac{p_j(H_j^{g^*}) \cdot \bar{c}_j}{p_{jr}} \cdot \frac{1}{1+\mu}\right)^{\frac{1}{\mu}} \tag{A.19}$$

4. the "re-sale" market with the global landlords clear;[41]

$$\begin{aligned} H_j^{g^*} = & \underbrace{H_{jh}^1(m) \cdot \left(1 - \min\left(\frac{\sum_{(k,s)\in\mathcal{I}(m')}(B_{ks}(w_k + m' - p_{ks}))^\nu}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}(w_k + m - p_{ks}))^\nu},\ 1\right)\right)}_{\textit{Sales by stage 1 incumbent homeowners}} \\ & + \underbrace{H_{jr}^{S,local,1} \cdot \left(\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa + 1} - \frac{\left(\frac{p_{jr}}{\bar{mpc}_j \bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}}{\bar{mpc}_j \bar{c}_j}\right)^\kappa + 1}\right)}_{\textit{Sales by stage 1 incumbent local landlords}} \end{aligned} \tag{A.20}$$

5. rental markets clear;

$$H_{jr}^{D,2} = H_{jr}^{S,2} = H_{jr}^{S,local,2} + H_j^{g^*} \tag{A.21}$$

[41] See Appendix Section D.2 for details on the sales by incumbent homeowners and landlords to the global landlord.

6. homeownership markets clear; and

$$H_{jo}^{D,2} = H_{jo}^{S,2} = \bar{H}_j - H_{jr}^{S,2} \tag{A.22}$$

7. local population sums up to total population.

$$\sum_{(j,h)} L_{jh}^2 = \sum_{(j,h)} H_{jh}^{D,2} = \bar{L} \tag{A.23}$$

D.5. *Equilibrium Properties and Comparative Statics*

Sources of Residential Segregation

The model features several mechanisms that drive the spatial segregation of renters and homeowners. On the supply side, heterogeneities in landlording costs across neighborhoodsx lead to differences in equilibrium rental supply in the cross-section. On the demand side, leverage constraints that restricts the choice set of households depending on their wealth. Other forces of residential segregation include (1) the endogenous sorting of households who may have preferences for living near homeowners and (2) non-homotheticities in housing consumption that drive high-wealth homeowners to sort into high-price neighborhoods.

Spatial and housing tenure sorting by wealth. Figure A.10 summarizes the spatial sorting patterns of households in response to housing reallocation. Consider a neighborhood where the ownership benefits outweigh renting benefit (i.e., $B_{jo} > B_{jr}$). Such a neighborhood features a high share of high-wealth homeowners due to non-homotheticities in housing consumption. A reallocation of ownership housing to rentals pushes down rent, resulting in an in-migration of renters across the wealth distribution (Panel A, Figure A.10). At the same time, the price of owner-occupied housing increases, "pricing-out" middle-wealth households from the homeownership market (Panel B, Figure A.10). In aggregate, the share of low-wealth households increase and the share of high-wealth households decrease, while changes in the share of middle-wealth households are ambiguous (Panel C, Figure A.10). Homeownership weakly decreases for all levels of wealth (Panel D, Figure A.10).

Richer households sort into high-price locations. The unit housing demand generates a simple non-homotheticity in housing consumption. Namely, high endowment households are less sensitive to high prices and sort into high-price locations.

$$\frac{\partial^2 \ln \lambda_{jh}(m)}{\partial m \, \partial p_{jh}} > 0 \tag{A.24}$$

Second, financial constraints limit entry of low-wealth households into the neighborhood who cannot afford homeownership.

$$\lambda_{jo}(m) = 0 \;\; \textit{if} \;\; m < \theta^{LTV} \cdot p_{jo} \tag{A.25}$$

Homeownership is high for high-income/-wealth households. High-wealth households are over-represented in neighborhoods where homeownership is preferred:

$$\frac{\partial^2 \left(\lambda_{jo}(m)/\lambda_{jr}(m)\right)}{\partial m \, \partial p_{jo}} > 0 \;\; \textit{iff} \;\; B_{jo} > B_{jr} \tag{A.26}$$

High location-specific cost of rental supply leads to low rental supply and high rent. Rearranging equation (A.2), the equilibrium rental supply in terms of p_{jr}, and plugging in the price expression to *relative* choice probabilities between (j, o) and (j, r) from equation (A.1) yields equilibrium rent p_{jr}.

$$\frac{\partial p_{jr}}{\partial c_j} > 0 \;\; \textit{given} \;\; p_{jr} < p_{jo} \tag{A.27}$$

Comparative Statics

To denote counterfactual changes relative to the initial equilibrium, I use hat-notation: $\hat{X} \equiv \frac{X'}{X}$. From equation (A.1), I obtain the following expression.

$$\begin{aligned}
\hat{L}_{jh}(m) &= \frac{L'(m) \cdot \frac{(B_{jh}(w'_j+m-p'_{jh}))^\nu}{\sum_{(k,s)\in\mathcal{I}'(m)}(B_{ks}(w'_k+m-p'_{ks}))^\nu}}{L(m) \cdot \frac{(B_{jh}(w_j+m-p_{jh}))^\nu}{\sum_{(q,z)\in\mathcal{I}(m)}(B_{qz}(w_q+m-p_{qz}))^\nu}} \\
&\vdots \\
&= \hat{L}(m) \cdot \underbrace{\frac{(w'_j+m-p'_{jh})^\nu}{(w_j+m-p_{jh})^\nu}}_{=\hat{u}^\nu_{jh}(m)} \cdot \underbrace{\frac{L(m)}{L_{jh}(m)}}_{=\frac{1}{\lambda_{jh}(m)}} \cdot \underbrace{\frac{(B_{jh}(w_j+m-p_{jh}))^\nu}{\sum_{(q,z)\in\mathcal{I}'(m)}(B_{qz}(w'_q+m-p'_{qz}))^\nu}}_{=\lambda^{Counterfactual}_{jh}(m)}
\end{aligned} \tag{A.28}$$

Note that I assume that fundamental amenities B_{jh} remain constant, i.e., $\frac{B'_{jh}}{B_{jh}} = 1$. Similarly, I derive the following expression from equation (A.2).

$$\begin{aligned}
\hat{H}^S_{jr} &= \frac{\left(\frac{p'_{jr}}{p'_{jo}\bar{c}'_j}\right)^\kappa}{\left(\frac{p'_{jr}}{p'_{jo}\bar{c}'_j}\right)^\kappa + 1} \Bigg/ \frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa + 1} \\
&\vdots \\
&= \hat{p}^\kappa_{jr} \cdot \widehat{\left(\frac{1}{p_{jo}}\right)^\kappa} \cdot \widehat{\left(\frac{1}{\bar{c}_j}\right)^\kappa} \cdot \underbrace{\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa + 1}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}}_{=\frac{1}{\pi_{jr}}} \cdot \underbrace{\frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^\kappa}{\left(\frac{p'_{jr}}{p'_{jo}\bar{c}'_j}\right)^\kappa + 1}}_{=\pi^{Counterfactual}_{jr}}
\end{aligned} \tag{A.29}$$

D.6. *Constructing Data for the Quantitative Model*

The input for the quantitative model includes Census tract-level characteristics from the ACS and household wealth distribution from the SCF.

Normalizing and annualizing stock variables. Income w_j and rent p_{jr} are flow variables whereas raw household wealth m^ω and house price p_{jo} are stock variables. To make stock variables consistent with flow variables, I normalize raw p_{jo} and m^ω to mimic the annual

cash flow they generate.

I normalize home prices to annual levels that correspond to the user cost of owning a home. Intuitively, the normalized p_{jo} has the interpretation of the "no-arbitrage" price that makes the marginal household indifferent between owning and renting. Normalized m^{ω} is the additional annual income generated from liquidating wealth throughout the lifetime.

In the quantitative model, income plays a smaller role than wealth. This is because I focus on the financial constraints on homeownership due to down payment constraints, for which household wealth is a more natural determinant of whether the constraints are binding. For this reason, I choose a universal income level for all households in the baseline specification. Income is normalized to equal a quarter of the median housing rent in the economy, to roughly match households' housing expenditure share (Finlay and Williams 2022).

D.7. *Model Inversion Procedure*

Inverting out location-tenure-specific amenities.

Proposition 1. *Given data on wage w_j, housing cost p_{jh}, wealth distribution $\Phi(m)$, household sorting elasticity ν, and financial constraint θ, there is a unique (up to scale) vector of B_{jh} that rationalizes the distribution of households across space L_{jh}.*

Proof. For simplicity, assume a discrete distribution of wealth $\Phi(m)$. Rewriting equation (A.1), the equilibrium location-tenure choice of households, yields equation (A.30).

$$\begin{aligned} L_{jh} &= \sum_{m} L(m) \cdot \frac{(B_{jh}(w_j + m - p_{jh}))^{\nu}}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}(w_k + m - p_{ks}))^{\nu}} \\ &\vdots \\ B_{jh} &= L_{jh}^{\frac{1}{\nu}} \cdot \left(\sum_{m} L(m) \cdot \frac{((w_j + m - p_{jh}))^{\nu}}{\sum_{(k,s)\in\mathcal{I}(m)}(B_{ks}(w_k + m - p_{ks}))^{\nu}} \right)^{-\frac{1}{\nu}} \end{aligned} \tag{A.30}$$

□

Inverting out location-specific costs of rental supply.

Proof. Rewriting equation (A.2), the equilibrium rental supply, yields equation (A.31).

$$\begin{aligned} H_{jr}^{S,local} &= \frac{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^{\kappa}}{\left(\frac{p_{jr}}{p_{jo}\bar{c}_j}\right)^{\kappa}+1}\cdot \bar{H}_j \\ &\vdots \\ \bar{c}_j &= \left(\frac{H_{jr}^S}{\bar{H}_j - H_{jr}^S}\right)^{-\frac{1}{\kappa}}\cdot \frac{p_{jr}}{p_{jo}} \end{aligned} \tag{A.31}$$

□

Algorithm for model inversion. Begin with a guess of $\{\tilde{B}_{jh}\}$.

1. Given $\tilde{B}_{jh}$, compute the implied population $\tilde{L}_{jh}$ using equation (A.1)
2. Update $\tilde{B}'_{jh} = \psi \cdot \tilde{B}_{jh} + (1-\psi)\cdot \tilde{B}'_{jh}\cdot \frac{L_{jh}}{\tilde{L}_{jh}}$, where L_{jh} is data
3. If $\|\{L_{jh}\} - \{\tilde{L}_{jh}\}\| > \epsilon$, let $\tilde{B}_{jh} = \tilde{B}'_{jh}$ and repeat. Otherwise, let $B_{jh} = \tilde{B}_{jh}$.

where $\psi \in (0,1)$ and ϵ is small.

D.8. *Details About Counterfactual Exercises*

Welfare decomposition.

$$\ln \hat{V}(m) = \frac{1}{\nu}\ln\left(\underbrace{\sum_{(k,s)\in\mathcal{I}'(m)\cap\mathcal{I}(m)} \lambda_{ks}(m)\cdot \hat{u}_{ks}^{\nu}(m)}_{(1)} + \underbrace{\sum_{(k,s)\in\mathcal{I}'(m)\cap\mathcal{I}^c(m)} \lambda'_{ks}(m)\cdot \hat{V}^{\nu}(m)}_{(2)}\right) \tag{A.32}$$

$\mathcal{I}(m)$, equation (6), is the endogenous choice set of households who has endowment m. $\lambda_{ks}(m)$, equation (10), is the share of households with m who chooses (k,s). u_{ks} is the deterministic portion of utility. (1) represents changes in the cost-of-living and neighborhood characteristics among neighborhoods where households already had access to in the initial equilibrium (i.e., element of $\mathcal{I}(m)$) and continues to do so in the new equilibrium (i.e., element of $\mathcal{I}'(m)$). (2) captures the effects from changes in housing market access due to

price changes. For example, an increase in house price p_{jo} may make homeownership in j inaccessible to households whose wealth falls below the threshold required to qualify in the new equilibrium.

Factoring in capital gains for welfare analysis. If the price difference between two equilibria are redistributed to homeowners, the changes in welfare for incumbent homeowners and renters in neighborhood j, indexed by jo and jr, respectively, are given by the following equation.

$$\begin{aligned} \ln \hat{V}_{(\cdot|jo)}(m) &= \frac{1}{\nu} \ln \frac{\sum_{(q,z)\in\mathcal{I}'(m)} (B'_{qz}(w'_q + m + (p'_{jo} - p_{jo}) - p'_{ks}))^\nu}{\sum_{(k,s)\in\mathcal{I}(m)} (B_{ks}(w_k + m - p_{qz}))^\nu} \\ \ln \hat{V}_{(\cdot|jr)}(m) = \ln \hat{V}_{(\cdot|\cdot r)}(m) &= \frac{1}{\nu} \ln \frac{\sum_{(q,z)\in\mathcal{I}'(m)} (B'_{qz}(w'_q + m - p'_{qz}))^\nu}{\sum_{(k,s)\in\mathcal{I}(m)} (B_{ks}(w_k + m - p_{ks}))^\nu} \end{aligned} \tag{A.33}$$

Unlike for homeowners, renters' welfare is independent of their initial location.[42]

Algorithm to solve for a counterfactual equilibrium. Heuristically, the process of solving for a counterfactual equilibrium $\{H'_{jh}, \{p'_{jh}\}\}$ in response to a shock is the reverse of the model inversion process described previously. I outline the process below, considering a pared down version of the model where $\Delta B_{jh} = 0$ in response to the global landlord entry. I denote the pre- and post-SFR periods with superscripts 0 and 1, respectively.

- Step 0. Collect data: $\{p^0_{jr}\}, \{p^0_{jo}\}, \{H^0_{jr} = L^0_{jr}\}, \{\bar{H}_j\}, \{H_{jh}\}$.
- Step 1. Collect parameters: $\Theta = \{\nu, \kappa, \rho, \mu\}$.
- Step 2. Invert out unobservables $\{B^0_{jh}\}$ and $\{\bar{c}^0_j\}$.
- Step 3. Simulate the entry of corporate SFR landlords.
    1. Simplified version: lower $\bar{c}_j$ for an exogenous set of j's. I describe the subsequent steps using this process.

[42] For those who resided in j who still live in j in the new equilibrium, the common component of their utility is given by the following.

$$\hat{u}_{(jo|jo)} = \frac{B'_{jo}\,(w'_j + m^\omega - p_{jo})}{B_{jo}\,(w_j + m^\omega - p_{jo})} \qquad \hat{u}_{(jr|jr)} = \frac{B'_{jr}\,(w'_j + m^\omega - p'_{jr})}{B_{jr}\,(w_j + m^\omega - p_{jr})}$$

Thus, homeownership "insures against" price increases.

2. Full version: "turn on" the global landlord shock by lowering fixed costs F_j and have landlords enter endogenously.

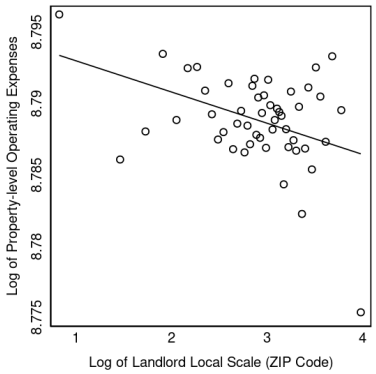
- Step 4. Compute counterfactual data $\{p^1_{jr}\}, \{p^1_{jo}\}$ that clear the markets at $\{H^1_{jr}\}, \{H^1_{jo}\}$.

  1. Compute $\{H^{S,1}_{jh}\}$ given $\bar{c}^1_j$
  2. Compute $\{H^{D,1}_{jh}\}$ given $\bar{c}^1_j$
  3. Adjust $\frac{p^1_{jr}}{p^1_{jo}}$ (ratios) until $\frac{H^{S,1}_{jr}}{H^{S,1}_{jo}} = \frac{H^{D,1}_{jr}}{H^{D,1}_{jo}}$
  4. Adjust $p^1_{jr} + p^1_{jo}$ (levels) until $H^{S,1}_{jr} + H^{S,1}_{jo} = \bar{H}_j$

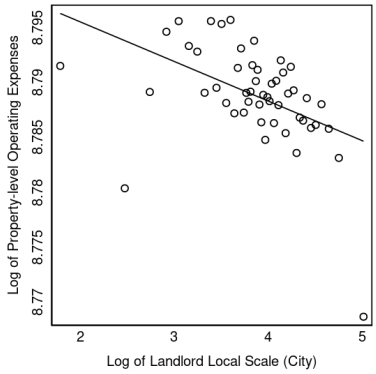
E. Additional Figures

Figure A.1. Landlords' Local Scale and Property-Level Operating Expenses

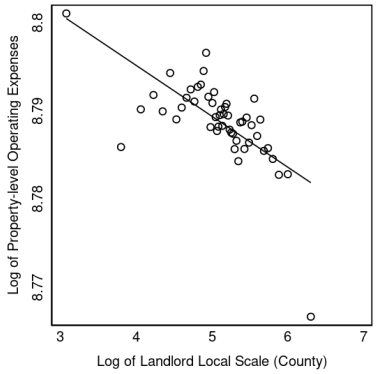
A. ZIP Code-Level



B. City-Level



C. County-Level

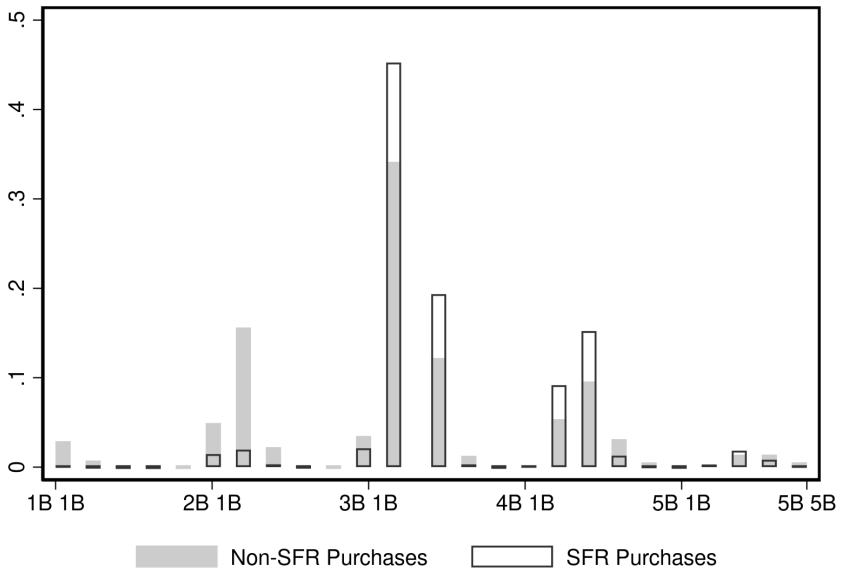


Notes. This figure shows the relationship between landlords' operating expenses and local scale. The y-axis is property-level operating expenses. The x-axis is landlords' scale within a geography defined as ZIP Code or county, depending on the specification. The data are from CMBS prospectuses (Annex A) which provide detailed property-level information about the underlying collateral to security investors. Operating expenses and landlord's scale are recorded as of the initial securitization date. I include property-level fixed effects, landlord fixed effects, and control for geographic trends by including ZIP Code-county-city-year-level fixed effects. Panels A, B, and C report results using landlord's scale within a ZIP Code, city, and county, respectively.

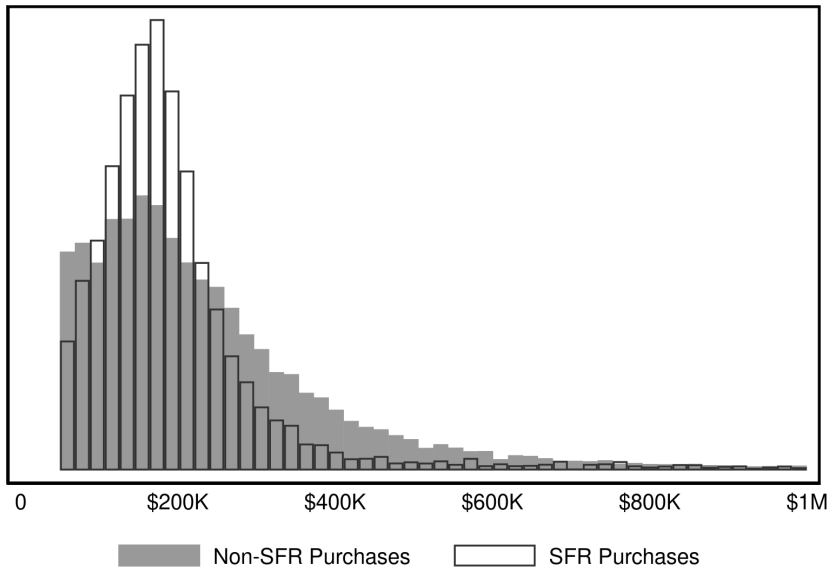
Return to Section 3.2.

Figure A.2. Homes that Corporate SFR Landlords Purchase

A. Number of Bedrooms and Bathrooms

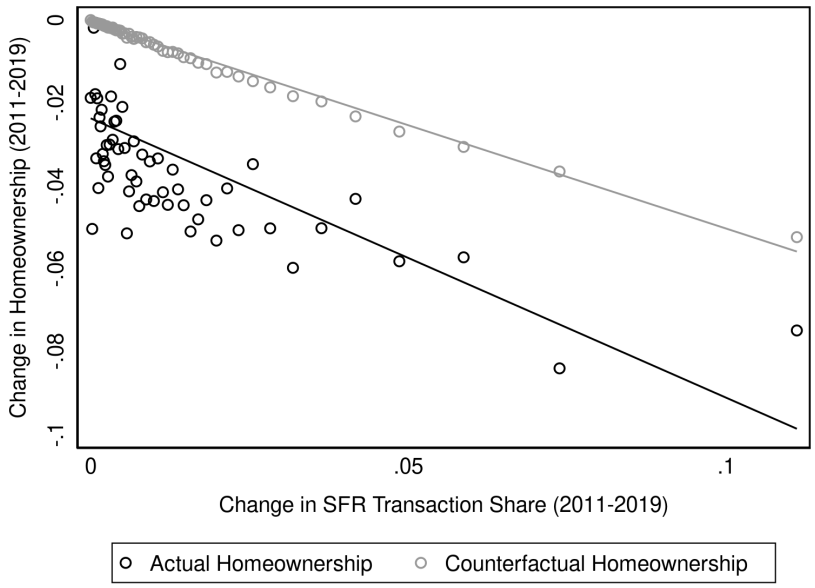


B. House Price



Notes. This figure shows the characteristics of properties acquired by corporate SFR landlords.

Figure A.3. Long Difference of Census Tract-Level Homeownership



Notes. This figure shows results from Census tract-level long-difference regression.

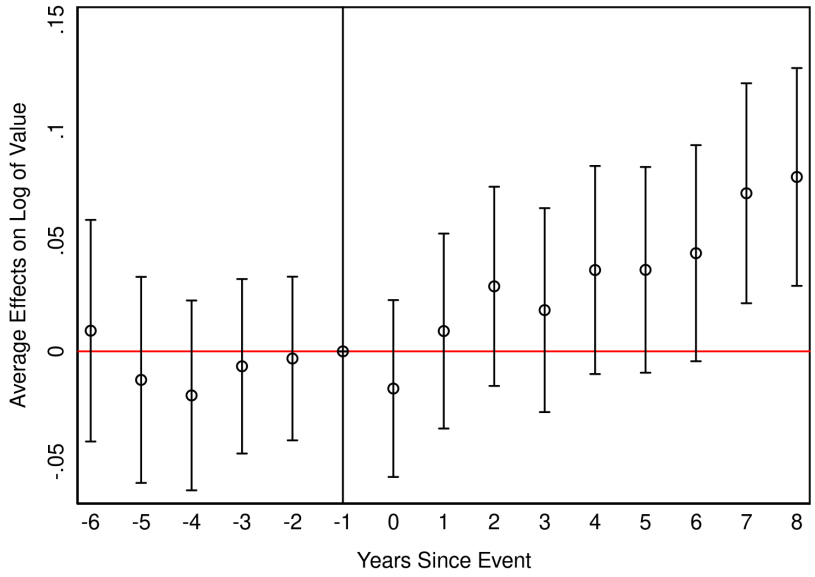
$$\Delta \textit{Homeownership}_{j,2011-19} = \alpha + \beta \Delta \textit{SFR Share}_{j,2011-19} + \epsilon_j$$

The y-axis is the change in homeownership and the x-axis is the share of properties purchased by a corporate SFR landlord between 2011 and 2019 relative to the total number of properties transacted in the same time period. The black line shows actual homeownership where the grey line shows "counterfactual homeownership" computed by dividing the sum of the number of rental properties in 2011 and the number of properties purchased by corporate SFR landlords by total number of properties as of 2011. And so, counterfactual homeownership is the mechanical homeownership rate implied by the entry and expansion of corporate SFR landlords, holding all else fixed. Reassuringly, the gap between actual and counterfactual homeownership is approximately 2 percentage point, similar to the actual aggregate decline in homeownership between 2011 and 2019 in the sample states of Florida, Georgia, North Carolina, and South Carolina. Furthermore, the gap is consistent across the x-axis, which provides descriptive evidence that neighborhoods where the impacts corporate SFR landlords are most pronounced were not on differential trends from other neighborhoods.

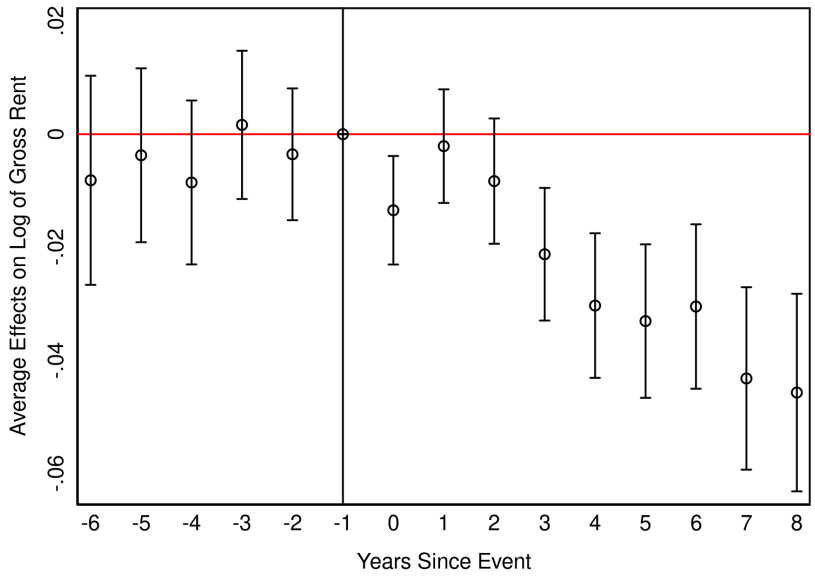
Return to Section 5.1.

Figure A.4. Procompetitive Effects on Local Rents and Prices (PUMS)

A. PUMA × Segment-Level Price



B. PUMA × Segment-Level Rent



(continued on next page)

Procompetitive Effects on Local Rents and Prices (PUMS) (cont'd)

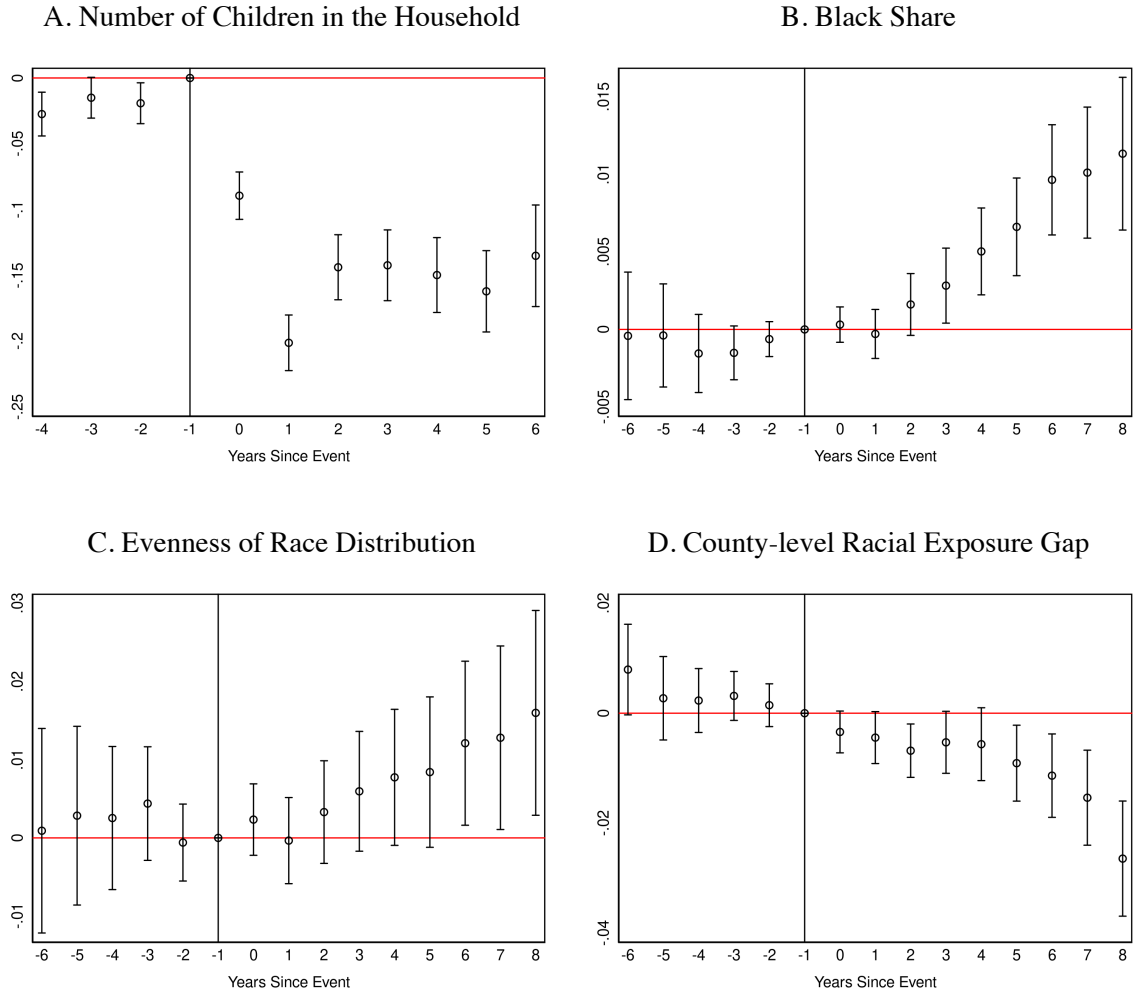
Notes.

$$\ln \textit{Housing Cost}_{i(jq)t} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}^{k}_{(jq)t}}_{=\mathbb{1}\{t-\textit{Year SFR Entered}_{(jq)}=k\}} + \underbrace{\alpha_{(jq)}}_{\text{Housing Market}} + \underbrace{\zeta_{g(jq)t}}_{\text{State-Time}} + \epsilon_{i(jq)t}$$

Years Since SFR Entry$_{(jq)t}$ is the relative time, in number of years, to the year in which a corporate SFR landlord first purchases any property in neighborhood or housing market (jq), defined as the interaction between the PUMA region j and housing quality segment q (i.e., number of bedrooms). Thus, I roughly control for the quality of the underlying housing stock. This is particularly important for rents, because distribution of the quality of rental stock may change significantly after SFR investor entry. Panels A and B show results for house price and rent at the housing market-level, respectively.

Return to Section 5.4 and Appendix Section C.2.

Figure A.5. In-Migration of Households into SFR Properties and Census Tract-Level Desegregation



Notes.

$$\textit{Household Characteristics}_{it} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Purchase}_{it}^{k}}_{\equiv \mathbb{1}\{t - \textit{Year SFR Purchased } i = k\}} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\zeta_{g(i)t}}_{\text{Census tract-Year}} + \epsilon_{it}$$

Years Since SFR Purchase$_{it}^{k}$ is the relative time, in number of years, to the year in which a corporate SFR landlord purchased property i. The data are property-household-level panel that tracks the resident of each property over time. Household characteristics are estimated by Data Axle using various data sources including surveys. To focus on households who move into a corporate SFR landlord-owned property, I restrict the treatment sample to investor-owned properties whose tenancy changes within the first three years of the purchase by the investor.

(continued on next page)

In-Migration of Households into SFR Properties and Census Tract-Level Desegregation (cont'd)

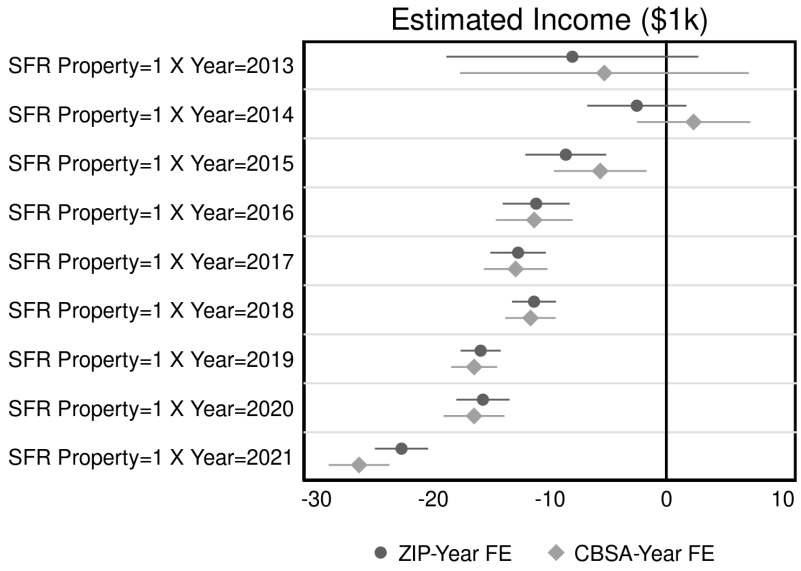
$$\textit{Segregation}_{jt} = \sum_{k \neq -1} \beta_k \underbrace{\textit{Years Since SFR Entry}_{jt}^{k}}_{=\mathbb{1}\{t-\textit{Year SFR Entered}_j = k\}} + \underbrace{\alpha_j}_{\text{Census tract}} + \underbrace{\zeta_{g(j)t}}_{\text{County-Year}} + \epsilon_{jt}$$

Years Since SFR Entry$_{jt}$ denotes the number of years relative to when a corporate SFR landlord first purchased any property in Census tract j. The data are constructed from the 5-year Census tract-level ACS.

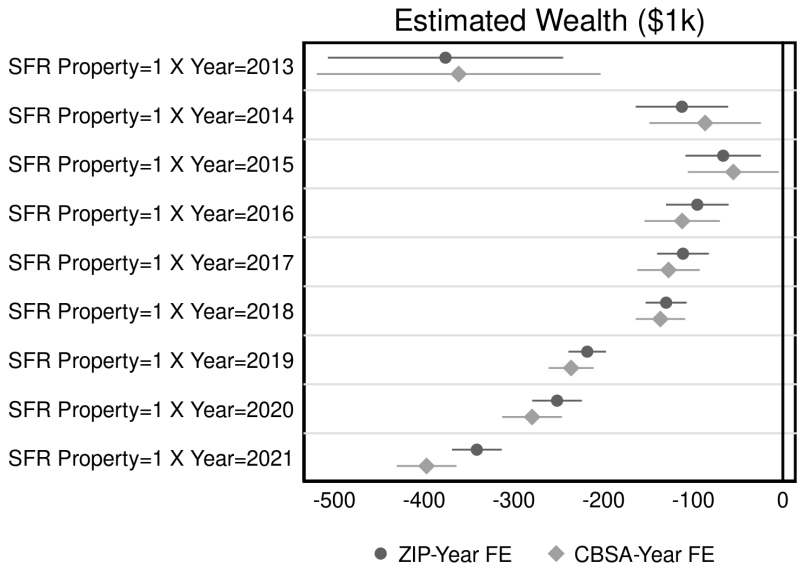
Return to Section 5.2.

Figure A.6. Tenants of Corporate SFR Landlords Over Time

A. Household Income

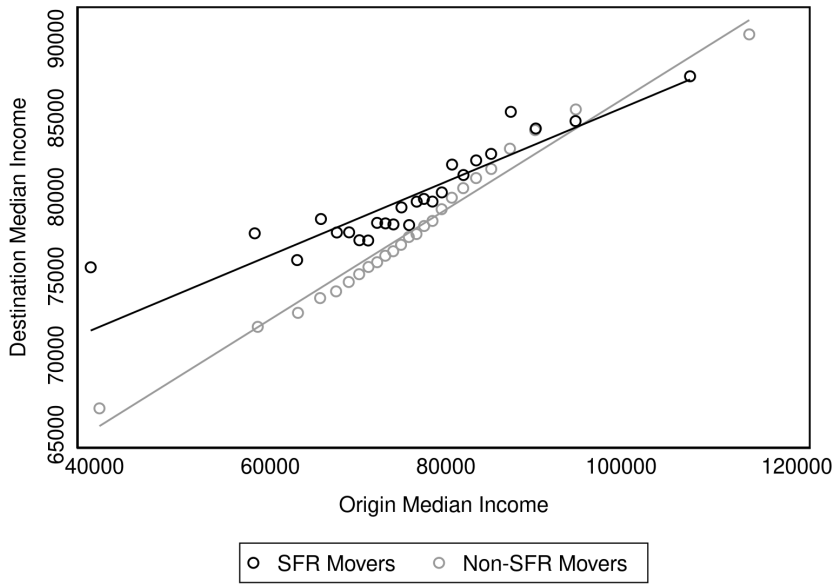


B. Household Wealth



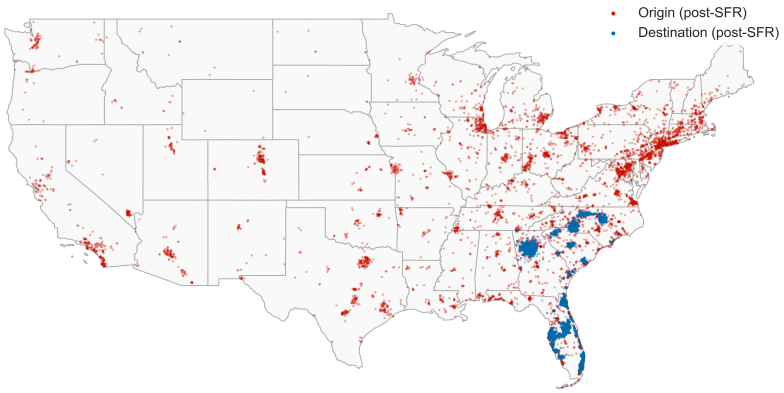
Return to Section 5.2.

Figure A.7. Evidence of Directed Migration: Origin V.S. Destination Neighborhood Income



Return to Section 5.2.

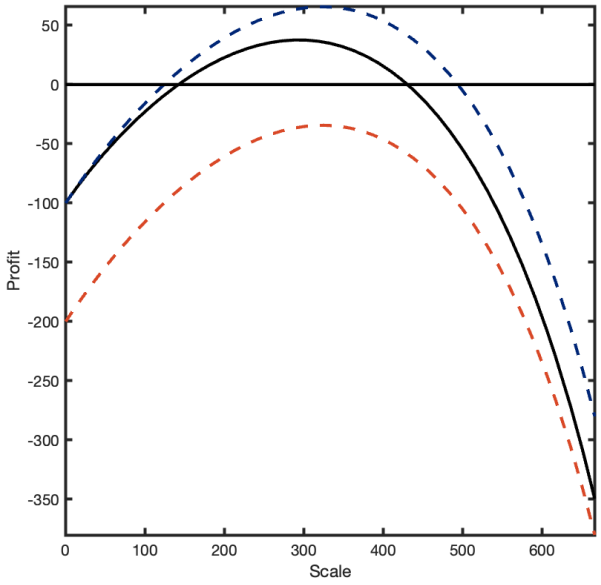
Figure A.8. Origin Locations of Households Who Move into an SFR Investor Property



Notes. Blue dots represent properties owned by SFR investors. Red dots represent the origin location of households who move to an SFR property, i.e., the location of properties resided by the household immediately prior to moving to an SFR property).

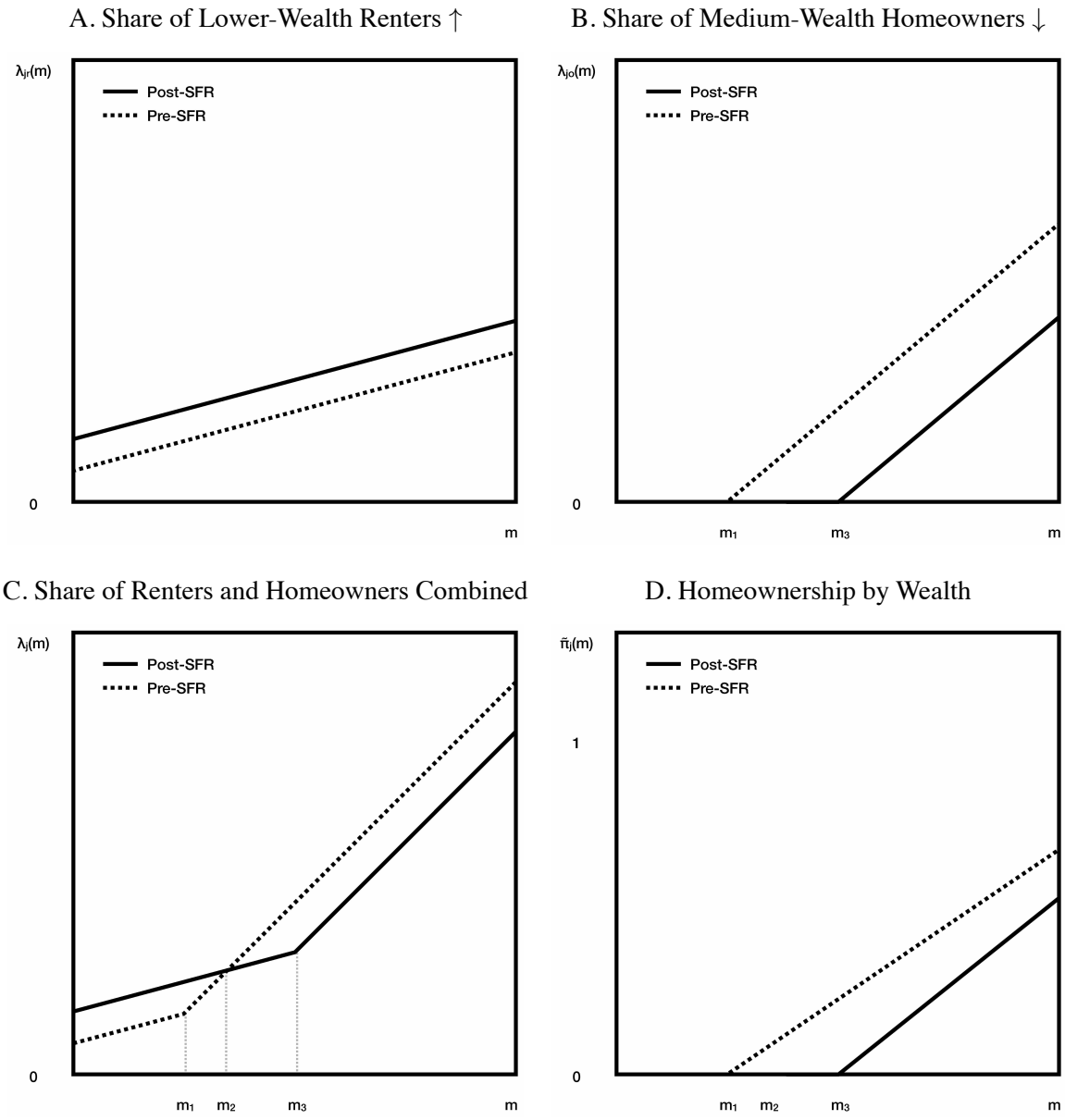
Return to Section 5.2.

Figure A.9. The Global Landlord's Profits



Return to Appendix Section D.2.

Figure A.10. Patterns of Spatial Sorting by Household Type



Return to Appendix Section D.5.

F. Additional Tables

Table A.1. Examples of Buyer Names and Addresses Associated with Corporate SFR Landlords

Institution	Buyer Name	Buyer Address
INVITATION HOMES	2018-4 IH BORROWER LP	SCOTTSDALE AZ 85261-4900
	2018-2 IH BORROWER LP	1717 MAIN ST STE 2000 DALLAS TX 75201-4657
	SFR JAVELIN BORROWER, LP	1717 MAIN ST STE 2000 DALLAS TX 75201-4657
	IH6 PROPERTY NORTH CAROLINA L.P.	9335 HARRIS CORNERS PKWY STE 150 CHARLOTTE NC 28269-3818
	. . .	. . .
PROGRESS RESIDENTIAL	MILE HIGH BORROWER 1 (VALUE), LLC	P O BOX 4090 SCOTTSDALE AZ 85261
AMERICAN HOMES 4 RENT	. . .	. . .
AMHERST RESIDENTIAL	. . .	. . .
BROOKFIELD ASSET MANAGEMENT	. . .	. . .
. . .	. . .	. . .

Return to Appendix Section B.2.

Table A.2. Landlord Scale and Operating Expenses

	Dependent Variable: Log of Operating Expenses					
	(1)	(2)	(3)	(4)	(5)	(6)
Log of Landlord Scale (ZIP)	-0.002***	-0.002***	-0.002**			
	(0.001)	(0.001)	(0.001)			
Log of Landlord Scale (City)				-0.003***	-0.004***	-0.003***
				(0.001)	(0.001)	(0.001)
Landlord F. E.	×	×	×	×	×	×
ZIP-County-City-Year F. E.	×	×	×	×	×	×
Property F. E.		×	×		×	×
Loan Characteristics			×			×
N	326,980	317,002	236,501	326,980	317,002	236,501
R-squared	0.721	0.748	0.797	0.721	0.748	0.797

Notes. This table shows the relationship between landlords' operating expenses and local scale.

$$\ln \textit{Operating Expenses}_{ilmt} = \beta \textit{Scale}_{g(i)lt} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\alpha_l}_{\text{Landlord}} + \underbrace{\gamma X_m}_{\text{Loan Characteristics}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}} + \epsilon_{ilmt}$$

Each observation is a unique property i owned by landlord l which are included in CMBS m securitized in year t. $g(i)$ is the ZIP Code or state where property i is located, depending on the specification. The coefficient of interest β represents the relationship between property-level operating expenses and a landlord's scale within a geography. Columns 1 through 3 report results where landlord scale is computed at the ZIP Code-level. Columns 4 through 6 report results where landlord scale is computed at the state-level instead. The results are stable with the inclusion of property fixed effects (Columns 2 and 5) and loan characteristics covariates (Columns 3 and 6). Standard errors are clustered by property and reported in parentheses.

Return to Section 3.2.

Table A.3. Price Premium Associated with Corporate SFR Landlord Acquisitions and Financing Methods

	Dependent Variable: $\ln Price$					
	(1)	(2)	(3)	(4)	(5)	(6)
SFR Buyer	0.200	0.168	0.160	0.158	0.146	0.100
	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)	(0.009)
Mortgaged	0.155	0.132	0.133	0.136	0.133	0.094
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Sample	2012-20	2012-20	2012-20	2012-20	2012-20	2012-20
Property F. E.	×	×	×	×	×	×
Hedonic-Time F. E.		×	×	×	×	×
Zip-Year F. E.	×	×				
Zip-Quarter F. E.			×			
Zip-Month F. E.				×		
Tract-Month F. E.					×	
Street-Month F. E.						×
N	3,154,922	3,153,985	3,142,053	3,104,743	2,732,619	455,488
R-squared	0.869	0.878	0.888	0.902	0.923	0.964

Notes.

$$\ln \textit{Price}_{ist} = \beta_1 \textit{SFR Buyer}_{ist} + \beta_2 \textit{Mortgaged}_{ist} + \underbrace{\underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}}}_{\equiv \chi_{it}} + \epsilon_{ist}$$

Each observation is a unique property sales s involving property i in time t. The estimated β coefficient represents the price premium that corporate SFR landlords pay relative to other buyers. The dependent variable is the log of transaction price. In Column 1, the specification includes property fixed effects and ZIP Code-year fixed effects. Columns 2 through 6 include time-varying hedonics and subsequently more granular geography-time fixed effects. Hedonic characteristics include bins for the number of years since property construction, number of years since renovation, property size, number of bedrooms and bathrooms, a binary variable indicating whether the property is multistory, heating and garage types, and construction quality. Standard errors are clustered by property and reported in parentheses.

Return to Section 7.3 and Appendix Section C.1.

Table A.4. Price Premium Associated with Corporate SFR Landlord Acquisitions and Distress Sales

	Dependent Variable: $\ln Price$					
	(1)	(2)	(3)	(4)	(5)	(6)
SFR Buyer	0.098	0.098	0.086	0.082	0.075	0.101
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.011)
Sample	Non-dist.	Non-dist.	Non-dist.	Non-dist.	Non-dist.	Non-dist.
Property F. E.	×	×	×	×	×	×
Hedonic-Time F. E.		×	×	×	×	×
Zip-Year F. E.	×	×				
Zip-Quarter F. E.			×			
Zip-Month F. E.				×		
Tract-Month F. E.					×	
Street-Month F. E.						×
N	2,491,190	2,490,278	2,477,694	2,437,852	2,069,904	329,720
R-squared	0.875	0.878	0.889	0.903	0.923	0.962

Notes.

$$\ln \textit{Price}_{ist} = \beta_1 \textit{SFR Buyer}_{ist} + \beta_2 \textit{Mortgaged}_{ist} + \underbrace{\underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}}}_{\equiv \chi_{it}} + \epsilon_{ist}$$

Each observation is a unique property transaction s involving property i in time t. The estimated β coefficient represents the price premium that corporate SFR landlords pay relative to other buyers. The dependent variable is the log of transaction price. In column 1, the specification includes property fixed effects and ZIP Code-year fixed effects. Columns 2 through 6 include time-varying hedonics and subsequently more granular geography-time fixed effects. Hedonic characteristics include bins for the number of years since property construction, number of years since renovation, property size, number of bedrooms and bathrooms, a binary variable indicating whether the property is multistory, heating and garage types, and construction quality. Standard errors are clustered by property and reported in parentheses.

Return to Section 7.3 and Appendix Section C.1.

Table A.5. Price Premium Associated with Corporate SFR Landlord Acquisitions and Distress Properties

	Dependent Variable: $\ln Price$					
	(1)	(2)	(3)	(4)	(5)	(6)
SFR Buyer	0.092	0.092	0.079	0.075	0.062	0.096
	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.011)
Sample	Never-dist.	Never-dist.	Never-dist.	Never-dist.	Never-dist.	Never-dist.
Property F. E.	×	×	×	×	×	×
Hedonic-Time F. E.		×	×	×	×	×
Zip-Year F. E.	×	×				
Zip-Quarter F. E.			×			
Zip-Month F. E.				×		
Tract-Month F. E.					×	
Street-Month F. E.						×
N	2,115,917	2,115,016	2,102,028	2,060,774	1,702,187	271,242
R-squared	0.875	0.878	0.890	0.905	0.924	0.962

Notes.

$$\ln \textit{Price}_{ist} = \beta \textit{SFR Buyer}_{ist} + \underbrace{\underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geography-Time}}}_{\equiv \chi_{it}} + \epsilon_{ist}$$

Each observation is a unique property transaction s involving property i in time t. The estimated β coefficient represents the price premium that corporate SFR landlords pay relative to other buyers. The dependent variable is the log of transaction price. In column 1, the specification includes property fixed effects and ZIP Code-year fixed effects. Columns 2 through 6 include time-varying hedonics and subsequently more granular geography-time fixed effects. Hedonic characteristics include bins for the number of years since property construction, number of years since renovation, property size, number of bedrooms and bathrooms, a binary variable indicating whether the property is multistory, heating and garage types, and construction quality. Standard errors are clustered by property and reported in parentheses.

Return to Section 7.3 and Appendix Section C.1.

Table A.6. Price Premium Associated with Corporate SFR Landlord Acquisitions and Local Market Penetration

	Dependent Variable: ln $Price$				
	(1)	(2)	(3)	(4)	(5)
SFR Buyer	0.1132***	0.1021***	0.1101***	-0.0419	-0.4720*
	(0.0034)	(0.0042)	(0.0037)	(0.1084)	(0.2521)
Trans. Share (Flow)		0.0006			
		(0.0003)			
SFR Buyer × Trans. Share (Flow)		0.0251***			
		(0.0061)			
Trans. Share (Flow; Year)			0.0001**		
			(0.0000)		
SFR Buyer × Trans. Share (Flow; Year)			0.0009*		
			(0.0005)		
Trans. Share (Stock; Year)				-0.0013	
				(0.0011)	
SFR Buyer × Trans. Share (Stock; Year)				0.0140***	
				(0.0027)	
Trans. Share (Stock)					-0.0059**
					(0.0026)
SFR Buyer × Trans. Share (Stock)					0.0183**
					(0.0089)
Sample	2012-20	2012-20	2012-20	2012-20	2012-20
Property F. E.	×	×	×	×	×
Zip-Month F. E.	×	×	×	×	×
N	3,117,066	3,117,066	3,117,066	3,117,066	3,117,066
R-squared	0.887	0.887	0.887	0.887	0.887

Note.

$$\ln \textit{Price}_{islt} = \beta_1 \textit{SFR Buyer}_{ist} + \beta_2 \textit{SFR Buyer}_{ist} \times \textit{Local Scale}_{slg(i)t} + \underbrace{\alpha_i}_{\text{Property}} + \underbrace{\gamma X_{it}}_{\text{Hedonic-Time}} + \underbrace{\zeta_{g(i)t}}_{\text{Geo-Time}} + \epsilon_{islt}$$

Each observation is a unique property sales s involving property i and buyer l in time t. The variation in the interaction variables *Transaction Share* comes from differences in the timing and the intensity of purchase activities in ZIP Code $g(i)$ across different corporate landlords buyers l. *Trans. Share (Flow)* is the number of distinct previous purchases leading up to sales s involving the same corporate landlord buyer l in $g(i)$ (normalized by the number of all transactions in $g(i)$ leading up to sales s). That is, it indicates the time-series order of transaction s among all acquisitions by l in ZIP Code $g(i)$. *Trans. Share (Flow; Year)* is the number of unique previous purchases by l in the same $g(i) \times$ Year. *Trans. Share (Stock; Year)* is the total number of distinct purchases by l in the same $g(i) \times$ Year. *Trans. Share (Stock)* is the total number of distinct purchases by l in $g(i)$ between 2012 and 2020.

Return to Section 7.3 and Appendix Section C.1.