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The metropolitan and neighborhood geographies of REIT- and private equity–owned single-family rentals

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ABSTRACT
After the U.S. foreclosure crisis, institutional investors purchased thousands of homes and converted them into rental properties. Past research links these entities to a number of negative outcomes, including rent increases and eviction filings. This paper examines a larger variety of investors, including private equity firms and contract sellers. Using a national dataset of real estate transactions from 2010 to mid-2017, we examine the inter- and intra-metropolitan geography of institutional investors. Consistent with prior research, we find that large publicly traded entities purchased homes in growing Sunbelt metros, yet some specific firms target weaker-market metros. Large, publicly traded firms have concentrated investment in higher-value neighborhoods with larger shares of white residents. In contrast, private equity firms and contract sellers tend to invest in relatively lower-value neighborhoods with larger shares of Black residents. Results suggest different potential implications for these diverse actors' investments, from crowding out prospective homebuyers to racial targeting.

KEYWORDS
Institutional investors; single-family rentals; class monopoly rent; housing

Introduction

In the wake of the foreclosure crisis and recession, single-family rental housing emerged in the U.S. as a new and highly profitable asset class, attracting substantial institutional investment (Christophers, 2023; Fields, 2018). Banks and other financial institutions foreclosed on millions of homeowners and small landlords nationwide in the 2000s and early 2010s, leading to massive portfolios of so-called real estate owned (REO) properties (Immergluck, 2010; Martin & Niedt, 2015). These institutions, in turn, sold discounted properties in markets hit hard by foreclosures to institutional investors (Immergluck, 2012; Seymour, 2020). Many other homes were sold at foreclosure auctions before entering REO inventory. Institutional investors, which had historically accounted for a small fraction of the single-family rental market, entered in force after 2010 given the conjuncture of discounted inventory available at scale in concentrated areas and a strong surge in demand for rental homes due to stricter underwriting and other barriers, as well as structural factors steering households toward rentership (Immergluck, 2018b).

Activists, academics, and journalists have raised several concerns related to corporate ownership of single-family rentals (SFR), suggesting that these entities' business practices, strictly aligned with maximizing profits, contribute to housing insecurity. These practices are argued to involve aggressively raising rents, adding excessive fees, withholding maintenance, and automatically filing for eviction at the moment of delinquency (Abood, 2018; Mari, 2020; Raymond et al., 2018; Semuels, 2019). The largest of these institutional single-family landlords include publicly traded Real Estate Investment Trusts (REITs) like Invitation Homes, which holds more than 80,000 homes, and private

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equity–backed operations like Progress Residential, entities created precisely to increase value for themselves and their shareholders (Christophers, 2022; Fields & Vergerio, 2022). These investors further grew their holdings during the pandemic, leveraging their ability to pay cash to outbid prospective homebuyers during a period of intense competition for single-family housing (Schaul & O'Connell, 2022).

While landlord interest groups claim institutional investors control only a small share of total single-family rentals nationally (Blackstone, 2019), these entities' holdings are concentrated in specific metropolitan areas, particularly in parts of the Sunbelt where discounted properties were widely available following the foreclosure crisis and demand for rental housing was strong and growing (Fields & Vergerio, 2022). Further, these investors' holdings are concentrated within specific submarkets within their metropolitan target areas (Chilton et al., 2018; Charles, 2020; Colburn et al., 2021). This concentration of ownership raises questions about the possibility of these firms now or eventually holding monopoly power over their target submarkets, allowing them to push rental prices upward and otherwise exert power over tenants, including through reduced maintenance, added fees and charges, and the threat of eviction (Tapp & Peiser, 2022). In addition, there are concerns that institutional ownership of single-family rentals harm residents of historically marginalized areas, particularly Black and Latinx neighborhoods, where some of these investors have been particularly active (Frankel & Keating, 2018; Schaul & O'Connell, 2022). These households and neighborhoods, which were disproportionately targeted by predatory subprime lending, leading to displacement in the ensuing foreclosure crisis, may now be targeted by institutional landlords exploiting structural and highly racialized barriers to homeownership (Fields & Raymond, 2021; Teresa, 2022).

Given the seriousness of these concerns, additional research on corporate landlords is required, including descriptive research on where these entities are acquiring inventory and in which submarkets. This paper contributes to our understanding of the geography of institutional investors in single-family rental housing by examining an extensive set of investors at the national scale. Past research on the geography of investor ownership has focused on REITs because information about these entities is publicly available (Charles, 2020; Chilton et al., 2018; Colburn et al., 2021). While these entities account for a large number of institutionally owned SFRs, they do not capture the private equity firms playing a substantial and growing role in this market. Existing research's focus on publicly traded REIT landlords may understate the degree to which diverse institutional investors are accumulating homes in specific types of areas, particularly Black and Latinx neighborhoods. Research on this broader set of actors is needed to assess whether and where these different actors are consolidating ownership, as this has implications for their capacity for realizing class-monopoly rent (Anderson, 2014; Harvey, 1974). In short, we need to know more about the geographic specialization of different kinds of SFR investors to understand which submarkets they are targeting and with what consequences.

To this end, we examine the metropolitan geography of ownership of this broader set of actors, comparing these entities in terms of the types of metropolitan areas where their properties are concentrated. Further, we compare the characteristics of the neighborhoods in which these firms invest. Recent journalistic accounts report that corporate investors of all sizes, including small-scale landlords, have concentrated their acquisitions in majority-minority neighborhoods (Schaul & O'Connell, 2022). We examine whether the demographic and housing market characteristics of the neighborhoods in which the largest corporate landlords purchase properties differ from the metropolitan areas in which they are located to address this question of demographic targeting, deliberate or otherwise. Ultimately, the paper demonstrates that institutional SFR investors exhibit substantial variation in the geographies of their investments. The large publicly traded REITs tend to have concentrated investment in Sunbelt metros and higher-income neighborhoods, while some private equity–backed firms have targeted lower-income and more racially diverse neighborhoods, often in metros where REITs are absent. These patterns are consistent with the premise that these firms are carving out submarket niches both between and within metropolitan areas, creating conditions for the realization of class-monopoly rent. Including this broader range of firms aids our understanding of how these firms' portfolios are both segmented and interconnected across submarkets.

Background

Making single-family rentals an asset class

Single-family rentership has grown substantially since the foreclosure crisis for several reasons (Immergluck, 2018b). Foreclosure displaced millions of owner households and impaired their credit, barring many of them from becoming owners again for at least several years. Lenders also reversed course after the subprime lending boom and tightened mortgage underwriting standards. At the same time, wages have not kept pace with home prices, making it harder to save for a down payment and otherwise qualify for a loan. Further, higher levels of student debt and other encumbrances have made it harder for younger households to become owners. Black households, who were disproportionately targeted by subprime lenders, have had a particularly hard time entering the homebuying market (Choi et al., 2019).

On the supply side of the situation, investors with the ability to pay cash could capitalize on the confluence of distressed property sales, particularly foreclosure auctions and REO sales, and growing demand for rental housing (Immergluck & Law, 2014). While single-family housing had long provided a sizable share of the overall U.S. rental stock, the entrance and growth of institutional investors represents a significant departure from precedent, although they have long been active in the multi-family space. Much has been made of the difference between the typical owner of SFRs before the foreclosure crisis, the "mom-and-pop" landlords consisting of individuals or small proprietors using rents to supplement other sources of income, and institutional investors, which manage their portfolios to enhance corporate and shareholder profits. Institutional investors had historically avoided single-family housing because of the greater difficulty of assembling and managing sufficient inventory compared to apartment buildings and complexes. With the availability of geographically concentrated and heavily discounted home inventories and growing demand for rental housing, the calculus changed for institutional investors, and they entered this space in force starting in 2012 (Christophers, 2023; Colburn et al., 2021; Fields, 2018). Innovations in information technology were also a necessary condition for the growth of SFR as an asset class, enabling large landlords to monitor and manage thousands of scattered rental homes (Fields, 2022).

Institutional investors in rental homes

While investors of all sizes purchased large numbers of homes during and after the foreclosure crisis, a few institutional investors purchased substantial quantities in the first wave of massive home acquisition between 2012 and 2014 (Christophers, 2023; Fields, 2018). The largest early SFR investor was global private equity giant The Blackstone Group, which created Invitation Homes, through which Blackstone acquired and managed rental homes. Other early SFR investors include real estate investment funds Colony Capital, Starwood Capital, and the Waypoint Real Estate Group—all entities whose portfolios would be consolidated and managed by Invitation Homes by 2017, making them, at least at the time, the nation's largest single-family landlord (Lane, 2017a). American Homes 4 Rent (AH4R), backed by the Alaska Permanent Fund, was another major early investor in single-family homes, and it would eventually merge with competitor firm American Residential Properties (Lane, 2015). Tricon American Homes, a subsidiary of a large Canadian investment firm, was another early investor, and they would later grow by acquiring Silver Bay Realty Trust in 2017, making them the fourth-largest publically owned SFR company at the time (Lane, 2017b). After their first few years of operation, these firms all went public to raise additional capital to expand their holdings.

Front Yard Residential, known as Altisource until 2017, was another major early investor which also went public after a few years of operation. Front Yard acquired property manager HavenBrook Partners and their more than 3,200 homes in 2018 (Lane, 2018). In 2021, Pretium Partners, an alternative investment management fund, partnered with Ares Management Corporation to acquire Front Yard and take it private again (Kalinoski, 2021). Pretium also owns Progress Residential, another major post-crisis SFR landlord. Progress had remained one of the largest privately held SFR landlords, and Pretium's acquisition of Front Yard made them the largest private owner of SFRs and, at the time, the second-largest SFR landlord in the nation. According to some sources, Progress surpassed Invitation in 2022, with the two firms each owning more than 80,000 SFRs (Private Equity Stakeholder Project, 2022). Other major SFR investors include real estate investment firm Amherst Capital, operating through its rental company Main Street Renewal, and private equity firm Cerberus Capital Management, acquiring and managing properties through FirstKey Homes.

The SFR investors mentioned above were and remain the largest, and they have received the most attention, though several other firms, some of which have since merged, have also been active in acquiring SFRs. One major investor is VineBrook Homes Trust (VineBrook), an externally managed real estate company based in the Dayton, OH area specializing in renovating and renting SFRs. They first acquired thousands of homes in the Midwest near their base of operations. VineBrook has since acquired other SFR companies' holdings in the Midwest and Southeast, including TrueLane in 2019 and Connorex-Lucinda (Conrex) and Prager in 2021 (James, 2021; VineBrook Homes, 2021a, 2021b). VineBrook's press releases state their strategy of acquiring and operating SFRs in "secondary and tertiary markets" (VineBrook Homes, 2019). Though VineBrook remains privately held, it is anticipated to go public in the near future (Clark, 2022), following the precedent of other major SFR investors pursuing this route to raise capital. It remains to be seen whether they do so or remain private, like Pretium, allowing them to maintain control and avoid additional scrutiny.

GTIS Partners (AKA Golden Tree Insite) and 643 Capital, both global real estate firms, through their investment and management company StreetLane Homes, were among the largest SFR landlords in the U.S., holding more than 6,000 homes at the end of 2016 (GTIS Partners, 2017). By 2021, GTIS had sold its inventory of scattered SFR homes to other institutional investors to concentrate on build-to-rent communities (GTIS Partners, 2021). Gorelick Brothers Capital was another privately held real estate investment firm that acquired homes after the foreclosure crisis. In 2021, Bridge Investment Group Holdings acquired Gorelick's homes and business platform (Bridge Investment Group, 2021). Reven was another early entrant, leveraging private equity to purchase "relatively small, stabilized portfolios of modest rental homes in major markets" (Robaton, 2018). Reven since went public and remains one of the smallest publicly traded SFR investors.

Geography of institutional investors and their effects

Research to date shows that large institutional investors acquiring properties in the 2012 to 2014 period concentrated their investments in Sunbelt metros. Mills et al. (2019) drew on a national dataset of real estate transactions, identifying homes purchased by eight of the largest SFR investors. They found that compared to other investors in single-family housing, these large buy-to-rent investors were more likely to concentrate their investments in specific metro areas, particularly in the Sunbelt. They found that three quarters of all purchases by SFR investors were in just 10 metros, expanding to 15 metros in 2013–2014. This geographic concentration is also identified by researchers looking at the individual inventories of the largest SFR investors. Fields et al. (2016), through an examination of SFR securitization materials, found that the bulk of the homes involved in these deals were concentrated in Sunbelt metros. Of the 17 metro areas with more than 1,000 SFR securitized homes, only Chicago, Indianapolis, and Seattle were outside the Sunbelt. Drawing on SEC filings for Invitation Homes, American Homes 4 Rent, and Tricon American Homes, Colburn et al. (2021) similarly found a concentration of institutional ownership in Sunbelt cities with strong predicted growth. Paired with a close reading of these entities' corporate filings, the authors concluded that "capital appreciation potential might be greater in other neighborhoods, but the high occupancy and strong rent profile is most important to this class of investors" (Colburn et al., 2021, p. 1605).

In terms of the within-metro geography of SFR investment, prior research finds that institutional investors, specifically REIT investors, are more likely to purchase homes in relatively higher-value suburban neighborhoods that tend to be both higher-income and more white compared to SFRs overall (Charles, 2020; Chilton et al., 2018; Colburn et al., 2021; Immergluck, 2018b). For instance, Colburn et al. (2021), found that Invitation Homes, American Homes 4 Rent, and Tricon collectively concentrated investment in neighborhoods with middle-to-higher incomes and where there is a higher proportion of white residents in Atlanta, Phoenix, and Tampa. Charles (2020), in their study of the geography of REIT investment in metro Atlanta, found largely similar results, but they also included an analysis of Front Yard Residential, whose investment profile contrasts considerably with these other firms. Front Yard's properties were relatively smaller and older and located in neighborhoods with lower home values and higher percentages of non-Hispanic Black residents and families living in poverty. These results suggest important differences between institutional SFR investors in their between- and within-metro patterns of investment, the types of properties involved, tenant income and demographics, and the business practices used for generating profits from these portfolios concentrated in different housing submarkets.

Investigative journalists have reported the geography and effect of purchases by individual SFR investors, including non-REIT entities, in markets that have received less attention in the scholarly literature. Journalists at the *Washington Post* reported on FirstKey Homes/Cerberus Capital Management's activity in Memphis, a city that does not rate among the top locations for REIT investment (Frankel & Keating, 2018). They found that FirstKey became the largest owner of single-family homes following the foreclosure crisis, operating nearly 1,800 rental homes in 2018. Journalists at the *Cincinnati Business Courier* have documented the incursion of institutional investors since 2013, giving particular attention to VineBrook, which they reported owned more than 3,000 homes in Hamilton County, Ohio. They reported that VineBrook and other SFR investors concentrated investment in racially integrated neighborhoods with high shares of Black households. This suggests that investors like VineBrook, and by extension FirstKey, are targeting not only different metros, particularly those with relatively weaker markets and lower acquisition costs, but also different neighborhoods, particularly those with larger percentages of Black residents. These investment patterns in turn raise concerns about investor activity crowding out homeownership opportunities in neighborhoods historically accessible to a range of homebuyers (Alamdari et al., 2022; An, 2023; Wetterich, 2022).

Academics and journalists have also documented the consequences of institutional SFR investors on tenants. The *Washington Post* investigation of FirstKey's activity in Memphis found that their properties were subject to numerous code violations while also having the highest eviction filing rate among other large management companies in the area. This finding is consistent with academic research finding that corporate single-family landlords are more likely to file for eviction than small single-family landlords (Raymond et al., 2018; Seymour & Akers, 2021). The literature attributes these higher eviction rates to institutional owners' business models. The largest SFR landlords operate thousands of rentals in multiple metros. Even if those properties are concentrated in a limited number of metros, these portfolios remain more dispersed than units in an apartment building. The geography and spread of these inventories strongly incentivize the adoption of automated processes for handling issues like delinquency (Fields, 2022). Indeed, prior research on large landlords, including institutional SFR landlords, finds they automatically file for eviction at the first opportunity (Garboden & Rosen, 2019; Immergluck, 2010; Leung et al., 2021). In addition, research and reporting consistently link corporate landlords and their profit-maximizing business models to high and rising rents and numerous ancillary fees, increasing the risk of delinquency and eviction (Guion et al., 2022). Reporting has also linked institutional landlords' cost-saving measures and the layers of mediation between corporate owners to health and habitability problems (Davidson & Flannery, 2019; Edelman et al., 2014; Mari, 2020; Semuels, 2019; Steimer, 2022).

While institutional SFR investors have deservedly captured attention, discussions around post-crisis home investment typically separate SFR investors from the large-scale contract sellers and rent-to-own specialists that also emerged in the early 2010s, whose practices echo those of earlier eras of predatory contract selling (Immergluck, 2018a; Satter, 2009). These entities pursue a very different business model, purchasing distressed homes in extremely weak housing markets and using non-conventional sales and rental arrangements—all resembling a form of risky rent-to-own arrangement. Two entities, in particular, played a large role in this space: Harbour Portfolio Solutions (Harbour) and Vision Property Management (Vision). Like the other institutional investors discussed above, these entities acquired homes primarily through bulk purchases from Fannie Mae and local tax auctions. Fannie Mae disposed of its slowest-selling inventory in weak market metros, particularly in the Midwest, via bulk transactions. Rather than invest in these homes to make them meet habitability requirements, these companies used alternative financial arrangements placing responsibility for code compliance on buyers/tenants. These entities' acquisitions were heavily concentrated in majority-Black neighborhoods, raising concerns about discrimination through the racially skewed targeting of risky home sales and rental transactions (Akers & Seymour, 2018; Immergluck, 2018a; Seymour & Akers, 2019; Teresa, 2022).

Housing submarkets and class-monopoly rent

From what we know about the diversity of institutional SFR investors, we can categorize these actors based on the particular supply and demand characteristics implied by their geographic concentration and the likely consequences of this market segmentation for different companies' tenants. Publicly traded SFR investors buying newer homes in desirable suburbs, because of the rents they are likely asking and the screening processes they are likely employing, are more likely to rent to households that might have been first-time homebuyers, particularly young families, before 2008. Because of post-crisis barriers to homebuying, these investors may be viewed as making homes available in locations likely lacking multifamily rental housing, including desirable areas with amenities like high-quality schools (Pfeiffer & Lucio, 2015). Indeed, Charles (2020) found that more than 60% of the homes purchased by American Homes 4 Rent in metro Atlanta were located in top school districts, an unsurprising fact given the company's public statements about their criteria for targeting particular properties or neighborhoods (American Homes 4 Rent, 2023b). From another perspective, SFR investors are crowding out would-be homebuyers and contributing to conditions extending their status as renters, even if these investors are "allowing" these households to change locations to access things like high-quality schools and larger homes strictly as services. As a result, households that would otherwise be able to obtain a fixed and affordable monthly mortgage payment and build equity are consigned to paying substantial rents subject to regular increases.

Other SFR investors, including private equity firms and rent-to-own operators, were more likely to concentrate investment in relatively cooler housing markets, often in inner-city neighborhoods segregated from strong school districts and other location-based amenities (Mallach, 2014). These investors variously describe their target submarkets as "underserved" (Harbour Portfolio Advisors, n.d.), "highly distressed" (Sylvan Road Capital, 2012), part of the "working-class segment" (TrueLane Homes, 2018), or where there is "lower institutional competition" (VineBrook Homes, 2023, p. 4). These submarkets are more likely to have older housing stock and lower-income residents. Therefore, these investors may be more likely to withhold maintenance to maximize profits while also being quick to evict for the same reasons as other large SFR landlords. Their tenants are also more likely to be Black and Latinx given the structural racism embedded in historical and contemporary labor and housing markets. Thus, while SFR investors in desirable suburban areas capitalize on barriers to buying confronted by relatively financially secure households, SFR investors in weak markets capitalize on the deeply constrained housing options presented to lower-income and Black and Latinx households given the nation's dearth of quality affordable rental housing.

These patterns of spatial specialization by investor type may, therefore, constitute processes of housing submarket formation, submarket monopoly ownership, and tenant exploitation, for which the concept of class-monopoly rent is particularly salient. Introduced by Harvey (1974) and Harvey and Chatterjee (1974), class-monopoly rent exists when property owners, as a class, limit supply to ensure adequate returns are extracted from tenants. Harvey and Chatterjee developed this concept through their research on Baltimore during the 1960s and 1970s, where they observed the structured scarcity produced through the collective action of individual property owners in heavily disinvested neighborhoods, where credit was difficult to obtain. Individual owners would disinvest and abandon their properties, maintaining submarket scarcity and class-monopoly rents at the bottom of the housing market, where landlords could command exploitative rents for often substandard units. The lowest-income renters unable to access public housing faced barriers to accessing higher-quality housing due to their financial circumstances and racial discrimination.

However, Harvey (1974) notes that class-monopoly rent is not only realized at the bottom of the housing market, but also in middle-class suburban submarkets where higher-income households similarly compete for limited housing options given the uneven and racialized landscape of amenities and public services, like high-quality schools. While Harvey (1974) references "speculator-developers" in the context of the production of class-monopoly rent in upper-income suburbs, we may consider the contemporary role of buy-to-rent speculator-investors in the realization of these rents in the context of scarce home purchase options, itself a function of targeted investor acquisition of available homes in desirable communities. In the absence of rent control or other regulations limiting landlord power, investors exercise substantial power in shaping specific rental housing submarkets including housing availability and cost.

Scholars have renewed interest in the concept of class-monopoly rent in recent years, affirming its value in theorizing, in particular, the ways in which the ongoing and evolving financialization of housing at a broader scale shapes localized power dynamics between property owners and individual homeowners and tenants (Anderson, 2014). Wyly et al. (2009) theorize geographically and racially targeted patterns of subprime mortgage lending during the 2000s as a new means for realizing class-monopoly rent. Despite industry claims of colorblind, risk-based pricing, they show that subprime mortgage lending was disproportionately targeted to Black and Latinx neighborhoods and to borrowers living there who would have been eligible for conventional loans. Revington (2021) explains the emergence of privately owned, purpose-built student housing as a form of generational-based submarket formation shaped by planners and exploited by developers for the realization of class-monopoly rent. Of particular relevance here, Teresa (2022) theorizes the post-housing-crisis reemergence of predatory land contracts in Chicago as a recent iteration of racialized class-monopoly rent extraction predicated on ongoing and interrelated processes of housing market segmentation, group-based exclusion, and the exploitation of the scarcity this entails. While the business model of firms like Harbour and Vision, predicated on bulk purchases of distressed properties and the use of land contracts to shift risk onto tenants, constitutes an extreme and highly exploitative form of monopoly rent extraction, class-monopoly rent can be realized up and down the hierarchy of housing submarkets given their differentiation in terms of size, quality, and location. It is precisely this differentiation that enables the realization of monopoly rent in the first instance, as explained by Harvey and Chatterjee in their foundational work, while the specifics of how this differentiation is produced and exploited require continued examination.

This paper takes a systematic, if necessarily partial, look at the landscape of institutional investment in single-family homes for buy-to-rent and related businesses, including rent-to-own operations. While prior research provides us with a view of the metropolitan concentration of REIT SFR investors, the geography of private equity SFR landlords, which play a crucial role in this space, has not been systematically examined nationwide. The rest of this paper compares their inter- and intra-metropolitan geographies of this larger set of SFR investors to understand how their spatial strategies may enable the realization of class-monopoly rent.

Methods

Identifying owners

This study draws on a national dataset of real estate transactions (i.e., sales) acquired from CoreLogic. The national scope of the CoreLogic data allows us to identify and analyze particular firms' properties across the entirety of metropolitan and micropolitan areas, as well as within their neighborhood contexts across these regions. These records run through June 2017; we began our search with transactions occurring in 2010, iterating through records involving single-family residential properties, as indicated by a land use code in the CoreLogic data. We used a series of if-else statements to assign each sale to just one possible SFR investor. Since properties passed between firms would be a match for one SFR investor at one time and another at a later point, we assigned sales to the entity their buyer would have been acquired by or merged with by the end of our study period, e.g., we assigned homes purchased by Colony to Invitation Homes. We provide further details about this process in Appendix A.

We iteratively decided on a final set of investors to examine in this study. We drew on lists of top SFR investors produced by the Amherst Group, which also used CoreLogic as its basis for producing annual counts for individual entities (Amherst Group, 2017, 2018). Of the 22 entities named in the Amherst Group report derived from an analysis of data as of Q4 of 2016, we retain 17 named institutions (see Table 1). We attempted to identify holdings by all of the named entities in this report, but we were unable to systematically identify properties acquired by Haven Homes (2,865 homes), Camillo Real Estate (1,359), Lafayette Real Estate (1,258), Transcendent Investment Management (609), Broadtree Home Rentals (561), and Pintar Investment Company (228). For those institutions we found in the property records, we did so by iteratively building and testing combinations of buyer names and property tax mailing addresses associated with each entity, using regular expressions to

Table 1. Institutional investors in single-family rentals.

Entity	Initial/Major Investor	Acquisition/Merger	Publicly Traded	Total Homes
Invitation Homes	Blackstone (since divested)	Merged w/Colony Starwood/Starwood Waypoint in 2017	Yes	81,367
American Homes 4 Rent	Alaska Permanent Fund	Merged w/American Residential Homes in 2016	Yes	44,560
Progress Residential	Pretium Partners		No	20,767
Tricon American Homes	Tricon Capital	Merged w/Silver Bay in 2017	Yes	13,807
Front Yard Residential	Pretium Partners	Acquired HavenBrook Partners in 2018	Until Pretium acquisition in 2021	13,538
Main Street Renewal	Amherst Capital		No	11,410
Vision Property Management	Atalaya Capital		No	8,306
FirstKey Homes	Cerberus Capital Mgmt		No	7,355
Home Partners of America	Blackstone		No	6,177
Harbour Portfolio Advisors	Harbour Portfolio Advisors		No	5,826
Conrex	Connorex-Lucinda	Inventory acquired by VineBrook in 2021	No	4,365
StreetLane Homes	643 Capital, GTIS Partners		No	2,364
Gorelick	Gorelick Brothers Capital		No	2,116
VineBrook	NexPoint Capital		No	1,279
Sylvan Homes	Sylvan Road Capital		No	932
TrueLane Homes		Inventory acquired by VineBrook in 2019	No	807
Reven			Yes	713
Prager		Inventory acquired by VineBrook in 2021	No	681

Source: Author's calculations from CoreLogic.

flexibly find matches. We developed our list of associated buyer names and addresses based on sources including REIT SFRs' SEC filings, typically Form 10-K, which list entities' related subsidiaries. For Invitation Homes, we combined searches for properties purchased by Colony, Starwood, and other entities that had merged with Invitation Homes by 2017. Similarly, we used keywords for Silver Bay to identify properties we attribute to Tricon.

For private equity firms, we drew on our own experience combing through property records in multiple metros associating corporate names with their specific parent owner. In addition to the SFR investors named in Amherst's reports, we included a small set of additional entities. First, we included Sylvan Homes, a large SFR landlord operating primarily in metro Atlanta, who purchases using corporate names starting with "RNTR" followed by a number. We also included Home Partners of America, a large rent-to-own business acquired by Blackstone in 2021. Unlike other entities in this study, Home Partners does not buy properties with the intention of leasing these properties indefinitely; rather, it purchases homes chosen by prospective tenants in certain housing markets and then enters into a lease-with-option-to-purchase agreement with the tenants (for more on Home Partners' business model, see Burns, 2023). Home Partners purchases homes using corporate names starting with "HP" or "HOME PARTNERS." Lastly, we also included Harbour Portfolio Advisors and Vision Property Management, the two largest firms purchasing homes to either sell them using land contracts or rent them using lease-with-option-to-purchase arrangements. We identified their properties using corporate names listed in lawsuits filed against these companies in Pennsylvania and Michigan.

Analytic approach

The primary purpose of our analysis is to examine and compare the between- and within-metropolitan geography of institutional or otherwise large SFR investors. After identifying properties purchased by the individual entities listed in Table 1, we used the latitude and longitude columns in our CoreLogic data to join them to the 2019 census tract and Core Based Statistical Area (CBSA) within which they are located. We then joined these records to housing and demographic tables from the 2015–2019 American Community Survey (ACS), retrieved from the National Historical Geographic Information System (NHGIS; Manson et al., 2022).

We first examined the metropolitan and micropolitan concentration of SFR investors. To this end, we counted the number of distinct properties acquired by each entity in a given CBSA and compared entities based on both absolute numbers and relative shares of properties in terms of total acquisitions by our selected SFR investors. We next examined neighborhood demographic and housing characteristics, looking at the distribution of tract-level variables for each entity. For each variable, we also calculated the ratio of the tract value to its CBSA value to assess the degree to which the neighborhoods in which a given entity's acquisitions are located mirror overall metro conditions. This analysis addresses the question of whether differences between entities in terms of characteristics are a function of metropolitan or neighborhood specialization.

Last, we clustered our SFR investors based on median values for tract-level percentage of the population identifying as non-Hispanic Black alone, median home value, and median year built. We also included the ratio of the tract value to the CBSA value for percent Black and median home value (there is very little variation in the ratio of tract year built to CBSA year built). We used k-means clustering with a four-cluster solution. K-means clustering is one of the most commonly used clustering techniques as it is easy to implement and interpret, and it has been used in numerous studies clustering neighborhoods and municipalities based on multiple characteristics (Hanlon, 2009; Won, 2023). This algorithm assigns observations to one of *k* (a number predetermined by the researcher) clusters based on the cluster center, or mean, to which each observation is nearest. As a robustness check, we used hierarchical agglomerative clustering (HAC), using Ward's linkage method, which successively merges observations with their nearest neighbors until all observations are merged into a single cluster (Mikelbank, 2004). Researchers can therefore decide how many clusters to retain after implementation, unlike k-means clustering. Hierarchical clustering yielded an identical four-cluster solution, so we retained our four-cluster k-means solution. We stress that we view this analysis as a heuristic for comparing firms, not a means of definitively classifying them based on absolute differences.

Results

Metropolitan geography

The literature already paints a clear picture of the metropolitan geography of REIT investors given the relative ease of accessing this information from SEC filings. Our findings related to these investors are consistent with those reports and the literature that uses them as a basis for their analysis. Figures 1 and 2 show the total number of properties acquired by an entity associated with each of our selected SFR landlords by CBSA. Figure 3 shows the CBSA share of total acquisitions for each entity and Figure 4 shows the location quotient for each entity by CBSA, highlighting firm-level specialization in particular metro areas. Figures 1 and 3 are sorted by the total number of acquisitions across our selected investors in a CBSA, and they list values for only the top 50 CBSAs by total number of properties owned by our target firms. The maps in Figures 2 and 4 are organized alphabetically by investor name; they display the top 200 CBSAs in terms of total investor acquisitions using a standardized scale for all firms. The maps in Figures 2 and 4 are largely inverses of one another, as firms with larger holdings in a smaller number of CBSAs tend to be much less specialized than their smaller counterparts.

Overall, these figures highlight the concentration of institutional investment in the Sunbelt, including metro Atlanta and Phoenix and several metros in Florida, Texas, and the Carolinas. A few

	AH4R	Conrex	Firstkey	Front Yard	Gorelick	Harbour	Home Partners	Invitation	Mainstreet	Prager	Progress	Reven	Streetlane	Sylvan	Tricon	TrueLane	Vinebrook	Vision
Atlanta-Sandy Springs-Alpharetta, GA	3,253	0	61	2,695	320	258	524	14,005	1,896	135	2,859	9	1,166	913	3,246	3	0	135
Dallas-Fort Worth-Arlington, TX	3,665	0	435	824	251	18	984	2,355	1,648	0	1,357	0	381	0	1,120	131	0	112
Phoenix-Mesa-Chandler, AZ	2,696	0	4	114	0	1	2	7,351	10	0	1,658	0	0	0	1,383	0	0	32
Miami-Fort Lauderdale-Pompano Beach, FL	194	0	9	1,360	0	6	132	8,087	1	0	1,070	0	64	0	674	1	0	23
Tampa-St. Petersburg-Clearwater, FL	1,423	0	16	334	201	9	311	5,471	168	0	2,101	0	0	0	1,309	9	0	75
Charlotte-Concord-Gastonia, NC-SC	3,082	147	160	304	248	62	191	3,266	349	0	1,509	0	0	15	1,820	1	0	32
Houston-The Woodlands-Sugar Land, TX	2,410	0	459	856	162	3	245	2,424	608	0	1,514	262	221	0	340	12	0	81
Chicago-Naperville-Elgin, IL-IN-WI	1,821	0	883	343	0	116	663	3,793	7	0	0	0	300	0	3	3	0	344
Indianapolis-Carmel-Anderson, IN	2,677	531	1,256	211	289	167	91	23	976	0	967	0	0	0	368	9	17	128
Orlando-Kissimmee-Sanford, FL	966	0	142	226	12	5	364	4,229	47	0	1,269	0	0	0	264	3	0	36
Jacksonville, FL	1,736	0	41	206	282	13	120	2,017	105	64	947	253	0	0	399	28	0	101
Memphis, TN-MS-AR	569	0	1,203	266	0	47	0	14	1,620	337	1,148	121	0	0	0	129	0	83
Las Vegas-Henderson-Paradise, NV	992	0	0	35	0	0	0	2,731	0	0	1,154	0	1	0	529	0	0	10
Riverside-San Bernardino-Ontario, CA	380	0	0	122	0	0	165	3,102	0	0	222	0	0	0	277	8	0	23
Nashville-Davidson--Murfreesboro--Franklin, TN	1,665	34	0	56	0	11	12	457	583	0	1,070	0	218	0	4	0	0	9
Seattle-Tacoma-Bellevue, WA	327	0	0	60	0	0	294	3,036	0	0	311	0	0	0	0	0	0	5
Los Angeles-Long Beach-Anaheim, CA	94	0	0	100	0	0	30	3,448	0	0	57	0	0	0	0	24	0	0
Cincinnati, OH-KY-IN	1,515	295	63	30	0	153	0	18	0	0	0	0	0	0	0	146	695	156
Denver-Aurora-Lakewood, CO	659	0	0	24	0	0	387	1,871	1	0	0	0	0	0	0	0	0	2
Raleigh-Cary, NC	1,580	31	0	50	0	1	55	592	14	0	582	0	0	0	0	0	0	5
Columbus, OH	1,605	133	0	28	7	83	0	8	0	0	0	0	0	0	279	0	325	117
North Port-Sarasota-Bradenton, FL	123	0	118	86	1	2	108	1,336	53	0	516	0	0	0	123	0	0	9
Sacramento-Roseville-Folsom, CA	46	0	0	78	0	0	86	2,022	0	0	0	0	0	0	39	0	0	7
Kansas City, MO-KS	3	185	919	73	0	139	116	27	620	0	0	0	0	0	2	49	0	107
Minneapolis-St. Paul-Bloomington, MN-WI	1	0	0	456	165	11	242	1,145	42	0	0	0	0	0	0	0	0	23
Lakeland-Winter Haven, FL	45	0	4	91	36	2	0	1,618	74	0	113	0	0	0	44	2	0	34
Columbia, SC	266	895	289	38	0	21	1	10	3	0	0	0	0	0	501	0	0	35
San Antonio-New Braunfels, TX	1,000	0	19	179	0	0	129	12	362	0	0	0	0	0	214	14	0	5
Detroit-Warren-Dearborn, MI	48	0	5	74	0	923	0	29	0	0	0	0	0	0	1	1	0	726
St. Louis, MO-IL	1	0	686	68	0	174	28	25	346	0	0	0	0	0	0	59	180	173
Birmingham-Hoover, AL	1	724	0	409	0	103	0	5	221	0	0	68	0	0	0	20	0	94
Winston-Salem, NC	786	92	0	87	0	17	7	298	212	0	0	0	0	0	0	0	0	14
Cape Coral-Fort Myers, FL	31	0	216	289	0	7	95	281	200	0	67	0	0	0	0	0	0	7
Deltona-Daytona Beach-Ormond Beach, FL	17	0	10	108	3	5	0	824	71	27	14	0	0	0	86	0	0	19
Palm Bay-Melbourne-Titusville, FL	182	0	0	101	0	14	1	587	214	0	0	0	0	0	30	0	0	19
Vallejo, CA	46	0	0	12	0	0	0	808	0	0	0	0	0	0	195	0	0	0
Oklahoma City, OK	380	0	0	99	0	12	14	9	514	0	0	0	0	0	0	0	0	15
Greensboro-High Point, NC	568	70	0	38	0	21	45	181	90	0	0	0	0	0	0	0	0	19
Charleston-North Charleston, SC	703	275	0	24	0	8	0	5	0	0	0	0	0	0	0	0	0	8
Tucson, AZ	380	0	0	27	0	0	0	88	0	0	175	0	0	0	189	0	0	18
San Francisco-Oakland-Berkeley, CA	54	0	0	40	0	0	0	554	0	0	0	0	0	0	214	1	0	1
Dayton-Kettering, OH	366	115	0	1	0	170	0	7	0	0	0	0	0	0	0	0	62	80
Greenville-Anderson, SC	567	147	0	21	0	13	0	6	0	0	0	0	0	0	0	0	0	11
Augusta-Richmond County, GA-SC	224	361	7	11	0	23	0	2	0	71	0	0	0	0	0	0	0	31
Austin-Round Rock-Georgetown, TX	595	0	3	18	0	0	77	8	0	0	0	0	0	0	0	0	0	2
Port St. Lucie, FL	198	0	0	139	0	1	2	277	57	0	0	0	0	0	6	0	0	8
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	1	0	0	197	0	19	50	142	3	0	0	0	0	0	0	1	0	129
Savannah, GA	479	0	0	8	0	3	0	5	0	0	0	0	0	0	0	0	0	4
Ogden-Clearfield, UT	465	0	0	22	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Durham-Chapel Hill, NC	234	34	0	26	0	4	4	141	5	0	0	0	0	0	0	0	0	7

Figure 1. Top 50 core-based statistical areas by total homes purchased by select institutional landlords by homes purchased by individual select institutional landlords. Source: Author's calculations from CoreLogic.

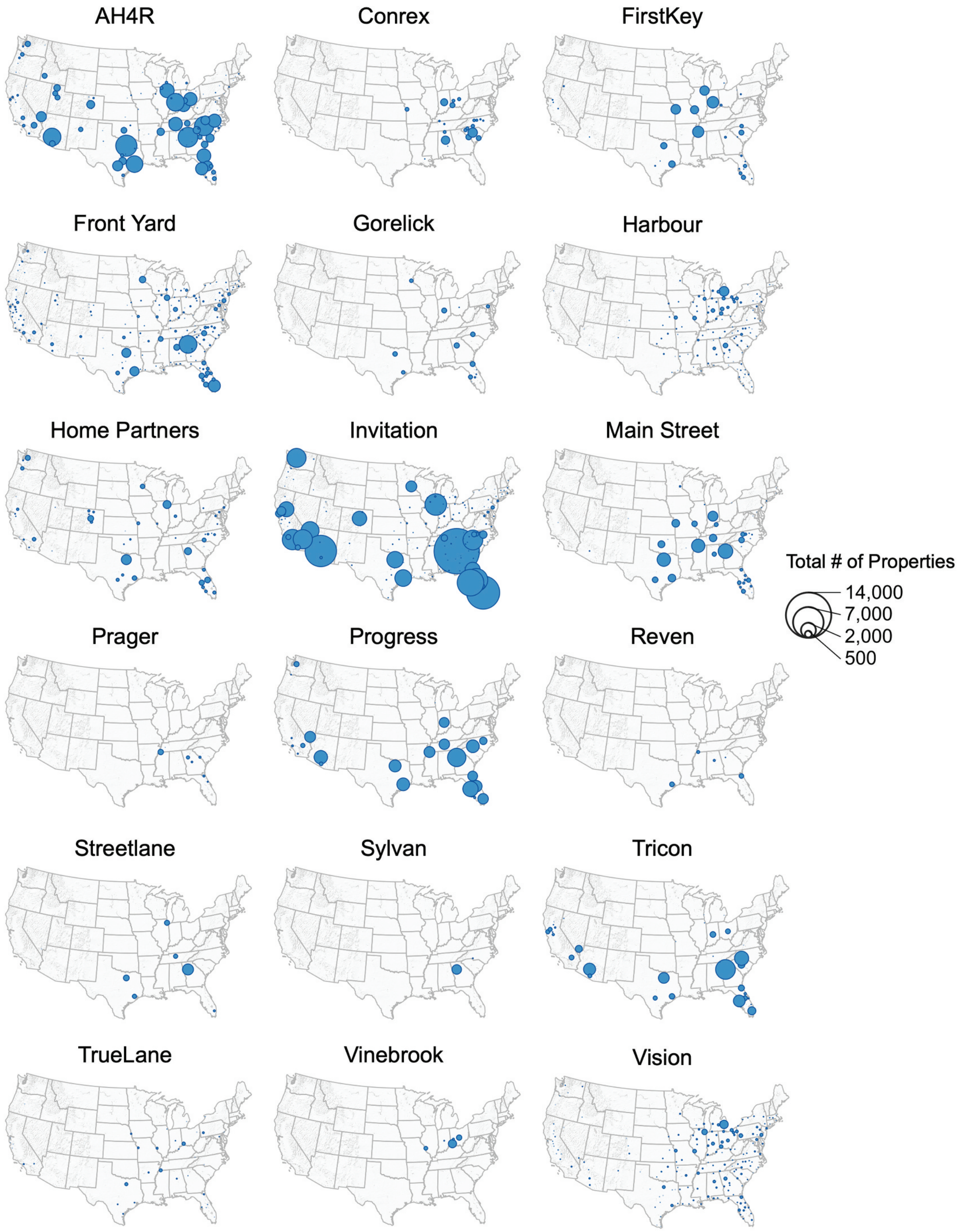
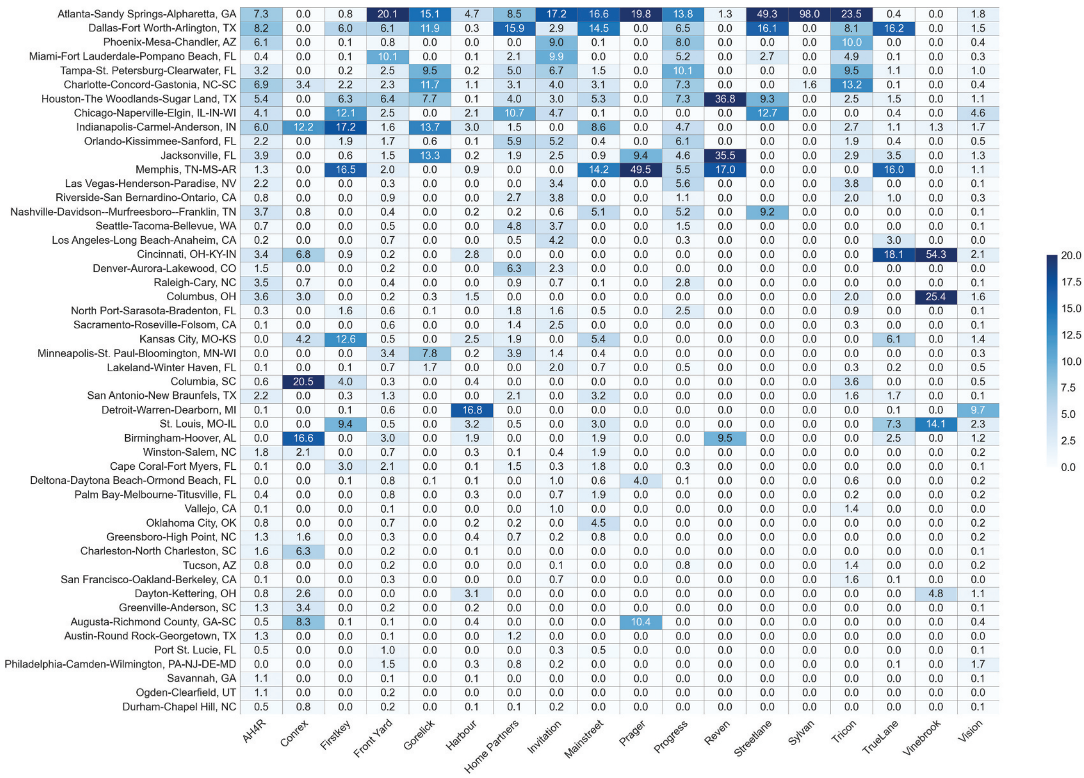


Figure 2. Count of homes purchased by select institutional landlords for top 200 core-based statistical areas. Source: Author's calculations from CoreLogic.



	AH4R	Conrex	Firstkey	Front Yard	Gorelick	Harbour	Home Partners	Invitation	Mainstreet	Prager	Progress	Reven	Streetlane	Sylvan	Tricon	TrueLane	Vinebrook	Vision
Atlanta-Sandy Springs-Alpharetta, GA	7.3	0.0	0.8	20.1	15.1	4.7	8.5	17.2	16.6	19.8	13.8	1.3	49.3	98.0	23.5	0.4	0.0	1.8
Dallas-Fort Worth-Arlington, TX	8.2	0.0	6.0	6.1	11.9	0.3	15.9	2.9	14.5	0.0	6.5	0.0	16.1	0.0	8.1	16.2	0.0	1.5
Phoenix-Mesa-Chandler, AZ	6.1	0.0	0.1	0.8	0.0	0.0	0.0	9.0	0.1	0.0	8.0	0.0	0.0	0.0	10.0	0.0	0.0	0.4
Miami-Fort Lauderdale-Pompano Beach, FL	0.4	0.0	0.1	10.1	0.0	0.1	2.1	9.9	0.0	0.0	5.2	0.0	2.7	0.0	4.9	0.1	0.0	0.3
Tampa-St. Petersburg-Clearwater, FL	3.2	0.0	0.2	2.5	9.5	0.2	5.0	6.7	1.5	0.0	10.1	0.0	0.0	0.0	9.5	1.1	0.0	1.0
Charlotte-Concord-Gastonia, NC-SC	6.9	3.4	2.2	2.3	11.7	1.1	3.1	4.0	3.1	0.0	7.3	0.0	0.0	1.6	13.2	0.1	0.0	0.4
Houston-The Woodlands-Sugar Land, TX	5.4	0.0	6.3	6.4	7.7	0.1	4.0	3.0	5.3	0.0	7.3	36.8	9.3	0.0	2.5	1.5	0.0	1.1
Chicago-Naperville-Elgin, IL-IN-WI	4.1	0.0	12.1	2.5	0.0	2.1	10.7	4.7	0.1	0.0	0.0	0.0	12.7	0.0	0.0	0.4	0.0	4.6
Indianapolis-Carmel-Anderson, IN	6.0	12.2	17.2	1.6	13.7	3.0	1.5	0.0	8.6	0.0	4.7	0.0	0.0	0.0	2.7	1.1	1.3	1.7
Orlando-Kissimmee-Sanford, FL	2.2	0.0	1.9	1.7	0.6	0.1	5.9	5.2	0.4	0.0	6.1	0.0	0.0	0.0	1.9	0.4	0.0	0.5
Jacksonville, FL	3.9	0.0	0.6	1.5	13.3	0.2	1.9	2.5	0.9	9.4	4.6	35.5	0.0	0.0	2.9	3.5	0.0	1.3
Memphis, TN-MS-AR	1.3	0.0	16.5	2.0	0.0	0.9	0.0	0.0	14.2	49.5	5.5	17.0	0.0	0.0	0.0	16.0	0.0	1.1
Las Vegas-Henderson-Paradise, NV	2.2	0.0	0.0	0.3	0.0	0.0	0.0	3.4	0.0	0.0	5.6	0.0	0.0	0.0	3.8	0.0	0.0	0.1
Riverside-San Bernardino-Ontario, CA	0.8	0.0	0.0	0.9	0.0	0.0	2.7	3.8	0.0	0.0	1.1	0.0	0.0	0.0	2.0	1.0	0.0	0.3
Nashville-Davidson--Murfreesboro--Franklin, TN	3.7	0.8	0.0	0.4	0.0	0.2	0.2	0.6	5.1	0.0	5.2	0.0	9.2	0.0	0.0	0.0	0.0	0.1
Seattle-Tacoma-Bellevue, WA	0.7	0.0	0.0	0.5	0.0	0.0	4.8	3.7	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Los Angeles-Long Beach-Anaheim, CA	0.2	0.0	0.0	0.7	0.0	0.0	0.5	4.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Cincinnati, OH-KY-IN	3.4	6.8	0.9	0.2	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.1	54.3	2.1
Denver-Aurora-Lakewood, CO	1.5	0.0	0.0	0.2	0.0	0.0	6.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Raleigh-Cary, NC	3.5	0.7	0.0	0.4	0.0	0.0	0.9	0.7	0.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Columbus, OH	3.6	3.0	0.0	0.2	0.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	25.4	1.6
North Port-Sarasota-Bradenton, FL	0.3	0.0	1.6	0.6	0.1	0.0	1.8	1.6	0.5	0.0	2.5	0.0	0.0	0.0	0.9	0.0	0.0	0.1
Sacramento-Roseville-Folsom, CA	0.1	0.0	0.0	0.6	0.0	0.0	1.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1
Kansas City, MO-KS	0.0	4.2	12.6	0.5	0.0	2.5	1.9	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	1.4
Minneapolis-St. Paul-Bloomington, MN-WI	0.0	0.0	0.0	3.4	7.8	0.2	3.9	1.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Lakeland-Winter Haven, FL	0.1	0.0	0.1	0.7	1.7	0.0	0.0	2.0	0.7	0.0	0.5	0.0	0.0	0.0	0.3	0.2	0.0	0.5
Columbia, SC	0.6	20.5	4.0	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.5
San Antonio-New Braunfels, TX	2.2	0.0	0.3	1.3	0.0	0.0	2.1	0.0	3.2	0.0	0.0	0.0	0.0	0.0	1.6	1.7	0.0	0.1
Detroit-Warren-Dearborn, MI	0.1	0.0	0.1	0.6	0.0	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	9.7
St. Louis, MO-IL	0.0	0.0	9.4	0.5	0.0	3.2	0.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	14.1	2.3
Birmingham-Hoover, AL	0.0	16.6	0.0	3.0	0.0	1.9	0.0	0.0	1.9	0.0	0.0	9.5	0.0	0.0	0.0	2.5	0.0	1.2
Winston-Salem, NC	1.8	2.1	0.0	0.7	0.0	0.3	0.1	0.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Cape Coral-Fort Myers, FL	0.1	0.0	3.0	2.1	0.0	0.1	1.5	0.3	1.8	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Deltona-Daytona Beach-Ormond Beach, FL	0.0	0.0	0.1	0.8	0.1	0.1	0.0	1.0	0.6	4.0	0.1	0.0	0.0	0.0	0.6	0.0	0.0	0.2
Palm Bay-Melbourne-Titusville, FL	0.4	0.0	0.0	0.8	0.0	0.3	0.0	0.7	1.9	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Vallejo, CA	0.1	0.0	0.0	0.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Oklahoma City, OK	0.8	0.0	0.0	0.7	0.0	0.2	0.2	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Greensboro-High Point, NC	1.3	1.6	0.0	0.3	0.0	0.4	0.7	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Charleston-North Charleston, SC	1.6	6.3	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Tucson, AZ	0.8	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.8	0.0	0.0	0.0	1.4	0.0	0.0	0.2
San Francisco-Oakland-Berkeley, CA	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.1	0.0	0.0
Dayton-Kettering, OH	0.8	2.6	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	1.1
Greenville-Anderson, SC	1.3	3.4	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Augusta-Richmond County, GA-SC	0.5	8.3	0.1	0.1	0.0	0.4	0.0	0.0	0.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Austin-Round Rock-Georgetown, TX	1.3	0.0	0.0	0.1	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port St. Lucie, FL	0.5	0.0	0.0	1.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	0.0	0.0	0.0	1.5	0.0	0.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.7
Savannah, GA	1.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Ogden-Clearfield, UT	1.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Durham-Chapel Hill, NC	0.5	0.8	0.0	0.2	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Figure 3. Top 50 core-based statistical areas by total homes purchased by select institutional landlords by share of homes purchased by individual select institutional landlords. Source: Author's calculations from CoreLogic.

Midwestern areas follow these leading metros, particularly Chicago and Indianapolis, where multiple investors were active, as well as metros like Kansas City and St. Louis, where some smaller private firms were active while REITs were largely absent. Memphis, Nashville, Cincinnati, and Columbus also stand out as metros where Invitation is absent but AH4R and other investors were active. Detroit appears on this list due to acquisitions by Harbour and Vision, the two contract sellers included in our analysis. Birmingham appears on this list primarily due to acquisitions by Conrex, Front Yard, and Main Street Renewal. Collectively, these figures reflect the historical economic geography of SFR investment, with the large early entrants acquiring homes at discounts as part of their REO-to-rental strategy in the immediate wake of the foreclosure crisis. Places like South Florida and Phoenix were hit particularly hard by foreclosures, but their markets rebounded quickly. In the same period, Harbour and Vision purchased bundles of hard-to-sell homes from Fannie Mae in the Midwest. Later entrants looked to relatively lower-cost metros and submarkets for investment opportunities.

Figures 3 and 4 further illustrate similarities and differences in the metropolitan specialization of SFR investors. Consistent with the work of Colburn et al. (2021), we find that Invitation's portfolio is concentrated in fewer total areas relative to AH4R, with 17% of its portfolio located in Atlanta, 10% in Miami, and 9% in the Phoenix metro area. In contrast, just 7% of AH4R's inventory is in the Atlanta metro area. AH4R also has sizable holdings in metros where Invitation is absent, including Indianapolis. Invitation's observed pattern of metropolitan concentration is consistent with its stated strategy of operating SFRs only in markets where it can operate at scale to create efficiencies (Invitation Homes, 2023). While we might assume AH4R is similarly concerned with achieving local scale, their investor materials report a strategy of metropolitan diversity, which might explain this difference in observed investment patterns (American Homes 4 Rent, 2023a). Beyond these top two firms, Atlanta appears to be the most targeted metro for many SFR investors, including both REIT

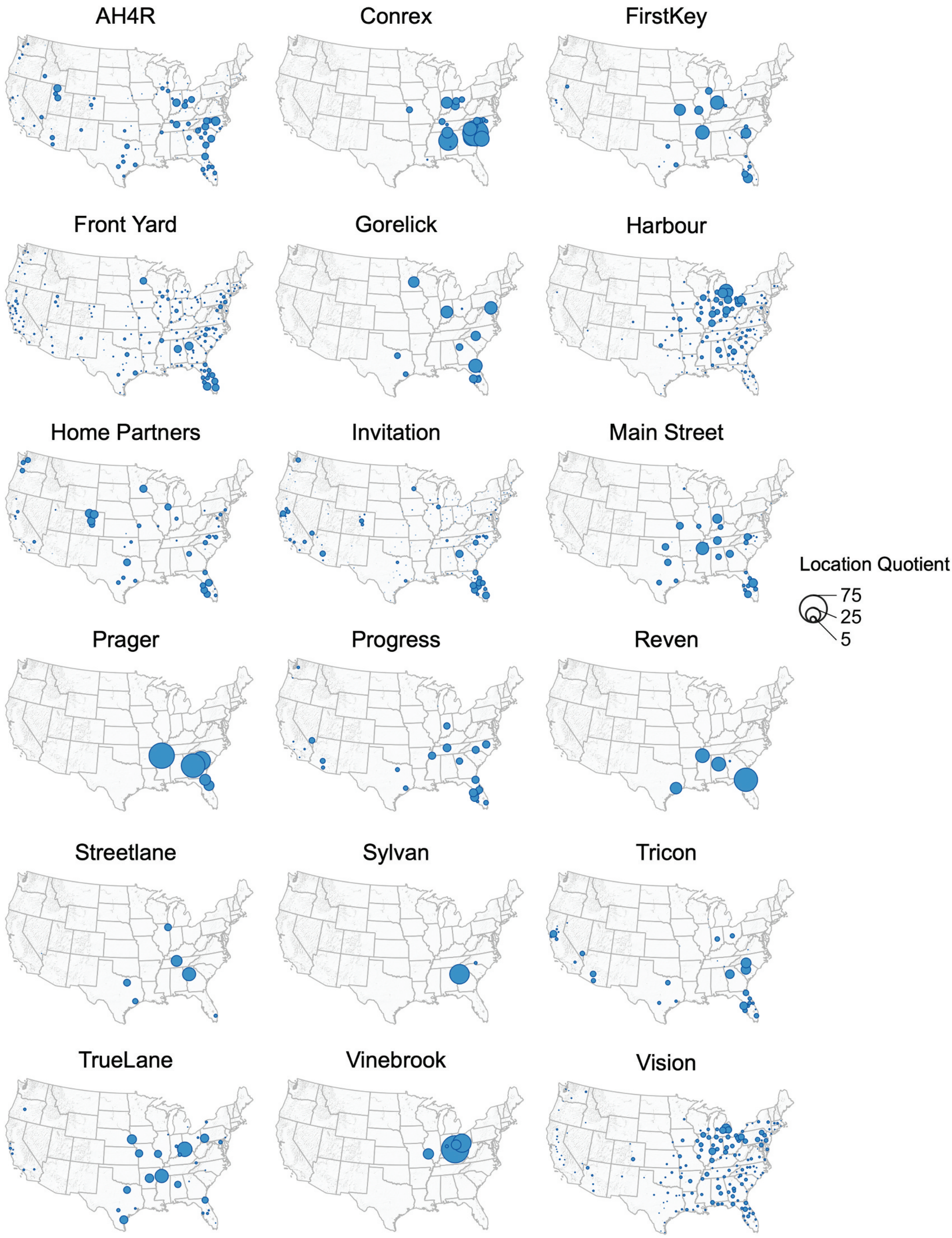


Figure 4. Ratio of core-based statistical area share of individual institutional landlord's homes to CBSA share of total single-family rentals. Source: Author's calculations from CoreLogic and 2015–2019 American Community Survey (ACS). Note: Denominator share of total single-family rentals derived from CBSA estimates of detached single-family rentals in the ACS within the contiguous United States.

and private equity firms. Nearly 25% of Tricon's inventory is in Atlanta, as well as 20% of Front Yard's and 24% of Progress's acquisitions. Smaller private firms StreetLane and Sylvan are even more specialized in Atlanta, which holds 49% and 98% of their investments, respectively. Despite being a local investment firm with a highly targeted focus, Sylvan is nonetheless a major actor within the SFR space in Atlanta, holding nearly 1,000 homes, placing it in the top half of all firms we examined.

As expected, smaller privately held firms, particularly those with fewer than 10,000 homes (see Table 1) were more geographically concentrated, but not always in the same places as the large firms. For instance, Memphis accounts for nearly 50% of Prager's acquisitions, with corresponding values of 17% for FirstKey and Reven, 16% for Truelane, and 14% for Main Street Renewal. In contrast, the largest SFR investors have little presence in Memphis; Invitation is virtually absent, though Progress holds more than 1,000 homes there, or about 6% of their total inventory. Cincinnati appears as a metro of specialization for VineBrook (54%), Trulane (18%), and to a lesser extent Conrex (7%), but Invitation and other large firms are similarly absent. At the firm level, companies like Reven display distinct investment patterns at the CBSA scale, with nearly all of their investments being located in just four CBSAs, with Houston (37%), Jacksonville (36%), Memphis (17%) and Birmingham (10%) being their primary targets.

These figures likely reflect differences in business models, with firms like VineBrook pursuing growth in lower-cost markets. VineBrook has been buying in and near its base of operations, leveraging local knowledge and presence, like other investors specializing in one or just a few metros. While appreciation and rents may be lower in these markets relative to places like Atlanta and Phoenix, the lower acquisition costs, in the context of post-crisis appreciation, likely makes them attractive to later entrants in the SFR business. These figures also reflect the geography of Harbour and Vision's bulk purchases from Fannie Mae, who likely required these investors to purchase the entirety of these geographically distributed pools of slow-selling properties if they wanted any at all. These two firms' investments, therefore, are much more widely distributed among smaller cities and towns across the Southeast and Midwest than other firms' portfolios. Harbour and Vision disposed of some of this far-flung inventory through flips to other investors, passively through disinvestment and abandonment, but also through land contracts (Akers & Seymour, 2018; Seymour & Akers, 2019; Teresa, 2022).

Neighborhood characteristics

Figure 5 shows the distribution of tract-level values for selected housing market indicators, namely, median household income, median home value, and median year structure built. Home Partners of America, Blackstone's rent-to-own company, purchased properties in neighborhoods with the highest median home values among our SFR investors. Most of Home Partners' properties are located in neighborhoods with median home values between $200,000 and $400,000, and the median property is located in a tract with a median home value of $278,000. Invitation, Progress, and AH4R are the only other investors where their median property is located in a tract with a median home value above $200,000. These entities also top the list in terms of tract household income. Conversely, these firms are virtually absent from lower-cost, lower-income neighborhoods, consistent with large REITs' investor reports highlighting their strategy of matching high-quality homes to higher-income SFR customers (Invitation Homes, 2023). A second grouping of landlords sits a bit beneath these large, nationally active landlords in terms of housing submarket stratification; the median property purchased by Tricon, StreetLane, Front Yard, and Main Street has a median neighborhood home value above $150,000 and median household income near or above $60,000.

On the other end of the spectrum, Harbour and Vision, the two contract sellers in our study, purchased homes in neighborhoods with the lowest home values and incomes and the oldest inventory relative to the rest of the investors. The median Harbour property is located in a tract with a median home value just below $80,000. Prager, Reven, VineBrook, and Truelane are similar in terms of neighborhood home values and income, placing them just above Harbour and Vision. Gorelick, Sylvan, Conrex, and Cerberus sit just above the former category of landlords, with

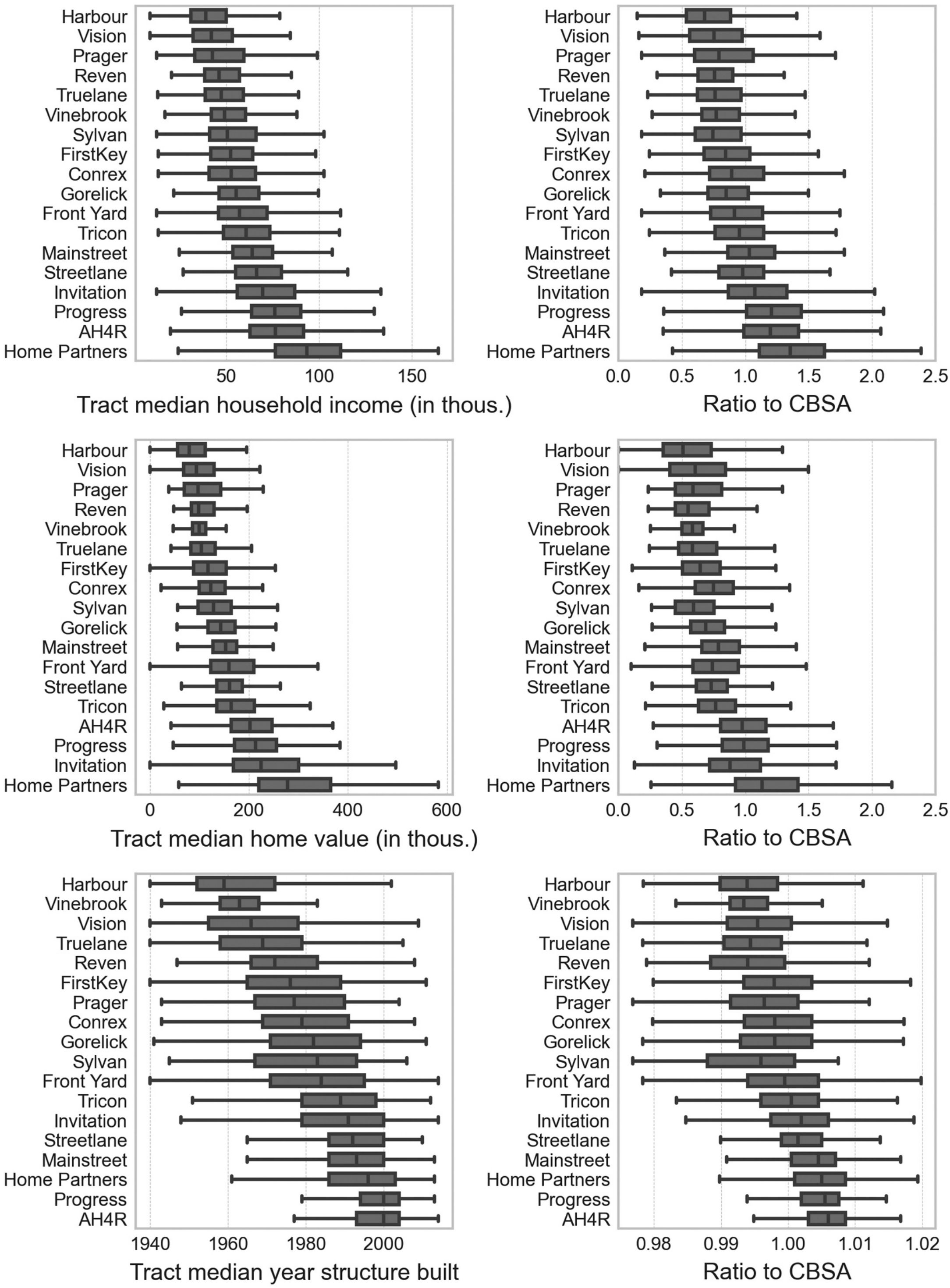


Figure 5. Distribution of values for select housing market characteristics for select institutional landlords. Source: Author's calculations from CoreLogic and 2015–2019 American Community Survey.

median properties in neighborhoods with median home values between $100,000 and $150,000 and incomes between $50,000 and $60,000. As with the firms investing in higher-income neighborhoods, firms buying in lower-income neighborhoods tend to specialize in those locations. Indeed, across all firms, there is substantial consistency in the types of neighborhoods in which they buy, indicated by the narrow dispersion of values in the boxplots for neighborhood income and home value.

The second column of subplots in Figure 5 shows the ratio of the tract values to the overall value for the CBSA in which a given property is located. These figures communicate the extent to which investors' metro-level targeting drives differences in neighborhood-level housing and demographic variables. In other words, these additional subplots help account for inter-regional variation in demographics and housing market characteristics. Here we see that Home Partners was not only more likely to purchase homes in higher-value and higher-income neighborhoods nationally, but also within the metros where they concentrated their investments. AH4R, Progress, and Invitation also concentrated their investments in neighborhoods with median incomes above the metro median. Other firms generally purchased in comparatively lower-value and lower-income neighborhoods. Harbour, in particular, acquired properties in neighborhoods with home values at roughly half of the corresponding metro value.

Turning to racial composition (see Figure 6), Sylvan and Prager stand far above other landlords in terms of their properties being concentrated in majority-Black neighborhoods. However, Reven and VineBrook were more likely to acquire properties in neighborhoods with a higher percentage of Black residents relative to the metros where they are located. Sylvan and Prager acquired properties exclusively in Atlanta and Memphis, both metros with a large overall share of Black residents, whereas VineBrook acquired homes principally in Cincinnati and Columbus, which have a relatively lower overall share of Black residents. Many landlords have relatively high ratios of tract percent Black to metro percent Black, with the exception of Home Partners, Invitation, and AH4R. This distinction is consistent with prior research finding REITs' holdings are concentrated in higher-value and often suburban areas (Charles, 2020), corresponding with racial composition due to ongoing processes of segregation and racial exclusion.

Harbour and Vision, in particular, exhibit substantial dispersion in the share of Black residents in the neighborhoods where they purchased homes, as shown by the width of the interquartile range in their boxplots. A substantial share of the properties purchased by Harbour and Vision are concentrated in majority-Black neighborhoods, particularly in Detroit and Atlanta. Acquisitions in majority-Black tracts account for 28% of Vision's acquisitions and 33% of Harbour's acquisitions. However, these firms acquired a larger share of properties widely scattered across the country, but mainly in smaller, older cities and inner-ring suburbs in the Midwest that tend to be majority white. This pattern reflects the composition of the properties included in Fannie Mae's bulk sales, which contained their slowest-selling REOs.

The results of our cluster analysis summarize these between-entity similarities and differences in terms of neighborhood characteristics (see Figure 7). One cluster consists of AH4R, Invitation, Home Partners, and Progress. This is the most robust cluster in our analysis, with these four entities appearing clearly separated from all others, even when including additional variables. This cluster is characterized by the highest neighborhood home values and the lowest neighborhood shares of Black residents. A second cluster consists of Tricon, Front Yard, Gorelick, Main Street Renewal, StreetLane, FirstKey, and Conrex. These entities have lower median home values than the first cluster, but they are centered around $150,000. This cluster is also characterized by being located in neighborhoods with a modest-to-substantial share of Black residents, particularly for Conrex, FirstKey, and StreetLane. A third cluster consists of Prager, Reven, Sylvan, and VineBrook, characterized by home values closer to $100,000 and being located in majority-Black neighborhoods. A fourth and final cluster consists of Harbour, Vision, and Truelane, with the lowest neighborhood home values and moderate overall shares of Black residents.

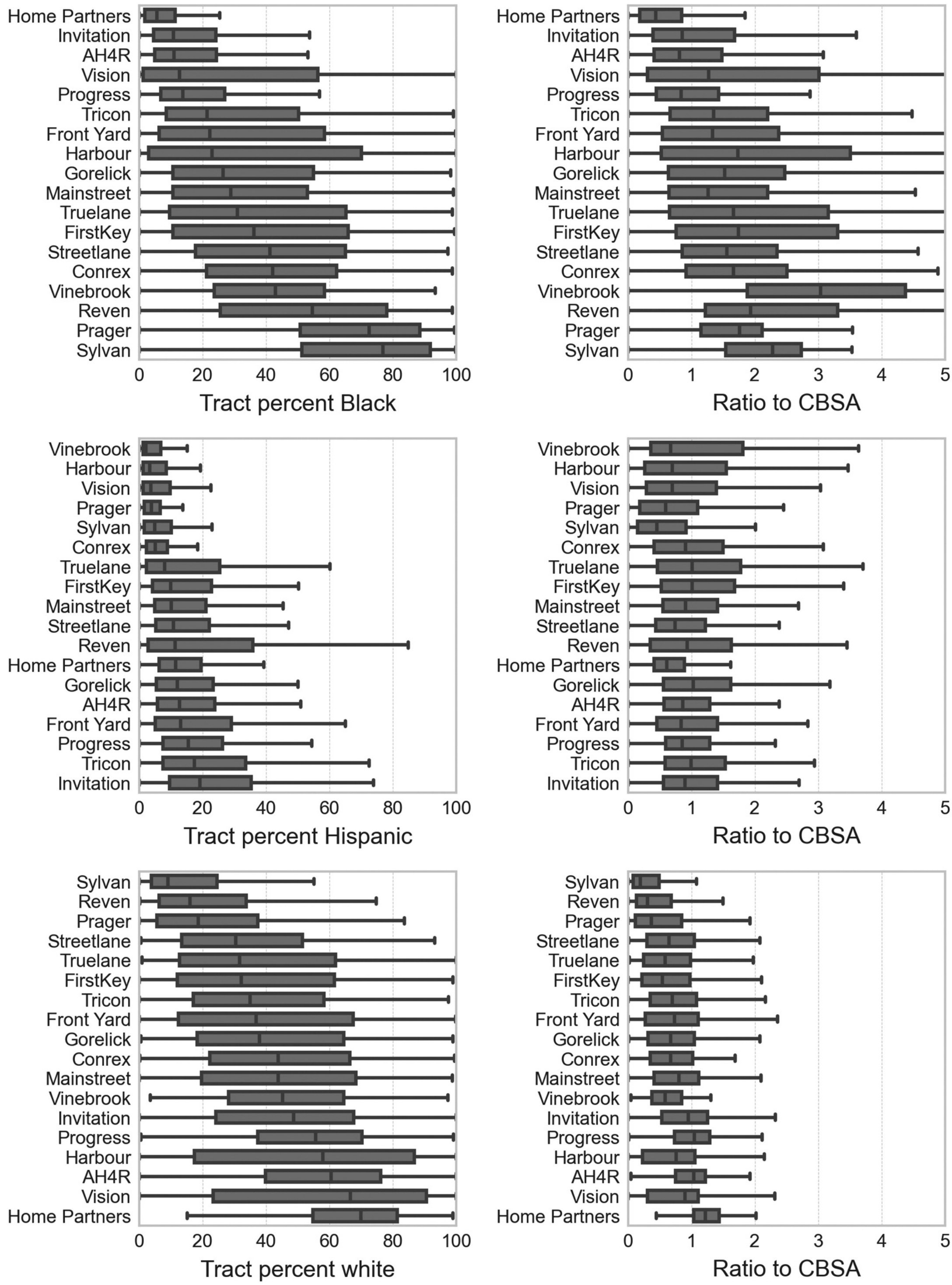


Figure 6. Distribution of values for select demographic characteristics for select institutional landlords. Source: Author's calculations from CoreLogic and 2015–2019 American Community Survey.

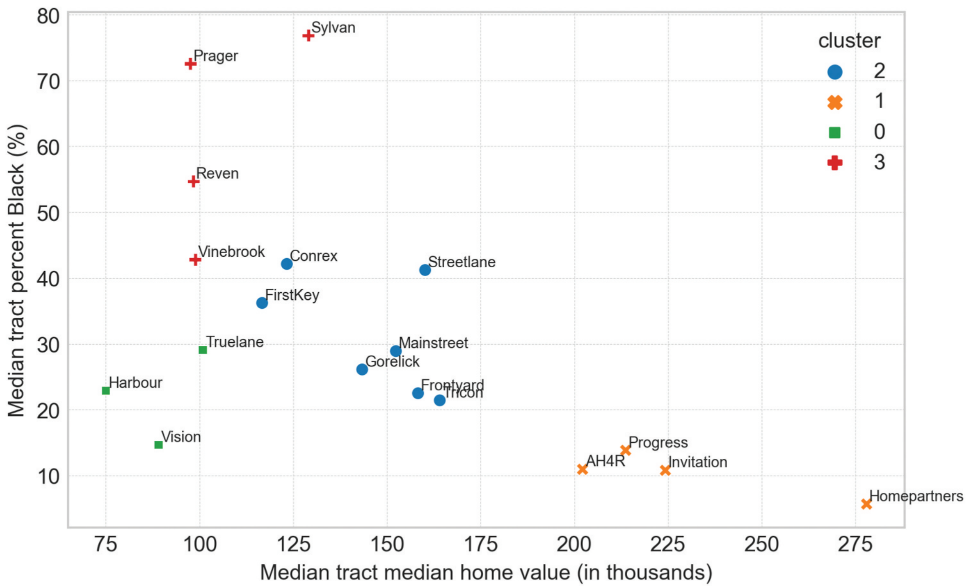


Figure 7. Cluster analysis results. Source: Author's calculations from CoreLogic and 2015–2019 American Community Survey.

Conclusion

This paper has examined the metropolitan geography and neighborhood characteristics of an expanded set of SFR investors, including REITs as well as privately held companies and rent-to-own operators who similarly purchased homes following the foreclosure crisis. Prior research has shed light on the overall regional geography of SFR investment for the large publicly traded SFR investors (Fields & Vergerio, 2022; Fields et al., 2016), as well as the neighborhood characteristics of a subset of those investors in one or a small number of metro areas (Charles, 2020; Chilton et al., 2018; Colburn et al., 2021). This paper, however, looks at a more expansive set of entities at the national scale and compares them in terms of their metropolitan and neighborhood specialization. Our findings regarding large REITs like Invitation Homes and American Homes 4 Rent are consistent with the existing literature, as expected. However, we have identified clear distinctions between these better-known entities and other, privately held firms targeting less expensive metros and majority-Black neighborhoods.

While entities like Invitation Homes have deservedly drawn academic and popular attention, focusing on these largest investors alone misses investment patterns and rental practices with perhaps more important fair housing and equity implications. In our background, we sketched a conceptual framework for understanding the implications of SFR investors' submarket preferences and business practices. Large REITs like Invitation Homes targeting relatively higher-value homes in metros experiencing appreciation and growth dynamics may raise concerns about crowding out prospective homebuyers in suburban neighborhoods with high-performing schools and other amenities. Invitation's activity in this space might contribute to higher rates of deferred ownership, limiting wealth appreciation for households who would have been able to purchase a home before 2008. Entities like FirstKey and VineBrook, however, target neighborhoods with higher shares of Black residents in relatively lower-cost metros. Their tenants may not have the same credit and income profile of Invitation's typical tenant, and the incursion of these investors has likely placed additional pressures on households with more fragile finances, pushing them to, or past, the brink of affordability, leading to involuntary moves and eviction (Alamdari et al., 2022; Fluker, 2015). At the same time, the variation in the between- and within-metro spatial strategies of these investors has implications for their market power, as the targeting of particular neighborhoods means that these firms are, by and large, not actively competing with one another for property acquisitions or tenants. Instead, they each target a distinct submarket in a given place, where they may be acquiring monopoly control, potentially enabling them to realize class-monopoly rent (Tapp & Peiser, 2022).

While our paper does not directly address the reasons for these sharp differences across investors' spatial footprints, the conjuncture of geography and timing is a key factor driving observed investment patterns. For example, Invitation Homes and the other larger companies that played an active role in creating the REO-to-rental pipeline immediately following the foreclosure crisis could buy recently built homes in the desirable suburbs of fast-growing Sunbelt metros at substantial discounts. These entities purchased large numbers of properties at foreclosure auctions, capitalizing on the national crisis that both deflated home values and made it difficult for prospective homebuyers to either access or use mortgage capital (Christophers, 2023), effectively establishing a first-mover advantage within the SFR market. These companies' public statements are consistent with the idea that they were purchasing in places with strong fundamentals and growth potential. Harbour and Vision, in contrast, were likely seeking high-risk, high-reward returns by participating in Fannie Mae and other financial institutions' bulk sales of their slowest selling inventory, concentrated in Detroit and other cities in the Midwest. And it is precisely this conjuncture of geography and timing that incentivized the use of high-risk contract sales and rent-to-own arrangements, rather than traditional rental agreements. Investors entering the SFR market after this REO-to-rental moment, as housing markets rebounded nationally, had incentives to look to other, lower-cost metros and neighborhoods to seek the next frontier of undervalued homes. These incentives would explain why investors like Cerberus and VineBrook were far more likely to target working-class Black neighborhoods and smaller metro areas not already saturated by investments from larger REITs. Some smaller firms, like VineBrook, also began as local real estate operations that expanded from their base of operations, unlike large Wall Street firms. This is an important factor in VineBrook's acquisitions in Cincinnati, Dayton, and Columbus, Ohio.

A related factor likely driving these observed patterns of geographic and submarket specialization is several firms' strategy of operating homogenous rental units to streamline servicing and other operations. This is likely particularly true for the largest firms specializing in higher-income neighborhoods. Don Mullen, the founder and Chief Executive Officer of Pretium, has described Pretium's target home as a 2,000 square-foot home built since 2000 with a two-car garage, a backyard, a homeowners association, and a quality school district. Furthermore, this home must be in a growing market (Basak, 2023). Mullen has also said that since the early days of REO-to-rental, Pretium has preferred to source from owner-occupied or portfolio-held properties to avoid the risks associated with distressed properties. Pretium's direct competitors, like Invitation and American Homes 4 Rent have similar business models, leading them to pursue growth in the same or similar metros and submarkets, particularly in growing places in the Southeast and Southwest with newer subdivisions filled with homogeneous single-family homes and inventory that can be sourced from homebuilders. This business model leaves other markets free from the competition of large entities like REITs, creating opportunities for other firms to enter those markets. Firms like VineBrook and Sylvan likely leverage local knowledge to identify assets and create investor value in markets that might appear riskier or otherwise undesirable to those firms specializing in recently built suburban Sunbelt areas.

This paper suggests a number of policy implications, including those directed toward the practices of SFR landlords and those directed upstream at factors contributing to the growth of SFRs and the expansion of corporate ownership in this space. The rental market transformed rapidly following the financial crisis, and the public sector has been slow to adjust. The primacy of private property in the United States makes it virtually impossible to stop individual homeowners from selling to investors, who can pay above-market prices in cash while waiving inspections and other contingencies. Home appreciation is prized for its capacity to build equity for homeowners, so it is difficult to imagine policies preventing owners from selling to the highest bidder. Even where smaller suburban municipalities or homeowner associations have sought to use their power to limit the incursion of corporate SFR landlords, state legislatures have responded with laws preempting local regulations (Baxter, 2022; Whoriskey & Schaul, 2022). However, much SFR inventory comes from institutional sources, including foreclosure inventories, particularly during the 2012–2014 period. While another foreclosure crisis is not likely in the immediate future, geographic differentiation in housing market strength entails that some markets continue to experience tax foreclosure, meaning institutional and often government-owned inventory becomes available in different places at different times. These properties are prime candidates for diversion into community land trusts, nonprofit or public ownership and management, or other institutions oriented toward ensuring neighborhood and social stability and affordability (Lowe et al., 2022).

Regulations limiting rent increases and evictions would address concerns about rapidly rising rents in corporate SFRs and the use of no-cause eviction to remove existing tenants upon acquisition. SFR landlords have targeted their investments precisely in places with landlord-friendly regulatory environments, where eviction is cheap and swift and rent control is viewed by state lawmakers as harmful and unfair to landlords (Hatch, 2017). Several Sunbelt and Midwestern states, through aggressive lobbying by conservative interests, have entirely preempted rent control at the local level. Regulations limiting rent increases and no-cause evictions have implications beyond the SFR space. The increasingly apparent contrast between slow wage growth and record profits for institutional landlords (Clark, 2021; Whoriskey et al., 2021), in the context of a rental affordability crisis contributing to rising homelessness and households making ends meet by delaying health care and other essentials, requires serious consideration of well-crafted rent regulation, which can address the inflexibility of the earliest and strictest forms of rent control (Slater, 2021).

Further, reforms to the eviction process, including the cost of filing, the length of notice periods, the ease of case sealing, and the extension of free counsel to tenants, should be considered in landlord-friendly states given the recent profusion of research indicating the ways in which landlords leverage the legal system to pressure tenants into paying even when they have legitimate reasons for withholding rent (Garboden & Rosen, 2019; Leung et al., 2021). Large landlords are particularly of concern given their automated processes for handling delinquency and adding fees and fines (Fields, 2022). These systems have exhibited errors leading to filings and fees where none should have been issued (Mari, 2020; Semuels, 2019). Eviction records, even those that were filed under false pretenses or in error, stay with tenants for years, making it difficult to access subsequent housing (Desmond, 2016). Preliminary evidence demonstrates that pandemic policies such as eviction moratoria, right to counsel, and stimulus payments were effective in mitigating these issues during the initial onset of the pandemic (Benfer et al., 2022; Hepburn et al., 2021).

Ultimately, while this study advances our understanding of the national geography of large corporate single-family landlords, its limitations also point toward crucial areas for future research. First, this study is limited by the fact that we could only look at acquisitions through mid-2017. Since this time, SFR investors have substantially expanded their holdings, either through additional mergers and acquisitions, moving to lower-cost areas in a context of rapidly appreciating home values, leveraging tax auction sales, or through other channels (Raymond et al., 2022; Schaul & O'Connell, 2022). Some of the largest firms have also expanded by developing rental-home subdivisions and buying inventory directly from homebuilders (Fields & Vergerio, 2022). These recent developments, therefore, require updating the actual numbers for how many properties each firm owns and where and charting these firms' evolving investment strategies and how they affect particular communities. Second, although this paper has not directly examined neighborhood or submarket-level local area concentration, these results, in concert with the existing literature on this topic, suggests additional research is needed on the extent of this concentration with implications for landlord monopoly power, including for this broader set of landlords.

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Appendix A. Additional details on identifying owners

For 643 Capital/GTIS (StreetLane Homes), we found a pattern for names associated with the mailing address for 643 Capital, including 445 Bush St San Francisco, California, and 150 California Street San Francisco, California. We examined the LLC names associated with those addresses for patterns and expanded our search accordingly. We also consulted local reporting linking StreetLane Homes to specific LLCs (Hudson, 2016). For Amherst Capital (Main Street Renewal), we followed a similar approach. We performed additional internet searches for information related to the LLC names associated with Amherst's mailing address in the CoreLogic data, eventually finding the names of multiple LLCs associated with one of their leasing managers on the open corporations website for the City of Independence, Missouri. We then fed those LLC names back into our search parameters for Main Street Renewal. We examined results for accuracy while comparing our totals against those in the Amherst Group reports as a reference. Our count of 11,410 homes for Amherst is slightly larger than the Amherst Group's own reporting of 10,742 homes at the end of year 2017, which is likely lower due to some small number of dispositions (Amherst Group, 2018).

We linked Cerberus (FirstKey) with a set of LLC names capturing the majority of their acquisitions. The names generally begin with substrings including "CSMA" and "BLTREJV3" (Fluker, 2015). The substring "BLT" refers to Building and Land Technology, from whom Cerberus bought homes. Our count of 7,355 homes for FirstKey lies between the Amherst Group's end of year 2016 count of 4,703 and their end of year 2017 count of 11,006, giving us confidence we were capturing the extent of their acquisitions present in our data since they run through mid-2017. Conrex purchased large numbers of properties using their own name and similar names associated with the listed address of their property management office, 3 Cordes Street Charleston, South Carolina. Our count of 4,365 homes for Conrex lies between the Amherst Group's end of year 2016 count of 1,121 and their end of year 2017 count of 5,059. Gorelick Brothers purchased using names starting with "MNSF" (e.g., "MNSF2"). Our count of 2,116 homes for Gorelick lies between the Amherst Group's end of year 2016 count of 1,974 and their end of year 2017 count of 2,440.

We identified properties associated with Prager by starting with the trunk names "PRAGER PROPERTY OWNER" and "PRAGER BRIDGE PROPERTY" and their mailing address, 1720 Peachtree St NW Atlanta, GA, as well as the trunk name "P FIN." Although VineBrook eventually acquired Prager, we preserved Prager, as well as Conrex and Truelane, as separate entities consistent with the SFR ownership landscape in 2017. Prager would purchase more than 400 homes from FirstKey in Memphis in 2020 before its acquisition by VineBrook in 2021, reflecting processes of selective sales, inventory pruning, and industry consolidation occurring in this market during and since our study period (James, 2021; Steimer, 2022).

We also maintain Front Yard and Progress as distinct entities. Though both are now controlled by Pretium Partners, they possessed distinct business identities and likely property management systems during the study period. Front Yard had gone public before being taken private again by Pretium, so were able to use their SEC filings to identify subsidiary LLC names, with the substrings "ARNS," "ARLP," and matching the most records. We also assigned properties purchased by HavenBrook Homes to Front Yard, though this acquisition occurred in 2018. Our final count of 13,358 homes purchased by Front Yard closely tracks with their self-reporting holdings of 12,575 properties at the end of 2017 (Front Yard Residential, 2017). For Progress, we used known LLCs associated with this entity, with those starting with the substring "FREO" matched to many sales (Kass, 2013), while other names were more clearly linked to Progress, e.g., "PROGRESS RESIDL 2015-3 BORROW." Our count of 20,767 homes closely approximates the 22,320 homes the Amherst Group associates with Progress at the end of 2017 (Amherst Group, 2018).