Who Should Manage Impact Investments? Evidence from Affordable Housing*

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Abstract

We study the performance and impact of asset-level investments by non-profit organizations in the U.S. multi-family housing market. We show that the acquisition of a property by a non-profit generally increases the share of tenants moving in from economically disadvantaged zip codes. Next, we document that non-profit owners exhibit a lower average financial performance than for-profit ones. Not only does rental income grow more slowly under non-profit ownership even for non-rent-restricted properties, non-profits also dispose of their assets at lower resale prices. Results of heterogeneity tests show that these findings are not simply reflecting a trade-off between equity and economic efficiency. Namely, well-governed non-profits combine high social impact with a financial performance approaching that of for-profits, while weakly-governed organizations combine relatively limited changes in the tenant base with inferior investment outcomes.

Keywords: impact investing, non-profits, affordable housing, governance.
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1 Introduction

Impact investments are made with the intention to generate positive, measurable social or environmental impact alongside a financial return.[1] A nascent literature studies the degree to which socially conscious end investors are willing to pay for the perceived non-pecuniary benefits of their investments (e.g., Hartzmark and Sussman, 2019; Barber et al., 2021; Baker et al., 2022). However, such work does not study whether mission-driven money managers and organizations are efficient stewards of their investment capital in terms of achieving impact, minimizing financial underperformance relative to profit-driven institutions, or both. As such, it is still unclear to what extent there exists a trade-off between equity and economic efficiency.

In this paper, we make progress towards answering these questions by studying the impact and financial performance of asset-level investments in the U.S. multi-family housing market. This empirical setting offers three distinct advantages. First, in this market, private and institutional for-profit players coexist with non-profit organizations. The latter typically follow a social mission of providing affordable accommodation to low-income households or other selected populations (e.g., veterans, single mothers), and may choose to set rents below market levels. For-profits invest in properties with market-level rents across the whole tenant quality and income spectrum, including units accessible to low-income households, which have delivered an attractive financial performance historically (Damen et al., 2025).[2] Second, while in most contexts it is hard to judge the efficiency of non-profit management, real estate records are public information, allowing us to benchmark the relative purchase and sale price levels of non-profit property investors against those of for-profit investors. Importantly, unlike endowment funds established by universities (Lerner et al., 2008; Barber and Wang, 2013; Aragon et al., 2022) and other non-profits (Lo et al., 2019), the investments made by the non-profits we examine are not intended to generate funding for their charitable mission; rather, those investments *are* the charitable mission. Third, the availability of household moving data enables measurement of owners' social impact at the asset level, a level of detail that is highly unusual in this literature.

[1] As of 2022, the global impact investing market encompasses nearly $1.2 trillion in assets under management (The Global Impact Investing Network, Sizing the Impact Investing Market, accessed April 19, 2024). This market is expected to produce $4.5 trillion in total revenues by 2030 (Fairfield Market Research, Impact Investing Market, accessed June 25, 2025).

[2] Both non-profits and for-profits also develop and hold income-restricted housing under government programs that provide substantial tax incentives (see, e.g., Soltas, 2024).

We obtain data on investments in the U.S. multi-family housing market over the 2000–2022 period from Yardi Matrix. This database includes transaction-level information on completion dates, transaction prices, and the identities of the buyers and sellers involved in each deal. It also includes a classification of those buyers and sellers into for-profit and non-profit investors, along with a classification of the assets sold into "affordable" properties (with income and/or rent restrictions), and "conventional" ones (without explicit income and rent caps).[3] For the sub-sample of conventional properties, we also have information on average monthly rents. We can further observe changes in a property's affordability status and its physical characteristics. We can thus construct a novel data set to study asset selection, asset management, and investment performance outcomes of non-profit and for-profit investors in the multi-family housing market over the past two decades.

We supplement this database of properties, owners, rent levels, and transaction prices with a number of other data sources. First, we obtain data on non-profit organizations' financial and governance characteristics from ProPublica's Nonprofit Explorer. Second, we collect a panel of zip code-level socioeconomic data from the U.S. Census Bureau American Community Survey that we link to property locations. Third, we obtain household-level address history data from Data Axle, allowing us to track moves into the properties in our database.

Before proceeding with our quantitative analysis, we corroborate our interpretation of non-profit housing investors as being primarily impact-driven. First, we find that these investors are more likely to acquire affordable properties and observably lower-quality properties. Moreover, non-profit investors tend to acquire properties in locations with lower household incomes, higher poverty rates, lower employment rates, a higher share of minority populations, and a lower share of college graduates among the local population. Second, we use a large-language model to perform an analysis of the public profiles of the non-profit and for-profit organizations in our sample. The results indicate that non-profits are much more likely to state that they follow impact investing principles, and much less focused on maximizing financial returns (even if the difference in investment approaches seems to have somewhat shrunk over time). Our evidence suggests that the non-profit status of multi-family housing investors is a good proxy for their impact orientation.

On this basis, we document several new insights into the social impact and financial performance of mission-driven vs. profit-driven investors in the multi-family housing market. First, we analyze how the profile of incoming tenants change after the acquisition of a property by a non-profit vs.

[3]In this paper, we refer to "affordable" properties as those designated by Yardi Matrix as subject to income restrictions. These classifications are based on regulatory or contractual criteria and do not necessarily reflect broader notions of affordability (e.g., rent levels relative to market rates or tenant incomes).

for-profit investor. We find non-profit ownership leads to tenants moving in from zip codes with higher minority and poverty rates, pointing to the social impact of these organizations.

Second, we find that non-profit investors earn 3.8–4.5% lower capital gains per year than do for profit-investors. Some of our results also suggest that any investor realizes a slightly higher capital gain when *reselling* to a non-profit organization. In other words, non-profits resell at lower prices, all else equal, than for-profit investors, and maybe also purchase at higher prices. Importantly, non-profit investors' underperformance in terms of realized capital gains is not driven by their preferences for affordable properties or lower-quality properties and locations, which we find to produce *higher* capital growth, in line with the recent work of Damen et al. (2025).

In additional tests, we find that our results indicating lower capital gains to non-profit investors are robust to accounting for asset management choices such as non-profits' higher tendency to convert conventional properties to affordable, and their lower likelihood to invest in potentially value-enhancing capital improvements. Our inferences about lower capital gains to non-profit investors also remain unchanged if we split the broad category of for-profit investors into institutional and private investors. As an extension to our baseline model, we repeat our analysis with price-to-rent ratios as the dependent variable (instead of capital gains upon resale). As before, we find strong evidence that non-profit sellers dispose of their assets at relatively low price levels.

Third, we can study differences in post-acquisition rental growth across investor types in the sub-sample of conventional properties, for which we have average monthly rent data. We find economically and statistically significantly lower rental growth under non-profit ownership than under for-profit ownership, even in this sub-sample of properties without explicit income or rent restrictions.

Fourth, and last, we explore heterogeneity in our social impact, capital gains, and rent growth results across the non-profit organizations in our sample by various non-profit characteristics. While in many of these splits we find consistent results across sub-groups, we find much weaker evidence that non-profit organizations that are larger and better-governed underperform for-profit organizations in terms of realized capital gains and rent growth. The biggest social impact is generated by organizations with higher governance scores and with an explicit affordability mission.

Taken together, our results show that non-profits do worse than for-profit investors on traditional metrics of investment performance in real estate markets. Rents grow more slowly under their ownership, and capital gains are lower. It is hard to rationalize the lower capital gains. Non-profit organizations probably have stronger preferences than for-profit investors for the properties in the market segments in which they are active, which could affect the prices at which they acquire assets (Sagi,

2021; Koijen et al., 2025). However, this should also imply higher resale prices, which is the opposite of what we find. We argue that a more plausible explanation for the lower capital gains is that, given the lower incentives to produce financial results, non-profits are likely to bargain less intensely than for-profit investors, especially when they are small and poorly governed. Next, the lower rent growth may be attributable, at least partially, to the social mission of non-profits. Yet, the fact that the lower rents are concentrated in smaller organizations with worse governance and efficiency suggests than an alternative explanation is again an occasional lack of professional management. We believe that this hypothesis is further supported by the results of our heterogeneity tests on the impact of non-profits. Namely, poorly governed non-profits combine lower rent growth with a smaller shift towards low-income tenants. An important lesson from our results is that, when we see mission-driven organizations underperforming financially, this should not necessarily be considered the unavoidable result of a trade-off between equity and economic efficiency—and thus a cost worth paying. Some of these organizations may simply not be the most efficient stewards of impact investment capital.

Our findings relate to three strands of recent literature to which we contribute as follows.

Impact Investing. Research in this area is primarily focused on investments in corporations. Notably, prior studies compute shareholders' willingness to pay for participating in investment funds with impact mandates (Hartzmark and Sussman, 2019; Baker et al., 2022); trace the effects of impact investing on firms' cost of equity capital (De Angelis et al., 2021); and provide recommendations for maximizing impact (Berk and van Binsbergen, 2021; Hartzmark and Shue, 2022; Landier and Lovo, 2025). Exceptionally, studies focus on the market for venture capital (Barber et al., 2021), private equity (Cole et al., 2023), as well as case studies in areas such as venture philanthropy (Lo and Zhang, 2023). We provide the first analysis of decision-making and outcomes for impact investors in the housing market.[4] Our study is also unique in that we can study both social impact and financial performance relative to that of profit-driven allocators of capital.

Non-Profit Organizations. Non-profit organizations in the U.S. own over $13 trillion in assets.[5] Yet, little is known about their investments.[6] Lo et al. (2019) study non-profit organizations with established endowment funds. They compute fund-level returns on invested capital, document significant cross-sectional heterogeneity in those returns, and assess key return drivers including

[4]Fermand (2021) studies employment growth generated by the commercial real estate investments of public pension funds, who may have dual-mandate objectives.

[5]See Federal Reserve Board, Balance Sheet of Non-Profit Organizations, accessed April 23, 2024.

[6]Lerner et al. (2008), Barber and Wang (2013), and Aragon et al. (2022) analyze the investment performance outcomes of university endowment funds.

fund size, fund sector, and governance structures. In a related study, Dahiya and Yermack (2018) find that non-profit endowment funds significantly underperform market benchmarks. Binfarè et al. (2023) focus on university endowments and find that higher levels of human capital inside universities explain higher returns. We focus on non-profit organizations' investment activity in the housing market. In contrast to prior work, the investments of those organizations are not made to provide funding support for their charitable mission; rather, those investments *are* their charitable mission. In this sense, our work is related to a stream of literature that has focused on comparing the governance, operational performance, and objectives of for-profits vs. non-profits, often in the context of hospitals and nursing homes (Eldenburg et al., 2004; Adelino et al., 2015; Lu and Lu, 2022). Lewellen et al. (2023) conclude that "the governance structures that emerge in nonprofits lack the traditionally 'desirable' features", and may therefore struggle to achieve their goals.[7] In a recent paper, Herpfer et al. (2024) show that hospitals switching from non-profit to for-profit status change their operational priorities and focus more on generating revenue. By analyzing heterogeneity between non-profits in their outcomes as a function of their characteristics, we also add to the literature on the role of governance in driving operational outcomes at non-profit organizations (see, e.g., Eldenburg et al., 2004; Fisman and Hubbard, 2005; Harris, 2014; Yermack, 2017; Babenko et al., 2021).

Housing Investments. A growing literature studies cross-sectional heterogeneity in the investment returns to single-family and multi-family rental properties. Demers and Eisfeldt (2022) document that lower-price neighborhoods generate higher returns. In a recent paper, Damen et al. (2025) find that properties with the lowest rent levels generate the highest investment returns, maybe because some institutional investors shy away from the low-income segment for reputational reasons. Sociological research has also argued that renting to poor households is riskier but more profitable (Desmond and Wilmers, 2019). In line with such work, we find evidence of higher capital gains for lower-quality and more affordable properties. However, our main interest lies in documenting heterogeneity in asset-level investment approaches and performance outcomes across for-profit and non-profit investors in the market for affordable multi-family housing. To our knowledge, our paper is the first to do so.[8] More broadly, our paper also contributes to a quickly expanding lit-

[7] Chowdhry et al. (2019) derive conditions under which non-profit status is optimal for social projects. That study is closely related to Glaeser and Shleifer (2001), who show that entrepreneurs' non-profit status can help overcome limited commitment to objectives that conflict with profit maximization.

[8] By contrast, the growing presence of institutional for-profit investors in the single-family housing market has become the subject of intense debate. Some research suggests that institutional investors' acquisitions of single-family homes helped stabilize house prices after the global financial crisis (Allen et al., 2018; Mills et al.,

erature that studies heterogeneity in real estate valuations and investment outcomes as a function of variation in investor preferences, information sets, operational skills, and bargaining power (see Goetzmann et al., 2021; Spaenjers and Steiner, 2024; Koijen et al., 2025, and references therein).[9]

2 (Affordable) Multi-Family Housing in the U.S.

The U.S. is experiencing a shortage of affordable housing, driven by a persistent construction shortfall and, more recently, high borrowing costs.[10] Notably, home ownership is now out of reach for many households, a record-high number of renter households are classified as cost-burdened, and the threat of homelessness is growing (JCHS, 2023). As of 2023, 60% of workers in the U.S. earn less than the hourly wage required to pay the market-level rent for an average two-bedroom home without spending more than 30% of their income (NLIHC, 2023).

The U.S. government has implemented several policies to address the country's shortage of affordable housing. These policies include HUD's Section 8 Housing Choice Voucher Program, which provides rental assistance vouchers to eligible low-income households. The U.S. government also uses inclusionary zoning regulations to require or incentivize developers to provide affordable housing units, such as the Low-Income Housing Tax Credit (LIHTC) program. Under the LIHTC program, developers receive tax credits in exchange for renting a share of their units to low-income tenants at reduced rates. Since its inception in 1986, the LIHTC program has subsidized over 3.55 million housing units. It thus represents the largest source of affordable housing finance in the U.S. However, the program is costly, leading to an average of $9 billion in forgone tax revenue each year (HUD, 2023b).

As the demand for affordable rental housing has grown, this market segment has emerged as a new asset class for real estate investors. We estimate, based on data from Yardi Matrix, that the total annual acquisition volume of income-restricted housing assets in the U.S. has grown at an average rate of 24% per year between 2010 and 2022. Industry pundits tout strong fundamentals and attractive financial performance prospects for affordable housing investments (CBRE, 2020).

2019; Lambie-Hanson et al., 2022; Ganduri et al., 2023; Garriga et al., 2023). Other studies explore potentially harmful consequences of institutional investors' presence in the housing market for housing affordability, tenant welfare, and neighborhood composition (Austin, 2022; Gurun et al., 2022; Giacoletti et al., 2023; Gorback et al., 2024).

[9] Goldstein et al. (2022) show that the presence of impact investors in the stock market can reduce the informativeness of asset prices about the financial pay-offs from those assets. Our results suggest that in markets characterized by search and bargaining, this effect could be exacerbated.

[10] HUD defines affordable housing as units accessible to households that earn less than 80% of the area median income (AMI) in their metropolitan statistical area (HUD, 2023a). A related format is workforce housing, defined as housing units accessible to households earning between 80% and 100% of AMI (ULI, 2010).

However, housing advocates are concerned about for-profit investors converting income-restricted housing assets into conventional, market-level units, thereby exacerbating the shortage of affordable housing (Anderson, 2022). Non-profit organizations have emerged in many locations with the aim of providing affordable accommodation to low-income households or other selected demographics. Indeed, novel funding models using capital from impact investors to acquire properties and place them under non-profit management are being hailed by some cities as an innovative approach to increasing the supply of affordable housing.[11]

3 Data

The principal data sets we use in this study are from Yardi Matrix, a commercial real estate data provider focused on the U.S. multi-family market. We supplement the Yardi Matrix multi-family data with IRS information on non-profit investors, socioeconomic location data from the U.S. Census Bureau, and household mobility data from Data Axle.

3.1 Data Sets

Yardi Matrix Multi-Family Data. The Yardi Matrix database contains transaction-level records covering the period 2000-2022, including price information and the identities of the buyers and sellers involved. The database also contains a classification of these buyers and sellers into private owners, institutions, non-profit organizations, and other types of real estate investors. The data further contain detailed information about static and time-varying property characteristics. Static characteristics include property name, address, number of rental units, and year of construction. Time-varying characteristics include changes in property structures and amenities, property quality ratings (i.e., building classes A+ through D), and location quality ratings (following the same class definitions).

Based on the Yardi Matrix database, we additionally construct an annual panel data set that tracks each property's affordability status over time. Yardi Matrix considers any property with income restrictions in place to be affordable, regardless of the affordability program under which those restrictions are imposed. This definition includes properties that are not part of any (governmental) affordability programs but still require their residents to comply with stated income ceilings.

[11] Governing, Can Impact Investors Help Big Cities Fill Housing Gaps? accessed June 25, 2025.

Yardi Matrix obtains this information by surveying the owners and/or management companies of the properties in their database.

Finally, we obtain a property-year panel on average monthly rents per sq. ft. for the 2010–2022 period. Yardi Matrix only collects rental data on conventional rental units, not income-restricted (affordable) units where rents may be a function of income. We thus focus any analyses of rental growth under non-profit versus for-profit ownership on the sub-set of conventional properties in the sample.

Non-Profit Characteristics. We obtain data on non-profit financial and governance characteristics from ProPublica's Nonprofit Explorer. The Nonprofit Explorer includes summary data and full PDF files for non-profit tax returns and IRS Form 990 documents going back as far as 2009, organized by employer identification number (EIN). To identify the EINs for the non-profit investors in our sample, we proceed as follows. First, we review all buyers classified as non-profit investors in the Yardi Matrix data set and extract a list of 457 unique non-profit buyer names. Then, we match these names to those in the IRS Exempt Organization (EO) Business Master Files. We focus on exact name matches and those where the non-profit name in the Yardi Matrix data set appended with the suffix "inc" has an exact match in the EO Master Files. This matching algorithm yields a set of 147 non-profits that we can identify in the IRS EO Master Files, including 11 out of the top-15 most active non-profit buyers in the Yardi Matrix data set. For each of these 147 matched non-profits, we look up basic financial characteristics (notably, total assets and functional expenses) using the ProPublica API. To collect data on items not directly available through the ProPublica API (notably, total program service expenses and governance characteristics), we download all available Form 990 PDFs for the matched non-profits from ProPublica. We process these PDFs using a combination of programmatic and manual searches to extract the required data items. In this way, we collect annual data on total program service expenses, as well as a point-in-time data set of governance characteristics from the first filing available for each matched non-profit. We construct a 17-item governance score following Boland et al. (2020).[12] The score draws on information in non-profit Forms 990 regarding, among others, characteristics of the board and management (Part

[12]The score sums indicator values based on the governance information in the underlying forms (e.g., % of independent board members, presence of written conflict of interest policy, formal approval of executive compensation), in line with the work of Gompers et al. (2003) for for-profit companies. Boland et al. (2020) argue that simple measures have similar predictive value as more complex governance measures (e.g., based on factor analysis (Harris et al., 2015)) for key outcomes. They also have the benefit of ease of interpretation and replicability.

VI, Section A), policies (Section B), disclosure (Section C), and the auditing of financial accounts (Part XII).

Additionally, we manually create a dummy variable for all non-profits indicating whether the organization's mission is centered on providing affordable housing.

Socioeconomic Location Data. We collect socioeconomic data from the U.S. Census Bureau American Community Survey (ACS) based on property zip codes. Specifically we construct a zip code-by-year panel of socioeconomic data, where each observation is associated with the trailing 5-year ACS. For example, observations for zip code 16802 in 2020 are from the 2016–2020 ACS. Exceptions are observations associated with years 2007 through 2010. Because 2007–2011 is the first available 5-year ACS, the observations for zip-years from 2007 through 2010 are from the 2007–2011 5-year ACS. The socioeconomic indicators we collect include annual data on median household incomes, poverty rates, employment rates, minority shares, and the shares of college graduates in each zip code.

Household Mobility Data. We collect household-level address history data from Data Axle's consumer profile database over the period 2006–2023. Data Axle sources data from a variety of sources including voter files and utility connects. We match property addresses from Yardi Matrix with addresses in Data Axle, only keeping properties from Yardi Matrix where we have a unique match in Data Axle. Every time we observe a new renting household in a property, we look up what is the zip code they are moving in from.

3.2 Descriptive Statistics

Our final sample contains 64,084 transactions across 37,077 properties over the 2000–2022 period. Of these transactions, 4,157 (6%) are for properties classified as affordable at the time of the sale. Figure 1 shows the distribution of the sample properties by U.S. state.

[Insert Figure 1 about here.]

Figure 2 depicts the annual transaction volumes in the U.S. multi-family housing market over the 2000–2022 period. Panel A (Panel B) shows the total annual transaction volumes (in $ billion) and the total numbers of transactions for affordable (conventional) properties. The patterns depicted show that investment volumes in the multi-family market have grown rapidly in the past

two decades. Notably, the data illustrated indicate that, since 2010, transaction volumes have grown at an average annual rate of 24% in the affordable multi-family market, and at 28% in the conventional market. In other words, the growth of investment volumes in affordable multi-family properties broadly matches that of investment volumes in conventional properties.

[Insert Figure 2 about here.]

Figure 3 depicts the investor composition in the U.S. multi-family housing market over the 2000–2022 period. The investor types included in the Yardi Matrix database are Institutional, Real Estate Investment Trust, Private, Non-Profit, and Other.[13] We combine Institutional and Real Estate Investment Trust investors into a single *Institutional* category. In our analyses, we focus on these investors, along with *Private* and *Non-Profit* investors. Panel A (Panel B) presents that breakdown for affordable (conventional) multi-family properties. The patterns shown indicate that private investors dominate the affordable and conventional multi-family markets with 76% and 86% of total transaction volumes, respectively. The figure also shows that institutional investors have comparable market shares in the affordable and conventional multi-family markets with 10% and 14% of total transaction volumes, respectively. While non-profit investors account for only 1% of total transaction volumes in the conventional multi-family market, they account for 14% of total transaction volumes in the affordable market. (Appendix Table A.1 presents a ranking of the top-20 multi-family investors by investor type. Appendix Figure B.1 depicts distributions of counterparty types for non-profit buyers and sellers.)

[Insert Figure 3 about here.]

Table 1 presents descriptive statistics for the multi-family transactions in the sample over the 2000–2022 period by investor type. Here, like in most of the analysis below, we combine *Institutional* and *Private* investors into *For-Profit Investors* and contrast them with the *Non-Profit Investors* in the sample. 47% of acquisitions completed by non-profit investors are for properties classified as affordable. By contrast, the corresponding share of affordable property acquisitions among for-profit investors is only 6%. The mean total transaction price for non-profit investors is $13.22 million, below that of $23.60 million of for-profit investors. The mean price per rental unit paid by non-profit

[13]The Institutional classification covers insurance companies, investment banks, institutional investors, pension funds, and pension fund advisors. The Non-Profit classification covers non-profit organizations, private/public partnerships, and government agencies. The Other classification covers lenders and merchant builders.

investors is also below that of for-profit investors ($82,943 versus $110,361). Non-profit investors tend to acquire smaller and older properties. Figure 4 shows that non-profit investors also tend to acquire assets with lower location ratings (Panel A) and lower property ratings (Panel B) than do for-profit investors.

[Insert Table 1 and Figure 4 about here.]

Table 2 presents socioeconomic statistics for the locations (zip codes) of multi-family transactions completed over the 2000–2022 period by investor type. (Appendix Table C.1 shows conditional correlations between these statistics and the location ratings presented earlier.) Non-profit investors tend to acquire more properties in locations that are characterized by lower median household incomes, higher poverty rates, lower employment rates, a higher share of minority populations, and a lower share of college graduates among the local population. These differences in characteristics are generally consistent with non-profit investors having more of an impact orientation.

[Insert Table 2 about here.]

As for the non-profit organizations in our sample themselves, Table 3 presents descriptive statistics for their size and governance characteristics over the 2009–2023 period. The average size of the non-profits in our sample, measured by total assets, is approximately $85 million. We measure administrative efficiency as the ratio of total program service expenses to total expenses. The mean value of 0.81 suggests that the non-profits in our sample spend the most of their expenses on their core mission, rather than other expense items like administrative overhead costs. The mean governance score is about 13 out of 17. About 80% of the non-profits in our sample are focused on providing affordable housing.

[Insert Table 3 about here.]

3.3 Non-Profit Organizations as Impact Investors

In the previous subsection, we showed that non-profit investors generally acquire properties that are more likely to be affordable by low-income households and that are located in socioeconomically challenged neighborhoods. We now conduct machine-learning analyses of the investors in the sample to further corroborate our interpretation of non-profit investors as being primarily impact-driven.

We implement our analyses of the impact versus profit orientation of multi-family investors using ChatGPT, an AI application based on the large-language model developed by OpenAI. Specifically, we submit the names of the institutional and non-profit investors from the Yardi Matrix database to ChatGPT in a randomized order, each preceded by the prompt below.[14]

> *"You are a financial analyst, skilled in assessing the focus of organizations on financial returns versus impact investing principles. You will be provided with the name of an organization. On a scale from 1 to 100, where 1 represents a focus on impact investing principles and 100 represents a focus on maximizing profit, assign a score to the organization. Use only information from the year 2023. Return only the score you assigned."*

The output from these analyses includes the names and types of the investors as observed in the Yardi Matrix database, along with the scores assigned by ChatGPT for each investor's impact investing focus. For comparison, we repeat those analyses asking ChatGPT to use only information from the year 2013. We summarize our findings in Figure 5.

[Insert Figure 5 about here.]

Panel A shows the distributions of impact investing scores for institutional and non-profit investors in the U.S. multi-family market as of 2013. The patterns depicted show that 80% of non-profit investors in the sample have impact investing scores of 30 or below, indicating a strong focus on impact investing principles. By contrast, 80% of institutional investors in the sample have impact investing scores of 80 and above, reflecting a clear orientation towards maximizing profit. Panel B presents the corresponding distributions of impact investing scores as of 2023. The patterns shown indicate that the dispersion of impact investing scores within investor groups is narrower in 2023 than it was in 2013. Notably, while 20% of institutional investors had impact investing scores of 90 or above in 2013, that share has declined to almost zero in 2023. That finding may reflect a growing orientation of traditional for-profit investors towards impact investing principles. That said, the distributions of impact investing scores across investor types suggest that non-profit investors still are predominantly impact-driven while institutional investors remain more focused on maximizing profit. In sum, those results are consistent with our interpretation of non-profit investors as impact investors.

[14] In our analyses, we use ChatGPT 4 which, as of the time of writing, is trained on information through December 2023. We restrict our analyses to the investors in the sample that are classified by Yardi Matrix as institutional or non-profit. The investors classified as private in the Yardi Matrix database are mostly individuals whose impact orientation cannot reasonably be observed in the data available to ChatGPT.

4 Impact Across Investor Types

We now assess the social impact of non-profit vs. profit owners of multi-family housing. We define (positive) social impact as renting out more units to economically disadvantaged households, and we use new tenants' prior zip code's socioeconomic characteristics as a proxy for its own characteristics. Namely, we construct a variable *New Tenant Char.*$_{i,t+1\to t+2}$ as follows. We identify in the Data Axle data all the families that are new at an address in our sample in one of the two years after the acquisition of the property by either a for-profit or non-profit investor. We then trace what was the previous zip code at which each household was residing. We collect the following previously-presented socioeconomic characteristics at each of those zip codes: median household income, poverty rate, employment rate, and the share of white residents. We then average these characteristics over all the new tenants at a property following a transaction, and estimate a linear regression model of the following form:

$$\begin{aligned} \textit{New Tenant Char.}_{i,t+1\to t+2} = \beta_1 \textit{Buyer Non-Profit}_{i,t} + \textit{Property Zip Code Char.}_t \\ + \textit{New Tenant Char.}_{i,t-2\to t-1} + \sum_c \gamma_c Z^c_{i,t} + \lambda_{m,t} + \epsilon_{i,t} \end{aligned} \tag{1}$$

where *New Tenant Char.*$_{i,t-2\to t-1}$ is the lagged version of the dependent variable at the property level and *Property Zip Code Char.*$_t$ measures the level of the relevant socioeconomic characteristic in the zip code of the property itself and in the year of the transaction. *Buyer Non-Profit* is an indicator that takes the value of one if the current seller (buyer) is a non-profit investor. The coefficient of interest is β_1. If this is significantly different from zero, that means that, controlling for the socio-economic characteristics of past incoming tenants at a property and of the property's location, the acquisition of a property by a non-profit buyer is followed by different incoming tenant profiles than the acquisition of a property by a for-profit investor.

We also account for the following property and transaction characteristics $Z^c_{i,t}$ in Eq. (1). *Log Price/Sq.Ft.* is the natural logarithm of the transaction price per square foot. *Age* is computed as the difference between the transaction year and the construction year of the property. *No. Units* is the number of rental units in a property. *Class B Location* (*Class C Location*, respectively) is an indicator that takes the value of one if the property is situated in a location with quality rating B+,

B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Location*, comprising properties situated in locations with quality rating A+, A, or A-. *Class B Property* (*Class C Property*, respectively) is an indicator that takes the value of one if the property has a quality rating of B+, B, or B- (C+, C, or C-, respectively). The omitted category is *Class A Property*, comprising properties with quality rating A+, A, or A-.

$\lambda_{m,t}$ indicate market-by-year fixed effects, where we use property markets as defined by MSCI (e.g., "Denver", "Central New Jersey", "Suburban Atlanta"), to capture geographical and time-series variation. $\epsilon_{i,t}$ is the residual.

We estimate Eq. (1) in the sample of transactions for which we have the necessary household mobility and socioeconomic characteristics data. Standard errors are clustered by market-year. Table 4 presents the results.

[Insert Table 4 about here.]

We see that acquisitions by non-profit buyers are followed by inflows of new tenants from zip codes with a lower median household income, a higher poverty rate, a lower employment rate, and a higher non-white share. Taken together, these results show that non-profit owners are more likely to rent out to households that are looking to move from economically disadvantaged locations.

5 Investment Performance Across Investor Types

In this section, we characterize the investment performance achieved by non-profit versus for-profit investors in the U.S. multi-family market. Specifically, we contrast the investment performance across these investor types in terms of capital gains over the holding period and rental growth post-acquisition. We outline our analyses for each of these performance metrics in turn.

5.1 Capital Gains

We start by analyzing the capital gains among non-profit and for-profit investors in the U.S. multi-family housing market. Figure 6 depicts average annual capital gains and holding periods in this market over the 2000–2022 period. Panel A shows average capital gains and holding periods by

investor type (non-profit versus for-profit). The patterns depicted in the figure indicate that non-profit investors experience mean annual capital gains below those of for-profit investors over most holding periods. Across all holding periods, mean annual capital gains to non-profit (for-profit) investors are 6.4% (8.5%). The figure also shows that the holding periods of non-profit investors are skewed to the right. Panel B presents overlaid histograms for the distribution of capital gains across non-profit and for-profit investors. The histograms indicate that the dispersion of capital gains is wider and more skewed to the left for non-profit investors than it is for for-profit investors. The unconditional comparisons outlined here suggest that non-profit investors experience lower average capital gains than for-profit investors for comparable holding periods, along with a wider dispersion and more negative skewness in these capital gains.

[Insert Figure 6 about here.]

5.1.1 Repeat-Sales Analyses

We formalize the comparison of capital gains earned by non-profit investors relative to those earned by their for-profit peers by estimating the capital gains to these investor types in a repeat-sales framework. Specifically, we estimate a linear regression model of the following form:

$$\textit{Capital Gain}_{i,t} = \beta_1 \textit{Seller Non-Profit}_{i,t} + \beta_2 \textit{Buyer Non-Profit}_{i,t} + \sum_c \gamma_c Z^c_{i,t} + \lambda_{h,t} + \epsilon_{i,t} \qquad (2)$$

where *Capital Gain* is the geometric average annual capital gain for property i sold at time t (after a holding period of h years). *Seller Non-Profit* (respectively, *Buyer Non-Profit*) is an indicator that takes the value of one if the current seller (buyer) is a non-profit investor. The coefficients of interest are β_1 and β_2. If non-profit organizations realize lower capital gains upon resale than for-profit market participants, all else equal, β_1 will be negative. If these lower capital gains are partially explained by non-profits paying more than other investors at purchase—and thus not just by reselling at lower prices—β_2 will be positive.

We account for the same property characteristics $Z^c_{i,t}$ as in Eq. (1), with a few modifications. First, we do not control for the price of the property, given that our dependent variable is a price-based measure. Second, for the time-varying property characteristics (age, location ratings, property

ratings), we use the value at the time of acquisition in the repeat-sale. Third, we add an indicator *Affordable* that takes the value of one if a property is classified as affordable at the time of the acquisition. $\lambda_{h,t}$ indicate holding period-by-year fixed effects capturing the effects of market timing of acquisitions and dispositions. In alternative specifications, we include market fixed effects capturing static differences across property markets in our sample, and market-by-year fixed effects capturing time-varying differences across these markets. $\epsilon_{i,t}$ is the residual.

We estimate Eq. (2) in the sub-set of repeat-sales transactions in the final sample over the 2000–2022 period. Standard errors are clustered by market-year. Table 5 presents the results.

[Insert Table 5 about here.]

The estimates reported in column 1 and 2 indicate that non-profit sellers experience annual capital gains 3.8% below those experienced by for-profit sellers. This estimate increases to 4.5% in our preferred specification (column 3). Based on this specification, we also find that any investor selling to a non-profit buyer earns up to 1.7% higher capital gains per year (column 3). The results on the control variables indicate that affordable properties, and buildings that are older and have lower location and property quality ratings yield higher capital gains. In sum, the results presented in Table 5 corroborate the observation that non-profit investors experience significantly lower capital gains on their multi-family investments than do for-profit investors. The lower capital gains mainly seem driven by lower resale prices, but we also have some evidence that non-profits pay more at purchase.

5.1.2 Robustness Tests and Extensions

We assess the robustness of our main results in a number of ways. First, the Yardi Matrix database contains information on whether a property experiences a substantial improvement in structures or amenities between the time of the acquisition in a given repeat-sale and the time of the subsequent disposition.[15] Improvements are rarely observed for both investor types (less than 5% of all resales), but the least for non-profit owners. Could this explain their lower capital gains? In Panel A of Appendix Table D.1, we repeat our baseline regressions dropping from our sample any resale with an observed improvement since property acquisition. We find very similar results as before. Second,

[15]Examples of improvements include upgrades to HVAC systems, elevators, laundry, or parking facilities, or luxury improvements like the addition of a fitness club.

one may wonder whether the lower capital gains can be explained by the higher (lower) likelihood of non-profits to convert conventional (affordable) properties into affordable (conventional) ones.[16] In Panel B of Appendix Table D.1, we repeat our regressions after dropping observations where the affordability status changes between purchase and sale. Again, our findings are qualitatively unchanged. Third, as our for-profit category consists of institutional investors (e.g., REITS, banks, funds) and "private" owners (e.g., owner-operators, high net worth individuals), with the latter being the largest category of buyers (cf. Figure 2). We thus repeat our baseline regressions using as the omitted category only these private investors, against which we benchmark the capital gains of both for-profit and non-profit organizations. The results are shown in Panel C of Appendix Table D.1. We see that for-profit institutions realize similar capital gains to the left-out category of private for-profit investors, while non-profit organizations underperform private investors.

The challenge when wanting to assess whether non-profit organizations trade at different relative price levels is that properties differ in many unobserved ways. One way to deal with this heterogeneity is to analyze capital gains on repeated transactions of the same property, as we did before. However, an alternative when rent information is available, as is the case for conventional properties in our setting, is to repeat Eq. (2) with a price-to-rent ratio as the dependent variable. While asset selection can explain differences in the average prices paid by non-profits vs. for-profits, this should not explain differences in prices *scaled by (lagged) rental income*, as long as we can appropriately control for differences in the risk (and thus expected return) characteristics of properties. Such a model also allows us to include properties in our estimation that only trade once. The results are shown in Appendix Table E.1. We do not find much evidence for different relative purchase prices, but we see that non-profit organizations sell for substantially lower relative sale prices. (The transaction price goes down by about one year of rental income.) This finding is all the more remarkable given the lower rental growth under non-profit ownership, which we will document in the next subsection.

[16] In 17% of cases where non-profits buy a conventional property, it is converted to affordable before resale. In nearly 10% of cases where a for-profit buys an affordable property, it transitions to a conventional one. In other words, transitions to conventional (affordable) are very rare under non-profit (for-profit) ownership.

5.2 Rental Growth

We assess potential differences in post-acquisition rental growth across investor types in the sub-set of multi-family transactions involving conventional properties, for which we observe rents. Specifically, we estimate a linear regression model of the following form:

$$\textit{Rent Growth}_{i,t} = \beta_1 \textit{Buyer Non-Profit}_{i,t} + \sum_c \gamma_c Z^c_{i,t} + \lambda_{m,t} + \epsilon_{i,t} \tag{3}$$

where *Rent Growth* is the growth in average rents per sq. ft. in a property from the year prior to the transaction to one, two, three, four, and five years after the transaction, respectively. All other variables and notation are as in Eq. (1). For each version of our model, the estimation sample is limited to observations where the holding period is equal to or greater than the horizon over which we compute rental growth, including transactions for which we do not observe a subsequent resale.

We estimate Eq. (3) in the sub-sample of conventional multi-family transactions over the 2010–2022 period. Standard errors are clustered by market-year. Table 6 presents the results.

[Insert Table 6 about here.]

The estimates reported across all columns in Table 6 indicate that properties acquired by non-profit buyers achieve lower rental growth over the subsequent one through five years. Comparing the magnitude of the coefficient on *Buyer Non-Profit* across the columns of Table 6 suggests that approximately 3.5% lower rental growth occurs in the first year post-acquisition (column 1). This estimate increases steadily with each additional year and compounds over the subsequent years to reach an 8.4% differential by year five post-acquisition (column 5).

The results presented here suggest that non-profit investors achieve significantly lower rental growth in multi-family housing investments than do their non-profit counterparts, even in properties that are not classified as fully affordable.

6 Heterogeneity Across Non-Profit Investors

We now characterize potential heterogeneity in the impact and investment performance achieved by non-profit versus for-profit investors in the U.S. multi-family market. Specifically, we assess variation by metrics capturing non-profits' size, governance strength, and affordability focus.

6.1 Heterogeneity in Impact

We estimate a linear regression model that expands Eq. (1):

$$\begin{aligned} \textit{New Tenant Char.}_{i,t+1\to t+2} = \beta_1 \textit{Buyer Above-Med. Non-Profit}_{i,t} + \beta_2 \textit{Buyer Below-Med. Non-Profit}_{i,t} \\ + \textit{Property Zip Code Char.}_t + \textit{New Tenant Char.}_{i,t-2\to t-1} + \sum_c \gamma_c Z^c_{i,t} + \lambda_{m,t} + \epsilon_{i,t} \end{aligned} \tag{4}$$

where as before $\textit{New Tenant Char}_{i,t+1\to t+2}$ measures the average of new tenants' previous zip codes' socioeconomic characteristics in the two years after a property transaction. *Buyer Above-Med. Non-Profit* (*Buyer Below-Med. Non-Profit*, respectively) is an indicator that takes the value of one if the current buyer in a repeat-sale is a non-profit investor with an above-median (below-median, respectively) value for a given non-profit characteristic on average over the sample period. We assess heterogeneity in impact among non-profit investors separately for each of the following non-profit characteristics: *Size* (total assets), *Efficiency* (the ratio of program service expenses to total expenses), *Governance* (a score on a 17-point scale), and *Affordable Mission* (an indicator variable). *For-Profit Buyer* is the omitted category. All control variables are the same as in the analysis presented in Section 4.

The results are shown in Panels A–D of Table 7. For brevity, we only show the coefficients on the independent variables of interest, together with the result of an F-test testing for the equality of coefficients β_1 and β_2.

[Insert Table 7 about here.]

We see that the biggest social impact is generated by organizations with higher administrative efficiency (although the F-test statistics are never statistically significant at traditional levels) and higher governance scores, and with an explicit affordability mission.

6.2 Heterogeneity in Capital Gains

We evaluate whether capital gains differ across non-profits in a repeat-sales framework similar to that used in Section 5.1. Specifically, we estimate a linear regression model that expands Eq. (2):

$$\begin{aligned} \textit{Capital Gain}_{i,t} = \beta_1 \textit{Seller Above-Med. Non-Profit}_{i,t} + \beta_2 \textit{Seller Below-Med. Non-Profit}_{i,t} \\ + \beta_3 \textit{Buyer Above-Med. Non-Profit}_{i,t} + \beta_4 \textit{Buyer Below-Med. Non-Profit}_{i,t} \\ + \sum_c \gamma_c Z^c_{i,t} + \lambda_{h,t} + \lambda_{m,t} + \epsilon_{i,t} \end{aligned} \tag{5}$$

where *Capital Gain* is the geometric average annual capital gain over the holding period for property i sold at time t. In each estimation, we account for the same property characteristics as in Eq. (2). All estimations include holding period-by-year fixed effects as well as market-by-year fixed effects. Table 8 presents the results.

[Insert Table 8 about here.]

In most specifications, we find that both sub-samples of non-profits realize significantly lower capital gains than for-profit investors. However, poorly governed non-profits resell at significantly lower capital gains. There is also some evidence that smaller non-profits are more likely to resell at lower prices.

6.3 Heterogeneity in Rental Growth

We examine the evidence for heterogeneity in post-acquisition rental growth among non-profit investors in a framework similar to that in Section 5.2. Specifically, we estimate a linear regression

model in line with Eq. (3):

$$\begin{aligned} \textit{Rent Growth}_{i,t} = \beta_1 \textit{Buyer Above-Med. Non-Profit}_{i,t} + \beta_2 \textit{Buyer Below-Med. Non-Profit}_{i,t} \\ + \sum_c \gamma_c Z^c_{i,t} + \lambda_{m,t} + \epsilon_{i,t} \end{aligned} \tag{6}$$

where *Rent Growth* is the growth in average rents per sq. ft. in a property from the year prior to the transaction to five years after the transaction. All other variables and notation are as presented before. The estimation sample is limited to observations where the holding period is equal to or greater than the five-year horizon over which we compute rental growth, including transactions for which we do not observe a subsequent resale. We estimate Eq. (6) separately for each non-profit characteristic in the sub-sample of conventional multi-family transactions over the 2000–2022 period. Table 9 presents the results.

[Insert Table 9 about here.]

The estimates reported indicate lower rent growth (relative to for-profit owners) for the non-profits with lower governance scores. We also find that the difference in rent growth rates with for-profits becomes statistically insignificant for non-profits with above-median size and administrative efficiency. Again, the relative underperformance of non-profits in the U.S. multi-family housing market that we document thus seems to be driven by non-profits that are less likely to be professionally managed.

7 Discussion

Our results in the previous section show that non-profits do worse than for-profit investors on traditional metrics of investment performance in real estate markets. Namely, rents grow more slowly under their ownership (even outside housing formally defined as "affordable"), and capital gains are lower.

Non-profits' lower capital gains in particular are hard to rationalize. Maybe non-profit organizations have stronger preferences, and therefore a higher willingness-to-pay, than for-profit investors for assets with higher social impact, which could affect the prices at which they acquire assets

(Sagi, 2021; Koijen et al., 2025). However, higher private use values should not only lead to higher purchase prices (for which we find some evidence) but also to higher sale prices (contrary to our results).[17] So what *can* explain the lower capital gains to non-profits? Prior work points to the importance of information asymmetries (e.g., Garmaise and Moskowitz, 2004; Kurlat and Stroebel, 2015) and heterogeneity in bargaining skills and intensity (e.g., Harding et al., 2003; Cvijanović and Spaenjers, 2021) in determining price outcomes in search markets for illiquid, heterogeneous assets like real estate. The fact that lower capital gains seem driven by lower *resale* prices is more suggestive of a bargaining explanation than an information story. (Information asymmetries should be higher before owning a property.) In particular, given the low incentives to produce financial returns, it is plausible that many non-profits do not spend the "time and energy needed to bargain aggressively" (Harding et al., 2003), and as a result sell at lower prices. The fact that that the underperformance is higher for weakly-governed organizations is consistent with this hypothesis.

A priori it is possible that the lower rent growth under non-profits can be attributed to their social mission, even if our analysis only included conventional properties. Non-profits may, for instance, reserve properties for vulnerable segments of the population and offer them at preferential rental rates. Yet, the fact that the lower rent growth is concentrated in smaller organizations with worse governance and efficiency suggests than another, potentially more important driver of the lower average income growth at non-profits might be their occasional lack of professional management. We believe that this hypothesis is further supported by the results of our heterogeneity tests on the impact of non-profits. We found that better-governed non-profits (and, to some extent, non-profits that do better on our administrative efficiency measure) have more of a social impact, in that they bring in tenants from poorer and more diverse locations. Yet, it is not these sets of non-profits that have lower rent growth; by contract, it is the poorer-governed ones, which have less social impact.

Thus, an important lesson from our results is that financial underperformance of mission-driven stewards of capital should not be necessarily considered the unavoidable result of a trade-off between

[17] This is unless the higher non-financial benefits of ownership mean that these investors only sell when distressed (Lovo and Spaenjers, 2018). In unreported results, we find that capital gains are not lower for financially weaker non-profits (e.g., below-median endowments, donation inflows), so we do not believe that this is plausible.

equity and economic efficiency. In our setting, well-governed non-profits combine high social impact with a financial performance approaching that of for-profits. Non-profits' inferior average investment performance is driven by weakly-governed organizations that also have limited social impact.

8 Conclusion

In the housing market, mission-driven non-profit investors frequently trade with for-profit investors over conventional properties and affordable properties that possess qualities of social impact investments. We study asset-level investment choices and performance outcomes of those investor types in the U.S. multi-family market over the 2000–2020 period. We find that non-profit investors earn significantly lower capital gains and produce lower rental growth than do for-profits. We show that the lower cpaital gains cannot be explained by the preferences of non-profits for affordable properties or their asset management choices. Notably, consistent with recent work, we estimate that affordable properties on average deliver stronger capital gains than comparable conventional properties.

We also find that the acquisition of a property by a non-profit is generally followed by an increase in the share of new tenants coming from economically disadvantaged zip codes. It may be tempting to see our results as evidence of a natural trade-off between impact and economic efficiency. However, results of heterogeneity tests show that non-profits' lower average investment performance relative to their for-profit counterparts in the U.S. (affordable) housing market is driven by weakly-governed organizations that also have limited social impact. Well-governed non-profits combine high social impact with a financial performance approaching that of for-profits.

It is important to note that the non-profit investors in our study have little incentive to produce strong financial returns. This characteristic stands in contrast to typical impact investors that seek to balance social or environmental objectives with delivering financial returns. While our non-profits can thus be viewed as pure impact investors, our inferences would likely be attenuated in a broader sample of typical impact investors. Further, impact investing is often practiced in public equity markets where there is usually no major role for bargaining over transaction prices—and thus for resale returns being a function of market participant characteristics. Nevertheless, our findings im-

ply that poorly governed impact investors may leave money on the table, even while having little impact. In that sense, they may not be the most efficient stewards of impact investment capital.

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Figure 1. Locations of Sample Properties by State

This figure depicts the locations of the sample properties by state. Darker shading indicates a larger number of sample properties located in a state. The data used to produce this figure are from Yardi Matrix.

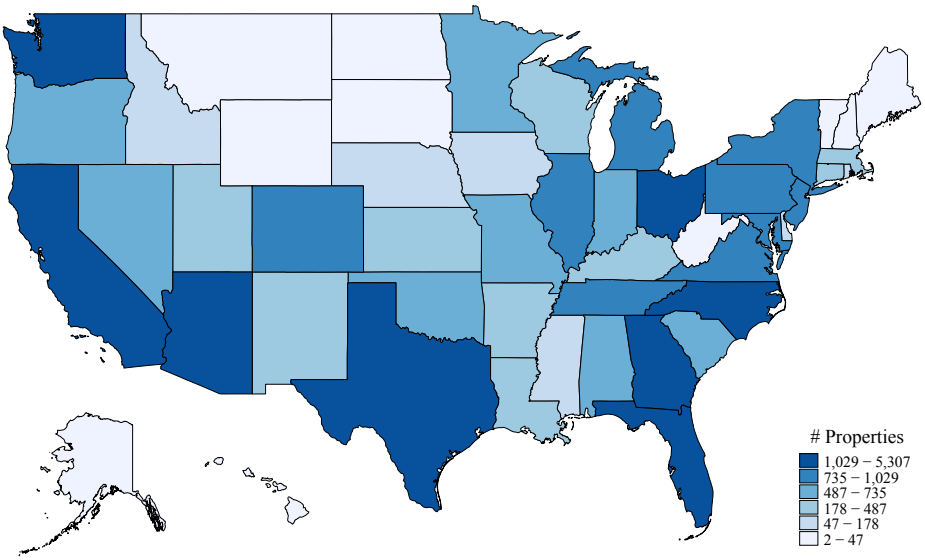
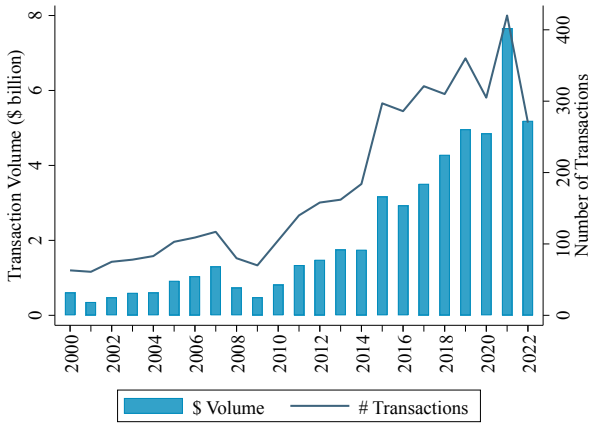
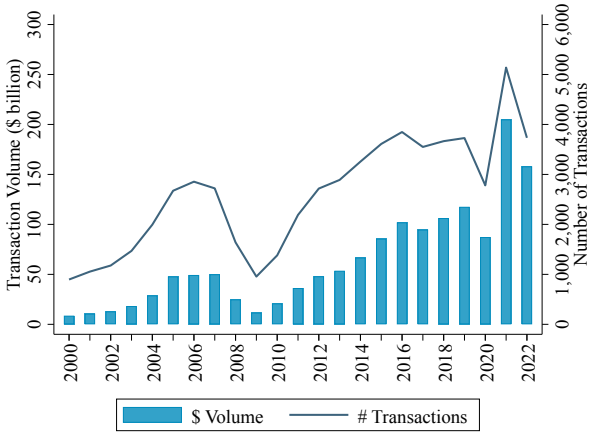


Figure 2. Transaction Volumes in the U.S. Multi-Family Market

This figure depicts the annual transaction volumes in the U.S. multi-family real estate market over the 2000–2022 period. Panel A shows the total annual transaction volumes (in $ billion) and the total annual numbers of transactions for affordable multi-family properties. Panel B shows the corresponding information for properties classified as conventional at the time of the transaction. The data used to produce this figure are from Yardi Matrix.



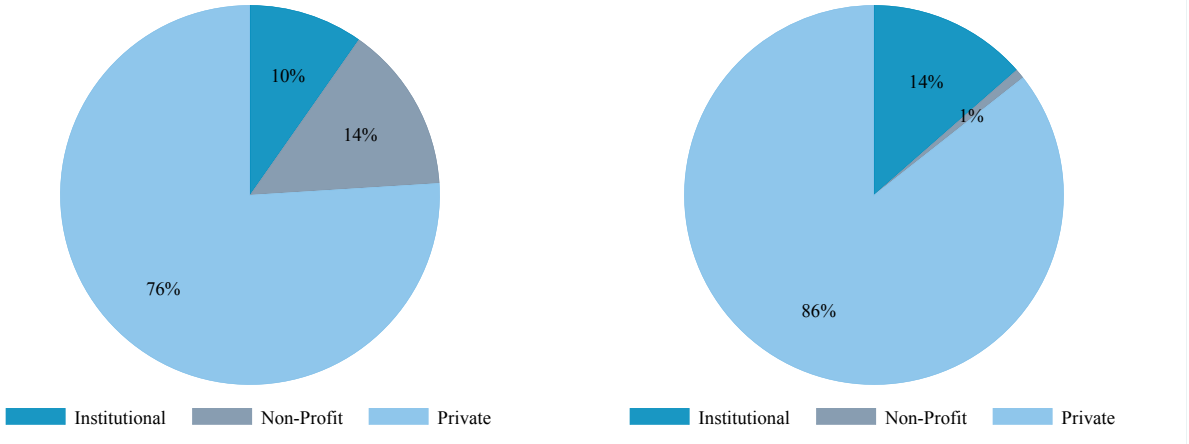
(A) Affordable Properties



(B) Conventional Properties

Figure 3. Investor Composition in the U.S. Multi-Family Market

This figure depicts the investor composition in the U.S. multi-family real estate market over the 2000–2022 period. Panel A shows the breakdown of total transaction volumes by investor type for affordable multi-family properties. Panel B shows the corresponding information for properties classified as conventional at the time of the transaction. The data used to produce this figure are from Yardi Matrix.

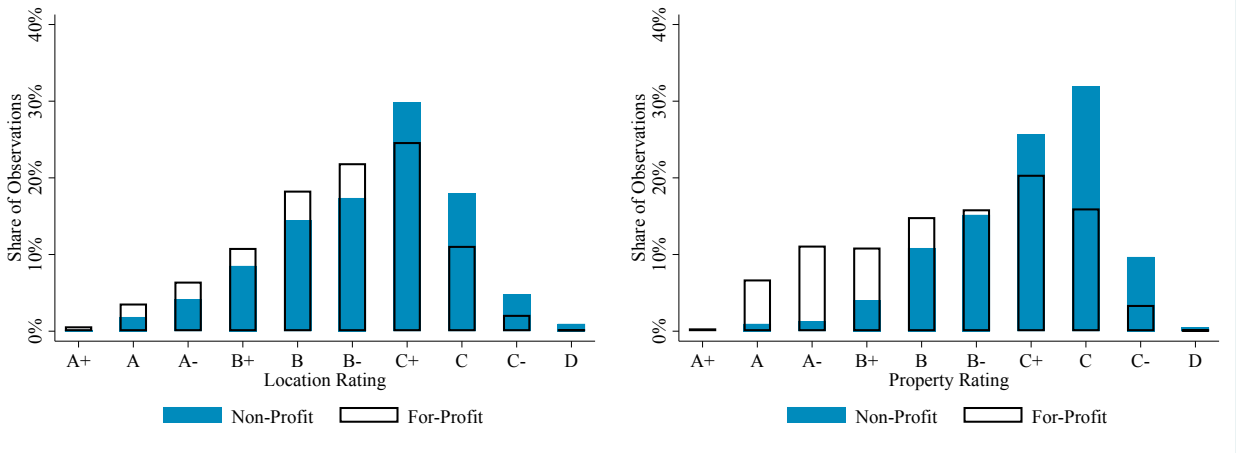


(A) Affordable Properties

(B) Conventional Properties

Figure 4. Distribution of Location Ratings and Property Ratings by Investor Type

This figure depicts overlaid histograms of quality ratings for multi-family properties transacted over the 2000–2022 period by investor type (non-profit versus for-profit). Panel A presents the distribution of location ratings. Panel B presents the distribution of property ratings. In each panel, the bars represent the the shares of total transactions completed in each ratings category. Quality ratings are defined from A+ (highest) to D (lowest). The data used to produce this figure are from Yardi Matrix.

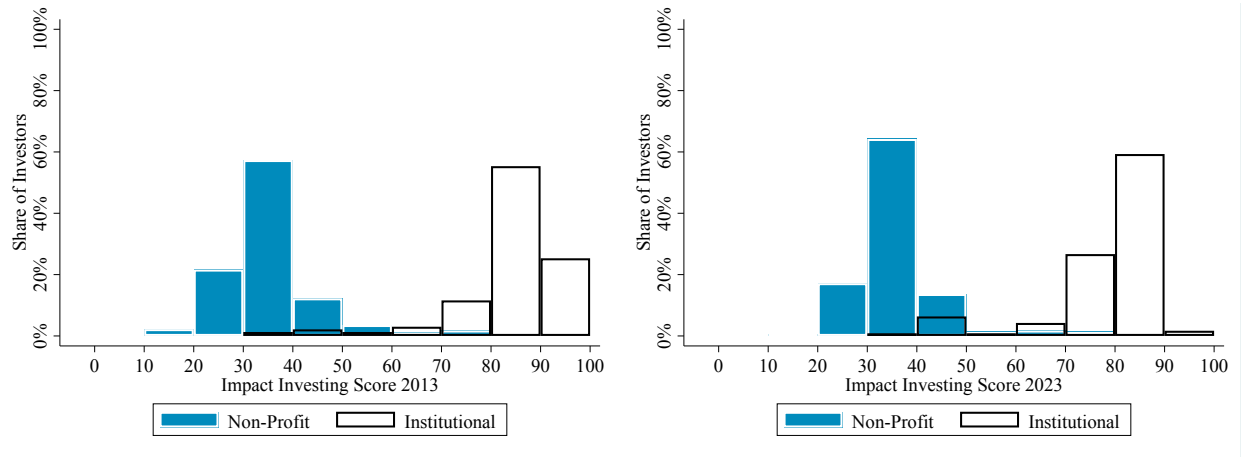


(A) Location Ratings

(B) Property Ratings

Figure 5. Investor Classification by Impact vs. Profit Focus

This figure depicts the distributions of impact investing scores for institutional and non-profit investors the U.S. multi-family housing market over the 2000–2022 period. Panel A shows the distribution of impact investing scores based on data from 2013. Panel B shows the corresponding information based on data from 2023. Impact investing scores are assigned by machine-learning analyses using ChatGPT on a scale from 1-100, where 1 represents a focus on impact investing principles and 100 represents a focus on maximizing profit. Further details on those analyses are provided in Section 3. The data used to produce this figure are from Yardi Matrix.

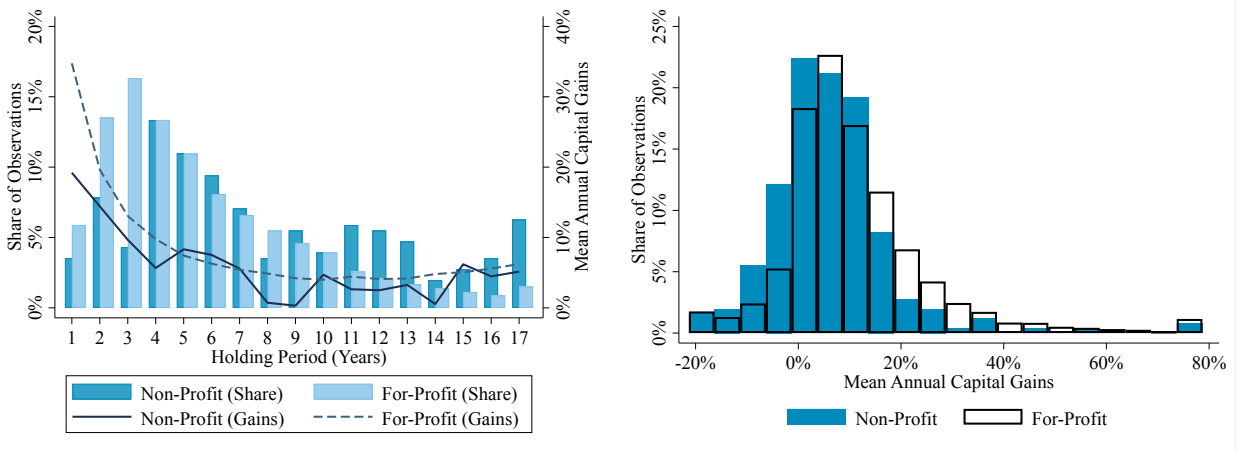


(A) Impact Investing Scores 2013

(B) Impact Investing Scores 2023

Figure 6. Capital Gains in the U.S. Multi-Family Market by Investor Type

This figure depicts capital gains from investments in the U.S. multi-family real estate market over the 2000–2022 period by investor type (non-profit versus for-profit). Panel A shows average capital gains by holding period. In this panel, the lines represent geometric average annual capital gains over the holding periods of the multi-family investments (in percent). The bars represent the distributions of holding periods (in years). Panel B shows the distribution of geometric average annual capital gains for multi-family investments by investor type. The data used to produce this figure are from Yardi Matrix.



(A) Holding Periods and Average Capital Gains

(B) Distribution of Capital Gains

Table 1. Descriptive Statistics Transactions Data

This table presents descriptive statistics for the multi-family transactions completed over the 2000–2022 period by investor type (non-profit versus for-profit). *Affordable* is an indicator that takes the value of one if a property is classified as affordable at the time of a transaction. *Price* is the total transaction price (in $ million). *Price/Unit* is the transaction price per apartment unit in a multi-family property (in $ thousands). *No. Units* is the number of apartment units in a multi-family property. *Year Built* is the construction year of the property. *Age* is the age of a property, computed as the difference between the transaction year and the construction year of a property. Significance from a difference-in-means test across non-profit and for-profit investors is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Non-Profit			(2) For-Profit			Diff.
	N	Mean	Median	N	Mean	Median	
Affordable	1,456	0.47	0.00	62,627	0.06	0.00	0.42***
Price	1,456	13.22	7.50	62,627	23.60	13.85	-10.38***
Price/Unit	1,456	82.94	58.91	62,627	110.36	81.85	-27.42***
No. Units	1,456	153.09	116.00	62,627	201.70	172.00	-48.62***
Year Built	1,456	1979	1979	62,627	1983	1983	-4.60***
Age	1,456	33.30	32.00	62,627	29.50	30.00	3.80***

Table 2. Descriptive Statistics Location Data

This table presents descriptive statistics for the locations (zip codes) of multi-family transactions completed over the 2007–2022 period by investor type (non-profit versus for-profit). *Median Income* is median household income in the past 12 months (in $). *Poverty Rate* is the share of the local population with household income below the poverty line. *Employment Rate* is the share of the local population that is employed in the labor force. *Minority Share* is the share of the local population classified as non-white. *Share College* is the share of the local population whose highest educational attainment is at least a bachelor's degree. Significance from a difference-in-means test across non-profit and for-profit investors is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Non-Profit			(2) For-Profit			Diff.
	N	Mean	Median	N	Mean	Median	
Household Income	1,064	55,169.72	50,813.00	30,391	61,463.74	56,730.00	-6,294.02***
Poverty Rate	1,064	0.19	0.17	30,394	0.16	0.13	0.03***
Employment Rate	1,064	0.59	0.60	30,398	0.61	0.62	-0.02***
Minority Share	1,064	0.40	0.35	30,398	0.34	0.29	0.06***
Share College	1,064	0.30	0.26	30,398	0.35	0.31	-0.04***

Table 3. Descriptive Statistics Non-Profit Data

This table presents descriptive statistics for the non-profit organizations in the sample over the 2009–2023 period. *Size* is the organization's total assets ($ million). *Efficiency* is the ratio of an organization's total program service expenses over its total functional expenses. *Governance* is a non-profit organization's governance score based on 17 metrics from its IRS Form 990 filing. *Affordable Mission* is an indicator that takes the value of one if the mission statement of an organization indicates a focus on providing affordable housing.

	N	Mean	Median	S.D.	Min.	Max.
Size	1,527	85.19	26.63	257.16	0.00	2,256.38
Efficiency	1,256	0.81	0.88	0.24	0.00	1.00
Governance	1,950	13.07	14.00	3.24	4.00	17.00
Affordable Mission	2,115	0.80	1.00	0.40	0.00	1.00

Table 4. Characteristics of New Tenants after Multi-Family Property Transactions

This table reports output from Eq. (1), estimated over the transactions in the final sample over the 2007–2022 period. The dependent variables measure averages of new tenants' previous zip codes' socioeconomic characteristics in the two years after a property transaction. *Buyer Non-Profit* is an indicator that takes the value of one if the current buyer is a non-profit investor. *Price/Sq.Ft.* is the natural logarithm of the transaction price per sq. ft. *Age* is the age of the property, computed as the difference between the transaction year and the construction year of the property. *No. Units* is the number of apartment units in a property. *Class B Location* (*Class C Location*, respectively) is an indicator that takes the value of one if the property is situated in a location with quality rating B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Location*, comprising properties situated in locations with quality rating A+, A, or A-. *Class B Property* (*Class C Property*, respectively) is an indicator that takes the value of one if the property has a quality rating of B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Property*, comprising properties with quality rating A+, A, or A-. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)
	Household Income	Poverty Rate	Employment Rate	White Share
Buyer Non-Profit	-1630.037***	0.009***	-0.006***	-0.017***
	(567.197)	(0.003)	(0.002)	(0.006)
Property Zip Code Char.	0.161***	0.174***	0.179***	0.230***
	(0.008)	(0.008)	(0.007)	(0.009)
Lagged Dep. Var.	0.425***	0.357***	0.322***	0.460***
	(0.016)	(0.014)	(0.013)	(0.012)
Log Price/Sq.Ft.	2929.237***	-0.011***	0.010***	0.011***
	(220.521)	(0.001)	(0.001)	(0.002)
Age	-28.679***	0.000***	0.000	-0.000***
	(8.532)	(0.000)	(0.000)	(0.000)
No. Units	-147.757	0.001	0.000	-0.001
	(145.286)	(0.001)	(0.000)	(0.001)
Class B Location	-1686.328***	0.003***	-0.002***	-0.005***
	(277.308)	(0.001)	(0.001)	(0.002)
Class C Location	-2804.422***	0.007***	-0.005***	-0.008***
	(347.282)	(0.001)	(0.001)	(0.002)
Class B Property	-1045.785***	0.001	-0.002**	0.002
	(223.018)	(0.001)	(0.001)	(0.002)
Class C Property	-2030.626***	0.005***	-0.005***	0.000
	(338.338)	(0.001)	(0.001)	(0.003)
Market-Year FEs	Yes	Yes	Yes	Yes
Observations	11,225	11,226	11,226	11,226
R-squared	0.82	0.69	0.77	0.84

Table 5. Capital Gains in the U.S. Multi-Family Market

This table reports output from Eq. (2), estimated over the repeat-sales transactions in the final sample over the 2000–2022 period. The dependent variable is the geometric average annual capital gain over the holding period for a multi-family property. *Seller Non-Profit* is an indicator that takes the value of one if the current seller is a non-profit investor. *Buyer Non-Profit* is an indicator that takes the value of one if the current buyer is a non-profit investor. *Affordable* is an indicator that takes the value of one if a property is classified as affordable at the time of the acquisition in a repeat-sale. *Age* is the age of the property, computed as the difference between the disposition year of the repeat-sale and the construction year of the property. *No. Units* is the number of apartment units in a property. *Class B Location* (*Class C Location*, respectively) is an indicator that takes the value of one if the property is situated in a location with quality rating B+, B, or B- (C+, C, or C-, respectively) at the time of the acquisition in a repeat-sale. The omitted category is *Class A Location*, comprising properties situated in locations with quality rating A+, A, or A-. *Class B Property* (*Class C Property*, respectively) is an indicator that takes the value of one if the property has a quality rating of B+, B, or B- (C+, C, or C-, respectively) at the time of the acquisition in a repeat-sale. The omitted category is *Class A Property*, comprising properties with quality rating A+, A, or A-. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Cap. Gain	(2) Cap. Gain	(3) Cap. Gain
Seller Non-Profit	-0.038***	-0.038***	-0.045***
	(0.008)	(0.008)	(0.008)
Buyer Non-Profit	0.012	0.015**	0.017**
	(0.007)	(0.007)	(0.008)
Affordable	0.026***	0.023***	0.023***
	(0.005)	(0.005)	(0.005)
Age	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
No. Units	0.006***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)
Class B Location	0.009***	0.007***	0.006***
	(0.002)	(0.002)	(0.002)
Class C Location	0.012***	0.011***	0.011***
	(0.003)	(0.003)	(0.003)
Class B Property	0.019***	0.021***	0.020***
	(0.002)	(0.002)	(0.002)
Class C Property	0.019***	0.026***	0.028***
	(0.004)	(0.003)	(0.003)
Hold. Pd.-Year FEs	Yes	Yes	Yes
Market FEs	No	Yes	No
Market-Year FEs	No	No	Yes
Observations	26,734	26,731	26,245
R-squared	0.42	0.44	0.48

Table 6. Rental Growth in the U.S. Multi-Family Market

This table reports output from Eq. (3), estimated over the transactions in the final sample over the 2010–2022 period. Due to data limitations, we exclude affordable properties from these estimations. The dependent variable is the growth in average rents per sq. ft. in a property from the year prior to the transaction to one, two, three, four, and five years after the transaction, shown in column 1, 2, etc., respectively. *Buyer Non-Profit* is an indicator that takes the value of one if the current buyer is a non-profit investor. *Price/Sq.Ft.* is the natural logarithm of the transaction price per sq. ft. *Age* is the age of the property, computed as the difference between the transaction year and the construction year of the property. *No. Units* is the number of apartment units in a property. *Class B Location* (*Class C Location*, respectively) is an indicator that takes the value of one if the property is situated in a location with quality rating B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Location*, comprising properties situated in locations with quality rating A+, A, or A-. *Class B Property* (*Class C Property*, respectively) is an indicator that takes the value of one if the property has a quality rating of B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Property*, comprising properties with quality rating A+, A, or A-. In each column, the estimation sample is limited to observations where the holding period is equal to or greater than the horizon over which we compute rental growth, including transactions for which we do not observe a subsequent resale. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) 1 Year	(2) 2 Years	(3) 3 Years	(4) 4 Years	(5) 5 Years
Buyer Non-Profit	-0.036***	-0.050***	-0.056***	-0.063***	-0.086***
	(0.005)	(0.008)	(0.009)	(0.008)	(0.013)
Price/Sq.Ft.	-0.012***	-0.022***	-0.032***	-0.038***	-0.045***
	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)
Age	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
No. Units	0.008***	0.010***	0.013***	0.017***	0.020***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Class B Location	0.002	0.003	0.003	0.006**	0.009***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Class C Location	-0.001	-0.001	-0.002	0.002	0.001
	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)
Class B Property	0.022***	0.028***	0.034***	0.041***	0.047***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Class C Property	0.026***	0.033***	0.037***	0.044***	0.048***
	(0.002)	(0.003)	(0.004)	(0.005)	(0.005)
Market-Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	30,686	25,304	21,081	16,330	12,729
R-squared	0.39	0.38	0.41	0.44	0.47

Table 7. Heterogeneity in Impact by Non-Profit Characteristics

Each panel of this table reports output from Eq. (4), estimated for a different dimension of heterogeneity in non-profit characteristics. *Buyer Above-Median Non-Profit* (*Buyer Below-Median Non-Profit*, respectively) is an indicator that takes the value of one if the current buyer is a non-profit investor with an above-median (below-median, respectively) value for a given non-profit characteristic on average over the sample period. *Buyer For-Profit* is the omitted category. Control variables are included but not tabulated. Non-profits for which we do not observe a certain characteristic due to data limitations are excluded from the estimations. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

(A) Size

	(1) Household Income	(2) Poverty Rate	(3) Employment Rate	(4) White Share
Buyer Above-Median Non-Profit	-2108.692*	0.009	-0.007	-0.014
	(1172.894)	(0.006)	(0.004)	(0.010)
Buyer Below-Median Non-Profit	-1320.007	0.010	-0.011*	-0.013
	(918.804)	(0.007)	(0.005)	(0.015)
F stat.	0.28	0.01	0.26	0.00
p-val.	0.60	0.93	0.61	0.96

(B) Efficiency

	(1) Household Income	(2) Poverty Rate	(3) Employment Rate	(4) White Share
Buyer Above-Median Non-Profit	-3029.979***	0.018***	-0.013**	-0.023**
	(1078.115)	(0.006)	(0.005)	(0.012)
Buyer Below-Median Non-Profit	-1913.561	0.005	-0.005	-0.013
	(1398.999)	(0.007)	(0.005)	(0.014)
F stat.	0.40	1.78	1.33	0.32
p-val.	0.53	0.18	0.25	0.57

(C) Governance

	(1) Household Income	(2) Poverty Rate	(3) Employment Rate	(4) White Share
Buyer Above-Median Non-Profit	-5797.757***	0.023**	-0.023***	-0.039**
	(1989.551)	(0.011)	(0.008)	(0.016)
Buyer Below-Median Non-Profit	-1634.635**	0.012***	-0.006*	-0.017
	(815.912)	(0.005)	(0.003)	(0.011)
F stat.	3.82	0.79	3.55	1.47
p-val.	0.05	0.37	0.06	0.23

(D) Affordable Mission

	(1) Household Income	(2) Poverty Rate	(3) Employment Rate	(4) White Share
Buyer Above-Median Non-Profit	-2327.992**	0.012**	-0.009***	-0.020**
	(952.040)	(0.005)	(0.004)	(0.009)
Buyer Below-Median Non-Profit	1840.621	-0.020*	0.002	0.037
	(1443.330)	(0.012)	(0.011)	(0.028)
F stat.	5.84	6.57	0.95	3.80
p-val.	0.02	0.01	0.33	0.05

Table 8. Heterogeneity in Capital Gains by Non-Profit Characteristics

This table reports output from Eq. (5), estimated over the repeat-sales transactions in the final sample over the 2010–2022 period. Across all columns, the dependent variable is the geometric average annual capital gain over the holding period for a multi-family property. Each column presents the results from estimating Eq. (5) for a different dimension of heterogeneity in non-profit characteristics, namely, non-profit *Size*, *Efficiency*, *Governance*, and *Affordable Mission*. *Seller Above-Median Non-Profit* (*Seller Below-Median Non-Profit*, respectively) is an indicator that takes the value of one if the current seller in a repeat-sale is a non-profit investor with an above-median (below-median, respectively) value for a given non-profit characteristic on average over the sample period. *Seller For-Profit* is the omitted category. *Buyer Above-Median Non-Profit* (*Buyer Below-Median Non-Profit*, respectively) is an indicator that takes the value of one if the current buyer in a repeat-sale is a non-profit investor with an above-median (below-median, respectively) value for a given non-profit characteristic on average over the sample period. *Buyer For-Profit* is the omitted category. Control variables are included but not tabulated. Non-profits for which we do not observe a certain characteristic due to data limitations are excluded from the estimations. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Size	(2) Effic.	(3) Govern.	(4) Aff. Mission
Seller Above-Median Non-Profit	-0.031	-0.063***	-0.024	-0.051***
	(0.021)	(0.017)	(0.016)	(0.016)
Seller Below-Median Non-Profit	-0.065***	-0.047***	-0.069***	-0.044*
	(0.018)	(0.017)	(0.016)	(0.027)
Seller For-Profit	[Omitted]	[Omitted]	[Omitted]	[Omitted]
Buyer Above-Median Non-Profit	0.025*	0.010	0.017	0.020
	(0.014)	(0.019)	(0.019)	(0.012)
Buyer Below-Median Non-Profit	0.017	0.039**	0.032*	0.034
	(0.019)	(0.016)	(0.016)	(0.029)
Buyer For-Profit	[Omitted]	[Omitted]	[Omitted]	[Omitted]
F-Stat (Seller)	1.51	0.41	4.04	0.05
p-Val. (Seller)	0.22	0.52	0.04	0.82
F-Stat (Buyer)	0.11	1.35	0.38	0.20
p-Val. (Buyer)	0.74	0.25	0.54	0.65
Control Variables	Yes	Yes	Yes	Yes
Hold. Pd.-Year FEs	Yes	Yes	Yes	Yes
Market-Year FEs	Yes	Yes	Yes	Yes
Observations	25,902	25,902	25,877	25,903
R-squared	0.49	0.49	0.49	0.49

Table 9. Heterogeneity in Rental Growth by Non-Profit Characteristics

This table reports output from Eq. (6), estimated over the transactions in the final sample over the 2010–2022 period. Due to data limitations, we exclude affordable properties from these estimations. The dependent variable is the growth in average rents per sq. ft. in a property from the year prior to the transaction to three years after the transaction. Each column presents the results from estimating Eq. (6) for a different dimension of heterogeneity in non-profit characteristics, namely, non-profit *Size*, *Efficiency*, *Governance*, and *Affordable Mission*. *Buyer Above-Median Non-Profit* (*Buyer Below-Median Non-Profit*, respectively) is an indicator that takes the value of one if the current buyer is a non-profit investor with an above-median (below-median, respectively) value for a given non-profit characteristic on average over the sample period. *Buyer For-Profit* is the omitted category. Control variables are included but not tabulated. Non-profits for which we do not observe a certain characteristic due to data limitations are excluded from the estimations. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Size	(2) Effic.	(3) Govern.	(4) Aff. Mission
Buyer Above-Median Non-Profit	-0.025	-0.012	-0.009	-0.039**
	(0.018)	(0.015)	(0.020)	(0.015)
Buyer Below-Median Non-Profit	-0.068***	-0.049**	-0.068***	-0.025
	(0.022)	(0.019)	(0.019)	(0.027)
Buyer For-Profit	[Omitted]	[Omitted]	[Omitted]	[Omitted]
F-Stat (Buyer)	2.24	2.29	4.52	0.23
p-Val. (Buyer)	0.14	0.13	0.03	0.63
Control Variables	Yes	Yes	Yes	Yes
Market-Year FEs	Yes	Yes	Yes	Yes
Observations	21,001	21,001	21,000	21,002
R-squared	0.41	0.41	0.41	0.41

ONLINE APPENDIX

Table A.1. Top-20 Multi-Family Investors by Type

This table presents the names of the top-20 multi-family investors in the sample by frequency rank, along with the (cumulative) percentage of transactions in which each investor is involved. Panel A (Panel B) presents the top-20 investors in the sub-set of transactions where the buyer is an institutional (non-profit) investor.

(A) Institutional Investors

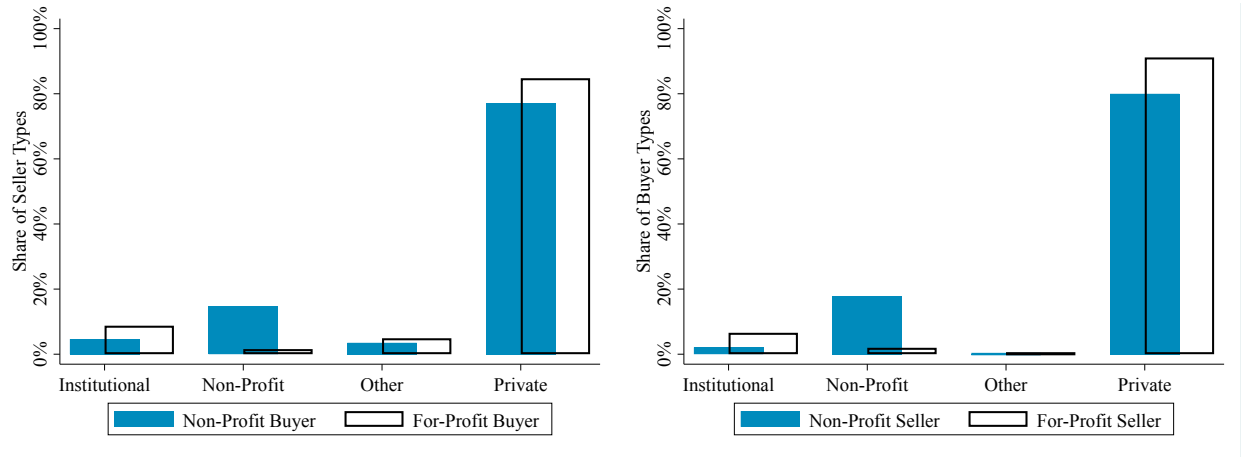
Rank	Investor	Freq.	Pct.	Cum. Pct.
1	Starwood Capital Group	375	9.01	9.01
2	Equity Residential	219	5.26	14.27
3	Nuveen Real Estate	176	4.23	18.50
4	Essex Property Trust	124	2.98	21.48
5	MAA	113	2.72	24.20
6	Invesco Real Estate	109	2.62	26.81
7	Independence Realty Trust	108	2.59	29.41
8	Inland Real Estate Group	94	2.26	31.67
9	UDR	94	2.26	33.93
10	Archstone	91	2.19	36.11
11	JPMorgan Asset Management	85	2.04	38.15
12	CBRE Investment Management	73	1.75	39.91
13	Heitman	73	1.75	41.66
14	Milestone Group	70	1.68	43.34
15	Resource Real Estate	70	1.68	45.03
16	CAPREIT	68	1.63	46.66
17	BlackRock	67	1.61	48.27
18	DWS	67	1.61	49.88
19	LaSalle Investment Management	66	1.59	51.47
20	Starlight Investments	65	1.56	53.03

(B) Non-Profit Investors

Rank	Investor	Freq.	Pct.	Cum. Pct.
1	Harmony Housing	69	4.74	4.74
2	Foundation for Affordable Housing	53	3.64	8.38
3	Foundation Housing	46	3.16	11.54
4	Preservation of Affordable Housing	32	2.20	13.74
5	Global Ministries Foundation	29	1.99	15.73
6	Housing Preservation	29	1.99	17.72
7	Atlantic Housing Foundation	24	1.65	19.37
8	NHP Foundation	23	1.58	20.95
9	Austin Affordable Housing Corporation	22	1.51	22.46
10	National Church Residences	22	1.51	23.97
11	Aeon	17	1.17	25.14
12	Affordable Housing Preservation	17	1.17	26.30
13	Chicanos Por La Causa	16	1.10	27.40
14	Patriot Services Group	16	1.10	28.50
15	Enterprise Community Partners	15	1.03	29.53
16	King County Housing Authority	15	1.03	30.56
17	Mercy Housing	15	1.03	31.59
18	Wisconsin Housing Preservation Corporation	15	1.03	32.62
19	MHT Housing	14	0.96	33.59
20	American Housing Foundation	12	0.82	34.41

Figure B.1. Distribution of Counterparties in the U.S. Multi-Family Market

This figure depicts distribution of counterparties for non-profit investors in the multi-family real estate market over the 2000–2022 period. Panel A shows the distribution of seller types for non-profit versus for-profit buyers. Panel B shows the distribution of buyer types for non-profit versus for-profit sellers. The data used to produce this figure are from Yardi Matrix.



(A) Seller Types

(B) Buyer Types

Table C.1. Determinants of Location and Property Ratings

This table reports output from ordered probit models for observed location ratings (Panel A) and property ratings (Panel B) as a function of zip code-level socioeconomic characteristics and property attributes, respectively, estimated over the transactions in the final sample over the 2000–2022 period. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

(A) Location Ratings

	(1) Location Rating	(2) Location Rating	(3) Location Rating
Household Income	0.024***	0.024***	0.012***
	(0.001)	(0.001)	(0.001)
Poverty Rate	-0.889***	-0.351**	-1.752***
	(0.182)	(0.178)	(0.177)
Employment Rate	2.404***	2.476***	0.926***
	(0.163)	(0.159)	(0.166)
Minority Share		-0.559***	-0.236***
		(0.053)	(0.056)
Share College			2.432***
			(0.080)
Observations	51,306	51,306	51,306
Pseudo R-squared	0.17	0.17	0.20

(B) Property Ratings

	(1) Property Rating	(2) Property Rating	(3) Property Rating
Affordable	-0.633***	-0.716***	-0.710***
	(0.025)	(0.026)	(0.026)
No. Units	0.004***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)
Age		-0.062***	-0.062***
		(0.001)	(0.001)
Renovated			0.417***
			(0.029)
Observations	64,083	64,083	64,083
Pseudo R-squared	0.09	0.34	0.34

Table D.1. Robustness Tests on Capital Gains

This table replicates output from Eq. (2), estimated over the repeat-sales transactions in the final sample over the 2000–2022 period. In Panel A, we exclude properties that experienced improvements to their amenities or physical structures over the holding period. In Panel B, we exclude properties that switched their status from affordable to conventional during the holding period (or vice versa). In Panel C, we break *Institutional Investors* out of the for-profit investor category. The omitted category in this set of regressions is thus *Private Investors*. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

(A) Accounting for Property Improvements

	(1) Cap. Gain	(2) Cap. Gain	(3) Cap. Gain
Seller Non-Profit	-0.038***	-0.038***	-0.046***
	(0.008)	(0.008)	(0.008)
Buyer Non-Profit	0.014*	0.016**	0.019**
	(0.008)	(0.008)	(0.008)
Affordable	0.026***	0.023***	0.024***
	(0.005)	(0.005)	(0.005)
Age	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
No. Units	0.006***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)
Class B Location	0.008***	0.006***	0.005**
	(0.002)	(0.002)	(0.002)
Class C Location	0.012***	0.010***	0.010***
	(0.003)	(0.003)	(0.003)
Class B Property	0.019***	0.021***	0.020***
	(0.002)	(0.002)	(0.002)
Class C Property	0.019***	0.026***	0.028***
	(0.004)	(0.003)	(0.003)
Hold. Pd.-Year FEs	Yes	Yes	Yes
Market FEs	No	Yes	No
Market-Year FEs	No	No	Yes
Observations	25,700	25,697	25,209
R-squared	0.43	0.45	0.53

Table D.1. Robustness Tests on Capital Gains (Continued)

(B) Accounting for Changes in Affordable Status

	(1) Cap. Gain	(2) Cap. Gain	(3) Cap. Gain
Seller Non-Profit	-0.042***	-0.043***	-0.051***
	(0.009)	(0.009)	(0.008)
Buyer Non-Profit	0.008	0.012	0.016**
	(0.007)	(0.008)	(0.008)
Affordable	0.026***	0.022***	0.023***
	(0.005)	(0.005)	(0.005)
Age	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
No. Units	0.006***	0.006***	0.005***
	(0.001)	(0.001)	(0.001)
Class B Location	0.009***	0.007***	0.006***
	(0.002)	(0.002)	(0.002)
Class C Location	0.012***	0.011***	0.011***
	(0.003)	(0.003)	(0.003)
Class B Property	0.019***	0.021***	0.020***
	(0.002)	(0.002)	(0.002)
Class C Property	0.018***	0.026***	0.028***
	(0.004)	(0.003)	(0.003)
Hold. Pd.-Year FEs	Yes	Yes	Yes
Market FEs	No	Yes	No
Market-Year FEs	No	No	Yes
Observations	26,416	26,413	25,920
R-squared	0.43	0.45	0.53

Table D.1. Robustness Tests on Capital Gains (Continued)

(C) Accounting for Institutional Investors

	(1) Cap. Gain	(2) Cap. Gain	(3) Cap. Gain
Seller Non-Profit	-0.038***	-0.038***	-0.045***
	(0.008)	(0.008)	(0.008)
Buyer Non-Profit	0.012	0.015**	0.017**
	(0.007)	(0.007)	(0.008)
Seller Institutional	-0.009***	-0.005	-0.005
	(0.003)	(0.003)	(0.003)
Buyer Institutional	0.006*	0.007**	0.003
	(0.003)	(0.003)	(0.003)
Affordable	0.026***	0.023***	0.023***
	(0.005)	(0.005)	(0.005)
Age	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
No. Units	0.006***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)
Class B Location	0.009***	0.007***	0.006***
	(0.002)	(0.002)	(0.002)
Class C Location	0.012***	0.011***	0.011***
	(0.003)	(0.003)	(0.003)
Class B Property	0.019***	0.021***	0.020***
	(0.002)	(0.002)	(0.002)
Class C Property	0.018***	0.026***	0.028***
	(0.004)	(0.003)	(0.003)
Hold. Pd.-Year FEs	Yes	Yes	Yes
Market FEs	No	Yes	No
Market-Year FEs	No	No	Yes
Observations	26,734	26,731	26,245
R-squared	0.43	0.45	0.53

Table E.1. Relative Transaction Prices in the U.S. Multi-Family Market

This table reports output from Eq. (2), estimated over the transactions in the final sample over the 2000–2022 period. The dependent variable is the ratio of price per sq. ft. over rent per sq. ft. *Seller Non-Profit* is an indicator that takes the value of one if the current seller is a non-profit investor. *Buyer Non-Profit* is an indicator that takes the value of one if the current buyer is a non-profit investor. *Affordable* is an indicator that takes the value of one if a property is classified as affordable at the time of the transaction *Age* is the age of the property, computed as the difference between the transaction year and the construction year of the property. *No. Units* is the number of apartment units in a property. *Class B Location* (*Class C Location*, respectively) is an indicator that takes the value of one if the property is situated in a location with quality rating B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Location*, comprising properties situated in locations with quality rating A+, A, or A-. *Class B Property* (*Class C Property*, respectively) is an indicator that takes the value of one if the property has a quality rating of B+, B, or B- (C+, C, or C-, respectively) at the time of the transaction. The omitted category is *Class A Property*, comprising properties with quality rating A+, A, or A-. Fixed effects are included as indicated. Standard errors, clustered by market-year, are shown in parentheses. Statistical significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1.

	(1) Price/Rent	(2) Price/Rent	(3) Price/Rent
Seller Non-Profit	-1.211***	-0.982***	-1.035***
	(0.249)	(0.226)	(0.210)
Buyer Non-Profit	-0.035	-0.236	-0.107
	(0.220)	(0.183)	(0.175)
Affordable	-1.508***	-1.562***	-1.571***
	(0.378)	(0.332)	(0.306)
Age	-0.031***	-0.028***	-0.029***
	(0.002)	(0.002)	(0.002)
No. Units	-0.200***	0.254***	0.266***
	(0.054)	(0.031)	(0.031)
Class B Location	-0.940***	-0.799***	-0.816***
	(0.073)	(0.056)	(0.055)
Class C Location	-2.341***	-1.715***	-1.724***
	(0.097)	(0.071)	(0.070)
Class B Property	-1.048***	-0.828***	-0.852***
	(0.081)	(0.056)	(0.054)
Class C Property	-1.752***	-1.655***	-1.654***
	(0.112)	(0.071)	(0.070)
Mean Dep. Var.	9.43	9.43	9.43
Year FEs	Yes	Yes	No
Market FEs	No	Yes	No
Market-Year FEs	No	No	Yes
Observations	34,485	34,477	34,453
R-squared	0.37	0.60	0.65