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Effects of financing constraints on maintenance investments in rent-stabilized apartments

Lee Seltzer [1]

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Abstract

This paper studies whether financing constraints adversely affect renters by reducing maintenance. Consistent with a sensitivity of maintenance to financial resources, housing code violations increased after a change in the law that effectively decreased cash flows available to maintain some rent-stabilized buildings in New York City. The effect is most severe when financing constraints are present. Moreover, results of panel regressions using a dataset of 45 cities obtained with Freedom of Information Act (FOIA) requests are consistent with a hypothesis that buildings with higher LTV ratio mortgages have more code violations. Together, the results provide evidence that financing constraints reduce maintenance, an outcome that exacerbates the unintended consequences of rent control.

Introduction

A recent survey shows that 43% of renters worry that maintenance in their homes is poor enough to cause adverse health effects (Will, 2022). Renters rely on investments by the building owner to mitigate maintenance problems, investments that require either internal cash flows or access to external financing. In the presence of financing frictions, insufficient financial resources (i.e., cash or borrowing capacity) could prevent building owners from making crucial maintenance investments.

This paper asks whether a building's maintenance is sensitive to how the building is financed. Specifically, excessive debt or insufficient access to cash can lead to reductions in investment (Myers, 1977, Fazzari et al., 1988), especially in cases where the investment primarily benefits non-financial stakeholders (Titman, 1984, Maksimovic and Titman, 1991). Therefore, buildings may be less well maintained when their owners have less access to financial resources.

Testing such a hypothesis is challenging, though, for two reasons. First, it is difficult to observe both building maintenance investments and financial resources available to maintain a building. I address this challenge with a novel dataset containing information on housing code violations to identify instances of poor building maintenance, and building loan-to-value (LTV) ratios at origination to observe whether the building's owner faces financing constraints.

Second, financial resources are not randomly assigned to buildings. For instance, the previous literature shows that firms may choose lower debt levels to maintain financial slack when they anticipate future growth opportunities (Myers, 1977, Titman and Wessels, 1988, Parsons and Titman, 2009). Similarly, building owners might choose to borrow less for buildings with greater growth prospects in order to maintain financial flexibility to invest in capital expenditures. I address these endogeneity concerns with a natural experiment in the setting of the rent-stabilized building stock in New York City. Owners of rent-stabilized apartments in New York are allowed to pass on a portion of the cost of improvements to their tenants through a rent increase. I exploit a 2011 revision to rent-stabilization laws that decreases the amount by which monthly rents can be increased to recoup improvement costs from one-fortieth of the costs to one-sixtieth. By decreasing building rental income, the 2011 Rent Act effectively decreases the financial resources available to maintain the building.

Importantly, the change in the law only applies to buildings with over 35 apartment units. I therefore use rent-stabilized buildings with 35 or fewer units as controls to filter out the effects of any time-varying factors affecting the aggregate rent-stabilized building stock in New York City. Specifically, I estimate generalized difference-in-differences regressions with matched samples to compare changes in violations after the law passed in 2011 for rent-stabilized buildings with over 35 units to a group of observationally similar rent-stabilized buildings with 35 or fewer units. The estimates show that violations per building increase by over three-quarters of a standard deviation for buildings with over 35 units relative to controls.

The Rent Act likely decreased building quality both by leading to fewer capital expenditure investments and by decreasing access to financial resources to spend on maintenance. If insufficient financial resources exacerbated the decline in maintenance, the increase in code violations should be largest in cases where the buildings' owner faced financing constraints when the law went into effect. Consistent with this hypothesis,

I show that the change in violations is strongest for buildings in the top tercile of LTV ratios and absent for those in the bottom tercile, based on their LTV ratios before the passage of the law.

I conduct several tests to examine alternative explanations for the change in code violations. For instance, I conduct a version of the difference-in-differences analysis matching each treated building to a control building within the same real estate company's portfolio. Even when I compare treated buildings to controls owned by the same real estate company, code violations increase for treated buildings after the Rent Act. This implies that the change in code violations is unlikely driven by real estate company characteristics such as a company's management style.

Furthermore, the estimates are similar when conducting a test limiting the sample to narrow size bins around the 35-unit cutoff, indicating that exogenous variation from the cutoff drives the results rather than differences in building size. Additionally, results are similar in a test where treated buildings are matched to controls according to their rents right before the law passed, indicating that the results are unlikely driven by differences in rental rates.[2] The conclusions are also similar in a test matching treated buildings to controls according to whether a building permit for a major project was obtained in the years leading up to the law, implying that results are unlikely driven by the need to make major property improvements. Placebo test results also show that no change in code violations is present for market-rate buildings with over 35 units, indicating that the results are unlikely due to unrelated conditions in the New York rental market.

The difference-in-differences results show that building owners reduce maintenance spending after the Rent Act, especially in the presence of financing constraints. To test the hypothesis of whether buildings with less financing capacity tend to have worse maintenance in a more general setting, I implement panel regressions of housing code violations on building LTV ratios in a sample of 45 US cities collected with Freedom of Information Act (FOIA) requests. The analysis reveals that after controlling for zip-code-by-year and mortgage-issue-year fixed effects, as well as building, loan, real estate company, and lender characteristics, buildings with higher LTV ratio mortgages tend to have more code violations. While this test is not causal, these results provide evidence suggesting that the insights from the natural experiment are generalizable to a broader sample.

To summarize, the findings in this paper show an increase in code violations of over three-quarters of a standard deviation for treated buildings relative to controls after the Rent Act. The effect is concentrated in buildings financed with mortgages that had high LTV ratios before the law passed, suggesting that the increase in violations is exacerbated when owners lack financial resources. Moreover, regression results using data from 45 cities provide evidence consistent with buildings with less financing capacity having more code violations. The results provide evidence that building maintenance is sensitive to the building's financing structure, which can exacerbate the unintended consequences of rent control.

This paper is closely related to the literature on rent regulation. Previous work has shown that rent regulation leads to reduced property values (Autor et al., 2014, Ahern and Giacoletti, 2022), misallocation of housing (Glaeser and Luttmer, 2003, Munch and Svarer, 2002, Favilukis et al., 2023), reduced housing supply (Diamond et al., 2019), and reduced housing quality (Downs, 1988, Moon and Stotsky, 1993, Sims, 2007, Arnott and Shevyakhova, 2014).

I contribute to this literature by showing that reductions in housing quality from rent regulation are more severe in the presence of financing constraints. In doing so, this paper provides the first evidence that frictions associated with a building's financing structure can exacerbate the unintended consequences from rent regulation. This evidence on the heterogeneous effects of rent regulation is important for policymakers, given the recently announced White House plan to implement rent control at the federal level for multifamily buildings.[3]

This paper also contributes to the literature on financing frictions in real estate markets and, in doing so, complements work showing that financing constraints can reduce investments in owner-occupied homes (Haughwout et al., 2013, Li, 2016, Harding et al., 2022), work showing that mortgage financing affects commercial real estate rent and earnings (Hughes, 2022, Liebersohn et al., 2022), as well as work by Melzer (2017), who shows homeowners tend to underinvest as a result of debt overhang.[4]

My work is closest to Melzer (2017) in that we both study maintenance spending. However, I expand on the analysis in Melzer (2017) in at least two important ways. First, while his focus is on owner-occupied homes, my focus is on the multifamily rental market, which differs from the owner-occupied home setting. For instance, since the building owner does not typically live in the building, costs from insufficient maintenance may be borne by renters in the form of an externality. Similarly, homeowners may be forced to move after a default, incurring nonpecuniary costs, while multifamily building owners are shielded from such costs. Additionally, in contrast to Melzer (2017), whose findings could potentially be driven by both debt overhang and a wealth effect, I exploit a change in multifamily rental cash flows that is exogenous to the real estate company's wealth. This arguably allows me to better identify the effect of a building's financing structure on its maintenance.

Lastly, since renters are the customers of real estate firms, this paper is related to the literature on how financing can affect a firm's customers. It is well known that financing frictions can reduce investment,[5] with negative consequences for firms' stakeholders such as customers.[6] In particular, financing frictions have been shown to adversely affect the quality of customer service in a variety of settings (Matsa, 2011, Phillips and Sertsios, 2013, Adelino et al., 2022, Kini et al., 2016, Bernini et al., 2015, Malshe and Agarwal, 2015). This paper uses insights into how financing affects customers to better understand how frictions related to how a building is financed affect rental markets.

The paper proceeds as follows. The next section motivates the hypotheses tested in the paper. Section 3 describes the data used in the analysis. Section 4 presents the results from the Rent Act natural experiment. Section 5 presents regression results of code violations on LTV ratios in a panel of 45 cities. Section 6 concludes and provides final remarks.

Section snippets

Decision-making by owners of multifamily real estate

In this section, I first provide a framework for how multifamily real estate firms are organized and how they make property-level decisions, and afterward I discuss the theoretical literature motivating the empirical hypotheses. Multifamily real estate assets in the United States are often financed using non-recourse mortgages, where lenders are not able to claim possession of the borrower's assets aside from the pledged collateral (Glancy et al., 2023). As a result, multifamily real estate …

Code violations data

I identify poor maintenance of multifamily buildings using municipal code violations. In the United States, tenants can typically complain to the city government if they feel that the building's owner is not providing them with minimum standards of living. If the city finds that the complaint is valid, the building's owner will be served with a code violation.

Building owners are typically fined when they incur violations, and in some cases, penalties for violations can be severe. For instance, …

Determinants of a building's financial structure

How an owner chooses to finance their building is endogenous, which can make it difficult to test Hypothesis 1. To illustrate this point, panel (a) of Fig. 1 displays maps of New York City showing average LTV ratios by zip code. Panel (b) displays apartment capitalization rates (i.e., building rates of return) by zip code within New York City. Comparing the two figures reveals an overlap between zip codes with high capitalization rates and those with high LTV ratios. Indeed, buildings in these …

External validity

The results in the preceding section show that after the Rent Act, code violations increased for affected rent-stabilized buildings in New York relative to controls, especially in the presence of financing constraints. While these findings are consistent with Hypothesis 1, they may not be generalizable to other markets. This is because in a market-rate setting, building owners may be able to alleviate credit constraints by increasing rent, which could offset the negative effects of credit …

Conclusion

This paper provides evidence that the way an apartment building is financed has implications for the building's tenants vis-a-vis habitability and building quality. These findings also shed light on the unintended consequences of rent control. Previous work has shown that rent control has numerous unintended consequences, including a reduction in building maintenance (Sims, 2007). By establishing that this reduction in building maintenance is especially acute in the presence of financing …

CRediT authorship contribution statement

Lee Seltzer: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. …

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