

How Are Landlords Faring During the COVID-19 Pandemic?

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How Are Landlords Faring During the COVID-19 Pandemic? Evidence from a National Cross-Site Survey

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Summary

This paper uses a survey of over 2,500 rental property owners in ten cities across the United States to determine the impact of the COVID-19 pandemic on landlords' rent collection and business behavior. Below are several key findings:

- 1) Yearly rent collection was down significantly in 2020 relative to 2019—both within and across rental markets—and an increasing number of owners have a large share of their portfolio behind on rent.
 - a. The share of landlords collecting 90 percent or more of yearly rent fell 30 percent from 2019 to 2020.
 - b. Ten percent of all landlords collected less than half of their yearly rent in 2020, with smaller landlords (1-5 units) most likely to have tenants deeply behind on rental payments.
 - c. While instances of severe non-payment grew the most for mid-sized owners, small owners had the highest exposure to deep tenant arrears because they were more likely to face this challenge prior to the pandemic.
 - d. In each of the study cities, we observe three- to fourfold increases in the proportion of landlords owed 10 percent or more of charged rent by 2020's end.
 - e. A larger share of landlords in the coastal cities of our sample reported being owed 50 percent or more of charged 2020 rent.
- 2) Owners of all sizes adjusted their practices during the pandemic, with dramatic increases in the share of landlords granting tenants rent extensions or forgiving back rent.
 - a. The share of all landlords granting rental extensions and forgiving back rent increased in 2020 relative to 2019 (15 to 48 percent and 3 to 21 percent, respectively).
 - b. These findings cannot be fully explained by decreased 2020 rental collection, indicating the pandemic affected landlord behavior above and beyond its impact on tenants' ability to make rent.
 - c. Larger landlords exhibited the most adaptability in managing their rental business in 2020, which likely reflects the more proactive role they took in managing their business prior to the pandemic.
- 3) Many owners also deferred maintenance to their properties, and those facing challenges around non-payment were more likely to list their properties for sale.
 - a. The share of landlords deferring maintenance and listing their properties for sale also increased in 2020 (5 to 31 percent and 3 to 13 percent, respectively), both of which have implications for long-term rental market stability and affordability.
- 4) Renters of color have disproportionately borne the negative impact of landlord decisions during the COVID-19 pandemic.
 - a. Rental properties in communities of color were more likely to be moderately and severely behind on rent in 2020.
 - b. Conditional on these rental payment rates, landlords were more likely to take punitive actions against these tenants in the form of late rental fees, evictions, and lack of rental forgiveness.

Combined, these findings highlight the strain the pandemic has placed on the housing stock, which has implications for the long-term viability and affordability of many of these units. More concerningly, our results show that households of color—which have been disproportionately affected by the pandemic in other domains—have been more likely to face punitive action from landlords, suggesting the pandemic has only exacerbated existing racial inequality in housing markets.

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Introduction

The COVID-19 pandemic has had a profound impact on US renter households' ability to make rent. According to the Census Bureau's Household Pulse Survey, nearly one in five US renter households were behind on rent by late December 2020 (Airgood-Obrycki et al. 2021), fueling a rent arrears crisis estimated to range between \$7 billion (Reed & Divringi 2020) and \$57 billion (Parrot & Zandi 2021).

Yet less is known about how rental property owners have responded to and are managing this financial strain. While there have been several efforts to understand the pandemic's impact on landlords, they have typically been limited to specific contexts (Reina & Goldstein 2021; de la Campa 2021) or focused on certain segments of the landlord population (Decker 2021b; National Multifamily Housing Council 2020; Choi & Goodman 2020). Given preexisting variation in the strength of US rental markets (e.g., JCHS 2020) and business practices of different property owners (e.g., Choi & Young 2020), it remains uncertain whether these findings generalize to other settings and among more diverse groups of landlords.

This working paper describes the results of a survey of landlords in ten cities across the US, conducted by researchers from the Bloomberg Harvard City Leadership Initiative, the Harvard Joint Center for Housing Studies, and the Housing Initiative at Penn. From February to April 2021, we asked rental property owners to assess the financial health of their pre- and post-COVID rental business.¹ We also asked landlords about the tools they have relied on to manage their rental properties during these two time periods. Over 2,500 landlords shared information about their rental property portfolios, as well as about individual rental properties in their portfolio.

We find that landlords' yearly rent collection was down significantly in 2020 relative to 2019. The share of landlords who collected 90 percent or more of their charged, yearly rent fell 30 percent from 2019 to 2020 (89 to 62 percent). For a set of landlords, the pandemic has severely limited the amount they collect in rent: 9 percent of landlords received less than half of their yearly rent in 2020. Correspondingly, landlords have modified their business practices during the pandemic. The shares of landlords who reported granting rental extensions and deferring property maintenance—the two most common steps landlords took to manage their portfolios in 2020—increased from 15 to 48 and from 5 to 31 percent, respectively. Other actions that were relatively uncommon prior to the pandemic, such as forgiving a portion of back rent and decreasing monthly rents, were reported by roughly one-fifth of landlords in 2020. And finally, despite local and federal eviction moratoria and decreased rent collection, an equal share of landlords indicated they began eviction proceedings against at least one tenant in both 2019 and 2020 (15 percent). An analysis of the relationship between landlords' pre- and post-COVID rent collection and business practices shows

¹ Throughout this paper, we will use the term “pre-COVID” to refer to the 2019 calendar year, while “post-COVID” will refer to the 2020 calendar year. Similarly, “pre-pandemic” will refer to 2019, while “during the pandemic” will refer to 2020.

that decreased rental revenue alone cannot fully explain the change to landlords' business practices: increases to deferred property maintenance and sale listings, in particular, are only partially due to challenges around rental payment.

In an analysis of rental market heterogeneity, we find consistent three- to fourfold increases in the proportion of landlords owed 10 percent or more of charged rent by year's end across all cities. However, we also find more substantial increases in the share of landlords owed 50 percent or more of charged rent for the East and West Coast cities of our sample compared to the non-coastal ones. This difference may be due to the pandemic having a particularly devastating impact on the economies of our sample's coastal cities (Chetty et al. 2020), and to renters in these cities being more likely to be cost-burdened prior to the pandemic (JCHS 2019).

While variation in cities' mean rental collection rates appears to be the primary driver of cross-city differences in landlords' tendency to grant rental extensions, this is not true for all business practices. Conditional on landlords' rent received, the shares of landlords pursuing rental fees and evictions in 2020 fell on average by 10.8 and 12.6 percentage points, respectively, across the cities in our sample, while the share deferring maintenance increased by 11.7 percentage points. Finally, though rental losses were unrelated to the rate at which landlords listed properties for sale prior to the pandemic, in 2020, we observe a robust, positive relationship between city-level rental non-payment and property sale listings. Combined, these actions raise concerns about the potential impacts of the pandemic – and owner responses to it – on the housing stock and longer-term housing affordability.

We also find that landlords of all sizes struggled to collect rent in 2020. In fact, exposure to rental non-payment increased more significantly for mid-sized (6-19 units owned) and larger landlords (20+ units owned) than for smaller ones (1-5 units owned), a disparity which may reflect the fact that, as the number of rental units in one's portfolio increases, so too does the chance of at least one unit falling behind on rent. However, 10 percent of small and 8 percent of mid-sized landlords reported being owed 50 percent or more of charged rent by 2020's end compared to only 3 percent of larger landlords, leading us to conclude that, while rent arrears were up for landlords of all sizes in 2020, small and mid-sized landlords were operating under more dire financial conditions relative to larger ones. Despite these differences, we also find that during the pandemic larger landlords were more adaptable in their business practices, leading to relatively higher rates of rental extensions, deferred maintenance, and property sale listings among this group.

Our study shows that rental non-payment was up disproportionately at rental properties in lower-income neighborhoods and in communities in which a majority of residents are people of color. In 2020, roughly 40 percent of properties in lower-income neighborhoods had rent shortfalls of 10 percent or more compared to roughly 30 percent of properties in higher-income ones, with effects of a similar magnitude observed in majority versus non-majority resident of color communities. The financial strain experienced

by renters in communities of color, in particular, has likely been exacerbated by landlords' tendency to pursue business practices in these communities that increase housing instability. For example, properties located in neighborhoods with a higher share of residents of color were significantly less likely to have tenants experiencing rental forgiveness, and significantly more likely to have tenants facing rental late fees or eviction.² Taken as a whole, these findings provide evidence that renters of color have disproportionately borne the negative impacts of landlord decisions during the COVID-19 pandemic.

This paper makes several contributions. First, we add to an emerging though somewhat disjointed literature that explores COVID's impact on renters, property owners, and rental markets. For example, Parrot and Zandi (2021) rely on US Census Pulse data to provide a critical estimate of the magnitude of the national rent arrears crisis, but due to the nature of these data, the authors are unable to explore local variation in rental non-payment or impacts among landlords. On the other hand, several notable studies have focused on single cities to provide important context to owners' exposure to losses and responses to the pandemic, but these results cannot necessarily be generalized across other markets (Reina et al. 2020; Reina & Goldstein 2021).³ Our study builds on this work by employing an original survey across multiple cities to explicitly estimate the impact of COVID-19 on landlords and rental markets and explore variation therein. Crucially, we put this information together to show that the pandemic has led to consistent year-over-year declines in rental payment across markets, that these changes have corresponded to changes in landlords' business practices, and that the pandemic has also altered the degree to which landlords have pursued certain actions at their properties and for tenants (holding constant rental collection rates).

Second, this paper provides insight into the different conditions under which smaller- and larger-scale landlords operate. While it is well documented that, prior to the pandemic, there were significant differences between these types of investors—from the properties they own (e.g., Immergluck & Law 2014), to their rent-setting policies (e.g., Decker 2021a), to their individual demographics (e.g., Choi & Young 2020)—few studies have been able to examine the relative differences in the rental business practices of these populations in a single, unified context.⁴ During the pandemic, research on these populations has been similarly disjointed, with data from the National Multifamily Housing Council (2020) suggesting that rental payments have been down only slightly for large, institutional investors, and national

² For example, moving from a property located in a neighborhood at the 25th percentile of a city's resident of color distribution to one located in a 75th percentile neighborhood is associated with a 20 percent decrease in landlords' property-level rental forgiveness rate, a 30 percent increase in their property-level late rent fee incidence rate, and a 40 percent increase in their property-level eviction rate.

³ Other studies have more explicitly estimated the value of tenant and landlord rental assistance need in specific markets, but these studies have relied on secondary data sources to approximate these findings (Kneebone and Murray 2020; Kneebone and Reid 2020).

⁴ A notable exception is the work of Raymond et al. (2017) in Fulton County, Georgia. Using parcel-level eviction records, the authors show that corporate landlords are more likely than small landlords to file for tenant eviction, conditional on property and neighborhood characteristics.

survey data focused on smaller-scale landlords suggesting this population has struggled significantly with rent collection (Decker 2021b; Choi & Goodman 2020). Additional work in Albany and Rochester, New York has shown that mom-and-pop landlords, through their responses to the pandemic, have likely exacerbated existing housing inequalities in communities of color, though it is uncertain whether the same holds true for larger landlords (de la Campa 2021). Our survey, offered to thousands of landlords of all sizes across ten rental markets, unifies these disparate strands of research and highlights small landlords as a group that—compared to larger landlords—generally take a less active approach in managing their properties despite greater exposure to rental non-payment.

Finally, this paper provides additional evidence of the pandemic’s outsized impact on Americans of color (and to a lesser extent, low-income Americans). These findings add to a literature that documents a long history of discrimination in the rental housing market for Black and Hispanic Americans (Hanson & Hawley 2011; Reina, Pritchett, & Wachter 2020; Hepburn, Louis, & Desmond 2020), and highlight the need for current housing responses to be centered around and proactively promote racial equity (Ellen et al. 2021).

The remainder of this paper proceeds as follows. Section 2 describes the survey implementation and methodology, Section 3 reviews the key findings for landlords’ rent collection and business practices, Section 4 explores heterogeneity by property characteristics, and Section 5 concludes.

Survey Implementation

The following section describes the design of the COVID-19 Landlord Survey; when, where, and how it was implemented; and the characteristics of respondents.

Survey Design and Setting

The COVID-19 Landlord Survey is an extension of two prior survey efforts designed by members of the research team: one targeted owners of three or fewer rental properties in Albany and Rochester, New York and was distributed in June and October 2020 (de la Campa 2021), while the other was offered to landlords in Philadelphia (September 2020) and Los Angeles (December 2020) who had at least one tenant apply for pandemic-related emergency rental assistance (Reina et al. 2020; Reina & Goldstein 2021).

Both efforts offered insight into the pandemic’s impact on landlords’ rental business, but they were also limited in scope. Accordingly, in December 2020, the research team began reaching out to cities and counties across the US to participate in a larger survey designed to explore the pandemic’s impact across different types of rental markets, landlords, and properties. Municipalities were recruited through the Bloomberg Harvard City Leadership Initiative network, as well as through ongoing rent-relief evaluations

being conducted by the Housing Initiative at Penn, and were asked to partner with the research team by sharing landlords' contact information and facilitating outreach.⁵ Conversations with municipalities that maintained significant contact information for landlords—specifically, mobile phone number or email—were prioritized. Overall, the research team had conversations with nearly forty US cities and counties and partnered with ten cities to implement the COVID-19 Landlord Survey: Akron, Ohio; Albany and Rochester, New York; Indianapolis, Indiana; Los Angeles, California; Minneapolis, Minnesota; Philadelphia, Pennsylvania; Racine, Wisconsin; San Jose, California; and Trenton, New Jersey.⁶

While these municipalities were chosen with an eye towards achieving geographic spread, we caution that our sample is not necessarily representative of all cities in the US.⁷ Nonetheless, our sample of survey cities resembles the universe of US cities along several dimensions. Table 1 reports descriptive statistics for residents and renter households of the pooled survey sample cities as well as the population of all US cities.⁸ Data come from the 2018 ACS 5-year sample, with means and medians calculated from pooled population totals (across all cities within each sample).

The median age of residents across the cities in our sample is identical to that of residents in US cities as a whole (34.9). Just over half of all households in both survey and US cities are renter-occupied. The distribution of rental properties is also similar across the two groups, though survey cities have a slightly higher share of large apartment buildings (32.3 percent of rental units are located in 20+ unit buildings in survey cities compared to 27.2 percent in US cities as whole). The median income of renter households is also similar across the two groups (\$38,577 vs. \$36,691), as is the share of cost-burdened renters, defined as those who spend 30 percent or more of their income on rent (53.8 vs. 48.7.6 percent).

There are also some key differences. Relative to US cities, survey cities are, on average, less white (34.7 vs. 48.1 percent) and more Hispanic (31.9 vs. 23.2 percent). The rental housing stock in survey cities is slightly older than that of US cities overall (built 65 vs. 54 years ago), and median rents are slightly higher (\$1,186 vs. \$1,027). Overall, 1.7 million of the nation's 21.8 million city-based rental units are located in the ten cities in our survey sample.

⁵ The Bloomberg Harvard City Leadership Initiative conducts research on the use of data and evidence in city government and leads trainings for mayors and city leaders in how to use data to make more equitable, effective, and efficient decisions.

⁶ The two most common reasons cities did not participate are that they did not maintain sufficient landlord contact data and/or did not have internal capacity to collaborate.

⁷ Notably, we were not able to secure the participation of any Southern US cities.

⁸ Appendix Table 1 presents these descriptive statistics separately for each city in the survey sample.

Outreach, Response, and Respondents

In eight of the ten sample cities, we obtained landlord contact information from rental dwelling registries. In general, these registries exist to ensure safe living conditions for renters, and they typically require owners of residential properties with rental dwelling units to obtain a permit and pass an interior inspection before units can be legally leased to tenants.⁹ In San Jose, only owners of properties built before 1979 that contain three or more rental units are required to register.¹⁰ These older and larger rental buildings tend to be located in lower-income areas of the city, leading to a San Jose sample that has a disproportionate number of landlords who operate at the lower end of the rental market (though these landlords may also own properties in higher-income areas of the city). Compliance rates on rental registries vary from a low of around 10 percent in Indianapolis, to upwards of 70 percent in Trenton, to nearly 95 percent for San Jose's more limited registry.¹¹

Landlord contact information for the remaining two cities—Los Angeles and Philadelphia—was obtained from emergency rental assistance (ERA) applications. In each city, it was incumbent upon tenants to apply for ERA, meaning the owners represented in this sample did not actively select into the process for receiving funds. Previous research finds that these properties include many landlords who are not traditionally engaged in ownership or trade organizations and/or any federal or local housing assistance programs (Reina & Goldstein 2021; Reina et al. 2020).

We distributed the COVID-19 Landlord Survey on a rolling basis across all sites from February through April 2021. In each city, every landlord for which contact information was obtained was invited—either via email or text message—to participate in the online survey. Table 2 shows response rates for each city. Overall, we sent out nearly 58,000 survey invites and received 2,930 partial or complete responses for

⁹ Typically, owners must pay a small fee to register their rental properties with their city, which covers the cost of a housing habitability inspection. For example, the rental inspection fee in Albany, New York is \$50 per rental property unit. Examples of common inspection criteria include working smoke and carbon monoxide detectors; open means of egress; clean, running water; and basic unit security. Owners who fail their initial inspection must remedy any habitability issues and then pass a re-inspection. In most municipalities, though owners are subject to monetary penalties for lapsed rental registrations, they are often given the opportunity to rectify the situation prior to the issuance of fees.

¹⁰ These types of properties represent 8.2 percent of all San Jose rental properties, while the units therein represent 35.4 percent of all San Jose rental units.

¹¹ While we cannot adequately explore landlord characteristics for registry compliers and non-compliers, we can explore the characteristics of rental properties by registry compliance status (Appendix Table 2). Properties in compliance with the rental registry tend to be older, have more units, and are more likely to be owned by a landlord registered as a limited liability corporation or partnership. They also tend to have lower per-unit property values and have slightly less residential area. Rental registry properties tend to be located in neighborhoods with a higher share of residents of color, though we do not observe any meaningful differences across compliance status in neighborhood median household income or gross rent. Note that landlords with properties in compliance with their city's rental registry may also own properties not in compliance. Unfortunately, our survey is not equipped to explore this issue.

an average response rate of 5.1 percent. This response rate ranged from a low of 1.4 percent in Los Angeles to a high of 9.3 percent in San Jose.

The survey was designed to collect information at two levels: for the landlord's entire city-specific portfolio, and for an individual property representative of the landlord's portfolio.¹² For each level, we asked landlords about their pre- and post-COVID rental income, as well as the various actions they have taken to manage their rental business. The survey also asked for basic demographics on the landlord, including race, age, and percent of income derived from their rental business. We also asked landlords general questions about their rental business, such as whether they rely on a property manager or have tenants who use Housing Choice Vouchers (also referred to as Section 8).

In Table 3, we present descriptive statistics for survey respondents. 61.4 percent of respondent landlords are male. Two-thirds are white, 11.5 percent are Black, 6.3 percent are Hispanic, and 8.6 percent are Asian. Nearly 40 percent of respondents are over the age of 60, the most common age range represented in the survey. 12.4 percent of owners own at least one property as a limited liability corporation (LLC) or partnership (LLP/LP), which is typically considered a proxy for non-individual investors. One-fifth of landlords have at least one tenant who uses Section 8, and 27.7 percent rely on a property manager at some or all their properties.

Survey respondents manage a variety of rental property types. Fifty percent own at least one single-family home (attached or detached), and 50 percent own at least one two- to four-family home.¹³ An additional 22 percent own apartment buildings of any type, with 12.4 percent owning 5-9 unit buildings, 5.1 percent owning 10-19 unit buildings, and 4.5 percent owning 20+ unit buildings. Finally, 7 percent of landlords own condominium rental units. With a high share of respondents owning one- to four-unit rental properties, nearly two-thirds of landlords manage a total of 1-5 rental units; an equal share of the remainder own 6-19 or 20+ units. Appendix Table 3 shows there is considerable variation in these demographics across cities, though most of the landlords that responded to our survey tend to be male, over the age of 50, disproportionately white compared to the racial composition of their city, and own fewer than 20 rental units.¹⁴

¹² Specifically, landlords were instructed to choose a property whose profitability prior to the pandemic was typical of their portfolio's pre-pandemic profitability. Asking questions at the rental property level allows us to explore variation according to property and neighborhood characteristics.

¹³ Landlords could select multiple types of rental properties owned. Thus, results will not sum to 100.

¹⁴ In each city, with the exception of Los Angeles and San Jose, over 60 percent of landlords own five or fewer rental units.

The Impact of the Pandemic on Landlords' Rental Business

We now explore the impact of the pandemic on landlords' rental business in 2020 and investigate the steps landlords have taken in response to pandemic-induced financial uncertainty.

Landlords' rent collection decreased significantly in 2020

Figure 1 reports the overall impact of the pandemic on landlords' rental collection rates. Landlords were asked to report their rental collections for both 2019 and 2020 as a percentage of total rent charged (across their portfolio), and separated into four categories: 100, 90 to 99, 50 to 89, and less than 50 percent of yearly rent received.

Prior to the pandemic, the vast majority (88.9 percent) of landlords reported collecting 90 percent or more of their charged yearly rent.¹⁵ In 2020, this share fell by nearly a third, to just over 60 percent, while the share reporting collection of 50 to 89 percent of rent rose from 8.2 percent in 2019 to 28.6 percent in 2020. We also see a substantial share of landlords experiencing serious financial strain during the pandemic, with the share of landlords collecting less than 50 percent of charged rent by year's end increasing from 2.9 percent in 2019 to 9.1 percent in 2020.

Given that the Los Angeles and Philadelphia survey participants had at least one tenant who applied for local ERA, we may be concerned that this selection is mechanically biasing downwards our results for rent collection (in 2020 in particular). We offer several pieces of evidence to suggest this is not the case. First, Appendix Figure 1 presents a version of Figure 1 that excludes both Los Angeles and Philadelphia from the sample; rental payment rates for both 2019 and 2020 are nearly identical when including or excluding these cities from the analysis. Second, despite higher rates of tenant ERA participation in these cities (roughly 60 percent), nearly one-quarter of landlords in the other cities sampled based on rental registries also indicated they had tenants who participated in ERA during the pandemic.¹⁶ Finally, in Appendix Figure 2, we present rental collection results solely among landlords with at least one tenant participating in emergency rental assistance, separately for the ERA cities of Los Angeles and Philadelphia (Panel A) and the rental registry cities (Panel B). While we observe modest pre-pandemic variation in the share of landlords collecting 100 vs. 90-99 percent of rental revenue, findings are qualitatively similar

¹⁵ A lack of data on landlords' pre-pandemic rental collection makes it difficult to contextualize this figure, though our results generally align with those from two prior survey efforts. First, pre-pandemic rental payment data from the National Multifamily Housing Council (2020) show that around 95 percent of units pay rent in full by the end of an average month. Though slightly higher than our estimates, these figures are derived from units owned by large, professionally managed landlord organizations, which are more likely to be higher-income relative to the units in our sample. Second, the pre-pandemic share of landlords reporting 90 percent or more of rent received in our study is nearly identical to that reported by a large survey of landlords in Los Angeles (Reina & Goldstein 2021).

¹⁶ Note that even though all Los Angeles and Philadelphia landlords had at least one tenant *apply* for local ERA, this need not imply that the tenant participated in the program and/or received funds.

across the two samples. Moreover, in 2020, landlords' mean collection rates by rental revenue category are virtually identical in ERA and rental registry cities. Thus, we conclude that differences among the ERA and rental registry samples are not substantially biasing our results for landlords' rental collection.

Landlords have changed their business practices during the pandemic

In Figure 2, we explore year-over-year changes in landlords' rent collection, tenant, and ownership policies. We present results for 2019 in dark gray and 2020 in light gray. Landlord responses are shown on the x-axis, while the percent of landlords who reported taking these actions is displayed on the y-axis. Results will not sum to 1 because landlords could report taking multiple steps to manage their rental property portfolio.

Overall, the pandemic has led to a sharp increase in certain types of actions and a decrease in others.¹⁷ For example, 15 percent of landlords reported granting rental extensions to at least one of their tenants prior to the pandemic—in the pool of nine actions, this was the third most common that landlords reported taking in 2019. In 2020, nearly 50 percent of landlords reporting taking this action, making it by far landlords' most common practice during the pandemic. At the same time, while charging tenants late rent fees and increasing rents were the two most common actions reported by landlords prior to the pandemic (23 and 30 percent, respectively), during the pandemic, the prevalence of these actions fell by 12 and 9 percentage points, respectively. The decline in rental fees is particularly noteworthy given the lower amount of rent, on average, collected during the pandemic.¹⁸

Some landlord practices that were relatively uncommon prior to the pandemic became widespread in 2020. Around one-fifth of landlords reported forgiving outstanding rent and decreasing rents, compared to 3 and 4 percent, respectively, in 2019. We also observe a 15 percentage point increase in the share of landlords who reported missing at least one mortgage, utility, and/or property tax payment in 2020, as well as a 10 percentage point increase in the proportion of landlords who listed a property for sale at some point during the year. And perhaps most strikingly, while only 5 percent of landlords reported delaying property repairs in 2019, 31 percent reported deferring maintenance in 2020, a sixfold increase.

Despite declining rental collection, the share of landlords who brought eviction proceedings against at least one tenant is nearly identical for both 2019 and 2020 (15 percent). This implies that the eviction rate conditional on not receiving rent in full was lower in 2020 than in 2019 (23.2 versus 29.4 percent), which may be a reflection of bans placed on eviction at the local and federal level; indeed, recent research

¹⁷ Of course, these actions may be changing precisely because rental collection was down in 2020 relative to 2019. We explore this possibility in further detail in Table 4 below.

¹⁸ Part of this decline is almost certainly a reflection of the fact that late fees for past-due rent were prohibited in many of our study cities during the pandemic (Raifman et al. 2020).

has estimated 1.5 million evictions were prevented during the pandemic due to these eviction moratoria (Hepburn et al. 2021). At the same time, it may be surprising that an equivalent share of landlords in 2020 and 2019 indicated that they had brought eviction proceedings against at least one tenant. However, we offer two potential reasons this may be the case. First, our survey asked landlords about the initiation of eviction proceedings rather than their conclusion. Second, despite the aforementioned reduction in evictions, an estimated 1.1 million tenants were evicted in 2020, and it may be the case that landlords who moved forward with evictions during the pandemic—which were relatively more difficult to execute—are those more familiar with the eviction system. While our study cannot speak to this phenomenon more broadly, 45 percent of the landlords in our study who brought eviction proceedings against at least one tenant in 2020 did so in 2019 as well.¹⁹

Decreased rent collection cannot fully explain landlords’ changing rental business practices

It may be the case that changing rental business practices during the pandemic are a reflection of landlords’ decreased rental collection, as observed in Figure 1. To further explore this possibility, we estimate the following OLS regression:

$$Practice_{icy}^p = \beta_0 + \beta_1 RentLT90_{icy} + \beta_2 2020_y + \beta_3 RentLT90_{icy} * 2020_y + \gamma_c + \varepsilon_{icy} \cdot \quad (1)$$

$Practice_{icy}^p$ is an indicator for whether landlord i in city c and year y implemented rental business practice p . We estimate Equation (1) separately for each of the nine rental business practices p reported in Figure 2. $RentLT90_{icy}$ indicates whether landlord i in city c collected at most 90 percent of their rental revenue in year y , and 2020_y is an indicator for the 2020 (i.e., post-COVID) time period. We include city fixed effects (γ_c) to control for the time-invariant characteristics of the cities in our sample.

Table 4 presents results from Equation (1), with heteroskedastic-robust standard errors reported in parentheses. Coefficient β_1 captures the relationship, in 2019, between rental non-payment and business practice p . Apart from listing one’s properties for sale, prior to the pandemic, the intensity with which landlords pursued their rental business practices was highly correlated with yearly rental collection. For example, column (4) shows that collecting at most 90 percent of 2019 rent was associated with a 12.3 percent decrease in the share of landlords’ increasing tenants’ rents (in that year). Conversely, relative to collecting 90 percent or more of yearly rental revenue, partial collection is associated with a 13.7 percent increase in landlords’ eviction initiation rate (column 6).

The coefficient β_2 instead reports the effect of the pandemic on landlords’ rental business practices solely among those who received 90 percent or more of their rental revenue. Even for this group of

¹⁹ In general, research for mid-sized US cities shows that, in a given year, a small number of landlords are responsible for the majority of tenant evictions (Rutan and Desmond 2021).

landlords, the pandemic has had an impact on nearly every rental business practice, with particularly large increases (relative to 2019) in the share of landlords granting rent extensions (22.6 percent), forgiving rent (11.8 percent), and deferring property maintenance (16.4 percent). There have also been steep decreases in the share of landlords charging late rent fees (14.4 percent), increasing rents (21.5 percent), and evicting tenants (6.5 percent). Taken together, these findings imply that the observed changes from 2019 to 2020 in landlords' business practices were not driven exclusively by decreased rent collection from the pandemic and likely reflect a variety of other factors including local policies and restrictions (i.e., eviction moratoria), weakened demand in the rental market, COVID-related limitations on building access, and supply-side challenges for maintenance and repair.

Finally, the coefficient on the interaction term (β_3) sheds light on how the relationship between rental payment and business practices has changed, if at all, in 2020 (post-COVID) compared to 2019 (pre-COVID). In addition to shifting the levels of nearly all business practices in 2020, the pandemic has also intensified the rate at which landlords have taken certain actions in response to partial rent payment. This is particularly evident for the implementation of rental payment plans. In 2019, collecting at most 90 percent of rental revenue was associated with an 8.3 percent increase in landlords' implementation of rental payment plans; during the pandemic, the strength of that relationship roughly tripled, such that partial payment was associated with a 31.7 percent increase in this business practice ($\beta_1 + \beta_3$). The amplification of this relationship may be a result of the restrictions placed on landlords' traditional responses to rental non-payment—such as late fees and evictions—during the pandemic (e.g., Raifman et al. 2020).²⁰ Indeed, in 2020, there was no significant relationship between partial rental payment and the implementation of late rent fees, and that between rental payment and evictions was significantly weakened.

Other actions that have been significantly altered during the pandemic are those related to property ownership, such as missing financial payment obligations, deferring property maintenance, and listing one's properties for sale. For example, while there was no statistically significant relationship between rental non-payment and listing properties for sale in 2019, collecting at most 90 percent of rental revenue in 2020 was associated with a 12.5 percent increase in the probability of listing one's property for sale.

The pandemic's impact has been widespread across rental markets

While no region of the US has been spared by the COVID-19 pandemic, there has been significant variation in the timing and intensity of the crisis (e.g., Shrawder & Aguilar 2020). Accordingly, in Figure 3, we

²⁰ Of course, there may be other reasons this is the case. For example, the pandemic may have caused landlords to develop an increased desire to assist tenants through their financial hardships, thus making rental payment plans a preferred response to rental non-payment.

present the share of landlords collecting less than 90 percent of charged rent separately for each city in our study, for both 2019 and 2020.

We observe considerable heterogeneity across cities in the share of landlords who were owed 10 percent or more of charged rent by the end of 2019—from a low of 6 percent of Minneapolis to a high of 18 percent in Rochester and Trenton. In general, we find that landlords in the Upper Midwestern cities of Minneapolis and Racine collected the most rent pre-COVID; those in the Industrial Midwestern cities of Indianapolis and Akron as well as the West Coast cities of San Jose and Los Angeles collected slightly less; and those in the East Coast cities of Rochester, Albany, Philadelphia, and Trenton collected the least. In each city, however, we observe a consistent three- to fourfold increase from 2019 to 2020 in the share of landlords owed 10 percent or more of charged rent. These findings support the notion that the pandemic has had a significant impact on the rental business of landlords across a variety of rental markets and political contexts and underscore the importance of looking at relative changes when examining the impact of COVID-19 on rental markets.²¹

In Figure 4, we present year-over-year changes in the percent of landlords reporting less than 50 percent of rental revenue received. Once again, a higher share of landlords in the coastal cities of our study reported facing financial difficulty with their rental properties prior to the pandemic, and the share of landlords collecting less than 50 percent of charged rent in 2020 was up significantly across all rental markets. Contrary to Figure 3, however, the year-over-year increase in severe rental non-payment was steeper in the coastal cities. Two potential explanations for this finding may be because pandemic unemployment rates were higher in the coastal cities of our sample relative to the Midwestern ones (Chetty et al. 2020), and renters were more likely to be cost-burdened in these regions prior to the pandemic (JCHS 2019).

Table 5 explores cross-city, cross-year heterogeneity among five key landlord business practices. Each cell of this table reports the share of landlords in city c (row) pursuing business practice p (column), for year y (sub-column). Column (1) shows that, prior to the pandemic, a substantial share of landlords in each city reported granting rental extensions—from a low of around 10 percent in Los Angeles to a high of nearly 20 percent in Albany. In 2020, these proportions increased by 20 to 50 percentage points (column 2), with the most significant increases concentrated among cities where landlords collected less rent during the pandemic.²² Columns (3) and (4) show an opposite trend for rental fees: though they were common in

²¹ For instance, Parrot and Zandi (2021) use the Census Bureau Household Pulse Survey to demonstrate that renters are further behind on rent in West and East Coast urban areas; our results show that, proportionally, renters are behind on rent at relatively consistent rates across the geographic regions in our study.

²² Indeed, it may be the case that decreased rent collection within each city is driving the changes to landlords' rental extension rates. We explore this possibility in further detail in Table 6 below.

all cities prior to the pandemic, landlords in each city reported significantly lower rates of this rental business practice in 2020.

Results are more mixed for evictions (columns 5 and 6). The proportion of landlords initiating eviction proceedings fell by several percentage points for half the cities in our sample—specifically, the West Coast cities of Los Angeles and San Jose and the Midwestern cities of Minneapolis, Racine, and Akron. At the same time, evictions were up slightly in all East Coast cities and the Midwestern city of Indianapolis. While this finding, like that for the granting of rental extensions, may in part be explained by cross-city variation in landlords’ rental collection rates, it may also be a function of the differing intensities and duration of renter protections for the cities in our sample.²³

Fewer than 10 percent of landlords in any of our sample’s cities reported deferring maintenance at one or more of their rental properties prior to the pandemic (column 7). Yet, in 2020, roughly one-quarter of Midwestern, one-third of West Coast, and two-fifths of East Coast landlords indicated they had delayed necessary property upkeep for at least one of their rental properties (column 8). Property sales were even less common prior to the pandemic (column 9), but this action increased dramatically in 2020 (column 10). During the pandemic, over 15 percent of landlords in Akron, Albany, Indianapolis, Philadelphia, Rochester, and Trenton reported listing at least one rental property for sale.

As mentioned above, several of the year-over-year changes to landlords’ business practices are most striking in cities where declines to rent collection were most severe. At the same time, variation in local rules, regulations, and politicians’ response to the pandemic (e.g., Raifman et al. 2020) might lead to an independent impact on landlords’ rental businesses, irrespective of rental payment. To better explore this issue, in Table 6, we present weighted OLS estimates from a version of Equation (1) collapsed to the city-year level.²⁴ Estimates from this regression shed light on: 1) the average, pre-pandemic relationship between city-level rent collection and business practices (β_1), 2) the average impact of the pandemic on landlords’ rental business practices, conditional on city-level collection rates (β_2), and 3) whether the pandemic has, on average, altered the relationship between rental collection and business practice implementation across cities (β_3).

Column (1) of Table 6 shows that, in 2019, a 1-unit increase in the share of landlords collecting at most 90 percent of rental revenue was associated with a statistically significant 0.58 unit increase, on

²³ In general, the cities of our study with stronger eviction moratoria experienced greater reductions in late fees and landlord eviction filing rates, the latter of which aligns with the findings of Hepburn et al. (2021). For example, in Minneapolis, a ban on all phases of the eviction process has been in place since March 2020, whereas in Rochester and Albany, landlords could serve tenants eviction notices from July through December 2020 (Raifman et al. 2020).

²⁴ Specifically, we estimate $\overline{Practice}_{cy}^p = \beta_0 + \beta_1 \overline{RentLT90}_{cy} + \beta_2 2020_y + \beta_3 \overline{RentLT90}_{cy} * 2020_y + \varepsilon_{cy}$ for the five key business practices p reported in Table 5. $\overline{Practice}_{cy}^p$ represents the mean share of landlords pursuing business practice p in city c in year y . $\overline{RentLT90}_{cy}$ represents the mean share of landlords collecting at most 90 percent of rental revenue in city c in year y . 2020_y is a binary indicator for the post-COVID time period.

average, in the share of landlords granting rental extensions. If we assume effects are linear throughout the distribution, this implies a 5.8 percentage point increase in the city-level rental extension rate for a 10 percentage point increase in city-level partial rental revenue collection rate. With coefficients on the pandemic (i.e., 2020) indicator and interaction term statistically indistinguishable from 0, we thus conclude that the primary driver of cross-city differences in landlords' rental extension rates is indeed cross-city variation in their rental collection rates.

This is not the case when examining the relationship between rent collection and the incidence of late rent fees (column 2) and tenant evictions (column 3). While we once again observe a strong, positive relationship in 2019 between a city's share of landlords who collected at most 90 percent of their rental revenue and pursued tenant late rent fees and/or evictions, these proportions fell by 10.8 and 12.6 percentage points, respectively, during the pandemic (holding constant rental collection). We also find suggestive evidence that the pandemic has attenuated the relationship between rent collection and the pursuance of evictions. Taken together, these results imply that cross-city variation beyond that observed in rental collection rates—perhaps arising from different pandemic rules, regulations, and responses across cities, among other factors—contributed to the observed variation in the issuance of rental fees and tenant evictions in 2020.

Finally, in columns (4) and (5) we see that the pandemic has altered city-level rates of deferred property maintenance and rental property sale listings, albeit in slightly different ways. Prior to the pandemic, there was no robust relationship between landlords' rental collection and deferred maintenance rates; though the share of landlords reporting this practice was up significantly during the pandemic, there remains no significant relationship between citywide rent collection and deferred maintenance in 2020. For property sales, on the other hand, listings were up more dramatically in 2020 in cities with lower rental collection rates. These responses in particular raise concerns about the potential impact of the pandemic on both long-term housing stock quality and affordability.

Smaller and mid-sized landlords are experiencing more significant financial strain while larger landlords are exhibiting greater business adaptability

A central question of our study is: how has the impact of the pandemic varied according to the size of a landlords' portfolios? While data from the National Multifamily Housing Council (2020) has shown that rental collection rates during the pandemic have been down 3 to 4 percentage points for large, professionally managed organizations, others have found substantial declines in rent collection for smaller, mom-and-pop landlords (Choi & Goodman 2020; de la Campa 2021). Additionally, though two notable studies have focused on individual markets to provide important context to owners' exposure to losses and responses to

the pandemic (Reina & Goldstein 2021; Reina et al. 2020), there are no studies we are aware of that have deployed a common survey instrument across multiple cities and multiple types of property owners.

Figure 5 presents year-over-year changes in the proportion of landlords owed 10 percent or more of charged rent (Panel A) and 50 percent or more of charged rent (Panel B), by the number of rental units in landlords' portfolios. Panel A shows that, prior to the pandemic, landlords who own fewer units collected less of their rental revenue relative to larger ones—12 percent of small (1-5 units) and mid-sized (6-19 units) landlords reported less than 90 percent of rent received in 2019 compared to 7 percent of large (20 or more units) landlords—which may be a reflection of the types of renters and markets these landlords serve (Choi & Young 2020). However, the year-over-year change in this proportion is monotonically increasing with landlord portfolio size, with small, mid-sized, and large landlords experiencing increases of 22, 32, and 43 percentage points, respectively. This finding is likely a reflection of the fact that, as the number of rental units in one's portfolio increases, so too does the chance of at least one unit falling behind on rent.

Prior to the pandemic, smaller and mid-sized landlords were also more likely to be owed 50 percent or more of charged rent, again likely a reflection of the more vulnerable populations housed by these owners. However, contrary to the findings in Panel A, the year-over-year change in this proportion was larger for these groups relative to larger landlords (6 vs. 3 percentage points), leading to significantly higher rates of severe rental non-payment for smaller and mid-sized landlords in 2020. In particular, one-tenth of small landlords and one-twelfth of mid-sized landlords were owed 50 percent or more of charged rent by year's end compared to fewer than one in twenty large landlords. Though perhaps surprising given that larger landlords were significantly more likely to be missing 2020 rental payments in general, the disproportionate impact of severe rental non-payment on small and mid-sized landlords generally supports the findings of Reina and Goldstein (2021) in Los Angeles.

In Table 7, we compare yearly variation in landlords' rental business practices according to the size of their rental property portfolios. Specifically, we present results from an OLS regression of yearly rental business practices on landlord portfolio size indicators, an indicator for 2020, and the interaction of these variables. We additionally control for yearly rent collection—to account for the differences by portfolio size observed in Figure 5—and city fixed effects. For reference, we report the regression constant term, which represents the share of large landlords reporting this business practice in 2019 (conditional on our control variables).

The coefficients on the variables Small Landlord and Medium Landlord in column (1) show that, in 2019, there were no significant differences among small and mid-sized landlords relative to larger ones in the rate at which tenants were put on rental repayment plans. The coefficient on the variable 2020 indicates that the share of larger landlords pursuing this practice during the pandemic increased by 46.1

percentage points (relative to 2019). Finally, the coefficients on the interaction terms show that, for small and mid-sized landlords, the pandemic is associated with comparatively smaller increases in the rental extension rate, though the year-over-year change is still positive in absolute value for these two groups.²⁵ Because these results condition on yearly rental collection, the disproportionate increase in the share of larger landlords' granting rental extensions in 2020 is not solely a function of these landlords' higher likelihood of receiving 90 percent or less of rental revenue.

Column (2) instead shows that, prior to the pandemic, small and mid-sized landlords were significantly less likely to charge late rent fees relative to larger landlords, with the share of small landlords pursuing this practice, in particular, less than half that for the largest ones. Though the incidence of this rental practice fell among all landlords in 2020, smaller and mid-sized landlords experienced smaller decreases relative to owners of 20+ rental units. Results are similar for evictions (column 3), though relative to rental fees, the share of landlords of all sizes pursuing tenant evictions in 2020 fell much less dramatically.

Deferred maintenance was up significantly for all landlords in 2020 (column 4), though increases were more dramatic for mid-sized and larger landlords relative to smaller ones (29.0 and 25.0 percentage point increase, respectively, vs. 16.2 percentage point increase). This finding is interesting given that smaller landlords were more likely to pursue this practice prior to the pandemic. Finally, column (5) shows that property sale listings were up for all landlords in 2020, though small and mid-sized landlords were more likely to hold onto their properties: while the share of large landlords listing properties for sale increased by 17.3 percentage points in 2020, this association was attenuated by 11.4 and 8.1 percentage points, respectively, for small and mid-sized landlords.

Our analysis shows that, though smaller and mid-sized landlords struggled more with 2020 rent collection relative to larger landlords, the latter group of owners were more adaptable in their business practices. This greater adaptability is reflected in both relatively larger increases in the granting of rental extensions, as well as in relatively larger decreases in the charging of late rent fees for larger owners relative to smaller ones. In general, these results align with our pre-pandemic findings on the positive correlation between the intensity with which landlords pursue business practices and their portfolio size. Overall, these results unify and confirm findings from disparate studies about the financial impact of the pandemic on both larger and smaller landlords (National Multifamily Housing Council 2020; Choi & Goodman 2020), while at the same time providing important context to our limited understanding of how landlords—smaller ones, in particular—have adapted their business practices during the pandemic (de la Campa 2021; Decker 2021b).

²⁵ Specifically, smaller landlords experienced a 19.5 percentage point increase in their rental extension rate during the pandemic (46.1-26.6), while mid-sized landlords experienced a 34.0 percentage point increase (46.1-12.1).

The Pandemic’s Impact on Individual Rental Properties and Communities

Because we also asked landlords to report on the pandemic’s impact at a single property in their portfolio, we can examine heterogeneity according to salient property and neighborhood characteristics. In the following section, we change the unit of analysis from the landlord to the landlord-owned rental property and explore whether certain types of properties and communities, if any, were more likely to fall behind on rent, and how this may have affected landlords’ business management.

Renters in economically and socially vulnerable communities are further behind on rent

Emerging research has shown that, across a variety of domains, low-income, Black, and Hispanic Americans have disproportionately borne the impact of the COVID-19 pandemic. This has been true not only in terms of exposure to the virus (Reitsma et al. 2021; Zelner et al. 2021) and job loss (Lee, Park, & Shin 2021), but also in other less obvious contexts, such as access to remote education (Bacher-Hicks, Goodman, & Mulhern 2021). Studies have also found that these more socially and economically vulnerable groups were further behind on rent in 2020 compared to higher-income and white Americans (Airgood-Obrycki et al. 2021).

In Figure 6, we explore yearly changes in property-level rent collection rates separately for properties in neighborhoods whose median household income falls above or below the citywide median.²⁶ To construct this figure, we first demean the rental payment and above-median neighborhood income indicators by city, and then add back the mean of each variable to its demeaned value to aid in interpretability.²⁷ In so doing, we control for inter-city differences in rental payment and neighborhood racial composition which might affect the pooled analysis of the relationship between these two variables.

In both above- and below-median income neighborhoods, the share of rental properties behind 10 percent or more on rent roughly tripled from 2019 to 2020 (Panel A). However, the proportion of properties behind on rent in 2020 was significantly larger in lower-income neighborhoods compared to higher-income ones (38 vs. 28 percent). Correspondingly, Panel B shows that these properties were also more likely to be behind 50 percent or more on rent by the end of 2020 compared to properties in higher-income communities (14 vs. 8 percent).

This basic pattern is also observed when examining changes in rental payment rates by a neighborhood’s share of residents of color, specifically comparing neighborhoods with a majority of

²⁶ To get neighborhood income classifications, we first match each property in our rental property sample to its census block group (CBG). We then use the 2018 ACS to obtain the median household income for that CBG and classify the CBG according to whether its median household income falls above or below the citywide median. We perform this exercise separately for the ten cities in our sample.

²⁷ In practice, this means that the mean rental collection rate for city c is subtracted from each observation for city c (and similarly for the mean above-median neighborhood income share).

residents of color with those where white residents are the majority (Figure 7).²⁸ In fact, the share of properties behind 10 percent or more on rent by the end of 2020 was nearly identical for both majority resident of color and lower-income neighborhoods, as well as for non-majority resident of color and higher-income ones. Similarly, properties in communities with more residents of color were more likely to fall deeply behind on rent, with 14 percent owing 50 percent or more of charged rent in 2020 compared to 9 percent in communities with fewer residents of color.

Figures 6 and 7 show that, while the pandemic had a significant negative impact on overall rent collection across a variety of communities, properties in lower income and majority resident of color communities experienced greater struggles in making rent in 2020.

Landlords' responses to the pandemic may be increasing housing instability in vulnerable communities

Prior to the pandemic, low-income, Black, and Hispanic Americans have faced discrimination in the rental housing market in numerous ways—from housing search (Hanson & Hawley 2011; Fang, Guess, & Humphreys 2019), to securing affordable housing via Section 8 (Cunningham et al. 2018), to evictions (Hepburn, Louis, & Desmond 2020). Given this history, a natural question to pose is: how have landlords managed their rental properties in communities of color and low-income neighborhoods, particularly given the relatively higher rates of rental non-payment observed in these communities?

In Figure 8, we explore variation in landlords' 2020 rental business practices according to neighborhood income. Specifically, we present nine binned scatter plots of landlords' rental property business practices (y-axis) versus the natural log of neighborhood median income (x-axis). To construct these plots, we first demean both landlords' rental business practices and neighborhood median income by city and average rent collection. We then divide the observations into 20 equal-sized groups (vigintiles) based on the natural log of neighborhood median income and plot the share of landlords pursuing the indicated rental practice within each bin. The solid lines show the best linear fit estimated on the underlying micro data using OLS regression, and Appendix Table 4 presents these regression estimates.

For certain business practices, such as decreasing rents and listing properties for sale, we observe no meaningful relationship between the intensity with which landlords pursued these actions and the neighborhood median income of their rental properties. For others, such as charging late rent fees and

²⁸ A neighborhood's share of residents of color is defined as the sum of individuals who identify as Black, Hispanic, Asian, Native American, multiracial and/or other races. In practice, due to the cities in our study, communities of color are primarily comprised of Black and Hispanic residents. To get neighborhood racial and ethnic composition classifications, we first match each property in our rental property sample to its census block group (CBG). We then use the 2018 ACS to obtain the mean share of residents of color for that CBG, and classify the CBG according to whether this share is above or below 50 percent. We perform this exercise separately for the 10 cities in our sample.

evicting tenants, there appears to be a weak correlation between business practice intensity and neighborhood income though results are imprecisely estimated and inconclusive. The one exception is for the rate at which landlords have missed at least one mortgage, property tax, and/or utility payment, which is strongly and statistically significantly decreasing in neighborhood median income.

Results are starker when examining landlords' 2020 business practices according to a neighborhood's share of non-white residents (Figure 9). In this instance, nearly all of landlords' practices are statistically significantly related to the neighborhood racial and ethnic composition of their rental properties. Typically, properties in communities with more residents of color are more susceptible to business actions that likely contribute to housing instability. For example, a 1-unit increase in a neighborhood's share of residents of color (i.e., moving from a neighborhood with no residents of color to one with exclusively residents of color) was associated with an 8.3 percentage point reduction in the share of landlords offering rental forgiveness, 9.0 percentage point reduction in the share decreasing monthly rents, and a 5.7 percentage point increase in the share charging late rent fees (Appendix Table 4). Put differently, moving from a neighborhood at the 25th percentile of the city-demeaned resident of color distribution to one at the 75th percentile is associated with a roughly 25 percent decrease in landlords' rent forgiveness rate, 30 percent decrease in their monthly rent decrease rate, and 30 percent increase in their late fee implementation rate.²⁹ These findings, which indicate relatively greater landlord-induced financial strain for renters of color, are particularly relevant given the pandemic's outsized financial impact in these communities (e.g., Lee, Park, & Shin 2021).

We also observe a disproportionate share of landlords reporting tenant evictions at properties in communities of color. In this case, moving from the 25th to 75th percentile of the neighborhood resident of color distribution is associated with a nearly 40 percent increase in the tenant eviction rate. The higher rate of displacement in these communities aligns with emerging research on the unequal rate at which Black and Hispanic renters have been evicted during the pandemic (Hepburn et al. 2021; Stein et al. 2021). While landlords have been more likely to miss financial payments in neighborhoods with more residents of color, there once again is no meaningful relationship between neighborhood racial composition and deferred maintenance or property sales.

In sum, landlords' tendency to pursue business practices differentially according to neighborhood racial composition, even conditional on rental collection rates, has resulted in tenants in more marginalized communities—i.e., tenants more likely to be adversely affected by the pandemic in other ways (Bacher-Hicks, Goodman, and Mulhern 2021; Bambra et al. 2020; Lee, Park, and Shin 2021)—disproportionately bearing the consequences of rental non-payment. Ultimately, this serves to exacerbate and reinforce the

²⁹ Moving from the 25th to 75th percentile of the city-demeaned resident of color distribution is associated with a 41 percentage point change in a neighborhood's share of residents of color.

many historical rental market discriminations facing renters of color (Hanson & Hawley 2011; Cunningham et al. 2018; Hepburn, Louis, & Desmond 2020).

Conclusion

In this paper, we explore the impact of the COVID-19 pandemic on the rental business of landlords in ten cities across the US. We find that landlords' rental properties generated a significantly lower share of their potential rental revenue in 2020 relative to 2019. Despite preexisting, cross-city variation in rental market strength, we observe proportionate three- to fourfold increases in rental non-payment during the pandemic for all cities in our sample. Critically, 9 percent of all landlords received less than half of their yearly rent in 2020. While landlords modified their business practices—such as the granting of rental extensions—in response to this decrease in rental revenue, business impacts alone cannot explain landlords' behavioral responses.

The pandemic also amplified the relationship between rental collection and actions such as rent forgiveness and deferred property maintenance, perhaps due to constraints in 2020 on landlords' traditional responses to rental non-payment, such as late rent fees and evictions (Raifman et al. 2020). This suggests that many owners modified their practices to recover funds and attempted to cut costs by reducing investments in their properties. The latter trend raises the possibility of a concerning repercussion, which is that many properties will need further investment post-pandemic to remain viable, and can have two distinct negative effects. First, in the short term, it may imply that renters are residing in units of substandard quality, thus affecting their health and well-being. Second, absent owners finding the means to pay for these deferred investments, it may result in rental units exiting the housing stock earlier than they previously would have. For the markets in our study, both outcomes may contract the local housing stock and further exacerbate housing affordability issues.

Our findings show that small owners had the highest exposure to rental non-payment both prior to and during the pandemic, but mid-sized owners saw the largest increase in non-payment. These findings highlight the preexisting financial precarity of small property owners, as well as the tenuous financial position of mid-sized owners in 2020. Many small and medium-sized owners face challenges accessing credit to invest in their properties generally, which means that absent concerted efforts to bridge these credit gaps, owners of these properties will have difficulty restructuring their financing to ensure their property is viable (Local Housing Solutions 2021).

These challenges are clearly affecting owner behavior, with city-level rental non-payment positively associated with property sale listings. Such sales could place further strain on the overall stock of affordable housing, although they also present an opportunity for localities to actively broker the sale

and purchase of these properties to ensure their long-term viability. This approach could also serve as an opportunity for localities to provide subsidy support, with coterminous affordability restrictions, to increase the affordability of these units. Cities may be well positioned to pursue such a strategy given the unprecedented federal funds currently being deployed.

Among the many concerning findings in our study is the disproportionate impact of the pandemic on the renters in and housing stock of communities of color. By showing that owners are more likely to exercise punitive actions on renters in markets with a majority of residents of color, we demonstrate that the ways in which owners are engaging with challenges around rental collection are racialized. Numerous notable works have documented persistent and pernicious racial discrimination in rental housing markets and investments (e.g., Reina, Pritchett & Wachter 2020), and our findings suggest that these prejudicial actions have only intensified during the pandemic. Thus, it is essential that cities ensure households of color are able to access rent relief as well as legal protections and recourse against discriminatory owner behavior. Further, cities must acknowledge that the ramifications of the pandemic will persist post-pandemic if they do not connect such targeted responses to longer-term efforts to address racial inequality in housing markets.

While this study offers robust evidence as to the pandemic's negative impact on landlords' rental collection and their corresponding business practice adaptation, it also has limitations. Our limited sample size and response rate, coupled with a dearth of information on property owners from national sources, makes it difficult to assess the representativeness of our respondents relative to all owners in our markets, as well as the generalizability of our findings to owners nationally. Of the pandemic's many important lessons, one is that we still know little about who owns rental properties and how these owners behave. Thus, the results of our paper are critical to filling this gap but should be considered in concert with other local and national owner studies.

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Tables and Figures

Table 1: COVID-19 Landlord Survey Cities in Comparison with US Cities

	Survey Cities	US Cities
<i>Panel A: Resident Characteristics</i>		
White	34.7	48.1
Black	18.4	17.7
Hispanic	31.9	23.2
Asian	11.9	7.5
Other race	3.1	3.5
Median age (y)	34.9	34.9
N Residents	8,500,786	114,703,389
<i>Panel B: Renter Household Characteristics</i>		
Renter-occupied (among all households)	55.0	50.1
Reside in 1-unit property	27.7	27.9
Reside in 2-4 unit property	16.6	19.0
Reside in 5-9 unit property	11.6	12.5
Reside in 10-19 unit property	11.3	12.1
Reside in 20+ unit property	32.3	27.2
Median income (\$)	38,577	36,961
Cost-burdened	53.8	48.7
Median gross rent (\$)	1,186	1,027
Median age of housing structure (y)	65	54
N Renter Households	1,688,205	21,799,773

Notes: This table reports descriptive characteristics of residents and renter households for the ten, pooled COVID-19 Landlord Survey cities as well as for the universe of all US cities. Data come from the 2018 ACS 5-year sample, with means and medians calculated from pooled population totals (across all cities within each sample). Unless otherwise indicated, the variables above are expressed as percentages. Categorical variables may not sum to 100 due to rounding. Cost-burdened renters are defined as those who spend 30 percent or more of their yearly income on yearly rent.

Table 2: COVID-19 Landlord Survey Response Rates

	Overall	Akron	Albany	Indianapolis	Los Angeles	Minneapolis	Racine	Rochester	Philadelphia	San Jose	Trenton
N Survey Recipients	57,994	3,440	1,971	7,615	18,810	10,540	2,294	2,190	6,156	3,476	1,502
N Survey Respondents	2,930	265	116	462	256	683	174	181	333	323	137
Response Rate	5.1	7.7	5.9	6.1	1.4	6.5	7.6	8.3	5.4	9.3	9.1

Notes: This table reports, both overall and separately for each participating city, the number of survey invites (less outbound bounces), number of survey respondents, and survey response rate to the COVID-19 Landlord Survey. These figures include responses from property managers (N=80) who were not asked questions about rental business profitability or practices as they were routed to the end of the survey; we include these individuals when computing response rates as we do not know how many property managers received the survey invitation but chose not to participate. Respondents were not asked questions about rental business profitability and actions if they indicated they did not own at least one overlapping rental property in 2019. In Albany, Indianapolis, Los Angeles, Minneapolis, Racine, Philadelphia, San Jose, and Trenton, participants were invited to participate in the survey via email. In Akron and Rochester, participants were invited via text message (SMS). Data come from the COVID-19 Landlord Survey.

Table 3: Descriptive Statistics of Survey Respondents

	N	Mean	SD
Male	2255	61.4	48.7
Missing gender	2850	20.9	40.7
White	2338	66.3	47.3
Black	2338	11.5	31.9
Hispanic	2338	6.3	24.3
Asian	2338	8.6	28.0
Missing race	2850	18.0	38.4
30–39 years old	2380	14.7	35.5
40–49 years old	2380	17.8	38.3
50–59 years old	2380	25.6	43.6
60+ years old	2380	39.6	48.9
Missing age	2850	16.5	37.1
LLC or LLP/LP owner	2255	12.4	32.9
Missing owner name	2850	20.9	40.7
Uses a property manager	2703	27.7	44.8
Missing property manager	2850	5.2	22.1
Accepts Section 8	2709	20.8	40.6
Missing Section 8	2850	4.9	21.7
Owens single-family home(s)	2536	50.7	50.0
Owens 2-4 family home(s)	2536	50.6	50.0
Owens small apartment building(s)	2536	12.4	32.9
Owens mid-sized apartment building(s)	2536	5.1	22.1
Owens large apartment building(s)	2536	4.5	20.7
Owens condominium unit(s)	2536	7.2	25.9
Missing types of properties owned	2850	1.3	11.5
Owens 1-5 rental units	2803	65.6	47.5
Owens 6-19 rental units	2803	17.2	37.7
Missing number of rental units owned	2850	1.6	12.7

Notes: This table reports descriptive statistics for the COVID-19 Landlord Survey respondents. The variables above are expressed as percentages. The omitted category for race is “Other Race.” The omitted category for age is “20–29 years old.” No respondents reported being less than 20 years old. The omitted category for number of rental units owned is “Owens 20+ rental units.” “Small apartment building” indicates a 5-9 unit building. “Mid-sized” indicates 10 to 19 rental units. “Large” indicates 20+ rental units. Respondents could indicate owning multiple types of properties, and thus, property ownership will not sum to 100. Categorical variables may not sum to 100 due to rounding. Data come from city administrative records and the COVID-19 Landlord Survey.

Table 4: Relationship between Rental Collection and Business Practices

	Grant Rent Ext.	Forgive Rent	Charge Rent Fee	Inc. Rents	Dec. Rents	Evict Tenants	Miss Payments	Defer Maint.	List Props. for Sale
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
< 90% Rent Received	0.083*** (0.028)	0.037** (0.016)	0.064** (0.030)	-0.123*** (0.023)	0.052*** (0.015)	0.137*** (0.028)	0.066*** (0.020)	0.088*** (0.022)	0.019 (0.014)
2020	0.226*** (0.014)	0.118*** (0.010)	-0.144*** (0.011)	-0.215*** (0.011)	0.115*** (0.009)	-0.065*** (0.009)	0.053*** (0.008)	0.164*** (0.011)	0.058*** (0.008)
< 90% Rent Received*2020	0.234*** (0.034)	0.138*** (0.023)	0.029 (0.033)	0.102*** (0.025)	0.057** (0.022)	0.099*** (0.032)	0.209*** (0.026)	0.181*** (0.029)	0.106*** (0.021)
N Landlord-Years	4,808	4,808	4,808	4,808	4,808	4,808	4,808	4,808	4,808

Notes: This table reports OLS estimates of the relationship between landlords' business practices and rental collection, prior to and during the pandemic. Each column presents results from a separate OLS regression, where the indicated business practice is the dependent variable. "Grant Rent Ext." indicates rental extensions and/or putting tenants on repayment plans. "Forgive Rent" indicates rental forgiveness (either in full or a portion). "Charge Rent Fee" indicates charging fees for late rent. "Inc. Rents" indicates increases to monthly rents. "Dec. Rents" indicates decreases to monthly rents. "Evict Tenants" indicates the commencement of eviction procedures (and potentially, the conclusion). "Miss Payments" indicates missed mortgage, property tax, and/or utility payments. "Defer Maint." indicates delayed property repairs or maintenance. "List Props. For Sale" indicates one or more properties were listed for sale. Landlords could choose multiple actions. Models include city fixed effects. Heteroskedastic-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Data come from the COVID-19 Landlord Survey.

Table 5: Changes in Five Key Landlord Rental Business Practices, by City

	Grant Rent Extensions		Charge Rent Fees		Evict Tenants		Defer Maintenance		List Props. for Sale	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Akron	17.5	49.3	24.5	20.1	19.2	17.9	3.9	29.7	2.2	16.6
Albany	19.6	45.1	27.5	9.8	17.6	21.6	9.8	46.1	3.9	22.5
Indianapolis	18.1	53.1	26.0	17.9	17.3	19.1	3.6	25.8	4.1	15.3
Los Angeles	9.5	59.5	26.5	4.5	8.5	6.5	6.5	35.0	1.0	11.5
Minneapolis	10.2	29.2	14.5	6.6	5.5	3.0	2.5	24.2	2.7	8.2
Philadelphia	19.0	68.6	29.1	15.9	17.8	25.6	5.4	35.7	3.5	20.9
Racine	13.9	43.8	20.1	9.0	11.1	9.7	9.7	24.3	2.1	5.6
Rochester	14.6	53.2	22.8	12.7	25.3	31.6	5.1	43.0	3.8	17.7
San Jose	11.4	50.4	26.0	3.5	11.4	5.5	5.9	32.7	1.2	6.7
Trenton	22.2	57.4	24.1	17.6	20.4	38.9	9.3	36.1	2.8	15.7

Notes: This table reports the share of landlords’ pursuing five key rental business practices in 2019 and 2020, for each city in the study. “Grant Rent Extensions” indicates rental extensions and/or putting tenants on repayment plans. “Charge Rent Fees” indicates charging fees for late rent. “Evict Tenants” indicates the commencement of eviction procedures (and potentially, the conclusion). “Defer Maintenance” indicates delayed property repairs or maintenance. “List Props. For Sale” indicates one or more properties were listed for sale. Responses do not sum to 100 (within a city-year) because landlords could choose multiple actions. 10.5 percent of respondents are from San Jose, 8.6 from Los Angeles, 23.3 from Minneapolis, 6.2 from Racine, 16.2 from Indianapolis, 9.3 from Akron, 6.4 from Rochester, 4.2 from Albany, 10.9 from Philadelphia, and 4.5 from Trenton. The total number of survey respondents in the sample is 2,525. Data come from the COVID-19 Landlord Survey.

Table 6: Relationship between City-Level Rental Collection and Business Practices

	Grant Rent Ext.	Charge Rent Fees	Evict Tenants	Defer Maint.	List Props. for Sale
	(1)	(2)	(3)	(4)	(5)
Share < 90% Rent Received	0.583** (0.208)	0.756* (0.395)	1.173*** (0.204)	0.236 (0.152)	0.041 (0.051)
2020	0.072 (0.068)	-0.108* (0.059)	-0.126** (0.045)	0.117*** (0.037)	-0.004 (0.024)
Share < 90% Rent Received*2020	0.280 (0.272)	-0.561 (0.400)	-0.483* (0.228)	0.198 (0.174)	0.253*** (0.084)
N City-Years	20	20	20	20	20

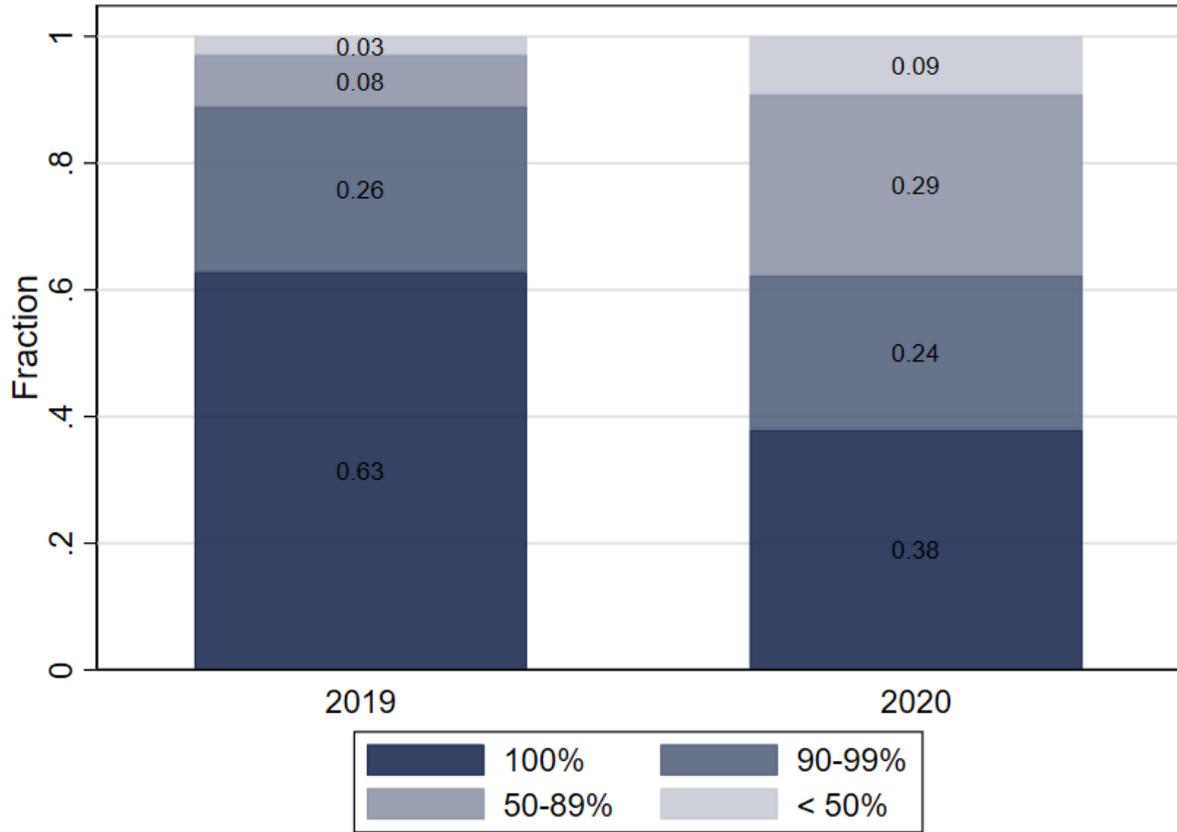
Notes: This table reports OLS estimates of the relationship between landlords' rental collection and business practice implementation rates, at the city-level, prior to and during the pandemic. To generate these estimates, data are first collapsed on means to the city-year level, and all regressions are weighted by the number of survey respondents within the city. "Grant Rent Ext." indicates rental extensions and/or putting tenants on repayment plans. "Charge Rent Fees" indicates charging fees for late rent. "Evict Tenants" indicates the commencement of eviction procedures (and potentially, the conclusion). "Defer Maint." indicates delayed property repairs or maintenance. "List Props. For Sale" indicates one or more properties were listed for sale. Landlords could choose multiple actions. Heteroskedastic-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Data come from the COVID-19 Landlord Survey.

Table 7: Relationship between Landlord Portfolio Size and Business Practices

	Grant Rent Ext.	Charge Rent Fees	Evict Tenants	Defer Maint.	List Props. for Sale
	(1)	(2)	(3)	(4)	(5)
Small Landlord	-0.004 (0.028)	-0.268*** (0.033)	-0.281*** (0.030)	0.030* (0.016)	-0.039** (0.017)
Medium Landlord	-0.019 (0.032)	-0.121*** (0.039)	-0.144*** (0.034)	0.025 (0.018)	-0.041** (0.017)
2020	0.461*** (0.036)	-0.311*** (0.040)	-0.096** (0.040)	0.290*** (0.033)	0.173*** (0.031)
Small Landlord*2020	-0.266*** (0.038)	0.216*** (0.041)	0.060 (0.041)	-0.128*** (0.035)	-0.114*** (0.032)
Medium Landlord*2020	-0.121*** (0.045)	0.085* (0.048)	0.004 (0.047)	-0.040 (0.041)	-0.081** (0.036)
Constant	0.196*** (0.026)	0.454*** (0.032)	0.394*** (0.029)	0.057*** (0.015)	0.075*** (0.016)
N Landlord-Years	4,764	4,764	4,764	4,764	4,764

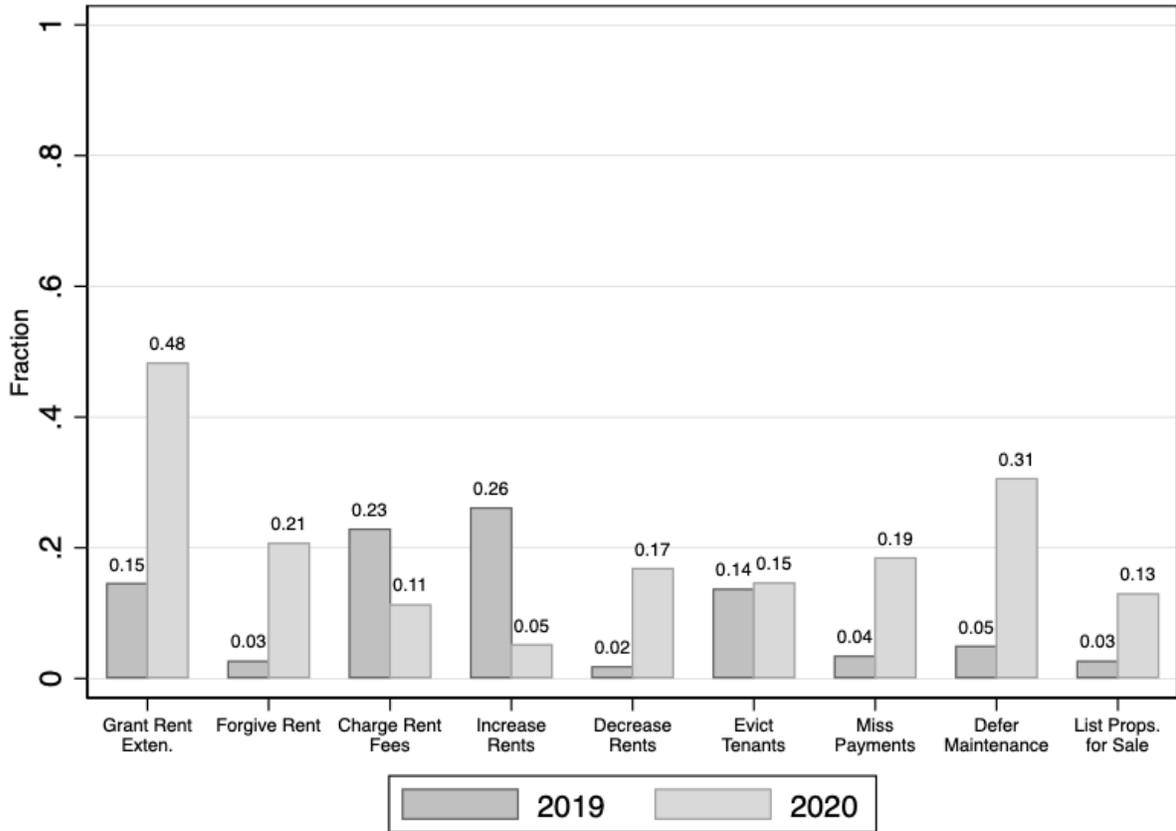
Notes: This table reports OLS estimates of the relationship between landlords' rental property portfolio size and business practice implementation rates, prior to and during the pandemic. "Small Landlord" indicates rental property owners with 1-5 rental units. "Medium Landlord" indicates rental property owners with 6-19 rental units. The constant captures the conditional mean of the dependent variable for the reference group, which is the year 2019 for rental property owners with 20+ rental units. "Grant Rent Ext." indicates rental extensions and/or putting tenants on repayment plans. "Charge Rent Fees" indicates charging fees for late rent. "Evict Tenants" indicates the commencement of eviction procedures (and potentially, the conclusion). "Defer Maint." indicates delayed property repairs or maintenance. "List Props. For Sale" indicates one or more properties were listed for sale. Landlords could choose multiple actions. Models control for yearly rent collection and include city fixed effects. Heteroskedastic-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Data come from the COVID-19 Landlord Survey.

Figure 1: Landlords' Rental Collection Prior to and During the Pandemic



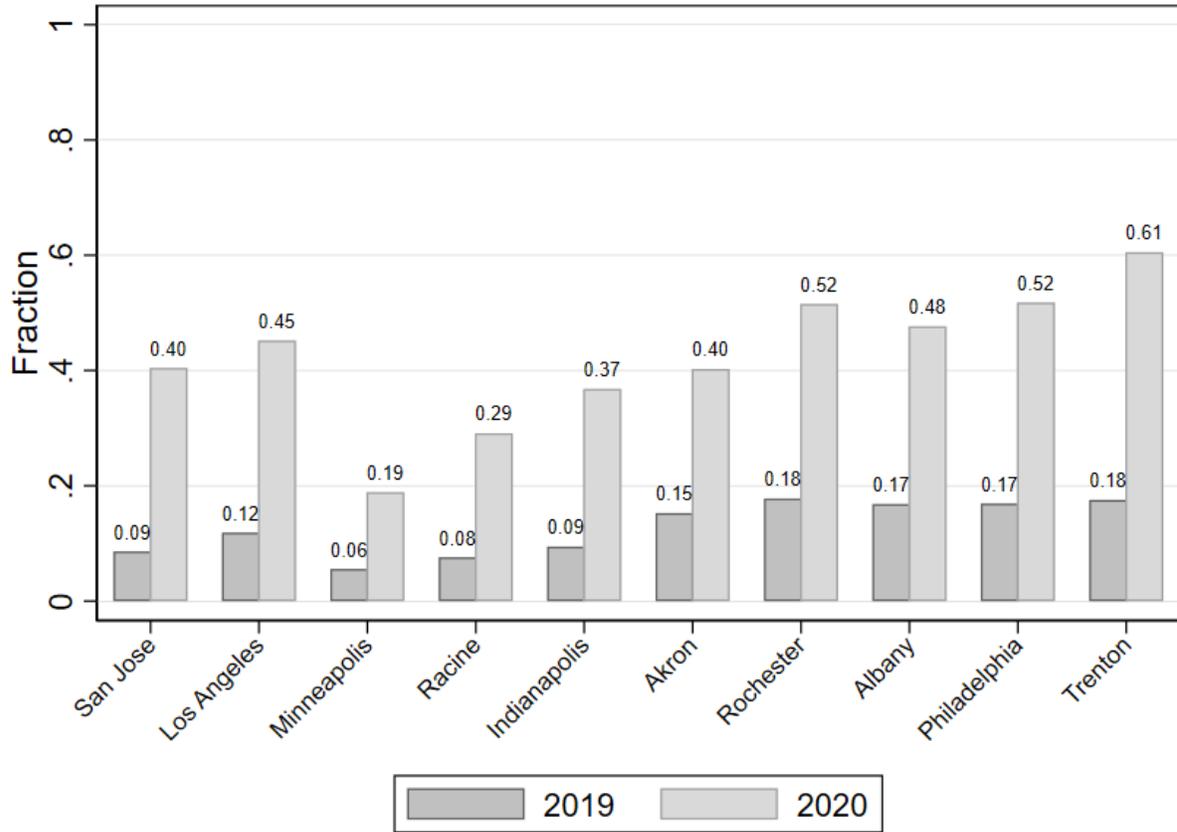
Notes: This figure plots landlords' rental collection rates in 2019 and 2020. Rental payment is expressed as a percentage of total rent charged, in a given year, for a landlord's rental portfolio. The number of survey respondents in the sample is 2,548. Data come from the COVID-19 Landlord Survey.

Figure 2: Landlords’ Rental Business Practices Prior to and During the Pandemic



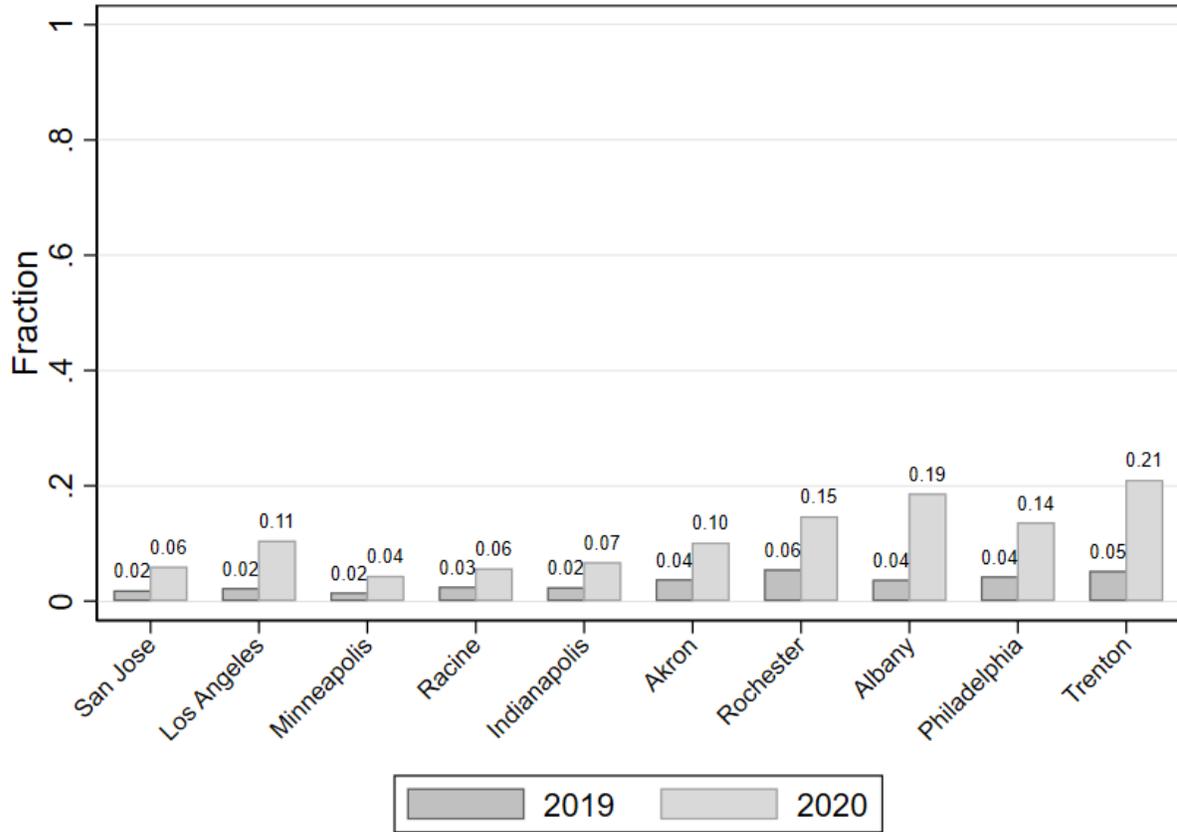
Notes: This figure plots landlords’ rental business practices in 2019 and 2020. “Grant Rent Exten.” indicates rental extensions and/or putting tenants on repayment plans. “Forgive Rent” indicates rental forgiveness (either in full or a portion). “Charge Rent Fees” indicates charging fees for late rent. “Increase Rents” indicates increases to monthly rents. “Decrease Rents” indicates decreases to monthly rents. “Evict Tenants” indicates the commencement of eviction procedures (and potentially, the conclusion). “Miss Payments” indicates missed mortgage, property tax, and/or utility payments. “Defer Maintenance” indicates delayed property repairs or maintenance. “List Props. For Sale” indicates one or more properties were listed for sale. Responses do not sum to 1 because landlords could choose multiple actions. The number of survey respondents in the sample is 2,525. Data come from the COVID-19 Landlord Survey.

Figure 3: Share of Landlords Receiving Less than 90 Percent of Rent Charged, by City



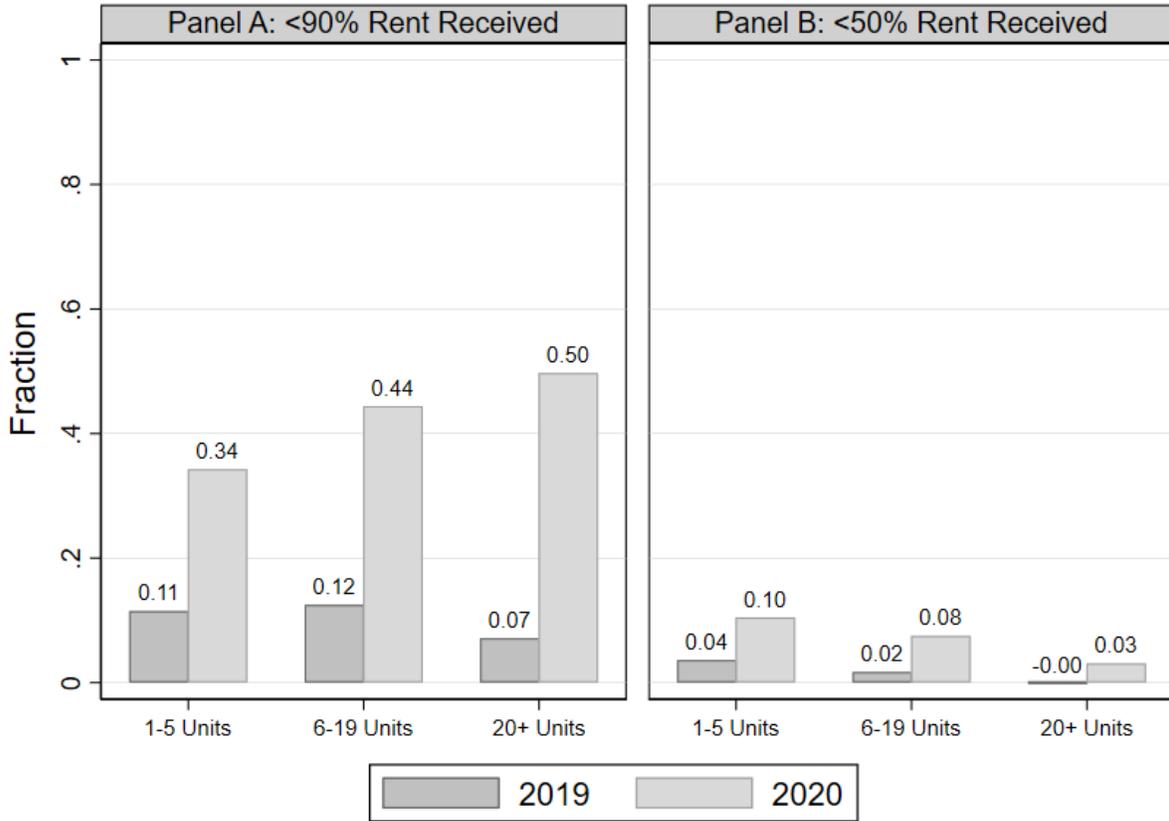
Notes: This figure plots the share of landlords reporting less than 90 percent of total rent received in 2019 and 2020, by city. Rent received is expressed as a percentage of total rent charged, in a given year, for a landlord’s rental portfolio. 10.5 percent of respondents are from San Jose, 8.6 from Los Angeles, 23.3 from Minneapolis, 6.2 from Racine, 16.2 from Indianapolis, 9.3 from Akron, 6.4 from Rochester, 4.2 from Albany, 10.9 from Philadelphia, and 4.5 from Trenton. The total number of survey respondents in the sample is 2,548. Data come from the COVID-19 Landlord Survey.

Figure 4: Share of Landlords Receiving Less than 50 Percent of Rent Charged, by City



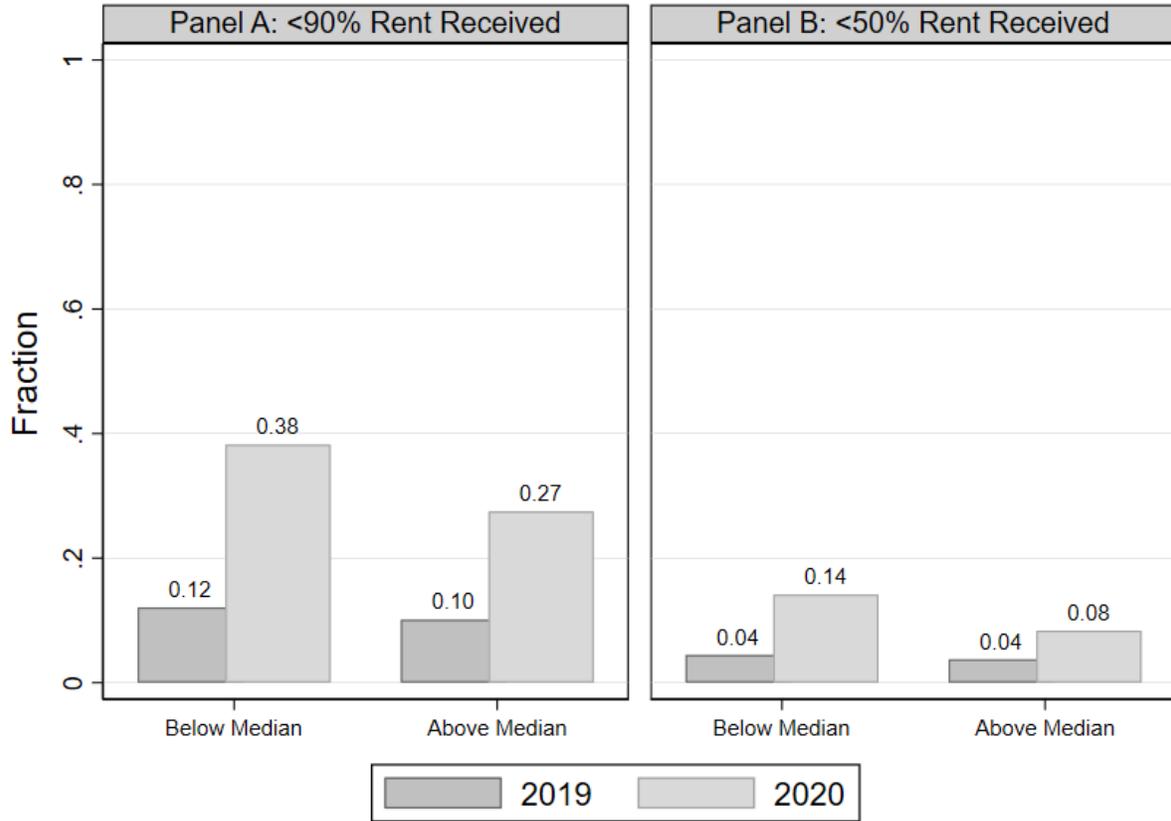
Notes: This figure plots the share of landlords reporting less than 50 percent of total rent received in 2019 and 2020, by city. Rent received is expressed as a percentage of total rent charged, in a given year, for a landlord’s rental portfolio. 10.5 percent of respondents are from San Jose, 8.6 from Los Angeles, 23.3 from Minneapolis, 6.2 from Racine, 16.2 from Indianapolis, 9.3 from Akron, 6.4 from Rochester, 4.2 from Albany, 10.9 from Philadelphia, and 4.5 from Trenton. The total number of survey respondents in the sample is 2,548. Data come from the COVID-19 Landlord Survey.

**Figure 5: Landlord Rental Collection Rates,
by Size of Landlord Rental Portfolio**



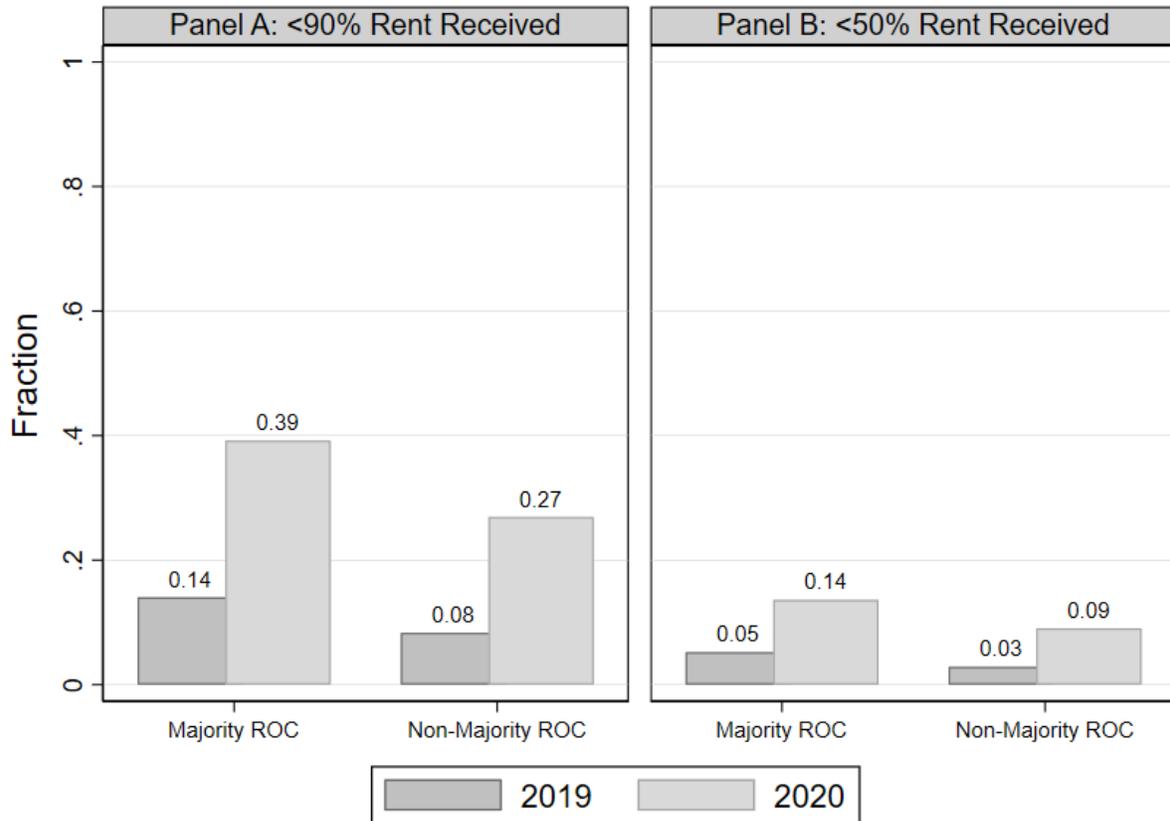
Notes: This figure plots the share of landlords reporting less than 90 percent of total rent received (Panel A) and less than 50 percent of total rent received (Panel B) in 2019 and 2020, by the size of landlords' rental portfolios. Rental payment is expressed as a percentage of total rent charged, in a given year, for a landlord's rental portfolio. 71.1 percent of landlords in the sample own 1-5 rental units, 18.2 percent own 6-19 rental units, and 10.7 percent own 20 or more rental units. Models include city fixed effects. The number of survey respondents in the sample is 2,524. Data come from the COVID-19 Landlord Survey.

Figure 6: Landlords' Property-Level Rental Collection Rates, by Neighborhood Median Income



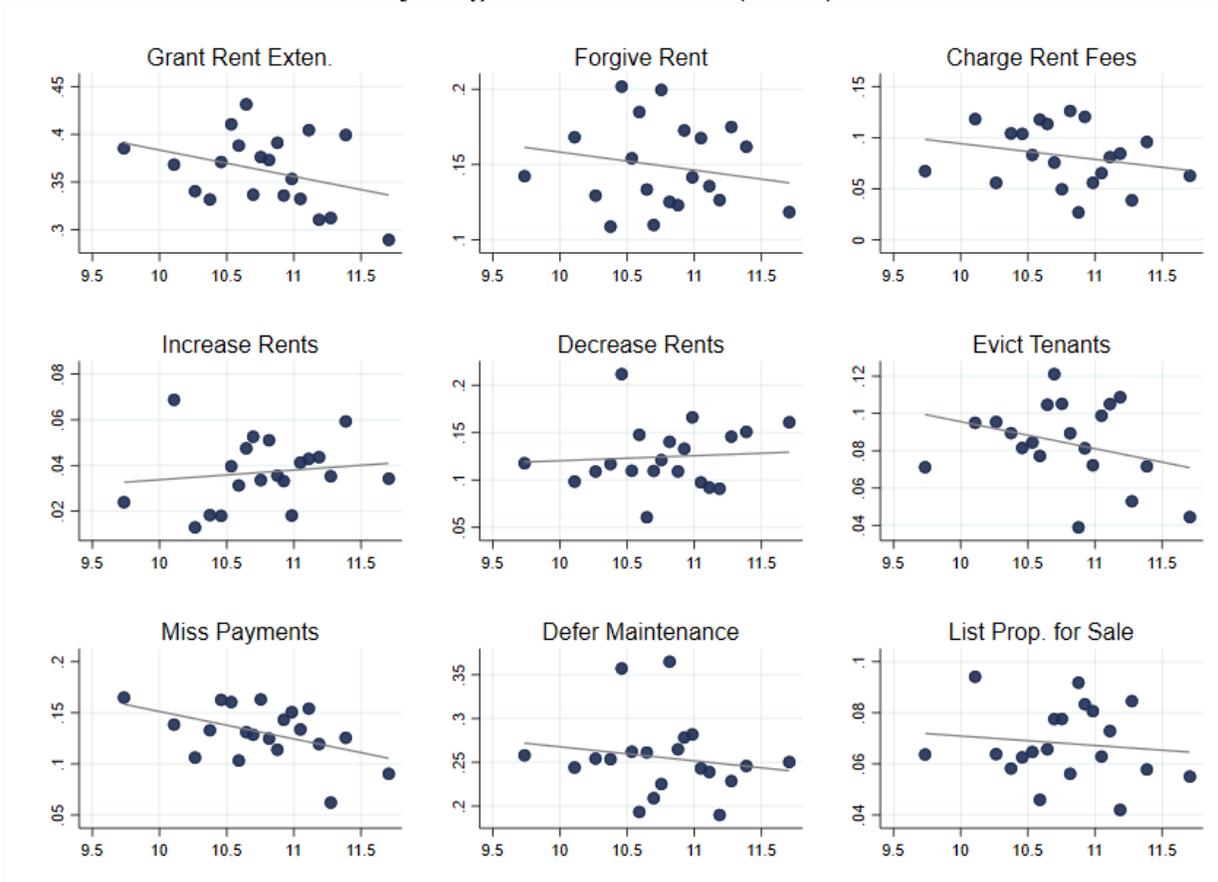
Notes: This figure plots, for 2019 and 2020, the share of landlords reporting less than 90 percent of total rent received at an individual rental property (Panel A) and less than 50 percent of total rent received at an individual rental property (Panel B), according to the neighborhood median income for that property. Properties are classified as “Below Median” if they are located in a neighborhood whose median income falls below the median for their city. Neighborhoods are classified according to census block groups (CBGs). 46.5 percent of properties are located in a neighborhood with an above-median household income. See Appendix Table 1 for each city’s median household income. Models include city fixed effects. The number of rental properties in the sample is 2,428. Data come from the COVID-19 Landlord Survey.

Figure 7: Landlords' Property-Level Rental Collection Rates, by Neighborhood Share of Residents of Color



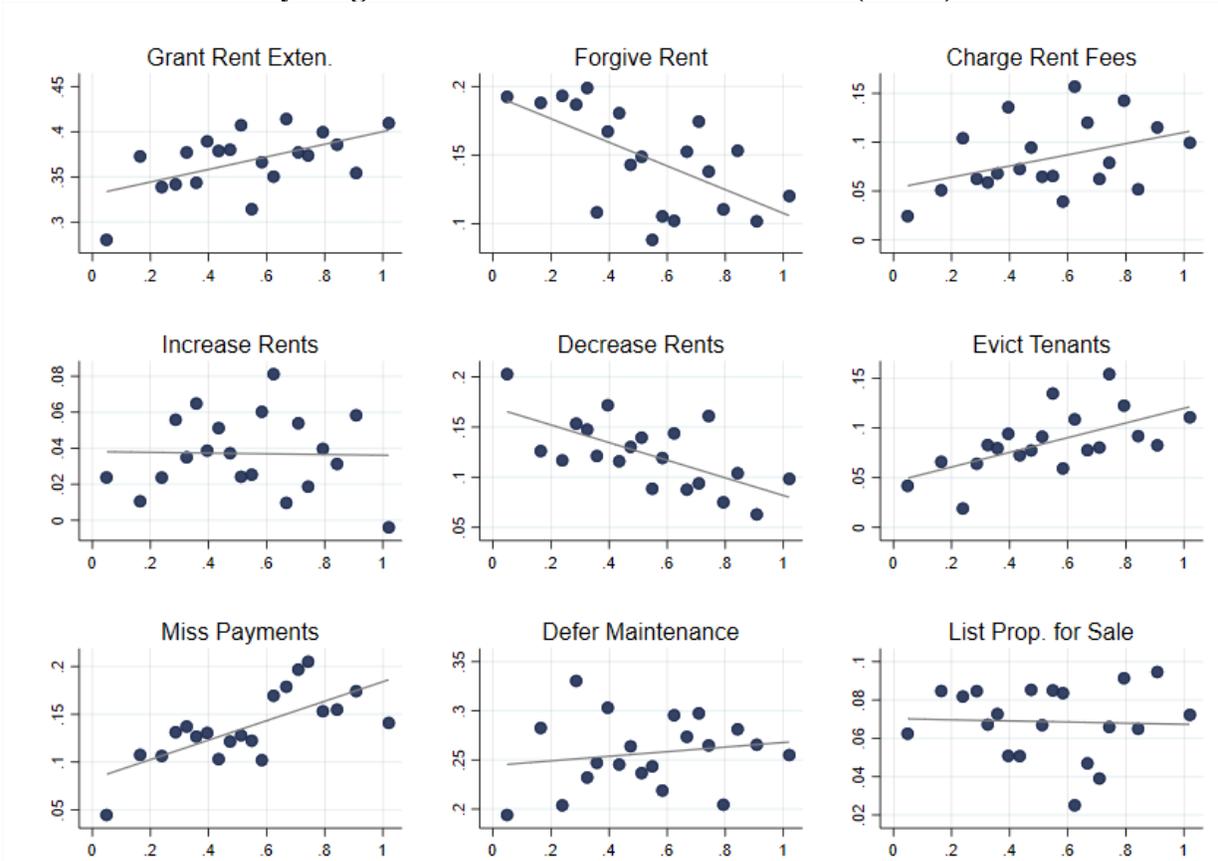
Notes: This figure plots, for 2019 and 2020, the share of landlords reporting less than 90 percent of total rent received at an individual rental property (Panel A) and less than 50 percent of total rent received at an individual rental property (Panel B), according to the neighborhood share of residents of color for that property. A neighborhood's share of residents of color is defined as the sum of individuals who identify as Black, Hispanic, Asian, Native American, multiracial and/or other races. Properties are classified as "Majority ROC" if they are located in a neighborhood with a majority (over 50 percent) of residents of color. Neighborhoods are classified according to census block groups (CBGs). 53.0 percent of properties are located in a neighborhood with a majority of residents of color. See Appendix Table 1 for each city's racial and ethnic composition. Models include city fixed effects. The number of rental properties in the sample is 2,513. Data come from the COVID-19 Landlord Survey.

**Figure 8: Landlords' Property-Level Business Practices (y-axis),
by Neighborhood Income (x-axis)**



Notes: This figure presents nine binned scatter plots of landlords' 2020 property-level rental business practices versus the neighborhood median income (for the property). For each plot, the share of landlords reporting the practice is reported on the y-axis while the natural log of neighborhood median income is presented on the x-axis. To construct these plots, we first demean both landlords' rental business practices and neighborhood median income by city and average rent collection. We then divide the observations into 20 equal-sized groups (vigintiles) based on the natural log of neighborhood median income and plot the share of landlords pursuing the indicated rental practice within each bin. The solid lines show the best linear fit estimated on the underlying micro data using OLS regression, and Appendix Table 4 presents these regression estimates. The indicated actions took place at some point during 2020. "Grant Rent Exten." indicates rental extensions and/or putting tenants on repayment plans. "Forgive Rent" indicates rental forgiveness (either in full or a portion). "Charge Rent Fees" indicates charging fees for late rent. "Increase Rents" indicates increases to monthly rents. "Decrease Rents" indicates decreases to monthly rents. "Evict Tenants" indicates the commencement of eviction procedures (and potentially, the conclusion). "Miss Payments" indicates missed mortgage, property tax, and/or utility payments. "Defer Maintenance" indicates delayed property repairs or maintenance. "List Prop. For Sale" indicates the property was listed for sale. The number of rental properties for each plot is 2,322. Data come from the COVID-19 Landlord Survey.

**Figure 9: Landlords' Property-Level Business Practices (y-axis),
by Neighborhood Share Residents of Color (x-axis)**



Notes: This figure presents binned scatter plots of landlords' 2020 property-level rental business practices versus the neighborhood share of residents of color (for the property). For each plot, the share of landlords reporting the practice is reported on the y-axis while the neighborhood share of residents of color is presented on the x-axis. A neighborhood's share of residents of color is defined as the sum of individuals who identify as Black, Hispanic, Asian, Native American, multiracial and/or other races. To construct these plots, we first demean both landlords' rental business practices and neighborhood share residents of color by city and average rent collection. We then divide the observations into 20 equal-sized groups (vigintiles) based on neighborhood racial composition and plot the share of landlords pursuing the indicated rental practice within each bin. The solid lines show the best linear fit estimated on the underlying micro data using OLS regression, and Appendix Table 4 presents these regression estimates. The indicated actions took place at some point during 2020. "Grant Rent Exten." indicates rental extensions and/or putting tenants on repayment plans. "Forgive Rent" indicates rental forgiveness (either in full or a portion). "Charge Rent Fees" indicates charging fees for late rent. "Increase Rents" indicates increases to monthly rents. "Decrease Rents" indicates decreases to monthly rents. "Evict Tenants" indicates the commencement of eviction procedures (and potentially, the conclusion). "Miss Payments" indicates missed mortgage, property tax, and/or utility payments. "Defer Maintenance" indicates delayed property repairs or maintenance. "List Prop. For Sale" indicates the property was listed for sale. The number of rental properties for each plot is 2,402. Data come from the COVID-19 Landlord Survey.

Appendix Tables and Figures

Appendix Table 1: Descriptive Statistics of Residents and Renter Households in Survey Cities

	Akron	Albany	Indianapolis	Los Angeles	Minneapolis	Philadelphia	Racine	Rochester	San Jose	Trenton
<i>Panel A: Resident Characteristics</i>										
White	58.5	49.9	55.2	28.5	59.8	34.6	49.9	36.6	26	12.9
Black	29.9	27.9	28.1	8.6	19.1	41.0	22.2	38.2	2.8	48.4
Hispanic	2.5	10.2	10.2	48.6	9.6	14.5	23.1	18.3	32	36.4
Asian	4.6	6.9	3.2	11.7	6.1	7.1	0.9	3.2	35.6	1.1
Other race	4.5	5.0	3.3	2.8	5.5	2.8	3.9	3.8	3.6	1.2
Median age (y)	36.7	31.2	34.2	35.4	32.1	34.3	34	31.9	36.5	33.9
N Residents (100,000s)	2.0	1.0	8.6	39.7	4.2	15.8	0.8	2.1	10.3	0.8
<i>Panel B: Renter Household Characteristics</i>										
Renter-occupied (among all households)	49.4	63.2	46.7	63.2	52.7	47.0	49.0	63.7	42.8	63.4
Reside in 1-unit property	44.7	9.0	38.2	21.1	15.3	40.8	33.6	30.2	32.9	45.8
Reside in 2-4 unit property	20.5	57	13.6	12	18.1	25	33.1	34.6	13.3	20.6
Reside in 5-9 unit property	8.9	12.3	19.0	12.9	6.3	7.4	7.9	9.2	9.3	7.2
Reside in 10-19 unit property	8.6	6.1	12.8	14.2	12.8	4.5	7.2	5.0	10.1	4.5
Reside in 20+ unit property	17.0	15.5	15.4	39.4	47.3	21.9	17.7	20.6	33.4	22
Median income (\$)	25,598	30,972	31,299	43,015	37,155	31,508	28,900	24,043	72,825	24,355
Cost-burdened	47.7	53.5	49.0	57.3	46.3	50.2	50.8	57.0	50.2	56.3
Median gross rent (\$)	735	951	865	1,376	985	1,007	824	831	1,970	1,029
Median age of housing structure (y)	63	80	47	55	59	70	68	77	43	-
N Renter Households (10,000s)	4.2	2.6	15.6	86.8	9.2	28.0	1.5	5.5	13.8	1.7

Notes: This table reports descriptive characteristics of residents and renter households separately for the ten COVID-19 Landlord Survey cities. Data come from the ACS 2018 five-year sample. Unless otherwise indicated, the variables above are expressed as percentages. Categorical variables may not sum to 100 due to rounding. Cost-burdened renters are defined as those who spend 30 percent or more of their yearly income on yearly rent.

**Appendix Table 2: Descriptive Statistics of Survey City Rental Properties,
by Rental Registry Compliance**

	Not on Registry	On Registry
<i>Panel A: Property Characteristics</i>		
Property units (n)	1.5	2.8
Property age (y)	78.2	92.9
Missing property age	2.7	1.4
LLC or LLP/LP owner	24.8	30.6
Per-unit assessed property value (\$)	119,301	97,402
Missing per-unit assessed property value	1.0	0.4
Per-unit residential area (sq. ft.)	1,614	1,366
Missing per-unit residential area	14.0	28.8
<i>Panel B: Neighborhood Characteristics</i>		
Residents of color	48.1	46.7
Median household income (\$)	47,541	44,0230
Median gross rent (\$)	870	926

Notes: This table reports descriptive means for all rental registry eligible rental properties in Akron, Albany, Indianapolis, Minneapolis, Racine, Rochester, San Jose, and Trenton. In Rochester, owner-occupied two-family rental properties are exempt from the rental registry, though because we cannot identify these properties, they are included in the eligible sample. In San Jose, only properties built before 1979 with three or more rental units are required to register with the city and thus included in the eligible sample. Unless stated otherwise, the variables above are expressed as percentages. Data on property characteristics come from city administrative records. Data on neighborhood characteristics come from the ACS 2018 five-year sample.

Appendix Table 3: Descriptive Statistics of Survey Respondents, by City

	Akron	Albany	Indianapolis	Los Angeles	Minneapolis	Philadelphia	Racine	Rochester	San Jose	Trenton
Male	63.9	75.8	65.5	51.6	60.4	56.7	54.3	63.8	61.5	68.7
Missing Gender	12.0	16.7	23.2	25.8	16.4	23.1	18.6	14.6	32.2	27.2
White	78.4	76.8	74.9	50.8	80.2	42.9	83.4	57.4	47.3	39.6
Black	12.5	8.1	9.8	14.1	3.7	27.2	8.3	20.6	0.9	31.1
Hispanic	2.2	5.1	3.1	18.3	3.1	11.0	3.4	4.5	11.5	6.6
Asian	1.3	5.1	4.7	8.9	6.5	8.7	2.1	6.5	31.4	15.1
Missing race	10.1	13.2	20.3	23.0	15.4	18.6	15.7	12.9	26.4	22.1
20-29 Years Old	1.3	2.0	3.3	0.0	3.7	2.7	1.4	1.3	0.9	1.9
30-39 Years Old	11.5	22.0	15.2	7.2	20.4	18.4	11.6	14.5	3.9	15.7
40-49 Years Old	12.8	18.0	19.8	12.4	19.8	24.2	14.3	18.9	11.2	23.1
50-59 Years Old	34.6	19.0	24.8	23.2	21.6	25.4	32.7	25.2	23.3	37.0
60+ Years Old	39.7	39.0	36.9	57.2	34.4	29.3	40.1	40.3	60.8	22.2
Missing age	9.3	12.3	19.2	21.8	13.2	17.9	14.5	10.7	24.4	20.6
LLC or LLP/LP Owner	19.8	20.2	7.5	-	4.1	-	14.2	23.2	11.8	33.8
Missing owner name	0.4	0.0	1.6	100.0	2.1	100.0	1.7	0.6	1.0	4.4
Uses a property manager	23.5	25.7	39.2	36.1	24.3	22.4	16.5	16.8	36.6	22.5
Missing property manager	4.3	4.4	5.1	6.0	5.2	5.4	8.1	2.8	4.9	5.1
Accepts Section 8	31.6	27.3	13.1	20.4	10.5	23.5	19.6	32.2	33.7	22.5
Missing Section 8	4.3	3.5	4.9	5.2	5.3	4.5	8.1	2.2	5.2	5.1
Owens single-family home(s)	77.0	19.8	81.0	21.3	34.1	68.0	51.3	58.8	20.8	76.3
Owens 2-4 family home(s)	33.1	85.8	33.7	42.7	59.5	48.9	56.6	70.9	56.2	36.0
Owens small apart. building(s)	3.8	16.0	3.5	37.8	5.8	14.8	5.3	13.3	27.2	9.6
Owens mid-sized apart. building(s)	2.1	6.6	1.7	16.9	4.6	1.4	2.0	3.6	12.1	0.9
Owens large apartment building(s)	0.4	0.9	4.5	16.4	2.6	1.8	0.0	1.8	10.9	4.4
Owens condominium unit(s)	1.3	1.9	7.7	10.2	15.0	3.5	3.9	1.8	5.3	2.6
Missing types of properties owned	7.4	7.0	10.7	9.3	13.2	9.0	11.6	7.3	13.7	16.2
Owens 1-5 rental units	72.3	67.5	72.2	40.7	73.3	60.9	78.9	68.0	45.7	69.4
Owens 6-19 rental units	14.5	20.2	12.0	31.1	12.3	17.9	9.4	14.0	34.1	11.2
Missing # rental units owned	0.8	0.0	1.6	2.8	1.3	1.6	0.6	0.0	4.6	1.5
N Respondents	258	114	449	248	676	312	172	178	307	136

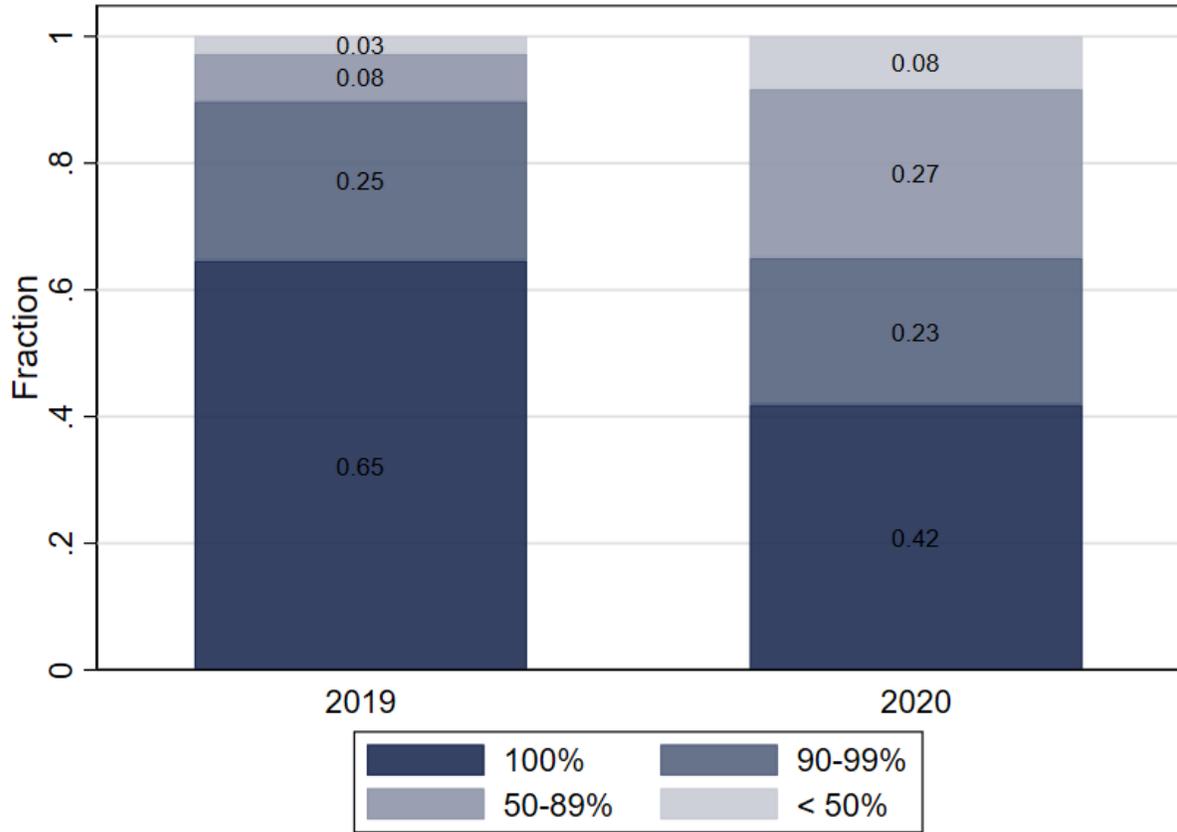
Notes: This table reports descriptive statistics for the COVID-19 Landlord Survey respondents, by city. The variables above are expressed as percentages. The omitted category for race is “Other Race.” The omitted category for age is “20–29 years old.” No respondents reported being less than 20 years old. The omitted category for number of rental units owned is “Owens 20+ rental units.” “Small apartment building” indicates a 5-9 unit building. “Mid-sized” indicates 10 to 19 rental units. “Large” indicates 20+ rental units. Respondents could indicate owning multiple types of properties, and thus, property ownership will not sum to 100. Categorical variables may not sum to 100 due to rounding. Data come from city administrative records and the COVID-19 Landlord Survey.

Appendix Table 4: Relationship Between Landlords’ Property-Level Rental Business Practices and the Neighborhood Demographics of those Rental Properties

	Grant Rent Ext.	Forgive Rent	Charge Rent Fee	Inc. Rents	Dec. Rents	Evict Tenants	Miss Payments	Defer Maint.	List Prop. for Sale
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Unconditional 2020 Mean	0.37	0.15	0.08	0.04	0.12	0.09	0.14	0.26	0.07
<i>Panel A: Neighborhood Income</i>									
Log Median Income	-0.027 (0.020)	-0.010 (0.015)	-0.016 (0.011)	0.004 (0.008)	0.005 (0.015)	-0.014 (0.010)	-0.027** (0.013)	-0.016 (0.019)	-0.004 (0.011)
N Rental Properties	2,322	2,322	2,322	2,322	2,322	2,322	2,322	2,322	2,322
<i>Panel B: Neighborhood Race</i>									
Share Residents of Color	0.069** (0.035)	-0.083*** (0.028)	0.057*** (0.021)	-0.003 (0.013)	-0.090*** (0.026)	0.076*** (0.020)	0.104*** (0.026)	0.022 (0.033)	-0.005 (0.021)
N Rental Properties	2,402	2,402	2,402	2,402	2,402	2,402	2,402	2,402	2,402

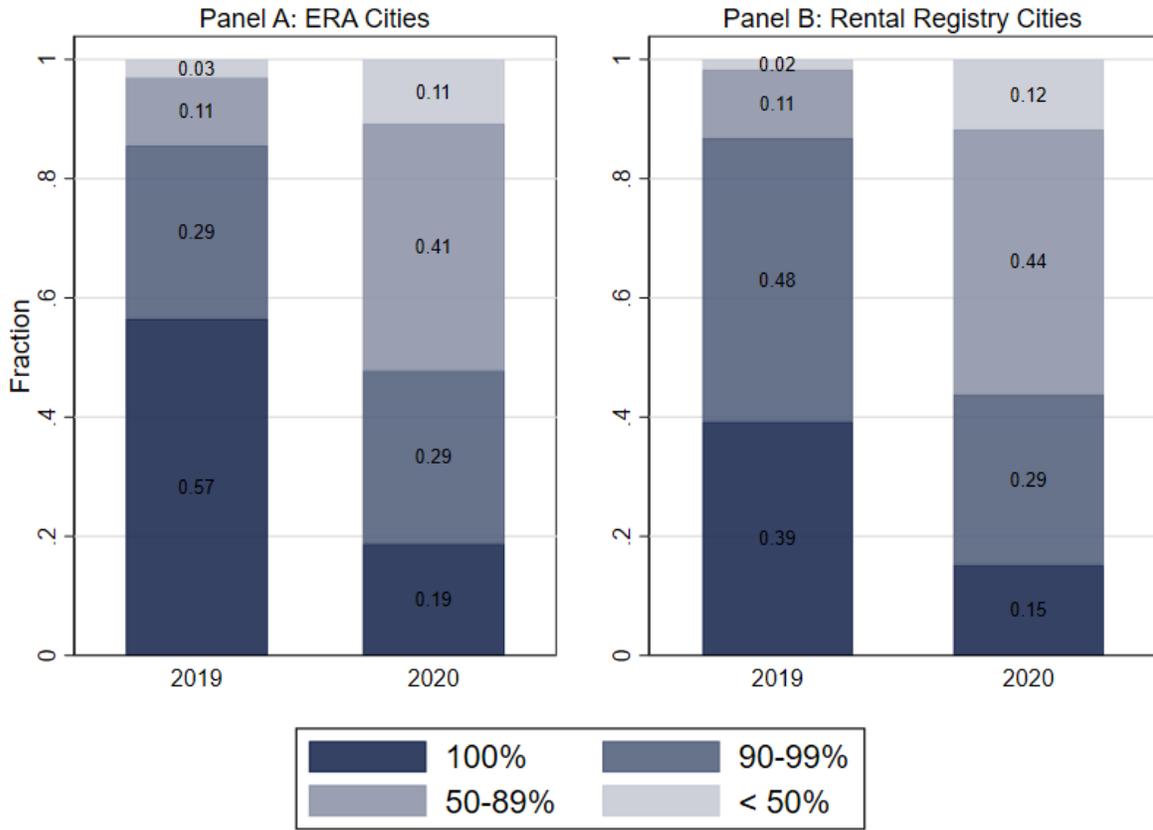
Notes: This table reports OLS regression estimates of the relationship between landlords’ property-level rental business practices and the neighborhood demographics of those rental properties. Each column presents results from a separate OLS regression, where the indicated business practice is the dependent variable. These estimates represent the slopes of the best fit lines, for the indicated rental business practice, presented in the binned scatter plots of Figures 8 and 9. The indicated actions took place at some point during 2020. “Grant Rent Ext.” indicates rental extensions and/or putting tenants on repayment plans. “Forgive Rent” indicates rental forgiveness (either in full or a portion). “Charge Rent Fee” indicates charging fees for late rent. “Inc. Rents” indicates increases to monthly rents. “Dec. Rents” indicates decreases to monthly rents. “Evict Tenants” indicates the commencement of eviction procedures (and potentially, the conclusion). “Miss Payments” indicates missed mortgage, property tax, and/or utility payments. “Defer Maint.” indicates delayed property repairs or maintenance. “List Prop. For Sale” indicates the property was listed for sale. Landlords could choose multiple actions. Models control for 2020 rent collection and include city fixed effects. Heteroskedastic-robust standard errors are reported in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Data come from the COVID-19 Landlord Survey.

Appendix Figure 1: Landlords' Rental Collection Prior to and During the Pandemic, Excluding Los Angeles and Philadelphia Landlords



Notes: This figure plots landlords' rental collection rates in 2019 and 2020, excluding Los Angeles and Philadelphia landlords. Rental payment is expressed as a percentage of total rent charged, in a given year, for a landlord's rental portfolio. The number of survey respondents in the sample is 2,051. Data come from the COVID-19 Landlord Survey.

Appendix Figure 2: Landlords' Rental Collection Prior to and During the Pandemic, Among Landlords with at Least One Tenant Participating in ERA



Notes: This figure plots landlords' rental collection rates in 2019 and 2020 among the sample of landlords who had at least one tenant receiving emergency rental assistance (ERA) in 2020. Panel A presents results for Los Angeles and Philadelphia landlords (N=299). Panel B presents results for Akron, Albany, Indianapolis, Minneapolis, Racine, Rochester, San Jose, and Trenton landlords (N=479). Rental payment is expressed as a percentage of total rent charged, in a given year, for a landlord's rental portfolio. Data come from the COVID-19 Landlord Survey.