# LEASES AS FORMS

*David A. Hoffman and Anton Strezhnev*[*]

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## ABSTRACT

We offer the first large scale descriptive study of residential leases, based on a novel dataset of ∼170,000 residential leases filed in support of over ∼200,000 Philadelphia eviction proceedings from 2005 through 2019. These leases are highly likely to contain unenforceable terms, and their pro-landlord tilt has increased sharply over time. Matching leases with individual tenant characteristics, and to 16,261 unique owner-landlords, we show that unenforceable terms are likely to be associated with more expensive leaseholds in richer, whiter parts of the city. This result is linked to particular landlords' growing adoption of shared forms, originally created by non-profit landlord associations, and more recently available online for a nominal fee. Generally, such shared form leases contain worse rules for tenants than the proprietary leases they replace. Over time, it has become easier and cheaper for landlords to adopt such common forms, meaning that access to justice for landlords strips tenants of rights.

[*]Hoffman is the William A. Schnader Professor of Law Professor of Law at University of Pennsylvania Carey School of Law; Strezhnev is an Assistant Professor in the Department of Political Science at the University of Chicago. We thank Andrew Baker, Vince Buccola, Angus Corbett, Kevin Davis, Meirav Furth, Jonah Gelbach, Mitu Gulati, Jon Klick, Rory Van Loo, Julian Nyarko, Manisha Padi, Natasha Sarin, Lior Strahilevitz, Tess Wilkinson-Ryan and Eyal Zamir, as well as participants at the Fourth Annual Empirical Contracts Conference, the American Law and Economics Conference, workshops at Arizona State, Hebrew University, Northwestern, Penn, Toronto, and Chicago, the Philadelphia Steering Committee & Housing Security Working Group, and lawyers from the Philadelphia Public Interest Law Center for comments. Jonathan Pyle of Philadelphia Legal Assistance scraped the underlying eviction dockets and developed the basic coding framework we employ. We are particularly grateful to Mike Crosson whose preliminary student work with these data helped inspire the project. Sean Bender, Madison Gray, Jordan Konnell, Colleen O'Connor, Megan Russo, Patrick Miller-Bartley, and Sam Whillans provided invaluable research assistance. The analysis contained herein is based in part on data provided under license from The Pew Charitable Trusts. The views expressed herein are those of the authors and do not necessarily reflect the views of The Pew Charitable Trusts. Address comments to dhoffman@law.upenn.edu, or by mail at 3501 Sansom Street, Philadelphia PA 19104.

## I. INTRODUCTION

Residential leases are ubiquitous, economically significant, but understudied contracts. While more than a third of American households rent, the literature has systematically examined only around a hundred distinct leases. That deficit is particularly striking for contracts whose alleged breach results in evictions, as these agreements provide the basis for the exercise of the force of the state to (quite literally) turn poor families out on the street.

To understand these contracts better, we gather a novel dataset of ∼170,000 leases filed in support of over ∼200,000 eviction proceedings in Philadelphia from 2005 through 2019. For each lease, we collect information about the leasehold (where it is in space, its type, as well as local demographic and income characteristics), the lease (its terms, price and length), the tenant (individual level race imputed using name-based methods), the landlord (name, attorney, repeat filings, total properties in the city), as well as information about the eviction proceeding itself.

Our basic approach undermines the conventional wisdom that lease terms result from an imbalance of bargaining power between landlords and tenants. This account, founded on limited evidence but well-established in the legal literature, both implies that rent trades off with terms, and that overall weaker tenants get "worse" legal protections in their contracts. A different approach, built on the newer literature on consumer contracts, rests on theories of information costs. In providing a descriptive account that will inform these two theories, we focus on several questions.

*How Oppressive Are Leases?* The conventional account holds that leases are uniformly averse to tenants. We show, in line with previous research, that both unenforceable and oppressive terms in private leases we observe a striking time trend: the incidence of both unenforceable and oppressive terms has sharply increased over the last 20 years.

*What Motivates Adoption of Unenforceable and Oppressive Terms?* We find almost no within-landlord variation in leases in our data: landlords do not calibrate eviction leases for particularly vulnerable tenants in their rental population. Rather, leases vary between landlords. We show that unenforceable terms are associated with a set of highly standardized leases that are widely shared between landlords. Though we study over a hundred thousand private contracts, a handful of distinct standard form leases—which we call *shared leases*—make-up the plurality the dataset. The sharp increase in both unenforceable and oppressive terms in the last twenty years can be thus attributed to increasing adoption by small landlords of shared leases, in turn resulting from the ability to access cheap internet forms, which replace the oral or *proprietary leases* of the past. In this way, we illustrate standardization's perverse effects.

Tenant race interacts with this standardization story in unexpected and complex ways. We observe that unenforceable and oppressive terms are more likely in the leases of richer, whiter, tenants. This relates to the distribution of widely-shared, long, forms, which are

particularly common in slightly more expensive leaseholds and in apartment buildings. Notably, however, this relationship is made more complex in majority white census tracts, where black tenants tend to live in apartment buildings while their white neighbors do not. In those places, black tenants are particularly likely to sign leases with unenforceable terms.

*What is the Effect of Local Geography?* In Philadelphia, the lease you sign has more to do with where you live than who you are. Because landlords specialize in places and building types, and almost never vary leases between tenants, geography generally dominates tenant characteristics in explaining the makeup of leases. That tight link between lease, place and people complicates the conventional account which suggests that leases are priced in part based on their legal terms.

*Are Leases in Evictions Different?* One hazard in our approach concerns the selected nature of our dataset. We study those leases that landlords have attached to eviction filings, and not a random selection of Philadelphians' leases: for instance, they are disproportionately drawn from the leases of the poor. Even within the set of poor tenants, eviction isn't random: tenant characteristics, landlord strategies, and neighborhood characteristics may make it more likely. We investigate whether there is a connection between these *eviction selection* effects and *lease selection*. We are primarily concerned with knowing if the sorts of leases attached to eviction filings are meaningfully different from those of poor Philadelphians generally. Attacking that problem from a variety of angles, we argue that they are not.

Our primary observations—the dominance and growth of both unenforceable and oppressive terms and the role of forms—lead to set of prescriptions, which we discuss in the last section of the paper.

We begin with a literature review.

## II. Leases as Objects of Study

As Suchman (2003) argued, contracts are "social artifacts," things worthy of study as such. Much can be learned from micro and macro analysis of the production of these objects, just as scholars have benefits from the study of other technological innovations, from the wheel to the mousetrap. The study of lease contracts as artifacts has been, to date, limited. In this section we detail the results of that previous learning, and then describe how it relates to the burgeoning field of contractual innovation writ large.

### *A. The Conventional Account: The Landlord's Dominion*

There have been a handful of small-scale empirical projects studying leases. Curtis Berger's pioneering work on leases focused on "representative forms" from 16 cities' Real Estate Boards in 1972, out of 50 cities surveyed. Berger (1974) found that of the 16 model

leases, around half purported to waive the warranties of habitability, while most created additional landlord remedies and tenant obligations. The result was a set of documents that Berger argued treated the"residential tenant as a latter-day serf. One sees a near-pathological concern with tenant duties and landlord remedies, occupying from 50 to 80 percent of every form. Much of the remaining text seeks to immunize the landlord against the claims of his tenant."

This theme—that leases permit landlords to dominate tenants—continued in later works. Some argue that form leases are a faceless evil, as "it makes little difference which form one purchases, however, for their contents are strikingly uniform." (Bentley, 1974) Scholars have asked why forms persistently contain unenforceable provisions, as such terms are often denied enforcement by courts. (Sullivan, 2009; Berger, 1974; Furth-Matzkin, 2017) The general consensus is that such clauses are imposed as a part of a strategy by landlords, who seek to extract surplus from tenants given tenants' low readings rates and inability to fully police such clauses in court (Furth-Matzkin, 2018; Mueller, 1970). As Williams (1987) observed, African-American tenants may seek more formal leases to protect themselves from the power dynamics inherent in the landlord-tenant relationship.

The work closest to ours is Furth-Matzkin's work on Boston leases. (Furth-Matzkin, 2017). Employing a snowball sample, she studied 70 residential agreements, of which a third were student leases. Of those leases, a little more than half had individual (non-corporate) landlords. Half of the studied leases were standardized forms. Furth-Matzkin identified a relatively high number of unenforceable and misleading terms. When controlling for leasehold size, rental amount, tenant type, and duration, she concluded that corporate landlords, using commercial forms, and higher value leaseholds, all used forms with fewer unenforceable terms. Furth-Matzkin attributes her results to commercial firms and drafters being "typically more careful than individual landlords in the drafting of their leases."[1]

[1]In an unpublished student paper, Nora Crawford studied 20 Philadelphia leases, 17 from students and 3 from landlords. She found that 6 of the 17 student leases used language drafted by a single law firm in Philadelphia, which listed its copyright on the leases themselves. (Crawford N.D.) Crawford interviewed the lawyer-drafter of the form residential leases in her sample. He explained why he thought terms in leases were particularly sticky: landlords "look at [the lease] like the Bible, and they will not change the terms of the Bible." The drafting lawyer continued that he had departed from the model Realtor Association lease because it had drawn attention to tenant remedies in ways not required by law: "My clients don't want me to tell the other side how to sue us and when." He suggested that because Pennsylvania law on landlord tenant issues is "sort of confusing," landlords seeking to comply face difficulties. For "mom and pop" operators, the drafter believed that they originally "buy a form" but then do not update it for later developments in the law. By contrast, larger landlords were more likely to "revise [the lease] periodically, but not regularly, to reflect changes in the law." Finally, the drafter discussed how his leases were disseminated in the housing market. His firm's standard residential lease is "very inexpensive" and gives the purchaser an unlimited license at their properties. Customized leases are more expensive, and most landlords take the standard form. He described that form as a loss-leader—the "low-end" of the practice—intended to build relationships with

In general terms, these studies extend a consumer law tradition which focuses on the purportedly negative effects of disparate bargaining power. Whiter and richer tenants, and men, are thought to be signatories of "better" leases, or at least leases with fewer unenforceable terms. Moreover, the literature assumes that landlords calibrate price based on the characteristics of the applicable legal regime and the tenant. Scholars thus posit that landlords will charge tenants for "better" lease contracts (Ackerman, 1971).

### *B. A Revised Account: Leases as Forms*

The above account suggests that leases are tailored for tenants. But the literature on contracts-as-forms is to the contrary. Multiple studies have found that even for material contracts, terms are not well priced, nor do they change after radical shifts in the governing legal regime (Gulati & Scott, 2012; S. J. Choi & Gulati, 2004). How can this be? The answer seems to be a very strong form of inertia and aversion to change of the template (Nyarko, 2020).

This in turn lends credence to drafting cost explanations for boilerplate terms. Coates, describing weak takeover defenses, argued that information costs played an important role (Coates, 2001). Where terms were less material, lawyers would be likely to adopt those nearest to hand, meaning that contact boilerplate terms were "likely to exhibit geographic correlations."

> Law firms that are closer to each other in physical proximity are more likely to share information, either formally (by sharing documents or experiences), or by lateral hiring, or by conscious borrowing from large, locally prominent law firms with high IPO market shares (Silicon Valley law firms are likely to look to Wilson Sonsini; smaller New York law firms are likely to look to Skadden Arps or Sullivan & Cromwell) or via common counter-parties (particularly accountants, investment bankers, or VCs). In any event, more geographically proximate law firms are more likely to think of one another as salient sources of public company boilerplate.

Coates continued that once established, economic concentrations on the client side would be nurtured by parallel, close-knit, networks of lawyers, who would have an interest in preserving similar forms and practices (at the expense of outsiders). The result, in Coates' sample, was a "silicon valley law firm effect." Other scholars have found similar differences in economically significant contract practices based on law-firm fixed effects (e.g. S. Choi, Gulati, & Posner, 2012; Jennejohn, 2018).

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clients who might later be interested in higher end business. Unfortunately, sometimes property managers "take" the lease from building to building as they move, or the client takes the lease to new properties without his notice. The result is that his leases, originally drafted to build a book of business for the law firm, have diffused through the residential market, particularly in buildings associated with richer landlords.

The consumer literature is less well developed, largely because there are fewer large-*n* datasets of consumer facing contracts. Florencia Marotta-Wurgler has shown that firms adjust the terms in their consumer contracts as they learn about their consumers (Marotta-Wurgler & Taylor, 2013). But, though terms may change over the long run, there is very little evidence that consumers react to those changes as they happen. Reading rates for mass contracts are too low to generate informed minority price responses to terms. Outside of a few very salient terms (warranty, interest rate and term in financial contracts), we are aware of no studies that find price effects for particular ordinary contract terms. (Zamir, 2014) [2]

### *C. Predictions*

Putting this work together leads to cross-cutting intuitions. The extant evidence on leases focuses on unenforceable terms, and finds that landlords use "worse" leases for the least powerful tenants. It also holds that there are few, if any variations between forms (rarely, in fact, mentioning the possibility of competition between lawyers). Finally, the evidence is blind to the effects of local geography. But these conclusions rely on very few observations.

Work on contracts-as-forms, by contrast, suggests that we should expect variation between forms to be driven in part by drafting costs, and that such costs might result in geographically based differences in form types. It also suggests that there will be little change in forms over time, and that unenforceable terms may persist, but the explanation may turn more on the costs of change rather than an intent to dominate. This strand of literature, in short, does not necessarily predict that weaker tenants will get worse leases.

## III. The Leases Dataset

### *A. Data*

We obtained our dataset of leases with the help of the non-profit Philadelphia Legal Assistance (PLA), an organization that provides free civil legal services to low-income Philadelphians, as a part of a broader project analyzing eviction proceedings that scraped the online docket of the Philadelphia Landlord-Tenant Court. Each landlord-tenant case contains a standardized complaint document along with a number of attached exhibits—in PDF format—containing any supplementary documents. From available dockets, PLA downloaded all such exhibits with titles that contained any mention of the term "lease." This yielded a total of 225,409 potential leases that accompanied evictions from 2005 to 2019.

[2] Studies of mortgage contracts (and credit-card agreements) do observe behavioral changes in response to changes in salient material terms (Bucks & Pence, 2008; Padi, 2018).

These PDFs, being images of scanned paper documents, are neither machine-readable nor searchable in their original form. With difficulty, we converted them to text.[3] After converting, we constructed a search via a number of fuzzy regular expressions—search patterns with some tolerance for mistakes or errors—to detect whether a document actually contained a lease and on which page the lease began.

Of the 225,409 docket entries, we identified 171,314 as residential leases for which data on the plaintiff and defendant were present, where we were able to detect the presence of a lease via OCR, and where we could extract an address from the docket entry.[4] We removed 602 leases which had missing data on rent. Overall, we have captured the vast majority of written leases underlying Philadelphia landlord-tenant disputes from 2005 to 2019.

In this sample of 170,712 residential leases, we searched for whether the dispute related to a public housing or subsidized unit. While leases involving public housing were directly identifiable by the presence of the Philadelphia Housing Authority (PHA) as the plaintiff, a substantial share of lease contracts with private landlords involved subsidies to the tenant administered through the HUD housing choice voucher program. Public housing and subsidized leases are subject to significant regulation in what contract terms are permitted, with both exculpatory clauses and waivers of notice of legal proceedings explicitly forbidden.[5] We search each of the leases for any mentions of "housing assistance" or "assistance payment," indicating that the lease is connected to a housing assistance payment contract between the tenant and the public housing authority. Of our 170,712 leases, we identified 17,859 as public housing leases where the PHA acts as the plaintiff and 16,192 subsidized leases, leaving 136,661 unsubsidized lease contracts.

From the docket entries themselves, PLA extracted a number of covariates related to the dispute and the property. Most important for us is the location of the property, which PLA geocoded from available address data. 164,728 leases were able to be geocoded to a unique latitude/longitude and located within a Philadelphia census tract. Of these, 132,382 are unsubsidized leases.

[3]To analyze the data in any reasonable timeframe, it was first necessary to convert the images into a machine-readable text format. We used the open-source Tesseract 4.0 Optical Character Recognition (OCR) engine to process the PDF images into text files. Often leases are scanned at poor resolutions, at difficult-to-read angles and with hand-written text and therefore the image conversions typically contain errors. Even in high-quality images, the OCR process does not necessarily detect paragraphs and segmentation in a reliable fashion, making it difficult to further segment the text into distinct provisions. Additionally, leases are often included with other documents such as any notices sent to the tenant or the landlord's rental license.

[4]Not all scraped documents actually contained a lease. This is likely because the PLA search was somewhat overly-broad and included entries such as "Notices of Lease Termination." Other failures to detect may be actual errors due to poor-quality OCR. Given the share of leases actually captured, we do not think this is a substantial issue.

[5]See 24 CFR § 886.327

Beyond property-level covariates, we obtain information on the name of the plaintiff (landlord), the outcome of the case (win, loss, or withdrawal/judgment by agreement) and in the case of a judgment, whether it is a default judgment, the amount of ongoing rent demanded (which is almost always equal to the monthly rent specified in the lease), and whether the tenant had legal representation.

We also collect, from a private firm, information about race, gender and voting history along with consumer data where available for 35,735 individual tenants in cases from 2014 to 2019.[6] We use this information to help to validate a name-matching technique to estimate the tenant's race in the leases.

Because individual landlords may own multiple properties through different LLCs, looking at patterns among leases with common plaintiffs will not accurately capture the extent to which landlords adopt different leases for different properties. Pursuant to an agreement with Pew Charitable Trust, we accessed a novel database of Philadelphia's landlords. As Pew described this data in a public report:[7]

> The Pew Charitable Trusts worked with Reinvestment Fund, a research and financial institution that seeks to create opportunities for the underserved through partnerships, to develop a first-of-its-kind portrait of Philadelphia's landlords. The effort involved analyzing administrative datasets from Philadelphia's Department of Licenses and Inspections, the Office of Property Assessment, and the Department of Records.
>
> Our research tells us that Philadelphia has approximately 55,000 landlords who own roughly 136,000 rental properties with 288,000 units. Although most of these landlords are small businesses, they don't own a majority of the city's units. Half are owned by relatively large property-owners.

We merge our lease data with the Pew dataset. Among the unsubsidized and geolocated leases in the sample, we were able to match about 80% (106,170) of entries to buildings for which Pew was able to identify common owners. While we have 33,694 unique plaintiffs in the matched data, this corresponds to only 16,261 unique landlords based on Pew's research. For each matched landlord, we access information about building size, type, and ownership location along with information on the landlord (e.g. total number of unique properties).

### *B. Unenforceable and Oppressive Terms*

Lease forms offer varied terms within a frame that at 30,000 feet is widely shared. Most lease forms are headlined by a title ("Pennsylvania Residential Lease", "[Building Name]

[6] For more information on that firm, see infra at note 21.

[7] (Haider, 2021).

Lease", "Plain Language Lease", etc.) They then will identify, in numbered paragraphs, the parties, the address, the nature and term of the occupancy, rent, security deposit, and the duties of the landlord and tenant. Many leases will further describe the condition of the property, while attempting to disclaim various rights the tenants might have in the default legal regime. Finally, most leases will describe the landlord's right to enter, retake occupancy, and the consequences of default. Leases are signed by both the landlord (or its management firm) and the tenant and dated. The typical lease in our dataset is a few pages long. Some are then buttressed by addenda providing for additional rules governing the tenants' behavior (such as the use of drugs on the premises, the sorts of pets that can be housed) or offering additional disclosures by the landlord (lead, etc.)

We begin our study of these forms by focusing on unenforceable and oppressive lease terms.[8] That disjunctive phrase is intentional. Some terms are unenforceable: in our view, a Pennsylvania court would be unlikely to enforce it against a properly preserved objection brought by a residential tenant facing eviction. In making that determination, we were confronted with a regional limitation in legal certainty. Though the field is nominally jointly governed by federal statutes and Pennsylvania's Landlord and Tenant Act of 1951, neither provides clear guidance about most provisions in modern leases. Caselaw about residential leases is sparse, leaving many provisions in a limbo, where analogies must be drawn from from decisions about commercial tenants, or more general principles of contract law. Appendix A describes the relevant doctrine in detail. As we note, some terms of of *unclear legality*: we have a view about their enforceability, but it's not strongly held.

Others terms are enforceable but tend to tilt power toward landlords. We call these *oppressive* terms, and identified them after speaking to advocates for tenants in Philadelphia.[9] They described oppressive terms as ones that affected bargaining in settlement negotiations, made eviction more likely or otherwise made shifted the rules toward the landlord in a material way. Multiple terms potentially fell in this category, including ones that required tenants to pay evicting landlords' attorneys fees, limited the circumstances under which security deposits could be returned if the tenancy was damaged, permitted eviction when the tenant's guests used drugs or committed crimes, and deprived the tenant of certain forms of notice prior to eviction. However, we did not ultimately identify each of these terms in our searches.

[8]Our first intuition was to compare lease similarity using existing supervised learning or other forms of matching tools. Because of the difficulty of parsing individual paragraphs in the leases and the prevalence of typographical errors from the transfer from PDF to text, that approach proved impracticable.

[9]The advocates we spoke to included attorneys at Community Legal Services of Philadelphia's housing unit, an attorney who works with Philadelphia Legal Assistance, a private civil rights law firm who has brought a cases against landlords for their practices, a clinician at the University of Pennsylvania who has litigated in the eviction court, and an attorney who regularly represents landlords in that court

Our strategy for identifying unenforceable or oppressive terms in leases relies on a series of searches using approximate (or "fuzzy") regular expressions. These are search patterns which we crafted to identify the key phrases that reflect the presence of a particular provision.[10] We use a number of different search expressions for each clause to reflect the slight differences in language and phrasing found. While we generally find relatively good performance in identifying the specific provisions we focus on, this classification method is imperfect and may not correctly classify some leases (such as cases where the language differs from what is typically used or the lease scan was incredibly poor quality).[11] We provide results validating the quality of our classifications in Appendix B using a sample of 800 hand-coded leases. As noted, there were a number of potential terms subject to search: we focus on those terms whose phrasing was relatively consistent across leases. That is, some terms—like fee shifting provisions—were simply too varied in the source data to capture well using our method.

The result is that we identified four terms of interest that our search technique reliably identified from the underlying leases, and which the relevant advocates suggested were of particular importance in the adjudication of eviction disputes.

1. Unenforceable terms

    - *Exculpatory clauses,* which disclaim liability for negligence.
    - *As-Is clauses,* which purport to waive the implied warranty of habitability.

2. Terms of Unclear Legality

    - *Holdover tenant penalty clauses,* which state that tenants who do not leave after the expiration of the lease term owe an increased sum, typically a multiple of the rent. Pennsylvania law about the enforceability of these provisions in residential leases is simply absent, particularly in their most common form, which sets damages at three times the monthly rent.

3. Oppressive Terms

    - *Waivers of notice,* which permit the landlord to begin an eviction proceeding before the 15-30 day notice period required by the Landlord-Tenant Act.

[10] Specifically, we use the implementation found in the `regex` package in Python 3.

[11] We do not believe that these errors are systematically associated with any fundamental characteristics of the underlying lease and eviction proceeding, but note that our approach will tend to be more likely to fail to classify a lease with a particular provision (false negative) than yield a classification where there is no such provision (false positive).

# IV. RESULTS

## A. *Summary Statistics*

Our geocoded sample consists of 164,728 total lease documents with 132,382 of these leases identified as unsubsidized and private. Based on the names of plaintiffs extracted from the landlord-tenant complaints, we start with 42,666 unique plaintiffs, 33 of which appear in a case involving at least one unsubsidized lease. As we described above, only some of these unique plaintiffs are distinct landlords, since many landlords own multiple properties through distinctly named LLCs. The modal number of times a unique plaintiff appears in the data is 1, so the share of repeat plaintiffs is quite small. But the distribution is extremely right-skewed. Within the subset of our sample where we identify the ultimate owner, we find that the largest landlord in the data has 508 unique addresses and 2,474 unique leases in our data and, according to Pew, a total of 3,846 owned properties. Just 10 unique landlords account for about 13 percent of the leases that appear in our sample.[12]

Figure 1: Summary of lease term prevalence in sample (all geocoded leases)

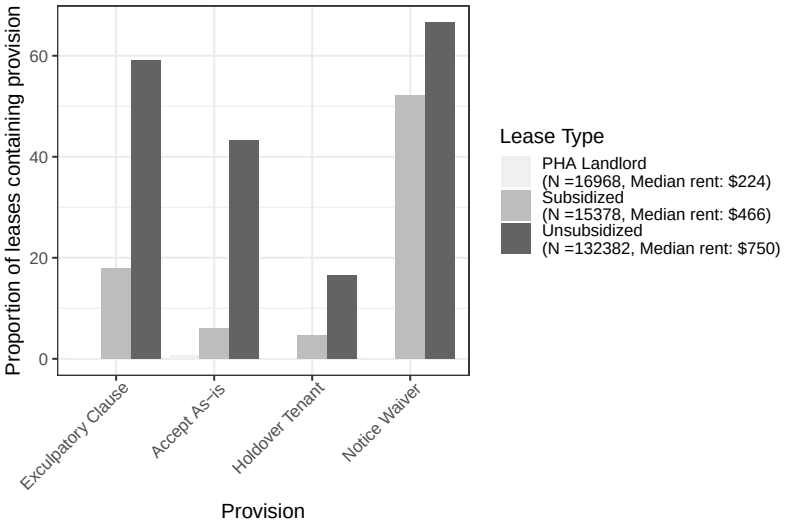


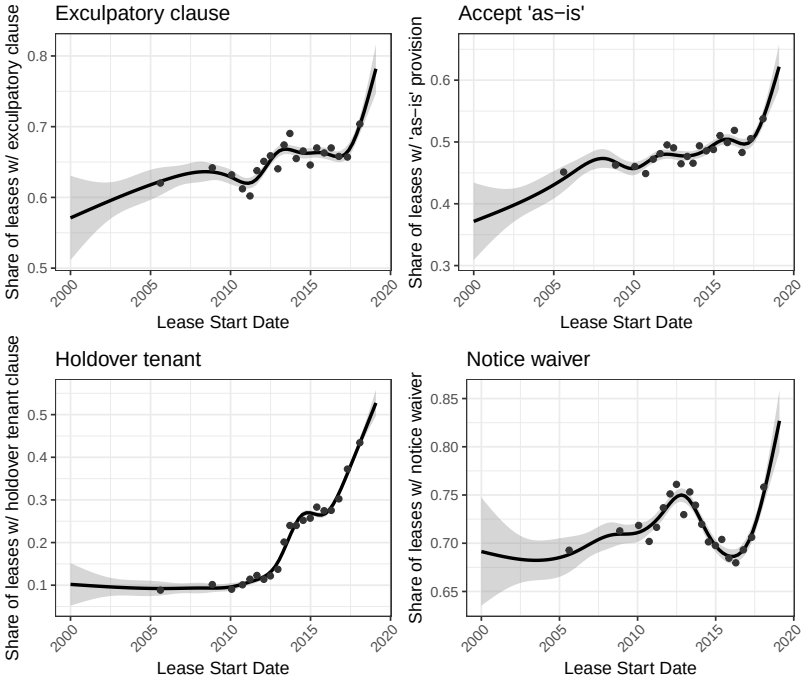

Figure 1 summarizes the overall frequency of each of the four provisions within the three classes of leases we identified. It also indicates the total number and median ongoing rent for each category as listed in the complaint.[13] Among the unsubsidized leases,

[12] In general, we find that average landlord size – as measured by number of properties found by Pew – is roughly constant across leases in our sample from 2010 to 2019, with a somewhat larger average size among those leases sampled from around 2000-2005.

[13] Since rent is often handwritten into a lease template, it is not possible for us to systematically extract monthly rent from the machine-readable text as it is rarely OCRed without error. As such, the information

the prevalence of exculpatory clauses is quite high: about 60 percent. A slightly larger share (67%) contain an explicit waiver of notice or a reduction in notice terms. Holdover tenant clauses are comparatively rarer and likely a newer phenomenon, with only 17% of unsubsidized leases containing this provision. "As-is" clauses are less common than either exculpatory clauses or waivers of notice, but more frequent than holdover tenant provisions. As expected, the Philadelphia Housing Authority leases do not contain any unenforceable terms.[14] These provisions also tend to co-occur. Of the unsubsidized leases in our sample, 18% have one of the provisions, 22% have two, 30% have three and 8% have all four.

Figure 2: Prevalence of lease provisions by lease start date




NOTES: N = 88,871 leases with observed start date post-2000. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages plotted at the median year of each bin.

from the landlord-tenant complaint on the amount of "ongoing rent" demanded by the plaintiff provides us with the closest approximation. Landlords have incentives to inflate this figure.

[14]We find a tiny fraction of matches to our search queries among the PHA leases which are likely false positives due to chance error in the OCR transfer. While we find a larger number of exculpatory clauses among the subsidized leases, this is not necessarily an indicator of a high false positive rate as it is not uncommon for a HUD-approved subsidized lease agreement to be accompanied by a standard lease template that may contain unenforceable provisions – both of which are signed by the landlord and tenant.

Eviction leases have tended to contain more unenforceable and oppressive terms over time. Figure 2 plots the estimated proportion of leases with each of the four provisions over time.[15] We use the lease start date listed in the docket and focus on leases starting from 2000 onwards as the sample size of leases that are listed as beginning prior to this year becomes very small. Lease date data is missing for many docket entries and due to typographical errors and some leases are listed with nonsensical start dates. We are able to prune nearly all of these incorrect start dates by excluding leases that list a start date after the date of the filing of the dispute. This leaves us with a total of 88,871 unsubsidized leases post-2000 for which we know the start date and which we are also able to geolocate. 72,060 of these leases could also be matched to a landlord in the Pew dataset. For some clauses, the growth is stark: holdover tenant clauses were essentially unknown in 2000, but after a dramatic shift in 2010, they now are in most leases.

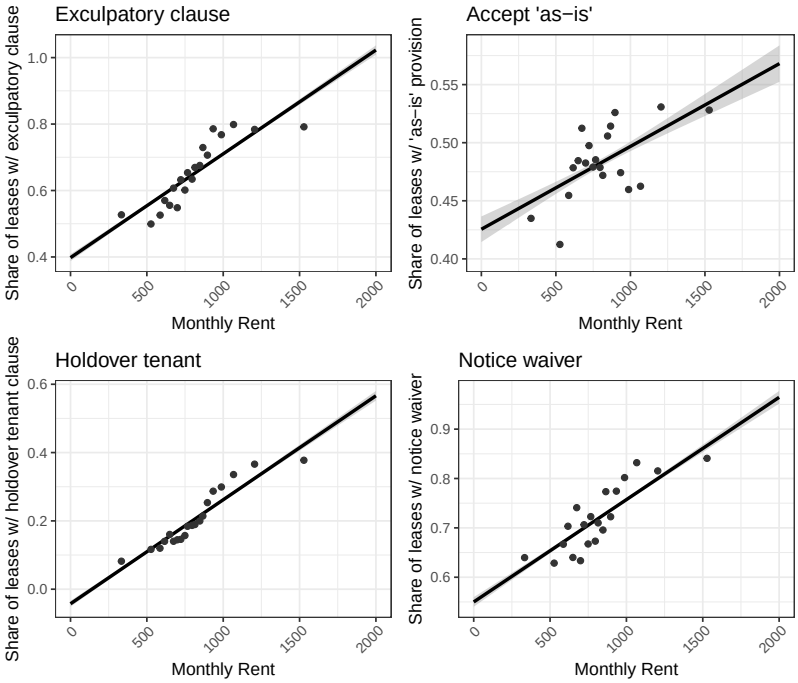
Next, we examine the correlation between the monthly rent listed in the lease and the presence of these provisions among the unsubsidized leases.[16] Figure 3 plots the relationship between monthly rent and the prevalence of each type of provision via linear regression models. Focusing specifically on the range of monthly rents between $500 and $1500, which covers about 90 percent of the observations in the data, there is a clear, positive linear trend in the prevalence of each of these four provisions. The magnitudes are quite sizeable – the difference in the probability that a lease will contain a notice waiver between a lease priced at $1,500 monthly versus one priced at $500 monthly is about 30 percentage points. Notably these relationships persist even when adjusting for lease start year fixed effects to account for the fact that rents are generally rising over time.

These are striking patterns. Contrary to previous research, unenforceable and oppressive terms appear to be *positively* correlated with wealth, at least as measured by ongoing rent obligations in eviction leases. But is this relationship primarily driven by differences in the location of the properties, or is there something about the individual characteristics of the tenants or their landlords that predicts whether a lease will contain one of these terms? The next section examines the spatial distribution and the extent to which neighborhood characteristics predict term prevalence.

[15] For regressions involving year, we estimate generalized additive models using cubic splines of the start date variable as we expect likely non-linearity in the underlying time trends and do not wish to impose significant structural assumptions on the regression model. We also include a binned scatterplot that computes average outcome values among a number of equally sized bins. The range of the x-axes encompass the full range of start dates in the dataset.

[16] We focus on those leases with monthly rents listed as greater than 0 and less than or equal to 2000 dollars per month, which accounts for over 98% of leases in the dataset. Some of the very extreme values (>$10,000 per month) are likely typographical errors, while others may be mis-classified commercial properties. Overall, pruning the data to these units this leaves us with 129,130 unsubsidized, geolocated leases. 86,837 have a known start date after 2000.

Figure 3: Prevalence of lease provisions by monthly rent



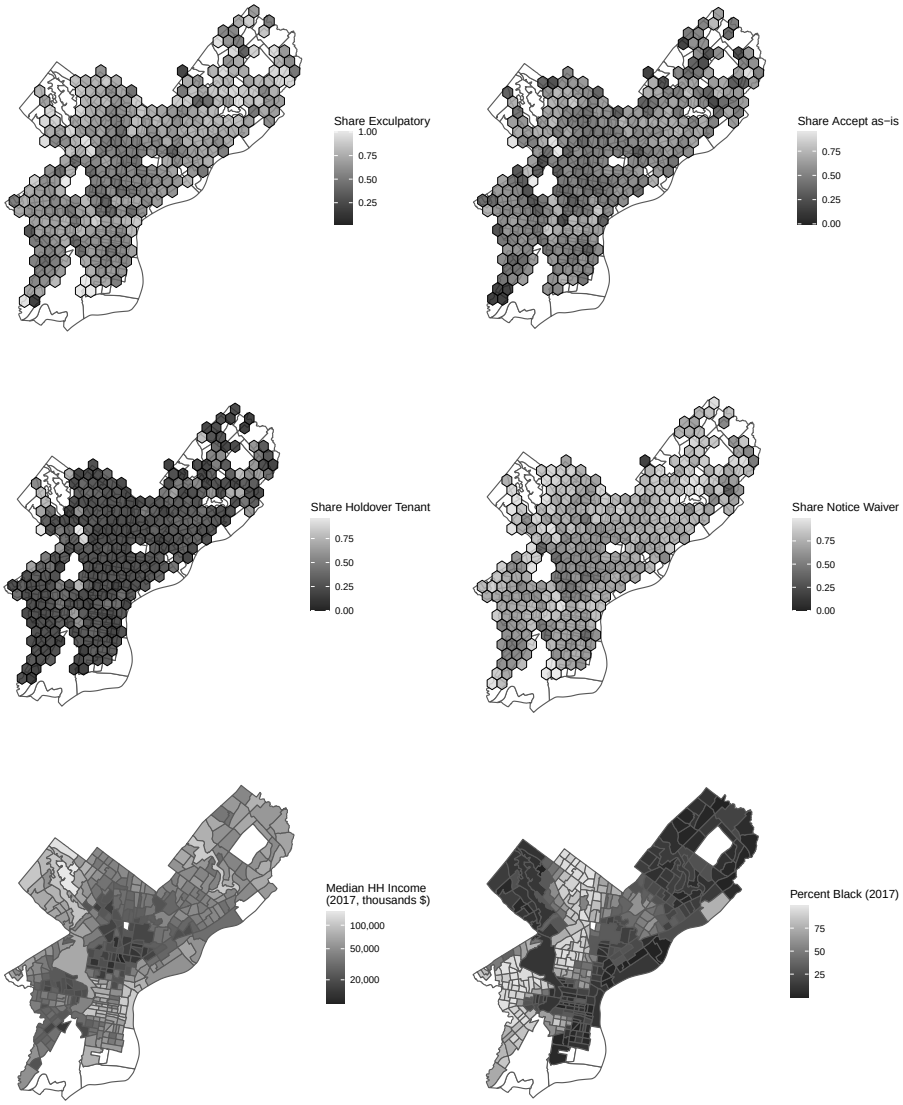

NOTES: N = 86,837 leases with observed start date post-2000 with monthly rent ¡ $2,000 per month. Estimates denote predicted probabilities from a linear regression. Points denote binned averages plotted at the median rent of each bin.

### *B. Geographic Covariates*

Given that lease terms are rarely the subject of direct negotiation between the landlord and tenant, and landlords typically use standardized form contracts, we expect that a significant amount of the variation in term prevalence will be driven by neighborhood-level characteristics. Over the 16,261 landlords we identify, around 51% (8,298) appear in two or more than two unsubsidized leases in our dataset. Only 24% of identified landlords have properties across two or more census tracts and a mere 4% have properties across five or more tracts. That means that landlords, by specializing in a particular geography effectively specialize by tenant type as tenants cluster by wealth, class, race and ethnicity.

Philadelphia exhibits significant variation across neighborhood in wealth and income level and is likewise highly segregated across racial lines. We obtain from the American Community Survey 5-year data estimates of median income and racial composition in

Figure 4: Geographic distribution of lease provisions in Philadelphia, Median Income, and Race




NOTES: Unsubsidized, geocoded leases with non-missing start date after 2000 (N = 88,871). Hexes are approximately 1 square kilometer in area. The bottom two figures are (left) median household income reported in 2013-2017 inflation-adjusted dollars (ACS 5-year table S1901) and (right) the share of residents reporting their race as one race and Black or African American (ACS 5-year table DP05). Tracts with missing data in white.

2013-2017 at the level of the census tract.[17] This period covers the signing dates of most of the leases that we have in our dataset. Both of these are highly correlated with one another, with poorer tracts tending to also have a larger proportion of Black residents. In general, the wealthiest and whitest areas of the city are located near the downtown area, and the northwest. In contrast, poorer tracts are found primarily in the north and west of the city.

Simply plotting the prevalence of each of the provisions among our sample of unsubsidized leases strongly suggests regional effects. Figure 4 overlays on top of a map of Philadelphia, a series of one-square-kilometer sized hexes. Within each hex, we calculate the proportion of geocoded leases that contain each of our four unenforceable lease provisions. Exculpatory clauses, notice waivers, holdover tenant clauses and accept as-is terms tending to be more common in the northeast, northwest and downtown regions and generally less common in north and west Philadelphia.

To better visualize the relationship between local conditions and unenforceable and oppressive provisions, we regress the proportion of each lease provision among leases geolocated to a census tract on 2013-2017 median household income and on percent Black residents. Figure 5 shows that the relationship between census tract log median income is roughly linear and positive. In regions of the city with greater income levels, the proportion of leases in our sample that contain one of the unenforceable provisions is notably higher than in those regions with comparatively poorer residents. Figure 6 recovers an analogous negative association with the proportion of Black residents in the census tract.[18] While there is a substantial amount of noise in how prevalent a given contract provision is in a region, all of the provisions we consider are more prevalent in leases in wealthier and demographically whiter areas of Philadelphia. Given the problem of ecological inference, this result should not be interpreted as an effect of individual tenant race or income. However, these patterns do suggest likely clustering of lease templates favorable to landlords in particular regions of the city associated with more well-resourced landlords.

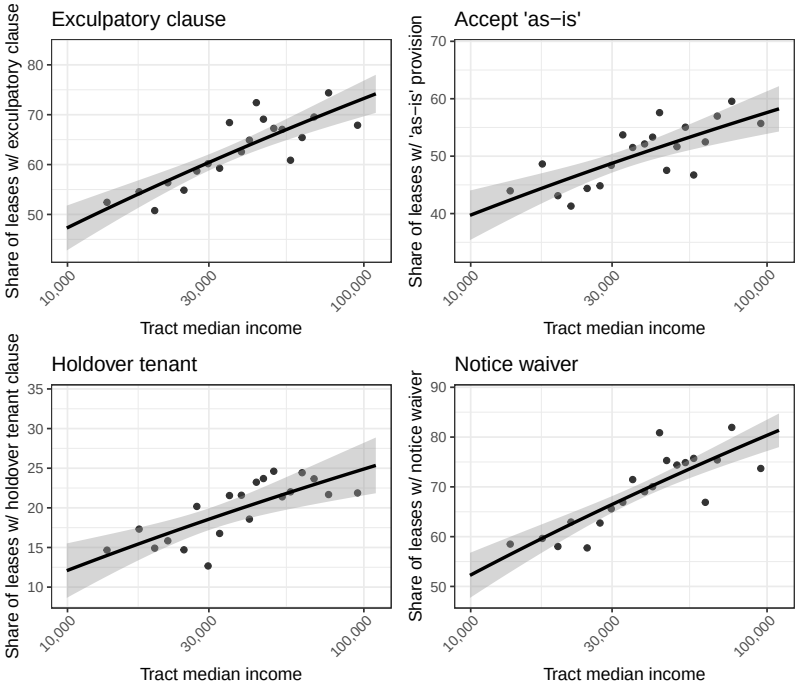
### *C. Templating and Within-Landlord Variation*

Do landlords vary whether they include certain clauses for different tenants? Examining the share of leases that contain each of the four provisions among frequent filing

[17] While we selected this particular period of the ACS, our results are not sensitive to the choice of when to measure either racial composition or median income as these variables change very minimally in Philadelphia over the course of the time period being analyzed. The correlations between the 2017 5-year estimates and the 2010 5-year estimates are .85 for median income and .96 for % white.

[18] To the extent that the two covariates are highly correlated with one another, it makes it difficult if not impossible to meaningfully disentangle whether it is race or income that is *causally* responsible. Moreover, the question of whether one or the other is the "true" driving factor is poorly defined as the two are highly interrelated within a geographically segregated city like Philadelphia.

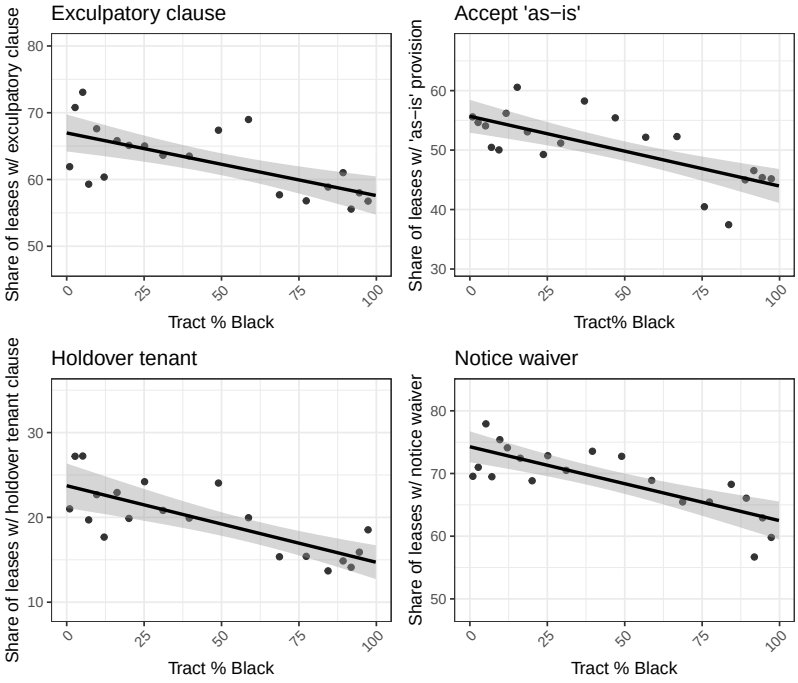
Figure 5: Regression of share of lease with each provision in a census tract on logged median income




NOTES: N = 363 census tracts with 10 or more sampled leases. 88,800 total leases. Grey bands denote 95% HC2 robust confidence intervals. Median household income reported in 2013-2017 inflation-adjusted dollars (ACS 5-year table S1901). Points denote binned averages (20 equally-spaced bins). All regression slope coefficients statistically significant at $p < .05$.

landlords suggests that they rarely do. Because landlords may alter their leases over time, we focus on a relatively narrow time window (2015-2019) to analyze the within-landlord distribution of lease provisions. Figure 7 plots histograms of the proportion of leases within each Pew-identified landlord that contain one of the terms. We see clear bi-modal distributions with spikes at 0 and 1, especially for exculpatory clauses and notice waivers (with some noise expected due to our imperfect searches). For most of Philadelphia's landlords, the inclusion or exclusion of a particular provision is an all-or-nothing question. We find minimal evidence that there is any specific tailoring of leases to different tenants with respect to these clauses. Simple linear regression models with landlord and year-of-lease fixed effects alone can explain between 57% and 62% of the variation in clause presence among leases signed after 2000 (depending on the particular clause). Therefore the interesting variation in our data is not *within* landlords, but between them.

Figure 6: Regression of share of lease with each provision in a census tract on % Black residents

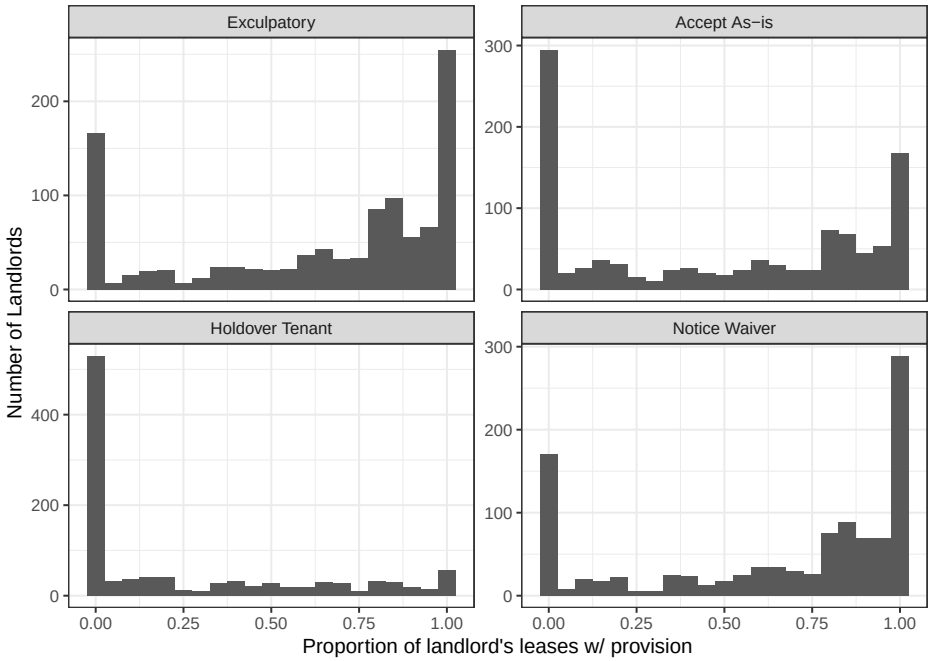



NOTES: N = 363 census tracts with 10 or more sampled leases. 88,800 total leases. Grey bands denote 95% HC2 robust confidence intervals. Percent Black is the share of residents reporting their race as one race and Black or African American (2013-2017 ACS 5-year table DP05). Points denote binned averages (20 equally-spaced bins). All regression slope coefficients statistically significant at $p < .05$.

Nevertheless, we still find some variation in the prevalence of each provision within landlords that can be explained by our covariates. Most notably, we find that exculpatory clauses and notice waivers are still more likely to appear in leases with higher rents, even after adjusting for landlord fixed-effects, lease date, and building characteristics though the magnitudes are significantly smaller compared to the differences that we observe between landlords. As shown in Table 1, we estimate that for each additional $1000 in rent, the probability that a lease will contain an exculpatory clause or a notice waiver rises by about 3 percentage points. Moreover, insofar as there exists within-landlord variation, we are confident that this is being driven by landlord choices across properties rather than differences in units within buildings. Including building fixed effects eliminates all four of these relationships.

As part of our validation exercise for our classification method (Appendix B), we hand-coded a random selection of about 800 leases and found that many different landlords

Figure 7: Prevalence of lease provisions within landlords (landlords w/ 5+ leases, leases from 2015-2019)




NOTES: N = 1,066 landlords, 28,484 leases.

Table 1: Landlord fixed effects regressions of lease provisions on monthly rent

| | *Dependent variable:* | | | |
|---|---|---|---|---|
| | Exculpatory Clause | Notice Waiver | Holdover Tenant | Accept As-is |
| Monthly Rent ($1000s) | 0.030*** | 0.026*** | 0.013 | 0.025* |
| | (0.012) | (0.010) | (0.010) | (0.014) |
| Leases | 72,065 | 72,065 | 72,065 | 72,065 |
| Buildings | 27,111 | 27,111 | 27,111 | 27,111 |
| Landlords | 12,778 | 12,778 | 12,778 | 12,778 |

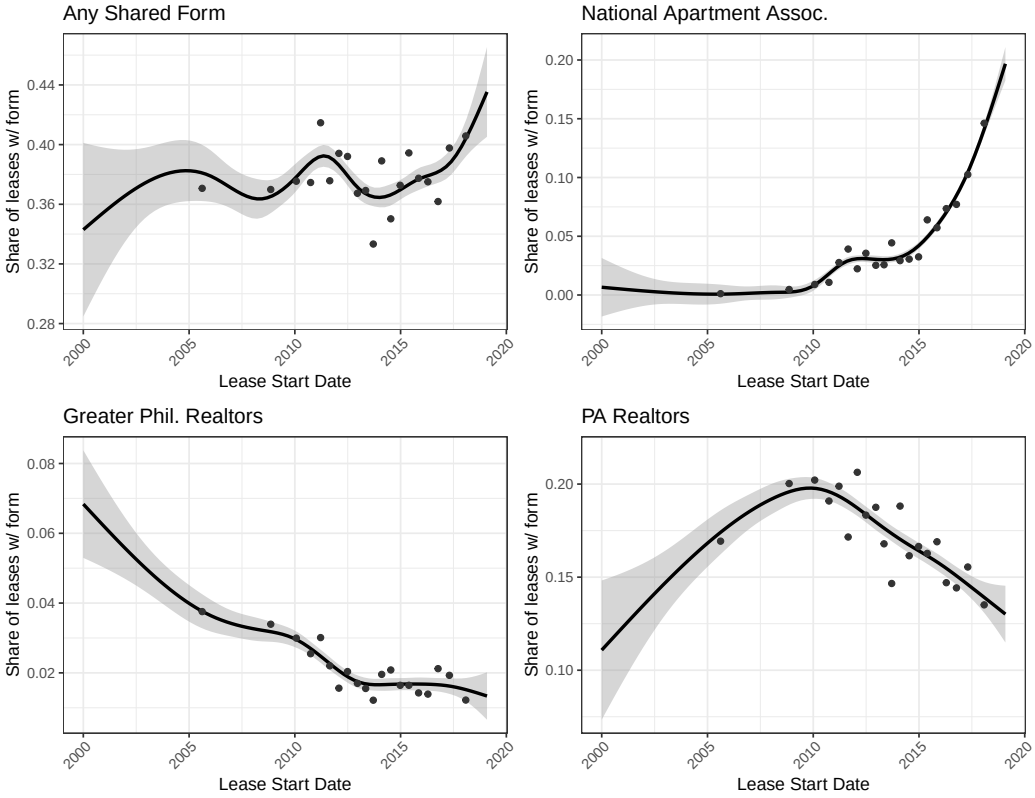
*p<0.1; **p<0.05; ***p<0.01

NOTES: N = 72,065 leases, 27,111 buildings. 12,778 landlords. Leases from 2000 to 2019. OLS regressions adjust for landlord and lease start year fixed effects (all omitted from the table for space). Cluster-robust standard errors clustered on landlord in parentheses.

used the same widespread *shared lease*. Many of these shared leases are made available to landlords via online services that allow easy access to forms tailored to states. Using that hand-coding as the basis for text searches of the larger dataset, we found several

dominant shared leases: the Philadelphia Association of Realtors Lease (approximately 16% of all leases in our dataset), the National Apartment Association Lease, the Landlord Association of Pennsylvania Lease, a "plain language" lease approved by the Pennsylvania Office of the Attorney General, the Greater Philadelphia Association of Realtors Lease, the Pennsylvania Apartment Association Lease, and a handful of internet leases that were sourced from a number of websites such as ezLandlordForms.com or ZipLogix.[19]

Figure 8: Prevalence of shared leases over time



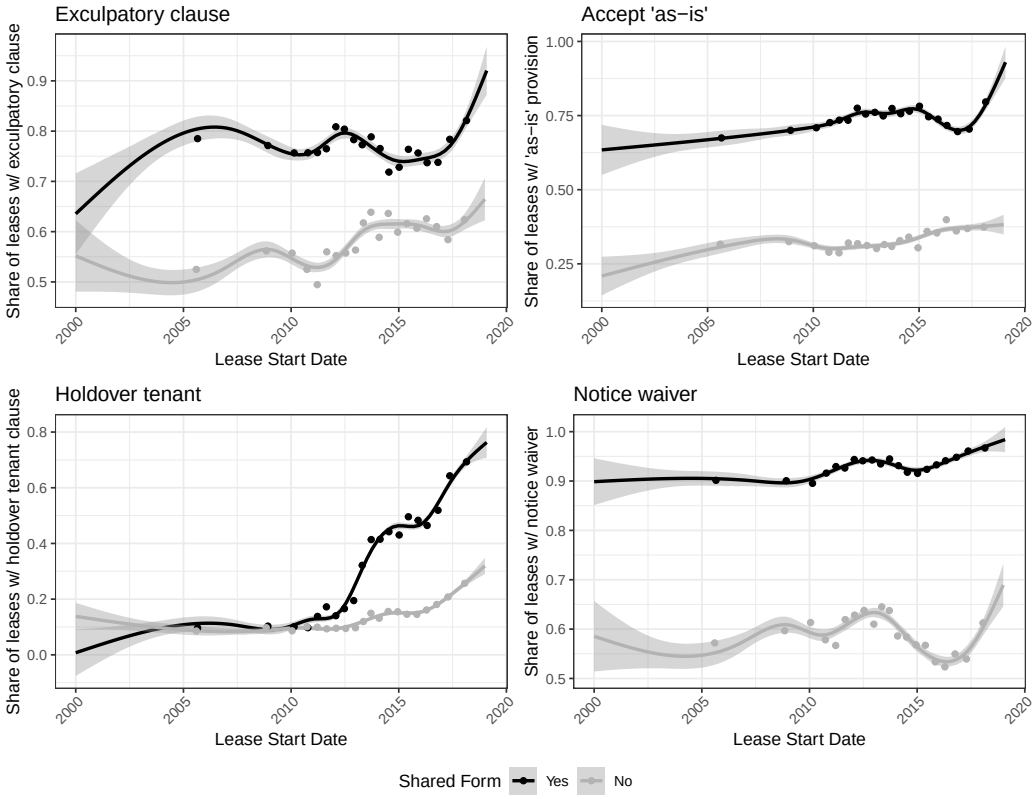

*Notes:* N = 88,871 leases with observed start date and geolocation post-2000. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages (20 intervals).

We coded each contract as being a *shared lease* if they matched one of these organization-sponsored leases or if they are listed as coming from a website that provides landlord forms. About 35% of leases in our dataset use one of these shared leases. This is an

[19]Many of the forms obtained via online websites are also templates from one of these. For example, ZipLogix is often used to generate the Philadelphia Association of Realtors template. The role of non-profits and associations in generating forms is explored in (Davis, 2007)

under-estimate of the total number of shared leases as some landlords may use identical (or largely identical) text from an existing lease while omitting relevant identifiers. In particular, we are very likely under-counting web forms as the printed leases will often omit the source of the document when it appears only in a document header or footer. Additionally, property management companies develop their own in-house leases which often have the same or greater level of legal sophistication as the more popular shared leases. What we are coding as *shared leases* are simply those that are common across many landlords and identifiable by us. While essentially all leases are patterned off of models, inspecting a sample of the non-form leases in our dataset suggests that these are rather idiosyncratic – a combination of very simple leases and very long custom templates specific to a particular property manager. Going forward, we'll call contracts that aren't widely shared across landlords *proprietary leases.*

Figure 9: Prevalence of lease provisions by lease start date – Shared Leases vs. Proprietary Leases




NOTES: N = 88,871 leases with observed start date post-2000. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages.

The prevalence of shared leases increased with time. Figure 8 plots the estimated share of shared leases from 2000 to 2019. Their prevalence rises from about 34% in 2000 to over 43% in 2019. Additionally, the changes in *specific* shared leases have been more dramatic. For example, the National Apartment Association Lease is non-existent pre-2010 but rises to nearly 20% of the sample in 2019. Conversely, the Greater Philadelphia Realtors Lease has declined in popularity – dropping from about 6% of the sample in 2000 to essentially 0 in 2019. The PA Realtors Lease – one of the most popular templates, accounting for about 45% of our shared leases leases – rises in relative popularity from 2000 to 2010 but declines afterwards.

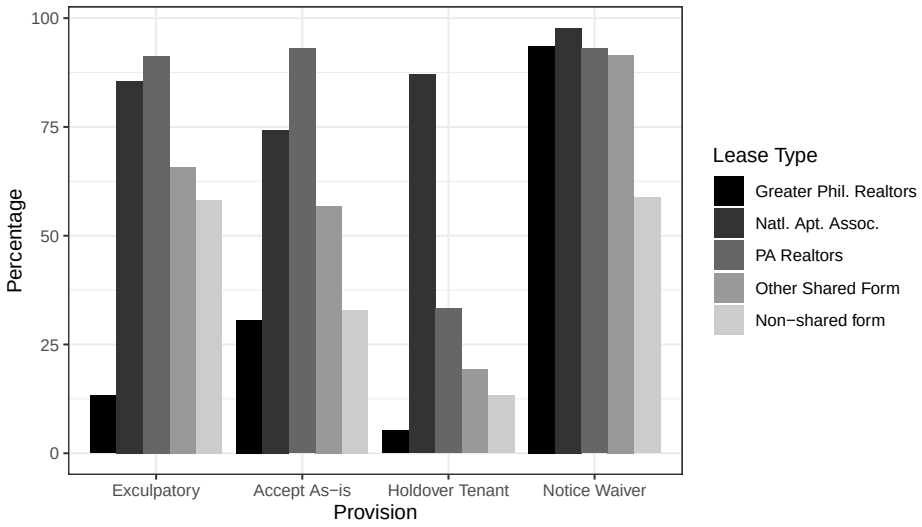
The spread of shared leases has important consequences for unenforceable and oppressive provisions. Figure 9 plots the trend in the prevalence of each of our four provisions and compares shared to proprietary leases. First note the clear intercept shift — shared leases are much more likely to contain each of the four terms. Second, this gap appears relatively stable over time.[20] Third, we see some growth over time in the unenforceable and oppressive provisions even among the proprietary leases, suggesting that there may be some convergence over time. This relationship is clearest when looking at the holdover tenant clause, which experiences a sharp increase in prevalence after 2010 that is driven almost by changes within shared leases: it was included in the 2013 edition of the Pennsylvania Association of Realtors Residential Lease. However, we see that the prevalence of this term grows even among the proprietary leases after 2010 as some landlords begin using proprietary leases containing this clause.

Furthermore, we find that the lease forms that are *growing* in popularity over time have worse provisions than those that are declining – that is, the composition of popular forms is changing in a way that is increasing the prevalence of our unenforceable terms. Figure 10 plots the share of leases with each of our four provisions among leases matching the Pennsylvania Association of Realtors (PAR) template, the National Apartment Association (NAA) template, and the Greater Philadelphia Association of Realtors (GPAR) template – three templates with different trajectories over time. In general, the forms that are growing their share of leases over time are worse for tenants than those in decline, which may explain some of the undulation in the time trends we see in Figure 9 as different templates wax and wane in popularity. It also may explain why the time trends in our four provisions are much more pronounced compared to the trend in templating. Not only are shared leases replacing proprietary leases, which tend to be shorter and more informal, but more pro-landlord templates are replacing less pro-landlord ones.

With shared lease networks explaining a significant chunk of why some leases contain these terms and others do not, do they exhibit similar clustering in space? Figure 11 plots the prevalence of shared leases in different parts of the city, along with specific sub-

[20] With one notable exception in the holdover tenant clause, which is almost entirely absent from all forms prior to 2010.

Figure 10: Share of leases containing each provision among those classified with particular templates

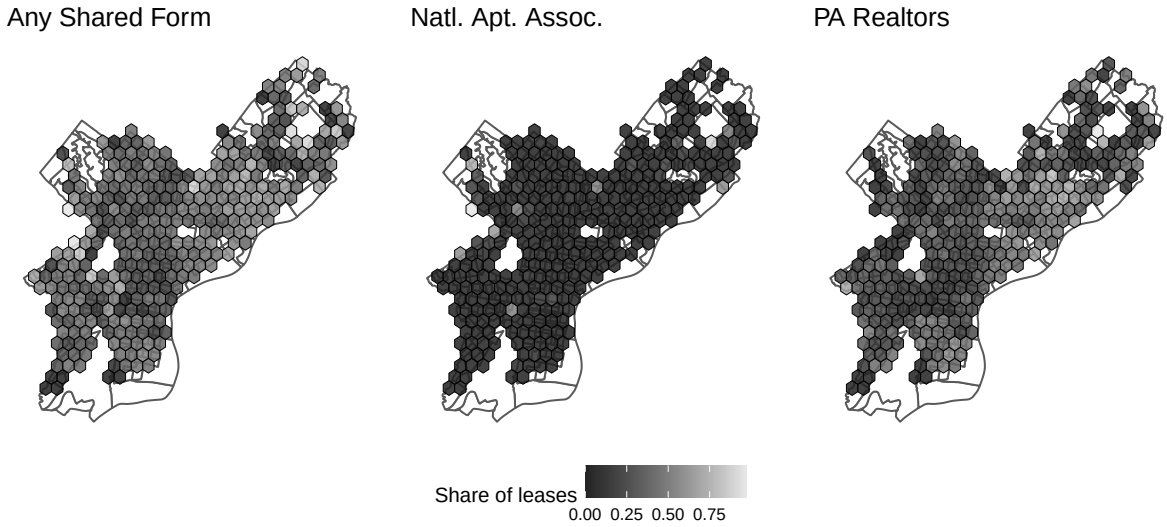



NOTES: N = 88,871 unsubsidized leases with observed start date post-2000.

plots for two prominent types: the Pennsylvania Association of Realtors template and the National Apartment Association template. In general, we find heavier prevalence of shared leases in the downtown area and in the north-east. We find the National Apartment Association template concentrated in a few notable points in the city and nearly entirely absent elsewhere, likely reflecting use by large apartment complexes. The PA Association of Realtors template is much more diffuse as it is more widely available to smaller multi-family and single-family housing but we still see clear areas of the city where it is much more common than others.

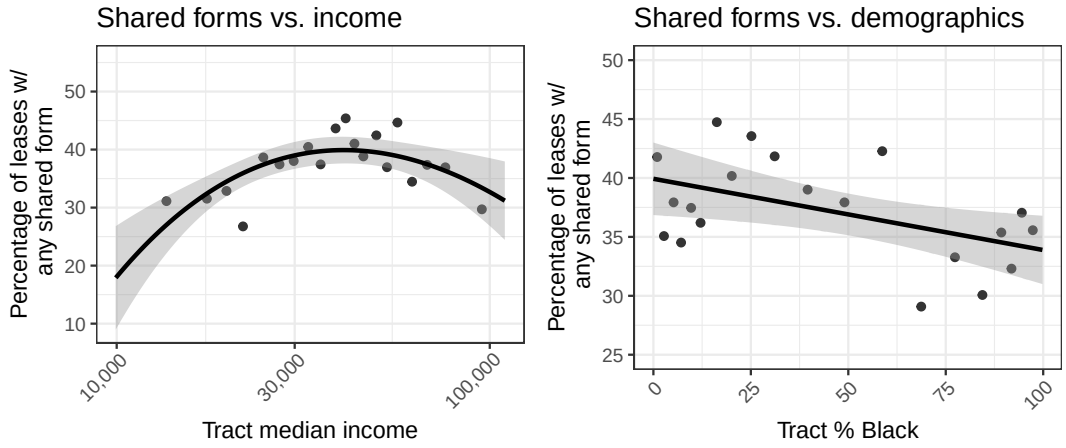
This clustering is associated with regional income and demographic characteristics. Figure 12 plots the regressions of the proportion of shared leases in each census tract on logged median income and % Black residents. We find one notable deviation from the patterns seen for the prevalence of unenforceable terms – tract income predicts more forms only up to a certain point. A quadratic polynomial fits the observed data much better than a linear model. Shared leases are most common in tracts where median incomes are in the $50,000 range but their usage drops off in the most wealthy census tracts (which are comparable to the poorest in our dataset). We hypothesize that the use of custom templates among property management companies may account for this pattern – these leases are often extremely dense and are developed by lawyers hired by the company but may not match any of the commonly used form templates. Unfortunately because such leases lack any common identifiers, evaluating our hypothesis systematically would be difficult.

Figure 11: Geographic distribution of shared leases in Philadelphia



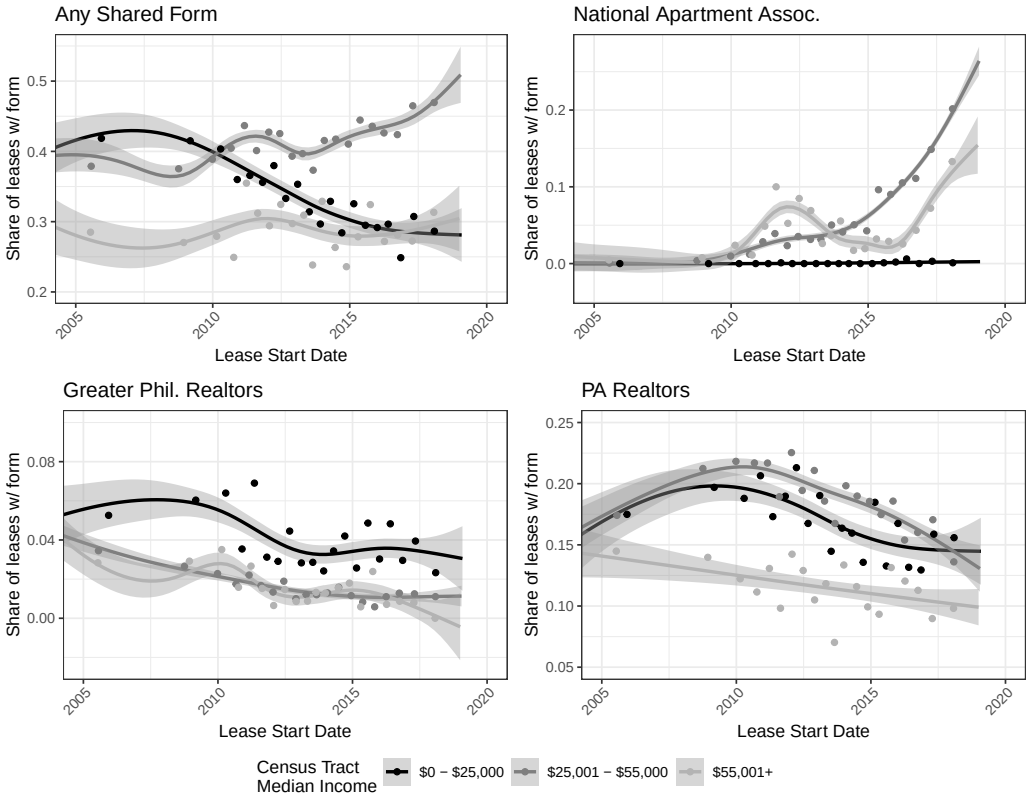

NOTES: Unsubsidized, geocoded leases with non-missing start date after 2000 (N = 88,871). Hexes are approximately 1 square kilometer in area.

Figure 12: Regression of share of leases containing shared forms in a census tract on logged median income and race (2017)




NOTES: N = 363 census tracts with 10 or more sampled leases. 88,800 total leases. Grey bands denote 95% HC2 robust confidence intervals. Median household income reported in 2017 inflation-adjusted dollars (ACS 5-year table S1901). Percent Black is the share of residents reporting their race as one race and Black or African American (2017 ACS 5-year table DP05). Points denote binned averages (20 equally-spaced bins). All regression slope coefficients statistically significant at $p < .05$.

Figure 13: Prevalence of shared leases over time by census tract median income

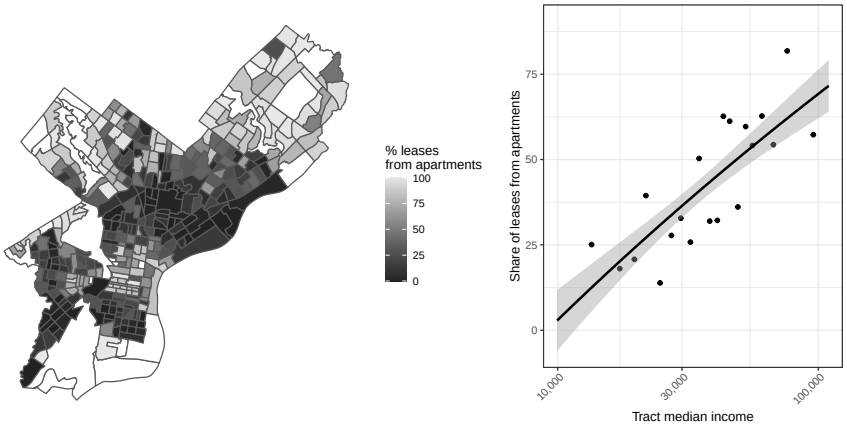



NOTES: N = 88,617 leases with observed start date and geolocation post-2000 in census tracts with observed median income. Estimates denote predicted probabilities from a cubic smoothing spline.

What we do find, however, is that the growth of shared leases seems predominantly concentrated in census tracts with median incomes in roughly the 25th-75th percentile of all tracts. Figure 13 plots the time trend in the incidence of shared leases conditional on the census tract income bracket. Leases from census tracts in the middle of the distribution (56,185 leases from 191 tracts with median incomes between $25,000 and $55,000) are the ones with a clear growth over time in the proportion of shared leases being used. One thing that we find in the richer census tracts is relative stability in the overall share of shared leases but clear trends in *specific* types of forms – for example, a decline in the PA Realtors template coupled with a sharp growth in the National Apartment Association template. This to us is suggestive of *substitution* in form type towards templates more favorable to landlords among those landlords using forms and may further explain the high prevalence of the unenforceable provisions in richer vs. poorer census tracts despite comparable levels of form usage.

### *D. Building Types and Within-Tract Variation*

Figure 14: Prevalence of leases from apartments by geography and income

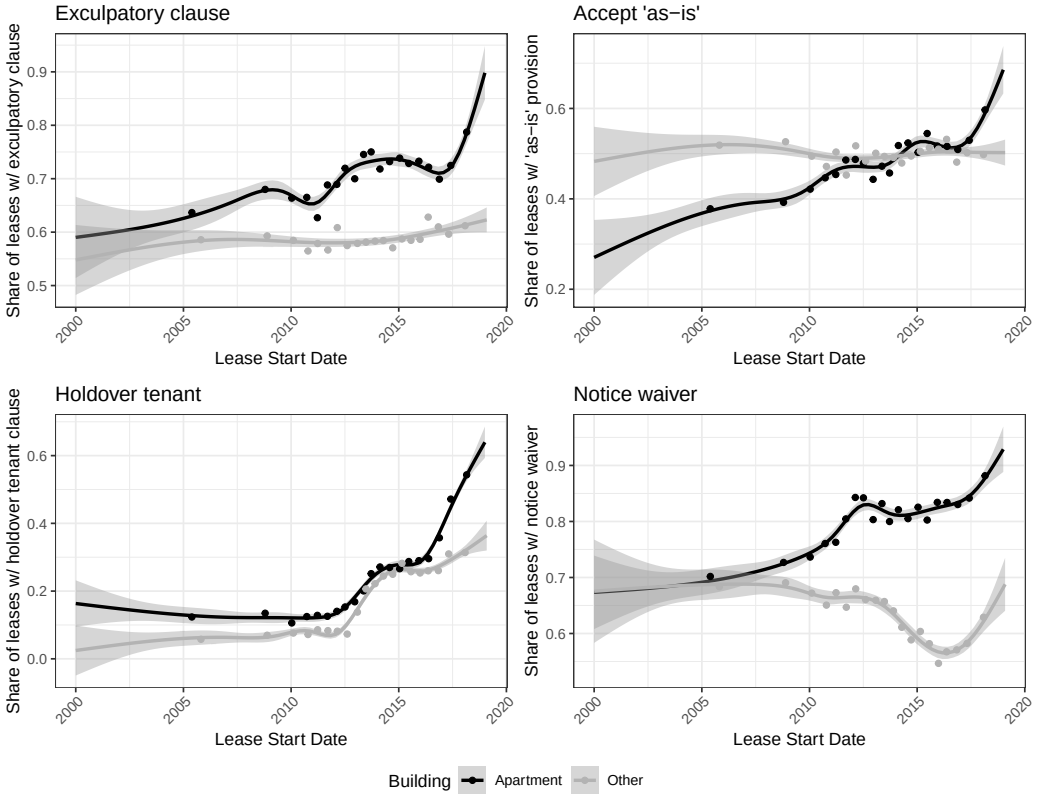



*Notes:* N = 358 census tracts with 10 or more sampled leases matched to landlords. 71,989 total leases Grey bands denote 95% HC2 robust confidence intervals. Median household income reported in 2013-2017 inflation-adjusted dollars (ACS 5-year table S1901).

Beyond geography and form selection, what else explains variation between different landlords in the relative adoption of unenforceable terms? One prominent difference is in the types of *buildings* that a particular landlord owns. Using the Pew data, we obtained information on the characteristics of the buildings associated with each lease. Rental properties were classed as either apartment buildings or as row houses, with a handful of detached and semi-detached homes and a number of single-family conversions. Notably, we found that the prevalence of apartments varies significantly with geography. As Figure 14 shows, the highest-income regions of the city are also the ones where most of the leases are from apartment buildings. By contrast, lower-income regions tend to be comprised mostly of row houses.

We find substantial differences between apartment buildings and other properties both in terms of the prevalence of these unenforceable terms and in the use of shared forms over time. Figure 15 shows that while apartments and other properties may have been comparable in their usage of exculpatory clauses or notice waivers at the start of our period of analysis, the trends diverge substantially over time, with nearly every apartment building lease in our sample dated to 2018-2019 containing both provisions. While both apartment and non-apartment leases see an increase in the presence of holdover tenant clauses, the trend is stronger for the apartments. Interestingly, as-is clauses remain rare among apartments but grow over time while the trends again remain flat for non-apartment properties. Figure 16 provides an explanation for this divergent trend. Apartment buildings appear

Figure 15: Prevalence of lease provisions by lease start date – Apartments vs. Non-apartments

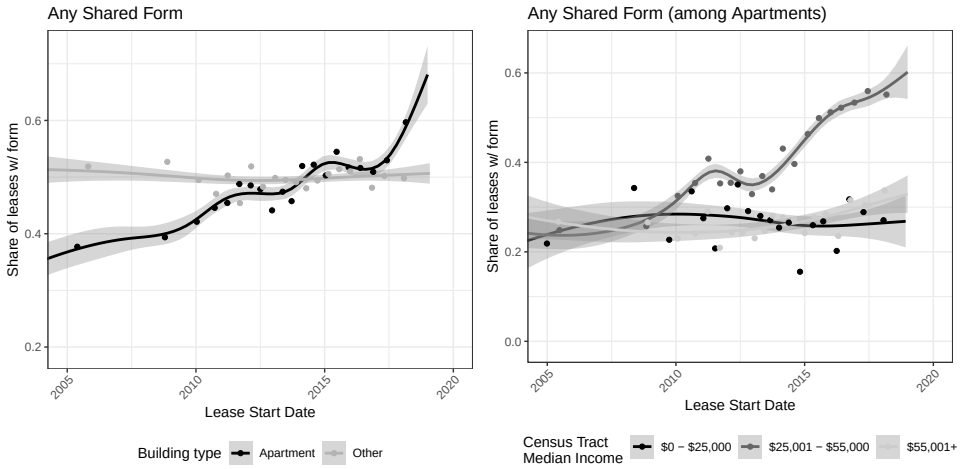



*Notes:* N = 72,060 leases with observed start date post-2000 matched to Pew landlord data. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages.

to be predominantly responsible for the surge in shared lease form adoption. Conversely, trends in the use of shared templates remained flat in non-apartment properties. It is worth noting that this lack of a trend in the non-apartment group likely masks changes in the *types* of templates being adopted which will vary in the types of provisions they contain. More crucially, this trend differs substantially by region of the city – the adoption of shared forms by apartments is almost exclusively a trend among apartments in *middle-income* areas of the city.

Significantly, we find that the differences in the content of the types of leases selected by landlords of apartments relative to other types of properties result in differences in lease content across racial groups. As we illustrated earlier, neighborhoods with wealthier and whiter residents tend to have leases with more unenforceable provisions. However, because of the ecological inference problem this does not necessarily extend to the individual

Figure 16: Prevalence of shared forms by lease start date – Apartments vs. Non-apartments




*Notes:* N = 72,042 leases with observed start date post-2000 matched to Pew landlord data with non-missing tract income data. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages.

level. Detailed information about the demographic and socioeconomic status of particular tenants is difficult to obtain. However, using addresses and names, we can extract some information on the background of the tenant—in particular we are able to generate predictions regarding the race of the tenant. We also match and validate name and address pairs using a comprehensive voter file dataset maintained by the private political research firm L2.[21]

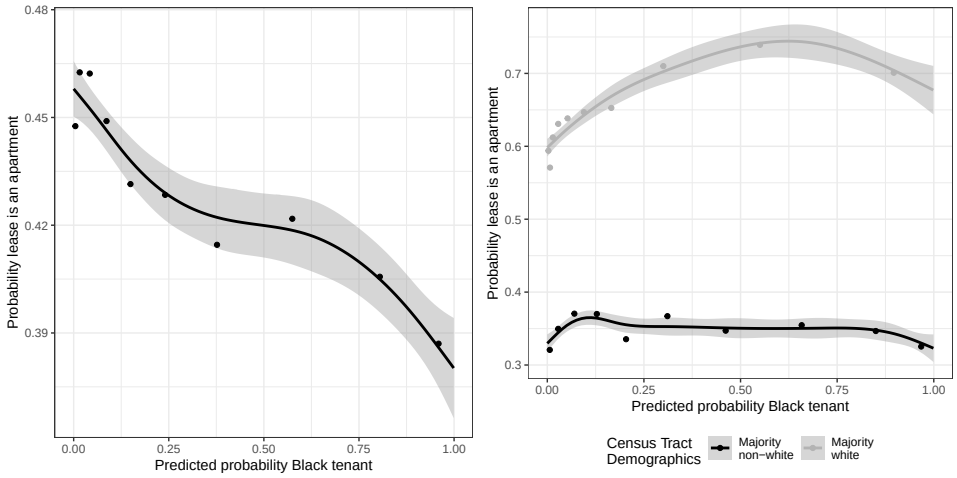
We predict tenant race using the surname analysis method frequently used in the social sciences (Fiscella & Fremont, 2006; Imai & Khanna, 2016) to impute individual-level race using known aggregate distributions from administrative data.[22] We specifically implement the method developed by Sood and Laohaprapanon (2018) which also incorporates information on first names to improve the quality of the prediction. We use the full name model trained on the Florida voting registration data used by Sood

[21]We extracted unique name-address pairings from our landlord-tenant dataset for cases filed between 2014 and 2019. We then requested that L2 match these name-address pairings to each of its annual historical voter file datasets from 2016 (as far back as was available) to the present day. Of the 79,861 unique tenant-address pairings from this time period, we were able to link 14,633 to an L2 voter file record. From these records, we obtain information on tenant gender, ethnic description, and estimated income where available from matched commercial data records.

[22]The approach leverages the fact that some surnames are more commonly among members of particular racial and ethnic groups. Given a known distribution of a particular surname using administrative data (such as census or voter registration data), the method uses Bayes' rule to obtain a predicted probability that an individual belongs to a particular ethnic or racial group conditional on their surname.

and Laohaprapanon (2018) and implemented in the Python library `ethnicolr`, available at https://github.com/appeler/ethnicolr. For our analysis below, our primary independent variable of interest is the predicted probability that an individual is non-Hispanic Black/African American.[23] Because multiple tenants can reside at a single property and be listed in the eviction filing, we have more total tenants classified than individual leases or eviction filings.

Figure 17: Association between individual tenant race and probability of inhabiting an apartment vs. non-apartment property



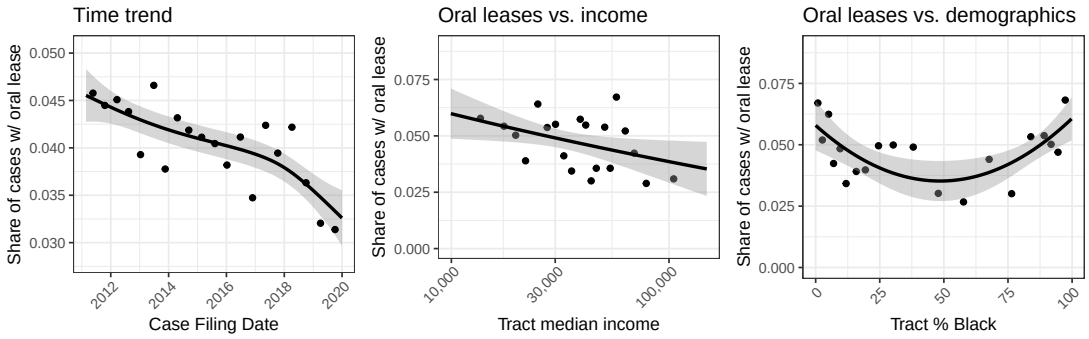

*Notes:* N = 60,098 tenants, 46,365 unique eviction filings, 20,059 buildings. Estimates denote predicted probabilities from a cubic smoothing spline. Points denote binned averages.

Figure 17 plots the probability that a tenant in our dataset will inhabit an apartment building conditional on predicted race. It also presents estimates conditional on census tract characteristics (majority white vs. majority non-white). Overall, we find that Black tenants are on average *less* likely to live in an apartment building than the alternatives. This is consistent with the distribution of apartments throughout the city and its association with demographics. However, this relationship partly *inverts* when we condition on neighborhood demographics. Within census tracts that are majority white, Black tenants

[23]We verified that our measure has good predictive power by comparing it to the race/gender classifications from those tenants who we were able to match to a commercial dataset obtained from political research firm L2. Using voter file data from 2016 onward, we matched 14,633 of 79,861 unique name-address pairings and obtained both registered voter data and commercial data. Race/ethnic classification in the L2 dataset is also imputed using similar methods as Pennsylvania voter registration does not collect data on race. Therefore, the relationship between our estimates and the commercial data classifications is positive and monotonic but somewhat curvilinear due to imperfections in how the commercial dataset chose to coarsen the ethnic classification estimates.

are on average more likely to reside in apartment buildings while the relationship is much flatter among majority non-white areas. As expected, the share of apartment complexes in majority white areas is significantly larger compared to those that are majority non-white. Finally, we find that adjusting for the type of property (apartment vs. non-apartment) in a regression model eliminates any observed relationship between race and lease provisions (as does adjusting for landlord fixed-effects). This strongly suggests that the relationship between tenant race and lease provisions has less to do with unit-level choices by landlords and more to do with the types of properties being rented by Black tenants versus white tenants.

Figure 18: Time trends and census-tract level regressions for prevalence of oral leases in landlord-tenant cases (2011-2019)



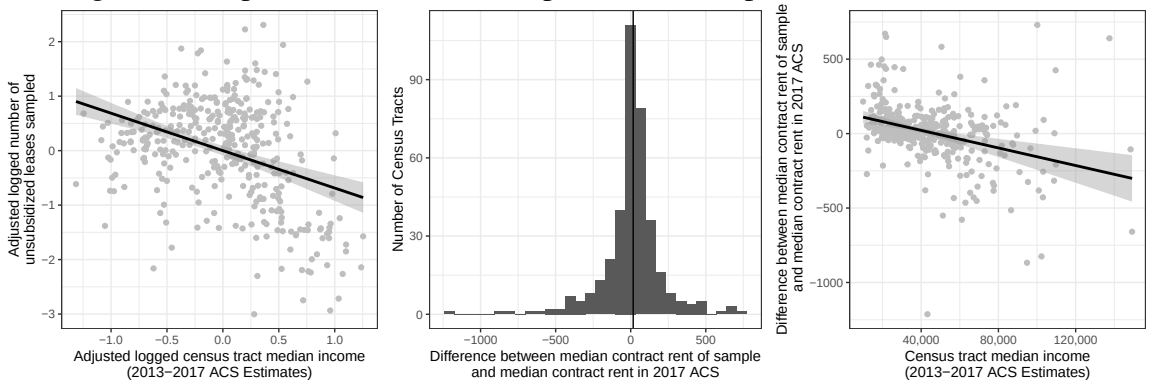

NOTES: N = 191,626 landlord-tenant cases from 2011-2019. N = 370 census tracts with 10 or more sampled cases. Grey bands denote 95% HC2 robust confidence intervals. Median household income reported in 2017 inflation-adjusted dollars (ACS 5-year table S1901). Percent Black is the share of residents reporting their race as one race and Black or African American (2017 ACS 5-year table DP05). Points denote binned averages (20 equally-spaced bins). Time trend results are predicted probabilities from a cubic smoothing spline. Income and race regressions are linear/quadratic models estimated via ordinary least squares. All regression slope coefficients statistically significant at $p < .05$.

Finally, we see more evidence supporting the hypothesis that legal formality is ascending. For the cases filed between 2011 and 2019, we have information recorded in the case filing on whether the lease agreement was oral or written. The vast majority of leases are written, but there are a few oral agreements (about 4 percent). Figure 18 shows that the use of oral leases has been declining over time (even within our relatively narrow timeframe) and is differentially distributed throughout the city. Census tracts with higher incomes have, as we would expect, fewer oral leases.

### *E. The Selection Question*

Leases are filed as exhibits to eviction proceedings and are not a random sample of all leases in the Philadelphia, let alone all national leases. While we do not claim to speak to the sorts of patterns that exist among Philadelphia leases in general, we do consider our sample to be a reasonable starting point for examining rental contracts among the poorer residents of Philadelphia. Nevertheless, we consider two possible avenues through which focusing on leases attached to evictions could generate a form of "selection bias." We examine whether such mechanisms are plausible given additional evidence and, if they are, how our analyses above adjust for that bias. First, we consider the question of whether selection threatens "external validity" – that is, whether our sample can reasonably generalize to the population of low-income resident leases or whether there are certain landlords or types of leases that never appear or are grossly underrepresented in our sample simply because those landlords are able to encourage tenants to leave their properties without recourse to formal rules. Second, we consider the risk of spurious correlations induced by unobserved factors associated with lease provisions and the onset of eviction proceedings – the "collider bias" problem (Cole et al., 2010).

Figure 19: Representativeness of sampled leases compared to ACS benchmarks




NOTES: N = 375 census tracts; 372 census tracts with observed median contract rent. Grey bands denote 95% HC2 robust confidence intervals. First panel presents an added-value plot from a regression of log number of leases sampled on log median income adjusting for log number of renter-occupied units. Second panel plots a histogram of the distribution across census tracts of the differences in median contract rent from sampled leases and median contract rent from ACS. Vertical line denotes the median of the distribution. Third panel plots the relationship between the sample-ACS rent difference and census tract median income. Median household income reported in 2017 inflation-adjusted dollars (ACS table S1901). Number of renter-occupied housing units based on 2013-2017 estimates (ACS table DP04). Median contract rent calculated from renter-occupied units paying cash rent (ACS table B25058).

Both external validity and collider bias concerns arise because we are only able to observe those leases for which an eviction proceeding was initiated and cannot observe those

landlords who, for whatever reason, never choose to use the landlord-tenant court. Recent literature on the hazards that appear to drive eviction point to a number of factors that could also potentially be associated with covariates of interest. In recent work, Desmond and his co-authors randomly surveyed Milwaukee residents and find that (net of other factors) having children increased the likelihood of eviction, as does increase in crime in the neighborhood. Desmond has also found that being Latino in a predominantly white neighborhood makes one particularly at risk for eviction (from among the set of individuals who are behind on their rent) (Desmond & Gershenson, 2017). At the same time, tenants with weaker social networks — close relationships who had recently experienced drug addiction, incarceration, eviction, etc. — were more likely to be evicted (Humphries, Mader, Tannenbaum, & van Dijk, 2019). If the people in landlord-tenant court are distinctive, it might stand to reason that their leases are too.

We first focus on the question of representativeness. Do we have reason to believe that the sample of leases we collected systematically differs from the true population of lower-income leases? We do find that, after conditioning on the number of renter-occupied units in each census tract (using data from the American Community Survey), we are more likely to sample leases from lower- and middle-income census tracts than we are leases from higher-income tracts. The left panel of Figure 19 shows the added-variable plot from a regression of the (logged) number of leases sampled in a census tract on the tract's (logged) median income, adjusting also for the (logged) number of units in a tract. This is consistent with the general pattern that the poor tend to be the targets of eviction proceedings and therefore appear in our sample (Collinson & Reed, 2018). Since this paper specifically focuses on the contracts of poor residents, this is entirely expected – areas of Philadelphia are highly segregated by income and it would be surprising if a sample of the leases of lower-income residents uniformly represented all areas of the city. We would be somewhat more concerned about representativeness if we found that *within* each census tract we were consistently sampling leases that looked very different from the typical rental agreement in that tract. We do not find evidence that this is the case.

We examine the gap between the median monthly rent among sampled leases within each census tract and the median rent reported by the ACS. As shown in the right panel of Figure 19, the gap, on average, is very close to zero. Apart from a few extreme outliers – likely driven by single apartment complexes in otherwise low-eviction areas that are heavy initiators of eviction proceedings – we see little systematic difference between the median rent statistics from the ACS and median rent in our data.[24] This suggests the absence of significant *systematic* biases in the within-tract sampling process at least insofar as they would be correlated with rents. Since rent is an obviously highly relevant covariate when looking at leases, it is difficult to come up with a selection mechanism that is not, in some way, associated with rents. We are relatively confident that the main factors driving

[24]While there is quite a bit of variability, this is expected given the nature of the sampling process.

selection into our sample are geographic-level factors related to resident income which are expected and can be observed to a large extent. We do find, as the third panel shows, that there is some negative relationship between the difference between in-sample and ACS rent and census tract median income though it is not particularly strong and there is still a significant amount of variation across tracts. In richer areas, the leases that we are observing tend to be of those living in housing with lower rents than the area median, consistent with our argument that while our sample is not representative of all Philadelphia leases, it does generally represent the leases of lower-income residents.

Further, the structure of the lease ecosystem strongly suggests that it is unlikely that there is a type of lease that is entirely absent from the eviction sample. As we explore below, the dataset is dominated by shared leases – we can link around half of all leases in the dataset to shared, commercially available forms. These shared leases contain the worst clauses for tenants, and are increasing in relative prevalence over time. Within landlord differences are almost entirely absent. Thus, landlords (who evict) use the same forms for all of their tenants, and they increasingly tend to use forms also adopted by other landlords. One would have to posit that such landlords use an entirely different set of forms for that portion of their tenant population that they rationally expect *not to later evict* to worry that the selected leases and forms are unrepresentative *of those landlords.*

Moreover, while it is possible that the leases of landlords who don't file as many evictions are different, we discount that possibility for several reasons. First, Furth-Matzkin's work observes roughly equivalent numbers of unenforceable terms in her sample, composed largely of student leases, as we do. Furth-Matzkin (2017) This provides some comfort that the selection process is not biased toward finding "worse" leases, even though these are very documents that are submitted to court. In that light, it would be quite surprising if the set of landlords who don't evict had *better* terms for their tenants than those who do. Second, the prevalence of the notice waiver provisions suggest that selection out of litigation is somewhat limited: landlords can file evictions with relatively little fuss, and often do so supported by attorneys whose practice is highly routine. In fact, a recent lawsuit filed accuses those very attorneys of running, in effect, eviction-mills where insufficient attention was paid to the facts of each case.[25] Overall, as that eviction appears to result largely from post-rental change in tenant characteristics (such as having additional children while in the leasehold) we think that pre-eviction lease selection is unlikely.

In short, while it is obvious that examining leases associated with eviction will not yield a representative sample of all leases in the city, it does give us a good window into the the sorts of leases held by tenants on the lower end of the socio-economic spectrum that are more at-risk for eviction.

[25] See Lawsuit Documents, available at https://www.pubintlaw.org/cases-and-projects/ending-exploitative-eviction-practices-by-collection-lawyers/

A second concern about selection comes from the risk of "collider bias" or spurious correlation between variables induced by the fact that we are only examining leases associated with evictions. While our correlational results are presented primarily as a description of interesting patterns in our dataset and not as clearly identified causal effects, it is important to consider whether the correlations we observe in the data – particularly the individual-level ones – would still be present if we were to also observe the leases of those against whom eviction proceedings were not initiated. Many of the individual-level and demographic-level covariates that we study are known to have a strong association with the probability of eviction proceedings. For example, as recent work by the Reinvestment Fund suggests, Black tenants in Philadelphia are significantly over-represented in evictions relative to their share of the overall renter population (Reinvestment Fund, 2021). Moreover, they are more over-represented specifically in those census tracts that are gentrifying and undergoing significant growth in rents over time. If there are other unobserved factors associated with both eviction and lease provisions, that may explain some of the associations we discuss below.

This would make an interesting explanation in its own right for some of the descriptive patterns in lease provisions that we observe and we make no claim of an explicitly causal association for the relationship between, for example, tenant race and lease provisions. One hypothesis is that this relationship may be driven by a third, unobserved factor, related to differences in property type between Black and white tenants within census tracts, but an alternative explanation may be due to gentrification patterns that are not being captured by our covariates. If landlords in rapidly gentrifying areas are more likely to adopt shared form leases and, on average, more likely to evict Black tenants, we would observe Black tenants *within the subsample of eviction-related leases* as being more likely to have provisions associated with shared forms. Such a pattern would nevertheless have important substantive consequences for our understanding of the eviction process.

However, we have some reason to doubt that this is necessarily the only story. First, we adjust for census tract-level covariates. If it is the case that Black tenants are disproportionately facing eviction in gentrifying areas of the city, then comparing Black residents to white residents in comparable regions would rule out gentrification as an explanation for the observed difference in our outcomes of interest. While our primary tract-level covariates are time-invariant, we include interactions between them and the filing date of the case in the regression analyses of individual tenant characteristics and lease provisions. Although we do not have an ideal *time-varying* measure of gentrification that encompasses our entire timeframe, this approach provides an initial way to capturing recent changes in the relationship between geography and eviction. Second, we find no evidence of heterogeneity across time in the association between whether a tenant is Black and the presence of unenforceable lease provisions like the notice waiver or exculpatory clause. We would expect that if the correlation were driven by a surge in evictions of Black tenants from

gentrifying areas in recent years that this relationship would grow stronger over time. Ultimately, while we are certainly cautious to not draw extremely strong conclusions about all leases based exclusively on the subset of leases from eviction proceedings, we have taken care to address the most likely sources of selection-induced correlation using what data can be gathered on census tract characteristics.

## V. Implications and Research Directions

We have focused on a selected dataset: contracts submitted to a court to justify an eviction. Nonetheless, we find that most contain multiple unenforceable and oppressive terms. The primary exception are those contracts associated with public housing agencies, which have created a regulatory inspection process which scrubs leases of unenforceable or oppressive language. Overall, we illustrate the low efficacy of *ex post* term policing doctrines.

We observe landlords adopting two strategies in choosing leases, at least those that end up in eviction court. Some adopt proprietary leases, which are often short, contain few unenforceable and oppressive terms, and are associated with cheaper leaseholds in poorer census tracts with non-repeat play landlords. More often, and more recently, landlords adopt shared leases. These are typically drafted by non-profits or commercial providers and disseminated at low cost. They are longer and more pro-landlord than their proprietary counterparts. Over the last twenty years, the latter strategy has increasingly dominated the former, which we attribute to increasing adoption by landlords who specialize in apartment buildings, and who are relatively poorer. But whether they adopt proprietary or shared leases, or whether they are large or small, one thing we do not see is significant numbers of landlords tailoring leases for individual tenants. This Part explores the implications of these findings, considers further research questions and describes certain limitations.

### *A. Regulating Templates*

One clear take-home message is that *ex ante* regulation is associated significantly fewer pro-landlord terms than when such policing is left to *ex post* court decisions. That's so even though all the studied leases were submitted in support of evictions, meaning that most landlords left themselves open to ready-made defenses if tenants could secure competent representation. Moreover, unenforceable and oppressive terms are becoming more common over time, suggesting that although internet-based reputational markets are increasingly available, they are not particularly effective at shifting power to tenants. By contrast, the Federal Housing Authority cleansed leases of unenforceable terms. We do not find meaningful backsliding from federal mandates in subsidized leases, though the enforcement regime is under-resourced. These findings—the prevalence of unenforceable

and oppressive terms, and the weakness of *ex post* court policing, reinforce the small existing literature, but the comparative story is novel.

These data also illuminate the role of *forms.* We show a story of substitution over time: from oral to written leases, and from proprietary leases to widely-shared lease templates, particularly in apartment buildings, as opposed to other kinds of building types. Formality and standardization is generally associated with greater use of unenforceable and oppressive terms in leases. This is an important addition to the literature on consumer contracting, on three levels.

*First,* it illustrates that, although these are rather expensive consumer contracts, of great importance to their adherents, there is essentially no within-landlord variation in terms. Leases are not tailored to tenants. The sort of strategic drafting behavior that the literature posits is a luxury available to those with the money to pay for counsel. Until recently, such landlords did not even have access to legal forms at all, let alone the capacity to calibrate forms to tenant- or building-specific risks. That is illustrated by Figure 18 which shows that oral leases are concentrated in poorer regions. Moreover, because the landlord-tenant court rarely focuses on the details of the lease in ordering evictions, particularly those that result from defaults, landlords are free to under-invest in legal protections.

It is perverse to find that access to justice, at least for landlords, may harm tenants. Proprietary, shorter, and oral leases, though they accompany decidedly lower-resourced leaseholds, contain fewer terms that take away tenants' rights. This finding runs counter to the relatively small extant studies on this topic. We show that as the costs of formalization and standardization decreased (due to the internet), and tenants increasing faced legally unfriendly leases. Thus, we illustrate one mechanism by which formality and access to legal services may hurt the poor.

Our results suggest a path toward a more muscular regulatory strategy. A common argument against pro-tenant interventions has been that they will have perverse effects, increasing the price for all tenants while merely benefiting those before the eviction court. But, ironically, because landlords appear to select between leases with little regard to tenant characteristics, and drafting costs seem to drive market outcomes, these data suggest that pro-tenant regulatory interventions are unlikely to increase rents. More vigorous enforcement of private law prohibitions on particular lease terms, or novel prohibitions on particular clauses, would help tenants in court proceedings, and potentially reduce the incidence of evictions.

But though regulatory and *ex post* policing may do little harm, our results suggest a more direct proposal to improve leases. Advocates should focus their reform efforts on the purveyors of shared leases. Many such providers are non-profit associations that may be susceptible in the near term to public pressure in ways that courts and state legislatures are not. At the same time, a very small number of for-profit firms are providing legal forms

over the internet that contains terms which we think to be at least arguably unenforceable. Reformers might consider legal strategies to change these firms' practices.

*Second,* the dominance of forms, and their insensitivity to tenant characteristics, unsettles the scholarly consensus that that landlords insert unenforceable provisions in leases as a part of a deliberate strategy to take advantage of tenant sophistication. That argument always resulted from a complicated logic: while leases would not be read before signing, they would *ex post* when landlord-tenant relationship deteriorates. Only then would the landlord use its superior sophistication to bully its tenant into accepting bad distributive outcomes due to clauses that were often unenforceable in court. The hypothesized result would be that unenforceable terms provide an unpriced, shrouded, option to landlords.

Like many accounts of shrouded contract terms, this is a hard hypothesis to prove or disprove. However, our data is facially inconsistent with at least one part of the conventional story, i.e., that unenforceable terms should be more prevalent in the most vulnerable tenants. We generally find the opposite is true. That said, perhaps the story of exploitative options is right but its particular implications are wrong. Some will argue that we observe greater adoption of oppressive provisions in more expensive leases because these are the very tenants who have enough resources at stake to make bargaining outside of court necessary. Perhaps landlords only need leases as a tool to bully *more* powerful tenants: poorer tenants can be evicted without further thought.

It is possible that this more nuanced account is correct. But we would offer some cautions. First, relatively richer tenants are also those with better access to the sorts of resources which would illuminate the unenforceable natures of the underlying terms. And the story does not explain why national lease providers—and internet forms—are growing rapidly in this market. Overall, we think the degree of standardization within landlords, and the pattern of adoption of shared leases and their growing dominants, suggests reasons to doubt that landlords are deliberately inserting unenforceable terms in leases to extract surplus from their tenants. Rather, we think our descriptive account is more consistent with thinking that transaction costs—the costs of acquiring a lease, and the value of standardization across many different types of people and markets, regardless of the law's distinctive rules—are the primary driver of lease terms in this market.[26]

*Third,* our results have implications for the study of contracting writ large. Here, caution is in order, because these leases are those that arise from contracts with poorer tenants, and thus many not reflect widespread contracting practices. However, legal scholars have struggled to find examples of exogenous shocks that will produce widespread changes to consumer contracts. (Marotta-Wurgler & Taylor, 2013) Here, we observe dramatic changes in practice to an important and widely-shared set of contracts—the rise of

[26]We do not claim that unenforceable and oppressive lease terms have no functional purpose. Simply, we do not see evidence that landlords choose leases with those hypothesized purposes in mind, or adjust prices accordingly.

holdover tenant clauses, for example—in the absence of any corresponding shifts either in the legal regime or the rental market. Rather, non-profit associations' forms appear to drive the changes we observe in contract terms. This fits well with Davis (2007)'s theory of the role of such entities in contractual innovation, but is its first first empirical demonstration.

These findings do suggest that researchers could work towards a general account for the relative rise and fall of particular types of shared leases. Does the relative success of particular lease templates illustrated in Figure 8 arise from competitive forces acting on the lease level, or is it merely downstream from struggles between different landlord groups. Is this a technological phenomenon, or one related to capital flows. To put it differently, we observe what looks like a competition between forms, with some emerging as more "fit" than others. But this may be an illusion, and what is really happening is the nationalization of the rental market, resulting in the de-localization of the forms they use.

### *B. The Role of Race and Lease Addenda*

The story that we tell about race and lease forms is complex, and our descriptive findings using this selected data must be interpreted with care. It would at first glance appear that black tenants differ from white tenants in whether they receive leases with exculpatory clauses or notice waivers — on average being less likely to receive them but *more* likely in majority white census tracts. However, we find that these differences appear to be predominantly driven by the types of buildings inhabited by black tenants relative to white tenants along with the geographic distribution of different types of buildings within the city.

This absence of a clear race effect for these oppressive and unenforceable provisions may result from the minimal control that landlords exert over lease provisions once a particular template has been chosen. However, many landlords choose to also include addenda to the main lease to cover additional situations and issues. To investigate the role of race in this contracting market, we examine the specific case of "crime-free" and "drug-free" provisions.

Many landlords include such provisions in their leases via addenda to the main lease though sometimes the lease form itself will include such language. These provisions consider the presence of criminal activity—often specifically "drug-related criminal activity"—on the premises to be a violation of the lease and grounds for eviction. Recent work by Archer (2019) on the related phenomenon of municipal crime-free ordinances, which often mandate these addenda in local leases, has highlighted the likely racially discriminatory impact of such laws. While Philadelphia does not have a local crime-free leasing law, we nevertheless find significant adoption of provisions related to criminal activity and investigate the extent to which these provisions systematically correlate with tenant race. We constructed a broad search for any mention of "illegal drugs" or "controlled substances" or any mention of "criminal" or "illegal" activity. Among our unsubsidized leases, about

35% contain such provisions, but in contrast to our other four unenforceable provisions, provisions related to drugs or crime appear in essentially all PHA leases and a large majority of the subsidized leases in our sample.

Table 2: Regressions of lease provisions on predicted probability Black tenant

| *Outcome* | *Regressor* | *Model:* | | | |
|---|---|---|---|---|---|
| | | Year FE | Tract + Year FE | Landlord + Year FE | Year FE + Controls |
| Exculpatory Clause | Pr(Black) | -0.0364*** | 0.00293 | -0.000659 | 0.00358 |
| | | (0.0100) | (0.00756) | (0.00663) | (0.00970) |
| Accept As-is | Pr(Black) | -0.0282** | 0.0134 | -0.00384 | 0.000447 |
| | | (0.0123) | (0.00850) | (0.00681) | (0.0115) |
| Holdover Tenant | Pr(Black) | -0.0297*** | -0.00167 | 0.00198 | -0.000244 |
| | | (0.0107) | (0.00615) | (0.00531) | (0.00932) |
| Notice Waiver | Pr(Black) | -0.0321*** | 0.0108 | -0.00386 | 0.00777 |
| | | (0.00961) | (0.00713) | (0.00565) | (0.00849) |
| Drug or Crime Clause | Pr(Black) | 0.0485*** | 0.0286*** | 0.00210 | 0.0309*** |
| | | (0.0110) | (0.00823) | (0.00702) | (0.0110) |
| | Leases | 60,098 | 60,098 | 60,098 | 60,098 |
| | Buildings | 20,059 | 20,059 | 20,059 | 20,059 |
| | Landlords | 9,922 | 9,922 | 9,922 | 9,922 |

*p<0.1; **p<0.05; ***p<0.01

*Notes:* N = 60,098 tenants, 20,059 buildings. 9,922 landlords. Leases from 2000 to 2019. All OLS regressions adjust for lease year fixed effects. Second and third regressions adjust for census tract and landlord fixed effects respectively. Final regression includes only year fixed effects but adjusts for building type (apartment/non-apartment) and census tract % white. Cluster-robust standard errors clustered on building in parentheses.

As Table 2 illustrates, in contrast to the other four provisions where controlling for census tract fixed effects eliminates the observed association with individual tenant race, black tenants are somewhat more likely to receive leases with drug and/or crime provisions even when compared to other tenants *within the same census tract*. We find that controlling for building type (column four) does not eliminate this relationship either as while apartment buildings are more likely in general to contain these clauses, we still observe a statistically significant association between tenant race and drug/crime provisions even after adjustment. Adjusting for landlord fixed-effects does appear to eliminate the observed association, suggesting that there is still minimal variation in lease provisions and addenda among buildings owned by the same landlord where we observe multiple leases. However, building characteristics alone do not seem to explain away the observed within-tract relationship between race and drug/crime provisions. Even after controlling for census tract fixed effects, building class and landlord size (as measured by total number of properties

owned) we still observe a positive and statistically significant relationship between the probability a tenant is classified as Black and the presence of a drug/crime provision in the lease document.

To summarize, for our main four unenforceable lease provisions, *most* of what appears as a difference between Black and white tenants can be explained by differences in locales where these lease provisions are common and by the types of properties that choose to adopt forms (notably, apartment complexes). But Black tenants are on average more likely to receive leases that contain drug and crime-free provisions *even when* comparing tenants across different landlords located in similar census tracts and building types. Although the explanation does not appear to be driven by differences in individual landlords choosing different clauses across different properties, it does suggest that landlord groups specialize not only in building type (apartment, row house, etc...) but also, effectively, in tenants.[27] Buildings with a larger share of black tenants appear are more likely adopt leases that contain drug/crime provisions even when compared to other buildings in similar areas with a larger proportion of non-Black tenants, suggesting cross-landlord discrepancies in behavior that are correlated with race.

Tenants choose where they live in a world of constraints. Spatial discrimination—i.e., black workers are effectively prohibited from moving freely around a city due to factors like access to mass transit or a lack of capital—may affect employment. (Zenou & Boccard, 2000). This is a reminder that race is intertwined with other characteristics—like income, social capital, employment and geographic mobility–which leads tenants to rent at particular properties. Landlords specialize both in places and in kinds of buildings/tenants, perhaps on racialized lines. Whatever the etiology, the result is that black tenants living in white neighborhoods face unequal hazards of oppressive terms than their white neighbors. This descriptive addition to the literature on race and contract suggests that lease forms may operate systematically to entrench racial hierarchies.

### *C. Limitations and Next Steps*

We have earlier discussed selection concerns. The most important take-away from that discussion is that these leases are representative (in the best case) the contracts of relatively poorer tenants in Philadelphia, but not (necessary) the leases of richer tenants. But even putting that limitation aside, Philadelphia is a distinct city. It is poor (for a large American city), geographically diffuse, and its rental market appears to be dominated by small landlords. Whether the relationship between templating and enforceability would

[27] A significant factor in housing discrimination is landlords' ability to select their tenants. A recent audit study by Christensen, Sarmiento-Barbieri, and Timmins (2021) showed substantial differences in how often landlords responded to requests from otherwise identical Black tenants versus white tenants, with the latter being more likely to obtain a response, particularly in cities in the U.S. Northeast.

recur in other cities is up in the air, and, consequently, the generalizability of our findings to the tenancies across the country is unknown.

Important questions about this contracting ecosystem remain. We are interested in learning about how landlords react to changes in applicable legal rules over time, as a recent literature suggests the importance of such learning in how consumer contracts change. (Marotta-Wurgler & Dari-Mattiacci, 2018). Recent changes to the rules in Philadelphia's Landlord-Tenant court may permit us to observe how legal rules spur changes in leases. Second, were it possible to learn more about management firms, we could determine how such intermediaries drive lease selection, and whether learning occurs at the network level or at the landlord level. Finally, we would be interested (and are exploring) in seeing how matches in the characteristics of landlords and tenants (such as race and gender, to the extent landlords are individuals) affect lease terms and price.

Our more immediate concern, however, is to study how lease terms affect the hazards of eviction itself. That is, are tenants forced to sign a lease depriving them of notice of eviction more likely to lose their tenancy? Does agreeing to be evicted for criminal conduct mean that eviction is more likely, controlling for the likelihood of criminal activity? Our next paper using these data will turn to those questions.

## CONCLUSION

This novel dataset consists of hundreds of thousands of Philadelphia leases drafted over the last twenty years and submitted as exhibits to eviction filings. Shared lease templates are widespread and growing more prevalent over time. As such common contracts increasingly substitute for oral leases and proprietary forms, particularly in apartment buildings, tenants face a more hostile legal terrain. We also uncover that tenants' race matters to what kind of leases they get, an effect we largely identify with segregated housing even at the hyper-local level. Eviction leases thus reveal, and reinforce, existing disparities in how formal legal rules affect citizens. With a clarified understanding of the etiology of those disparities in mind, better regulatory strategies, from changes in public laws to pressure campaigns against landlord associations, may come into focus.

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## A. Appendix A: Pennsylvania Law and Unlawful and Oppressive Lease Provisions

*Exculpatory Clauses*

Exculpatory clauses (disclaiming liability for negligence) are the best known unenforceable term in the existing scholarship about leases.(Mueller, 1970) Exculpatory clauses in *commercial* leases are enforceable in Pennsylvania so long as they are very particular—that is, not merely exculpating in general terms.[28] They are clearly void if they seek to vitiate the landlord's liability for statutorily-required duties (like providing fire exits.)[29] In between those extremes, Pennsylvania Courts focus on bargaining power, and disapprove of exculpatory clauses where "each party [is not] a free bargaining agent, which, it is evident, a prospective tenant for an apartment being unable to bargain away an exculpatory clause, is not."[30] Following that rule, Pennsylvania courts have relatively routinely invalidated exculpatory clauses in residential leases in the absence of strong evidence of equal bargaining power or particular specific forms of negligence.[31]

Figure 20 shows an extract from one of the lease documents in our sample that we found used the 2017 PAR template. Sub-section B contains the exculpatory clause which disclaims the Landlord's responsibility for any injuries occurring on the property.

**20. INSURANCE AND RELEASE**

(A) Tenant understands that Landlord's insurance does not cover Tenant, Tenant's personal property, or Tenant's guests. Tenant is advised to obtain personal property and liability insurance to protect Tenant, Tenant's personal property, and Tenant's guests who may be injured while on the Property.

☐ **IF CHECKED,** Tenant must have insurance policies providing at least $ _____ personal property insurance and $ _____ liability insurance to protect Tenant, Tenant's personal property and Tenant's guests who may be injured while on the Property. Tenant must maintain this insurance through the entire Term and any Renewal Term. Tenant will provide proof of insurance upon request. Tenant will notify Landlord within 10 days of changes to or cancellation of these policies.

(B) Landlord is not legally responsible for any injury or damage to Tenant, Tenant's family, or Tenant's guests that occurs on the Property.

(C) Tenant is responsible for any loss to Landlord caused by Tenant, Tenant's family or Tenant's guests, including reasonable attorney's fees associated with that loss, if awarded by a court.

Figure 20: Sample exculpatory clause - Pennsylvania Association of Realtors 2017 Standard Residential Lease

*As-Is Clauses*

Pennsylvania courts enforce a non-waivable implied warranty of habitability.[32] "As is" provisions, which violate that prohibition, are *per se* unenforceable.

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[28]Topp Copy Products, Inc. v. Singletary, 626 A.2d 98, 99 (Pa. 1993)

[29]Boyd v. Smith, 94 A2d 44, 46 (Pa. 1953)

[30]Galligan v. Arovitch, 219 A.2d 463, 465 (Pa. 1966)

[31]Santiago v. Truitt, 23 Pa. D. C. 3rd 1982)

[32]Fair v. Negley, 390 A.2d 240, 245 (Pa. Super. Ct. 1978) ("We can only conclude that an attempted waiver of the implied warranty of habitability in residential leases is unconscionable and must be held to be ineffective.")

The 2017 PAR lease likewise contains an "as is" provision as shown in Figure 21. Of course, there may be some variation in the disclaimer, and that variation could (under the caselaw) rescue the clause from a finding that it (in the words of the governing authority) made the leasehold unfit "for its intended purpose to provide premises fit for habitation by its dwellers."[33]

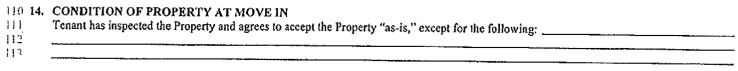
14. CONDITION OF PROPERTY AT MOVE IN
Tenant has inspected the Property and agrees to accept the Property "as-is," except for the following: _____

Figure 21: Sample as-is clause - Pennsylvania Association of Realtors 2017 Standard Residential Lease

*Holdover Tenant Penalty Clauses*

A holdover tenant clause states that a tenant who stays over past the end of her tenancy owes some sum, typically a multiple of the rent, together with associated expenses. Below is an example from the 2013 PAR standard lease

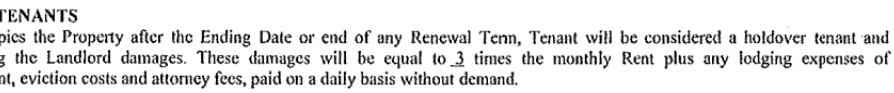
22. HOLDOVER TENANTS
If Tenant occupies the Property after the Ending Date or end of any Renewal Term, Tenant will be considered a holdover tenant and will be causing the Landlord damages. These damages will be equal to 3 times the monthly Rent plus any lodging expenses of the new occupant, eviction costs and attorney fees, paid on a daily basis without demand.

Figure 22: Sample holdover tenant clause - Pennsylvania Association of Realtors 2013 Standard Residential Lease

Are such terms enforceable? The issue is familiar for contract students. Is the holdover tenant stipulated damage payment a reasonable estimate of the landlord's liquidated damages, or is it a penalty clause, which attempts to punish breach? Pennsylvania courts have not ruled on such a clause in the residential lease context.[34] Other jurisdictions, however, appear to lean against enforcement of stipulated damage clauses against residential holdover tenants.[35] Our research suggests that 34 states—unlike Pennsylvnia—provide

[33]Pugh v. Holmes, 405 A. 2d 897, 906 (Pa. 1979). The point is that the "as is" clause is itself legally unenforceable.

[34]Rittenhouse 1603, LLC v. Barbera Eyeglasses, 2019 WL 1787475 (Pa. Sup. 2019). In commercial leases, Pennsylvania courts have accepted double rent. Pennsylvania Warehouse Beverage Stores, Inc. v. Brookhaven MZL, LP, 2015 WL 7258463 (Pa. Super. 2015).)

[35]Mark S. Dennison, *Landlord's Recovery of Damages for Tenant's Wrongful Holding Over of Leased Premises*, 68 AM. JUR. POF 3D 1 (2019) ("The question of whether a provision for the payment of a stipulated amount, should the tenant withhold possession upon the expiration of a lease, is a provision for liquidated damages or for a penalty is determined by the facts of the particular case. If the court determines that the clause fixing damages is merely to secure performance of the agreement, it will be treated as a penalty and only actual damages proved can be recovered. In doubtful cases, the courts are inclined to construe the stipulated sum as a penalty.")

a statutory penalty for holdover tenants, typically adopted from the Uniform Residential Landlord and Tenant Act. In many states (but not all), there is a scienter requirement that the tenant hold over willfully or not in good faith. The amount of the penalty varies widely from actual damages up to triple rent and may also include attorney's fees and court costs. In the remaining states, where no holdover penalties are permitted by statute, typically resolve these question on a case-by-case basis, with reference to operative contract law rules about stipulated damages.

In general, Pennsylvania follows a traditional, skeptical, view toward stipulated damages:

> "[A]greements to pay a fixed sum without any reasonable relation to probable damages for breach tends to negative any notion that the parties really meant to provide a measure of compensation. Where a stipulated damages clause is intended as a form of punishment with the purpose, in terrorem, to secure compliance, the principles of compensation are subordinated and the provision must fail as an unenforceable penalty. A penalty is said to be fixed not as a pre-estimate of probable actual damages, but as a punishment, the threat of which is designed to prevent the breach."[36]

In sum, though holdover tenant penalties have not been tested explicitly in Pennsylvania, we are fairly sure that most of them would be deemed unenforceable.

*Waiver of Notice*

The fourth provision that we consider is a waiver of the 15-30 day notice period required by the Philadelphia Landlord-Tenant Act of 1951 in the case of an initiation of eviction proceedings for a breach of the lease. This type of provision is enforceable as the Landlord-Tenant Act stipulates that a tenant may accept a shorter time or waive notice entirely in the lease.[37] However, we consider it an indicator of greater landlord power over the tenant in the case of eviction as it reduces the time available to a tenant to mount a defense. Since the vast majority of the judgments actually issued by the Philadelphia Landlord-Tenant court are default judgments in favor of the plaintiff—approximately 89% in our sample—simply showing up and contesting an eviction attempt reduces the landlord's likelihood of getting an eviction. Additionally waivers of notice, like exculpatory clauses, are explicitly banned in HUD subsidized housing leases.

An example of a waiver of notice, also found in the Pennsylvania Association of Realtors template is provided in Figure 23.

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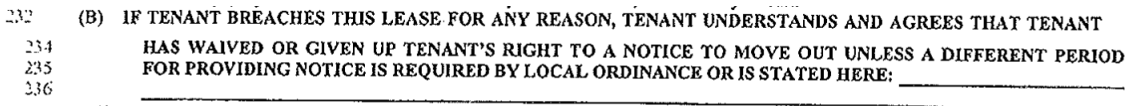
[36] Holt's Cigar Co. v. 222 Liberty Associates, 404 Pa. Super 578, 587 (1991) (cleaned up)

[37] 68 P.S § 250.501 (e)



(B) IF TENANT BREACHES THIS LEASE FOR ANY REASON, TENANT UNDERSTANDS AND AGREES THAT TENANT HAS WAIVED OR GIVEN UP TENANT'S RIGHT TO A NOTICE TO MOVE OUT UNLESS A DIFFERENT PERIOD FOR PROVIDING NOTICE IS REQUIRED BY LOCAL ORDINANCE OR IS STATED HERE: _____

Figure 23: Sample waiver of notice - Pennsylvania Association of Realtors 2017 Standard Residential Lease

## B. Appendix B: Validation results for the lease provision coding procedure

Because our method for coding leases is based on a series of (fuzzy) regular expression searches and the quality of the lease scans is often poor, we expect some error in whether we accurately classify a lease as having a particular provision. If this error is truly random, it should not bias our estimates of the relationship between various covariates and the presence of a given provision. However, we want to ensure that there are no *systematic* biases in our classification process – that our terms are both sufficiently exhaustive such that they do not systematically fail to capture a provision that might be worded slightly differently or overly-generic such that they incorrectly detect the presence of a provision that is absent. To validate our automated coding method, we hand-coded a randomly sampled subset of our leases and compared the hand-coded results to our keyword-based classifications. Overall, the validation exercise suggests that our keyword searches have very high accuracy with minimal false positives and false negatives.

Our approach proceeded in an iterative fashion. Using an initial version of our search strings, for each of the four provisions, we randomly sampled 100 leases that were machine-coded as containing the provision and 100 leases that were machine-coded as not containing the provision. The leases were read in their original PDF form by the research team and coded for whether the leases actually did or did not contain the relevant provision. For some of the false-negatives, we found common phrases that were absent from the original search strings and modified the regular expression to incorporate these. After addressing the obvious false negatives, we re-ran our automatic coder and evaluated the remaining number of false positives/negatives. Table 3 presents the accuracy, false positive rate and false negative rate of our classification method for each of the four provisions. Overall, accuracy for the classifier is quite high for the notice waiver and holdover tenant provisions and lower for the as-is and exculpatory clauses. We suspect that the lower accuracy for the latter two provisions is due to the wide variety of ways in which such a provision could be worded. Conversely, notice waiver and holdover tenant provisions tend to use very similar wordings. However, we find that for all of the provisions there is not a particularly systematic imbalance between false negatives and false positives suggesting that misclassification is primarily noise and not a systematic bias. We note that there is something of a skew towards false negatives for the holdover tenant clause classifier, which would likely cause us to be *underestimating* the true magnitude of the trend that we observe.

| Provision | Accuracy | False Positive Rate | False Negative Rate |
|---|---|---|---|
| Notice Waiver | 93.5% | 4.7% | 7.4% |
| As Is Clause | 88.0% | 14.9% | 10.3% |
| Exculpatory Clause | 74.0% | 26.9% | 25% |
| Holdover Tenant Clause | 92% | 1.3% | 12% |

Table 3: Performance of lease keyword classification method on hand-coded