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Scattered Governance: A Typology for Toronto's Business Improvement Areas

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Ronit Levine-Schnur *Editor*

Measuring the Effectiveness of Real Estate Regulation

Interdisciplinary Perspectives

Measuring the Effectiveness of Real Estate Regulation

Ronit Levine-Schnur
Editor

Measuring the Effectiveness of Real Estate Regulation

Interdisciplinary Perspectives



Springer

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Introduction

Real estate regulation is considered one of the most influential constraints on housing and urban development. In particular, a great amount of scholarship has been devoted in recent years to examining how land use regulation influences the elasticity of housing supply. However, substantial theoretical, methodological, and empirical issues regarding the effectiveness of real estate regulation still require further study. This book reconsiders the fundamental issues regarding the effect of real estate regulation on housing, urban development, and considerations of justice and efficiency. It follows an international conference hosted by the Gazit-Globe Real Estate Institute at the Interdisciplinary Center (IDC) Herzliya, Israel, with additional contributions by members and researchers associated with COST Action CA17125 on Public Value Capture for Increasing Property Values. The contributors to this volume are leading and emerging scholars, representing diverse methodologies and academic disciplines, including theoretical economics, behavioral economics, law, planning, geography, mapping and data analysis, and political science.

The present volume offers new perspectives on core questions such as: How should the effectiveness of land use regulation be measured? What are the relevant outcomes for effective land regulation on housing availability, enhanced equality, sustainable development, or other outcomes? How to assess the interplay between different outcomes? How to study different modes of regulation and their mutual influences, such as zoning, mortgage regulation, public property markets, property taxes, and local government law?

The book's eleven chapters are divided into five parts, which address different aspects of real estate regulation, combining theoretical analysis with a close observation of diverse case studies, from North America and Europe to Israel and China. Part I, titled "Zoning and Land Use Regulation: Theory," offers cutting-edge analysis into how to measure, model, and understand the impact of zoning and other modes of real estate regulation, from economic and normative theoretical perspective.

C. Luke Watson and Oren Ziv investigate nonparametric identification of demand in markets with two-sided sorting. They consider any situation where the price of a good depends on the sorting of buyers. Specifically, the case where willingness to

pay for local amenities differs by income group and monopolistic landlords use a pricing rule based on marginal cost and price elasticities. Watson and Ziv show that, generally, demand parameters cannot be identified; thus all identification is based on *a priori* exclusion restrictions or functional form on demand or pricing rules. One example is that if cost shifters are assumed as additively separable in marginal cost, the model can be identified. Whereas such restrictions may be warranted in specific research questions, they argue that researchers should consider and be clear about the implicit additional structure placed on the model.

Christopher Serkin offers a fresh look on the traditional problem of exclusionary zoning. He contends that some of the conventional legal tools for recognizing and responding to exclusionary zoning—a phenomenon characterized primarily by suburban communities—do not apply as well in cities, where minimum lot sizes and bans on multifamily housing are not the primary source of density limits. He therefore provides a new lens for identifying exclusionary zoning by focusing on the economic effects instead of any particular characteristic. In particular, Serkin's contribution examines the extent to which the economic value of public services, such as high-quality public schools, is capitalized into property values. In the absence of supply restrictions, he claims, developers should satisfy consumer demand and compete away any premium associated with public services. Zoning, however, changes that dynamic, allowing services to be capitalized into property values. Consequentially, affluent communities are not exclusionary only because they are expensive; they are expensive in part because they are exclusionary.

Part II complements Part I by offering empirical findings on the effects of zoning and land use regulation. Tate Twinam provides an in-depth empirical analysis of the prolonged effect of historical zoning ordinances. He argues that comprehensive zoning is a ubiquitous local institution in the USA, yet there is little documentation of its long-run impact on land use patterns. Twinam's study examines the introduction of comprehensive zoning in Chicago and Seattle in 1923, and its effects on these cities' future development. The results indicate that zoning fundamentally altered land use patterns, promoting the separation of commercial and industrial uses from residential areas. These changes occurred even in areas that were already highly developed. Additionally, these early zoning laws involved considerable legal path dependence, affecting land use changes many decades after their initial passage.

Nir Mualam offers a very different approach to studying the effectiveness of real estate and land use regulation in the context of heritage protection. Mualam compares the effectiveness of heritage regulation in Oregon, Israel, and England by examining built heritage conflicts before appeal tribunals in the three systems. He suggests that heritage regulation should be considered effective when it is able to facilitate change, flexibility, and adaptation. The empirical findings show that whereas all three systems accommodate flexibility and change, in some jurisdictions decision makers interpret heritage regulation more broadly by allowing more change in the historical fabric. Consequently, heritage regulations may be considered more effective in some jurisdictions than in others.

Part III, “Business and Industrial Land Development Policies,” considers regulation that shapes commercial land. It opens with Alexandra Flynn’s paper on the Canadian experience with Business Improvement Areas (BIAs)—self-taxing local bodies that play an important role in urban governance. Her chapter is focused on Toronto, home to the first BIA in the world and to one of the highest number of BIAs in North America. Using a mixed methodological approach that includes geographic information systems mapping, quantitative analysis, and semi-structured interview data, the chapter offers a typology of Toronto’s BIAs, looking at the metrics of size, a walkability/transit score, budgets, and year of formation. The study identifies four kinds of BIAs scattered unevenly across the city and presents the unique attributes of each BIA type, along with some preliminary conclusions as to how Toronto’s BIA types differ from those in other jurisdictions.

Jinfeng Du details the consequences of a 2007 Chinese policy instrument stipulating that industrial land must be granted through tender, auction, and/or listing (TAL), and that the transaction price of the granted land should be higher than a minimum standard. Du’s paper evaluates the effectiveness of the reform based on an interrupted time series quasi-experimental design. The effects of the reform on industrial land conveyance and on overall land granting are evaluated. The results indicate that this reform has successfully reduced the proportion of industrial land granted through negotiation; it has not promoted price growth, however, but has reduced the price of the TAL-granted industrial land. It has also significantly reduced the total negotiation-granted land and the proportion of such land in the overall land granting market.

Part IV, “Urban Land Development Regulation,” researches case studies from Germany and Poland. In the first contribution, Julia Süring and Alexandra Weitkamp examine the population growth in many large German cities, which had resulted in shortage of urban living space over the last years, while housing prices keep rising, mostly in the low-budget segment. Süring and Weitkamp’s paper evaluates the land policy instruments and building land strategies adopted in many of these cities, aiming to find out if these policy measures can countervail the displacement and segregation of low-budget households. Therefore, the chapter investigates German building land strategies in terms of their content structure, their orientation with regard to the entire city, and their effect on the land value. The case study findings, combined with those of interviews with administrative experts, led to a comparison of eight chosen strategies. The results of the analysis show commonalities and differences, the factors of success, but also components within the building land strategy that require further development.

The Polish case is presented by Małgorzata Barbara Havel. In her chapter, she points to the current moment of reform in the local planning law and inquires about the relevance of existing Western European planning theory directed at the communicative or collaborative planning process and the role of values and consensus building. She claims that these approaches do not adequately account for the particular property rights nuances in planning practice and urban development in countries undergoing economic and political transition. Havel identifies that, recently, increased attention is being paid to the formal “rules of the game” and to

the property rights regime in urban development processes. This paper contributes to the conceptualization of the impact of formal institutions on urban development and presents an analytical model for the influence of the property rights regime on urban land development methods.

Part V, titled “Standardization Efforts in the Real Estate Market,” closes the volume by analyzing efforts to standardize the real estate market, from several viewpoints. Yevgeny Mugerman and Moran Ofir examine the seminal heuristic of anchoring and adjustment and its effects on the mortgage market. They focus on the market’s adaptation to protective regulation on mortgage loans recently imposed by the Central Bank of Israel in order to protect the banking system against systemic risk associated with highly leveraged loans. Using a unique and detailed dataset on mortgage loans from 2011 to 2016, Mugerman and Ofir empirically estimated the impact of these restrictions on household choices and the housing market and found that overall the regulatory provisions tested served as an anchor for the borrowers. Their most unexpected result was an increase in mortgage loans maturity following the imposed maturity limit. Accordingly, the anchoring and adjustment heuristic may have influenced households’ decision in such a way that they perceived the maximum maturity limit as a relevant average maturity anchor and consequently increased mortgage maturity.

Mortgage regulation is also discussed in Nelson Camanho, Ronit Levine-Schnur, and Tal Farber’s paper, which investigates whether it assures proper decision making by borrowers. The paper offers regulatory responses to mitigate a “mortgage illusion” phenomenon found in recent experimental studies. According to these experiments, buyers are influenced by the comparison between the monthly rental payment and the monthly mortgage installment for fixed-rate mortgages and are more likely to buy a house when the former is higher than the latter. The paper suggests that regulators ought to account for this illusion in designing mortgage policies.

In the book’s last article, Sjep van Erp finds that after a relatively long period in which European law has hardly had any impact on property law (except for intellectual property law), this began changing some 15 years ago. Projects were initiated to unify certain parts of property law, such as mortgages, trusts, and the transfer of movables. At the same time, the EU Court of Justice made it clear in its case law that the four freedoms underlying the EU internal market could set aside national rules of property law. However, van Erp argues, so far none of the integration projects has been successful. Furthermore, in a recent case about the position of civil law notaries and their privileged role in land transactions, the court acknowledged their special position and seemingly accepted the status quo concerning the priority of national property law over EU law. It is beginning to become apparent, therefore, that EU law might prove not very effective when it comes to property law. Van Erp asks whether this tendency can be characterized as part of what seems to be a return to a demarcation of property laws along national borders or only as a temporary stage that will pass as (regional and global) economic integration continues.

I hope that the book's variety of topics and perspectives will serve and encourage rigorous debate among experts and students interested in real estate regulations, their effects on efficiency, sustainability, and distributional justice, and the ways they can be designed to secure better outcomes.

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Ronit Levine-Schnur

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Part I

Zoning and Land Use Regulation: Theory

Measuring the Demand for Land Under Sorting and Matching



C. Luke Watson and Oren Ziv

Abstract This paper investigates nonparametric identification of demand in markets with two-sided sorting. We consider any situation where the price of a good depends on the sorting of buyers. Specifically, we consider the case where willingness to pay for local amenities differs by income group and monopolistic landlords use a pricing rule based on marginal cost and price elasticities. We first show that generally demand parameters cannot be identified, thus all identification is based on a priori exclusion restrictions or functional form on demand or pricing rules. One example is that if cost shifters are assumed additively separable in marginal cost, then the model can be identified. Such restrictions may be warranted in specific research questions, but researchers should consider and be clear about the implicit additional structure placed on the model.

1 Introduction

Real estate values within cities differ greatly in rent and in the average income of residents¹. The simplest explanation for these differences is that central locations have higher overall amenity values that generates sorting between income groups and neighborhoods, with higher-income individuals and businesses outbidding lower-income individuals for higher amenity parcels throughout the city.

If individuals of different income groups had identical willingness to pay for these amenities, then a simple hedonic regression of prices on observable amenities would reveal that universal willingness to pay. However, the observed relationship

¹We use the terms ‘rent’ and ‘price’ interchangeably when referring to locations, but our arguments are valid for any case where a good’s price depends on endogenous sorting.

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between individuals' ex ante attributes and a location's qualities implies that willingness to pay varies systematically by renter attributes.

Much work has been devoted to identification of amenity values in the presence of this heterogeneity. In order to identify and measure differences in amenities across locations in the presence of this sorting, several papers have proposed methods revolving around the use of demand shifters—see Kuminoff et al. (2013) for a recent review article. In a discrete choice residential problem, one common strategy is to use amenities of alternative locations to instrument for price endogeneity, as in Bayer et al. (2007)—which are based on “Berry-Levinsohn-Pakes (BLP) instruments” from Berry et al. (1995). This strategy uses substitution behavior as a price shifter leveraging variation in the amenities of rivals. The intuition of using rival amenities is that they will be uncorrelated with unobservable attributes of a specific location's demand but correlated with price due to substitution. Alternatively, “supply-side” variables like zoning restrictions or geographic features may be used under the assumption that these variables affect the cost of providing space but are uncorrelated with demand.²

This paper presents a complication to these efforts. The approaches in the above literature require market structure assumptions which decouple the demand and supply determinants such that exogenous cost shifters can identify demand elasticities, even when demand elasticities vary by group. These assumptions restrict the potential set of scenarios in which the approaches are valid and, if they are violated, can introduce bias into estimates. Specifically, when a location's rent depends on the endogenous sorting behavior, previously proposed identification methods fail. Instead, all identification must be based on functional form or exclusion restrictions. Thus, demand parameters cannot be nonparametrically identified.

To make our argument, we consider a market of location choices where demand only depends on exogenous location attributes and endogenous prices that depend on the attributes and sorting behavior. We first lay out in the most general terms how interdependence between supply and demand can introduce bias into estimates of demand. The intuition for our result is that when *a priori* we do not know how different income groups' demands depend on local amenities or prices, if prices depend on sorting, then there is a lack of independent variation in the data.

Next, we go through one example of market structure in which interdependence between supply and demand violates the conditions of traditional identification strategies: when monopolistic landlords use a price setting rule based on marginal cost and price elasticities of demand. Our setup and arguments follow from Kasay (2015) who considers nonparametric identification of social externalities where demand depends on the sorting behavior of other buyers but price only depends on the attributes. We set up the supply and demand sides of the market and show how, under specific circumstances, exogenous cost shifters introduce bias into estimates

²Davidoff et al. (2016) show that many of the factors identified by Saiz (2010) are in fact highly correlated with demand; our model that incorporates differences in amenity valuation by income groups may be one explanation for this.

of willingness to pay. The intuition is that shifters also change the equilibrium sorting pattern, changing demand at each specific location and changing, via the monopoly power of landowners, the markups of each landowner. The endogenous response of markups to demand shifts confound the measured shift in supply.

Finally, we evaluate potential strategies to overcome the nonidentification problem. Exclusion restrictions or functional form assumptions must be made with careful consideration to market structure. In this case, researchers must choose to either model the endogenous relationship between supply and demand directly using all relevant channels (in our example, the endogenous markups of monopoly landowners) or otherwise assert that measured “supply shifters” affect price only through supply and not demand.

The relevance of our critique to any particular research project will depend on the question. Primarily, our point is that researchers should consider this issue when developing their estimation strategies, consider alternative restrictions, and be clear with readers about what structure is placed on the problem.

2 Literature Review

Measuring the value of amenities and the degree of sorting has been an ongoing line of economic research for decades following the Tiebout (1956) hypothesis that location sorting could “solve” the local public good problem. Since then, many authors have expanded our knowledge of the existence of sorting equilibria and estimation of sorting preferences.³

A related but separate literature considers how to measure valuations for local amenities and test for sorting behavior. Kuminoff et al. (2013) review this literature which they trace from hedonic regressions in Rosen (1974) and discrete choice structural models based on McFadden (1974). Estimating demand is a necessary step to computing willingness to pay for local amenities and cost-benefit calculations over their provision (by private markets or governments). For example, schools, roads, scenic views, and clean air are all local amenities that affect location markets and tax revenues. The authors describe three approaches to estimation: “pure characteristics,” “random utility,” and “general equilibrium.”

The pure characteristic approach is typified by Epple and Sieg (1999) who model a discrete choice of community and then a continuous choice of housing characteristics, where all buyers agree on a vertical ranking of neighborhood amenities but can have type-specific preferences for a particular attribute and use instruments based on the income rank of different communities.

³Dowding et al. (1994) and Broadway and Tremblay (2012) review the Tiebout model, and Barseghyan and Coate (2016) create a dynamic extension of the model.

Random utility models are typified by Bayer et al. (2004) who model a discrete choice of housing types in a neighborhood, where buyers of different types can have any horizontal preference for housing and neighborhood features and use instruments based on the characteristics of houses beyond a certain distance from a neighborhood.

The general equilibrium model is typified by Ferreyra (2007) who models a random utility model of community choice along with majority voting on tax rates, where buyers have different perceptions of local public goods (schools). This approach attempts to directly model the amenity production process and does not estimate willingness to pay or consider exactly how unobservables correlate with demand.

Alternatively, it is possible to use a quasi-experimental research design to use plausibly exogenous variation in amenities to measure price responses; see Chay and Greenstone (2005) who measures the price response of clean air amenities as an example.

Identifying demand can also potentially disentangle whether residents have preferences over neighborhood demographics or use demographics as a heuristic tool for some other neighborhood attribute. Bayer et al. (2007) use a border discontinuity design with hedonic regressions and a discrete choice model to estimate preferences for test scores and neighborhood demographics. The authors report that the seemingly large socioeconomic difference between high-test-score neighborhoods and low-test-score neighborhoods is driven primarily by racial sorting.⁴

While Kuminoff et al. (2013) discuss identification issues in the literature, we highlight what we believe is at the heart of the issue more directly. In short, when demand depends on exogenous characteristics—all features of the choice—and endogenous prices and neighbors, then there is no independent variation in the data to identify demand parameters. The demand coefficients are linearly dependent on each other, and so identification is not possible off the equilibrium support. We use the argument structure of Kasy (2015), who shows that, without exclusion restrictions on demand, social preferences cannot be identified. The author describes three strategies for identifying demand and social externalities based on exclusion restrictions about certain characteristics, market connectedness, and market dynamics. Using these strategies, the author finds that neighborhoods' Hispanic share reduces demand of non-Hispanics, increases Hispanic demand, and decreases housing price.

The primary difference in our modeling is that we explicitly consider how sorting affects the price and the measurement issues that follow. The previous papers assume market structures such that, in essence, prices can be treated as fixed conditional on a set of exogenous amenities, which we take to be all features of the

⁴The authors explicitly report in their abstract “much of the apparent willingness to pay for more educated and wealthier neighbors is explained by the correlation of these sociodemographic measures with unobserved neighborhood quality” (Bayer et al. 2007: 589).

location other than price; however, we allow prices to depend on how the different groups sort into locations. More specifically, in our model landlords use the price elasticity of demand to set prices and this elasticity varies depending on renter income. Essentially, rather than social preferences in demand, suppliers' profits depend on the distribution of income in the location. In this light, the possibility of sorting creates an identification problem in any market where sellers have pricing power even if assuming there are no social preferences among buyers.

An important departure of this paper from the previous literature is that, in principle, we can account for sorting at any geographic level, even between specific units or parcels. Because rather than relying on implicit assumptions about the structure of supply, like that there is a competitive market at each location, we directly model the supply decision of landowners. The assumption of competitive real estate markets, which can be used to justify the exogeneity of supply shifters to demand and support the assumptions made in the literature above, requires a sufficient number of homogenous units within each choice set and therefore can only be understood to account for sorting between areas at high enough levels of aggregation to justify the competitive assumption.

3 General Model

In this section, we set up a general model of a differentiated product market, based on product attributes, with heterogeneous demanders where the price of a good depends on the sorting of the demanders. While all of these arguments follow generally, we describe the model in terms of a location choice problem with landlords and renters. Landlords set prices and rent out space in a location with exogenous amenities; renters with heterogeneous incomes make location choices to maximize utility subject to prices.

Suppose there are $t \in T$ household types (e.g., income groups, ethnic groups) and $\ell \in L$ different neighborhood locations. Each location is associated with a set of exogenous potential attributes related to the location, X_ℓ . This includes attributes typically associated with a plot, such as geographic location, crime, and unobservables, as well as attributes of other plots, such as the elevation or crime of neighboring plots and supply shifters. We do this to emphasize that we will not make assumption on what attributes affect demand. Two items are not part of X : price and the profile of neighbors also choosing the same neighborhood because these will be endogenously determined in equilibrium. We are assuming that we have exogenous variation in all X 's attributes. By defining choices based on product characteristics, if $X_\ell \neq X_k$, then $\ell \neq k$.

Now, let

$$Y(X_\ell) = (Y_{t=1}(X_\ell), \dots, Y_{t=T}(X_\ell))$$

be a profile of type shares in a specific neighborhood based on the exogenous attributes of the neighborhood. Similarly, we can define a profile of demands

$$D_\ell(X_\ell, P) = (D_{\ell,t=1}(X_\ell, P), \dots, D_{\ell,t=T}(X_\ell, P)).$$

We impose that demand is only a function of location characteristics and prices. In the next section, we micro-found this assumption.

The equilibrium pricing rule depends on the exogenous amenities and the profile of groups in each location:

$$p_\ell = P(X, Y(X)).$$

This model structure aligns with that of Kasy (2015). There, demand is a function of exogenous amenities, prices, and the profile of other buyers, while price is only a function of amenities, i.e., $D(X, P, Y)$ and $P(X)$. Instead, in our framework, it is price which is potentially endogenously a function of the type of agent which in equilibrium sorts into the landowner's location.

In equilibrium, demands for each type and plot must equal the type shares at that location:

$$\sum_\ell \sum_t Y_{\ell,t} = \sum_\ell \sum_t D_{\ell,t} = D.$$

Market clearing requires that supply equals demand for every location:

$$\sum_t D_{\ell,t} = D_\ell(X, P) = S_\ell(X, P) \text{ for each } \ell \in L.$$

We are interested in identifying demand in order to estimate willingness to pay for location amenities. We suppose that amenities and equilibrium prices and sorting are observed, but we do not impose any functional form properties on demand. The main result is the following proposition.

Proposition 1 (Nonidentification): *Suppose the researcher observes $(X, P^*(X, Y^*(X)), Y^*(X))$ but does not impose any prior knowledge on S or D , then $D(X, p(X, y))$ is only identified for $(p, y) \in (P^*(X, Y^*(X)), Y^*(X))$. With uniqueness or differentiability, only linear combinations of the demand slopes are identified as $D_x + D_p[P_x + P_y Y_x] = Y_x$.*

The proposition says that demand slopes for amenities and prices are linearly dependent with sorting behavior, so there is never independent variation in amenities and sorting. To show nonidentification, we only need to create an example where the coefficients of demand can be arbitrary off of the equilibrium support. Consider the following function of demand with an arbitrary parameter A:

$$D(X, P(X, y)) = (1-A) P(X, Y(X)) + AP$$

The following equations show that on the observed equilibrium support, the function “is true” but off equilibrium the function is totally arbitrary, yielding nonidentification of demand parameters.

$$\begin{aligned}\rightarrow \frac{dD}{dx} &= (1 - A)[Px + PyYx] \\ \rightarrow \frac{dD}{dp} &= A \\ \rightarrow D_x + B[xP_x(X, Y) + P_x(X, y)] + [B P_y(X, Y)) + A]Y_x &= Y_x\end{aligned}$$

4 Monopoly Power

Above, we allowed for the possibility that price depended on demand parameters. In this section, we further elucidate the nonidentification problem by showing a particular mechanism through which this comingling can occur. Specifically, we define the market structure such that, in equilibrium, renters sort into locations according to type and landowners retain monopoly pricing power. In this context, markups, and therefore prices, depend on the sorting behavior of individuals. Crucially, optimal markups at each plot will vary with renters’ types. Any change in the sorting behavior of renters therefore also affects the landowners’ markup decisions at each plot.

To set up the model, we draw on the notation of Watson and Ziv (2019) for our application of our general point. Renters vary by income level. Let Y_t signify a particular income level, where $Y_t < Y_{t+1}$. We begin by positing a set of discrete locations A . Each plot, or location, in A will differ according to its underlying “location attributes”: a .

Each plot has a unique landowner who maximizes his/her profits by choosing the rent level, where q is the mass of renters the landowner accommodates at his/her location a in equilibrium. Landowner a ’s profit is unit rent times quantity minus total costs:

$$\pi_a = r \cdot q - c(q).$$

Renters, indexed by i , are also heterogeneous: each renter’s type y is drawn from a continuous distribution $G_2(y)$.⁵ Renters draw random utilities $\epsilon_{i,a}$ for each location $a \in A$. These random utility draws, drawn from a type 1 extreme value distribution $G_3(\epsilon)$, constitute what we refer to as horizontal differentiation among locations, as each renter has idiosyncratic preferences over locations along this dimension. Renters choose their location a to maximize the utility function

⁵In empirical applications, such as Berry et al. (1995), a log normal distribution is used for income with mean and standard deviation based on a random sample in the aggregate jurisdiction.

$$U_{y,a} = F(a, y, I_y - r(a)) + \epsilon_{i,a}$$

subject to a budget constraint, where consumption is equivalent to I_y , income of renter type y , minus rent.

As in Watson and Ziv (2019), an equilibrium will be defined by a schedule of rents and quantities $r_a, q_a \forall a \in A$ that maximize landowner profits, an assignment of individuals to locations a for all individuals $i \in I$ such that no individual can improve welfare by choosing to pay rents at any other plot, and a clearing of the real estate market, so that for each type y , $g(y) = \sum_A q_a(y) + q_0(y)$, the original density of types y is accounted for across all their chosen locations a and the outside option.

Following the results of this setup in Watson and Ziv (2019), it is clear that landlords set prices based on the price elasticity of demand, which will be a function of the types that sort into the location:

$$r^* = mc(q^*, a) + \frac{q^*}{-mr(q^*, a)} \Rightarrow \frac{r^* - mc}{r^*} = -\frac{1}{\varepsilon^*} \geq 0. \quad (1)$$

Prices are not set at marginal cost but rather are a markup over marginal cost, where the markup is a function of the price elasticity of demand, ε^* . Note, this markup is endogenously determined in the equilibrium, and therefore the equilibrium markup and prices are codetermined by elements of supply and demand. To further understand the markup, we define an equilibrium using the following three equations:

$$q_a^D(r^*) = Y^*(a) \quad (2)$$

$$q_a^S(r^*) = \sum_t Y_t^*(a) \quad (3)$$

$$r^*(a, Y^*(a)) = mc(Y^*(a), a) + \frac{Y^*(a)}{-mr(Y^*(a), a)} \quad (4)$$

Equation (2) ensures supply and demand at each location are equalized. Equation (3) ensures market clearing for each type of agent, and Eq. (4) sets monopoly landowner profit maximizing rent at each location equal to marginal cost plus a markup. The function $Y^*(a)$ can be understood both as an equilibrium profile of types, Y^* , at location a , and as an equilibrium assignment function of types Y to location a .

Note that a direct implication of the pricing rule is that, in this framework, the markup for a given location, a , is a function of equilibrium type $Y^*(a)$. The intuition for this result is that individuals of a given income group have different systemic tastes and willingness to pay. If landowners face types with less elastic tastes, they will respond with higher markups in order to maximize profits. Markups are therefore a function of demand type. Conversely, if willingness to pay for

all attributes is income invariant, then markups—and thus prices—will not be systematically tied to income sorting.

Furthermore, any shift in the equilibrium assignment function $Y^*(a)$ of types Y to locations a will shift the schedule of markups across locations. This is the heart of the nonidentification result: any exogenous variation in costs will affect demand at each location and thereby adjust the equilibrium assignment function $Y^*(a)$. Any such variation will therefore adjust markups (and price) at each location through endogenous changes in demand.

5 Dealing with Nonidentification

Identifying demand in this context is a *Catch-22*: to identify demand, you must already know important features of demand. This is the classic identification problem that adequate exclusion restrictions are needed. It remains the case that demand is identified if the researcher has available known supply-cost shifters over which demanders do *not* have preferences. This, however, can only be achieved if, in addition to being itself demand-neutral, cost shifters have no effect on the equilibrium sorting behavior of renters other than through price.

Suppose that it is known that there are marginal cost shifters, ω , that are not a part of X , so that prices are

$$p = P(X, Y(X), \omega).$$

Then, there will be different prices for the same X , which will provide the independent variation needed for identification. To see this, note that:

$$\frac{d}{d(X, \omega)} D^* = \begin{pmatrix} D_x + D_p [P_x + P_y Y_x] \\ D_p \cdot P_\omega \end{pmatrix} = \begin{pmatrix} Y_x \\ Y_\omega \end{pmatrix}.$$

In particular, at an observed $(X, Y^*(X))$, there will be variation induced by ω that allows identification of D_p and D_x , so we can calculate willingness to pay. Another potential path to satisfy this requirement is to restrict analysis to situations where $Y^*(X)$ can be argued or verified to be unchanged for some or all types. This might happen whenever shifters are sufficiently small. However, lower levels of variation in the instrument can magnify any bias caused by a violation of exclusion restrictions.

Finally, functional form restrictions can guarantee $P(X, Y^*(X)) = P(X)$. Behind such assumptions, however, lie market structure assumptions which in turn limit the validity and scope of an econometric model. If, as in our example, the source of confounding emanates from the market power of landowners, one can assume a market structure where landowners, in equilibrium, optimally price at marginal cost. To do this, one would need to defend assumptions, either theoretically or empirically, regarding any particular market structure arrangement.

Certain assumptions may be sensible depending on the setting but may in turn limit the analysis to settings in which the assumptions are valid. Seminal works in this field have, for instance, used the assumption of competitive real estate markets and estimated demand for neighborhood-level variables. At the neighborhood level, the competitive market assumption may indeed be reasonable, but subsequent work attempting to apply this work at lower levels of aggregation would err.

6 Conclusion

Market structure matters. Previous work has estimated demand for real estate using sometimes-implicit assumptions about the structure of real estate markets. We have shown that under certain circumstances, these assumptions can lead to biased estimates. In particular, in the presence of two-sided matching equilibria, prices, under specific market structure, may deviate from marginal cost and become dependent on demand characteristics. In these instances, changes to the sorting behavior of renters in a market endogenously affect prices. When this is the case, standard tools used to identify demand parameters can result in biased estimates.

This result is general. One particular vehicle for this endogenous pathway is monopolistic competition among landowners. In the presence of monopoly power, landowner markups are dependent on demand elasticities, and those elasticities are reflected in rents through markups. In this setting, changes to the equilibrium matching arrangement change the demand elasticity at each location and hence affect price through demand. Supply-side shifters cannot be used as instruments in this case.

We suggest several strategies for overcoming these obstacles, including directly addressing any shifts in the equilibrium matching between renter and location types, focusing analysis on within-type variation, and explicitly modeling the structure of the market. Ultimately, the econometrician must carefully consider the structure of both the demand and supply sides of the market in order to determine the least costly set of assumptions required in order to proceed.

References

- Barseghyan, L., & Coate, S. (2016). Property taxation, zoning, and efficiency in a dynamic tiebout model. *American Economic Journal: Economic Policy*, 8, 1–38.
- Bayer, P., Ferreira, F., & McMillan, R. (2007). A unified framework for measuring preferences for schools and neighborhoods. *Journal of Political Economy*, 115(4), 588–638.
- Bayer, P., McMillan, R., Rueben, K. (2004). An equilibrium model of sorting in an urban housing market. “National Bureau of Economic Research.” Working Paper No. 10865.
- Berry, S., Levinsohn, J., & Pakes, A. (1995). Automobile prices in market equilibrium. *Econometrica: Journal of the Econometric Society*, 63, 841–890.
- Boadway, R., & Tremblay, J.-F. (2012). Reassessment of the Tiebout model. *Journal of Public Economics*, 96, 1063–1078.

- Chay, K. Y., & Greenstone, M. (2005). Does air quality matter? Evidence from the housing market. *Journal of Political Economy*, 113(2), 376–424.
- Davidoff, T., et al. (2016). Supply constraints are not valid instrumental variables for home prices because they are correlated with many demand factors. *Critical Finance Review*, 5(2), 177–206.
- Dowding, K., John, P., & Biggs, S. (1994). Tiebout: A survey of the empirical literature. *Urban Studies*, 31, 767–797.
- Eppe, D., & Sieg, H. (1999). Estimating equilibrium models of local jurisdictions. *Journal of Political Economy*, 107(4), 645–681.
- Ferreyra, M. M. (2007). Estimating the effects of private school vouchers in multidistrict economies. *American Economic Review*, 97(3), 789–817.
- Kasy, M. (2015). Identification in a model of sorting with social externalities and the causes of urban segregation. *Journal of Urban Economics*, 85, 16–33.
- Kuminoff, N. V., Kerry Smith, V., & Timmins, C. (2013). The new economics of equilibrium sorting and policy evaluation using housing markets. *Journal of Economic Literature*, 51(4), 1007–1062.
- McFadden, D. (1974). The measurement of urban travel demand. *Journal of Public Economics*, 3(4), 303–328.
- Rosen, S. (1974). Hedonic prices and implicit markets: Product differentiation in pure competition. *Journal of Political Economy*, 82(1), 34–55.
- Saiz, A. (2010). The geographic determinants of housing supply. *The Quarterly Journal of Economics*, 125, 1253–1296.
- Tiebout, C. M. (1956). A pure theory of local expenditures. *Journal of Political Economy*, 64, 416–424.
- Watson, C. L., & Ziv, O. (2019). Is the rent too high? Land ownership and monopoly power. Manuscript.

Capitalization and Exclusionary Zoning



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Abstract For decades, land use experts have wrestled with the problem of exclusionary zoning. Traditionally, the phenomenon has been characterized primarily by suburban communities using large-lot zoning and other density controls to reduce supply and drive up the cost of housing. Increasingly, however, zoning is blamed for the affordability crisis in many thriving cities. Some of the conventional legal tools for recognizing and responding to exclusionary zoning do not apply as well in cities, where minimum lot sizes and bans on multi-family housing are not the primary source of density limits. This chapter therefore provides a new lens for identifying exclusionary zoning, one that focuses on the economic effects instead of any particular characteristic. In particular, the chapter looks at the extent to which the economic values of public services like high-quality public schools are capitalized into property values. In the absence of supply restrictions, developers should satisfy consumer demand and compete away any premium associated with public services. Zoning, however, changes that dynamic, allowing services to be capitalized into property values. Affluent communities are not just exclusionary because they are expensive; they are expensive in part because they are exclusionary.

1 Introduction

Local governments weave together property taxes, public services, and zoning into a complex fabric that determines in large measure how and where people live. Different municipalities offer their own particular mixes, seeking broadly to satisfy consumer demand and enhance local property values. Some prioritize low taxes, others excellent public schools, and still others transit and infrastructure.

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The resulting patchwork quilt gives property owners, and prospective residents, a significant amount of choice in satisfying their particular preferences (Oates and Fischel 2016; Tiebout 1956).

This does not, however, convert property taxes into a mere fee for services. Because those taxes are levied by property value, and not by any taxpayer's individual use of the service, they create important opportunities for redistribution. Purchasing an inexpensive home in an affluent municipality will provide access to the very same public schools as purchasing an expensive home but will result in lower property taxes. Someone buying a \$75,000 home and paying \$1200 a year in property taxes, for example, has the same access to public services as someone buying a \$750,000 home in the same municipality and paying \$12,000 per year. Traditionally, moving to a more affluent community or region has been an important source of social mobility in the United States (Rothwell and Massey 2015).

The opportunity only exists, however, to the extent that property values do not fully capitalize the benefits of the services and of this intra-local redistribution. For example, if living near mass transit allows residents to avoid owning a car, this may save them upward of \$7500 per year. Housing advocates have long argued for more transit-oriented development precisely on grounds that such housing will be more affordable, all things considered, because people living near mass transit will have lower transportation costs. However, if that financial benefit is fully capitalized into local property values, so that buyers or renters will have to pay an additional \$7500 per year (or more) to live near mass transit, then those cost savings disappear (Serkin and Wellington 2013). The same is true for any municipal service that can be capitalized into property values. An example familiar to many young families is that people often disgorge the benefits of good schools through the combination of housing prices and property taxes. But the same can be true, too, of police, fire, and rescue services, libraries, and even economic opportunities. Access to better jobs and higher incomes only leads to better economic outcomes if rents and housing costs do not first eat it all away.

As obvious as this intuition may seem, the fact of this phenomenon should be something of a surprise. If a service is valuable, and consumers are willing to pay a premium for access to it, then developers should be expected to produce more housing to take advantage of that premium. In the process, though, they should compete away that premium, until a new equilibrium emerges where house prices hew closely to construction costs. This does not, in fact, occur in most places because of zoning and land use regulations. By reducing the ability of developers to supply new housing, the value of amenities will be capitalized at least to some extent into land values. In places like New York City, for example, housing costs are often twice the construction costs, reflecting the regulatory limits on density even in America's most dense urban center (Glaeser et al. 2005; Been et al. 2014). Where the value of public services is fully capitalized into property values, people must pay for the opportunities they are trying to secure in the form of higher housing costs.

This chapter will argue that the extent to which the value of services is, in fact, capitalized into local property values should inform judgments about whether zoning is problematically exclusionary. The economic benefits of high-quality

services like public schools can be consumed by the combination of property taxes and housing costs in ways that limit or all but eliminate important opportunities for redistributive taxes. This represents a subtle but important shift in evaluating the exclusionary impact of zoning and land use controls. Traditionally, the sine qua non of exclusionary zoning is affordability. The focus of the proposal here is instead the extent of capitalization of services and public goods into property values.

The definition of exclusionary zoning offered in this chapter is intended to supplement but not supplant traditional analyses. In other words, a municipality can be exclusionary either because local services are excessively capitalized into property values or because housing is simply too expensive. But affordability and capitalization raise different concerns and therefore demand different kinds of analyses and responses. We may care about affordability simply because people need a roof over their heads, and some access to housing is essential for many reasons familiar in the housing literature. Capitalization, on the other hand, reveals how much of the value of local services residents must disgorge in the form of higher housing costs and so determines the extent to which redistribution in the provision of those services is actually available.

This focus on capitalization does not solve the analytical problems posed by exclusionary zoning, but it does reframe them. Instead of trying to identify particular practices—like large-lot zoning—as exclusionary, it calls for examining the extent to which the value of local services is capitalized into housing costs. It is no easy answer to determine how much is too much. It depends on deeper normative commitments about the nature and appropriateness of redistribution at the local level, which in turn depends upon the public goods or services at issue. This chapter therefore does not aspire to provide a definitive set of rules but seeks instead to offer a framework for evaluating capitalization as a measure of exclusion. That inquiry will require delving into the mechanisms of capitalization, which depend on dynamics surrounding residential mobility and the ways in which zoning and land use controls can limit that mobility. First, however, it is important to understand how exclusionary zoning is more traditionally identified and evaluated.

2 Conventional Exclusionary Zoning

Zoning and land use controls can serve many vital purposes, like protecting health and safety by separating dangerous or noxious uses of land, minimizing infrastructure costs, preserving ecological resources, and sustaining community character, to name just some of the most obvious. With the possible exception of Houston, Texas, every city in the United States uses zoning to promote these and other important public goals. However, land use controls have a dark side, as well. After all, the seminal American zoning case, *Euclid v. Ambler Realty* (1926), upheld the exclusion of apartment buildings from single-family residential neighborhoods by characterizing apartment buildings as parasites and analogizing them to “a pig in the parlor instead of the barnyard” (*Euclid v. Ambler Realty*, p. 388). Zoning’s

origins are intertwined with the goal of excluding minorities and the poor. This is zoning's "original sin."¹ Today, however, land use controls that make property *too* inaccessible have earned the pejorative label of "exclusionary zoning."

There is widespread agreement among academics, courts, and policymakers that exclusionary zoning is problematic (Span 2001; Sager 1969). It is normatively undesirable for local governments to use their land use authority to keep out groups they typically disfavor (Ford 1994). There is much less consensus, however, about what constitutes exclusionary zoning. After all, every zoning ordinance is exclusionary to some extent. That is the point of zoning. It puts a cap on density and seeks to exclude certain uses from certain areas or even from the municipality as a whole. Zoning necessarily reduces the supply of developable land and therefore drives up land and housing prices (Been et al. 2017). The legal problem is therefore to distinguish between normal zoning, which is always exclusionary to some extent, and *impermissibly* exclusionary zoning. This is an altogether different and more difficult problem.

One approach focuses on exclusion's costs on neighboring communities. In the most famous line of exclusionary zoning cases, *Southern Burlington County NAACP v. Mt. Laurel* (1975), the New Jersey Supreme Court imposed a fair share requirement to ensure that local governments' land use controls were operating for the benefit of the entire state and not merely the parochial interests of each city and town. The legislature eventually—and grudgingly—took up the *Mt. Laurel* court's call and operationalized the judicial rule with a new statutorily defined fair share requirement.

The goal of the resulting regime was laudatory. By requiring every municipality in New Jersey to provide a fair share of affordable housing, the state sought to prevent the pernicious exclusionary dynamics that would allow affluent suburbs to close their borders to the poor. It recognized that exclusionary zoning's burdens fall not only on those people excluded from more affluent communities but also on less affluent communities themselves by forcing them to bear the costs associated with concentrated poverty and a diminished tax base (Span 2001; Serkin and Wellington 2013). The dynamic typically feeds on itself. When wealthy suburbs zone in an exclusionary manner, the poor are relegated to poor communities, which tends to increase the costs of public services—like public education. A poor community must then either raise taxes or cut the level of public services. This will create even more pressure on affluent property owners to leave the municipality, causing a further decline in property values and property taxes, and so on. *Mt. Laurel* and its codification by the New Jersey legislature were intended to break that death spiral by ensuring that every community would bear the costs associated with poor families and could not simply foist those costs on to poor communities and the urban core (Holmes 2013).

¹This is Nestor Davidson's formulation, made during an unpublished presentation at a land use conference in 2016.

While the ultimate impact of *Mt. Laurel* and the resulting legislation continues to be written and studied, the implementation was hardly smooth. Persistent litigation, lobbying around fair share requirements, political compromises, and recalcitrant municipalities have substantially blunted the lofty aspirations of the original *Mt. Laurel* decision. Nevertheless, *Mt. Laurel* remains something of a high-water mark in legal responses to exclusionary zoning.

Few states have responded like New Jersey. Most state supreme courts have not sought to require affirmative fair share obligations. Most courts have instead focused on certain kinds of zoning practices that tend to be exclusionary. They have sought, in other words, to prohibit particular forms of zoning that are unduly restrictive instead of trying to balance out municipal burdens associated with affordable housing.

In its most traditional incarnation, exclusionary zoning involves suburbs seeking to exclude poor and minority residents of the urban core by adopting measures designed to drive up land prices. Traditional land use barriers restricting supply include, for example, large minimum lot sizes, off-street parking requirements, density limits, prohibitions on multi-family housings, as well as the burdens of a complex permitting process that function like a tax on development (Serkin and Wellington 2013; Furman 2015). And, indeed, for many decades, the focus of much of the judicial inquiry amounted to deciding how big minimum lot sizes could be and how much land had to be set aside for multi-family housing (Span 2001, p. 32).

Those exclusionary practices are by now familiar to courts and to land use practitioners, but they are becoming increasingly anachronistic. By focusing on these particular forms of exclusionary zoning, the law has largely failed to keep up with more recent housing trends. The traditional focus on suburban exclusionary zoning makes less sense in the face of changing consumer preferences and dramatic increases in demand for urban living. In suburbs, where the modal homebuyer is seeking a single-family detached house, large-lot zoning reduces available developable land while producing the kind of housing that the market most values, but not so in cities, where a taste for density, amenities, and transit-oriented development produces very different consumer pressures. Large-lot zoning and limits on density still—by definition—reduce the supply of developable land but in the process prohibit the form of housing that many consumers increasingly prefer. As a result, large-lot zoning and prohibitions on multi-family housing are simply not part of the zoning lexicon in most of the resurgent urban core and are not responsible for today’s affordability crisis in many cities (Jan 2017; Been et al. 2014; Crowley 2003). Efforts to address affordability by eliminating traditional forms of exclusionary zoning therefore often miss the mark.

In fact, many of the most exclusive and most expensive places are now the most dense. The super-tall super-luxury buildings dotting the Manhattan skyline represent extremely dense but also extremely expensive developments. In other places, as well, the kinds of developments that affordable housing advocates have long championed—transit-oriented development, walkable neighborhoods, and dense building—are increasingly associated with affluence and luxury instead of affordability (Koschinsky and Talen 2015).

Even more problematic for conventional responses to exclusionary zoning, some measures expressly designed to produce affordable housing can have the opposite effect. Mandatory inclusionary zoning, for example, requires developers to produce a certain number of affordable units for every market-rate unit. Ostensibly, the goal is to encourage the production of affordable housing. By driving up the costs of development, however, mandatory inclusionary zoning can reduce production of new housing and thus increase overall housing costs. In an important 2011 study, Jenny Schuetz, Rachel Meltzer, and Vicki Been demonstrated that aggressive inclusionary zoning in and around Boston resulted in the production of fewer affordable units and an overall increase in housing prices (Schuetz et al. 2011; Ellickson 1981).

Ultimately, whether or not zoning is exclusionary depends significantly on its impact, and not on any particular form that it might take. Changing consumer preferences and the evolving impact of land use controls on development patterns means that it no longer makes sense—if it ever did—to try to identify exclusionary zoning by specific criteria. A better approach focuses on the *effects* of land use controls, instead of their *characteristics* to decide which are exclusionary (Furman 2015; Span 2001).

It is, perhaps, tempting to look exclusively to affordability and to determine that zoning is exclusionary if there is an inadequate supply of housing available to people at different income levels. But this, too, is no easy task. How much affordable housing must each municipality allow? And what counts as affordable? *Mt. Laurel* and its progeny demonstrate the difficulty of this approach. New York and San Francisco are occasionally pilloried for having affordable housing that is available to people making more than \$100,000 per year (although given the staggering prices in those cities, this number is perhaps more appropriate than it seems) (Kusisto and Kamp 2015). Nevertheless, determining the right level of affordability—both in terms of the number of units and the relevant eligibility—is not straightforward.

This inquiry into affordability also misses some important dynamics and concerns. Part of the worry about exclusionary zoning is undoubtedly the absence of adequate housing for households with limited income. People have to live somewhere. Focusing on the number of people in an area who are “housing cost burdened” is the appropriate lens for this concern and is already commonplace in studies of municipal housing needs. But there is another dynamic at work, too. Municipalities that exclude the poor also exclude the poor from the services that they provide. Indeed, that is often the point. But it is also normatively problematic. Breaking up concentrated poverty and creating meaningful access to better public services requires more than a roof over people’s heads. It requires affordable housing in communities with opportunities. Targeted policy interventions recognize precisely this point, and housing programs—like the Moving to Opportunity plan—are designed to promote access to the services that more affluent communities offer.

Access to a municipality—or to a region—can be important for accessing better opportunities like better schools, higher salaries, stronger communities, and so forth (Schleicher 2017). Residential mobility can be key to social mobility, but only to the extent that housing costs do not require low-income households to disgorge the full

economic benefits of living in the municipality. Housing may be available to people of different income levels, but if the lower-cost housing nevertheless capitalizes the full value of the public services in the community, then the benefits of the cross-subsidy inherent in the funding of local services disappear.

There is an important tension running through the economics and land use literatures on zoning, but one that is seldom noticed. Much of the mainstream scholarship concerning local governments and land use regulation focuses on the fierce interjurisdictional competition for mobile capital. One important aspect of the story is that local governments seek to minimize redistribution through the property tax system by trying to exclude low-income households, in order to keep high-end residents from moving out. Zoning is one of the principle tools that local governments use to minimize the cross-subsidy inherent in property taxes. Leading economic models of local governments, however, suggest a very different dynamic. These either assume or set out to prove that any redistribution through the property tax system is simply capitalized into property values. In that case, an affluent person will still move into a community with a large number of low-income households, because the cost of the high-end home he or she wants to buy will be discounted by the extent of the cross-subsidy.

The next two parts consider each of these different perspectives in turn. The first examines the claims of the Tiebout hypothesis, with its focus on interjurisdictional competition and sorting. The second examines the follow-on economic literature on capitalization. Together, these discussions set the stage for the evaluation of exclusionary zoning that follows.

3 Tiebout and Selecting for Taxes and Services

According to the now conventional recitation of the Tiebout hypothesis, people choose where to live based on the combination of services and property taxes that satisfies their individual preferences. Tiebout (1956) was solving a particular puzzle: what are the political pressures that constrain the provision of pure public goods in the absence of pricing mechanisms? And the answer is to be found in the political feedback from exit, colloquially described as people voting with their feet. People choose to live in jurisdictions that best satisfy their particular preferences.

In his original model, Tiebout imagined an infinite number of jurisdictions that perfectly matched people's preferences. Each homeowner could then select the municipality that satisfies his or her individual preferences: one homeowner could choose to pay \$10,000 in property taxes for excellent schools and another to pay \$9000 for just ever-so-slightly less excellent schools, for example. In this model, people pay only and precisely for those services that they value. This does not exactly convert property taxes into a fee for services, because it is possible for people to value services they do not use. A retired couple without children, for example, might value living in a community with good public schools. People who do not use a library might nevertheless like to live in a community that maintains a good one

and so pay for it even if they never use it. And some people, too, might prefer to live in a place that provides some redistribution. Nevertheless, the Tiebout hypothesis offers a model for perfectly satisfying preferences through the combination of taxes and services.

In reality, of course, public goods, services, and taxes cannot be so finely adjusted. Instead, people buy a bundled collection that necessarily includes some things they value more than others. And there are a limited number of jurisdictions that are, in effect, competing for residents and for mobile capital, with some constraints on the supply of developable land. A local government that provides an appealing mix will see demand for property in the jurisdiction goes up, leading to a politically desirable increase in property values (Fischel 2005). Those that get it wrong—that, for example, provide services people do not actually value—will see property values decline. It is this tension between the overall mix of services on the one hand, and taxes on the other, that drives consumers' selection of municipalities.

In the real world of imperfect satisfaction of preferences and constrained choices, some measure of redistribution through the property tax system is inevitable. Some people are paying for services that they do not actually value as much as they cost in taxes, because they are buying the entire bundle. More importantly, some people are heavier users of some goods and services than others. Families with more children in the public school are using more of the municipality's education system. At the same time, some people contribute less to funding those services. Because most public services are financed primarily by local property taxes, people with low-valued property contribute less to the municipality's budget than people with higher-valued property who therefore pay more in taxes. This inevitably results in redistribution or at least in a difference between the "tax price" of a service (the amount that an individual taxpayer pays) and the "real price" of the service. As the economics literature describes the phenomenon, the tax price of services is lower for owners of lower-valued property than the real price (Barseghyan and Coate 2016).

If that cross-subsidization becomes too great—so that affluent homeowners are paying high taxes for services they do not value—there is a real risk that they will start to leave to seek out municipalities that better satisfy their preferences, perhaps those with a smaller number of inexpensive homes or those where the public school represents a small percentage of local property tax expenditures. This does not necessarily mean moving to a place with a worse school, or even one that spends less per pupil. For the affluent, it may simply mean moving to a place where school financing involves less redistribution.

Zoning is, in part, a response to this dynamic. Instead of the affluent leaving a community to avoid cross-subsidization, they can instead seek to exclude the heavier users of municipal services or those who will contribute less in property taxes. Anyone living in low-valued housing will contribute comparatively less to property tax revenue (Yinger 1982). Through this lens, the residents in a community who receive the greatest cross-subsidy are families with school-aged children who live in inexpensive housing. Zoning that eliminates the least expensive housing options in a

municipality will therefore minimize the spread between expensive and inexpensive housing and so reduce the cross-subsidy embedded in the property tax system. Bans on multi-family housing are the most obvious example.

This is one of zoning's central functions: it serves as a barrier to entry that prevents or minimizes the cross-subsidization of public goods. As Jason Furman put it succinctly, in remarks prepared for the Urban Institute, "zoning regulations and other local barriers to housing development allow a small number of individuals to capture the economic benefits of living in a community..." (Furman 2015, p. 2). This is simply the result of supply being unable to keep pace with demand because of the regulatory barriers (Eagle 2017). The most expensive communities in the country do not exclude the poor by imposing de jure wealth requirements, of course. They do so implicitly by being unaffordable, which means—in part—excluding affordable housing options within the community. Take any rich suburb with excellent public schools and strict zoning controls, and the combination of property values and property taxes means that it is effectively unavailable to all but the most affluent.

But simple affordability is only part of the problem. Differentiation between property and among communities based on price is part of any market-based system of allocating scarce resources. The point here is that zoning impacts price in two separate ways. First, and most obviously, it reduces supply and so increases the costs of land. That observation is familiar and self-evident from the law of supply and demand. But second, and more interestingly, it also does so by minimizing the extent of the cross-subsidy in the property tax system. This is a different point and a more problematic one because it suggests that affluent communities are not simply inaccessible to the poor because they are expensive; instead, they are expensive in part *because* they are inaccessible to the poor. By excluding the poor, by limiting or eliminating affordable housing options, a greater share of municipal tax revenue can be retained for the benefit of those who pay the bulk of it.

This is a problem. There are deep normative reasons that municipal services are generally funded through taxes and not fees. Public schools, roads, police, infrastructure, and economic development, for example, create benefits that we as a society have decided are appropriate for everyone to be able to access. Admittedly, conventional wisdom is that redistribution, if it is to happen, must occur at the state or the federal level. It is too easy for mobile capital to leave local governments, and so efforts at redistribution will simply cause the wealthy to move in order to avoid cross-subsidizing those efforts. This claim, however, has come under increasing attack in recent years. Most importantly, Clayton Gillette has demonstrated that a certain amount of local redistribution is not only possible but is also appropriate (Gillette 2011). So long as the benefits of locating in a municipality outweigh redistributive taxes, such redistribution will be possible. In other words, mobile capital flight is not inevitable in the face of local redistribution. It occurs only when the redistributive pressures are too high given local conditions. How much redistribution any municipality can effectuate depends upon the value that it offers on many dimensions.

Once redistribution is expanded to include access to public services—like quality schools—and not only explicit redistribution that occurs through the social safety net, then it becomes immediately apparent that local redistribution is ubiquitous. At least some measure of redistribution is intrinsic to the system of property tax financing for municipal services, and this is by design. It is simply not the case that redistribution always results in mobile capital leaving a municipality, because redistribution through the property tax system occurs every time someone buys a house for more than the median property value in the municipality. Zoning, again, can reduce the extent of the redistribution—as discussed above—but cannot eliminate it. Nor should it.

Reasonable people can disagree over the extent of the property tax cross-subsidy for municipal services. The point here is simply to acknowledge the effect of zoning on that cross-subsidy. But there is an additional and more subtle dynamic at work as well. By constraining supply, zoning also affects the capitalization of public services into property values. But this dynamic is then quite different. Capitalization does not eliminate the cross-subsidy through taxes, but it can mean that residents surrender some or all of that value in the form of higher housing costs. The more that property values capitalize the value of these public services, the less accessible they actually are, and the less opportunity there is for meaningful redistribution at the local level. Understanding this dynamic requires looking more closely at the mechanisms of capitalization.

4 Capitalization of Public Benefits

It is well known and well understood that local amenities and taxes are both capitalized into property values, at least to some extent (Oates 1969). Property taxes are capitalized nearly perfectly; every additional \$1 in property taxes translates into \$1 less that purchasers have to spend every year on housing.²

Amenities—both public and private—are also capitalized into property values. In theory, for every dollar of property taxes that is used to pay for services that housing consumers value at more than \$1, property prices could increase by the extent to which the value of the services exceeds the tax burden. Paying \$5000 in property taxes every year for a bundle of services that the median homeowner values at \$8000 will have a positive impact on property values of up to the discounted present value of \$3000 per year. Of course, if property taxes are used to pay for services that people do not value, then property values will go down. Paying \$5000 for a bundle of services that people only value at \$2000 will put downward pressure on values.

²This is not quite as simple as a \$1 in property taxes translating into \$1 in property values. Instead, every dollar spent on property taxes is a dollar less that is available to spend on mortgage payments, which translates directly into cash flow available to buy a house. Therefore, it is capitalized 100% into housing costs, but translated through borrowing costs (Goodman 1983).

This mechanism can make property taxes resemble a pure benefit tax. In stylized models of zoning, dating back to the 1970s, zoning produces equilibria in which everyone segregates into communities with identically valued houses. The cross-subsidy of property taxation disappears since people will also prefer to live in a municipality in which theirs is the least-expensive permissible house (precisely because of the cross-subsidy). Communities segregate by housing type, so that everyone can buy as much house as they want, but in entirely homogenous communities (Hamilton 1975; Barseghyan and Coate 2016).

This, of course, does not correspond to the real world. But capitalization can explain and account for heterogeneity in municipal property values. With capitalization, the value of the redistribution is simply priced into property values. Higher-valued property owners are still paying a greater share of the costs of public services. This puts downward pressure on the price of higher-end property. In turn, the beneficiaries of the redistributive tax system—occupants of lower-valued property—forfeit the value of the redistribution through higher housing costs. This can be captured by landlords or by previous owners in the form of higher land and housing costs. In other words, property taxes continue to include the opportunity for redistribution, but the *benefits* of the redistribution are not available to housing consumers. In a world of perfect capitalization, the effect of the cross-subsidy in property taxes disappears entirely because it is absorbed in both directions by housing costs. The higher taxes of higher-cost property are offset by reductions in property values, while the implicit subsidy in lower-cost property is offset by increases in property values (Zodrow 2014, p. 59).

Returning again to the real world, the value of services is not likely to be perfectly reflected in housing prices for two separate reasons. First, we would expect the supply of new housing to eat away at capitalization. Developers will seek to supply new housing to take advantage of those amenities and can eventually be expected to “compete away” any premium (Hamilton 1975; Yinger 1982). But developers can only supply new housing if there is land to develop to take advantage of the available premium. The supply of new land is, of course, physically constrained. But the more meaningful constraint comes from zoning and land use controls. In the absence of zoning, developers could always build bigger and taller and denser next to the nice park or in the town with the good schools. With zoning, however, the supply is constrained, and so the capitalization of municipal services appears in local property values. And the extent of capitalization will depend largely on the extent to which zoning and land use controls constrain the supply of new substitute property that would otherwise have been available to compete away that premium.

Second, only stable property taxes and public services will be reflected in housing costs. If someone buys a house at a certain price that capitalizes both taxes and services, and then taxes or services *change*, that change will be borne by the in-place property owners. Economic models suggest that prices will again return to equilibrium, but any change represents an opportunity for intra-local redistribution. This observation suggests how to reconcile the observed worry about capital flight with the theory of capitalization. It suggests that capital flight is likely to arise not simply because of heterogeneous property values in a municipality—even

values that widely diverge. If those differences, and the implicit cross-subsidy they represent, are capitalized into property values, there should be no effect on mobile capital. But *changes* in the mix of housing and *increases* in the number of low-valued property will represent a transfer from in-place owners of high-valued property to owners of low-valued property. If property owners anticipate such changes, they may move to try to avoid its eventual impact.

It is now possible to see why capitalization can provide a way of evaluating the extent to which zoning is exclusionary. With perfectly elastic supply, there will be no capitalization of public services and municipal amenities into property values because developers will compete away the premium available due to the value of the services. As zoning reduces supply, however, capitalization increases. How much depends in large measure on the nature of the amenity as well as the restrictiveness of the zoning.

One way to measure this is by looking at the difference between house prices and the costs of construction. In a competitive market, the difference between construction costs and the price of a house is primarily attributable to the cost of land (Gyourka and Malloy 2015). If that “gap” increases, it is largely because of increases in the costs of land. Land values, in turn, are the result of inherent features—like location, beauty, and other unique characteristics—but also of the zoning and regulatory restrictions that limit the availability of near substitutes. And that gap is, in fact, increasing in many places. The services offered by desirable municipalities—and the various benefits of living in them—have been increasingly inaccessible because they are more fully capitalized into property values.

This relationship between zoning and property values is perhaps easiest to see in a different context than municipal amenities: regional differences in wages. According to a recent paper by economists Peter Ganong and Daniel Shoag, there used to exist a relatively clear path to better pay in this country: moving from the South to the Northeast (Ganong and Shoag 2017). Wages were consistently higher in the Northeast, and so poor workers could reliably improve their wealth and prosperity by moving to those better-paying jobs. Inter-regional mobility has been decreasing in recent years, however, and the migration from the South to the Northeast appears largely to have stalled. One reason, according to Ganong and Shoag, is that housing costs now largely capitalize the wage differential. Thanks to widespread restrictive zoning that dramatically decreases the availability of developable land throughout the Northeast, workers will have to disgorge all of the higher wages in the form of higher housing costs. Moving from a job that pays \$10 per h to one that pays \$20 is no path to wealth if housing costs are also doubled.

Ganong and Shoag offer an insightful but ultimately consequentialist evaluation of capitalization of wage differentials. They explore these effects on the economy broadly; workers will have reduced incentives to move where their services are in greater demand, and so there will be an increasing mismatch between the regional supply and demand for labor. But evaluating capitalization of municipal services depends upon normative judgments about the extent to which property values should capitalize the value of public services.

5 Evaluating Capitalization

Partly or wholly un-capitalized public services represent opportunities for redistribution. Someone living in low-cost housing can capture the value of local services without “paying” full price in the form of higher housing costs. Moving to a municipality represents a redistributive transfer and provides an important step up the economic ladder. Whether it is a family accessing better schools or workers accessing affordable transportation, this implicit redistribution through the cross-subsidization of property taxes can be an important step in the path toward greater financial stability.

This is not inappropriate freeriding but is instead part of the design of the system of municipal finance. The reason that schools are paid for by taxes and not through user fees is precisely to make them available to everyone, regardless of ability to pay. But that availability exists in name only if, in fact, the full price of a public education must be borne by poor families through the combination of taxes and housing costs. The system of progressive taxation in the United States, and the use of a property tax instead of, say, a head tax, ensures that the wealthy pay more than the poor for public services. The corollary, of course, is that the poor should be able to receive those services without paying their full cost. That opportunity disappears when the benefit of the service is consumed by higher housing costs.

The claim here, then, is that exclusionary zoning exists not only when it targets the poor, as when it prohibits multi-family housing, but also when it results in too much capitalization of the value of public services into property values. This comes with two immediate consequences.

First, exclusionary zoning under this definition is not relegated to suburban large-lot zoning. It can exist in cities as well. The proliferation of tall, dense development in the urban core does not immunize the zoning regime from allegations of exclusion. The capitalization of public services into housing prices will depend on the extent to which zoning and land use controls prevent the market from satisfying demand for access to the community. In other words, dense, multi-family development can still be exclusionary. The corollary is also true: large-lot zoning and other significant density controls are not necessarily exclusionary if there is no real housing demand.

Second, this approach invites an analysis of exclusionary zoning that focuses explicitly on the economic opportunity of accessing higher-quality public services instead of just housing costs. This does not come with easy answers. Indeed, there is much to debate about the appropriate amount of redistribution that should be available through the property tax system. But focusing on capitalization provides a very different framework for thinking through the problems of exclusionary zoning. It also offers some new ways of addressing the problem.

So far, the analysis here has primarily examined how the full capitalization of public services can undermine opportunities for redistribution. Where supply is too constrained, people will end up paying “full price” for public services in the combination of property taxes and housing costs. And, as noted above, this is

normatively problematic because it squeezes out the opportunity to benefit from services like high-quality public schools. It is important to acknowledge, however, that the opposite extreme is also untenable. In the absence of any capitalization, the difference between property taxes and the value of public services is a surplus to be captured by anyone moving to the municipality. But public services—and in particular public schools—are congestible resources. If the available surplus value is high enough, then satisfying the demand can consume and eliminate the value of the underlying public service. If many people move to a municipality to take advantage of the good school and low property values, the size and therefore the character of the school will also change, which may reduce its quality. Property values will have to start to go up to create a new equilibrium, or the municipality's "pull"—the attractive resource that is drawing people in—will disappear.

In a stylized model with two static jurisdictions, there is no easy solution to this problem. An equilibrium will arise wherein the combination of taxes and property values will always reflect the full value of the public resources. In the real world, however, there is much more room for capitalization to exist on a spectrum. Competition among jurisdictions, relocation costs, information costs, and heterogeneity in preferences for public services will inevitably leave value on the table. Likewise, the dynamism in zoning regulations, persistence of housing stock, and competition between municipalities together make it unlikely that housing prices will settle on an equilibrium of perfect capitalization (Kain and Quigley 1970, p. 533). Evidence is all around. People regularly move to the suburbs because they perceive an economic benefit of sending their kids to good public schools and do not have to spend the full value of those schools on property taxes and housing costs. The full value of public services is not bargained away, even as it exerts pressure on housing costs. Markets are not so fluid and efficient as the stylized economic models typically assume. This is the old joke about two economists seeing a \$20 bill on the sidewalk. One asks the other, "should we pick it up?" The other answers, "Don't be silly. If \$20 were lying on the sidewalk, someone would have picked it up already."

Evaluating the exclusionary effects of a municipal zoning ordinance, then, should involve measuring the extent to which public services are capitalized into property values. That may be difficult to measure with precision, but it need not be precise and can perhaps be seen in the gap between construction costs and housing prices. The point is simply that too much capitalization reduces or even eliminates the opportunity to benefit from the cross-subsidy implicit in the property tax system. Where that occurs, zoning is too restrictive, and this should be a basis for challenging municipal land use controls.

The responses to over-capitalization of public services can be threefold. The most straightforward is to increase supply and specifically the supply of property worth less than the median value of property in the municipality. More low-cost housing will drive down prices as developers compete away the surplus value available from local public services. This closely resembles conventional legal responses to exclusionary zoning, where developers challenge application of a zoning ordinance and seek legal relief that will allow them to develop despite zoning limits. Indeed, this is the conventional response to concerns about affordability, and focusing on

capitalization simply adds another gloss. Increasing supply will not only bring down costs due to the interaction of supply and demand in the abstract but will also bring down costs because developers will bargain away some of the surplus created by public services.

Alternatively, or in addition, the focus on capitalization suggests an important alternative justification for initiatives like community land trusts that cap the sale price of certain housing to preserve affordability. The value of public services would then not be priced into housing costs, because land values would be artificially constrained. People living in housing produced in this way would not have to pay the full value of high-quality public schools, for example, and so meaningful cross-subsidization would remain available.

The same reasoning might also apply—albeit much more controversially—to rent regulation. There are, of course, many powerful reasons to object to rent regulations and price controls. They can distort housing markets and reduce the overall supply of new housing in ways that can drive up costs for everyone else. They also create a kind of lottery benefit, where those few people lucky enough to access rent-regulated housing receive a windfall, while most people do not. For these reasons, and others, the brief argument here is not an endorsement of rent regulation. But it is a new justification for price controls as a way of avoiding the inevitability of the powerful effects of capitalization, and one that could factor into an evaluation of proposals in the future.

Capitalization suggests a less conventional response, as well, and that is to require increased funding for local services in municipalities with high capitalization rates, perhaps reflected in the difference between construction costs and housing prices. This may seem counterintuitive. If the problem is affordability, *increasing* the tax burden in a municipality seems perverse, indeed. Moreover, local services like a high-quality public school are presumably part of the reason for exclusionary zoning in the first place. Spending *more* on the school, for example, amounts to embracing the privilege, treating schools like a kind of exclusionary amenity (Strahilevitz 2003). If the stylized capitalization studies demonstrate anything clearly, however, it is that new taxes will be borne by in-place property owners (Zodrow 2014, p. 59). Only future buyers capture the capitalized value of the service. The result of any *change* in property taxes is purely redistributive as between existing property owners. Because the taxes will fall proportionately by property value, the tax price of the investment in public services for low-valued property should be lower than the real price and vice versa for high-valued property (i.e., it will effectuate a transfer from owners of high-valued to low-valued property).

The implicit transfer in this system would be valuable to people who had already bought low-valued property in the municipality, in effect allowing them to recapture some of local value of the public services. It would not, however, be of help to people already priced out. The additional tax would, in fact, also tend to increase further the cost of low-valued property in the municipality. But such a tax could put political pressure on owners of high-valued property to allow more development of low-valued property. Otherwise, owners of high-valued property would see their property values decrease because of this added tax. And the economic hit of a

redistributive tax is more likely to blunt opposition to new development more than appeals to equity (Been et al. 2017).

This is not likely to be a judicially administrable remedy. Instead, this would require state action. It would amount to a kind of “luxury” tax on exclusionary jurisdictions. In theory, a state could enact a kind of capitalization threshold that would trigger the added state tax, which would then stay in place unless and until capitalization decreased.

Much additional work would be required to decide how best to measure the extent of capitalization. Still more work would be required to develop an appropriate state tax. The observation for present purposes is simply that the dynamics of capitalization make genuine redistribution through the property tax system more difficult than many people seem to assume, but that *changes* in tax rates can create the kind of the cross-subsidy that disappears from the property tax system when the value of services are fully capitalized into property values.

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References

- Barseghyan, L., & Coate, S. (2016). Property taxation, zoning, and efficiency in a dynamic Tiebout model. *American Economic Journal: Economic Policy*, 8(3), 1–38.
- Been, V., Ellen, I., & O'Regan, K. (2017). Supply skepticism: Housing supply and affordability. Manuscript in preparation.
- Been, V., Madar, J., & McDonnell, S. (2014). Urban land use regulation: Are homevoters overtaking the growth machine? *Journal of Empirical Legal Studies*, 11(2), 227–265.
- Crowley, S. (2003). The affordable housing crisis: Residential mobility of poor families and school mobility of poor children. *Journal of Negro Education*, 72(1), 22–38.
- Eagle, S. J. (2017). Affordable housing as metaphor. *Fordham Urban Law Journal*, 44(2), 301–359.
- Ellickson, R. C. (1981). The irony of inclusionary zoning. *Southern California Law Review*, 54(6), 1167–1216.
- Euclid v. Ambler Realty, 272 U.S. 365. (1926).
- Fischel, W. A. (2005). *The homevoter hypothesis: How home values influence local government taxation, school finance, and land use policies*. Cambridge MA: Harvard University Press.
- Ford, R. T. (1994). The boundaries of race: Political geography in legal analysis. *Harvard Law Review*, 107(8), 1841–1921.
- Furman, J. (2015, November). Barriers to shared growth: The case of land use regulation and economic rents. Remarks presented at the Urban Institute, Washington, DC. Retrieved from https://obamawhitehouse.archives.gov/sites/default/files/page/files/20151120_barriers_shared_growth_land_use_regulation_and_economic_rents.pdf.
- Ganong, P., & Shoag, D. (2017). Why has regional income convergence in the U.S. declined? *Journal of Urban Economics*, 102, 76–90
- Gillette, C. P. (2011). *Local redistribution and local democracy: Interest groups and the courts*. New Haven, CT: Yale University Press.
- Glaeser, E. L., Gyourko, J., & Saks, R. (2005). Why is Manhattan so expensive? Regulation and the rise in housing prices. *The Journal of Law and Economics*, 48(2), 331–369.

- Goodman, A. C. (1983). Capitalization of property tax differentials within and among municipalities. *Land Economics*, 59(2), 211–219.
- Gyourka, J., & Malloy, R. (2015). Regulation and housing supply. In G. Duranton, V. Henderson, & W. Strange (Eds.), *Handbook of regional and urban economics* (Vol. 5B, pp. 1289–1338). Amsterdam: Elsevier.
- Hamilton, B. W. (1975). Zoning and property taxation in a system of local governments. *Urban Studies*, 12(2), 205–211.
- Holmes, R. C. (2013). The clash of home rule and affordable housing: The mount Laurel story continues. *Connecticut Public Interest Law Journal*, 12(2), 325–360.
- Jan, T. (2017, October 23). America's affordable-housing stock dropped by 60 percent from 2010 to 2016. *The Washington Post*. Retrieved from <https://www.washingtonpost.com/>.
- Kain, J. F., & Quigley, J. M. (1970). Measuring the value of housing quality. *Journal of the American Statistical Association*, 65(330), 532–548.
- Koschinsky, J., & Talen, E. (2015). Affordable housing and walkable neighborhoods: A national urban analysis. *City*, 17(2), 13–56.
- Kusisto, L., & Kamp, J. (2015, December 1). Some families earn six figures and still need help with the rent. *The Wall Street Journal*. Retrieved from <https://www.wsj.com/>.
- Oates, W. E. (1969). The effects of property taxes and local public spending on property values: An empirical study of tax capitalization and the Tiebout hypothesis. *Journal of Political Economy*, 77(6), 957–971.
- Oates, W. E., & Fischel, W. A. (2016). Are local property taxes regressive, progressive, or what? *National Tax Journal*, 69(2), 415–433.
- Rothwell, J. T., & Massey, D. S. (2015). Geographic effects on intergenerational income mobility. *Economic Geography*, 91(1), 83–106.
- Sager, L. G. (1969). Tight little islands: Exclusionary zoning, equal protection, and the indigent. *Stanford Law Review*, 21(4), 767–800.
- Schleicher, D. (2017). Stuck! The law and economics of residential stagnation. *The Yale Law Journal*, 127(1), 78–154.
- Schuetz, J., Meltzer, R., & Been, V. (2011). Silver bullet or Trojan horse? The effects of inclusionary zoning on local housing markets. *Urban Studies*, 48(2), 297–329.
- Serkin, C., & Wellington, L. (2013). Putting exclusionary zoning in its place: Affordable housing and geographical scale. *Fordham Urban Law Journal*, 40(5), 1667–1695.
- Southern Burlington County N.A.A.C.P. v. Mount Laurel Tp., 67 N.J. 151, 336 A.2d. 713. (1975).
- Span, H. A. (2001). How the courts should fight exclusionary zoning. *Seton Hall Law Review*, 32(1), 1–107.
- Strahilevitz, L. (2003). Exclusionary amenities in residential communities. *Virginia Law Review*, 92, 439–498.
- Tiebout, C. M. (1956). A pure theory of local expenditures. *Journal of Political Economy*, 64(5), 416–424.
- Yinger, J. (1982). Capitalization and the theory of local public finance. *Journal of Political Economy*, 90(5), 917–943.
- Zodrow, G. R. (2014). Intrajurisdictional capitalization and the incidence of the property tax. *Regional Science and Urban Economics*, 45(1), 57–66.

Part II

Zoning and Land Use Regulation:

Evidence

The Long-Run Impact of Zoning in US Cities



Tate Twinam

Abstract Since the early twentieth century, virtually every city in the USA has embraced comprehensive zoning as a means to shape and control the development of land use. Early zoning regulations took cues from existing land use patterns while also attempting to reduce land use conflict by enforcing a greater separation of incompatible uses. Zoning and land use have since coevolved endogenously over the course of the following century. This chapter synthesizes and elaborates on the work of Shertzer et al. (J Urban Econ 105:20–39, 2018) and Twinam (Reg Sci Urban Econ 73:155–169, 2018) aimed at measuring the causal impact of early zoning laws on the long-run evolution of land use in US cities. Using a wide variety of detailed pre-zoning microdata and digitized zoning maps from two major US cities, Chicago and Seattle, I employ several analytical approaches to answer the following questions: (1) To what extent did initial zoning efforts conflict or coincide with existing land uses? (2) Did zoning effect substantial changes in land use patterns? (3) How does the impact of zoning on the long-run development of land use compare to that of other important economic determinants, such as pre-existing land use patterns, geography, transportation, and demographics? My results suggest that zoning has played an influential role in determining the economic geography of US cities.

1 Introduction

What determines the spatial organization of production and consumption in cities? This is a perennial question among planners and urban economists, and it has led to the development of a rich theoretical and empirical literature spanning a variety of fields. The economics literature focuses almost exclusively on the role of market forces in determining city structure, emphasizing the interaction of agglomeration economies, congestion, and physical factors like durable capital and access to

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transportation networks. Far less attention has been paid by economists to the role of government land use regulations, particularly comprehensive zoning ordinances. These policies have been a near-universal part of urban planning in the USA since the early twentieth century. However, despite the recognition of their importance by policymakers, homeowners, activists, and urban planning scholars, little rigorous quantitative evidence of their long-run impact on city structure has been undertaken. In this chapter, I review and synthesize recent research on the long-run causal impact of zoning conducted by myself and coauthors (Twinam 2018; Shertzer et al. 2018).

Chicago and Seattle, two of the largest cities in the USA, have experienced very different socioeconomic experiences over the past century. However, like many cities, both embraced zoning in the 1920s, passing similar comprehensive land use regulations in 1923. Like all policies, zoning evolves over time as it both influences outcomes and is in turn influenced by them. This considerably complicates the measurement of zoning's impact, as it is endogenously determined in a complex evolving system. The research discussed here attempts to overcome these difficulties by focusing on zoning at its inception. Detailed pre-zoning data on land use, transportation networks, demographics, and relevant geographic factors is mustered to provide a comprehensive view of how these cities developed prior to zoning. Combined with digitized maps of the ordinances imposed on these cities, it allows me to disentangle the impact of zoning on future land use from the influence of other important economic and social forces.

The results suggest that zoning has had a profound effect on the economic geography of both cities, and that local governments exert substantial control over land use patterns, an important finding given the near-universal adoption of zoning in the USA and many other countries. The impact of zoning is comparable and, in some cases, even greater than that of other well-recognized economic drivers of land use. This is true despite the fact that zoning responds to these economic forces, as Wallace (1988), McMillen and McDonald (1991), Munneke (2005), and many others have carefully demonstrated. This is also true despite the fact that zoning can be strongly influenced by political forces (Murray and Frijters 2016). The results further show that zoning not only shapes future development—it can shift and mold past development as well. This ties in to the extensive literature in economic history and economic geography on the role of lock-in and persistence in shaping present-day outcomes. As many influential studies have found, accidents of history can lead to persistence in the location and form of economic activity.¹ This chapter both reinforces and adds nuance to those findings. While it is indisputable that history has greatly influenced the economic geography of the USA today, it is also the case that persistence is moderated by institutional forces like zoning, and that these forces can overpower even strongly established patterns of activity.

The chapter proceeds as follows. Section 2 provides a brief history of the establishment and development of zoning in the USA. It also provides some preliminary descriptive and visual evidence for long-run persistence in zoning.

¹I discuss examples below in Sect. 2.

Section 3 outlines the data sources from Chicago and Seattle that are used to conduct a more rigorous analysis. In Sect. 4, three approaches are developed to illustrate the impact of historical zoning on future land use development. Section 4.1 shows how land use changed in these two cities over a roughly 100 year time span, stratifying on the type of zoning received when both cities were initially regulated in 1923. Section 4.2 presents a pseudo-regression discontinuity analysis exploiting blocks/parcels proximate to zoning boundaries. Section 4.3 directly quantifies the impact of zoning relative to other important determinants of future land use, such as geography, transportation networks, pre-existing land uses, and demographics. Section 5 concludes.

2 The Introduction and Evolution of Zoning in the USA

Comprehensive zoning in the USA began in earnest with New York City's pioneering 1916 ordinance. In 1922, the U.S. Department of Commerce issued the Standard State Zoning Enabling Act, a model law aimed at helping states enable municipalities to craft their own zoning ordinances. The U.S. Supreme Court decision in *Euclid v. Ambler* established the constitutionality of zoning as an application of the state's police power in 1926 (Wolf 2008). By 1930, following a wave of state enabling acts, over 500 cities had adopted zoning.²

This surge in popularity was driven by a number of factors. Both the general public and real estate developers demanded more orderly development and the separation of incompatible uses. Figure 1 depicts the cover of a pamphlet designed to promote zoning in Chicago, highlighting the need to establish separation of uses. Many objected to the “canyon effect” created by unbroken rows of skyscrapers and the potential negative effects of the associated reduction in sunlight exposure and air flow on public health; controversy surrounding the construction of the imposing Equitable Building in Manhattan likely contributed to the form of New York's 1916 setback requirements. Exclusionary motives targeting low-income households and racial/ethnic minorities were also common (Shertzer et al. 2016). An early pitch for zoning in Seattle highlighted a case of “eight cottages on one 60 ft. lot,” exhorting that “zoning would prevent it.”³ More expensive, largely white neighborhoods sought to limit the inflow of lower-income immigrants and African-Americans by requiring larger and more costly dwellings; the latter issue was particularly salient given the transformative impact of the Great Migration on northern and western cities.

²For a more in-depth look at the introduction and evolution of zoning in the USA, see Hirt (2015) and Fischel (2015). Hunt and DeVries (2017) provide an excellent history of post-war planning in the city of Chicago.

³Ironically, the affordability crisis fostered by exclusionary zoning in Seattle has recently led to a push for “microhousing” to economize on the scarce supply of land legally available for multifamily development (Kelleher 2015).

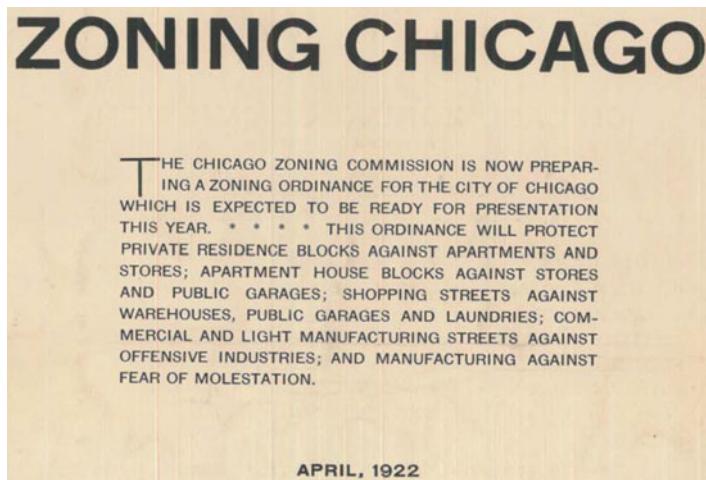


Fig. 1 Pamphlet promoting Chicago zoning. From the first page of the pamphlet “Zoning Chicago” distributed by the zoning commission to explain their work to the public and advocate for the adoption of a comprehensive ordinance

Early zoning ordinances tended to be fairly simple (and lax) by contemporary standards. These ordinances commonly followed a dual-map overlay system, with one map specifying zoning for uses (e.g., manufacturing) and a separate map specifying density restrictions. Chicago and Seattle, both discussed extensively below, followed very similar dual-map systems. Use zoning would typically specify districts for single-family, multifamily, commercial, and industrial uses; these districts were usually hierarchical, with the least restrictive industrial districts allowing all other uses as well, while the most restrictive single-family districts prohibited multifamily, commercial, and manufacturing development. Figure 2a shows a sample of Chicago’s 1923 use zoning map, depicting manufacturing districts near the Chicago River and major railroads, buffered from apartment districts by commercial zones. Density districts established restrictions on lot coverage, height, and aggregate volume, sometimes allowing taller buildings conditional on setbacks. Figure 2b shows the additional density restrictions imposed, with lower allowed densities in apartment districts and higher densities in commercial zones. At the time they were enacted, the ordinances often conflicted with existing land use patterns. These non-conforming uses were generally allowed to persist for some set time period (often 5–10 years), with restrictions on owners’ abilities to expand or renovate.

Over the course of a century, zoning ordinances evolved to adapt to new conditions and planning trends. Maps changed slowly through small-scale, piecemeal rezonings at the request of landowners (and the consent of neighbors). More substantial changes occurred through large-scale comprehensive revisions, generally spaced decades apart. Over time, as the professional class of planners expanded

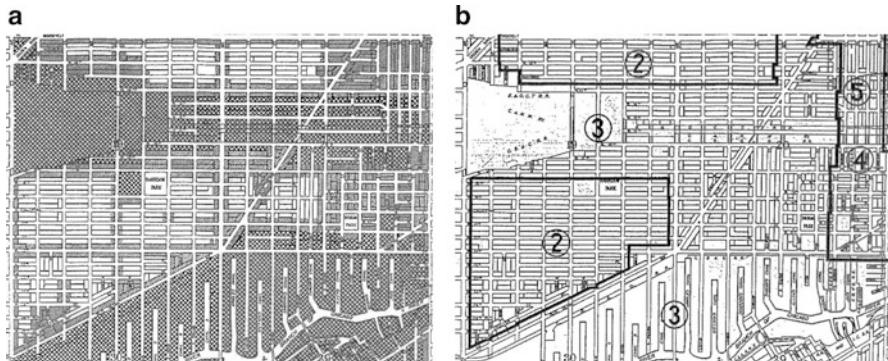


Fig. 2 1923 Chicago zoning map samples. (a) Portion of 1923 use zoning map. Unhatched areas are zoned for apartments, hatched areas are zoned for commercial uses, and cross-hatched areas are zoned for manufacturing. (b) Portion of 1923 volume zoning map. Zone 2 is the lowest density area depicted here, accommodating low-rise apartment buildings. Zone 5 is the highest density area, allowing for skyscrapers

and new innovations were developed, zoning ordinances became considerably more complex. Chicago's original ordinance included four use districts and five volume districts; today, even a small city will typically have dozens of different zoning classifications. Beyond restricting just use and density, modern zoning laws impose controls on a myriad of factors, from signage and architectural form to landscaping and bicycle parking. "Planned unit developments" allow for bespoke zoning arrangements suiting the needs of large-scale, mixed-use projects. Chicago's 1923 zoning code included 20 pages of text; the present-day zoning code is approximately 265 pages long.

Figure 3 illustrates both persistence and evolution in zoning for an area just north of Downtown Baltimore. Figure 3a depicts a portion of Baltimore's original 1931 use zoning map, with blue areas zoned for light commercial uses and adjoining yellow areas accommodating more intensive commercial/industrial uses. White areas are protected residential districts. The updated 1958 map depicted in Fig. 3b shows the addition of a new district type, with the blue and red areas zoned for light commercial and office/residential uses, respectively. In Fig. 3c, we see the use zoning for the same area circa 2006. The homogenous white residential use zones of 1931 and 1958 have been replaced with numerous new residential districts of different codes denoting different intensities of residential use. For example, an R-6 district allows 29 units per acre in a planned unit development, while an R-8 district allows 79. Similarly, the proliferation of different business (B), office-residential (O-R), and manufacturing (M) classifications is evident. However, while the granularity of zoning has clearly increased, it is also evident that today's residential and business/manufacturing districts closely follow those that were established 75 years prior.

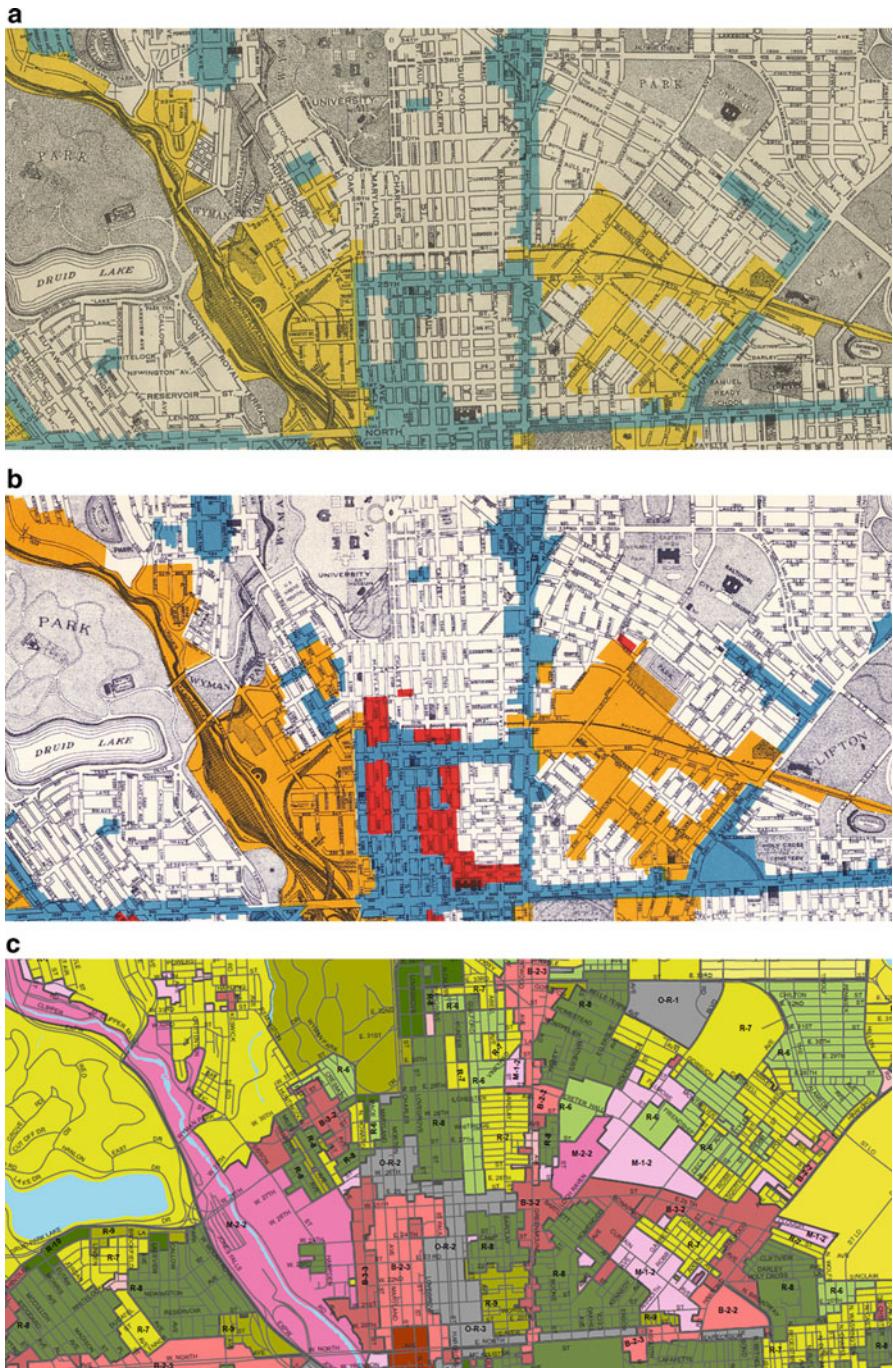


Fig. 3 Use zoning around Johns Hopkins University, Baltimore, MD. **(a)** Use zoning, 1931. **(b)** Use zoning, 1958. **(c)** Use zoning, 2006



Fig. 4 Use zoning in St. Louis, MO. Panel (a) shows the use zoning map for St. Louis, Missouri circa 1948, digitized by Gordon (2009). Beige areas are restricted to single-family uses; brown areas are zoned for multifamily uses; orange zones accommodate businesses; light gray areas allow industrial activity; the red area establishes special restrictions around the central business district; and dark gray areas do not restrict use at all. Panel (b) shows the zoning map circa 2015. The 2015 ordinance has a larger number of zoning classifications than the ordinance in effect in 1948, but I have grouped related classifications to match the color scheme from (a)

This persistence in zoning is not an isolated phenomenon. Figure 4 shows the zoning pattern established by 1948 in St. Louis, Missouri, alongside the present-day zoning map. As in other cities, zoning in St. Louis became more complex over time; for example, the 1948 map had only one commercial zoning classification, while the 2015 ordinance had three. However, once related classifications are consolidated, it is clear from Fig. 4 that the overall zoning configuration of the city has changed little over the past 70 years. This is particularly striking given the considerable reversal of economic fortune the city has experienced over this time period.

A similar pattern emerges in Chicago. Figure 5a highlights all blocks containing commercial and manufacturing uses in 1922. Most blocks in the developed portion of the city contained businesses, while industrial uses were concentrated along rivers/railroads but also appeared sporadically throughout the city. Figure 5b shows the attempt by the zoning commission to direct commercial activity towards downtown and major street corridors while concentrating manufacturing in certain areas. By 2005, commercial uses had been purged from much of the city, and many isolated manufacturing uses had disappeared (Fig. 5c). Shertzer et al. (2018) show quantitatively that both commercial and industrial activity became substantially more isolated by 2005, roughly as much as the 1923 ordinance intended.

Prior to zoning, the vast majority of tall buildings (those with four or more stories) in Chicago were concentrated in the downtown Loop district and along

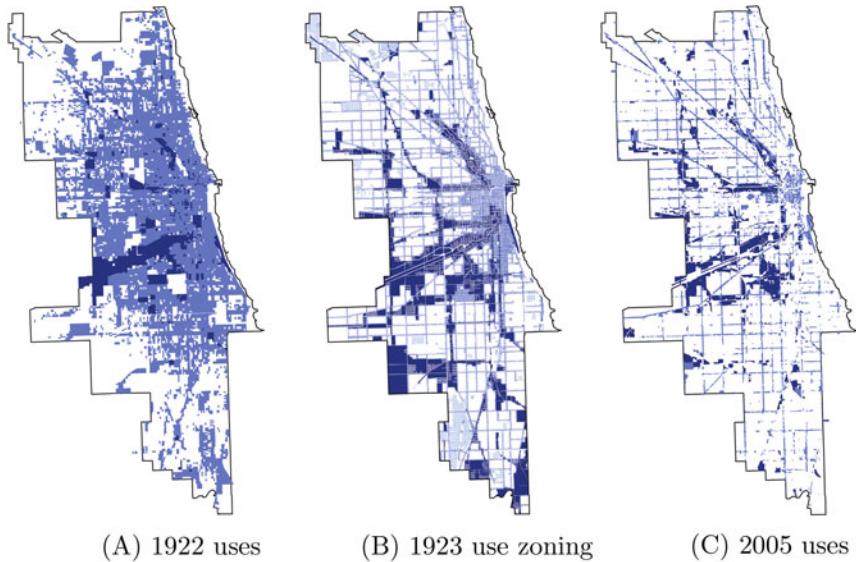
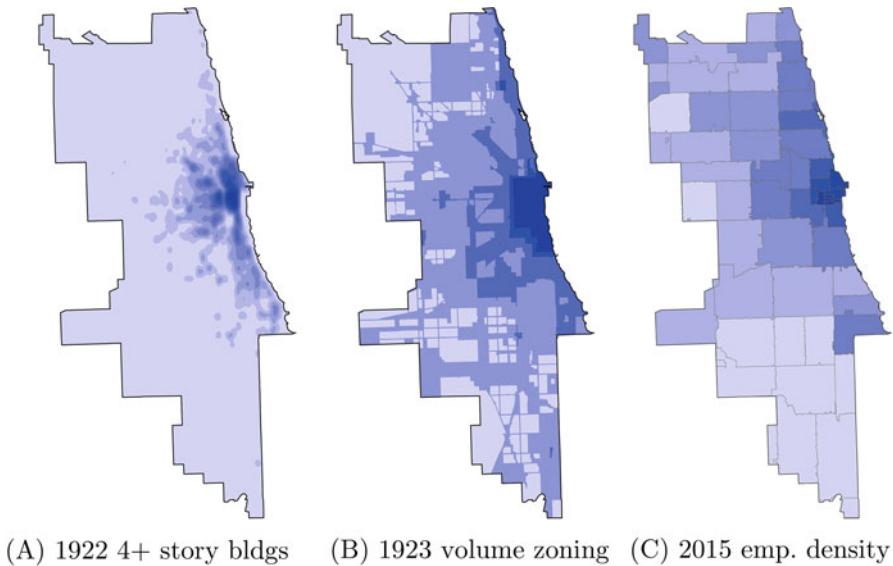


Fig. 5 Commercial and industrial activity. Panel (a) shows the distribution of commercial and manufacturing uses in 1922; blocks containing commercial uses (but not industrial) are light blue, while industrial blocks are dark blue. Panel (b) maps 1923 use zoning districts: the lightest blue areas were zoned for residences, white areas were zoned for apartments, medium blue areas were zoned commercially, and the darkest blue areas were zoned for manufacturing. Panel (c) shows the distribution of commercial and manufacturing uses realized by 2005

Lake Michigan. This can be seen in Fig. 6a. The 1923 ordinance anticipated a considerable expansion of the central business district, and zoned liberally for tall buildings downtown, along the coast, and in a radial pattern extending outward from the Loop (Fig. 6b). In 2015, employment density closely tracked this pattern, as is evident from Fig. 6c.

The experience of the cities discussed here is replicated throughout the country. While cities evolve and change, the general pattern of zoning and land use can be remarkably persistent. This has been documented in numerous studies. Brooks and Lutz (2019) show how historic (and obsolete) streetcar lines still strongly predict density in Los Angeles, and they hypothesize that land use regulation helped entrench this pattern (and was further reinforced by it). Redfearn (2009) further shows that employment centers in the Los Angeles metro area have been very stable over the past century, despite the emergence of the interstate highway system. Siodla (2015, 2017) uses the 1906 San Francisco Fire to show that durable capital induces a high degree of persistence in land use and density. Hornbeck and Keniston (2017) derive similar results when examining the Boston fire of 1872. While the phenomenon of land use persistence is not in question, it is worth asking: Does zoning play a role in perpetuating this phenomenon, and can institutional constraints on land use engender change? These are the questions I aim to address here, building on my previous work (Shertzer et al. 2018; Twinam 2018).



(A) 1922 4+ story bldgs (B) 1923 volume zoning (C) 2015 emp. density

Fig. 6 Building density. Panel (a) shows the density of buildings with four or more stories in 1922. Panel (b) maps the 1923 volume zoning districts: The lightest areas were zoned for the lowest density (district 1), while the darkest area was zoned for the highest density (district 5). Panel (c) shows zip code-level employment density in 2015

3 Data

The descriptive evidence presented above illustrates a pattern of persistence in urban zoning over long time horizons. However, this does not establish a causal role of zoning in the long-run development of urban spatial structure. To do so, Shertzer et al. (2018) and Twinam (2018) marshalled detailed data on pre-zoning patterns of land use in Chicago and Seattle, respectively. Drawing on these data, the analysis in Sect. 4 aims to disentangle the impact of historical zoning on future land use from that of durable capital, geography, transportation networks, and neighborhood demographics. I describe the data used in detail here; further discussion of methodology appears in Sect. 4.

The analysis of Chicago is based on block-level data spanning the city boundaries circa 1920, with the exception of portions of the old Hyde Park township and the area east of Lake Calumet; pre-zoning land use data is not available for these areas. Most annexations had been completed by the 1920s, so this data covers most of the city today. There are 14,582 blocks for which all data are available. More precise parcel-level data is available for the city of Seattle, but covers a smaller area centered around the downtown. There are 2270 parcels in Seattle for which historical data is available, and this area overlaps 13 neighborhoods in the core of the city, including the central business district (CBD), former industrial areas undergoing transitions towards commercial and industrial use, and several

residential areas. Parcel boundaries are not constant, as a substantial amount of land assembly and subdivision has taken place since the initial zoning. To account for this, parcels that were subdivided remain so, while parcels that were assembled are split along their historic lines. The data for both Chicago and Seattle includes information regarding both historical and contemporary land use, historical zoning, important geographic determinants of land use and zoning, measures of access to transportation networks, and demographic composition of neighborhoods. These components are discussed below.⁴

3.1 Land Use

Data on historical land use in Chicago comes from a 1922 survey conducted by the zoning commission to inform the development of the city's 1923 zoning maps. The survey included the location of all businesses and manufacturing sites in the city, along with the location and height of all buildings four stories and taller. Manufacturing uses were split into five class based on type of use and extent to which the use affected neighboring properties. Figure 7 illustrates a portion of the resulting survey map, while Fig. 8 shows a portion of the geocoded survey for the area around Chicago's central business district, the Loop. There were ultimately 33,622 commercial uses, 9022 manufacturing uses, and 5715 buildings over three stories tall. In addition to this historical land use data, land values based on 1913 data from Olcott's Blue Books are included as well; this data was transcribed by Gabriel Ahlfeldt and Daniel McMillen (McMillen 2015). Contemporary Chicago land use data is drawn from a comprehensive 2005 survey conducted by the Chicago Metropolitan Agency for Planning. This survey distinguishes between single-family and multifamily residential use, commercial use, and manufacturing use.

Surveys conducted by the planning commission of Seattle provide parcel-level data on land use and land use change over time. The first survey collected data on land use in 1920 for 882 parcels in Lower Queen Anne, bordering Puget Sound and just north of the CBD. Nine categories of uses are delineated; most importantly, the survey distinguishes between single-family residences, multifamily housing, businesses, and industrial uses. Below, I refer to this as the comprehensive land use sample, as it provides data on all parcels in its extent regardless of whether these experienced land use transitions in the following decades. A second survey reports land use for 2270 parcels in a larger area in and around the CBD; however, parcels were only included in this survey if they experienced changes in primary land use type between 1920 and 1952. Parcels covered in this survey constitute the land use change sample. Data on present-day (2015) land use is drawn from parcel-level GIS data provided by King County. I aggregate parcel classifications to the categories residential,⁵ mixed use, commercial, industrial, and vacant.

⁴The discussion of the Chicago data is drawn from Shertzer et al. (2018), while the Seattle data is documented in Twinam (2018); see these sources for additional detail.

⁵I do not distinguish between single-family and multifamily residences in the modern data, as there are relatively few single-family homes in this portion of Seattle today.

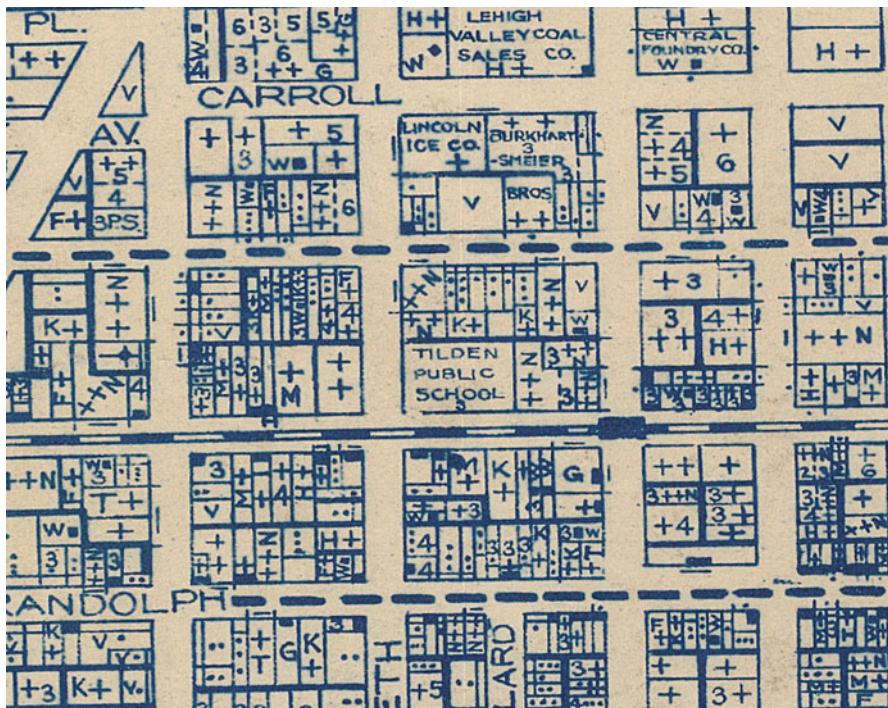


Fig. 7 1922 land use survey sample. A portion of the 1922 land use survey map created by the Chicago Zoning Commission. These blocks are located just across the Chicago River to the west of the downtown. Numbers indicate building heights in stories. Black squares within parcels indicate commercial uses; letters sometime accompany these to indicate a specific commercial activity. V indicates a vacant lot/building. Letters followed or preceded by a single + indicate light industrial uses. Letters preceded by ++ indicate heavier industrial uses; in particular, ++N indicates uses which “by reason of excessive noise, odor, fumes, gases, etc., affect the adjacent territory”

3.2 Zoning

The initial 1923 zoning ordinance for Chicago used the typical dual-map system, separately identifying zones for different uses and different allowed densities. Use zoning divided each area of the city into one of four distinct districts: Residential (restricted to single-family homes), apartment, commercial, and manufacturing. Figure 2a shows a portion of this use zone map.

These districts were hierarchical, with residential districts banning all other uses and manufacturing districts (the most liberal classification) allowing any other use. Each area of the city was also allocated to one of five volume districts, which restricted building size. District 1, the most restrictive, was aimed at accommodating single-family homes. The highest density district 5 allowed skyscrapers and was confined to the downtown area. Figure 2b shows a sample of this volume district map. Portions of these maps were originally digitized by Shertzer et al. (2016); these were expanded by Shertzer et al. (2018).

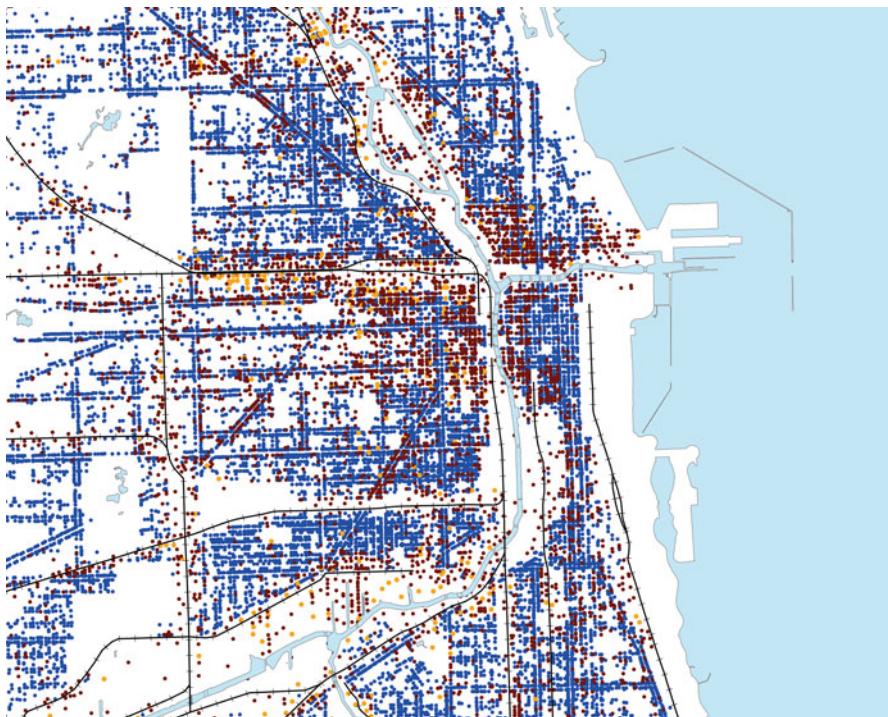


Fig. 8 1922 land use survey digitized. Figure depicts land use in the Loop, Near North Side, Near West Side, and Near South Side. Blue dots are commercial uses; red dots are light manufacturing uses, and orange dots are noxious manufacturing uses. Figure includes railroads and the Chicago River

Seattle also enacted its first comprehensive zoning ordinance in 1923, and the zoning classifications associated with each parcel were digitized from the original maps by Twinam (2018). Much like Chicago's ordinance, it used a hierarchical dual-map system, with one map regulating uses and another restricting density. The ordinance established six use categories: Single-family (“first residence”), multi-family (“second residence”), business, commercial, manufacturing, and industrial. The ordinance also specified five height districts and four area districts. The use restrictions tended to be the most binding, and the density restrictions were strongly collinear with uses in my sample, so I focus attention on the use restrictions in the analysis below.

3.3 Geography

All models estimated below contain extensive controls for important geographic and locational features. For each Chicago block and Seattle parcel, I calculated the

distance to the CBD, coast, and, in Chicago, distance to the nearest river. Chicago's topography is relatively flat, which reduces the need for additional geographic controls. For Seattle, I include the distance to KeyArena, which marks the location of a major public entertainment district adjacent to the CBD. Interstate 5 splits the central district in Seattle, and a parcel's location relative to this division may affect its land use trajectory, so I include an indicator for a westward orientation relative to I-5. Seattle's topography has been subject to large-scale regrading efforts in the past. Of particular importance is Denny Hill, which was regraded five times between 1898 and 1930. The goal of the regrading effort was to improve transportation efficiency and promote commercial development in the area, so I account for this in my analysis (Williams 2015).

3.4 Transportation

All models include measures of access to transportation networks. In both the Chicago and Seattle data, I include the distance to the nearest railroad for each observation. In Chicago, this data was drawn from modern railroad maps supplemented by the 1922 land use survey. Seattle railroad data is drawn from Atack (2016). Distance to the nearest state and interstate highway is also included. Both Chicago and Seattle featured a sizable streetcar network in place in the early twentieth century. In Seattle, the network first began operation in 1889 and was expanded multiple times until finally being decommissioned in 1941 (Blanchard 1968). Using available maps from 1915 and 1941, the streetcar network was digitized, allowing me to include measures of parcels' proximity to the track. As recent evidence has shown, streetcar networks can have a long-run impact on development, so it is important to capture these effects (Brooks and Lutz 2019). Chicago also had an extensive streetcar network at this time. While this streetcar network has not yet been digitized, these lines tended to follow major streets quite closely. To capture this, I include the distance to a major street in all models estimated on the Chicago sample.

3.5 Demographics

Historical demographic data for both Chicago and Seattle is drawn from the 100% counts of the 1920 Federal Census at the enumeration district (ED) level. ED maps for Chicago were digitized by Shertzer et al. (2016). ED maps for Seattle were separately digitized by Twinam (2018) from maps provided by FamilySearch with the assistance of the Seattle Public Library. This data includes population count for each ED, which is converted to population density and included in all models. Where sufficient variation exists in the data, breakdowns by race/ethnicity are included as well.

4 Results

In this section, I discuss and apply three approaches to measuring the impact of historical zoning on future land use development. Section 4.1 shows how land uses in Chicago and Seattle transitioned over the century following the enactment of zoning. I stratify these transitions based on the type of zoning received when both cities were initially regulated in 1923. Section 4.2 presents a pseudo-regression discontinuity analysis, which exploits those blocks (in Chicago) and parcels (in Seattle) which received different types of zoning but are very proximate to zoning boundaries. Section 4.3 directly quantifies the impact of zoning relative to other important drivers of land use and land use change, such as geography, transportation networks, pre-existing land use, and demographics.

4.1 Land Use Transitions

Tables 1 and 2 document changes in land use at the block level between 1922 and 2005 in Chicago. Focusing on commercial/light manufacturing activity, Table 1 shows how block-level land use changed for those blocks receiving no commercial zoning in 1923, while Table 2 repeats the analysis for blocks that did initially receive commercial zoning. Roughly 59% of blocks received some commercial zoning in 1923. The first row of Table 1 shows that blocks that received no commercial zoning and contained no commercial uses in 1922 were almost totally devoid of commercial uses in 2005; only 4% transitioned towards commercial uses. In contrast, the first row of Table 2 shows that 49% of blocks which lacked commercial uses in 1922 but did receive commercial zoning ended up containing commercial uses by 2005.

Table 1 Transition matrix: commercial uses in Chicago, 1922–2005 blocks receiving no commercial zoning in 1923

	No com. use in 2005	Com. use in 2005	Total
No com./mfg. A uses in 1922	4157	171	4328
Com./mfg. A uses in 1922	1500	244	1744
Total	5657	415	6072

Transition matrix for block-level land use between 1922 and 2005. Only includes blocks that did not receive commercial zoning in 1923

Table 2 Transition matrix: commercial uses in Chicago, 1922–2005 blocks receiving commercial zoning in 1923

	No com. use in 2005	Com. use in 2005	Total
No com./mfg. A uses in 1922	1393	1327	2720
Com./mfg. A uses in 1922	2166	3732	5898
Total	3559	5059	8618

Transition matrix for block-level land use between 1922 and 2005. Only includes blocks that received commercial zoning in 1923.

This strongly suggests that commercial zoning in 1923 substantially increased the likelihood of commercial development in the years after.

What about blocks where commercial activity was already established before the introduction of zoning? As discussed above, the 1923 ordinance had generous provisions for the grandfathering of existing uses, and it is entirely possible that zoning's long-run impact would be concentrated on directing new development rather than displacing existing uses. The second row of Table 1 shows that blocks with pre-zoning commercial activity that did not receive any commercial zoning largely transitioned away from such activity; only 14% of these blocks retained commercial activity by 2005. The story differs substantially when focusing on blocks that did receive commercial zoning. Of these, a majority (63%) still hosted commercial uses by 2005.

Tables 3 and 4 repeat the above analysis for industrial activity in Chicago. Industrial zoning was allocated more sparingly than commercial zoning, with only 13% of blocks receiving any. While industrial zoning often followed existing manufacturing activity, there is significant heterogeneity; 74% of blocks receiving industrial zoning in 1923 had no pre-existing industrial uses. Of those blocks that did host industrial activity prior to zoning, 64% retained industrial activity by 2005 if zoned for such, while only 21% continued to do so without industrial zoning. This suggests that zoning may have displaced a considerable amount of manufacturing activity. As for the emergence of new industrial areas, 28% of non-industrial blocks zoned for industry transitioned toward these uses by 2005; that number is only 3% for blocks that did not receive any industrial zoning in 1923.

The pattern of land use transitions observed here strongly suggests that zoning played a role in both directing new land use development and displacing old. But is this pattern specific to Chicago? Tables 4 and 5 present similar transition matrices

Table 3 Transition matrix: industrial uses in Chicago, 1922–2005 blocks receiving no industrial zoning in 1923

	No ind. use in 2005	Ind. use in 2005	Total
No mfg. B-S uses in 1922	12,088	392	12,480
Mfg. B-S uses in 1922	228	60	288
Total	12,316	452	12,768

Transition matrix for block-level land use between 1922 and 2005. Only includes blocks that did not receive industrial zoning in 1923

Table 4 Transition matrix: industrial uses in Chicago, 1922–2005 blocks receiving industrial zoning in 1923

	No ind. use in 2005	Ind. use in 2005	Total
No mfg. B-S uses in 1922	1025	401	1426
Mfg. B-S uses in 1922	176	320	496
Total	1201	721	1922

Transition matrix for block-level land use between 1922 and 2005. Only includes blocks that received industrial zoning in 1923

Table 5 Transition matrix: land uses in Seattle, 1920–2015 parcels receiving multifamily zoning in 1923

	Land use, 2015					Total
	RES	MU	C	I	V	
<i>Land use, 1920</i>						
SF	111	16	90	2	21	240
MF	15	1	17	0	2	35
B	9	0	5	0	3	17
C	5	1	10	0	1	17
I	0	0	2	0	0	2
V	109	2	36	1	6	154
Total	249	20	160	3	33	465

Transition matrix for parcel-level land use between 1920 and 2015. 1920 land uses are coded as single-family (SF), multifamily (MF), business (B), commercial (C), industrial (I), and vacant (V). 2015 land uses are coded as residential (RES), which includes both single-family and multifamily uses, mixed use (MU), commercial (C), industrial (I), and vacant (V). Sample is restricted to parcels which received only multifamily zoning in 1923

for parcel-level land use changes in Seattle over roughly the same time period. As discussed above, the Seattle sample is restricted in size due to limitations on historical data, so there is less variation in land use and zoning than in the Chicago sample. However, we can examine differences in development for those parcels that received residential (multifamily) zoning in 1923 versus those that were zoned for commercial or manufacturing activity.

Table 5 tracks the evolution of parcel land use between 1920 and 2015, restricted to the 465 parcels in my data that received multifamily zoning in 1923. This zoning classification generally prohibited most business, commercial, and industrial activity. As is evident from the table, most (85%) of these parcels were occupied by either single-family homes or were vacant at the time of the initial survey. At the time, Seattle was much less developed than Chicago, with a population of a little more than 300,000 (less than half its size today); Chicago, on the other hand, had a population of 2.7 million in 1920, almost identical to its current population. Most of these parcels are located within one mile of the central business district; despite that fact, over half were devoted to strictly residential use in 2015.

Table 6 shows what happened to the parcels receiving less restrictive zoning, which allowed local businesses, more intensive commercial uses, or manufacturing activity. As in the multifamily zoning case above, a large share of these parcels (75%) were occupied by single-family homes or were vacant prior to the introduction of zoning. They tended to be closer to the central business district, but the difference in average distance is only about one-tenth of a mile. In spite of that, only 18% of these parcels were devoted to strictly residential use in 2015, while 72% hosted commercial or industrial activity.

Table 6 Transition matrix: land uses in Seattle, 1920–2015 parcels receiving Bus./Com./Mfg. zoning in 1923

	Land use, 2015					Total
	RES	MU	C	I	V	
<i>Land use, 1920</i>						
SF	144	105	385	19	72	725
MF	25	19	43	0	6	93
B	24	28	93	3	18	166
C	19	24	85	3	10	141
I	4	9	24	0	2	39
V	97	89	336	19	41	582
Total	313	274	966	44	149	1746

Transition matrix for parcel-level land use between 1920 and 2015. 1920 land uses are coded as single-family (SF), multifamily (MF), business (B), commercial (C), industrial (I), and vacant (V). 2015 land uses are coded as residential (RES), which includes both single-family and multifamily uses, mixed use (MU), commercial (C), industrial (I), and vacant (V). Sample is restricted to parcels which received business, commercial, or manufacturing zoning in 1923

4.2 Regression Discontinuity Analysis

The above results show substantial differences in the long-run evolution of land use between areas zoned more or less restrictively. Commercial and industrial activity was much less likely to persist when it conflicted with zoning, and areas zoned for such activity were much more likely to see it emerge in the future. While these results are suggestive, they ignore other factors that may have influenced the trajectory of land use change. Areas may differ in access to transportation networks, demographic composition, or the general land use character of the surrounding area. Conducting a more rigorous analysis requires accounting for this other potentially influential factors.

In this subsection and the next, I exploit the rich historical data available for these two cities to disentangle the impact of zoning from that of other important factors. Here, I focus on land use change at the micro level using a pseudo-regression discontinuity design. For Chicago, I regress an indicator for the block-level presence of commercial or industrial land use in 2005 on a large suite of (non-zoning) predictor variables. These include measures of geography, such as the distance to the central business district, Lake Michigan, the Chicago River; access to transportation networks, such as distances and adjacency indicators for major streets and railroads; 1913 land values; demographic characteristics, such as density, racial/ethnic composition, and immigrant share; and pre-zoning land use, including the density of commercial and industrial uses of different types both within and around the block. To allow for nonlinearities, many of these variables enter in polynomial form. In total, there are about ninety pre-zoning land use predictors. The residuals from this regression are then used in a local linear regression analysis of the likelihood of future commercial/manufacturing use within 500 feet of the

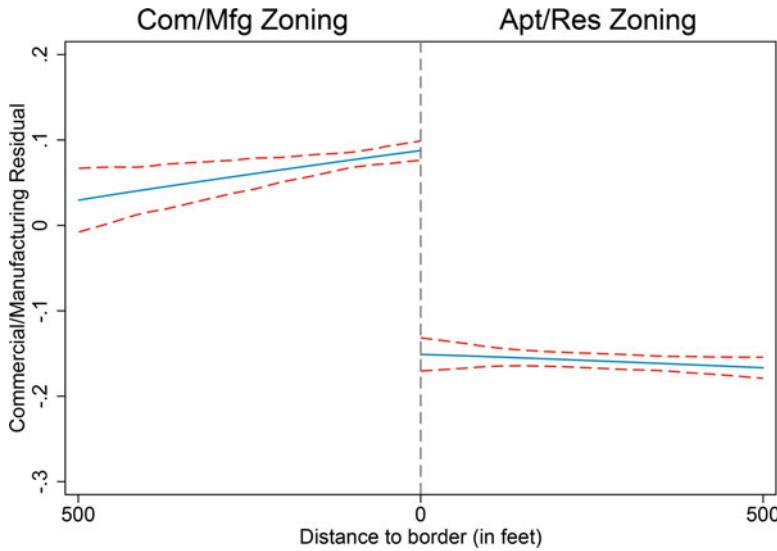


Fig. 9 Commercial and industrial activity: Chicago. Sample includes Chicago blocks with commercial/manufacturing zoning that are within 500 feet of a block containing only apartment/residential zoning, as well as apartment/residential zoned blocks within 500 feet of a block containing commercial/manufacturing zoning. There are 10,805 observations in the sample. Left-hand side of border includes commercial/manufacturing blocks. Right-hand side includes apartment/residential blocks. Outcome variable is the residual from a linear regression of an indicator for 2005 commercial/industrial use on all pre-1923 zoning covariates

boundary between areas zoned for commercial/industrial use and those restricted to apartment/single-family residential use. The results are plotted in Fig. 9.

The figure shows that the probability of a block containing commercial/manufacturing activity in 2005 is over 20 percentage points higher if the block was zoned as such in 1923, relative to a very close neighboring block that received more restrictive residential zoning. This holds even after accounting for a wide range of competing factors that could have influenced future land use. Even when the sample is further restricted to include only blocks that had substantial pre-zoning commercial/industrial development (at least three such uses on each side of the boundary), the result is remarkably similar in magnitude. The results of this analysis can be seen in Fig. 10. This suggests that zoning had a strong causal impact on the evolution of land use even in areas where it conflicted with the existing pattern of activity.

This same exercise can be repeated using the parcel-level data available for Seattle. The set of pre-zoning predictors available here is smaller, but the sample also focuses on a narrower portion of the city, mitigating some of the identification concerns. I regress an indicator for the presence of commercial/industrial activity (including mixed-use developments) in 2015 on controls for 1920 land use; geographic factors, including distance to the central business district, Puget Sound,

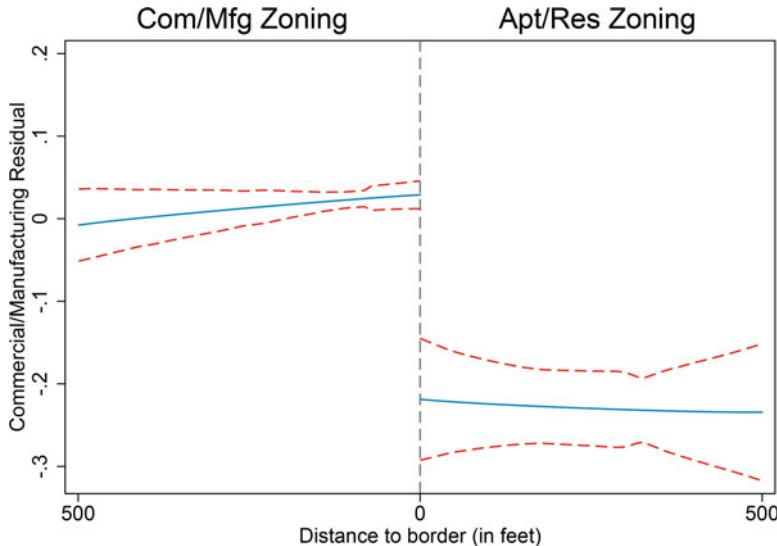


Fig. 10 Commercial and industrial activity: Chicago. Sample includes Chicago blocks with commercial/manufacturing zoning that are within 500 feet of a block containing only apartment/residential zoning, as well as apartment/residential zoned blocks within 500 feet of a block containing commercial/manufacturing zoning. Only blocks with at least three pre-existing commercial/manufacturing uses are included, yielding a sample size of 3,123. Left-hand side of border includes commercial/manufacturing blocks. Right-hand side includes apartment/residential blocks. Outcome variable is the residual from a linear regression of an indicator for 2005 commercial/industrial use on all pre-1923 zoning covariates

and KeyArena, as well as an indicator for siting on the area of the Denny regrade; transportation factors, such as the distance to the nearest railroad, interstate, state highway, and streetcar line, as well as an indicator for siting west of Interstate-5; and demographic variables including population density and racial/ethnic composition. I again restrict the sample to parcels within 500 feet of a zoning border, and plot a local linear regression of the residuals on the distance to the border. The results can be seen in Fig. 11.

Remarkably, the same 20 percentage point difference in the probability of non-residential use emerges at the boundary. Parcels that fell under a less restrictive zoning classification in 1923 are substantially more likely to host commercial or industrial uses in 2015 relative to nearby parcels, even those in the same block. The zoning-induced discontinuity decays more quickly over space here, likely due to the smaller spatial scale of the analysis combined with the effectiveness of the control variables in capturing other land use influences. Section 4.3 puts zoning in context with these other factors to compare their relative importance. It is clear from these results, however, that zoning matters in the long run. Even accounting for an extensive suite of land use influences, zoning discontinuities induce sharp changes

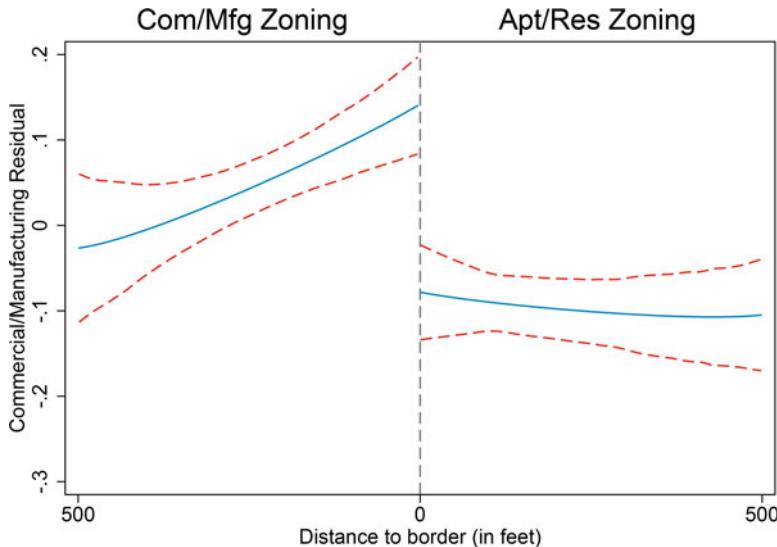


Fig. 11 Commercial and industrial activity: Seattle. Sample includes Seattle parcels with commercial/manufacturing zoning that are within 500 feet of a parcel containing only apartment/residential zoning, as well as apartment/residential zoned parcels within 500 feet of a parcel containing commercial/manufacturing zoning. There are 1,054 observations in the sample. Left-hand side of border includes commercial/manufacturing parcels. Right-hand side includes apartment/residential parcels. Outcome variable is the residual from a linear regression of an indicator for 2015 mixed-use/commercial/industrial activity on available pre-1923 zoning covariates

in long-run outcomes in both Chicago and Seattle, two cities that have experienced very different socioeconomic fortunes over the course of the twentieth century.

4.3 Sheaf Coefficients

While it seems clear that zoning has exerted an influence on the arrangement of economic activity in Chicago and Seattle, it is far from the only factor driving land use patterns. In this section, I aim to decompose and compare the impact of different historical factors driving land use change. I estimate linear regressions of future land use outcomes on the historical land use, demographic, transportation, and geography variables discussed previously. Additionally, I include 1923 zoning measures for each block/parcel. This allows me to estimate the relative importance of these different predictors. Since there are many predictors in each broad category, I use the method of sheaf coefficients (Whitt 1986; Heise 1972). These coefficients summarize the impacts of groups of predictor variables by assuming that each group acts through an individual latent variable. Since the (estimated) latent variable is constructed with a standard deviation of one by design, the estimated sheaf

Table 7 Impact of 1923 zoning on 2005 land use in Chicago

	Single-family (1)	Commercial (2)	Industrial (3)
<i>Sheaf coefficients</i>			
Zoning	0.146*** (0.0065)	0.152*** (0.0042)	0.075*** (0.0045)
Land use	0.099*** (0.0049)	0.176*** (0.0091)	0.088*** (0.0044)
Geography	0.151*** (0.0081)	0.072*** (0.0074)	0.058*** (0.0039)
Transportation	0.030*** (0.0035)	0.100*** (0.0037)	0.019*** (0.0026)
Demographics	0.067*** (0.0064)	0.055*** (0.0068)	0.034*** (0.0046)
Observations	14,582	14,582	14,582
R ²	0.391	0.368	0.349

Sheaf coefficients based on linear regressions of 2005 land use outcome indicators on 1923 zoning, 1922 land use, 1920 demographics, transportation, and geographic covariates. Robust standard errors in parentheses

*** $p < 0.01$

coefficients reflect standard deviation changes, allowing for a comparison of the relative importance of zoning, land use, transportation infrastructure, geography, and demographics in determining future land use outcomes.

Table 7 shows the estimated sheaf coefficients for Chicago, with robust standard errors reported in parentheses. In column (1), the outcome variable is an indicator for the presence of single-family homes. Clearly all factors are relevant, with geography being the most prominent among them. Zoning ranks nearly as important, followed by pre-zoning land use and, more distantly, demographics and transportation network access. In column (2), where the outcome is an indicator for commercial activity, zoning and historic land use are the dominant factors, with transportation playing a more important role. This is unsurprising given that commercial activity is concentrated in the central business district (which was already well developed at the time) and along major street corridors (see, e.g., Fig. 5). Zoning and historic land use are also the primary drivers of industrial location today (column (3)). Given that neighborhoods are often strongly resistant to the introduction of noxious industrial activity, it is unsurprising that it tends to persist where originally established. Geography is a close third factor, since much of this activity is still proximate to the Chicago River. Regardless of the particular outcome considered, it is clear that zoning is a major predictor relative to other traditionally important determinants of land use.

Table 8 reports the results of the sheaf analysis for Seattle, with standard errors reported in parentheses. These are clustered at the block level to account for attempts to homogenize zoning within blocks. I analyze the comprehensive and land use change samples separately; the former sample is smaller but contains all of the

Table 8 Impact of 1923 zoning on 2015 land use in Seattle

	Mixed use (1)	Mixed use (2)	Mixed/com./ind. (3)	Mixed/com./ind. (4)	Com./ind. (5)	Com./ind. (6)
<i>Sheaf coefficients</i>						
Zoning, 1923	0.031 (0.0434)	0.116*** (0.0433)	0.089*** (0.0139)	0.122*** (0.0426)	0.108*** (0.0219)	0.077* (0.0435)
Land use, 1920	0.094*** (0.0286)	0.037** (0.0179)	0.069*** (0.0219)	0.033*** (0.0109)	0.064*** (0.0202)	0.027** (0.0137)
Geography	0.208** (0.0992)	0.150*** (0.0467)	0.211*** (0.0260)	0.165*** (0.0421)	0.182*** (0.0311)	0.208*** (0.0569)
Transportation	0.030 (0.1199)	0.103*** (0.0288)	0.109*** (0.0331)	0.067** (0.0282)	0.159*** (0.0599)	0.145*** (0.0515)
Demographics, 1920	0.200 (0.2026)	0.059** (0.0292)	0.105 (0.0829)	0.066*** (0.0175)	0.089 (0.1092)	0.072*** (0.0251)
Observations	287	679	718	1617	718	1617
R ²	0.385	0.289	0.415	0.318	0.279	0.192

Sheaf coefficients from linear regressions of 2015 land use outcome indicators on 1923 zoning, 1920 land use, 1920 demographics, transportation, and geographic covariates. Odd-numbered columns are estimated on the comprehensive land use sample; even-numbered columns are estimated on the land use change sample. Outcome in columns (1)–(2) is an indicator for mixed use; sample is restricted to parcels with multifamily or mixed commercial/multifamily use only. Outcome in columns (3)–(4) is an indicator for mixed, commercial, or industrial use; sample is restricted to parcels not vacant in 2015. Outcome in columns (5)–(6) is an indicator for commercial or industrial use; sample is restricted to parcels not vacant in 2015. Standard errors are clustered at the block level

* $p < 0.1$

** $p < 0.05$

*** $p < 0.01$

parcels in the given area of Lower Queen Anne, while the latter is larger but only includes parcels which saw a land use conversion by 1952.⁶ In the first two columns, the samples are restricted to parcels that contained multifamily or mixed-use developments in 2015; the outcome is an indicator variable for mixed use. The coefficients reflect the impact of zoning on the likelihood that multifamily residences would incorporate (typically ground-level) commercial activity as well. Neither business nor commercial zoning appears to have a noticeable impact on the comprehensive sample, but commercial zoning has a substantial positive impact on the land use change sample; the estimated impact is even larger than that of pre-existing land uses, transportation access, and demographics.

The third and fourth columns examine a broader sample to explain the presence of purely multifamily residential structures versus those that accommodate mixed uses or are devoted to purely commercial or industrial use. The outcome variable

⁶See Sect. 3 for more details.

is an indicator equaling 1 if the parcel includes commercial or industrial activity (regardless of the presence of residential activity as well); the indicator is 0 for residential-only parcels. The results show a substantial positive impact (on both the subsamples) of more liberal zoning allowing for commercial and industrial activity, and the effect is larger in magnitude than the influence of historic land use. In the final two columns, the outcome variable is an indicator for exclusively commercial or industrial use, so it takes a value of zero if the parcel is reported as residential or mixed use. Again, more liberal zoning in 1923 substantially increases the likelihood of commercial or industrial use prevailing in 2015.

These results show that in both cities, zoning is an influential predictor of future land use even after accounting for an extensive array of important confounding factors. The magnitudes of the zoning shear coefficients across cities and samples is generally quite similar, mirroring the results of the previous two subsections. Overall, these results suggest a strong causal role for zoning in shaping the long-run development of these cities.

5 Conclusion

Zoning is both ubiquitous and controversial in the USA. The increasingly severe housing affordability crisis affecting many regions has elevated zoning to a state- and national-level policy conversation. Our best estimates suggest that the cost of restrictive zoning is too high to ignore (Bunten 2017; Herkenhoff et al. 2018). At the same time, a burgeoning literature in both urban economics and economic history has sought to understand contemporary urban problems in light of persistent historical factors. Despite this, attempts to measure the impact of zoning on cities have faced challenges due to the difficulties associated with limited data and the inherent endogeneity of land use regulations. This chapter, a discussion and elaboration of my work in Shertzer et al. (2018) and Twinam (2018), aims to address these difficulties through careful data collection and a long-run perspective.

My findings, based on historical and contemporary data from Chicago and Seattle, suggest an important role for zoning in both shaping and reshaping urban spatial structure over the twentieth century. In Chicago, a city already substantially developed by 1923, zoning considerably altered the existing pattern of commercial and industrial development. It also played a large role in organizing economic activity in the outlying, less developed areas of the city. In Seattle, a city where much of the core was still occupied by single-family homes in 1923, zoning played a sizable role in shaping which areas became part of the commercial downtown and which maintained a residential character. In both cities, the role of zoning was comparable to that of other well-recognized factors of importance, including geography and infrastructure. Institutional persistence and lock-in due to agglomeration economies are both phenomena that are well-documented in the

literature on economic geography and economic history. This research serves to highlight the interplay of the two, illustrating that institutional changes can mediate the impact of economic forces on the evolution of cities.

References

- Atack, J. (2016). Historical Geographic Information Systems (GIS) database of U.S. Railroads for 1826–1911. <https://my.vanderbilt.edu/jeremyatack/files/2016/05/RR1826-1911Modified0509161.zip>
- Blanchard, L. F. (1968). *The street railway era in Seattle: A chronicle of six decades*. Forty Fort: Harold E. Cox.
- Brooks, L., & Lutz, B. (2019). Vestiges of transit: Urban persistence at a microscale. *Review of Economics and Statistics*, 101(3), 385–399.
- Bunten, D. M. (2017). *Is the rent too high? Aggregate implications of local land-use regulation*. FEDS Working Paper No. 2017-064.
- Fischel, W. A. (2015). *Zoning rules!: The economics of land use regulation*. Cambridge: Lincoln Institute of Land Policy.
- Gordon, C. (2009). *Mapping decline: St. Louis and the fate of the American city*. Philadelphia: University of Pennsylvania Press.
- Heise, D. R. (1972). Employing nominal variables, induced variables, and block variables in path analyses. *Sociological Methods & Research*, 1(2), 147–173.
- Herkenhoff, K. F., Ohanian, L. E., & Prescott, E. C. (2018). Tarnishing the golden and empire states: Land-use restrictions and the US economic slowdown. *Journal of Monetary Economics*, 93, 89–109.
- Hirt, S. A. (2015). *Zoned in the USA: The origins and implications of American land-use regulation*. Ithaca: Cornell University Press.
- Hornbeck, R., & Keniston, D. (2017). Creative destruction: Barriers to urban growth and the Great Boston Fire of 1872. *American Economic Review*, 107(6), 1365–1398.
- Hunt, D. B., & DeVries, J. B. (2017). *Planning Chicago*. New York: Routledge.
- Kelleher, S. (2015, March). Seattle's micro-housing boom offers an affordable alternative. *The Seattle Times*.
- McMillen, D. (2015). Conditionally parametric quantile regression for spatial data: An analysis of land values in early nineteenth century Chicago. *Regional Science and Urban Economics*, 55, 28–38.
- McMillen, D. P., & McDonald, J. F. (1991). A Markov chain model of zoning change. *Journal of Urban Economics*, 30(2), 257–270.
- Munneke, H. J. (2005). Dynamics of the urban zoning structure: An empirical investigation of zoning change. *Journal of Urban Economics*, 58(3), 455–473.
- Murray, C. K., & Frijters, P. (2016). Clean money, dirty system: Connected landowners capture beneficial land rezoning. *Journal of Urban Economics*, 93, 99–114.
- Redfearn, C. L. (2009). Persistence in urban form: The long-run durability of employment centers in metropolitan areas. *Regional Science and Urban Economics*, 39(2), 224–232.
- Shertzer, A., Twinam, T., & Walsh, R. P. (2016). Race, ethnicity, and discriminatory zoning. *American Economic Journal: Applied Economics*, 8(3), 1–31.
- Shertzer, A., Twinam, T., & Walsh, R. P. (2018). Zoning and the economic geography of cities. *Journal of Urban Economics*, 105, 20–39.
- Shertzer, A., Walsh, R. P., & Logan, J. R. (2016). Segregation and neighborhood change in northern cities: New historical GIS data from 1900–1930. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 49(4), 187–197.

- Siodla, J. (2015). Razing San Francisco: The 1906 disaster as a natural experiment in urban redevelopment. *Journal of Urban Economics*, 89, 48–61.
- Siodla, J. (2017). Clean slate: Land-use changes in San Francisco after the 1906 disaster. *Explorations in Economic History*, 65, 1–16.
- Twinam, T. (2018). The long-run impact of zoning: Institutional hysteresis and durable capital in Seattle, 1920–2015. *Regional Science and Urban Economics*, 73, 155–169.
- Wallace, N. E. (1988). The market effects of zoning undeveloped land: Does zoning follow the market? *Journal of Urban Economics*, 23(3), 307–326.
- Whitt, H. P. (1986). The sheaf coefficient: A simplified and expanded approach. *Social Science Research*, 15(2), 174–189.
- Williams, D. B. (2015). *Too high and too steep: Reshaping Seattle's topography*. Seattle: University of Washington Press.
- Wolf, M. A. (2008). *The zoning of America: Euclid V. Ambler*. Lawrence: University Press of Kansas.

Tracing the Effectiveness of Land Use Regulation: The Case of Heritage Protection Measures, Flexibility, and Adaptations



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Abstract The effectiveness of real estate and land use regulation is hard to measure because of the variety of contexts, as well as the many factors that affect the ability of regulation to achieve its outcomes. Nonetheless, one can still look at regulation and evaluate its effectiveness through a variety of methods. In this study, we examine heritage regulation in Oregon (USA), Israel, and England and compare its effectiveness by examining built-heritage conflicts. The arena for this study is appeal tribunals in the three jurisdictions, where heritage conflicts are frequently debated. The proposed framework for analysis defines several independent variables: the existence of built-heritage regulation and conflicts, heritage-related appeals, and institutional setting that allows for local heritage decisions. The analysis also defines one major dependent variable, the outcome of appeals, and specifically whether the conflict resulted in changes to the historic property. I suggest that flexibility and changes in the historic environment correspond with a more effective policy. In the context of this research, heritage regulation is considered effective when it has the ability to facilitate change, flexibility, and adaptation. The findings suggest that while all three systems accommodate flexibility and change, in some jurisdictions, decision-makers interpret heritage regulation more broadly by allowing more change in the historic fabric. This approach indicates that in some jurisdictions, heritage regulations are more effective than in others.

1 Introduction

The major theme of this book—measuring the effectiveness of regulation—brings to the fore many questions; can effectiveness be measured with respect to land use regulation? What criteria can and should be used? These questions mesh well with evaluation studies and specifically with implementation research which imply that effectiveness can be measured not only by looking at implementation but

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also through procedural criteria. Moreover, effectiveness is context-dependent; it depends on the major goals envisioned by regulation and on its embedded implicit or explicit values.

To examine these issues, I looked at a particular type of land use regulation: provisions pertaining to the built heritage. Regulation of this type prescribes which alterations and adaptations, if any, can be made in the historic fabric. Put differently, the underlying theme in this chapter is whether heritage regulation is an effective policy tool.

Heritage regulations are not new; in their modern form, they have been around for at least 150 years. These regulations create a portfolio of important historic properties, grade them, and guide property owners and municipal decision-makers on how to protect and preserve them. Heritage regulations can take many forms: they can exist in the form of laws prepared by government, as bylaws passed by municipal and local bodies, or as statutory plans that define how specific heritage properties should be treated. Some heritage regulations are more restrictive, while others are more flexible. The tension between rigidity and change, between strict preservation and major alterations, stands at the epicenter of many heritage disputes. While unpacking these tensions, this chapter focuses on heritage conflicts that emerge out of requests to develop heritage properties. The conflicts indicate how decision-makers interpret heritage laws. They also unravel how heritage regulations work and whether they have an impact on proposals to develop heritage assets. This examination can also help in assessing the effectiveness of heritage policies.

By the twenty-first century, heritage regulations have moved away from strict preservation to allow flexibility, change, and the dynamic adaptation of heritage environments to current needs (Munoz-Vinas, 2012, p. 204). The literature has established that heritage properties must not become museums, nor hinder development and the growth of cities. As Thomas (1997) puts it, “conservation does not mean pickling in aspic with no prospect or cognizance of the possibility of change” (Thomas, 1997, p. 177). Besides, for example, untouchable icons like the Big Ben in London, or the Wailing Wall in Jerusalem, the built heritage, and especially more “mundane” heritage such as factories, residential buildings, and those built in the past century or so must accommodate change (Mualam & Sybblis, 2015). Indeed, this flexible approach can be criticized as pro-growth or even developer-friendly. It risks becoming too enthralled with private interest while neglecting public values and concerns.

Given the complexity of heritage protection, private interests of developers and owners are constantly balanced against broader societal concerns. Furthermore, a major goal of heritage regulation is to strike a balance between development and preservation (Duerksen & Goebel, 1999, p. 10). While striking a balance between these competing interests, decision-makers may call for alterations and change in the historic property. Consequently, one way to measure the effectiveness of heritage regulation is to look at its ability to balance preservation and change. But how? One option is to look at the outcome of heritage conflicts. In other words, by mapping the outcome of proposals to develop heritage properties, it is possible to assess whether regulation is effective or not, i.e., whether it enables decision-makers to strike a

balance between development and preservation. Effective heritage regulations and policies will enable flexibility—and therefore adaptations of heritage properties—while ineffective heritage regulation will forego adaptation and pursue a highly rigid path of development, even a complete stoppage of “unwanted” development.

2 Effectiveness of Land Use Regulations and Heritage Statutes

2.1 *Effectiveness and Efficiency of Land Use Policies*

Government policies, including land use policies, are complex to evaluate: their implementation may take years, and their impact may be indirect and pegged to other contributing factors (Greenberg, 1971). This has led to an extensive literature on the implementation of land use policies (see Alexander and Faludi, 1989; Velotta, 2008; Kim, 2014). While these accounts strive to make sense of existing policies, some argue that the field of land use planning lacks rigor in terms of evaluation methods. Specifically, critics argue that planners have developed few guides to evaluate policies (Baer, 1997) and that “the literature on city planning is anemic at best” in terms of evaluation methods (Waldner, 2004, p. 5).

Evaluation of land use regulation can be carried out *ex ante*, *post hoc*, or as an ongoing process. One way to conduct a *post hoc* evaluation of the implementation of regulations is to examine their actual “efficiency” or “effectiveness” (Brown & Chin, 2013). However, effectiveness and efficiency in planning can be measured in a variety of ways (Oliveira & Pinho, 2010; Muñoz Gielen & Mualam, 2019) and examined using different techniques (Seasons, 2002, p. 46), perspectives, and indicators (Calkins, 1979).

Evaluation research involves the establishment of criteria for measuring the effects of “planned social action,” including planning laws (Hyman & Wright, 1971; Pruetz, 2016). A policy can be considered as effective when it abides by certain procedural requirements; when it secures the desired outputs (Hill & Werczberger, 1978; Elson et al., 1993; Laurian et al., 2004); when it aligns with specific policy targets (Rowe & Frewer, 2004); when it achieves its objective within a given time frame; or when a certain output is generated at lower costs. The latter criterion is used in cost-effectiveness analysis, which looks at the minimum cost of achieving a certain outcome (Patton et al., 2016, p. 359; Muñoz Gielen & Mualam, 2019), for example, the cost of building a road or the costs of protecting heritage. In order to determine a policy’s effectiveness, planners and policy analysts do not have to examine each benefit of a specific policy, but instead focus on a limited number of outputs, associated with it (Weimer & Vining, 1998, pp. 272–273; Patton et al., 2016, p. 200).

Efficiency, however, is more difficult to measure (Fischel, 1990, pp. 56–57; Muñoz Gielen & Mualam, 2019). Efficiency tests measure a broader set of costs

versus benefits and in particular the maximization of benefits, of utilities, or of the public interest at large (Pennington et al., 2017). Efficiency tests include questions such as how an entire set of outputs compares with inputs (Greenberg, 1971), the degree to which government produces as much as possible from its resources, and the cost of that production (Haty et al., 1977, p. 233). The ensuing analysis of heritage policies focuses on effectiveness rather than efficiency.

2.2 Effectiveness of Heritage Policies and Regulations

Heritage policies are often designed to protect different types of heritage such as intangible elements, tangible objects, landscapes, and structures (King, 2004, p. 10). These policies take many shapes and forms such as local statutory plans or national regulation (Birch & Roby, 1984; Pickard, 2001; Owley, 2015). When evaluating the effectiveness of these measures, one has to consider their underlying goals. Heritage policy in particular may rely on a set of values that it aims to protect such as architectural significance, authenticity, social identity, cultural symbols, community stability, and much more (Fredheim & Khalaf, 2016; Yung, Zhang, & Chan, 2017). Heritage policies may also focus on promoting other more mundane goals (Munoz-Vinas, 2012, p. 177) such as the minimization of conflict, the protection of property rights, and the creation of value for developers while striking a balance between a variety of public and private interests (Howard & Ashworth, 1999, p. 52). On one hand, there is public interest in protecting certain artifacts, objects, and buildings which society (or at least certain groups in society) value. On the other hand, there are private interests of owners, neighbors, and rent-seeking entrepreneurs who wish to develop properties and to maximize profit (Warner, 1987; Koziol, 2008). So heritage protection policies might become a source of battles between a variety of agents over the value of heritage and the burdens it places on the shoulders of landowners.

Given different vested interests in heritage, it becomes harder to define criteria for measuring the effectiveness of regulation. To complicate things, heritage policies can be evaluated based on their explicit or implicit goals. Moreover, heritage policy can be considered effective based on both process and outcome criteria, for example, when it abides by certain procedural rules (such as enabling meaningful participation) or achieves a certain corollary defined or anticipated by the legislature (such as a balanced development of heritage assets).

While a growing group of studies attempt to evaluate the impact of heritage regulation on property values (Mason, 2005; Noonan & Krupka, 2011), the literature also measures its effectiveness in different ways. Keeping the economic perspective at the center, these studies look at economic impacts of heritage preservation, such as its ability to create jobs, increase revenues and wealth, rejuvenate cities, and stimulate other economic benefits (Listokin, 1997; The World Bank, 2001). Using this economic logic, the effectiveness of heritage regulation is often compared to other renewal strategies—such as new construction—in terms of its ability to

generate specific benefits such as increased investment in urban infrastructure, tourism, and local communities (Wichman, 2008).

In addition to the economic lens, studies of heritage protection have also sought other ways to evaluate policy. As an example, Al-Quntar (2013) evaluates how efforts to preserve heritage can prevent wartime damage to cultural heritage. Other scholars examine the effectiveness of heritage laws by looking at equity issues, such as social inclusiveness and cultural sensitivity (Hargrove, 2009), for example, the ability of heritage regulation to protect different types of cultures without bias (Ndlovu, 2011) or to enable public participation (Steinberg, 1996). Another notable group extends the social point of view to include analysis of broader sustainability indicators. These studies evaluate the effectiveness of heritage policies by looking at their immediate and indirect effect on environmental, economic, and social sustainability (Page, 2016). For instance, Stubbs (2004) develops a set of indicators to assess the impact of heritage protection on sustainable development (Stubbs, 2004, p. 302). These indicators include the impact of heritage policy on energy efficiency, climate change, and visitors' mode of travel.

As suggested in the introduction of this chapter, scholars have also evaluated heritage policy by looking at its ability to accommodate flexible protective measures, including adaptive reuse and physical adaptation of structures (PICH Consortium, 2018). While flexible approaches to heritage preservation are important, a too lenient approach can create heritage-insensitive development (Tunbridge, 2000). However, the adaptive-flexible approach is perceived as low-cost and therefore as “the most effective approach for a self-financing and sustainable form of conservation” (Steinberg, 1996, p. 465). The adaptive-flexible approach has emerged for a variety of reasons: for example, austerity has created fiscal challenges, and thus governments find themselves unable to force strict protection. As a result, they have been more inclined to seek compromise and public-private partnerships in order to protect heritage. Other reasons behind the adaptive-flexible approach include a growing awareness that the past is not sacred—or at least that most cultural properties are not sacred. As a result, heritage practitioners and researchers have increasingly promoted a pragmatic approach which reorganizes and reinterprets the values embedded in heritage properties and balances them against competing interests. As one mural in Belfast reads, “a nation that keeps one eye on the past is wise; a nation that keeps both eyes on the past is blind” (Fig. 1).

The underlying challenge of evaluating heritage protection regulation, like the challenge of most evaluation studies, is to elicit and operationalize evaluation criteria for effective heritage policies. For example, it is possible to argue that an effective heritage policy is one which allows flexibility and enables changes in existing historic districts. A different point of view would assert that an effective heritage policy manages to freeze development or slow down the pace of change in historic districts. Based on different beliefs and point of views, it is possible to evaluate effectiveness using different perspectives. Existing heritage studies (e.g., Thomas, 1997; Prudon, 2008) have frequently touched on the issue of change as central to heritage policy, and this chapter adopts the same approach. Management of change, through adaptive reuse, modernization, and alteration of

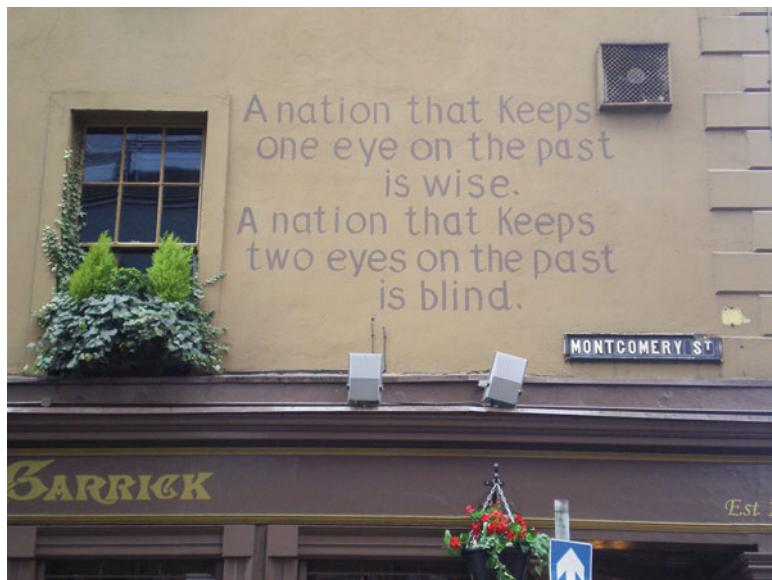


Fig. 1 Montgomery St., Belfast. The Garrick Pub (Source: Author)

heritage properties, is increasingly becoming the central issue for heritage protection strategies (PICH Consortium, 2018, p. 53).

Thus, to operationalize this goal, I maintain that *effective heritage regulations enable protection alongside the management of change*. Specifically, when conflicts over the development of heritage emerge, *effective heritage regulation enables decision-makers to strike a balance between development and change*.

It is possible to obtain a broad view of the effects of heritage policies by looking comparatively at policies employed in a variety of jurisdictions (e.g., Pickard, 2001; Franzese, 2008; Sanz Salla, 2009). This is because comparative analysis extends the usefulness of evaluation by enabling the evaluator to detect similarities and differences in the outputs (the effects), of a given policy (Hyman & Wright, 1971, p. 204; Weiss, 1997).

The approach espoused in this chapter draws on existing literature in several ways. First, I examine the effectiveness of heritage regulation by looking at its ability to accommodate change in the historic fabric. In line with existing research that stresses flexibility, the empirical analysis I undertook examines how decision-makers relate to changes in heritage properties; do they avoid these changes, or do they interpret heritage regulation in such a way as to enable change? How is balance maintained when landowners make proposals to develop the built heritage? This is an outcome-based approach to evaluate the effectiveness of heritage regulation.

Second, the analysis looks *comparatively* at the ability of heritage policies to accommodate change. This is done in order to ground the evaluation in a broader

international context. The setting I chose for this examination is heritage conflicts and, more particularly, heritage appeals as discussed before appeal tribunals.

3 Methodological Notes

3.1 Key Variables and Research Question

The paper focuses on a specific set of independent and dependent variables in a cross-country comparative setting. The independent variables embody contextual issues that foreground the analysis. They include the existence of a proposal to develop a historic property; a conflict between an owner (or a developer) and a local planning authority concerning development proposals; and the existence of heritage regulation which sets “the rules of the game” and determines whether a proposal for development should proceed.

The dependent variables I used are outcome-based indicators. These are evaluation criteria that assess the impact of heritage regulation on decisions to develop the historic property. The first dependent variable is whether decision-makers interpret heritage regulation as allowing change in the historic fabric. The next dependent variable, a progeny of the first, relates to whether heritage regulation enables change, given proposals to develop, and to what extent. In other words, the interpretation of policy by decision-makers is an invaluable source for assessing the impact of heritage regulation, its effectiveness, and its application “on the ground.”

The abovementioned criteria for evaluation require a consideration of the values and goals embedded in heritage policy which is part of contemporary policy analysis (Anderson, 1987). Specifically, assessing the degree of change, adaptation, and flexibility allowed by heritage regulation assumes that today’s heritage policies are inclined to allow change and even require it. Form does not trump function, and as a consequence, adaptive reuse or physical reconfiguration of heritage buildings may be of essence given pragmatic considerations (Prudon, 2008; Mualam & Sybllis, 2015).

3.2 The Setting: Planning Conflicts and Appeals

The reasons for choosing planning conflicts in order to evaluate land use policies have been already discussed in the literature, and there is not enough room here to repeat them all (Nelson, 1995; Edgar, 2011). For the most part, planning conflicts and in particular planning appeals are defining moments in the operation of any planning system (Mualam, 2014a, 2014b). When a planning application is refused in whole or in part by a city (usually by its local planning board of some sort), the parties—including owners, developers, and in some cases third parties—may

file an appeal to a quasi-judicial tribunal. Appeal processes reflect the priorities and policies of the planning system as a whole. They reveal how policy acts on the ground and interacts with people as well as diverse interest groups (Lai, 2000). Planning appeals are also a useful arena for studying heritage conflicts as they accentuate already existing cleavages of interests with respect to the built heritage (Mualam & Sybblis, 2015). Thus, planning appeals can help in evaluating the effectiveness of heritage regulation.

The ensuing analysis examines whether changes were approved in the historic fabric by looking at heritage disputes that present themselves before an expert adjudicator on appeal: a planning tribunal that specializes in land use planning matters. The context of conflict and dispute is especially important because it mirrors an embedded tension between landowners—who often want to change the use or appearance of the historic property—and other stakeholders such as municipalities and local planning authorities—who consider broader public goals and may therefore adopt a more rigid approach which tightly controls development of heritage properties. Appeals are context-specific, and the power to initiate an appeal may rest in the hands of landowners, the local (municipal) planning authority, or even the neighboring owners. These agents may either push development toward conservation or change, rigidity, or flexibility, depending on the heritage property in issue and their respective vested interests.

These two, allegedly contradicting, approaches call for adaptation or strict preservation. The former considers heritage as dynamic, as a facilitator of other processes occurring in the built environment such as urban growth and regeneration. The other view, however, considers heritage to be sacred, even untouchable (Howard & Ashworth, 1999, p. 52). This view can present quite a challenge to landowners and developers wishing to maximize profit and make full use of their property rights.

These two viewpoints can be fairly characterized as two extremes. However, in between, one can find enough room for intermediate attitudes that strike a balance between development and strict conservation. These “in-between” situations are exactly where the effectiveness of heritage regulation can be measured: in the space that exists between strict management and unfettered changes.

3.3 The Setting: Choosing Jurisdictions for Comparative Analysis

I chose to focus on three jurisdictions: England, Israel, and the state of Oregon in the United States. These three settings all have heritage regulations, and it is possible to study how their regulations, corresponding to the independent variables, operate in the setting of appeals and conflicts. Specifically, all three jurisdictions have established a tribunal which adjudicates heritage disputes—the Planning Inspectorate in England, the Land Use Board of Appeals (LUBA) in Oregon, and Appeal Committees in Israel. These tribunals share similar discretionary powers to

decide local planning conflicts and to examine proposals to develop heritage assets (Mualam, 2014a).

In addition, the three settings allow to compare planning systems that share certain attributes. Although comparing them is not exactly like comparing apples with apples, all three jurisdictions have empowered local planning authorities to decide whether or not to grant planning permission to develop heritage properties. Moreover, all three maintain a significant degree of central government control on localities by regulating, guiding, and supervising heritage policies and decisions made at the local level (a centralized planning system). In addition, these jurisdictions allow the interests of landowners to be represented in the dispute in an adversarial setting.

As with other comparative studies, it is impossible to trace all contextual issues that affect heritage-related decisions, nor to isolate all differences which may affect the evaluation in the comparable jurisdictions. In other words, it is impossible to control for a large set of variables, because it is impossible to find three totally comparable jurisdictions. Indeed, there are many different nuances in the heritage protection systems of each jurisdiction. Nevertheless, comparative analysis builds on a certain degree of generalization and abstraction, which is embedded in the comparative method. This abstraction allows for a cross-jurisdictional analysis (Denters & Mossberger, 2006).

4 Contextual Notes

4.1 *A Brief Background on Heritage Regulation and Policy in England, Israel, and Oregon*

In order to fully understand the effectiveness of heritage regulations in Israel, Oregon, and England, it is helpful to understand how they work (see, e.g., Suddards, 1998, ICOMOS Israel, 2002; King, 2004).

4.1.1 **Heritage Regulation in England: Rigidity Alongside Flexibility**

Heritage protection in England (known there as conservation) is under the scope of both local and national regulations (Rydin, 1993, pp. 112–113). It is centrally controlled and administered by the government but also enables local planning agencies a certain degree of discretion to plan and grant planning permission (Sheppard, Peel, Ritchie, & Berry, 2017). Heritage protection is situated institutionally in a non-imperative planning system. This means that planning is indicative and discretionary and uses non-binding policy guidance (PICH Consortium, 2018). Discretion is given to local planning authorities to approve plans and planning permits and thus to manage heritage properties. However, alongside this discretionary system,

England relies also on regulations, planning policy guidelines, and national policy frameworks that impose certain rules pertaining to heritage. Several laws define how built heritage is to be protected, including the *Listed Building and Conservation Areas Act* and the *Town and Country Planning Act*. This means that the approach to heritage management is somewhat mixed, and it is possible to find strict rules pertaining to heritage conservation that coexist with a more discretionary approach (PICH Consortium, 2018, p. 74).

The English system may be considered restrictive toward the development of heritage properties because it relies on central government guidance and regulation which creates a unified, centralized, and a very controlled heritage system (Bridgwood & Lennie, 2009). Restrictions on historic properties apply to public agencies¹ as well as to private owners. Thousands of conservation areas designated by local governments provide a highly controlled, restricted, and supervised environment regarding development efforts. Scholars note that the mindset of English governance is geared toward viewing developers and their aspirations as a threat to the built heritage (Barthel, 1996). Thus, control over development of heritage properties is common in the planning system of England (Greed, 1996, p. 167), and consent is required for altering or demolishing a structure listed as “historic” or in cases where it is situated in officially registered conservation areas.

Generally, there has been a presumption in favor of preserving heritage that exists across the board. Specifically, national-level policies have stressed the importance of built heritage (Mynors, 2006). Nevertheless, in recent years, the government has introduced a more balanced approach with a focus on sustainable development. Accordingly, local planning authorities as well as other decision-makers must relate to other competing values and benefits that may suggest more lenient approach to heritage protection. For example, a key policy document, the National Planning Policy Framework (NPPF, approved in 2012), as well as earlier policy statements (see Planning Policy Statement No. 5) relates to the issue of balancing competing interests in planning (Department of Communities and Local Government, 2010). Specifically, the NPPF states that development of heritage properties should be examined in light of an array of socioeconomic benefits (Department of Communities and Local Government, 2012, p. 16). Likewise, planning agencies were instructed to take into account the desirability of new development alongside heritage properties (Id., p. 31) and to weigh competing public goals that outweigh the harm caused by development of heritage properties. In particular, the government maintained that securing a viable use for a heritage site, bringing it back to use, and creating an economically vital neighborhood are considerations for allowing development and change (Id.).

¹Section 83 of the LBCA Planning (Listed Buildings and Conservation Areas Act) of 1990.

4.1.2 Heritage Regulation in Israel: Growing Local Awareness to Heritage But Still a Flexible Approach to Heritage Development

Similar to England, preservation in Israel happens on both the local and the national level. Unlike in England, however, the role of central government is not as prominent as the role assumed by local and regional planning authorities (Israel's State Comptroller, 2005). The weight is primarily on the thin shoulders of municipal and local planning authorities to devise planning schemes that preserve their built heritage (Government of Israel, 2005, Sect. 9.5).

For years, central government has been quite indifferent to preservation, shown by the weak prescriptions of the Israeli Planning and Building Act of 1965.² Although the Israeli Planning and Building Act is recognized as a comprehensive law (Tal, 2006, p. 359), it did not provide many useful tools for preservationists, at least not initially. In 1991, the parliament devised a new program for heritage policy. It amended the Planning and Building Act by adding provisions relating to built-heritage protection. In the “words of explanation” of the new legislation, the legislators who submitted the bill noted Israel’s deficient efforts to preserve its heritage. (The Parliament of Israel, 1991)

The parliament members who deliberated the new bill also concluded that the Planning and Building Act has failed to produce the proper framework for protecting historic sites. This failure can be attributed to the orientation of existing preservation legislation in favor of development rather than development control (The Parliament of Israel, 1991).

The new bill was eventually passed in 1991. It gave planning agencies increased powers to create statutory preservation plans. Nevertheless, the 2005 State Comptroller’s report found that even post-1991, heritage protection has been neglected due to lack of incentives and involvement by the state (Israel’s State Comptroller, 2005). Moreover, local planning agencies avoided dealing with heritage policies. Few statutory plans were passed, and those which did enabled alterations and changes in the historic fabric. Statutory plans were flexible and allowed adaptations of historic properties so to avoid future lawsuits by owners on grounds of takings. Put differently, local planners enabled changes to the historic fabric because of financial reasons: specifically, their reluctance to pay hefty sums as compensation to owners lodging lawsuits against local governments.

In the recent decade, a growing stream of statutory plans indicate that gradually heritage has become an important part of the planning toolkit, with more incentives being offered to Israeli landowners (Mualam, 2015). The overall result is that although the Israeli planning system uses imperative planning, formal statutory plans, and regulations and codes, the protection of built-heritage regulation remains

²In 2010, the government sought to change the provisions of the Planning and Building Act to include revised (and somewhat updated) statutory instruments pertaining to heritage preservation. This suggestion has been deliberated by the parliament as part of the most extensive reform in the Planning and Building Act to date. More discretionary powers were given to localities in 2014. Owing to matters of scope, these modifications were not included in this research.

primarily in the form of local plans that protect specific sites and districts. This regulation enables localities to practice discretion in the development control process, owing to a certain degree of flexibility, which enables dynamism and incentives in the form of added building rights (Mualam, 2015). Consequently, some critics have argued that heritage preservation in Israel is closely tied to spot-zoning and a developer-friendly approach, which protects heritage while enabling massive changes in the built historic fabric (Margalit, 2014).

4.1.3 Heritage Regulation in Oregon: Local Discretion and Flexibility, Alongside National Control and Guidance

The Oregonian heritage protection system demonstrates flexibility in two ways: first, embedded flexibility owing to the “home rule,” which allows localities greater leeway to manage their affairs and to regulate different aspects of planning without the government’s intervention. Second, the Oregon legislature has expressed the opinion that heritage assets must accommodate the needs of landowners and become part of a broader strategy to reach sustainability goals. On the face of it, local planning agencies are empowered to exercise discretion when granting planning permission or approving development of heritage properties.

It is useful to note that Oregon is unique in the context of the rest of the United States. Oregon’s planning system is known to be rather centralized (Carson, 2001). Although localities play a crucial role in controlling development, the state is nevertheless highly involved in regulating land use and creating the foundations for local involvement. The state issued a series of statewide planning goals that apply across the board. These goals must be considered and implemented by localities when approving local plans. In addition, Oregon’s Land Conservation and Development Commission ensures state policies are implemented by supervising localities’ plan-making (Oregon Revised Statutes [ORS] No. 197.251).³ All of the above makes Oregon’s planning system rather centralized and top-down (Cullingworth & Caves, 2003, p. 225). LUBA, as a government-appointed body, is also an arm of government’s involvement in the planning system and of its strict control over local development.

The State Historic Preservation Office (SHPO), part of the Parks and Recreation Department, is the agency in charge of heritage and heritage preservation in the state of Oregon. SHPO’s role is to be the statewide leader for historic protection, including both historic and archaeological sites (SHPO: Oregon Plan, 2011). SHPO administers an array of federal and state preservation programs intended to support local governments (Oregon State Historic Preservation Office, 2011,

³The Land Conservation and Development Commission may grant or deny the approval of local comprehensive plans and land use regulations. Those statutory instruments are carefully examined following a hearing procedure, in order to align them with national goals (ORS 197.251).

p. 18).⁴ Every few years, SHPO issues a Historic Preservation Plan to guide its future activity. The Historic Preservation Plan outlines the SHPO's priorities and overall approach. It is not a town plan in its narrow sense, nor is it a statutory instrument. The Historic Preservation Plan is a strategic document, intended to help direct coordinated effective preservation effort (see the American National Historic Preservation Act—NHPA—Section 101). The plan sets goals for future policies and addresses a wide range of subjects, including government partnerships, heritage networking, identification and designation of resources, rehabilitation, data accessibility, economic development, advocacy and outreach, grants and funding, education, codes, and ordinances.

The 2011 Preservation Plan of Oregon presents a practical approach which sets aside romantic notions about heritage and “cuts to the chase.” In an illuminating passage, SHPO called to abandon counterproductive ideas about heritage and, instead, to adopt a pragmatic and flexible approach which considers a range of vested interests (Oregon State Historic Preservation Office, 2011).

In other words, the SHPO acknowledges the crucial importance of Oregon’s heritage but, at the same time, maintains that like most enduring social movements in history, the heritage movement will have to change from an orientation toward the past to one toward the future. Alongside some very imperative statutory measures pertaining to heritage in Oregon (including ORS—Oregon Revised Statutes), there have been some policy shifts that indicate a more indicative and flexible approach to the development of heritage.

4.1.4 Managing the Built Heritage in a Non-fanatic Manner?

The brief analysis of the three jurisdictions demonstrates that each has a structured, somewhat central, planning system which oversees local decisions about the built heritage, each has an established set of regulations, and each has attempted to connect development and heritage protection. These realities are in line with recent practices and policies in the built-heritage world. They also correspond with recent findings in the literature that point to the importance of flexible management. Recently, an interesting cross-national study made it clear that “cultural heritage is not a static object but subject to a dynamic development, adapting to changes in societal usage, technological improvements, and functional requirements. Management of cultural heritage is often a matter of balancing change against protection

⁴The Certified Local Governments Program aids SHPO in fulfilling its task. Certified Local Governments are those who made a commitment to preserve heritage resources. In return for taking on certain responsibilities such as designating local landmarks and reviewing proposed alterations of historic properties, Certified Local Governments become eligible for federal grants, distributed to them via SHPO (Oregon State Historic Office, 2011; NHPA Section 101). The NHPA specifies when SHPO and the (Federal) Secretary of the Interior can approve the certification; criteria for certified localities include establishing “an adequate and qualified historic preservation review commission” (Section 101(c)).

of cultural values" (PICH, 2018, p. 60). This means that protection of heritage and development are in fact allies (Id). It also means that flexibility becomes front and center in heritage planning. However, the question remains whether laws and policies can create the conditions to apply flexible control mechanisms over heritage development or whether the shift toward adaptive reuse is in word rather than in deed.

4.2 A Brief Overview of Heritage Appeals: The Discretion of Appeal Tribunals and the Scope of Review

The foregoing discussion illustrates that the planning systems in Israel, Oregon, and England accommodate a certain degree of flexibility in built-heritage projects. The question is how much change and flexibility is allowed and whether this flexibility is displayed frequently in each development control system. The issue of balancing conservation and change in built heritage also invokes the question of power and authority: are planning bodies free to decide the degree of changes in the historic fabric? This question relates also to the powers of appeal bodies and their ability to strike a balance between conservation and development. Notably, the three jurisdictions are comparable in this sense, because in all settings, the appeal body is empowered to decide how to manage heritage properties while examining the decision of lower-tier local planning bodies (Mualam & Alterman, 2017; Mualam, 2014b). The Planning Inspector in England, LUBA in Oregon, and appeal tribunals in Israel can decide to accept or reject the decision made by the local planning authority. As a result, these appeal bodies are able to reach their own decisions and balance conservation and change as they see fit.

5 Identification and Content Analysis of Appeal Tribunal Decisions

For the empirical stage of my examination, I identified heritage appeals. Decisions of appeal tribunals were identified using the Israeli Planning Administration website and LUBA's (Oregon's Land Use Board of Appeals) and the Planning Inspectorate's website. The search covered the years 2006–2010, in which no dramatic changes in regulation occurred.

In the United Kingdom, the search identified a total of 4475 appeals that relate to heritage properties. Out of these, 1047 appeals (23%) originated in London. Owing to matters of scope, I focused on London appeals and sampled 105 decisions (10% of London appeals) using a random sampling technique.

Likewise, in Israel, a search was conducted for appeal decisions pertaining to heritage properties. Here too, I focused on the years 2006–2010. I looked for appeals decided by the three major Israeli appeal tribunals: (a) district appeal committees, (b) regional appeal committees, and (c) national appeal committee. I searched government websites to identify heritage-related appeals. Additional searches were conducted in commercial websites that store legal information, such as NEVO, TAKDIN, and PADOR. Unlike in England, where thousands of heritage appeals exist, I found a total of 73 heritage-related appeals in Israel, all of which were analyzed.

In Oregon, the search for appeal decisions utilized Westlaw's search engine. It covered the entire set of LUBA decisions from 2006 to 2010. After searching Westlaw, the data were compared with appeals identified using LUBA's webpage (<http://www.oregon.gov/LUBA/Pages/index.aspx>). Each heritage-related decision was skimmed, and the decisions not related to heritage preservation were discarded (these were mostly procedural decisions). Overall I traced nine appeals decided in 2006–2010. In view of the smaller number of appeals in Oregon (relative to England and Israel), I decided to expand the search and to include appeals decided in 1995–2010, in order to upgrade the explanatory power of the analysis. Thus, the sample was extended to 33 appeals in Oregon.

As the next step, I content analyzed each appeal decision and examined the landowners' request to develop heritage properties. This analysis also focused on the end result of the appeal (as a dependent variable) and the final decision reached by the appeal body. Specifically, I examined whether the required changes to the heritage property were approved or denied by the appeal body.

6 Findings and Comparative Analysis

6.1 Type of Development Discussed on Appeal

First, the empirical analysis sought to identify what types of works are discussed in heritage appeals. The underlying assumption is that this issue can also be indicative of some of the reasons behind heritage conflicts.

The analysis illustrates the scope and type of modifications requested by developers of heritage properties. The distribution of projects discussed by appeal bodies indicates that developers often seek to make partial modifications to heritage sites, treating them as potentially dynamic locations.

I found a range of applications submitted for the development heritage properties (see Fig. 2 in which the categories are not mutually exclusive). The applications are brought before the appeal tribunal to decide whether or not to accept them as is. The most common request in all countries pertains to *exterior alterations* and to changes of *height*. Statistically, I identified a correlation between the identity of the

Type of works discussed on appeal

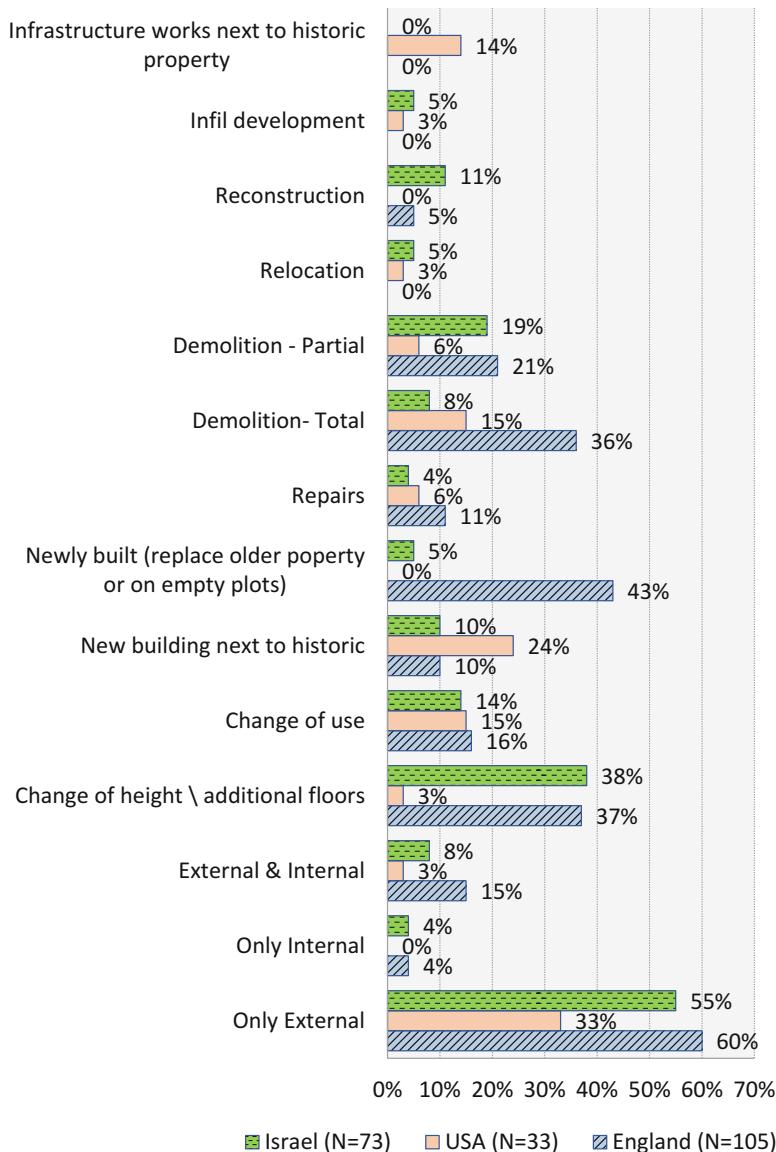


Fig. 2 A Comparison of the type of works discussed by appeal bodies

jurisdiction and the type of works required by landowners.⁵ This suggests that the differences between countries can indicate certain patterns. As shown in Fig. 2, 33% of appeals discussed by LUBA, 55% of appeals in Israel, and 60% of Inspectorate appeals involve exterior alterations proposed by owners/developers. These numbers reflect the most significant type of works discussed in each country (relative to other type of changes such as internal changes, repairs, etc.).

The figure supports a view which has almost reached consensus in heritage literature (Hutchinson, 1989): modifications to historic properties are often sought by their owners. It therefore comes as no surprise that across the board, all tribunals are called to adjudicate appeals that involve exterior alterations.

A second predominant issue discussed in heritage appeals pertains to changes of height, which appears in 38% of Israeli and 37% of Inspectors' decisions. This type of works points to another reason behind appeals and heritage conflicts. However, it is puzzling that "change of height" does not play a central role in Oregon appeals, although it is a recurring theme in Israel and England. This discrepancy suggests that other exterior changes (such as demolitions) are central to Oregon appeals, thereby generating potential conflicts.

A third issue relates to "total demolitions" of historic properties. Evidently, Inspectors deal more with this type of development proposals than LUBA or Israeli tribunals. Similarly, Inspectors are more engaged in dealing with proposals to build new structures in historic areas than their counterparts in Oregon and Israel. The difference is hard to explain because it may depend on numerous legal and site-specific factors. However, it is possible to draw a connecting line between these findings and the predominant English system of Conservation Areas, which is a form of district and environs protection over heritage fabrics (Harwood, 2012). Because Conservation Areas allow demolitions and newly built structures in historic areas, and given their predominance in England, it is possible to hypothesize that Conservation Area policy in England also affects the type of works being discussed. Owing to matters of scope, this chapter does not analyze possible reasons for these discrepancies and leaves those to future studies. Overall, the analysis of heritage appeals shows that conflicts frequently raise the issue of adaptation and change, which are important features in evaluating heritage policy.

6.1.1 A Breakdown of Appeals' Outcomes

Figure 3 compares the findings from each jurisdiction. Statistically, a strong correlation was found between the country variable and the outcome of heritage appeals.⁶ In other words, the identity of the country significantly influences the outcome of appeals, and these outcomes may be patterned.

⁵*p*-value = 0.000, $R = 0.754$. Pearson's chi-squared test was used to examine correlation of variables. If dependency was found, Cramer's value was applied to measure the association between the variables (whether strong, medium, or weak).

⁶*p*-value = 0.000; $r_c = 0.639$.

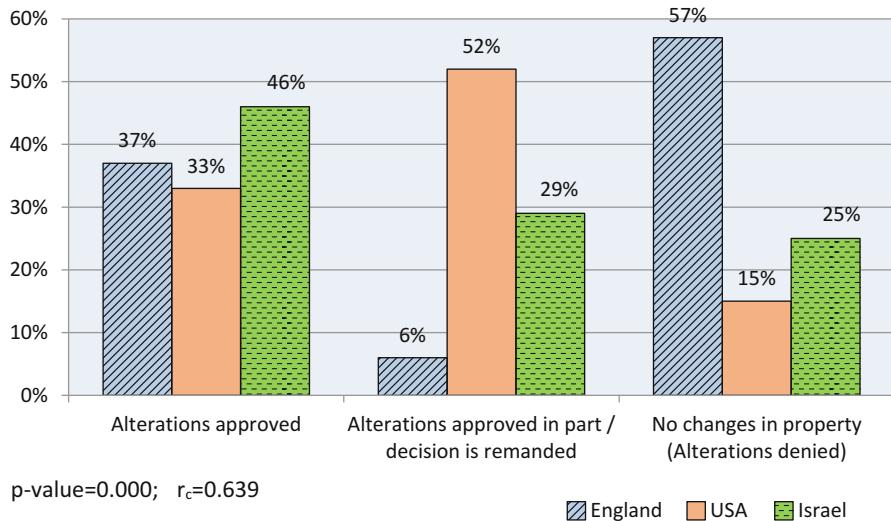


Fig. 3 Appeal outcome by jurisdiction

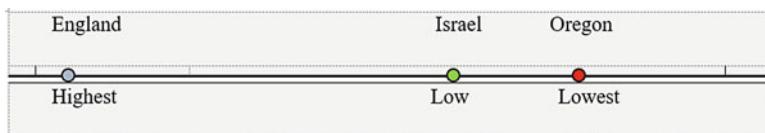


Fig. 4 Comparative spectrum: rejection rate of heritage-related development

England has the highest rejection rate of development proposals: in most appeals (57%), changes to historic assets are denied; Oregon is on the other extreme with the lowest rejection rate of appeals (15%). Israel is in the middle of the rejection spectrum with a relatively low rejection rate (25%).

The evidence indicates that the approach adopted by Inspectors is comparatively hard-lined, conservative, and cautious. LUBA, on the other hand, is the most generous in terms of enabling development. Israeli tribunals are more cautious than LUBA but much more permissive and lenient than English Inspectors (Fig. 4).

Although there is a significant correlation between *the jurisdiction* and the *outcome* of appeals, other statistical tests do not identify any significant correlation between the outcome of the appeal and any particular argument employed by the tribunal to justify its decision. However, the significant differences imply that although the statutory and policy landscape in each jurisdiction accommodates change in the historic fabric, at the end of the day, Israel and Oregon's planning systems enable greater leeway to landowners and developers to make changes in their properties. Thus, according to our conceptualization, it is possible to posit that heritage regulations are more *effective* in Israel and Oregon than in England. This is somewhat unexpected because, at least on the face of it, England has acknowledged

the need to accommodate a variety of interests alongside the protection of heritage and has therefore urged decision-makers to consider adaptations, as illustrated in the National Planning Policy Framework and its predecessor policies. Having said that, the comparative findings suggest that England is still relatively reluctant to administer and manage change.

6.2 The Outcome of Heritage Appeals

The picture somewhat changes when looking at the outcome of appeals from a different angle; the analysis also identifies whether the *entire set of proposed changes/development* or only *partial changes* were eventually approved by the appeal tribunal (Fig. 5).

The most generous tribunal (at least from the perspective of developers) is the Israeli one, where in 46% of appeals, *all changes* requested by the applicant were approved; England ranks second (37% of all changes were approved), and LUBA ranks last (where 33% of appeal decisions were entirely approved).

The analysis may shed light on facts which put hard-lined approach of Inspectors identified earlier in some perspective. In other words, although Inspectors' decisions are characterized by the highest rejection rate (relative to LUBA and Israeli tribunals), Inspectors have also proven to be lenient when heritage properties are in issue: 37% of proposed developments have been fully approved by Inspectors, and this denotes an approach which provides developers and owners with some degree of freedom and support nonetheless.

By contrast, Israeli developers do not only "enjoy" a relatively low rejection rate, but when compared to those in Oregon and England, Israeli developers are also able to convince tribunals to allow development in its entirety.

Similarly, Oregonians enjoy a low rejection rate, as only 15% of appeals are rejected. However, unlike in Israel, developers in Oregon cannot get their development proposals approved in their entirety. The analysis reveals that in most cases (52%), LUBA allows only partial changes or remands certain aspect of the heritage decision to be reconsidered again by the local government.

According to the data, in 52% of cases, LUBA leaves developers in a limbo, imposing a second round of deliberations on remand. This is a significant factor because it means that the outcomes of heritage appeals in Oregon often remain uncertain even after appeal.

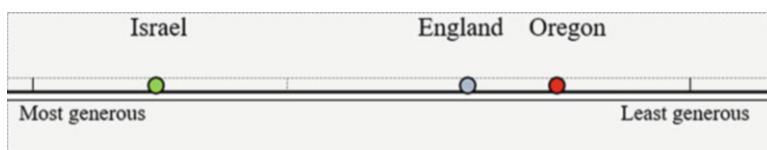


Fig. 5 Comparative spectrum: approval rate of the entire set of requested changes

Overall, and in terms of effectiveness, it appears that if effectiveness consists of *approval* of the entire set of requested works, the Israeli system is comparatively effective. From another angle, which looks at *rejection* of a development proposal in its entirety, both the Oregonian and Israeli systems can be considered relatively effective. Comparatively, while England's heritage regulations are somewhat effective (i.e., flexible and adaptive), it is less effective than those of the other jurisdictions.

How can one explain these outcomes? Different factors such as the characteristics of the planning system and the leeway granted to localities under each system may be the root cause of differences. In addition, an atmosphere of suspicion toward owners and developers could also be an explanatory factor. There are clearly many other factors including regulatory nuances, and the type of heritage properties, that may become determining factors. Future research may dig deeper into these issues and offer valid explanations which cannot be unpacked here owing to matters of scope.

7 Conclusions

Despite the complexity of heritage disputes and the tensions associated with heritage protection, the findings suggest that a pattern exists in respect to the outcome of heritage appeals and, in particular, the ability of each planning system to accommodate change. This indicates that there is a decision-making style unique to each of the three countries which partially determines the amount of changes decision-makers are willing to allow in the historic environment. In turn, the approval or rejection of changes to historic properties can help explain the pulse of development, the disposition of tribunals toward flexibility, and the overall effectiveness of heritage regulation as measured through the prism of change, flexibility, and adaptation. We found the lowest rejection rate in Oregon and Israel and the highest in England, and this may be indicative of many other factors at play here, such as politics, economic feasibility, and other legal and policy issues that may affect this outcome.

Comparative analysis creates an opportunity for acquiring broader understanding of how policy works (Mukhija, 2010). The comparison of heritage regulation is possible in a comparative setting which accentuates similarities and differences. There are some background issues which could not be examined using comparative analysis that are worth mentioning. It is possible that difference can be attributed to several factors which are not examined herewith, owing to matters of scope. These factors may include the level of protection of property, the location of the heritage property, or the type of heritage property discussed by the tribunals. Future research should seek to draw connections between these contexts, the effectiveness of heritage regulation, and its relationship with other forms of policy. For the modest purposes of this chapter, however, the analysis focused on describing the difference and similarities while relating them back to a framework which helps assess the effectiveness of heritage regulations. As discussed in the literature review,

it is possible to evaluate heritage policies using different angles. The arena of conflict and appeals facilitates evaluation of effectiveness by mapping the outcome of heritage policies. For this reason, the outcome functions as a measuring rod. This examination can be taken to the next level by expanding the scope of research to other jurisdictions and planning systems. It is my hope that this would enable comparison to become meaningful for heritage scholars and practitioners. By understanding how flexible a planning system is in its management of heritage, it is possible to better understand how heritage regulation is interpreted and formulated and how decision-makers relate to heritage protection vis-à-vis other no less important considerations. If we accept that the future of heritage management can be found in change, flexibility, adaptation, and alteration, then the findings of this chapter help by showing how this is possible in “real-life” quandaries.

References

- Alexander, E., & Faludi, A. (1989). Planning and plan implementation: Notes on evaluation criteria. *Environment and Planning B, Planning & Design*, 16(1), 127–140.
- Al-Quntar, S. (2013). Syrian cultural property in the crossfire: Reality and effectiveness of protection efforts. *Journal of Eastern Mediterranean Archaeology and Heritage Studies*, 1(4), 348–351.
- Anderson, C. W. (1987). Political philosophy, practical reason, and policy analysis. In F. Fischer & J. Forester (Eds.), *Confronting values in policy analysis: The politics of criteria* (pp. 22–44). Newbury Park: Sage.
- Baer, W. (1997). General plan evaluation criteria, an approach to making better plans. *Journal of the American Planning Association*, 63(3), 329–344.
- Barthel, D. L. (1996). *Historic preservation: Collective memory and historical identity*. New Brunswick: Rutgers University Press.
- Birch, E. L., & Roby, D. (1984). The planner and the preservationist: An uneasy alliance. *Journal of the American Planning Association*, 50(2), 194–207. <https://doi.org/10.1080/01944368408977175>.
- Bridgwood, B., & Lennie, L. (2009). *History, performance and conservation*. London: Taylor & Francis.
- Brown, G., & Chin, S. Y. W. (2013). Assessing the effectiveness of public participation in Neighbourhood planning. *Planning Practice and Research*, 28(5), 563–588. <https://doi.org/10.1080/02697459.2013.820037>.
- Calkins, H. W. (1979). The planning monitor: An accountability theory of plan evaluation. *Environment and Planning A*, 11(7), 745–758.
- Carson, R. H. (2001, August 6). Does centralized planning work? Planetizen, pp. 8–11. Retrieved from <https://www.planetizen.com/node/24>.
- Cullingworth, B., & Caves, R. W. (2003). *Planning in the USA: Policies, issues and processes*. London: Routledge.
- Denters, B., & Mossberger, K. (2006). Building blocks for a methodology for comparative urban political research. *Urban Affairs Review*, 41(4), 550–571. <https://doi.org/10.1177/1078087405282607>.
- Department of Communities and Local Government. (2010). *Planning policy statement 5: Planning for the historic environment*. London: DCLG Publications.

- Department of Communities and Local Government. (2012). *National Planning Policy Framework*. London: DCLG Publications. Retrieved from <https://www.gov.uk/government/organisations/department-for-communities-and-local-government>.
- Duerksen, C. J., & Goebel, R. M. (1999). *Aesthetics, community character, and the law*. Chicago, IL: American Planning Association.
- Edgar, A. (2011). Decision-makers, expert witnesses and advocates: The roles of planners in merits appeals. *Urban Policy and Research*, 29, 293–307. <https://doi.org/10.1080/08111146.2011.579237>.
- Elson, M., Walker, S., & Macdonald, R. (1993). *The effectiveness of green belts*. London: HMSO.
- Fischel, W. A. (1990). *Do growth controls matter? A review of empirical evidence on the effectiveness and efficiency of local government land use regulation*. Cambridge, MA: Lincoln Institute of Land Policy.
- Franzese, P. L. (2008). *A comparative analysis of downtown revitalization efforts in three North Carolina communities*. Chapel Hill: The University of North Carolina.
- Fredheim, L. H., & Khalaf, M. (2016). The significance of values: Heritage value typologies re-examined. *International Journal of Heritage Studies*, 22(6), 466–481. <https://doi.org/10.1080/13527258.2016.1171247>.
- Government of Israel. (2005). National outline plan no. 35: Construction, development, and conservation. Jerusalem.
- Greed, C. (1996). *Introducing town planning (Second Edi)*. Harlow: Longman.
- Greenberg, B. G. (1971). Evaluation of social programs. In F. G. Caro (Ed.), *Readings in evaluation research* (pp. 155–175). New York: Russel Sage Foundation.
- Hargrove, M. D. (2009). Mapping “the social field of whiteness”: White racism as habitus in the City where history lives. *Transforming Anthropology*, 17(2), 93–104. <https://doi.org/10.1111/j.1548-7466.2009.01048.x.93>.
- Harwood, R. (2012). *Historic environment law: Planning, listed buildings, monuments, conservation areas and objects*. Pentre Moel, Crickadarn, Builth Wells: Institute of Art and Law.
- Hatry, H. P., Blair, L. H., Fisk, D. M., Greiner, J. M., Hall, J. R., & Schaenman, P. S. (1977). *How effective are your community services? Procedures for monitoring the effectiveness of municipal services*. The Urban Institute: Washington, D.C..
- Hill, M., & Werczberger, E. (1978). Goal programming and the goals-achievement matrix. *International Regional Science Review*, 3(2), 165–181. <https://doi.org/10.1177/016001767800300205>.
- Howard, P., & Ashworth, G. J. (1999). European heritage, planning and management. Intellect Books. Retrieved from <https://books.google.com/books?hl=en&lr=&id=X9mhXFqd2DcC&pgis=1>.
- Hutchinson, M. (1989). *The prince of Wales: Right or wrong? An architect replies*. London: Faber and Faber.
- Hyman, H. H., & Wright, C. R. (1971). Readings in evaluation research. In F. G. Caro (Ed.), *Readings in evaluation research* (pp. 185–220). New York: Russel Sage Foundation.
- ICOMOS Israel. (2002). In H. Novenstern & G. Koren (Eds.), *Legal methods of furthering urban preservation*. Jerusalem: Ministry of Science, Culture and Sport.
- Israel's State Comptroller. (2005). Report on localities in Israel: Heritage protection by municipal authorities. Jerusalem.
- Kim, G. H. (2014). *Green infrastructure for integrated land use planning and Stormwater management: Content analysis through evaluation of thirty municipal comprehensive plans*. Buffalo: State University of New York.
- King, T. F. (2004). *Cultural resource laws and practice*. Walnut Creek, CA: AltaMira Press.
- Koziol, C. (2008). Historic preservation ideology: A critical mapping of contemporary heritage policy discourse. *Preservation Education & Research*, 1, 41–50.
- Lai, L. W. (2000). *Town planning in Hong Kong: A review of planning appeal decisions*. Hong Kong: Hong Kong University Press.
- Laurian, L., Day, M., Backhurst, M., Berke, P., Erickson, N., Crawford, J., Dixon, J., & Chapman, S. (2004). What drives plan implementation? Plans, planning agencies and developers. *Journal of Environmental Planning and Management*, 47, 555–577.

- Listokin, D. (1997). Economic impacts of historic preservation. New Brunswick, NJ.
- Margalit, T. (2014). Multi-spot zoning: A chain of public—Private development ventures in Tel Aviv. *Cities*, 37(1), 73–81. <https://doi.org/10.1016/j.cities.2013.12.001>.
- Mason, R. (2005). Assessing values in conservation planning: Methodological issues and choices. In M. de la Torre (Ed.), *Assessing the values of cultural heritage, the Getty conservation institute (L.a) report* (pp. 5–30). Los Angeles: The J. Paul Getty Trust.
- Mualam, N. (2014a). Appeal tribunals in land use planning: Look-Alikes or different species ? A comparative analysis of Oregon, England and Israel. *Urban Lawyer*, 46(1), 33–96.
- Mualam, N. (2014b). Where planning meets the law: The rise of appeal tribunals for deciding land-use disputes. *Journal of Planning Literature*, 29(4), 370–385. <https://doi.org/10.1177/0885412214542129>.
- Mualam, N. Y. (2015). New trajectories in historic preservation: The rise of built-heritage protection in Israel. *Journal of Urban Affairs*, 37(5), 620–642. <https://doi.org/10.1111/juaf.12168>.
- Mualam, N., & Alterman, R. (2017). Looking into the ‘black box’ of heritage protection: Analysis of conservation area disputes in London through the eyes of planning inspectors. *International Journal of Heritage Studies*, 24, 599. <https://doi.org/10.1080/13527258.2017.1399284>.
- Mualam, N., & Sybllis, M. (2015). The functional threshold of modern heritage: form versus function and the struggle over Tel Aviv’s concert hall. *International Journal of Heritage Studies*, (November), 1–20. doi: <https://doi.org/10.1080/13527258.2015.1103299>.
- Mukhija, V. (2010). N of one plus some: An alternative strategy for conducting single case research. *Journal of Planning Education and Research*, 29(4), 416–426. <https://doi.org/10.1177/0739456X10362770>.
- Muñoz Gielen, D., & Mualam, N. (2019). A framework for analyzing the effectiveness and efficiency of land readjustment regulations: Comparison of Germany, Spain and Israel. *Land Use Policy*, 87, 104077. <https://doi.org/10.1016/j.landusepol.2019.104077>.
- Munoz-Vinas, S. (2012). *Contemporary theory of conservation*. Amsterdam: Elsevier.
- Mynors, C. (2006). *Listed buildings, conservation areas and monuments*. London: Sweet & Maxwell.
- Ndlovu, N. (2011). Legislation as an instrument in south African heritage management: Is it effective? *Conservation and Management of Archaeological Sites*, 13(1), 31–57. <https://doi.org/10.1179/175355211X13097877338932>.
- Nelson, A. C. (1995). Comparative judicial land-use appeals processes. *Urban Lawyer*, 27(2), 251–265.
- Noonan, D. S., & Krupka, D. J. (2011). Making-or picking-winners: Evidence of internal and external price effects in historic preservation policies. *Real Estate Economics*, 39(2), 379–407. <https://doi.org/10.1111/j.1540-6229.2010.00293.x>.
- Oliveira, V., & Pinho, P. (2010). Measuring success in planning: Developing and testing a methodology for planning evaluation. *Town Planning Review*, 81(3), 307–332.
- Oregon State Historic Preservation Office. (2011). *Oregon historic preservation plan 2011/2016*. Oregon: Salem.
- Owley, J. (2015). Cultural heritage conservation easements: Heritage protection with property law tools. *Land Use Policy*, 49, 177–182. <https://doi.org/10.1016/j.landusepol.2015.07.007>.
- Page, M. (2016). *Why preservation matters*. New Haven: Yale University Press.
- Patton, C. V., Sawicki, D. S., & Clark, J. J. (2016). *Basic methods of policy analysis and planning (third edit)*. London: Routledge.
- Pennington, D. N., Dalzell, B., Nelson, E., Mulla, D., Taff, S., Hawthorne, P., & Polasky, S. (2017). Cost-effective land use planning: Optimizing land use and land management patterns to maximize social benefits. *Ecological Economics*, 139, 75–90. <https://doi.org/10.1016/j.ecolecon.2017.04.024>.
- PICH Consortium. (2018). Cultural heritage—a challenge for Europe. The Impact of Urban Planning and Governance Reform on the Historic Built Environment and Intangible Cultural Heritage (PICH). Retrieved from <https://planningandheritage.wordpress.com/pich-2/>.
- Pickard, R. (2001). In R. Pickard (Ed.), *Policy and law in heritage conservation*. London: Spon Press.

- Prudon, T. H. M. (2008). *The preservation of modern architecture*. Hoboken, NJ: Wiley.
- Pruetz, R. (2016). Transferable development credits puts growth in its place. In R. Leshinsky & C. Legacy (Eds.), *Instruments of planning: Tensions and challenges for more equitable and sustainable cities* (pp. 142–154). New York: Routledge.
- Rowe, G., & Frewer, L. (2004). Evaluating public-participation exercises: A research agenda. *Journal of Science, Technology & Human Values*, 29(4), 512–556.
- Rydin, Y. (1993). *The British planning system: An introduction*. Houndsills: The Macmillan Press.
- Sanz Salla, C. O. (2009). *The protection of historic properties: A comparative study of administrative policies*. Southampton, Boston: WIT Press.
- Seasons, M. (2002). Evaluation and municipal urban planning: Practice and prospects. *The Canadian Journal of Program Evaluation*, 17(1), 43–71.
- Sheppard, A., Peel, D., Ritchie, H., & Berry, S. (2017). *The essential guide to planning law: Decision-making and practice in the UK*. Bristol: Policy Press.
- Steinberg, F. (1996). Conservation and rehabilitation of urban heritage in developing countries. *Habitat International*, 20(3), 463–475.
- Stubbs, M. (2004). Heritage-sustainability: Developing a methodology for the sustainable appraisal of the historic environment. *Planning Practice and Research*, 19(3), 285–305. <https://doi.org/10.1080/0269745042000323229>.
- Suddards, R. W. (1998). *Listed buildings (second Edi)*. London: Sweet & Maxwell.
- Tal, A. (2006). *The environment in Israel*. Tel Aviv: Hakibbutz Ha'Meuchad.
- The Parliament of Israel. (1991). *Accompanying notes to the 1991 amendment of the planning and building act, march 12, 1991*. The Parliament of Israel (The Knesset): Jerusalem.
- The World Bank. (2001). *Cultural heritage and development: A framework for action in the Middle East and North Africa*. The World Bank: Washington D.C..
- Thomas, K. (1997). *Development control: Principles and practice*. London: Routledge.
- Tunbridge, J. (2000). Heritage momentum or maelstrom? The case of Ottawa's byward market. *International Journal of Heritage Studies*, 6(3), 269–291. <https://doi.org/10.1080/13527250050148232>.
- Velotta, M. (2008). *University of Nevada, Reno plan implementation evaluation in Nevada: A study of the implementation of the Truckee meadows regional plan, 1991–2007*. Reno: University of Nevada.
- Waldner, L. (2004). Planning to perform: Evaluation models for City planners. *Berkeley Planning Journal*, 17(1), 1–28.
- Warner, S. B. (1987). *The private city: Philadelphia in three periods of its growth*. Philadelphia: University of Philadelphia Press.
- Weimer, D. L., & Vining, A. R. (1998). *Policy Analysis: Concepts and Practice (third edit)*. Upper Saddle River, NJ: Prentice Hall.
- Weiss, C. H. (1997). *Evaluation: Methods for studying programs and policies* (Vol. 24, p. 372). Upper Saddle River, NJ: Prentice Hall. [https://doi.org/10.1016/S0149-7189\(01\)00034-9](https://doi.org/10.1016/S0149-7189(01)00034-9).
- Wichman, W. (2008). The economic benefits of state historic preservation. Honolulu.
- Yung, E. H. K., Zhang, Q., & Chan, E. H. W. (2017). Underlying social factors for evaluating heritage conservation in urban renewal districts. *Habitat International*, 66, 135–148. <https://doi.org/10.1016/j.habitatint.2017.06.004>.

Part III

Business and Industrial Land Development Policies

Scattered Governance: A Typology for Toronto's Business Improvement Areas



Alexandra Flynn

Abstract Business Improvement Areas (BIAs)—or Business Improvement Districts as they are known in the United States—are self-taxing local bodies that play an important role in urban governance. Toronto, which was the location of the first BIA in the world, has one of the highest number of BIAs in North America, yet little is known about how these bodies differ across the city. Using a mixed methodological approach that includes geographic information system mapping, quantitative analysis, and semi-structured interview data, this chapter addresses this gap in knowledge by offering a typology of Toronto BIAs, looking at the metrics of size, walkability/transit score, budgets, and year of formation. The study concludes that there are four kinds of BIAs in Toronto scattered unevenly across the city: Big City Builders, Former Local Stewards, Big Industrial Powerhouses, and Emerging Small Centres. The paper sets out the unique attributes of each kind of BIA and some preliminary conclusions as to how Toronto's BIA types differ from those in other jurisdictions and points at the explosive creation of Emerging Small Centres BIAs following Toronto's amalgamation.

1 Introduction

A Toronto-based Business Improvement Area (BIA) created a poster reproduced in Illustration 1, one whose deceptively complex message may be lost if you happened to see it on your local store window (City of Toronto 2012). The poster shows a city block with the city's iconic CN Tower looming behind, with a dozen or so of the services needed to maintain the area. The message is clear: alongside city departments, BIAs play a crucial role in maintaining the public realm. The poster suggests that BIAs see themselves as reflecting more than just the interests of their direct stakeholders (local businesses and property owners), but also the public, in

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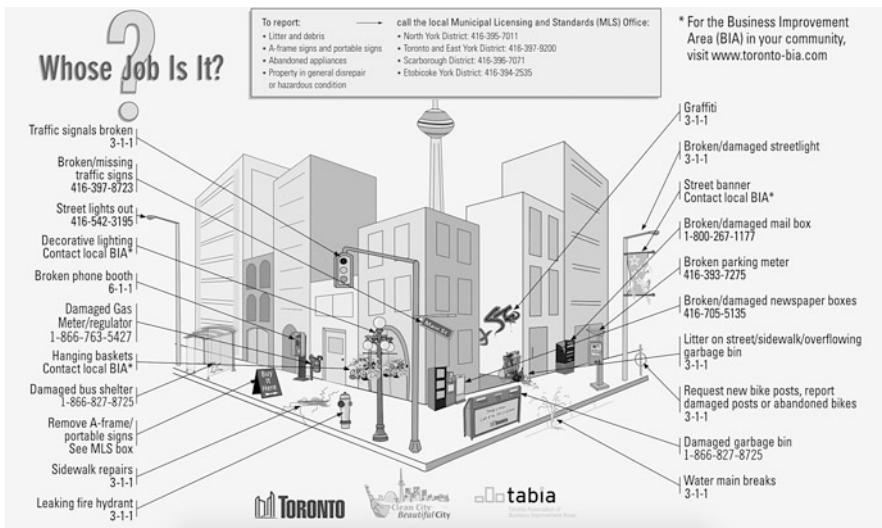


Illustration 1 “Whose Job Is It?” (City of Toronto)

maintaining city streets and the flourishing of the built environment. The BIA gives itself hanging baskets, street banner, and decorative lighting as their tasks, but in reality, as this paper will show, BIAs serve as a much broader advocacy and street realm organization than the seemingly clear-cut poster suggests. Entitled “Whose Job Is It?”, the BIA ad encapsulates two modest questions regarding the role of BIAs in local governance that are at the core of this paper: where are BIAs located and what are the implications for local governance?

Toronto was the first city to introduce BIAs as a form of self-taxed, neighbourhood-based governance for businesses and property owners (Hoyt and Gopal-Agge 2007, p. 947). These organizations allow businesses to improve the immediate local realm in order to enhance their business competitiveness, with mandated restrictions on their formation, oversight, membership, and fees. In practice, BIAs generally fulfil similar functions with the aim of enhancing the competitiveness of their member businesses: streetscaping and beautification, hosting community events, and, in some cases, contributing changes to the public realm, such as bike lanes. At the same time, there is wide latitude given to individual businesses to form BIAs in the first place, to draw the applicable boundaries around the BIA area, to form connections with other organizations, and to privilege particular activities over others.

While it is clear that BIAs form part of the urban governance models of many cities, there are few studies that explore the spatiality of BIAs. Jill Simone Gross (2005) is one of a few researchers analysing differences amongst BIAs within specific urban geographies. In her comprehensive article exploring the data on Business Improvement Districts (BIDs) within New York City, Gross identifies the categories that can be used to explain the different kinds of BIDs, ranging

in size, budgets, and function. She concludes that large and small BIDs fulfil different development functions: small ones focus on physical maintenance of an area; midsized concentrate on marketing and promotional activities; and large BIDs engage in capital improvement activities.

This article seeks to further this area of research by developing a typology for categorizing BIAs in the Toronto context based on spatial variables. This typology could set the stage for understanding the different kinds of BIAs that may be located in particular urban spaces. The present paper is drawn from a larger, more comprehensive examination of local governance in Toronto, including the formal and informal bodies that govern smaller-than-city spaces, with the goal of understanding local power. In the larger project and here, the study is primarily rooted in law and therefore details the relevant legislation, case law, and policy reports that permit BIAs (Dixon 2014). However, a mixed methodological approach is also adopted, using interview data, cluster analysis, and geographic mapping. This approach permits a more nuanced understanding of how BIAs form and represent those within smaller-than-city areas of the city, examining their legal structures, the geographies of local that they advance, and the implications for the meaningful participation of residents across the city.

The data in this article draws from a central databank of information with raw data on Toronto's 81 BIAs. This information is used for two purposes. First, the data was used to produce maps using geographic information systems (GIS), setting out where BIAs exist within the city. The purpose of these maps is to better illustrate the significant differences in the presence of these bodies across ward and community council areas and the overall effect on city governance. Second, the article uses quantitative data, including descriptive statistics on the specific locations of these bodies, their organizational size, budget, mandate, and creation date as the basis for "cluster analysis". Cluster analysis is a series of methods for classifying data into groups in which data in each group are more similar than data in other groups. Clustering is a demonstrated technique to understand how variables work together to create patterns. In the present context, it allows to bring together what I consider to be the crucial variables in articulating a typology for BIAs. In addition, the paper includes data from semi-structured to explain why and where BIAs are created.

Based on this analysis, I offer some preliminary contributions as to what the effect of these differing types of BIAs may have on urban governance more broadly. Ultimately, this paper seeks to start the conversation on why BIAs differ across the city, what leads to their development, and the degree to which BIA types differ in their contributions to urban governance. With the objective of contributing to a broader understanding of the role served by these local bodies, this chapter is divided into four sections. First, in Sect. 1, it provides an overview of the literature regarding the spatiality of BIAs and what is known regarding their impact on urban governance generally. The paper next examines in Sect. 2 the legal and geographic basis of Toronto's BIAs, focusing specifically on how the law frames their obligations within the city and some broad spatial conclusions that can be drawn regarding these organizations. Third, Sect. 3 describes the research design and proposed typology for understanding the functions of BIAs across the city's

geography, together with analysis as to why such patterns can be observed. Section 4 discusses the explanatory power of these typologies for the actual functioning of BIAs from different categories. The paper concludes with pointing at the need to further analyse the implications of BIAs on urban governance.

2 BIAs in Urban Governance

There is no single, uniform definition of BIAs. Other terms have been used to describe the construct, including “Business Improvement District” or “BID”, which is the term most commonly used in the United States and the United Kingdom, and “City Improvement District”, the name adopted in South Africa (Peyroux et al. 2012, p. 118). Toronto defines a BIA as an association comprised of commercial and industrial property owners and business tenants within a specified geographic area district, which is officially approved by the city to stimulate business and improve economic vitality (City of Toronto 2017; Hoyt and Gopal-Agge 2007). Hoyt and Gopal-Agge’s definition of BIAs is “privately directed and publicly sanctioned organizations that supplement public services within geographically defined boundaries by generating multiyear revenue through a compulsory assessment on local property owners and/or businesses”, which encompasses three crucial features that are not necessarily made clear under Toronto’s meaning: first, the BIA is meant to provide a specific set of powers to business and property owners in order to achieve their mandate, most notably an organizational structure and direct access to the local councillors who serve on their boards (Hoyt and Gopal-Agge 2007, p. 946). Second, BIAs are funded through a required levy against local property owners or businesses, which functions as a form of taxation. Local businesses cannot back out of paying even if they voted against forming a BIA or disagree with BIA activities (Frug 2010). Third, the definition acknowledges that BIAs supplement public services offered by the city, which more broadly defines their entrenched governance role.

BIAs have been alternatively described as local, unelected decision-makers, self-interested service providers, or something in between (Hoyt and Gopal-Agge 2007; Morçöl and Wolf 2010; Morçöl et al. 2014; Gross 2013). On paper, BIAs have a direct relationship with local governments. Their establishment is sanctioned through municipal law; they are partners in the delivery of some governmental services; and the government has accountability mechanisms to oversee their conduct and their fees. However, despite these formal connections with municipal governments, studies have shown that BIA staff do not believe they have any close identification with governmental institutions and see themselves as firmly part of the private sector rather than any form of government (Wolf 2006, p. 70; Hoyt and Gopal-Agge 2007, p. 955). In this sense, BIAs can be characterized as forms of organization that allows the state to govern at a distance, characterized as neoliberal management meant to “compensate for declining public resources” in increasingly privatized economies (Lewis 2010, p. 187). BIAs reflect an “ethos of low taxation”

in an era of “if you want it, you’re going to have to fund it yourself” (Lewis 2010, p. 187).

BIAs embody the inadequacy of the categories “public” and “private”, as they represent private interests (businesses and property owners), yet are often formally established and sanctioned by municipal governments. Randy Lippert and Mark Sleiman suggest that BIAs are not simply private actors seeking additional power and they do not fit easily within particular descriptions as exclusionary or inequality-enhancing (Lippert and Sleiman 2012, p. 62). Instead, they are more complex organizations that defy easy categorization. The degree to which these bodies are “public” or “private” is also linked to their longevity. In particular, as BIAs become service providers, development brokers, and place makers, there is a corresponding retreat of municipal government (Lewis 2010, p. 203). Therefore, the length of time that they have been in operation changes their role within the urban governance model.

To make sense of these unique bodies, some researchers have sought to classify BIAs according to different typologies. For example, one study suggested that these bodies can be conceptualized in three different ways along a spectrum, ranging from tools of governmental policies, as actors in urban governance networks, and ultimately as private governments (Lewis 2010, p. 203). The study showed that BIA directors play a profoundly important role in this overall question of urban governance and that their involvement in the city’s governance becomes “deeper and wider” over the years (Morçöl et al. 2014). At the end of the spectrum, BIAs will advocate on positions that went beyond the BIA to citywide matters like land use planning, zoning, and intergovernmental funding for infrastructure repair (Morçöl et al. 2014). These findings were affirmed in a study of Toronto’s Downtown Young BIA, where researchers observed that the objectives of BIAs tend to evolve from basic operational and tactical tasks to more strategic tasks. This requires improved data, cost-effective decision support, and increased coordination at the city, regional, provincial, and national levels (Morçöl et al. 2014).

In their evaluation of changes in the City of Toronto’s approach to governance given the principle guiding legislation; the City of Toronto Act 2006; and other legislative and policy initiatives, Meghan Joy and Ronald K. Vogel (Joy and Vogel 2015) reference “the ascendancy of neoliberalism as the governing philosophy” (p. 36). They posit that federal, provincial, and city governments have each adopted “a neoliberal policy agenda grounded in austerity policies that include lower taxes, greater reliance on market processes, scaling back or dismantling the welfare state, and embracing new public management policies” (p. 36).

Limited studies have also classified BIAs based on their differing roles across urban spaces, trying to make sense of their different forms, sizes, and locations within a single jurisdiction and the corresponding implications. For example, in her 2005 study, Jill Gross analysed the different kinds of BIAs that may be formed in New York City, ranging in sizes, budgets, and function (Gross 2005). Gross concluded that there are three kinds of BIAs in New York City, large, medium, and small, based on the metrics of revenue, number of businesses, board size, services provided, and geographic size. She concludes that the smallest focus on physical

maintenance of the area; the midsized concentrate on marketing and promotional activities; and large ones engage in capital improvement activities (Gross 2005, p. 175). In a piece focused on why BIAs form in certain geographical areas over others, Rachel Meltzer again uses data from New York City to conclude that BIAs are more likely to form where commercial space permits BID benefits to be capitalized; where there is homogeneity in member service and spending preference; and in areas with higher-valued properties that show opportunity for growth (Meltzer 2012). While Toronto has one of the highest numbers of BIAs in a single city and the municipality provides comprehensive data on indicators such as budgets and boundary lines, no studies have yet offered a typology or framework. Instead, the literature focuses on case studies of particular BIAs and their roles within localized areas. This paper contributes to existing analysis by providing a broader typology within which Toronto's BIAs may be understood.

Before explaining how I arrived at the typology and the research design, the next section contextualizes BIAs within Toronto governance model by setting out the relevant legislation.

3 The Legal and Spatial Basis of Toronto's BIAs

Toronto was the first city in the world to create a BIA, introduced in 1970 in Bloor West Village, which was then a largely suburban section of the city. The BIA was created through provincial legislation to offset the growing popularity of malls and to instead give businesses the power to influence shopping behaviour without relying on the municipality (at this time, the former, pre-amalgamated City of Toronto). The collection of businesses advocated in favour of an independent, privately managed body that would have the power to impose an additional tax on all commercial property owners in the area to be directed to local revitalization initiatives (Hoyt and Gopal-Agge 2007, p. 947). Local business leaders believed that a stable and effective funding source, drawn from member businesses, would help with beautification and improvement, promote urban business areas, and ultimately allow them to compete with suburban malls, which were increasingly replacing traditional business areas in localized areas (Pivot Legal Society v. Downtown Vancouver Business Improvement Association 2012). The purposes and organizational form of BIAs remain largely unchanged since the Bloor West Village BIA was created. Their role is to oversee the improvement, beautification, and maintenance of municipally owned land, buildings, and structures in the BIA beyond city standard levels; streetscaping; promotion; graffiti removal services; safety and security measures; strategic planning; and advocating on behalf of the interests of the BIA (Toronto Municipal Code 2018).

Initially, the Province of Ontario explicitly authorized the City of Toronto to introduce a by-law to establish BIAs (City of Toronto By-law 2018b, s. 170-70). Toronto and other Ontario municipalities are now empowered with the design of and rules relating to BIAs. There are currently 81 BIAs in Toronto, scattered unevenly

across the city (Melnyk 2015). On paper, Toronto's BIAs are highly regulated under the City of Toronto Act 2006, and city by-laws. The Municipal Code sets the minutiae of procedures guiding the establishment and operation of BIAs and is detailed here to illustrate the extent to which BIAs are municipally regulated (Toronto Municipal Code 2018). Many steps are required for City Council to pass a by-law designating a BIA (Toronto Municipal Code 2018, s. 19-4), including agreement by city staff, conducting formal community consultation processes, and polling existing businesses (Toronto Municipal Code 2018, s. 19-4(A)). Ultimately, 50 per cent plus one of those potential BIA members in attendance must agree to proceed with the creation of the BIA (Toronto Municipal Code 2018, s. 19-4(F)), and a minimum of 30%—or 100—of businesses and commercial or industrial property owners must reply (Toronto Municipal Code 2018, s. 19-4(H)). A Board of Management for the BIA is created (Toronto Municipal Code 2018, s. 19-13(A)) and considered to be “a city board and is an agent of the city” (Toronto Municipal Code 2018, s. 19-13(B)). This means that each director and the board must operate in compliance with all applicable law and city policies including accountability requirements under the *Municipal Freedom of Information and Protection of Privacy Act* and the *Municipal Conflict of Interest Act* (Toronto Municipal Code 2018, s. 19-15(K)). BIAs therefore have significant limitations in the exercise of their authority, including a requirement that it does not borrow or lend money, pass a resolution or take a position contrary to any Council-approved policy or decision, or support political candidates (Toronto Municipal Code 2018, s. 19-14; City of Brandon v. Artistic Tattoo 2003; Ontario Inc. v. City of Toronto 2013).

The City of Toronto's bureaucratic structure includes oversight over and partnerships with BIAs, in a manner that is vastly different from its relationship with other bodies such as neighbourhood associations. The City of Toronto has a BIA Office in the Economic Development and Culture Division, which provides professional operational and administrative support to BIAs (City of Toronto 2018a). This support includes collecting information on the city's BIAs and storing it in a publicly accessible website; providing training and support to their organizations in regard to their governance; collecting and remitting the levy to BIAs; and on-going interaction with the city councillor who sits as a member on the BIA boards within his or her jurisdiction. The BIA Office oversees partnership projects with BIAs, including a BIA capital cost-share programme, which includes approximately 100 streetscape improvement projects per year with an annual value of approximately \$5 million. These revitalization and street beautification initiatives are implemented at half the cost to the city through the 50% cost-share formula with BIAs. The BIA Office also administers the Commercial Façade Improvement Program, where the city provides approximately \$500,000 per year in grants to commercial property owners within BIAs across the city to upgrade the physical appearance of their buildings.

BIAs are, as one councillor called them, bodies that “create their own little tiny tax base and they tax and spend on themselves, and they all act in self-interest” (Anonymous interview councillor #2 2016). Once a BIA is approved by City Council, every business within its boundaries automatically becomes a

member and is required to pay BIA levies based on the assessment values of the individual and neighbourhood properties. Their funding is collected through the city's formal levying authorities, coordinated through an office dedicated to supporting their operations. The city collects an annual levy from local businesses and forwards it directly to the BIA, which becomes its budget for the year (City of Toronto Act 2006, s. 329(12)). The levies are collected by the city through the property tax billing process and remitted in full to the BIA (City of Toronto 2018a). The budget amounts under the authority of Toronto's 81 BIAs are considerable. Collectively, BIAs levy approximately 35 million per year [CAD] for commercial area improvements, marketing and promotion, and other economic development initiatives (City of Toronto 2018a). There is wide variation in the amounts of levies in individual BIAs across the city, from a few thousand to millions of dollars (CAD) (City Council 2014, 2015). Some BIAs operate with volunteers, while other BIAs require paid staff to run day-to-day operations. The size of the BIA budget is largely a function of the assessment base in the area; BIAs with large assessment bases are often able to levy more funds from its members at the same tax rate as a smaller BIA with smaller assessment base. The average amounts received by BIAs from member businesses across the city are Toronto-East York, \$1585.03; Scarborough, \$936.19; North York, \$863.44; and Etobicoke, \$897.83 (City Council 2014, 2015).

In practice, there is wide variation in the budgetary power of BIAs, largely along geographic lines. Most represent under 500 businesses and have budgets of under \$400,000 per year. In respect of the 2016 budgets, most or all of Etobicoke, North York, and Scarborough's BIAs have budgets under \$400,000. The vast majority of Etobicoke BIA budgets are under \$200,000. In contrast, almost all of the BIAs with budgets over \$700,000 are located in the Toronto-East York Community Council Area, with three of these BIAs having annual budgets over \$2,000,000. The largest BIAs are located in the Toronto-East York Community Council area and have budgets of over \$1,500,000. This is significant because it means that not all sections of the city have these bodies taking part in governance or municipal service delivery, nor are all BIAs playing the same role in local governance based on their size and locations.

In contrast to advocacy organizations such as neighbourhood associations, BIAs have strong institutional connections to city government, both through the involvement of the local councillor in setting up and serving on BIA boards and with the direct administrative support of the city. Ward councillors may be deeply involved in setting up a BIA, with the rationale that having the organization allows the councillor to work more effectively when it comes time for consultation. Councillors may help to form and further the involvement of BIAs in their wards if they see them as “the glue between different neighbourhoods” (Anonymous interview with councillor #2 2016), bodies that allow councillors to have “greater reach within a community” (Anonymous interview with councillor #1 2016), and bodies that serve as “citizen experts” (Anonymous interview with councillor #3 2016). Councillors help to form and further the involvement of BIAs and neighbourhood associations in their wards, as “the glue between different neighbourhoods” (Anonymous interview with councillor #2 2016), bodies that allow councillors to have “greater reach within

a community” (Anonymous interview with councillor #1 2016) and that serve as “citizen experts” (Anonymous interview with councillor #3 2016). If the priorities aren’t organizing businesses, it may be that they’re just not aware of how important a vehicle it can be, or just [do] not have the experience of how you go about a project like this, going from point a to point b, from a community organizing standpoint. The desire to set up BIAs may also speak to the style of representation of particular councillors. One councillor helps to create BIAs within their ward to “strengthen the voice of our neighborhoods, to make them a player and active in the organized, political structure, rather than just be ambivalent and not know what’s going on” (Anonymous interview with councillor #1 2016). The next section follows these anecdotes and uses quantitative data on BIAs within Toronto to identify how BIAs differ across the city.

4 A Typology of BIAs in Toronto

BIAs in Toronto are not uniformly located across the city. The Toronto-East York Community Council area has the vast majority of BIAs. Etobicoke and North York are next with a roughly equal number of BIAs, while Scarborough has the least, at 7%. As can be seen in Illustration 2, Toronto’s BIAs tend to be located in areas with a high number of business licences. There are, however, many robust commercial areas that choose not to form these organizations.

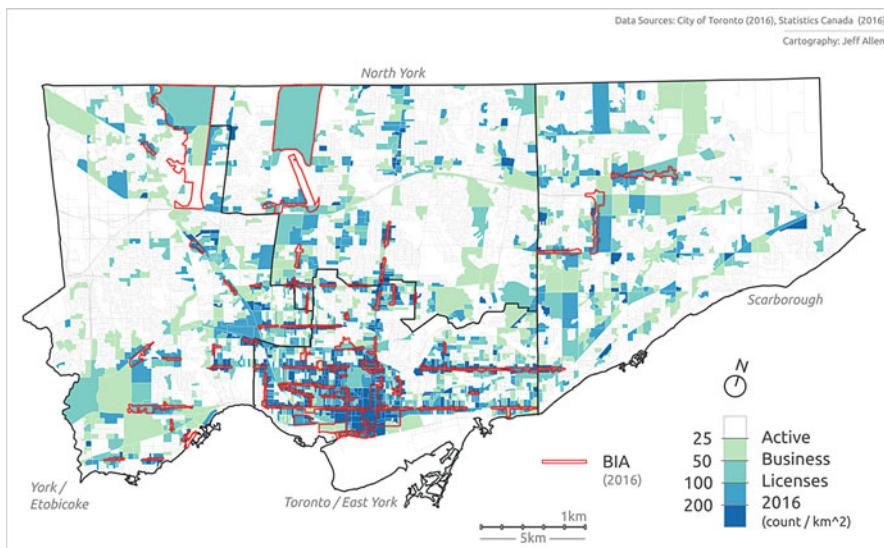


Illustration 2 Business activity in Toronto and BIA location (original research)

In order to articulate typology of BIAs, I conducted cluster analysis approach called “k-means” clustering, which seeks to minimize the Euclidean distance in an n-dimensional space between the attributes of observations and the means of clusters, whereby “k” is the specified number of clusters. The measures used to categorize BIAs were walkability, proximity to transit, and business density. The walk density score is the measure of walking segment lengths within the BIA, calculated by researchers working with the author by dividing the maximum walking score for a value from 0 to 1. The transit score is the average number of transit trips in 24 h reachable within an 800 m walk and dividing it by the maximum value of all BIAs to get a score from 0 to 1. Business density is calculated based on the number of businesses divided by the area of the BIA and then divided again by the maximum business density of all BIAs for a value from 0 to 1. The year formed and BIA budget notations were not included in the variable calculations and are provided for information only. Table 1 summarizes the variables available to cluster BIAs. Of the 81 BIAs, 4 did not have the information necessary to include within this study.

The information was classified by visually observing the variables. Prior to clustering, variables were scaled to Z-scores in order to standardize units. The desired number of clusters was determined via plotting the total within-clusters sum of squares versus the number of clusters, k, and then selecting the k where the graph provides the greatest change in slope (i.e. the point of greatest “bend”). Illustration 3 visually sets out the clusters. As can be seen, while Emerging Small Centres and Former Local Stewards are clustered tightly within particular geographies, Big Industrial Powerhouses and Big City Builders are clustered less tightly, yet are also distinctly located from a place-based perspective.

Based on the data in Table 1 and Illustration 3, four types of BIAs can be identified in Toronto:

- Big City Builders (Cluster 1) is comprised of five large BIAs located in the downtown core, were formed within the last 25 years, and have excellent transit access. The spatial areas are relatively large, lying alongside many parallel and perpendicular streets. They have comparatively high levies and annual budgets, and there are a large number of businesses that are represented by the BIA. Examples of these BIAs are the St. Lawrence BIA and Entertainment District BIA.

Table 1 Variables to assess BIAs (original research)

	Mean	Standard deviation
Year formed	1995	13.5
Transit score (0 to 1)	0.44	0.21
Walk density score (0 to 1)	0.45	0.18
Area (m ²)	439,928	1,352,387
Budget (2015)	364,806	591,550
Business count	319	465

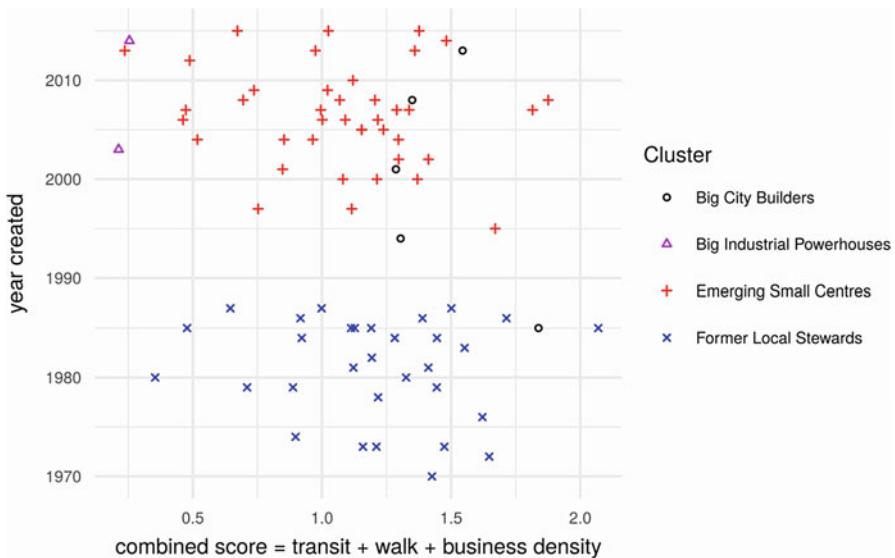


Illustration 3 The clusters of BIAs in Toronto (slope) (original research)

- Former Local Stewards (Cluster 2) has the city's longest standing BIAs, formed prior to 1988. These BIAs have generally high transit scores and walkability, but relatively lower budgets. Most of these BIAs are located on a single street retail strip. Examples of these BIAs are the Greektown BIA and the Parkdale BIA.
- Big Industrial Powerhouses (Cluster 3) contains only two BIAs, formed in X and Y. Both are located in industrial and low-density commercial areas in the northwest part of the city. These BIAs have high budgets, a large number of businesses, and low walkability and transit scores.
- Emerging Small Centres (Cluster 4) is made up of more BIAs formed in the past 25 years. These businesses have relatively lower budgets and fewer businesses and are located on single street retail strips. Examples of Cluster 4 BIAs are the Beaches BIA and the Yonge-Lawrence BIA.

These clusters are visually represented on the map at Illustration 4.

The map shows the different geographies of Toronto's BIAs. Big City Builders (Cluster 1) involve a small number of very large BIAs located in the downtown core. Former Local Stewards (Cluster 2) are older BIAs located in the former municipalities of Etobicoke, Scarborough, East York, and the City of Toronto and served as the business centres of these pre-amalgamated areas. Big Industrial Powerhouses (Cluster 3) are large industrial BIAs in North York comprised of thousands of businesses. Emerging Small Centres (Cluster 4) are also scattered across the city and are the emerging business centres in the city. As this map shows, business licences are located throughout the city, not just where BIAs are located.

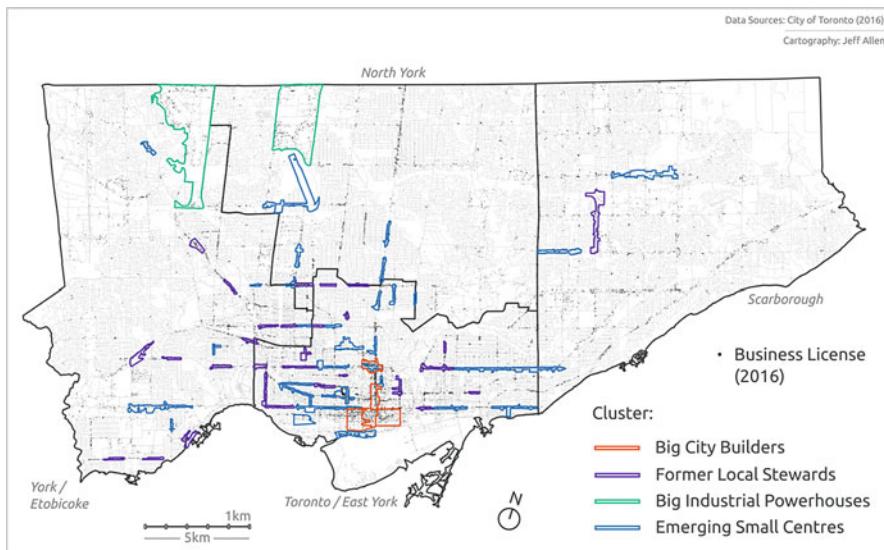


Illustration 4 Map of BIA clusters (original research)

Table 2 Key data on each cluster (original research)

	Big City Builders (Cluster 1)	Former Local Stewards (Cluster 2)	Big Industrial Powerhouses (Cluster 3)	Emerging Small Centres (Cluster 4)
Number	5	31	2	40
Year formed (average)	2000	1981	2009	2006
Transit score (0 to 1)	0.73	0.42	0.09	0.43
Walk density score (0 to 1)	0.34	0.52	0.11	0.43
2015 budget (average)	\$2,048,100	\$178,400	\$1,829,700	\$225,600
Business count	1490	177	1910	203

Table 2 sets out the means or averages of each cluster. The data is scaled to Z-scores, so a value of more than 0 is above average, and less than 0 is below average.

This table shows the enormous differences between BIAs based on type. Both Big City Builders and Big Industrial Powerhouses are few in number but represent a large number of businesses. They also have very high budgets. The main differences between them are their accessibility by transit, walkability, and year formed. Big City Builders, owing to their locations, are accessible by foot and public transit and formed just after amalgamation, whereas Big Industrial Powerhouses are in vehicle-focused areas and were established less than 10 years ago. Both Former Local Stewards (Cluster 2) and Emerging Small Centres (Cluster 4) are small, with approximately the same number of businesses, low budgets, and walk/transit scores. However, Former Local Stewards have been in operation for decades, whereas Emerging Small Centres were formed after amalgamation. The data affirms that

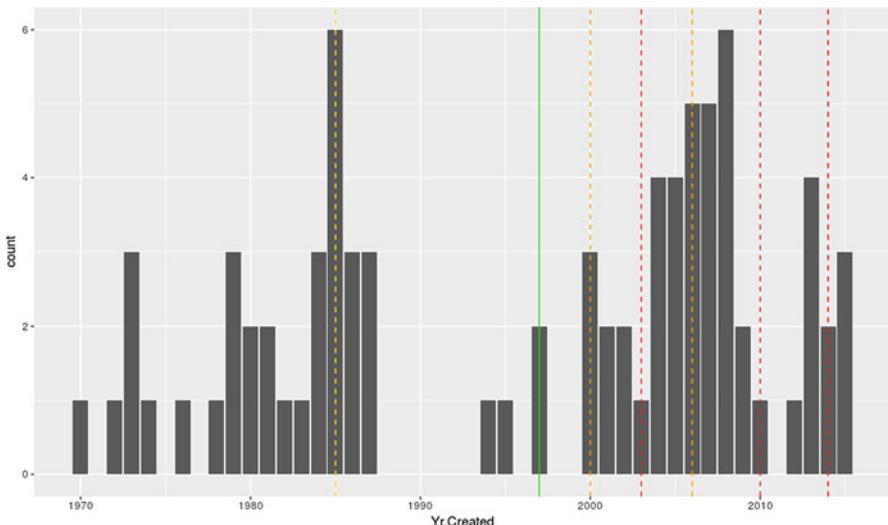


Illustration 5 Time period of BIA creation (original research)

both Former Local Stewards and Emerging Small Centres are located across the city, with the latter type as the smallest, most suburban, and least financed of the four types.

As can be seen, the year of BIA creation is a key aspect in determining BIA type. An important question is therefore what affects the emergence of BIAs. As can be seen in Illustration 5, the data reveals that Toronto's BIAs have doubled in number since 1998, when the City of Toronto was formed as an amalgamation of six small and one regional municipalities. The outer areas of the city have seen the greatest increase in the number of BIAs. Notably, following the amalgamation, we evidence the emergence of what I referred to as Emerging Small Centres which are the largest number of BIAs (almost half the number of all BIAs combined), have the fewest number of member businesses, and are in geographic areas that previously did not have such bodies.

In sum, Toronto's BIAs can be categorized as Big City Builders (Cluster 1), large BIAs formed within the last 25 years, with excellent transit access, high budgets, and an enhanced interest in city planning and policy; Former Local Stewards (Cluster 2), which are small and medium-sized BIAs, formed prior to 1988, with high transit scores and walkability and lower budgets; Big Industrial Powerhouses (Cluster 3), large BIAs located in industrial and low-density commercial outside the city's core, with high budgets and low walkability and transit scores; and Emerging Small Centres (Cluster 4), which are small BIAs formed in the past 25 years, with low budgets, few businesses, and medium to low transit scores.

5 Discussion

The data in the previous section clarified that BIAs differ in important ways across the city: in incomes, geographies, years of formation, size, and based on transit scores and walkability. There are two important points to make.

First, Toronto's amalgamation in 1998 set about a wave of new BIAs. There has been an immense increase in the number of Emerging Small Centres since amalgamation, opening up this form of organization in parts of the city that previously did not have these kinds of bodies. The increased number of Emerging Small Centres (Cluster 4) may in part be explained with a replacement for a direct connection to local government. In their evaluation of changes in the City of Toronto's approach to governance given COTA and other legislative and policy initiatives, Joy and Vogel (2015) note that federal, provincial, and city governments have scaled back the welfare state and embraced new public management policies. In the case of BIAs, it is clear that something transformative happened following amalgamation when it came to the establishment of BIAs.

Second, Gross' (2005) research on BIDs in NYC found that BID's size has a big effect on function. In her study, BIDs with larger budgets and comprising more urban area BIDs play an especially important role in impacting city policy. In Toronto too, BIAs of Big City Builders and Big Industrial Powerhouses have been shown through case study research to take on larger advocacy projects. For example, one of the largest of Toronto's BIAs is the Toronto Entertainment BIA (Cluster 1). It was created in 2008 and is located in the Toronto-East York Community Council area. It straddles two wards, owing to its large size of 156 blocks. It represents over 1800 businesses and in 2016 had a budget of over 2 million dollars (CAD), putting it firmly within Cluster 1. In 2013, it funded a Master Plan drafted by consultants, setting out in over 100 pages the BIA's proposals for the public realm, focusing on details such as streetscaping, planters, cycling lanes, and other matters squarely within the jurisdiction of the City of Toronto (Toronto Entertainment District BIA Master Plan 2015, p. 105). Regarding any city proposals relating to the BIA area, the Master Plan outlines in what circumstances the BIA should provide "official written endorsements", only where "the BIA is assured that the spirit and intent of the Master Plan are respected" (Toronto Entertainment District BIA Master Plan 2015, p. 105). It proposes a set process for councillor and staff review of the Master Plan in connection with proposed developments. The Master Plan further states that "Where proposals are deemed to be fundamentally at odds with the spirit and intent of the Master Plan, the BIA reserves its right to voice its opposition to the application to the city and/or Ontario Municipal Board" (Toronto Entertainment District 2015, p. 105).

Furthermore, in studying the development of the "creative city" in the Entertainment District BIA, Sébastien Darchen observed the tension between the local planning process, whereby the BIA carried a far stronger voice in community

deliberations and their interests were specific to the advantages for the member businesses (Darchen 2013, p. 197). While council ultimately supported a mixed-use neighbourhood which includes a diverse range of economic activities than those proposed by the BIA, including an environment where emerging artists can live and work in the neighbourhood, Darchen concluded that the promotion of arts and culture as imagined by the BIA will lead to revitalization of the area: “The creative city is used to legitimize a set of objectives—put forward by key stakeholders—to transform the space into an appealing urban environment conducive specifically to investment for residential and business development” (Darchen 2013, p. 201). The BIA articulated “already packaged regeneration processes,” representing and promoting only the particular interests of business members. Instead, only the particular interests of those with a vested stake are promoted” (Darchen 2013, p. 201). Again, in this example too, the role of this Big City Builder BIA was significant in shaping city policies.

However, unlike the analysis provided by Gross, in Toronto, even small- and midsized BIAs seek to influence local governance and social policy. The institutional rules and formal governance role of BIAs are similar regardless of the size or budget. In fact, all BIAs, regardless of type, engage in a range of activities, from marketing, streetscaping, hosting events, and advocating for policies related to the public realm.

As one staff member I spoke with said, BIAs weigh into “the geopolitics of the area” because of their site-specific private interests (Anonymous interview with staff #1 2016). For example, in 2015, Toronto’s Chinatown BIA (Cluster 2) objected to the plan to introduce a youth homeless shelter within the boundaries of the BIA (Mangione 2015). The BIA noted a lack of consultation on the proposal and the negative impact on the area, stating: “the BIA had worked hard for a decade to ‘clean up’ the area, and business owners are worried the facility will turn Spadina into a ‘centre of homelessness’ (Mangione 2015). The protest culminated in placards within member businesses, as well as a demonstration of over 50 people at City Hall (Wardle 2016). The BIA suggests that it is sympathetic to the need for having soup kitchens and drop-in centres but argues that they should not be located in tourist areas, even though numerous homeless and vulnerable people call such “tourist areas” home (Cole 2016). Other recent examples of smaller BIAs engaging in broader advocacy efforts include the Bloor Annex BIA’s (Cluster 2) direct involvement in bike lane advocacy along a considerable stretch of Bloor Street, including the coordination of a comprehensive study (City of Toronto 2017). Similarly, smaller BIAs have also created Master Plans to guide local development (St. Lawrence Market BIA 2015; Kennedy BIA 2013—Clusters 2 and 4). In short, in Toronto, BIAs of all sizes engage in advocacy efforts beyond the immediate interests of member businesses.

To conclude, the emergence of BIAs is closely related to the size of the local government, but, unlike in NYC, the size of the BIA isn’t essentially relevant to the type of function it executes.

6 Conclusion

Toronto BIAs are a crucial area of study, partly because of their considerable number (one of the highest in North America) and because of their important but understudied role in local governance. While other studies have examined the different kinds of BIAs within a single jurisdiction, such a study has to date remained unfilled in the Toronto context. This study addresses the gap by offering a typology of Toronto BIAs, looking at the metrics of size, walkability/transit score, budgets, and year of formation to conclude that there are four kinds of BIAs in Toronto: Big City Builders (Cluster 1), Former Local Stewards (Cluster 2), Big Industrial Powerhouses (Cluster 3), and Emerging Small Centres (Cluster 4). While all of these BIAs engage in similar kinds of activities, including advocacy beyond the immediate interests of member businesses, and have little relationship with residential density, the data reveals the enormous increase in the number of Emerging Small Centres (Cluster 4) since the time of Toronto's amalgamation. This study will hopefully start the conversation on the implications of these different types of BIAs on local governance.

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References

- Anonymous interview with City of Toronto councillor #1, Toronto, Ontario, Canada. (2016, July 5). Author conducted.
- Anonymous interview with City of Toronto councillor #2, Toronto, Ontario, Canada. (2016, July 7). Author conducted.
- Anonymous interview with City of Toronto councillor #3, Toronto, Ontario, Canada. (2016, July 18). Author conducted.
- Anonymous interview with City of Toronto staff member #1, City Planning, Toronto, Ontario, Canada. (2016, May 18). Author conducted.
- City Council. (2014). *Business improvement areas, 2015 operating budgets—report no. 1, ED1.5 (staff report to City Council)*. Toronto, ON: City of Toronto.
- City Council. (2015). *Business improvement areas, 2015 operating budgets—report no. 2 ED2.5 (staff report to City Council)*. Toronto, ON: City of Toronto.
- City of Brandon v. Artistic Tattoo. (2003). MBQB 133.
- City of Toronto. (2012). *Clean city, beautiful city*. Toronto: Waterfront BIA.
- City of Toronto. (2017). Business Improvement Areas. Retrieved 1 April 2017.
- City of Toronto. (2018a). Business Improvement Areas. Retrieved from <https://www.toronto.ca/business-economy/business-operation-growth/business-improvement-areas/>.
- City of Toronto. (2018b). By-law no. 170-70, Council procedures.

- City of Toronto Act. (2006). Statutes of Ontario 2006, c. 11, Sched. A. Retrieved from the Queen's printer of Ontario website: <https://www.ontario.ca/laws/statute/06c11>.
- City of Toronto Staff. (2017). *Bloor street west bike lane pilot project evaluation, PW24.9. Public Works and Infrastructure Committee (Staff report to City Council)*. Toronto, ON: City of Toronto.
- Cole, D. (2016). Chinatown should welcome homeless youth with open heart. *The Toronto Star* (January 7).
- Darchen, S. (2013). The Creative City and the redevelopment of the Toronto Entertainment District: A BIA-led regeneration process. *International Planning Studies*, 18(2), 188–203.
- Dixon, M. (2014). A doctrinal approach to property law scholarship: Who cares and why? *Property Law Review*, 3(3), 160–165.
- Frug, G. (2010). The seductions of form. *Drexel Law Review*, 3, 11–17.
- Gross, J. S. (2005). Business improvement districts in New York City's low-income and high-income neighborhoods. *Economic Development Quarterly*, 19(2), 174–189.
- Gross, J. S. (2013). Business improvement districts in New York: The private sector in public service or the public sector privatized? *Urban Research & Practice*, 6(3), 346–364.
- Hoyt, L., & Gopal-Agge, D. (2007). The business Improvement District model: A balanced review of contemporary debates. *Geography Compass*, 1(4), 946–958.
- Joy, M., & Vogel, R. K. (2015). Toronto's governance crisis: A global city under pressure. *Cities*, 49, 35–52.
- Kennedy BIA. (2013). Project Re-Kennedy, Toronto, ON.
- Lewis, N. (2010). Grappling with governance: The emergence of business improvement districts in a National Capital. *Urban Affairs Review*, 46(2), 180–217.
- Lippert, R., & Sleiman, M. (2012). Ambassadors, business Improvement District governance and knowledge of the urban. *Urban Studies*, 49(1), 61–76.
- Mangione, K. (2015). We don't need any more grit': Chinatown BIA on street youth centre. *CTV News* (December 30).
- Melniky, R. (2015). BIAs drive ethnic retail neighbourhoods. *Canadian Property Management* (7 April).
- Meltzer, R. (2012). Understanding business Improvement District formation: An analysis of neighbourhoods and boundaries. *Journal of Urban Economics*, 71, 66–78.
- Morçöl, G., Vasavada, T., & Kim, S. (2014). Business improvement districts in urban governance: A longitudinal case study administration & society. *Administration and Society*, 46(7), 796–824.
- Morçöl, G., & Wolf, J. F. (2010). Understanding business improvement districts: A new governance framework. *Public Administration Review*, 70(6), 906–913.
- Ontario Inc. v. City of Toronto, ONSC 5697 28. (2013).
- Peyroux, E., Pütz, R., & Glasze, G. (2012). Business improvement districts (BIDs): The internationalization and contextualization of a 'travelling concept'. *European Urban and Regional Studies*, 19(2), 111–120.
- Pivot Legal Society v. Downtown Vancouver business improvement association and another (no. 6) British Columbia Human Rights Tribunal. (2012).
- St. Lawrence Market Neighbourhood. (2015). BIA public realm master plan, Toronto, ON.
- Toronto Entertainment District. (2015). BIA Master Plan, Toronto, ON.
- Toronto Municipal Code. (2018). *Chapter 19: Business improvement areas*. Toronto, ON: City of Toronto.
- Wardle, C. (2016). Toronto BIA protests street Mission's plans to move into the Neighbourhood. *Presbyterian Record* (February 1).
- Wolf, J. F. (2006). Urban governance and business improvement districts: The Washington, DC BIDs. *International Journal of Public Administration*, 29, 53–75.

China's Land Granting Reform for Industrial Land: A Quasi-experimental Evaluation



Jinfeng Du

Abstract In the year 2007, China enforced a new policy stipulating that industrial land must be granted through tender, auction, and/or listing (TAL) and the transaction price of the granted land should be higher than a minimum price standard. This paper evaluates the effectiveness of the reform based on interrupted time series quasi-experimental design. The effects of the reform on industrial land conveyance and on overall land granting are evaluated. The results indicate that this reform has successfully reduced the proportion of industrial land granted through negotiation; however, it has not promoted price growth but has reduced the TAL granted industrial land price. This reform has also significantly reduced the total negotiation granted land and the proportion of land granted through negotiation in the overall land granting market.

1 Introduction

China has initiated a series of reforms in various aspects of socio-economic development since the Reform and Opening Up in 1978. As regard to the effectiveness of the reform measures, there are lots of discussions on mass media but few serious scientific evaluations. Evaluating the effectiveness of a reform measure inevitably confronts various types of threats to the validity of a true causal effect. To identify and minimize the threats and to draw a defensible and convincing inference of the causal effect of certain intervention, policy (program and/or project) evaluation technique emerged in the 1960s (Langbein and Felbinger 2006). As early as 1963, Campbell and Stanley identified and summarized 12 types of threats to valid inference (Campbell and Stanley 1966). Subsequent studies summarized the logic and preconditions of causation. The following points, that may overlay in different categorizations, are the commonly identified evidence (or criteria) of causation: (1)

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cause precedes effect, (2) cause relates and covaries with effect, (3) alternative explanations must be ruled out, (4) knowledge is available of what would have happened in the absence of the cause (counterfactual inference), and (5) there is a plausible mechanism for the causal relationship (Cook and Campbell 1979; Remler and Ryzin 2010; Shadish et al. 2002).

Three categories of research design have been developed to minimize the number and plausibility of internal validity threats, including randomized field experiment, (quasi) natural experimental design, and observational studies with statistical control of confounding factors (also known as non-experimental design); each category includes several experimental designs (Langbein and Felbinger 2006; Remler and Ryzin 2010; Shadish et al. 2002). Among these strategies, randomized field experiment and natural experiment confront the least threats and generate the most robust causal inference; however, confined by strict requirements, they are also rarely applied in empirical research. Observational study cannot control all confounding factors; therefore, it is readily criticized for omitted variable bias. Quasi-experimental design, although weaker than randomized and natural experiment in controlling for threats, provides a defensible and convincing inference of causation; therefore, it has become a widely applied strategy in causation exploration.

Interrupted time series is assumed to be the strongest quasi-experimental design to evaluate longitudinal effects of time-delimited interventions (Wagner et al. 2002). Early studies have built a solid methodological foundation and been applied in various disciplines, such as law and behavioral and psychological studies (McDowall et al. 1980). In empirical research, practitioners usually have to work with short time series. To strengthen the causal claim, additional design elements could be employed, such as control groups, nonequivalent dependent variables, treatment removals, and multiple replications. Although assumed as lesser known and underutilized (Coryn and Hobson 2011), nonequivalent dependent variable(s) design has been employed implicitly in empirical studies (Fischer 1995; McKillip and Baldwin 1990; McSweeney 1978; Muller 2004; Orwin et al. 2004; St. Clair et al. 2014; White 2000). A nonequivalent dependent variable (also named as control construct) is predicted not to change because of the treatment but is expected to respond to some or all of the contextually important internal validity threats in the same way as the target outcome (experimental construct) (Shadish et al. 2002). By comparing the difference between the outcomes of experimental and control construct, researchers could measure the magnitude and strength of causation. Panel data modeling approach is another instrument that enables us to incorporate cross-sectional and time series dummy variables to reduce the threats to internal validity (Wooldridge 2012); therefore, it could generate even more convincing causal claims.

Although impact evaluation techniques have been well developed, there is rare application in the field of urban studies and land use policy analysis. This paper evaluates the effectiveness of China's industrial land granting reform enforced in 2007 and introduces interrupted time series quasi-experimental design to urban studies and land use issues. To strengthen causation inference, nonequivalent dependent variables, panel data model, and control variables are employed as additional design elements. To comprehensively examine the impact of the reform, two datasets are

employed, including the national total granted land through different modes and for different land use types during 2003 and 2008 and provincial-level land granting date from 2003 to 2011. These datasets enable us to evaluate the effect on industrial land granting per se and on overall land granting market, respectively. The results indicate that this reform has successfully reduced the proportion of industrial land granted through negotiation; however, it has also reduced the land granting price for industrial land granted through TAL, while other land use types (such as residential and commercial) granted through TAL have experienced a rapid growth of price. This reform has significantly reduced the total negotiation granted land and the proportion of land granted through negotiation in the overall land granting market.

The remainder of the paper is organized as follows. Section 2 briefly reviews the reform on industrial land granting policy. Based on the nation's total granted industrial land through different modes, Sect. 3 evaluates the impact of the reform on industrial land granting. Section 4 further evaluates the impact of the reform on overall land granting market based on the total land (irrespective of intended land use types) granted through different modes at provincial jurisdiction level. In each of the two evaluation sections, we first describe the data, sketch out the evaluation model, and then present the results. Conclusions are summarized in Sect. 5.

2 Reform of Industrial Land Granting Policy in China

After the foundation of the People's Republic of China, the authorities introduced a free-of-charge land use policy in 1954 (Central Government Administration Council 1954). In the reform era, in order to accumulate capital to support economic development, land market has been established gradually; urban land was declared to be state-owned, while land use rights were allowed to be granted to private users through different modes (Wang 2008). Land pricing differs among different granting modes; the granted prices also exhibit substantial difference (Du 2010). After the fiscal reform in 1994, land-related revenue has become a major source of local governments' fiscal income (Wu 2001; Zhou 2007). Revenue-starved local governments commonly adopt a discriminatory land granting practice to maximize their land revenue: granting residential land at high price to maximize land grant revenue and granting industrial land at low price to attract investment to maximize ensuing tax income (Du and Peiser 2014; Su et al. 2012; Tao et al. 2010).

Land granting reform is of significant importance to build a transparent and competitive land market to maximize land revenue. Because industrial development is footloose and tends to move to the regions with lower land price, local governments confront fierce competition in attracting such investment (Du et al. 2016). To attract industrial investment, local governments usually negotiate one by one with investors to decide the price and other land use conditions (Su et al. 2012). Land price usually is very low. It was reported that a substantial portion of land had been granted at a price much lower than the land development costs (Jiang et al. 2007). This results in various problems, such as corruption and low land use efficiency (Du et al. 2016; Peck and Zhang 2013; Walker 2006; Wong and Zhao 1999).

In the year 2006, a significant reform on industrial land granting policy was introduced. On August 31, the State Council required that industrial land must be granted through more competitive modes, which are tender, auction, and/or listing (TAL), and the granted prices should not be lower than an administratively set standard. On December 23 in the same year, the Ministry of Land and Resources (MLR) further classified the national land into 15 grades, officially introduced the minimum land price standard for each grade, and enforced this policy on January 1, 2007. However, the fiscal system has not been restructured. Local governments are still heavily relying on land revenues and confront fierce competition to attract industrial investment. Reports about local governments granting land through fake TAL are not rare (Cai et al. 2013; Zhang 2006). Therefore, this study aims to evaluate how and to what magnitude this reform actually affected the industrial land granting market.

3 Evaluation Based on National Total Granted Industrial Land

The records of industrial land granted through different modes were only released during year 2003–2008 in the China Statistical Yearbook of Land and Resources. Although only at national level and merely contain six points in time, this data enables us to directly evaluate the impact of this reform on industrial land granting. As shown in the next section, the relatively short time period should be able to capture the effect of the reform. The proportion of industrial land granted through negotiation and granted land prices are employed as the key indicators. In order to improve the robustness and validity of our causation analysis, several nonequivalent dependent variables are employed as reference to quantify and compare the magnitude and significance of the effect.

McDowall et al. (1980) summarized four forms of impact process according to duration and onset characteristics of the intervention (abrupt or gradual in onset and permanent or temporary in duration). They also developed assessment models for three main types of impact based on an interrupted time series approach (except for the gradual and temporary process). A dummy variable of the intervention component is employed to quantify the magnitude of the effect. If the intervention component is statistically significant and could improve the explanatory power, the intervention is assumed to have a statistically significant impact on the process of interest. As illustrated in Fig. 1, the impact process is gradual and permanent in this section. Therefore, it can be modeled by an autoregressive integrated moving average (ARIMA) model by adding a lagged value of the time series to the intervention component (Eq. 1).

$$y_t = \delta y_{t-1} + \beta R_t + \varepsilon_t \quad (1)$$

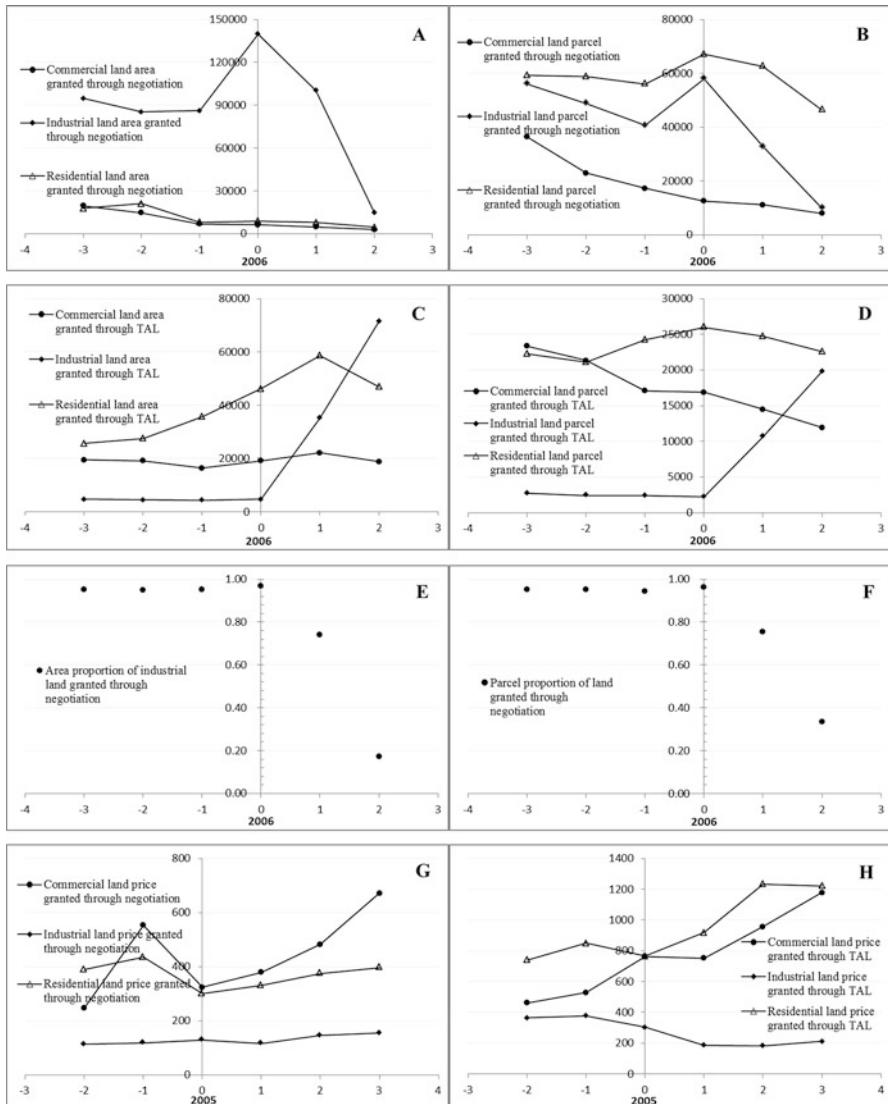


Fig. 1 Illustration of the indicators for national granted industrial land before and after the reform in China

y_t is the process of interest. y_{t-1} is the lagged value of the time series. R_t is the dummy variable of the intervention, that is, the reform of TAL granting for industrial land; after the enforcement of the reform, it equals 1, otherwise 0. ε_t denotes error term. β and δ are the parameters to be estimated.

The China Statistical Yearbook of Land and Resources categorizes the nations' annual total granted land into eight types and summarizes the number of parcels granted, total land area, and total land revenue received for each type of land that was granted through negotiation and TAL, respectively. Industrial, mining, and warehouse activities are merged as one type. In this study, we generally refer to it as industrial development. The total land revenue divided by total granted land area is the average land price. The data is summarized in Table 1.

3.1 The Effect on the Proportion of Industrial Land Granted Through Negotiation

The effect and form of the impact of the TAL granting reform for industrial land is visually striking. The land area and number of parcels granted through negotiation for industrial development both reduced dramatically since the enforcement of the reform (Fig. 1a, b); at the same time, the industrial land granted through TAL grew rapidly no matter whether measured by land area or number of parcels (Fig. 1c, d). Therefore, the proportion of industrial land granted through negotiation among the total granted industrial land declined substantially. When measured by the proportion of land area (Fig. 1e), it reduced more dramatically than that measured by the proportion of land parcels (Fig. 1f). In contrast, the land granted for commercial and/or residential development exhibits no significant difference before and after 2007 no matter whether granted through negotiation or TAL.

There was a time gap between the State Council required to grant industrial land through TAL (on August 31, 2006) and the enforcement of such reform (January 1, 2007). After the market learned the signal of reform, the total granted industrial land in year 2006 increased significantly than that in the preceding years, no matter whether measured by number of parcels granted or by total land area transacted. This phenomenon is a signal effect of the reform. The proportion of industrial land accounting for total granted land through negotiation also increased more than 1.5% and reached higher than 96% in 2006 compared with that in 2007.

In order to quantify the magnitude of the effect of the reform on industrial land granting, this section, based on an interrupted time series quasi-experimental design, evaluates the effect on the proportion of industrial land granted through negotiation. The indicators employed are calculated both on land area and number of parcels. As Fig. 1e and f vividly indicates, the proportion of industrial land granted through negotiation has reduced gradually after the reform in 2007.

The estimated autocorrelation function (ACF) and partial autocorrelation function (PACF) indicate that there is no autocorrelation for the proportion of land granted through negotiation no matter whether measured by number of parcels or by land area. The coefficients are highly significant no matter whether based on robust standard error or on observed information matrix (OIM) standard error estimator. An ordinary least square (OLS) estimation also demonstrates high

Table 1 Statistics of industrial land granted through different modes in China

Year	Granted land area (hectare)		Number of parcels		Land price (yuan/sq. m.)		Proportion of land granted through negotiation No. of parcels	Land area
	Negotiation	TAL	Negotiation	TAL	Negotiation	TAL		
2003	94751.23	4683.77	56,086	2741	114	363	0.953	0.953
2004	85347.91	4440.21	48,900	2422	119	376	0.953	0.951
2005	86202.54	4309.27	40,646	2381	130	303	0.945	0.952
2006	139763.23	4688.39	57,975	2229	117	186	0.963	0.968
2007	100337.00	35291.55	32,780	10,697	146	181	0.754	0.740
2008	14959.96	71453.94	9977	19,794	155	211	0.335	0.173

Table 2 Regression summary of industrial land granting evaluation

Variable	Proportion of industrial land granted through negotiation in terms of land area	Proportion of industrial land granted through negotiation in terms of land parcels	Industrial land price granted through TAL	Industrial land price granted through negotiation
Lag of dependent variable	2.489 ^a (5893.36)	1.996 ^a (226.46)	-0.14 (-1.30)	
Reform dummy	-0.256 ^a (-53.45)	-0.226 ^a (-22.60)	-168.12 ^a (-5.55)	18.58 ^b (1.67)
Constant	-1.412 ^a (-316.50)	-0.944 ^a (-62.68)	393.32 ^a (7.92)	120.91 ^a (28.50)

Note: Statistics of *t*-value reported in parentheses

^aSignificant at 1% level

^bSignificant at 10% level

significant coefficients. Since there are no significant differences among these three estimations, the results of robust standard error are adopted and reported in Table 2. The results indicate that the reform significantly reduced the proportion of industrial land granted through negotiation. There is a significant post-reform declining trend no matter whether the proportion is measured by land area or by number of parcels. Iterating the observations into the regression models, the reform reduced 21.8% of land area and 18.9% of land parcels for industrial land granted through negotiation in 2007 compared with those in 2006. By 2008, the simulated proportion of industrial land area and land parcels granted through negotiation has declined to 17.3% and 33.6%, respectively. This is identical with actual statistical level.

3.2 The Effect on Land Price

After the State Council required industrial land should be granted through TAL in August 2006, the average prices of TAL granted industrial land in the year declined dramatically (Fig. 1h). During the same period, the industrial land price granted through negotiation only decreased slightly in 2006 but then increased mildly and steadily (Fig. 1g). This could be affected by the composition of industrial land supplied in 2006, general land market condition, or some other factors. Assuming that socio-economic factors have the same impact on the changing trend of industrial land price no matter whether it is granted through negotiation or TAL and the reform of TAL granting policy for industrial land only impacts the price of TAL granted industrial land, the negotiation granted price for industrial land is employed as a control construct.

The ACF and PACF estimations indicate there is no significant autocorrelation for the time series of TAL granted industrial land prices before the enforcement of

the reform. The results of the regression with robust standard error indicate that the TAL granted industrial land price decreased by 168.1 *yuan* per square meter after the enforcement of the reform. The negotiation granted industrial land price exhibits a ARIMA(0,0,0) process. The regression constant term (equal 130.2) is significant at $p = 0.000$ level. To examine whether this price experienced significant change in year 2006 compared with that in the preceding year, the reform dummy variable is also added to the ARIMA(0,0,0) model. The results indicate the negotiation granted industrial land price increased by 18.6 *yuan* per square meter in year 2006 at marginal significant level. Iterating the observations into the regression models, the difference between the change of TAL granted industrial land price and change of that granted through negotiation demonstrates the convergence effect of the reform, that is, this reform has reduced TAL granted land price by 176.1 *yuan* per square meter in the first year after the enforcement of the reform.

The TAL granted land prices for residential and commercial developments may reflect the general changing trend of land prices for that granted through TAL. Residential price has been increasing steadily during the study period. Commercial price was relatively stable before 2006, but it increases rapidly henceforth. The TAL prices for residential development grew 152.4 *yuan* per square meter, while the commercial land decreased 12.0 *yuan* per square meter in 2006 compared with those in 2005; industrial price declined 117.6 *yuan* per square meter during the same period. Even though different land use types may face different market conditions, the substantial contrasting changing trend does shed light to the adverse impact of the reform on TAL granted industrial land price.

4 Evaluation Based on Provincial-Level Industrial Land Granting Data

Industrial land constitutes a large portion of the total granted land (as shown in Fig. 1a, b). Among the land granted through negotiation, industrial land accounted for 86.3% at the most in year 2006 and 56.2% at the least in year 2008 during our study period in terms of land area, and industrial land accounted for 41.1% at the most and 14.7% at least in year 2006 and 2008 in terms of number of land parcels granted. Therefore, the TAL granting reform for industrial land is expected to impact the overall land granting market. Based on the land granting records in the 31 provincial-level jurisdictions in Mainland China, this section evaluates whether and to what extent this reform affects the overall land granting market. The land area granted through negotiation and the proportion of land granted through negotiation among total granted land are employed as the indicators of this evaluation.

Detailed records (in the China Statistical Yearbook of Land and Resources) of land granted through different mechanisms at provincial level are not available until year 2003. The records only include the total land granted without the breakdown information of intended land use types. To observe the long-term effect of the

Table 3 Data description for evaluation of provincial jurisdictions granted land

Variable	Meaning	Mean	Std. Dev.	Min	Max
Negarea	Land area granted through negotiation in each provincial jurisdiction (ha.)	2799	3868	21	26,083
Negprice	Average negotiation granted land price (yuan/q.m.)	265	410	7	6082
Talprice	Average TAL granted land price (yuan/q.m.)	839	1026	61	9198
Negaprop	The proportion of negotiation granted land area among total granted land	0.410	0.272	0.006	0.964
Negpprop	The proportion of negotiation granted land parcel among total granted land	0.550	0.239	0.010	0.973
Invst	Investment of fixed assets in urban area (100 million yuan)	4388	4320	118	26,314
Cutws	The growth of employment in urban area comparing with preceding year (people)	154	517	-1250	3345
Pcgdp	Per capita gross domestic product (GDP) (yuan)	23,044	16205	3504	83,449
Urincr	Ratio of urban resident' income to that of rural resident	3.09	0.62	2.07	5.20
Gs2gdp	Growth of the secondary sector industries of GDP comparing with preceding year (100 million yuan)	746	749	-305	3595
Gs3gdp	Growth of the tertiary sector industries of GDP comparing with preceding year (100 million yuan)	588	644	7	3711
Culbuild ^a	Proportion of cultivated land to urban and rural built land	3.817	1.692	0.708	8.861

Note: ^aData for the time period of year 2003 to 2008

reform, the study period is set from year 2003 to 2011 and from 2003 to 2008, respectively. The data is summarized in Table 3.

A model (Eq. 2) is developed to estimate the impact of the reform on the intercept and slope of the changing trend of the dependent variables. The dummy variable (IV_{it}) of TAL reform for industrial land is coded 0 for the time points before the enforcement of the reform and 1 otherwise. The coefficient b_I measures the change of the intercept of process of the dependent variables. The coefficient (b_T) of the time series variable (T_{it}) captures the general trend of the dependent variables. The interaction of time trend and reform measure ($IV_{it} \times T_{it}$) captures the impact on the slope. The coefficient b_C controls the influence of compounding factors (C_{it}). Based on the merits of panel data structure, a dummy variable of each provincial jurisdiction (u_i) is employed to control for unobserved factors. ε_{it} denotes the error term.

$$Y_{it} = a + b_I IV_{it} + b_T T_{it} + b_{IA} (IV_{it} \times T_{it}) + b_C C_{it} + u_i + \varepsilon_{it} \quad (2)$$

4.1 The Effect on Negotiation Total Granted Land Area

The effect of the TAL reform for industrial land on total negotiation granted land area (TNGLA) is visually striking. The total land area granted through negotiation reduced substantially after the enforcement of the reform. By 2008, the negotiation granted land had reached a relatively low and stable level (Fig. 2a). There is a significant turning point in year 2008, which exhibited that the effect of the reform had reached a relatively stable stage by 2008. Therefore, time period from year 2003 to 2008 is also employed as a complementary evaluation. The signal of reform incited a rash increase of negotiation land granting in year 2006. This impact may be captured by the change of the intercept term (b_I in Eq. 2) of the TNGLA process, while the long-term effect may be captured by the change of the slope (b_{IA} in Eq. 2) of the TNGLA process. The amount of (negotiation) granted land area may be affected by economic development, availability of investment, growth of urban employment, impetus of urbanization (migration from rural to urban), land price, land endowment, and other factors. In deciding which land will be granted through negotiation or through TAL, intended land use types and land use planning, land use policy and industrial policy, local bureaucratic behavior, and other factors may play a significant role; however, data on these factors are not readily available. In this evaluation, per capita gross domestic product (GDP) ($pcgdp$) indexes the status of regional economy. The growth of secondary and tertiary sector industries compared with the preceding year ($gs2gdp$ and $gs3gdp$, respectively) is to capture land demand derived from economic development. Growth of urban employment compared with the preceding year ($cutws$) captures employment induced land demand.¹ The annual amount of investment in fixed assets ($invst$) measures capital availability.² The

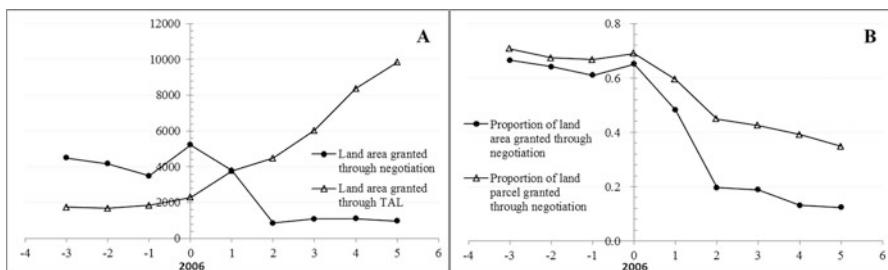


Fig. 2 Illustration of the average values of indicators at provincial level before and after the reform in China

¹The statistical criteria changed in year 2011. Since there are no other substitute data, this study assumes that the measurement error of this systematic change would not undermine the statistical validity of our analysis.

²The statistical criteria changed in year 2004. Before the change, it means the investment on capital construction; after 2005, it is the investment of fixed assets in urban area.

income disparity between urban and rural residents (*urincr*) measures the impetus of rural residents migrating to urban regions. Negotiation granted land price (*negprice*) captures the constraint effect of land pricing on demand for negotiation granted land, while TAL granted land price (*talprice*) measures the potential windfall rewards brought by negotiation granting to land users. The proportion of cultivated land area to total urban and rural built land area (*culbuild*) captures the supply side constraint, that is, the availability of developable land. The summary of the variables is reported in Table 3.

With respect to the full time series of year 2003–2011, the likelihood ratio (LR) test and modified Wald test indicate there is significant group-wise heteroskedasticity; the Pesaran's test, Friedman's test, and Frees' test indicate there is significant cross-sectional correlation; the Wooldridge test indicates there is significant first-order autocorrelation. Therefore, a panel-corrected standard error (PCSE) Parks estimator is employed. The results (*negarea0311* in Table 4) indicate that neither the impacts of the reform on the intercept nor on the slope of the TNGLA process are significant. However, they are jointly significant at 6.9% level.

With respect to the refined time series of year 2003–2008, the modified Wald test indicates there is significant group-wise heteroskedasticity; the Pesaran's test and Frees' test indicate there is significant cross-sectional correlation; the Wooldridge test fails to detect a significant first-order autocorrelation error structure. Therefore, an EGLS estimator with cross-sectional weights and White cross-sectional standard errors is employed. The results (*negarea0308* in Table 4) indicate that the impacts

Table 4 Summary of evaluation of negotiation granted land area at provincial level

Variable	Negarea0311	Negarea0308	Negarea0308
IV	1064274.7 (1.10)	4199553 ^a (17.87)	3881028 ^a (15.95)
T	1008.95 ^b (2.27)	886.65 ^a (5.84)	813.69 ^a (5.19)
IV×T	-531.64 (-1.10)	-2092.82 ^a (-17.86)	-1934.12 ^a (-15.94)
Invst	-0.38 ^b (-2.16)	-0.68 ^a (-3.15)	-0.677 ^a (-2.82)
Cutws	0.80 (1.17)	0.01 (0.04)	0.050 (0.34)
Pcgdp	-0.11 ^a (-3.18)	-0.16 ^a (-11.07)	-0.163 ^a (-11.29)
Urincr	-917.97 (-1.43)	230.52 (0.97)	669.94 ^a (5.22)
Gs2gdp	0.91 (1.14)	1.91 ^a (4.61)	1.87 ^a (3.93)
Gs3gdp	-1.18 (-1.18)	-0.84 ^a (-3.98)	-0.80 ^a (-3.40)
Negprice	-0.83 ^a (-2.63)	1.27 ^b (2.09)	0.98 ^b (2.03)
Talprice	0.60 ^a (2.58)	0.73 ^a (5.73)	0.82 ^a (5.86)
Culbuild		742.39 ^a (3.40)	
Constant	-2013575.6 (-2.26)	-1774377 ^a (-5.85)	-1626513 ^a (-5.19)
Adjusted <i>R</i> ²	0.693	0.776	0.789
Obs.	279	186	186

Note: Statistics of *t*-value reported in parentheses

^aSignificant at 1% level

^bSignificant at 5% level

^cSignificant at 10% level

on both the intercept and the slope of the TNGLA process are highly significant. The reform annually reduced 2092.8 ha land granted through negotiation after the reform ceteris paribus. Therefore, although there are still substantial amounts of land granted through negotiation, this reform has significantly reduced the total land granted through negotiation.

With respect to the controlled variables, the amount of annual investment in fixed assets, per capita GDP, and growth of tertiary industry outputs are negative and significantly correlated with negotiation granted land area. The growth of secondary industry output is positive and significantly correlated with negotiation granted land, which means that negotiation granting is adopted to attract and support the development of secondary industries. The regions with more developable land (and less constraint of land scarcity) have greater tendency toward granting land through negotiation.³

One interesting finding is the effect of land pricing system. Based on the 2003–2011 time series, negotiation granted price exhibits a significant constraining effect on the amount of negotiation granted land area, but this relationship demonstrated a positive and significantly correlation in the 2003–2008 time series. (The reasons for this difference may reflect an evolution of land market condition with the process of land reform.) However, in both time series, negotiation granted land area is positive and significantly correlated with TAL granted price. TAL granted land prices are much higher than negotiation granted ones, as shown in Table 3. Higher TAL price accompanying with more negotiation granting seems not in line with local governments' interest on maximizing land revenue income. Two possible factors may be important among other factors. First, as illustrated in existing literature, local governments commonly adopt a discriminatory land pricing strategy. Higher price of TAL granting is mainly used for residential and commercial developments, while negotiation granting is mainly used for industrial and/or public utilities activities (Su et al. 2012; Tao et al. 2010). After the enforcement of the TAL granting for industrial development, the effect of this factor should be reduced. However, urbanization differs dramatically among different regions in China. The regions with higher (residential and/or commercial) TAL price may grant more land (through negotiation) for infrastructure and public utilities improvements. Another factor pertains to the suspicion about bureaucratic behavior in land granting. Higher TAL price and larger price difference between the TAL price and negotiation price mean higher rewards for rent-seeking and corruption. Getting land through negotiation at lower price will bring land users higher windfalls. Therefore, in lack of enough scrutiny, both local officials and land users are more incentivized to collude and make under-the-table transaction through negotiation.

³This index is only available during the years 2003 to 2008. To compare the results with those generated from time series 2003–2011, this index is both included and excluded in the 2003–2008 period. In the model without this variable, the effect of urban-rural income disparity becomes more pronounced and significant, which means that the regions with higher urban-rural income inequality and higher impetus of rural resident immigration are more likely to grant land through negotiation to attract investment.

4.2 The Effect on the Proportion of Land Granted Through Negotiation

The proportion of land granted through negotiation is measured by the percentage of the number of parcels granted through negotiation among the total granted parcels (*negpprop*) and the percentage of land area granted through negotiation among the total granted land area (*negaprop*), respectively. Since the negotiation granted land declines, while the TAL granted land increases steadily (Fig. 2a), the proportion of land granted through negotiation decreases dramatically (Fig. 2b). This section aims to evaluate whether this process is caused by the reform and to quantify the magnitude of the effect. Although the total granted land may be affected by socio-economic factors, the proportion of land granted through negotiation is assumed to be more independent of socio-economic development. Therefore, only the dummy variable for each provincial jurisdiction is employed as a statistical control. Because there is a significant turning point for the proportion no matter whether measured by land area or number of land parcels, this evaluation examines both the full time series of year 2003–2011 and the refined short series of year 2003–2008.

With respect to land parcel proportion (*negprate*), the 2003–2011 study period (full dataset) and the 2003–2008 study period (refined dataset) both exhibit significant group-wise heteroskedasticity, cross-sectional correlation, and first-order autocorrelation. Therefore, the PCSE Parks estimator is employed for both datasets. The results (*negpprop0308* and *negpprop0311* in Table 5) indicate that the reform had significantly reduced the proportion of land parcel granted through negotiation. The coefficients derived from refined dataset exhibit more significant effect than that generated from the full dataset, statistically and substantively.

With respect to the indicator based on land area, the full dataset exhibits significant group-wise heteroskedasticity, cross-sectional correlation, and first-order autocorrelation. Therefore, a PCSE Parks estimator is employed. The short dataset exhibits significant group-wise heteroskedasticity but no significant serial correlation. The OLS estimator with robust standard error and GLS estimator accounting

Table 5 Regression summary of proportion of negotiation granted land at provincial level

Variable	Negaprop0311	Negaprop0308	Negpprop0311	Negpprop0308
IV	138.82 ^a (2.12)	556.89 ^b (13.99)	97.40 ^a (2.45)	273.69 ^b (7.86)
T	-0.01 (-0.38)	-0.02 ^b (-3.15)	-0.01 (-0.67)	-0.01 (-0.97)
IV×T	-0.07 ^a (-2.12)	-0.28 ^b (-13.99)	-0.05 ^a (-2.45)	-0.14 ^b (-7.86)
Constant	20.21 (0.39)	38.40 ^b (3.20)	19.66 (0.69)	12.35 (1.03)
R ²	0.780		0.668	0.706
Obs.	279	186	279	186

Note: Statistics of t-value reported in parentheses

^aSignificant at 5% level

^bSignificant at 1% level

^cSignificant at 10% level

for heteroskedastic panel are employed; the regression coefficients for the intercept and slope are similar in both estimations, but the GLS estimator exhibits more significant effect. Therefore, only the GLS estimator is reported. Same as the results of land parcel proportion, the regressions (*negaprop0311* and *negaprop0308* in Table 5) indicate that the results based on the short refined dataset exhibit more significant effect, statistically and substantively. This is because the analysis based on the longer study period reflects the instant and dramatic reform effect into an artificial longer period and blurs the actual magnitude of the effect.

5 Conclusions

China has formulated a series of reforms to build a well-functioning land market since the Opening Up and Reform in 1978. Promoting reform of land granting mechanism, prohibiting negotiation while popularizing tender, auction, and/or listing grant for intended industrial development, is one crucial step to build a transparent and competitive land market. This paper evaluates the effectiveness of this reform by employing interrupted time series quasi-experimental design incorporating other design elements, such as nonequivalent dependent variables, statistical control, and panel data model. Based on data availability, we evaluate the impact of the reform on industrial land granting and on the overall land granting market.

The evaluation of the effect on industrial land granting indicates that the reform has significantly reduced the proportion of land granted through negotiation among total granted industrial land no matter whether measured by granted land area or number of land parcels. When measured by the proportion of land area, the effect is more pronounced. However, the promotion of TAL granting for industrial land has not improved TAL granted land price as that of the residential and/or commercial land. On the contrary, this reform has reduced TAL granted industrial land price by 168 *yuan* per square meter in the first year after the enforcement of the reform. This decrease, on the one hand, reflects a lower land bidding power for industrial developments; on the other hand, it arouses suspicious of administrative intervention in the new industrial TAL granting market to lower down land price to attract investment. The rash increase of negotiation granted industrial land after the release but before the enforcement of the reform signals the speculation and instant market response to the reform to capitalize on the reform news.

Because industrial land accounted for a major portion of the total negotiation granted land, the TAL granting reform for industrial land has significantly affected the changing trend of the TNGLA process. Consequently, this reform has significantly reduced the proportion of land granted through negotiation among total granted land, no matter whether measured by land area or by number of land parcels. A longer study period may provide us with more information about the changing trend of the process; however, a shorter but more suitable study period may quantify a more accurate and significant reform effect. The evaluation based

on longer time series of 2003–2011 smooths the reform effect to reflect in a longer period; therefore, it flattens the slope and lowers down the intercept.

One disadvantage of short time series is the difficulty in knowing how long the effect will last (Shadish et al. 2002). As the evaluation in Sect. 3 indicated, we are not sure whether the tendency sustains or not only based on the industrial land data granted during year 2003–2008. Section 4 compiles a longer dataset and convinces our evaluation. However, because China constantly introduces new reform measures and the land market evolves rapidly, the length of the time series is not the longer the better. The crux is to evaluate and isolate the impact process with a thorough understanding of the reform process.

In order to strengthen the internal validity of our evaluation, other design elements are also employed. Statistical control enables us to further isolate the impact of compounding factors and strengthens the causal claims. Panel data modeling generates even more robust conclusion. However, various threats still exist although they are not assumed to undermine the overall validity of this study. For instance, there is measurement error for the granted industrial land. There is no independent statistics of granted industrial land among current data records. Industrial land is categorized and merged with mining and warehouse usages. It is impossible to disentangle them from each other. Therefore, we cannot evaluate the exact magnitude of the effect of the reform. The overall effect, however, is significant as Fig. 2 indicates that, after 2 years of the reform, industrial, mining, and warehouse land granted through negotiation has been reduced to a low and stable level. Second, there is a significant signal effect of the reform. After the announcement of the reform but before its enforcement, there was an extra-large amount of industrial land granted through negotiation. This high volume of transactions will inevitably affect ensuing land demand and land transactions. Last but not least, there may be contamination and multiple treatment threat. After the 2008 world financial crisis, China initiated a series of policies, including land use policy, to promote economic development. These factors may affect the estimated effect of the reform, especially when evaluating the reform effect based on the study period of year 2003–2011.

References

- Cai, H., Henderson, J.V., Zhang, Q., 2013. China's land market auctions: Evidence of corruption? *RAND Journal of Economics*, RAND Corporation, 44, 488–521.
- Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research*. Boston: Houghton Mifflin Company.
- Central Government Administration Council. (1954). *Zheng Wu Yuan Guan Yu Dui Guo Ying Qi Ye, Ji Guan, Bu Dui Xue Xiao Deng Zhan Yong Shi Jiao Tu Di Zheng Shou Tu Di Shi Yong Fei Huo Zu Jin Wen Ti De Pi Fu* (Reply on the questions of levying land use fee or land rent for state-run enterprises, institutes, army, schools or other work units using suburban land).
- Cook, T. D., & Campbell, D. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.

- Coryn, C. L. S., & Hobson, K. A. (2011). Using nonequivalent dependent variables to reduce internal validity threats in quasi-experiments: Rationale, history, and examples from practice. *New Directions for Evaluation, 2011*, 31–39.
- Du, J. (2010). *Beijing Cheng Shi Kuo Zhan Yan Jiu (Study on Urban Expansion of Beijing City)*. College of Urban and Environmental Sciences. Beijing: Peking University.
- Du, J., & Peiser, R. B. (2014). Land supply, pricing and local governments' land hoarding in China. *Regional Science and Urban Economics, 48*, 180–189.
- Du, J., Thill, J.-C., & Peiser, R. B. (2016). Land pricing and its impact on land use efficiency in post-land-reform China: A case study of Beijing. *Cities, 50*, 68–74.
- Fischer, R. (1995). Control construct design in evaluating campaigns. *Public Relations Review, 21*, 45–58.
- Jiang, S., Liu, S., & Li, Q. (2007). Tu Di Zhi Du Gai Ge Yu Guo Min Jing Ji Cheng Zhang (Land reform and economy development). *Management World, 9*, 1–9.
- Langbein, L., & Felbinger, C. L. (2006). *Public program evaluation: A statistical guide*. Armonk, New York: M.E. Sharpe.
- McDowall, D., McCleary, R., Meidinger, E., & Hay, R. A. (1980). Interrupted time series analysis. In *Sara Miller McCune*. Thousand Oaks, CA: Sage.
- McKillip, J., & Baldwin, K. (1990). Evaluation of an Std education media campaign: A control construct design. *Evaluation Review, 14*, 331–346.
- McSweeney, A. J. (1978). Effects of response cost on the behavior of a million persons: Charging for directory assistance in Cincinnati. *Journal of Applied Behavior Analysis, 11*, 47–51.
- Muller, A. (2004). Florida's motorcycle helmet law repeal and fatality rates. *American Journal of Public Health, 94*, 556–558.
- Orwin, R. G., Campbell, B., Campbell, K., & Krupski, A. (2004). Welfare reform and addiction: A priori hypotheses, post hoc explorations, and assisted Sensemaking in evaluating the effects of terminating benefits for chronic substance abusers. *American Journal of Evaluation, 25*, 409–441.
- Peck, J., & Zhang, J. (2013). A variety of capitalism . . . with Chinese characteristics? *Journal of Economic Geography, 13*, 357–396.
- Remler, D., & Ryzin, G. V. (2010). *Research methods in practice: Strategies for description and causation*. Thousand Oaks, CA: SAGE Publications.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton-Mifflin.
- St. Clair, T., Cook, T. D., & Hallberg, K. (2014). Examining the internal validity and statistical precision of the comparative interrupted time series design by comparison with a randomized experiment. *American Journal of Evaluation, 35*, 311.
- Su, F., Tao, R., Xi, L., & Li, M. (2012). Local officials' incentives and China's economic growth: Tournament thesis reexamined and alternative explanatory framework. *China & World Economy, 20*, 1–18.
- Tao, R., Su, F., Liu, M., & Cao, G. (2010). Land leasing and local public finance in China's regional development: Evidence from prefecture-level cities. *Urban Studies, 47*, 2217–2236.
- Wagner, A. K., Soumerai, S. B., Zhang, F., & Ross-Degnan, D. (2002). Segmented regression analysis of interrupted time series studies in medication use research. *Journal of Clinical Pharmacy and Therapeutics, 27*, 299–309.
- Walker, K. L. M. (2006). 'Gangster capitalism' and peasant protest in China: The last twenty years. *Journal of Peasant Studies, 33*, 1–33.
- Wang, X. (2008). Cheng Zhen Tu Di Shi Yong Zhi Du Gai Ge Hui Gu (A review of China's urban land reform). *China Territory Today, 6*, 10–16.
- White, M. D. (2000). Assessing the impact of administrative policy on use of deadly force by on-and off-duty police. *Evaluation Review, 24*, 295–318.
- Wong, K. K., & Zhao, X. B. (1999). The influence of bureaucratic behavior on land apportionment in China: The informal process. *Environment and Planning C, Government & Policy, 17*, 113–126.

- Wooldridge, J. M. (2012). *Introductory econometrics: A modern approach*. Mason, OH: South-Western, Cengage Learning.
- Wu, F. (2001). China's recent urban development in the process of land and housing marketisation and economic globalisation. *Habitat International*, 25, 273–289.
- Zhang, X. (2006). Weekly economic observer: Alert that local governments have dominated illegal land-use. *Xinhua News*.
- Zhou, F. (2007). Sheng Cai You Dao: Tu Di Kai Fa He Zhuan Rang Zhong De Zheng Fu He Nong Min (The role of government and farmers in land development and transfer). *Sociological Studies*, 22, 49–82.

Part IV

Urban Land Development Regulation

Success Factors of Building Land Strategies: Differences and Commons of the Approaches



Julia Suering and Alexandra Weitkamp

Abstract The population growth in many large cities has led to a shortage of urban living space over the last years in Germany. In many cities, there is a lack of space whereby the prices of the housing rise. But also many other large cities in the world recorded a rise in housing and land prices. This is particularly noticeable in the low-budget segment where the people are especially affected. A lot of German cities reacted with using land policy instruments and created building land strategies. In this book chapter, case studies of particularly affected German large cities are evaluated. The building land strategies are important for future-oriented land development in growing cities. This paper explores the challenges which large German cities are facing due to the current developments and the housing market. Furthermore, the study aims to find out if the use of building land strategies can countervail the displacement and segregation of low-budget households. Therefore, this chapter will investigate German building land strategies in terms of their content structure, their orientation in regard to the entire city, and their effect on the land value. Besides, administrative experts are. Their answers combined with the findings of the case studies led to a comparison of eight chosen strategies. The results of the analysis show commons and differences, the factors of success, and also components within the building land strategy, which need further development.

1 Introduction

Germany, as well as other countries, has both shrinkage and growing processes of population. While some regions are losing population, other regions have strong immigration. In many places, there are trends in housing shortages. This paper focuses on land policy instruments for providing affordable housing within the development process. Often, the impacts of urban planning can only be seen years

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after the measure has been implemented. Municipalities are constantly faced with the following questions: How did the population develop? How much living space does the city need concerning the current population? What developments are to be expected in the future? How much do people earn on average? The municipality has to interlink the answers with urban development instruments to steer purposeful development processes. Currently, many municipalities are confronted with this challenge to provide affordable housing to suit this high demand.

Especially many large cities are showing tendencies toward immigration, declining space potential, and little housing supply. As a common market effect, supply and demand determine the price (this is true for all markets, not only for the real estate market). This leads us to the question of who can afford to live in the city. The municipalities' aim is a provision of housing for all population groups. And they try to prevent migration to suburban or rural areas, especially to other municipalities. Therefore, they can use various steering instruments and subsidy programs.

In Germany, municipalities have numerous land policy instruments at disposal to stimulate or to control development. In times of housing and land shortage, the land policy instrument of building land strategies comes to the foreground. One of these strategies is the so-called building land model. This is a continuation of urban development contracts. In the beginning, a formalized decision for a building land model has to be made. The municipal council has to pass a resolution for the building land models. The building land model represents a bundling of possible components of an urban development contract, but can municipally differ. Especially the fact that all potential planning beneficiaries have the same requirements and conditions for the development characterizes the model. Every planning beneficiary has to fulfill the same criteria. For example, this includes providing a defined portion of affordable living space, instead of building solely apartments in the high-price segment. This helps the municipalities to reach their goal, to provide a continuous supply with affordable housing.

Although the legal situation is the same, there are similarities and differences in the building land models. In a case study analysis, the limits and potentials of building land models are shown in the context of housing and land shortages as well as rising housing prices.

2 Influences and Impacts on German Housing Market

The issue of ensuring appropriate and affordable housing for all kind of inhabitants is becoming increasingly difficult. In other European countries, there are observed similar trends in urban development and increasing shortage of affordable housing. In Germany, the total population has hardly changed in recent years, but the spatial distribution has transformed. There are different types of cities that have had disparate population trends in recent years. Small municipalities and medium-sized

towns had an increase in population many years ago. Since the beginning of 2000, the trend has changed. Currently, many smaller cities, especially in the periphery, are losing population. On the contrary, large cities are experiencing an increase in population. Hamburg, Dusseldorf, Cologne, Frankfurt am Main, Stuttgart, Munich, and Berlin are fastest-growing cities in the last few years. But also smaller cities, as well as Freiburg or Munster, have a continued rise of the population since 1989 (BBSR 2017).

The question arises of where the growth is coming from and which trends are underlying it. First of all, there are three different types of migration: the internal migration within the country, the move in from other countries, and the natural movement (the births and deaths ratio). Internal migration and the move in from other countries mainly cause the population change in Germany. Also, for the migration from rural to urban areas, there are many decisive factors. Most people move in urban regions for a wider offer of higher education, the range of courses on universities, workplaces, and health (BBSR 2017). In many growing cities, there are companies with different economic sectors, e.g., on the financial sector, on services, or medium-sized companies in the automobile branch (BBSR 2012).

People who move to a city need an appropriate extent of housing. So the first influencing factor on the housing market is the increase in population. The second observed trend on the housing market is a lifestyle change. There are trends away from the traditional family housing with more than two persons per household toward singularizing with a need for one- or two-room apartments. As a result, the per capita consumption of living space is rising in comparison to the past. Furthermore, low construction activity dominates in the last years. Until the 1990s, a construction boom prevailed. From 2000, a decline in the total population was forecasted in Germany. Especially shrinking cities were partially deconstructed because the need for housing was over satisfied. During this time, only a few new social housing was built for low-budget households. Existing social housing is expiring (in Germany, social housing runs out after a contractual timeframe) (Einem 2016). However, housing is one of the basic principles of existence in Germany (“Daseinsgrundfunktion”). It can be assumed that everyone should have adequate living space at their disposal. However, the housing market, i.e., the demand and supply of adequate housing in one place, is subjected to constant change and development. Heterogeneous changes in population development and migration influence the housing market.

Figure 1 presents the social rental apartments in Germany from 2000 to 2016. In this period, the number of social housing dropped more than one million. There was a change in subsidies from the funding of the object (buildings) to the funding of the subject (individuals/persons/households). So households got financial subsidies instead of funding developers for constructing new social housing. Today, there is a lack of affordable housing due to this low construction activity, the support measures of recent years (subject promotion), and the now prevailing immigration (DiFu 2014, p. 17).

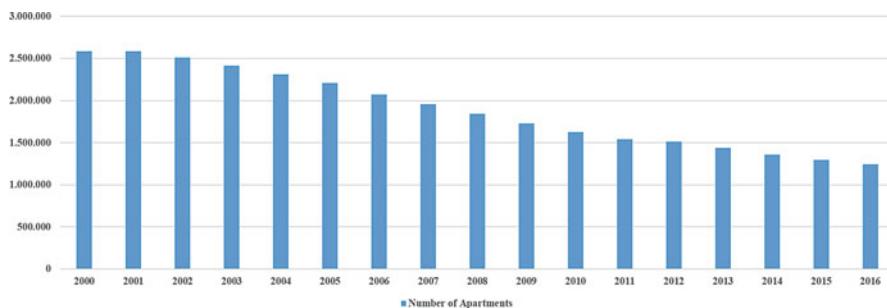


Fig. 1 Number of social rental apartments with occupancy commitment from 2000 to 2016 in Germany (based on BAG Wohnungslosenhilfe, 2017)

Since many cities lack enough space, land prices are rising. As a consequence, more and more households with medium and low incomes can no longer afford freely financed housing. Access to adequate housing is always linked to household income. Spatial segregation and gentrification of population strata are directly related to household income. In almost all urban areas, processes of spatial and social division can be observed. Thus, immigration and the current development trends create both positive aspects and diverse challenges for cities (Aehnelt et al. 2009).

Nowadays, there is a new rise in construction in large cities, so the availability of building land decreases and the already today high land values increase extremely strong through the rise of population and the reduction of land. Supply and demand determine the height of the land value. Beneath the market conditions, the transformation process and the related changes in land quality influence the land value. The land value of a parcel increases within the development process (from arable to building land). Figure 2 shows the phases of land development from arable land use to the phase of economic land use, e.g., for housing. In these land development phases, costs and benefits will be shared between the municipality and the developer (depending on the chosen urban measure). In particular, the costs for plans, permits, and social and/or technical infrastructure can be transferred to developers concerning the benefit. Only in the so-called phase of use, the investor is the only one who benefits from rental apartments (Hendricks et al. 2017, p. 259).

The development costs depend on future use. The municipalities connect various objectives with development depending on land use. Beneath the providing of affordable housing, which means lower income for the investors (loss), there is an increased demand for technical and social infrastructure and green spaces. Investors have to pay for these objectives. Also, some municipalities obligate good building standards and a special level of urban development quality. Increasing land values lead to higher development costs which cause higher housing costs. This increases the pressure, especially for weaker households with lower disposable incomes.

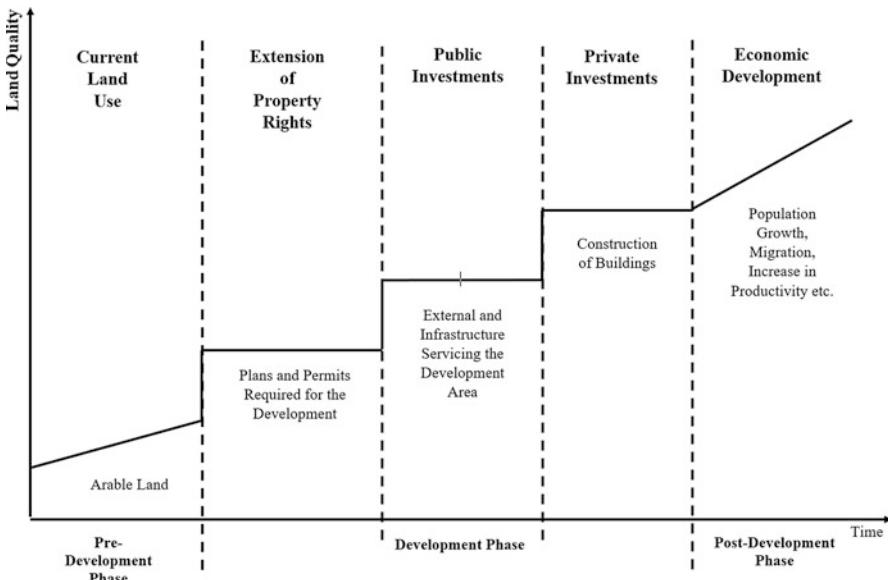


Fig. 2 Development process in Germany (based on Hendricks et al. 2017, p. 259)

3 Steering Instruments for an Urban Development

Municipalities have to provide housing and other general services through urban development, which is associated in most cases with a need for space. Urban development can be steered with financial subsidies and with legally defined land policy instruments. Municipalities can implement development through legal requirements (laws).

There are formal (legal) and informal (voluntary) instruments available. These can be support programs, guidelines, or, above all, the implementation of laws. Beneath, there are a large number of funding programs, action programs, and guidelines that complement the legal framework. The correct and appropriate use of the various instruments will become more and more important in the future. Municipalities have similar instruments at their disposal based on laws. The challenge is to sensibly use the instruments to steer sustainable urban development.

3.1 Land Policy Instruments

One of the most important laws in urban planning is the federal building code in Germany. The building code comprises the “general urban planning law” and the “special urban planning law.” It contains and regulates measures for the development of land. The building code describes regulations and procedures for

urban land use planning and the implementation of this planning. Instruments are, for example, the land readjustments, the urban contracts, or the expropriation. The “special urban planning law” regulates, e.g., an “urban redevelopment measure” or an “urban development measure.” They focus on special urban problems and are nonuniversally valid. The building land strategy with the building land model is one of the land policy instruments which is based on section 11 of the federal building code.

3.2 Financial Subsidies

Financial subsidies are distinguished according to “object subsidies” and “subject subsidies.” Construction costs of new housing are promoted with “object subsidies.” In return, the investor undertakes to build new social housing. In a lot of cities, like Berlin or Leipzig, the population declined some years ago. In these years, the vacancy rate in the residential market rose. New constructions are not needed anymore. Thus, the “subject subsidies” were preferentially being used. “Subject subsidies” mean that individual households or persons receive financial support. The most famous “subject subsidies” is the so-called housing benefit which is helpful especially in cities with the tense housing market. People with low income receive financial government support. The state pays part of the rent. Another financial incentive is the so-called construction child benefit. Since 2018, young families receive a state subsidy for the purchase of their own home per each child. Now, the number of inhabitants is rising again and only a few apartments are vacant. As a consequence, in these cities with a tense housing market, the “object subsidies” are increasingly used to create living space. Building land strategies with the building land models can raise “object subsidies.”

4 Building Land Strategies as a Land Policy Instrument for Municipalities

This chapter presents the land policy instrument of building land strategies and examines whether building land strategies are a possibility for affordable housing. Building land strategies are an extension of section 11 “urban contracts” of the federal building code. The municipality is allowed to use investors’ need for planning right to negotiate conditions. These are normally the assumption of development costs, but it could also be the obligation to make affordable housing in a portion of the building land available (and to accept a benefit loss) (Klein and Weitkamp 2016, p. 206).

Thus, section 11 allows municipalities to share the costs and charges of mobilizing land with investors. Particularly in large cities, which are contending with

population growth and housing shortages, building land strategies are a way of mobilizing affordable housing (Kötter et al. 2015, p. 143). The contractual possibilities determined in so-called building land models. The municipality decides itself for a common strategy and is required to demand the same from all investors. Contrary to the funding instruments of recent years, building land models do not support the individual but declare the creation of affordable housing as a part of the urban contract. Within the building land models, investors can obtain subsidies for the realization (Klein and Weitkamp 2016, p. 206).

Building land strategies represent a bundling of possible components of an urban contract to control the land use (Dv e.V. 2016, p. 19; Hartl 2014). Municipalities have a great potential to negotiate conditions for making a land use plan like the assumption of the planning and follow-up costs of urban development measures, for the promotion and safeguarding of the urban objectives pursued with urban land use planning or the setting of energy standards.

All agreed contractual contents have to be appropriate (Burmeister 2014, p. 19). Thus, the contract partner has prohibited the transfer of costs that are not related to the urban development measure or to which the municipality would be obliged even without the urban development measure. A practical example is the transfer of costs for the construction of a kindergarten to the planning beneficiary. This transfer of costs could only be part of the contract if the new building area results in an additional need and the existing capacities do not suffice. The two aspects are called causality principle and prohibition of coupling (Friesecke et al. 2019, p. 71).

The explicit content of the building land strategies with overwhelming costs, charges, and services varies between the municipalities. The municipalities have oriented the building land strategies to section 11 and adapted them to the needs of the respective cities. All cities have targets for mobilizing land and creating affordable housing. In some cities, urban climate and the construction of green areas are the focus of the models. Other cities have a shortage of educational institutions due to immigration. In these cities, the construction of social infrastructures is the main focus.

Looking at the decisions of the individual cities, it becomes clear that the models vary. The procedure of proving the adequacy differs. Section 11 only stipulates that the measure shall be “appropriate,” but there is not a uniform definition of that. The urban development is increasingly shifted from classical supply planning to needs-oriented land use. This fact justifies this vague legal term (Dv e.V. 2016, p. 16).

Through the application of urban contracts, municipalities can regulate the development of building land to a certain extent. The cities often define core criteria to be met (e.g., passing on development costs or affordable housing, at reduced rents or sale at subdued prices for certain population strata) and optional criteria. The scope of the optional criteria depends on the increase in land value in the area and the benefit the investor can expect (Weitkamp et al. 2017, p. 333).

Thus, it is possible to support specifying population groups. A possibility of support is a provision housing in lower price segments through the model contents, which influences a socially balanced urban development. Furthermore, the application of the model contributes to the relief of the financial budget of the

cities, since an appropriate transfer of costs to the developer is possible. Urban contracts allow the planning area to be implemented on time, which is particularly important in cities with tense housing markets and housing shortages (Friesecke et al. 2019, p. 71). Building land models replace individual case decisions and prevent lengthy planning and implementation procedures because the council and local municipality pass a fundamental resolution. The determination of a set of rules creates transparency between the contracting parties because they are already informed before the development of the area about the framework conditions. Furthermore, they know the level of costs and the increase in land value resulting from the development measure of the site (Dv e.V. 2016, p. 19).

Summarizing it could be stated that building land models always have specifications regarding:

- The scope of application
- The procedural steps
- Cost sharing
- The creation of affordable housing

The extent of content and application varies between cities and depends on land value increases. Basic principles and motivation for building land models are similar. The exact model contents and specifications like the extent, the appropriate, the procedure, the change of land value level, as well as success factors and recommendations for action of the individual cities are examined in more detail in the next sub-chapters.

5 The Research Design for the Analysis of Building Land Models

Many municipalities have worked out building land strategies in Germany. In the following, we present a case study analysis of 17 building land strategies with an in-depth study of eight cases from there. Figure 3 gives an overview of the selected cities that have had a basic decision on building land development. The compared cities were selected regarding their geographical location, their regulation contents, and the year of decision. Even though the aim was to distribute the cities over the entire federal territory, there are signs of a concentration of cities in the southern part of Germany, which results from the higher population density in southern and western Germany coupled with the negative consequences on the housing market. Above all, the building land strategies that have been passed in recent years will be examined more detailed in the following. A model from the year 2015 to 2017 may be less researched than a model from the year 1995, so the gain in knowledge may be higher. Models were selected that vary in content and, above all, deviate from the original model (Munich). Munich was the first municipality to introduce a building land model. Of the 17 case studies, the results of the cities of Berlin,

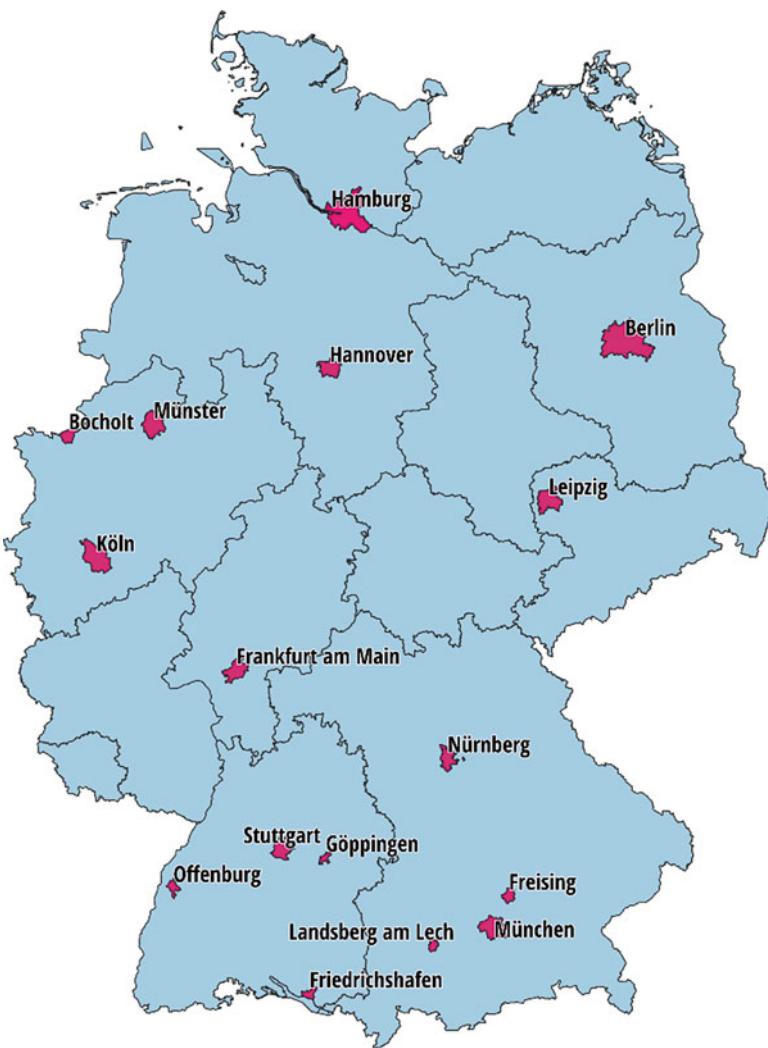


Fig. 3 Overview of case studies (Weitkamp)

Friedrichshafen, Göppingen, Hamburg, Hanover, Cologne, Leipzig, and Nuremberg are examined and compared below in an in-depth study.

Initially, research questions were developed and comparison criteria developed in line with them. All models were examined according to the following criteria:

- Decision year of the building land model
- The situation in the cities before the decision was taken
- Applicability of the model
- Urban planning aims/(general) aims

- Contents/requests/transfers of costs/affordable living space
- Adequacy/procedure
- Adjustments already made
- Land value/land value increase
- Strengths/weaknesses

The criteria and decision year of the building land model, initial situation in the cities, as well as land guideline values/land value increase were chosen to gain knowledge about the changes in soil levels. To get results regarding the success factors, the criteria of strengths and weaknesses, as well as adjustments, were chosen. Adjustments are usually made to optimize something. If the models are modifying, it seems obvious what has been maintained and in which sectors need an action. The other listed criteria, such as the applicability of the model, urban orientation/objectives, general objectives, content/requirements/transfers of costs, modeling requirements for affordable housing, adequacy, and procedures, aim to find answers regarding the content and extension of the models. The criterion of the specifications regarding affordable housing is important for the processing of the model contents on the one hand and for the issue of whether and to what extent these models influence segregation and gentrification processes on the other hand. The basic idea of the models is to create a portion of affordable housing.

The models should not only be compared based on the framework conditions and specifications. Additional knowledge should be gained on the municipal building land models, the background of the models, and knowledge of how to deal with affordable housing. Qualitative research is chosen with the method of expert interviews, as this provides new knowledge about a specific object of investigation. For example, assessments can be obtained regarding a possible relationship between a decision and a change in the land values. Personal experience reports can also be questioned. A literature search would not have provided any new knowledge in this context. To ensure the comparability of the interviews, a catalog of key questions was prepared which was the same for all experts. As the focus is on the gain of knowledge and the quality of the information, persons with special competence in this field were interviewed. The interview partners selected were exclusively experts from the administration who are involved in urban planning. No experts from other interest groups were deliberately consulted for the comparison, for example, the construction industry. Besides, the interviews were written; relevant passages were identified, divided into categories, and a content analysis carried out.

Also, the land values of a defined mean location were used to categorize the eight case studies. A location with residential use (in apartment buildings) was chosen. The categorization of the level boundaries was carried out as quartiles.¹ As the land value, the standard land values in Euro per square meter (€/sqm) are chosen. They represent land values of defined uses. Expert committees determine these

¹“Quartiles, as the name suggests, divide the fundamental distribution into four quarters. A specific quartile is, therefore, the boundary between two specific quarters of the distribution” (Lohninger 2012).

Table 1 Classification of cities according to land values (in €/sqm) in quartiles (Süring 2018)

Quartile 4	Berlin	880 €/sqm	Friedrichshafen	460 €/sqm	Quartile 2
	Hamburg	850 €/sqm	Hanover	240 €/sqm	
Quartile 3	Nuremberg	720 €/sqm	Göppingen	210 €/sqm	Quartile 1
	Cologne	570 €/sqm	Leipzig	160 €/sqm	

values. These are associations of real estate appraisers (LGLN 2016). Since land values have risen rapidly in recent years, they were used to compile the categories. Table 1 shows the classification of cities into quartiles. The top quartile (quartile 4) is defined as the cities with the highest land values, and the bottom quartile (quartile 1) is defined as the cities with the lowest land values.

The classification into quartiles allows statements to be made as to whether cities with high or low land values are acting differently. The land values are taken up concerning the criteria in the results section.

6 Results of the Case Study Analysis

6.1 Motivation to Pass Decisions

In the selected cities of Berlin, Friedrichshafen, Göppingen, Hamburg, Hanover, Cologne, Leipzig, and Nuremberg, studies and analyses were carried out in the run-up to the policy decision. For example, cities are working out city-wide studies, housing needs analyses, property market reports, or integrated urban development concepts. Table 2 shows the selected models adopted between 2011 and 2017. From this, it can be deduced that each city develops differently and that the same needs do not arise at the same time. The experts were questioned about the main drivers of decision-making. The interviews with the experts and the analysis of the interviews crystallized that it was the following motives that were decisive for a decision: population growth, low construction activity, low space potential, a high burden on household budgets, and low basic administrative structures.

Table 2 shows which city has developed a model with its primary reasons. It becomes clear that all cities have positive population trends. These are economically dynamic locations. The economic dynamics and the wide range of job and training opportunities attract (young) people to these cities. This development results in additional demand for housing space. The current population growth causes an imbalance in the housing market. In many places, the demand exceeds the supply of housing. The connection between population growth and the additional demand for housing is one of the most important aspects of the elaboration of a building land model.

Table 2 Overview of the motivation for a building land model (Stirling and Weitkamp 2019, p. 136)

Reasons for the decision on a building land model						
					Primary reason of decision	
	Land value level	Land value (€/sqm) 2016	City	Decision year	Population growth	Low construction activity
4	880	Berlin	2014	X	X	X
	850	Hamburg	2011	X	X	X
	720	Nuremberg	2017	X		
3	570	Cologne	2013	X	X	X
	460	Friedrichshafen	2017	X	X	X
	240	Hanover	2013	X		
2	210	Göppingen	2015	X	X	X
	160	Leipzig	2014	X		

The limited potential of the available space has confronted cities with several challenges in recent years. Construction activity plays an important role in providing adequate housing to meet demand. Simple and short procedural paths and times are needed to meet demand as soon as possible. The table shows that the experts from Berlin and Nuremberg in particular criticized the small basic administrative structures. The low administrative structures, such as different responsibilities and limited number of personnel, can contribute to an unnecessary postponement of planning processes. However, immigration also raises costs for cities. The realization of living space burdens the cities' household budgets. Population growth, low construction activity, and/or low space potential increase prices for building land, rents, and property in all cities. This makes it more difficult for low-income population groups to get an appropriate supply on the housing market. The issue of subsidized housing construction is gaining importance in urban planning if the demand for housing exceeds the supply. In Hanover and Göppingen, the even low construction activity, despite available space, caused rising housing prices.

The procedure of transferring costs and charges to the planning beneficiaries is not new in urban development. Previously, each planning beneficiary had to deal with individual case decisions following section 11 of the federal building code (urban contracts). This approach is not highly transparent and uniform. This leads to delays in the planning and implementation of development processes.

In summary, it can be stated that all selected cities are experiencing population growth, housing shortages, and rising land values. The consequence for low-income households is that they are unable to obtain affordable housing. There is no indication that cities such as Berlin or Hamburg have other reasons than Leipzig or Göppingen. The level of land values does not influence the reasons for a decision. Much more important is that the cities understand the developments and recognize the need for action. In this way, they can react to the developments. Then it is possible to maintain the city as a place of residence for all classes of the population. It is a good approach to create new areas through a building land model to take the pressure off the housing market. Identifying problems, developing strategies, and implementing them offer a chance of freezing the growth or maybe reducing land values in cities. The use of building land models alone is not enough to meet the needs and objectives of the city as a whole.

6.2 Correlation Between Urban Objectives and Model Content

A coherent consideration of the model contents and the general urban objectives indicate the demand for identifying needs for action. Urban objectives can be integrated into the core components of the fundamental decisions. High priority is given to simpler administrative structures, reducing the burden on budgets, expanding social and technical infrastructures, providing space, expanding subsidized and/or affordable housing, and maintaining or expanding socially mixed population structures.

First of all, the building land models have similar structures based on the legal specifications of section 11 of the federal building code. Recurring core components are:

- The definition of the scope of application
- The procedural steps
- The sharing or overwhelming of costs and burdens with/to the planning beneficiary
- The principle of appropriateness
- The creation of affordable living space

Building land models are linked to the creation of planning right, whereby residential building areas are provided with a defined proportion of affordable housing.

The provision of both subsidized and independently financed residential construction is intended to create mixed population structures. Fixed procedural steps and defined possible cost sharing guarantee uniformity and transparency. As a rule, planning and procedural costs, such as expert reports or archaeological investigations, are transferred to the planning beneficiaries. But sharing the costs of creating technical and social infrastructures also relieves the municipal's budgets.

In all building land models, the creation of new housing has the highest priority. But even with this component, the approaches are different. The comparison has shown that there are four different ways of creating the quota of affordable housing (cf. Fig. 4). Currently, Berlin, Cologne, Leipzig, Nuremberg, and Friedrichshafen refer their quota to the floor area. Hanover applies the 20% quota for subsidized housing construction to the number of residential units. In two cities, the quota is not clearly defined. In Hamburg, concept tenders are used to implement subsidized housing construction according to the existing subsidy paths. How much of subsidized housing is offered depends on the planning beneficiary. The more the investor offers, the higher the score for this aspect of his concept. Göppingen has



Fig. 4 Contents of building land models (Süring and Weitkamp 2019, p. 137)

not decided on a quota for subsidized residential construction, as the municipality has focused on preparing building sites. If looking at older building land models, it becomes clear that the requirements for housing construction mainly referred to residential units. As a result, mostly smaller apartments were produced in the subsidized segment and the planning beneficiary used the rest of the floor space for free financed residential construction. A regulation on the floor space increases the chance that apartments of different sizes will be built. Even though there is currently an increased need for one- to two-person households and this is forecast (Drixler et al. 2014, p. 12), it is important to build housing for families with low incomes. The number of people living in a household also contributes to lively and mixed neighborhoods.

Furthermore, there are differences in the implementation of the quota. In some cities, this refers to the realization of social housing in the rental segment with a commitment period. According to existing laws, a certificate of financial support for housing must be submitted for these residential units. In other cities, the planning beneficiaries can choose from various subsidy programs and variants to realize affordable housing, because different rents can contribute to a social mix. Mixing within a neighborhood or building depends on construction costs, land values, and other factors such as pressure on the housing market.

No explicit urban planning orientations can be derived from the defined contents. The creation of affordable housing is always the main reason. Other components such as social infrastructure or compensation measures have different priorities. The concrete model content (optional criteria) is negotiated between the planning beneficiaries and the municipality depending on the increase in land value and the appropriateness. The higher the increase in land value through the development of the space, the more model content can be agreed in the urban development contract (Weitkamp et al. 2017, p. 227). The requirements regarding affordable housing are dependent on the population gain and the resulting demand for living space.

Moreover, the model contents and cities are now considered concerning the land value levels. There are no significant differences between cities with very high or low land values in terms of the overall content. Irrespective of the level of land value, in all cities there are requirements regarding the scope, the procedural steps, the cost and burden sharing of the planning beneficiary, the principle of adequacy, and the creation of affordable housing. Based on the model contents, no explicit urban planning orientations can be derived. However, the focus is always on creating affordable housing, whereas other components such as social infrastructure or compensatory measures have a different status. The extent of the intervention depends on the increase in land value and the connection possibilities with appropriateness.

The quota of affordable housing differs in the models. In conjunction with the furnishing of living space at affordable prices, the floor reference values are an important indicator. The 30 percent rate is applied in cities with land value levels 4, 3, and 1. The cities in land value level 2 have lower targets. The specifications for affordable housing seem to depend on the population gain or the associated demand for housing. Older models offer different categories of prices for housing

(price-reduced housing) so that wider mass benefits. More recent models distinguish exclusively between free financed housing and social housing in the rental price segment. With this separation (free financed and social housing), the risk exists that middle-income households will be displaced (so-called threshold households). The planning beneficiaries cross-subsidize the incurred costs. As a result, the range between low-cost and more expensive rental and property prices increases. Different variants and subsidy programs, from which the planning beneficiary can choose, are a suitable possibility to get the socially mixed structures. Measuring the quota on the floor space can be a positive approach to get mixed population structures.

6.3 Application of Building Land Models

Building land models can be applied under two requirements: first, if an area has no planning rights (e.g., grassland, arable land) and should be developed to building land (therefore, a land use plan is needed) and, second, if an existing land use plan has to be changed. For both actions, the municipality is needed. An increase in the land value usually accompanies both actions (Hendricks et al. 2017, p. 259). Hamburg and Göppingen are exceptions. In Hamburg, the model is only used for municipal land. The municipality initiates a competition and the bidder with the best concept builds on the land. Göppingen is a special case because they are pursuing land banking (purchase and sale). The city of Göppingen focuses on providing space for young families.

Also, the German sustainable strategy focuses on inner developments. They have preference over outer developments. This shall prevent extreme expansion into the open spaces. Table 3 shows the variation of the scope. The specifications for the use, size, and the number of residential units can differ. Leipzig is the only municipality to use the model limited to the inner city. The increase in land value is not high enough on the edge of the city. Due to the costs incurred, the investor would not have any incentives to build.

Another issue is the usage of the land. In all selected cities, building land models are applied for areas for future residential development. Only in Nuremberg, the scope includes commercial and residential areas. However, the quota for social housing only has to be achieved for housing projects. All other requirements of the model apply to both types of use – commercial and residential.

Cities such as Leipzig, Friedrichshafen, Cologne, and Nuremberg have a limited scope. Building land models are only applied from a certain size of an area or a certain number of expected residential units. Of the selected cities, Leipzig has the lowest land values and most specifications. The building land model is only used from an area of 5000 square meters floor space or 50 residential units. If these conditions are not met, no contract between the municipality and the investor can be concluded according to the specifications of the building land model.

Table 3 also illustrates that cities of land value levels 1 to 3 have restrictions in the application. In Nuremberg, the planning beneficiary has to meet the 30%

Table 3 Scope of the building land models (Stüring 2018)

The scope of the building land models						
Land value level	Land value 2016	City	Application	Planning law	Usage	The number 1 of housing 1 units (min.) 1
4	880	Berlin	Preferred inner development	Change of existing plan, new building law	Residential	—
	850	Hamburg	Preferred inner development	For urban spaces (urban design competition/concept awards ²)	Residential	—
3	720	Nuremberg	Preferred inner development	New building law	Residential/Commercial	30
	570	Cologne	Preferred inner development	Change of existing plan, new building law	Residential	1800 sqm of floor space
2	460	Friedrichshafen	Preferred inner development	Change of existing plan, new building law	Residential	400 sqm of floor space
	240	Hanover	Preferred inner development	Change of existing plan, new building law	Residential	—
1	210	Göppingen	Preferred inner development	Land Banking (Purchase and sale of land)	Residential	—
	160	Leipzig	Only inner development	Change of existing plan, new building law	Residential	5000 sqm of floor space

quota if more than 30 terraced houses, more than 30 semidetached houses, or more than 30 residential units in multifamily housing are built as a result of the construction project. In Cologne, a minimum floor space of 1800 square meters or a minimum number of 20 residential units has to be built. In Friedrichshafen (land value level 2), a quota for the subsidized residential construction has to be met if the new floor space exceeds 400 square meters. In Leipzig, a floor space of 5000 square meters or a minimum number of 50 residential units is required in the city center. Friedrichshafen has a target floor area of 400 square meters and Cologne 1800 square meters. Friedrichshafen has a smaller restriction. Looking at the total area of the cities, it becomes clear that Friedrichshafen with an area of approximately 69 square kilometers is smaller than Cologne with an area of approximately 405 square kilometers (Stadtmarketing Friedrichshafen GmbH 2016, p. 3; Stadt Köln 2016, p. 9).

The height of land values plays a central role in the scope of the building land models. The land value categories show that the lower the land value in the city, the more extensive are the additional requirements. It is only possible to involve a planning beneficiary in costs and burdens if the land value in a city has a certain value. In cities with high land values and rising value rates, the building land model is profitable despite the additional financial costs. A building land model is a good way of controlling urban development, especially if the construction industry proves to be lucrative and space becomes scarce. But the total area of the city is also crucial. Friedrichshafen with a land value of 460 Euros per square meter for multifamily sites is in the mean of the comparable cities. Due to the size of the urban area, no high demands can be made because the model would then not be applicable.

The creation of uniform structures and transparency about the building land model play important roles. The procedures are comprehensible for the contractual partners, especially for the investors. The procedural steps are similar in compared cities. First of all, the planning beneficiary has to give his basic consent to the application of the model. Afterward, the decision to draw up the contract and the negotiations of the details of the urban development contract (in particular the optional criteria) in the individual case, which records all obligations and cost transfers of the contracting parties. Another important component is building obligation. The building land decisions describe that the buildings have to be implemented within 2–3 years (Weitkamp et al. 2017, p. 333). If the contract is breached within this period, this can have consequences for the planning beneficiary. In Göppingen, for example, the municipality has the right to purchase the land at market value (reverse transaction).

6.4 What Is Appropriate?

Adequacy is an important aspect of cost transfer. Section 11 of federal building code formulates that the costs and burdens transferred to the planning beneficiary have to be appropriate. However, a precise definition of “adequacy” is missing on the legal

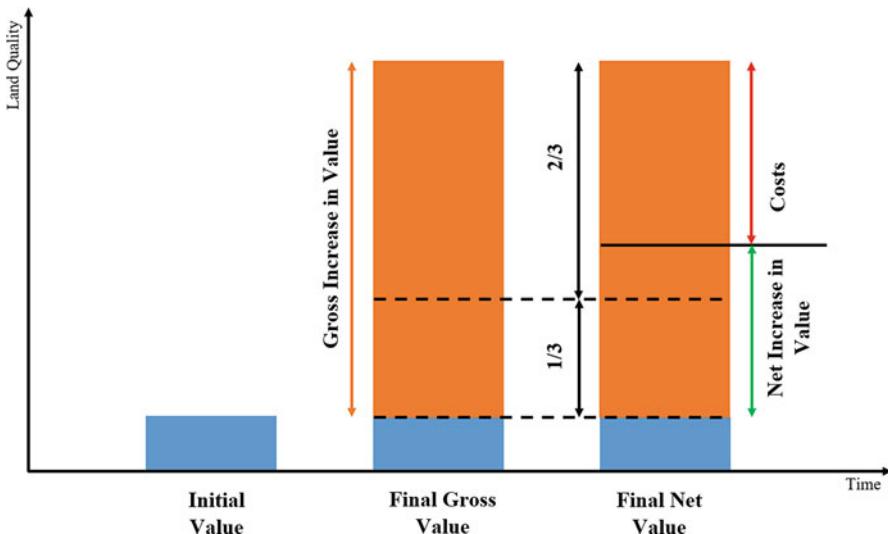


Fig. 5 Land value increase in the land development process (based on Kötter 2018, p. 153)

basis. For this reason, cities have their legal systems checked what is understood with “appropriate.” As a result, adequacy is interpreted in different ways (Hendricks et al. 2017, p. 272).

Two variants are used in practice. In the first variant, the land value increase of the plot is determined as the difference between initial and final land value. Figure 5 shows an example of the initial value, the final value, the range of land value increase, and possible public costs (social housing, infrastructure, development). From the determined value increase, two-thirds are charged as an appropriate amount. Up to this amount that planning beneficiaries have to pay for all costs. If the land value increase is not high enough and the calculation results in a low amount, the planning beneficiary also has to pay less. If the maximum of two-thirds of the increase in land value is achieved through costs for social housing and development, no further costs can be transferred. The municipality takes over the remaining costs, for example, for kindergartens or technical infrastructure. For example, the city of Friedrichshafen uses this variant.

The second option is to transfer all the development costs. In Berlin, Nuremberg, Cologne, and Leipzig, it is considered appropriate for the planning beneficiary if he has to pay all project-related costs. Therefore, urban calculations are used as an instrument to show the ratio of costs to benefits. The costs have to be related to the project. No costs may be transferred that the municipality would have without the project. These principles apply to both variants and are called the “principle of causality” and the “prohibition of coupling.” These principles are taken into account in all analyzed cities.

The Hamburg concept procedure is based on the general assumption that all specifications are appropriate. There is no independent examination in the

procedure. In the cities of Hanover and Göppingen, this cannot be clearly defined and cannot be assigned to either the first variant or the second variant. Hanover does not have a clearly defined boundary but is based on variant one (two-thirds of the increase in land value). Another possibility is an interim purchase: the municipality buys the land and develops afterward (instrument of land banking). For example, Göppingen focuses on the development of city-owned areas or aims at an urban interim purchase of areas. If a planning beneficiary develops an area, an urban development contract is concluded.

The urban development goals are closely related to the assessment of the appropriateness and the urban calculation. The adequacy is correlated with the land value increases: if these are too low, the cities themselves may have to pay for part of the costs and carry a part of the burdens of the development, since the two-thirds limit is quickly achieved. Furthermore, it is appropriate to have the planning beneficiary create public areas which are to be ceded to the municipality free of charge. A comparison of the cities showed that cities with higher land values operate in the same way as cities with lower land values. No clear statement can be made as to the reasons why the legal examinations and resolutions differ in the individual cities.

6.5 Change in Land Value Levels

In general, the land value levels in the selected cities are based on means. Within a city, the land values vary depending on the location (and on the uses). So far, it has not been possible to give precise forecasts, but only assumptions can be made about future land value development. The building land model alone is not sufficient to prove a change in the land value level. The change is influenced by various causes. Thus, the cause can be further price increases, because of too little use of the model, low construction activity, limited space potential, and cross-subsidization. Cross-subsidization means transferring the development costs and the low rental income in subsidized housing construction to the normal residential units. This results in a gap between cheap and very expensive housing. In many places, such as Berlin, many areas are being developed on existing building rights. The model cannot be applied here. Furthermore, construction activity in a city influences the value. The prices on the housing market are rising as a result of increased demand. If demand still cannot be met quickly enough, this could be one reason for prices continuing to rise.

Currently, land values are not falling despite the model. In summary, it can be concluded that construction activity and the available land potential in the city are of importance. As a result of the conditions negotiated in the urban development contract, the land values change less. It is assumed that the supply of land will have a positive effect on the housing market. Five of the cities mentioned here have adopted their models between 2014 and 2017. According to the building obligation, the planning beneficiaries have 3 years to implement the projects. As a result, it has

not yet been possible to implement enough projects, which means that no concrete conclusions can yet be drawn about land value development since the models were applied. It is to be expected that current price levels will remain unchanged for the time being or, at best, will fall a little. For this reason, cities should ensure that the costs or losses of building social housing are not transferred to the free financed housing market and that cross-subsidization takes place. If land, property, and rent prices for housing continue to rise, but the incomes of the population do not, there is a danger that the gentrification and segregation of middle-income households will be encouraged.

6.6 Success Factors and Recommendations

The building land models contain components that seem promising in terms of future urban development from the experts' point of view, though some components have proven to be less effective. These were already partially modified or will need to be modified in the future.

City representatives pursue as most common objectives:

- To achieve better and simpler administrative structures
- To relieve the financial burden on the municipality
- To expand social and technical infrastructures
- To provide land
- To expand subsidized and/or affordable housing
- To maintain or expand socially mixed population structures

The models are in use from 1 to 6 years. Progress about sustainable urban development is that during this time some goals have become success factors. A basic structure, a bundling of transparent guidelines, fair treatment of contractual partners, and planning security were created. These are important conditions to be able to continue to provide housing in line with demand and on an ongoing basis.

Many of these cities have decided on the building land models only in recent years and will still need action in the future concerning the establishment of the model and the justification of individual model contents. In the future, there must be specific information about the models to increase their acceptance among the population and the planning beneficiaries. A central office with expertise in land policy instruments would be helpful.

7 Opportunities and Limitation of Building Land Models

With the current development trends in the cities, these are forced to meet the requirements. The high level of immigration into cities, the trend of living in small apartments, the increase in the consumption of living space per person, and the

falling availability of space lead cities to use new strategies to develop housing. In many large cities, urban development trends can be identified such as housing shortages due to population gains. In contrast, construction activity has declined, especially in the low price segment. As the demand for residential space exceeds the supply, land, real estate, and rental prices have risen rapidly in recent years in major German cities and university cities. To prevent migration to the outskirts, segregation, and gentrification processes, cities and municipalities have developed building land models. This article systematizes the different building land models.

All selected building land models were examined about their content and their overall urban orientation. Besides, it was worked out whether and to what extent the building land models influence the land value levels in the cities. The comparison showed that the content of the models was similar. Which components are applied depends in part on the adequacy test and the overall urban objectives. The transfer of the costs to be paid is examined individually for the specific construction area, which is handled differently in the cities. A critical question is how the urban development processes would have developed if the cities had not elaborated and decided on building land models. A so-called zero epoch is missing here for comparison.

Furthermore, it was analyzed whether the models can help to counteract the displacement and segregation of households. The model is at least a good approach to provide residential land and housing. Besides, it has to be critically considered whether a quota that exclusively focuses on subsidized housing counteracts displacement and segregation or whether the problem of providing adequate housing is only transferred to another population group. Models that provide different variants and rents to meet the quota can help a wider mass of the population. From an urban perspective, the displacement of population strata can only be contained if sufficient space is available and built on a need-based scale.

Overall, it can be concluded that building land models ensure transparency and uniformity in dealing with planning beneficiaries. These are useful if planning law has to be created for many areas. Building gaps and covered inner areas are not included in the building land model. Here the mix of further land policy instruments is recommended, e.g., through the combination with property subsidies or interim purchase models. Without land policy control, rental and purchase prices on the real estate market will also continue to rise against the background of an increasingly growing demand for residential space.

References

- Aehnelt, R., Göbel, J., Gornig, M., & Häußermann, H. (2009). Soziale Ungleichheit und sozialräumliche Strukturen in deutschen Städten: In: BBSR (Hrsg.) Soziale Kohäsion in Städten Europas. Informationen zur Raumentwicklung. Jg. 2009, H. 6, 405–413.
- BBSR—Bundesinstitut für Bau-, Stadt- und Raumforschung (Hrsg.). (2012). Kommunale Strategien für die Versorgung einkommensschwacher und sozial benachteiligter Haushalte. http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/Sonderveroeffentlichungen/2014/DL_KommunaleStrategien.pdf?__blob=publicationFile&v=3.

- BBSR—Bundesinstitut für Bau-, Stadt- und Raumforschung (Hrsg.). (2017). Wohnungsdruck in deutschen Großstädten. http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/AnalysenKompakt/2017/ak-10-2017-dl.pdf?__blob=publicationFile&v=3.
- Burmeister, T. (2014). *Praxishandbuch Städtebauliche Verträge*. 3. Aufl. Bonn: vhw—Dienstleistung GmbH.
- DiFu—Deutsches Institut für Urbanistik. (2014). Kommunale Strategien der Wohnraumversorgung. Schaffung und Erhaltung von preisgünstigem Wohnraum. In: Difu-Berichte, Jg. 40, H. 3, p.17.
- Drixler, E., Friesecke, F., Kötter, T., Weitkamp, A., & Weiß, D. (2014). Kommunale Bodenpolitik und Baulandmodelle—Strategien für bezahlbaren Wohnraum? Eine vergleichende Analyse in deutschen Städten. (DVW e. V., Hrsg.). Augsburg: Wißner.
- Dv E.V.—Deutscher Verband für Wohnungswesen, Städtebau und Raumordnung E.V (2016). Mehr Bau-land für bezahlbaren Wohnungsbau. http://www.deutscher-verband.org/fileadmin/user_up-load/documents/BroschProzentC3ProzentBCren/Mehr_Bauland_bezahlbarer_Wohnungs-bau_DV.pdf.
- Einem, E. (2016). *Wohnen. Markt in Schieflage—Politik in Not*. Wiesbaden: Springer Fachmedien.
- Friesecke, F., Weitkamp, A., et al. (2019, unpublished). Bodenpolitik und Baulandmodelle in deutschen Städten. Strategien und Instrumente für bezahlbaren Wohnraum im Vergleich.
- Hartl, J. (2014). Maßnahmengesetz zum Baugesetzbuch 1990. BauGB-MaßnahmenG. <http://www.stadtgrenze.de/s/bbg/1990/baugh-massnahmeng-1990.htm>.
- Hendricks, A., Kalbro, T., Llorente, M., Vilmin, T., & Weitkamp, A. (2017). Public value capture of increasing property values—What are “Unearned Increments”? In E. Hepperle, R. W. Dixon-Gough, R. Mansberger, J. Paulsson, J. Hernik, & T. Kalbro (Hrsg.), Land ownership and land use development—The Integration of Past, Present, and Future in Spatial Planning and Land Management Policies (S. 257–282). Zürich: vdf Hochschulverlag. <http://vdf.ch/Land-ownership-and-land-use-development-e-book.html>.
- Klein, I., & Weitkamp, A. (2016). Wohnungswirtschaftliche Herausforderungen und das Mietrechtsnovellierungsgesetz. *Zeitschrift für Geodäsie, Geoinformation und Landmanagement*, 141(03), 206–214.
- Kötter, T. (2018). Mangel an bezahlbarem Wohnraum—Was leisten kommunale Baulandmodelle? In: VHW—Bundesverband für Wohnen und Stadtentwicklung e.V. Gemeinwohnorientierung in der Bodenpolitik, pp. 149–156.
- Kötter, T., Berend, L., Drees, A., Kropp, S., Linke, H. J., Lorig, A., et al. (2015). Land- und Immobilienmanagement—Begriffe, Handlungsfelder und Strategien. *Zeitschrift für Geodäsie, Geoinformation und Landmanagement*, 3, 136–146. <https://doi.org/10.12902/zf-0064-2015>.
- LGLN—Landesamt für Geoinformation und Landesvermessung Niedersachsen. (2016). Bodenrichtwerte für Mehrfamilienbauplätze in mittlerer Lage.
- Lohninger, H. (2012). Grundlagen der Statistik—Quartil. http://www.statistics4u.info/fundstat_germ/cc_quartile.html.
- Stadt Köln. (2016). Stadtgebiet und Flächennutzung. In: Statistisches Jahrbuch 2016—Kölner Statistische Nachrichten, Jg. 93, H.2, p. 9.
- Stadtmarketing Friedrichshafen GmbH. (2016). Zahlen, Daten, Fakten. https://www.friedrichshafen.de/fileadmin/user_upload/images_fn/Unsere_Stadt/Zahlen_Daten_Fakten/Zahlen_Daten_Fakten_2016-09.pdf.
- Süring, J. (2018). Baulandmodelle im Vergleich—Eine Strategie für bezahlbaren Wohnraum? Masterarbeit an der TU Dresden (unpublished; supervision: Weitkamp, A./Klein, I.).
- Süring, J., & Weitkamp, A. (2019). Erfolgsfaktoren von Baulandmodellen—Unterschiede und Gemeinsamkeiten der Lösungsansätze. In: Flächenmanagement und Bodenordnung (FuB). Jg. 81, H. 3, pp. 134–141.
- Weitkamp, A., Klein, I., & Friesecke, F. (2017). Strategies of developing building land in growing cities. In E. Hepperle, R. W. Dixon-Gough, R. Mansberger, J. Paulsson, J. Hernik, & T. Kalbro (Eds.), *Land ownership and land use development—The integration of past, present, and future in spatial planning and land management policies* (pp. 327–340). Zürich, vdf Hochschulverlag. <http://vdf.ch/Land-ownership-and-land-use-development-e-book.html>.

The Effect of Formal Property Rights Regime on Urban Development and Planning Methods in the Context of Post-Socialist Transformation: An Institutional Approach



Małgorzata Barbara Havel

Abstract In the majority of current institutional models, urban development is primarily viewed as a process of social interaction with the focus on informal institutional structures, strategies and personal characteristics of agents. This paper will discuss the formal ‘rules of the game’ by focusing on the property rights regime in urban development processes. The analytical model of the influence of the property rights regime on urban land development methods is presented. The paper discusses the libertarian approach to property rights as an important conceptual building block for understanding the transition in the field of urban development and planning in the post-socialist contexts.

1 Introduction

In years following 1989, the post-socialist countries have started the transitions with their laws and norms pertaining to property rights, planning, land use and urban development. At these times, the majority of existing planning theories, coming from Western European countries, were directed towards informal institutions, communicative or collaborative planning, the role of values and consensus-building and multilevel governance. These approaches did not adequately incorporate the peculiar property rights nuances that influenced the paths of urban development and planning in post-socialist countries that were undergoing the process of economic and political transition. In Western European countries, the system of private property rights and balance between the right of the individual and the right of government in urban development was already well established, although also evolving. The basic elements of spatial planning systems, including especially different approaches to the nationalization of development rights, had been established

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in the second half of the twentieth century.¹ In contrast, in transition countries the big efforts had to be directed to the formal institutions, the implementation of the protection of private property and the invention of balance between public and private rights in land in urban development processes.

It is worth noticing that, although it is not a mainstream approach in planning literature, recently more attention started to be paid to the formal ‘rules of the game’ and the property rights regime in urban development processes. The property rights approach has been applied to the analysis of land use planning and the way land and property markets operate (e.g. Buitelaar 2003; Buitelaar and Needham 2007a, 2007b; Geuting 2007; Van der Krabben and Buitelaar 2007; Lai 1997, 2002; Needham 2006; Renard 2007; Webster 2007; Webster and Lai 2003). These attempts aimed to analyse, for example, the possibility of influencing land use or achieving the existing goals of planning by changing rights in land or purposefully organizing markets in property rights.

This chapter aims to contribute to the conceptualization of the impact of the formal institutions on urban development and to present the analytical model of the influence of the property rights regime on urban land development methods, which is applicable in the context of post-socialist transformation. Property rights regime is defined as an integrated system of property rights and aspects of land use and development, which influence the balance between public and private rights in land in urban development process. The overall goal is to present the changes in the approach to property rights to land and the relation between planning and property rights as one from the explanatory variables of the outcome of the neoliberal transition in the field of urban development and planning in Poland. In the analytical model, the distribution of ‘rights and liabilities’ in the property rights regime in urban development is the central concept. Justification for studying the balance of rights can be found in the recent developments of the property rights paradigm within the new institutional economics. The corollary formulation of the Coase theorem formulated by Lawrence Wai-Chung Lai states that ‘in the real world of positive transaction costs, the choice of rights and liabilities (i.e., law, governance, institutions, contractual arrangements, coordination, the assignment of rights and liabilities, etc.) would affect the outcome and efficiency of resources’ (Lai 2007). In the following part of the paper, the background will be set up by emphasizing the importance of the mutual relationship between different levels of formal and informal rules from the institutional perspective. The next part of the paper presents the analytical model of the influence of the property rights regime on urban land development methods. These include presentation of the concept of property rights

¹The planning system in the UK introduced in 1947 remained relatively unchanged for over 30 years: ‘*Despite regular changes over the last three decades the planning system introduced in 1947 appears superficially similar to that of the second decade of the twenty-first century. Its main components, including the nationalization of development rights, local development plans, and the separation of such plans from decisions on development rights, all remain. Yet planning practice, its purpose, tools, skills and knowledge (to name but a few elements) are, in many cases, very different*’ (Allmendinger 2016, p. 16, 22).

regime as an institution and its chosen characteristics and conceptualization of urban land development process. The empirical research discusses how formal institutions of the property rights regime affect urban development and planning methods in the context of post-socialist transformation.

2 Complexity of Institutional Analysis

Nowadays, most researchers agree that ‘institutions matter’. The institutional turn has emerged, for example, in economics (Coase 1960; North 1990; Ostrom 1990; Chang 2006), planning theory (Healey 1997, 2007; Gualini 2001; Lai 2005) and property research (Healey 1992; Van der Krabben 1996; Guy and Henneberry 2000; Kauko 2002; Webster and Lai 2003; Oxley 2004; Needham 2006; Buitelaar 2007). In order to explain the concept of institutions, Douglas North (1990, p. 3) should be quoted to begin with: *‘Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction’*. These constraints refer to formal law and regulations (formal rules) and customary rules, cultural norms or standards of behaviour (informal rules) that humans devise to reduce uncertainty and control the environment (North 1990, pp. 3–5). Institutions emerge, evolve and interact with organizational arrangements that support production and exchange and therefore influence economy’s performance (Menard and Shirley 2008, pp. 1–3). Organizational arrangements refer to different modes of governance including: *‘(i) markets, firms, and the various combination of forms that economic actors develop to facilitate transactions and (ii) contractual agreements that provide a framework for organizing activities, as well as (iii) the behavioural traits that underline the arrangement chosen’* (Menard and Shirley 2008, p. 1). However, there is no one accepted definition of an institution. The definition of institutions has been extended to also include organizational entities, procedural devices, regulatory frameworks and also markets (Williamson 2000; Hodgson 2004, p. 44).

There are different mutually connected levels and hierarchy of institutions: mainly informal institutions related to the social structure of the society (level 1), institutions related to the rules of the game (level 2), institutions related to the play of the game (level 3) and institutions related to the allocation mechanisms (level 4) (Williamson 2000) (see Table 1). Different levels are interconnected in such a way that the higher-level institutions impose constraints on the lower levels; on the other hand, the lower-level institutions in turn exert a certain influence on the higher levels. In institutional analysis we cannot hold constant other institutions as all rules are nested in another set of rules at several levels that define how the first set of rules can be changed (Ostrom 1990, p. 51). First level institutions of informal social rules dependent on cultural factors, belief systems and values are seen as exogenous to the economic system. Second level institutions, which contain mostly formal institutions, define and enforce property rights. Third level institutions relate to governance. The fourth level of institutions determines the resource allocation

Table 1 Classification of institutions

Classification criteria of institutions	Categories	Examples	Comments from Jütting (2003) and Williamson (2000) on evidence of impact of institutions on development outcome
The degree of formality	Formal	Constitutions, laws, property rights, charters, by-laws, regulations	Informal institutions are more important in poor countries where formal institutions are less developed. They substitute for formal institutions. The same formal rules and constraints imposed on different societies produce different outcomes
	Informal	Extensions, elaborations and modifications of formal rules, socially sanctioned norms of behaviour (customs, taboos and traditions) and internally enforced standards of conduct	Informal rules are more difficult to change
Different levels of hierarchy	Level 1— institutions related to the social structure of the society	Mainly informal institutions such as traditions, social norms, customs. Exogenous. Very long horizon of frequency of change, but some may change also in times of shock/crisis	Define the way a society conducts/regulates itself. Date back many centuries. The most important level for people in developing countries. The path of change is rather slow or even non-existent Religion and basic conception of the reality
	Level 2— institutions related to rules of the game	Mainly formal rules defining property rights and the judiciary system. Exogenous or endogenous. Long horizon (10–1000 years)	Define the overall institutional environment
	Level 3— institutions related to the play of the game	Rules defining the governance, private structure of a country and contractual relationships, e.g. business contracts, ordering. Endogenous. Midterm horizon (1–10 years)	Lead to the building of organizations
	Level 4— institutions related to the allocation mechanisms	Rules related to resource allocation, e.g. capital flow controls, trade flow regimes, social security systems. Endogenous. Short-term horizon of change	Adjustment to prices and outputs, incentive alignments. These rules are easy to change, and they have an impact on resource allocation, employment, the social security system, etc.

Source: Author's presentation of various ways of classifying institutions based on Jütting (2003) and Williamson (2000)

mechanisms. Institutions from the levels two to four are usually endogenous to the economic system, generated therefore within the system and are the subject of change as a result of political or judicial decisions. They have a relatively shorter time span to change in comparison to informal institutions, which take long time to change, or sometimes it is even impossible to change them (North 1990, p. 6). For policy makers aiming to reform any institutional set-ups, the existence of different levels of institutions with different time horizons of change should be studied carefully (Williamson 2000; Jüting 2003).

Institutions matter in practice of urban development, but still there is a need for more guidance in identifying which features and to what extent influence the process and its outcome. This paper tries to further conceptualize how the evolvement of formal institutional arrangement in relation to property rights delineation by land use regulation supports the certain modes of the governance of urban development processes.

3 Property Rights Regime as an Institution in Urban Development

Property rights are significant instruments in society helping people to deal with each other and direct competition over scarce resources (Demsetz 1967). In the common understanding property rights constitute a typical example of an institution: '*Property rights are rules and therefore according to the usual definition, institutions*' (Buitelaar and Needham 2007a). There is no consensus if the degree to which ownership is established over a commodity's separate attributes is naturally changing towards economic efficiency through the influence of market forces (Demsetz 1967) or if it depends on the cost of creating and policing contracts that establish that ownership—that is, transaction costs—or a political power (Libecap 1989) or the process of social creation (Needham 2006) and/or path dependency (North 1990). However, property rights theory gives a clear point that many different rights attached to one piece of land and distribution of these rights matter for efficiency outcomes.

In practice there is a broad set of different property rights relations Davy (2012). A system of property rights is, for example, described as 'the set of economic and social relations defining the position of each individual with respect to the utilization of scarce resources' (Furubotn and Pejovich 1972, p. 1139). Property rights regime is defined here as an integrated system of property rights and aspects of land use and development, which influence the balance between public and private rights in land in urban development process. Property rights regime includes both legal and conventional rules in relation to land. Conventional aspects are included in the model because property rights are not always legally enforced but include various rights grounded in conventions, culture, relationships and many other (sociological) elements. It is impossible to discuss one without referring to another.

Table 2 The characteristics of property rights regime as an institution in urban development process

Legal and conventional aspects of property rights
- The scope and definition of property rights, philosophy of existence of property rights in society
Legal and conventional aspects of land use and development
- The distribution of development rights (the right to develop)
- The distribution of the economic rewards and costs in land use and development decisions (the economic right in urban land development)

This paper further proposes to distinguish characteristic of property rights regime in the international context in order to create the framework for empirical investigation of urban development and planning methods in country in transition (Table 2). There are two main characteristics: (1) legal and conventional aspects of property rights and (2) legal and conventional aspects of land use and development (Havel 2014). In an international context, there are differences in property rights regimes in relation to legal families (e.g. German civil law, French civil law, Scandinavian civil law and English common law), and they are manifested in how property rights are defined (Macfarlane 1998, pp. 111–112). This relates in the proposed conceptualization to ‘the legal and conventional aspects of property rights’. There are also differences in relation to how the aspects of land use and development define a boundary in the fundamental right of property (the legal and conventional aspects of land use and development) (Needham 2006). Land use and planning law plays an important role in the definition of balance between public and private rights in land (a balance between property rights and the public interest). It delineates the property rights defining the scope of possible interferences with private property.

Within the second characteristics of the property rights regime, the explanatory variables were identified, which explain the balance between property rights and the public interest in urban development. These characteristics are inherent within any land use regulations system and can be extended further. The two selected variables were considered especially essential for establishing the new legal framework within which the land market is taking place in countries building the new planning system from scratch. The explanatory variables concern, for example, the right to develop (the distribution of development rights) and distribution of the economic rewards and costs in land use and development decisions (the economic right in urban land development).

In urban development process, the composition of property rights regime defines different land development structures, which create regulatory, cooperative or market regimes within which the different coordination mechanisms are dominant (Table 3). Regulatory regime relates to hierarchy governance and imposed rules as a coordination mechanism. Cooperative regime relates to network governance and trust as a coordination mechanism. Market regime relates to market governance and price as a coordination mechanism.

Table 3 The property rights regime in urban development. The relation between property rights regime, governance structure and coordination mechanism

	Urban development structures		
	Regulatory regime	Cooperative regime	Market regime
Governance modes/ coordination mechanism	Hierarchy governance	Networks governance	Market governance
Imposed rules	X		
Trust		X	
Price			X

The property rights regime can be a combination of three different governance structures in different subfields of urban development (e.g. urban regeneration or social housing development). Within each structure all coordination mechanisms are possible. However, for the market sub-regime, the price is the dominant coordination mechanism. For the hierarchy regime the imposed rules are the main coordination mechanism. For the network regime the trust is the main coordination mechanism. The next part of the paper implements further the governance concepts in conceptualization of methods of urban development and planning.

4 Conceptualization of Urban Development and Planning Methods

No particular model can be fully representative for such a complex process like urban development. However, in order to gain an understanding of the effect of the property rights regime on urban development and planning methods in transition economies, the process, which is the subject of consideration, should be conceptualized. The proposed conceptualization emphasizes the ownership responsibility during the process and is taking into consideration the participation of developers in the planning process (Table 4).²

In the proposed model there are three categories in relation to the ownership responsibility during the process: (1) small landowners who perform some development activity, usually building their own house (it is called single development), (2) professional developers who take on the intermediary function and acquire a big area of land for the implementation of the project (private area development) and

²For the conceptualization of urban land development process, two different models were used as a starting point: Dransfeld and Voss (1993) and Kalbro (2000). According to Dransfeld and Voss (1993), the essential distinguishing feature between different types of land development processes is who the actual collector of the land is. According to Kalbro (2000) the development process can differ depending on land ownership (private or public), and it also depends on the role of the owner in the planning process.

Table 4 Conceptualization of urban development and planning methods

	Active participation in land use planning		
	Municipality	Cooperation Municipality and private developer	Non-planning regime Development without plan
	Hierarchy governance	Networks governance	Market governance
Single development	Case 1	Case 2	Case 3
Private area development	Case 4	Case 5	Case 6
Public area development	Case 7	Case 8	Case 9

(3) public area development which refers to the situation when the local authority, as a developer, buys the whole building area, builds streets and other utilities and then disposes of it to building developers. Planning is categorized in three lines: conducted by the public sector, the public and private sectors together and the non-planning regime, which refers to urban development without plan. The third column may refer to the so-called, in British literature, the non-plan regime, which was created in the UK by the Thatcher government in order to encourage private development (Ratcliffe & Stubbs 1996, p. 165). The meaning of that column, however, is wider, including also the situations, which are not intended purposefully by land policy.

The planning lines are not purely independent. Rather, we should think of them as forming the scale of planning practices offered by the planning system. Planning lines can also be related to the concepts of the governance of places in urban areas (Healey 2007). The first column represents the strong hierarchical governance system, which relates to the planning thought and practice dominant till the 1980s. This approach was very often criticized for the simplified physical view of cities, in which place qualities and connectivity were understood through the physical form of buildings and urban structure (Healey 2007, p. 3). Second column refers to the trend of collaborative and communicative planning theory—a common trend in Western European countries since the 1980s. Finally, the last column refers to phenomena, which is observed in post-socialist country undergoing the process of economic transition, where the development escaped from traditionally understood forms of planning (also as negative reaction to all kinds of planning, after years of planned economy), and it is not yet a form of cooperation. This line of development could refer to a market governance system. With that being said, it will be further argued that the actual distribution of rights and liabilities within the property rights regime facilitates certain urban development and planning method to occur. The following empirical part of the paper investigates how the theoretical ideas can be operationalized and tested in practice and how the property rights regimes determine the urban development structure through the definition of balance in rights in Poland.

5 Introduction to the Polish Case Study

Poland is an interesting case to look at due to the profound changes in the policy environment in which the land and property market operate—a transition to a socialist command style economy after World War II, followed by a transition back to a market-based criteria in the economy in the years following 1989. The transition in Poland was implemented in the form of '*neoliberal strategy of the modernization of the economy*' (Jasiecki 2013, p. 139). As opposed to Western European countries, where neoliberal strategy was mediated or filtrated within the existing institutional structures of evolving, but already well-established planning systems, it was introduced by the rapid, large-scale, top-down changes of the rules in the economy (Jasiecki 2013, p. 139). It was then transmitted—although at different times, extent and points of resistance—to other areas or policy fields of social and economic life (Jasiecki 2013, pp. 139–140), including planning and urban development.

After the demise of the communist regime, a lot of changes took place in relation to the field of spatial administration. Poland decentralized while reconstituting in 1990 its local self-government at the municipal level. Municipalities become responsible in areas such as spatial planning, property management, environmental protection, nature conservation and water management. At the beginning of the 1990s, the planning documents originating from the socialistic times were exposed to the new economic and political conditions. These plans assumed that the main investor was the Polish state, not the private companies. The general character of former plans limited their control function, making it impossible to control the supply of land for investment and also the same the principles of spatial order, architectural and landscape values (Staniszkis 1995). The content of plans was legally binding, i.e. provided base for issuing a building permit. The majority of international large-scale commercial real estate investments in the 1990s and at the beginning of 2000s occurred based on these plans (valid in majority till 2004). There was no discussion about the impact of the development scheme, the cost of urban infrastructure and especially about the privatization of the benefits of development processes. Lorens (2012) argues that '*the new political doctrine of neo-liberalism led towards creation of the unusual in the highly-developed countries system of acceptance to any development that occurred and enabling the almost every investor to realize his/her development concept*'. It was the chosen paths of leaving the idea of communism.

According to the presently binding Land Use Planning and Development Act of 2003 (hereinafter referred to as LUPDA 2003), the spatial planning system is managed at the three levels of the state, the regions and the municipalities. On each level, planning documents of differing scope and sphere are elaborated. The primary instruments of spatial policy are local spatial plans adopted by the municipalities.

6 Legal and Conventional Aspects of Property Rights

6.1 *The Doctrine of ‘Holy Property Rights’ and the Primacy of Property Rights Over the Public Interest in the Polish Jurisprudence*

After the demise of the communist regime, the ideology of private property was an important underlying factor for the path to transition. Land and property ownership have been identified as prerequisites for economic development (Bromley 2000). It referred to the doctrine of the so-called property rights school and the Washington consensus. In this atmosphere in the 1990s, the protection of private property rights and the right to the value of land became fundamental. The procedure of safeguarding property rights was affirmed by a provision of the Constitution of 1989. Furthermore, the Constitution of the Republic of Poland of April 2, 1997, confirmed that the right of ownership could only be limited by means of a statute and only if it did not violate the substance of such right. Article 21 of the Constitution of the Republic (1997) provides:

- ‘1. *The Republic of Poland shall protect ownership and the right of succession.*
- ‘2. *Expropriation may be allowed solely for public purposes and for just compensation’.*

Article 64 provides:

- ‘1. *Everyone shall have the right to ownership, other property rights and the right of succession.*
- ‘2. *Everyone, on an equal basis, shall receive legal protection regarding ownership, other property rights and the right of succession.*
- ‘3. *The right of ownership may only be limited by means of a statute and only to the extend that it does not violate the substance of such right’.*

However, the Polish jurisprudence and the doctrine of property rights are definitely different from the modern approach to property rights in European countries (Izdebski 2013, pp. 143–150). The main difference lies in treating property rights as absolute right with unlimited scope. Any interference with the right to property, and in particular interference in the field of planning and spatial planning law, is an exception to this rule. The concept of ownership in Polish legal standards maintains the myth of the ‘holy’ property right and the primacy of property rights over the public interest and spatial order (Izdebski 2013, pp. 151–154).

Also, for people after years of communism, the new democracy and private property were one and the same thing. The state intervention in private property was considered an intrusion associated with the former regime. Also ‘planning’ had a pejorative meaning connected to command market economy and state planning processes.

6.2 The Complicated Issue of Poland's Restitution of Property and Characteristics of Post-Socialist Property Relations

After World War II, Poland avoided the total nationalization of land with the exception of Warsaw, where land was confiscated to rebuild the new socialist city. However, the nationalization of industry and agriculture reform causes the expropriation of big private ownership from all Polish citizens (Havel 2016). Therefore, the debate about property rights restitution was very significant at the beginning of the transition (Załęczna and Havel 2008). In the 1990s there were a number of bills concerned with reprivatization and compensation proposed in Poland. However, none gained the approval of the Parliament. Today there is still a lack of the general restitution law necessary to return property to the former owners, their legal successor, or to compensate them for it on a large scale. The solutions to the restitution of property lost by Jews during the war are also unregulated. In a process called 'small restitution', all owners or their legal successors can regain their former property by virtue of civil and administrative courts' verdicts. In Warsaw thousands of properties were returned to heirs of former owners. Many people get back their buildings, but currently there is ongoing investigation on several cases. It constitutes the so-called restitution scandal. For a long time, city activists and journalists were trying to make the public aware of the activities of restitution dealers who are buying the claims, the misconducts and corruption around the processes, the need of support for people evicted from their apartments after 'small restitution', the lack of data and solution to the problem, etc. The Commission for the Reprivatisation of Warsaw Real Estates was established by the current government on the basis of the Act of 9 March 2017 on special principles for the legal consequences of reprivatization decisions regarding Warsaw real estate, issued in violation of the law. The commission's task is to clarify deficiencies in the activities of authorities and persons conducting proceedings in the issue of reprivatization decisions regarding Warsaw real estate.

The post-socialist properties in rural settings are characterized by Verdery (1999, p. 55) as 'fuzzy' in the sense that they '*lack of routinized rules and crystallized practice of exclusion and inclusion*'. It is similar in urban situation due to unsolved problem of restitution of property rights. Neoliberal property notions of private property '*emphasize rights (entitlement) and obligations (accountability), whose subject are normatively individuals (physical or jural) exercising exclusive rights*' (Sturgeon and Sikor 2004). It differs from practice in post-socialist context. In Eastern Europe contrary to advice of World Bank economists, multiple forms of property and markets emerged, non-corresponding to Western notions of 'free' markets and neoliberal notion of exclusive private property. Empirical studies produced new understanding of 'fuzzy' property rights (Verdery 1996, 1999) (in the sense that they lack clarity of borders, owners and exclusion) and identified ambiguity (in relation to existing contestations over single resource, which complicate the assessment of rights and obligations) as a key feature of post-socialist property relations in Europe (Stark 1996; Lampland 2002; Sturgeon and Sikor 2004). '*The*

contestations over single resources, overlapping rights, blurred boundaries between private and public, different meanings attributed to resources by different actors and conflicting visions of the landscape' in sum characterizes the ambiguity of post-socialist property rights relations (Sturgeon and Sikor 2004).

7 Legal and Conventional Aspects of Land Use and Development

7.1 *Distribution of Development Rights: Everybody Has the Right to Develop*

The first law concerning spatial planning and development—the Act on Spatial Development of 1994—came out to a large extent from the doctrinal assumption that the right to develop is an element of property rights, while planning regulations should be considered as a factor limiting the use of these rights (Izdebski 2013, p. 128). The Land Use Planning and Development Act of 2003 contains a formulation in Art. 6.2.1, which is sometimes interpreted as granting the right of ownership of a special role and special significance by recognizing that it includes the freedom to decide on the type of spatial development of real estate, including the freedom of building, which can only be limited in accordance with constitutional rules for the admissibility of restricting the right of ownership: ‘everyone has the right to develop the land, to which he has a legal title, in accordance with the conditions set out in the local spatial development plan, or the decision on land development conditions, if it does not violate protected by law the public interest and the third parties interest’. The right to develop is equated with the right of ownership.

Local plans still cover only a small portion of the country’s area. Everybody can apply for the decision on the conditions of land development, and it is issued when all of the following conditions are met:

- (1) at least one plot in the neighbourhood that is accessible from the same public road must be developed in such a way as to enable the requirements to be laid down for the new development as regards the continuation of functions, parameters, features and indicators of the development and land use as well as dimensions and architectural form of buildings and facilities, the building line and the building density (this is the so-called good neighbourhood principle);
- (2) the land must have access to a public road;
- (3) the existing or planned infrastructure must be sufficient for the purposes of the project concerned;
- (4) no permission is required for removal of land from agricultural or forestry use;
- (5) the decision is compliant with other specific regulations (e.g. the Act on Environmental Protection, the Act on the Protection of Forests and Agricultural Land, the Act on Historical Monuments Protection) (Art. 61.1 LUDPA).

These conditions are called ‘good neighbourhood principle’; however, very broadly interpreted or overused interpretation of it leads very often to the intensification of urban density parameters. In addition, application for the decision on the conditions of land development does not need to be consistent with any spatial plans at the upper level of the planning system. The areas designed in upper-level plans for public spaces, green corridors for the city, parks, etc., can be built up based on this administrative decision and this is what actually happens.

7.2 Distribution of the Economic Rewards and Costs: Extensive Compensation Rights for Planning Injury and Limited Use of Value Capture Mechanisms

The economic right in land development process relates to different partial legal rights that define who the residual claimants are over the development value is and who pays the cost associated with the development process and how compensation for the interference with the property rights is provided. Costs of land development include the cost of providing services essential for building sites to be developed, like technical infrastructure, open spaces and green areas (primary infrastructure) and the cost of connecting the development site to the social infrastructure network of public services, e.g., day care, schools, hospitals or museums (secondary infrastructure). It includes also the cost of planning work as well as the costs of compensations for the loss of value that occurs due to new adopted plans. In Poland, all these costs should be covered by the municipality. The role of the municipality is to provide urban infrastructure like municipal streets, technical infrastructure, open spaces and green areas and to connect the development site to the infrastructure network of public services like day care and some schools. Motorways, the national roads network, railways and power remain the responsibility of the central government (Ners 2007). Only in case of public investments of national, regional or county importance the cost to draw up of the local plan is covered respectively from the budget of the state, region or county. The private developers are not required by law to finance the spatial plans.

On the other hand, the use of public value capture instruments is very limited, and the compensations are very broad. Current planning system largely neglects how the costs of providing urban infrastructure and services are socialized and how the benefits of development processes are privatized (Gdesz 2011, 2012). In North America and Western Europe, the idea of public value capture contains a plethora of instruments, e.g. ‘exactions’ and ‘impact fees’ in the USA, ‘development charges’ in Canada and ‘planning gain’ and ‘planning obligations’ in the UK (Alterman 2012). In relation to value capture in Poland, there are mainly two mechanisms: planning fees (*renta planistyczna*) and betterment charges (*opłaty adiaceńskie*). First instruments are largely non-operational. It is mainly because planning fee might be charged only in cases where the owner sells the property within 5 years

from the date when the local plan or its revision came into force. The use of betterment levy is also limited as it can be charged only after technical infrastructure is built and in general municipalities are reluctant to use this instrument due to legal and social problems (see more in Havel 2017).

The compensation rights for value decline that occurs due to new adopted plans and especially compensations for areas designated in local plans for public roads are very broad and have become a significant financial burden on local government (Havel 2017; Alterman 2010; Gdesz 2010). Compensation includes the rise in land value due to earlier planning decisions and it relates often to the value of building land. Most municipalities do not have funds to pay the compensation. Consequently, the planning activities are seriously hindered. Many Polish cities are faced with a dilemma: to prepare local land use plans and be exposed to the immediate financial consequences of their adoption, or to protect their budget against these costs and at the same time give up control of the development of the city and agree to chaos in space. In order to avoid excessive financial consequences of the local plan, the cities eliminate or minimize design solutions, which require compensation. It can take form in the limitation on separation of plots for public roads, resignation of designing public spaces and the choice of inferior quality design of the area. The easiest way to avoid compensation claims is, in many cases, to suspend the work on local planning. Then, development takes place based on ad hoc decisions on the condition of land development (discussed above).

8 Urban Development Without Land Use Plans Based Only on Administrative Decisions: A Non-planning Regime and Market Governance Model

The most characteristic and predominant urban development and planning methods are represented by the third column and, in particular, single development—Case 3 (Table 5). Polish municipalities do not pursue an active land policy in the sense of acquiring the land, planning and putting in an infrastructure and then disposing ready plots to building developers, as it would be represented by Case

Table 5 Conceptualization of urban development and planning methods

	Active participation in land use planning		
	Municipality	Cooperation Municipality and private developer	Non-planning regime Development without plan
	Hierarchy governance	Networks governance	Market governance
Single development	Case 1	Case 2	Case 3
Private area development	Case 4	Case 5	Case 6
Public area development	Case 7	Case 8	Case 9

7 (Jędraszko 2005, p. 77). Urban development follows the model of the so-called single development, i.e. the process of urban development is usually undertaken on a case-by-case basis. Land remains the property of various old or intermediate owners (developers), and public authorities are responsible for public utilities to be built up. The private area development model, in a sense of developing a bigger area constituting a part of the city district, is possible (e.g. Marina Mokotów or Miasteczko Wilanów in Warsaw), but it can be considered rather as an exception.

Furthermore, private developers and landowners are able to implement their investments project in areas with local spatial development plans (Case 1) or without local spatial development plans based on the decision on land development conditions (Case 3). In relation to column two, the nature of public participation in the field of planning is very formal, and although the situation in this respect is improving very fast, still cooperation and coordination between different actors and their active involvement in planning by securing urban development agreements require the development of new planning skills, methods and knowledge by planning professionals. Planning is the so-called own task of the municipality. There are no regulations concerning cooperation in financing the spatial plan and land use agreements in spatial planning law. However, sometimes some informal cooperation in achieving the goal of area development is possible. The model of cooperation and coordination based on agreements between private and public sector in urban development in Poland is an emerging trend (Case 2 and column two in the model).

Municipality has a planning authority and can elaborate the local spatial development plan (column one—hierarchy governance). However, the number of enacted local plans is unsatisfactory and the municipal planning activities remain at a low level. At the end of 2004, local plans covered 17.2% of the country; in 2010, 26.4%; and a year later, 27.2%; in 2012 this rate reached 27.9% (Śleszyński 2014). The introduction of the obligation to compensate for planning injuries was one of the important reasons for the low activity of municipalities in this field (Izdebski 2013, p. 128). The costs of purchase of land for public roads and other public facilities provided for in the plan, as well as costs of covering losses resulting from the decrease in the value of real estate in connection with the adoption or change of the plan, constitute a significant burden for the municipality. However, the content of the existing planning documents might also be doubtful, in particular, because those documents designated a very large area of municipalities for housing. With lower rates of population density, this means the possibility of settlement for about 200 million inhabitants (Śleszyński 2014). Poland has currently 38.5 million inhabitants (CSO 2015). It may cause a consequent deepening of the already excessive urban sprawl, as well as the generation of the cost of urban infrastructure (Śleszyński 2014).

If, therefore, the municipality does not adopt a local spatial development plan for a specific area, in which it determines the land use and development principles, it gives up its powers, doctrinally referred to as planning authority, and the urban development will follow the line of planning in third column—i.e. the non-planning regime. The decisions on land development conditions are not a planning instrument. It expresses the freedom to decide on the type of spatial development of

real estate. The number of decisions on land development conditions in comparison with the number of building permits shows that investment activities in areas with no land use plan have become a norm, and although the number of decisions on land development conditions for several years systematically drops, it still accounts for around half of all investments, especially in residential construction (Śleszyński 2014). This makes column three and Case 3 the predominant way urban development process is taking place in Poland.

It can be argued that the distribution of rights and liabilities given by the property rights regime directs the methods of urban development in Poland towards a third line of non-planning regime and the market governance. It encourages private landowners to act in the urban land market by giving them the right to develop and limiting the enforcement possibilities in relation to planning and development of the local authorities due to very high compensation rights. In addition, the balance of rights in relation to value capture and compensation is set very much in favour of private developers and landowners. The control function over urban development in such a situation is very limited. The system of issuing the decisions on conditions of site development was criticized as the source of many negative phenomena in city development (a total chaos and lack of spatial order in the developed areas, usually lacking public spaces, basic social infrastructure and services, green areas, scheduled infrastructure roads and other technical support and lack of landscape protection) (Jędraszko 2005; Havel 2009; Tölle 2014). This model, without planning coordination, favours the dispersion of buildings and extensive use of space, causing losses of valuable natural areas in cities and their surroundings. The effects of such legal standards in relation to property rights regime mean essentially the resignation of public authorities from the possibility of shaping of places and planning cities.

Relations between planning law and the protection of property rights have an important role in urban development. They affect the possibilities of shaping spatial order and development in accordance with the principles of sustainable development, which is the goal of planning. We can see that strong property rights can be an obstacle to the implementation of spatial planning objectives by placing the primacy of property rights above the public interest.

9 The Purest, Libertarian Form of ‘Actually Existing Neoliberalism’ in the Field of Urban Development

Property rights approach can add to the understanding of the urban development in Poland under the new version of capitalism, following the chosen path of the neoliberalization of the economy. Private property rights are an essential component of the neoliberal philosophy. It constituted the doctrine of the so-called ‘property rights’ school, where land and property ownership has been identified as a prerequisite for economic development. This philosophy influenced the development path of the once-socialist countries of East Central Europe through exerted pressure of

the US government, along with the International Monetary Fund and the World Bank to adopt reforms in relation to the property rights as a part of the so-called Washington consensus. The political and social discourse regarding the concept of ‘holy’ private ownership as an element of neoliberal modernization of the economy created often naive misunderstanding that private property is about rights but not about responsibilities. The advantages of private property were emphasized by economic advisors and clear to all. However, the need to constrain the behaviour of owners with regard to property rights was not at all evident for policy makers and the society.

Neoliberalism does not follow a clearly predetermined pathway; rather it is ‘*inchoate and experimental*’ (Allmendinger 2016, p. 10). There is a consensus in theorization of neoliberalization that there is no single, *one-size-fits-all* neoliberalism; rather, there is a myriad of *actually existing neoliberalisms* (Brenner and Theodore 2002) or a process of *neoliberalization* (Peck and Tickel 2002) or a *variegated neoliberalization* (Brenner et al. 2010).

The examples of urban development cases in non-planning regime can be considered as the manifestation of *actually existing neoliberalisms* in the field of planning and urban development. This ideology undergoes deep modifications as it meets post-socialist conditions, especially in relation to property rights. The classical liberal conception of private property rights with their roots in Locke’s and Bentham’s thinking had considered and defended property rights as one of the fundamental individual rights—‘*Property must be secured or liberty cannot exist*’ (John Adams cited in Jacobs 2009). However, even then it appeared to view as legitimate the public’s right to create, recreate, take away and regulate property as it best served public purpose. For example, Locke in his theory of consent supports this perspective: ‘*Every man, by consenting with others to make one body politic under one government, puts himself under an obligation to everyone of that society, to submit to the determination of the majority, and to be concluded by it*’ (Locke, cited in Alexander and Peñalver 2012, p. 43) and ‘*For it would be a direct contradiction for anyone to enter into society with others for the securing and regulating of property, and yet to suppose his land, whose property is to be regulated by laws of society, should be exempt from the jurisdiction of that government to which he himself, and the property of the land, is subject*’ (Locke, cited in Jacobs 2009, p. 55).

Also, as shown in the paper of Lai (2002), pro-market theorists ‘*have consciously or casually made concessions and even outright endorsement of the social need for planning intervention in the land market*’. Lai (2002) examined the leading works of famous libertarian scholars, namely, Mundell’s *Man and Economics*; Popper’s *All Life Is Problem Solving*; Hayek’s *The Constitution of Liberty*; Nozick’s *Anarchy, State, and Utopia*; Friedman and Friedman’s *Free to Choose*; and Coase’s *The Problem of Social Cost*, with a focus on pollution as a theoretical origin for government planning intervention. Libertarian scholars support government control of pollution by various means that involve the government (see Lai 2002). Also, as Jacobs (2009) puts it: ‘*In the last 100 years the United States has appeared to move away from a view of property rights as integral and central to liberty and democracy*.

Instead, it appears that government has been allowed ever-increasing authority to intrude upon, reshape, and take away property without respecting the protections afforded by the Constitution'. (Jacobs 2009, p. 59). Property rights regime in Poland rather follows the contemporary Lockean libertarians (unlike Locke as explained above), since private property rights must be powerful enough to constrain the planning even when the local authority acts with the consent of the majority.

Finally, more general implications can be drawn out in respect to the institutional approach mentioned earlier in the text. New institutional economists indicate that if there is a problem of externalities the property rights are not adequately specified, as a particular way in which the rights are allocated between the parties is important for the economic outcome. Could, therefore, changes in property rights regime in urban development be used as an instrument for better achieving goals of land use planning? For sure, changes in an approach to property rights would be essential for spatial order in urban development and securing the possibility to adapt to spatial dynamics in a manner envisaged by the sustainable cities discussion. The property rights regime influences the property development process and consequentially the quality of the built environment itself.

References

- Alexander, G. S., & Peñalver, E. M. (2012). *An introduction to property theory*. Cambridge University Press.
- Allmendinger, P. (2016). *Neoliberal spatial governance*. London: Routledge.
- Alterman, R. (2010). *Takings international: A comparative perspective on land use regulations and compensation rights*. Chicago: American Bar Association Publications.
- Alterman, R. (2012). Land-use regulations and property values. The windfalls capture idea revisited. In N. Brooks, K. Donanghy, & G.-J. Knapp (Eds.), *The Oxford handbook on urban economics and planning*. Oxford: Oxford University Press.
- Brenner, N., Peck, J., & Theodore, N. (2010). After Neoliberalization? *Globalisations*, 7(3), 327–345.
- Brenner, N., & Theodore, N. (2002). *Spaces of neoliberalism: Urban restructuring in North America and Western Europe*. Oxford: Blackwell.
- Bromley, D.W. (2000). A most difficult passage the economic transition in central and Eastern Europe and the former Soviet Union. Paper presented at KATO Symposium, Humboldt University, Berlin, November 2–4, 2000.
- Buitelaar, E. (2003). Neither market nor government: Comparing the performance of user rights regimes. *Town Planning Review*, 74(3), 315–330.
- Buitelaar, E. (2007). The cost of land use decisions. In *Applying transaction cost economics to planning & development*. Hoboken: Blackwell Publishing.
- Buitelaar, E., & Needham, B. (2007a). Property rights and private initiatives: An introduction. *Town Planning Review*, 78(1), 1–8.
- Buitelaar, E., & Needham, B. (2007b). Epilogue: Property rights between tools and social value. *Town Planning Review*, 78(1), 119–122.
- Chang, H.J. (2006). *Understanding the Relationship between Institutions and Economic Development. Some Key Theoretical Issue*, United Nations University, Word Institute for Development Economics Research, UNU-WIDER Discussion Paper No. 2006/05, 16p.
- Coase, R. H. (1960). The problem of social costs. *Journal of Law and Economics*, 3, 1–44.

- CSO. (2015). Central Statistical Office of Poland. www.stat.gov.pl.
- Davy, B. (2012). *Land policy: Planning and the spatial consequences of property*. Farnham, England: Ashgate, 296pp.
- Demsetz, H. (1967). Towards a theory of property rights. *The American Economic Review*, 57(2), 347–359.
- Dransfeld, E., Voss, W. (1993). *Funktionsweise staedtischer Bodenmaerkte in Mitgliedstaaten der Europaeischen Gemeinschaft—ein Systemvergleich*. Universitaet Dortmund, Bonn, Bundesministerium fur Raumordnung, Bauwesen und Staedtebau (Dissertation), 327pp.
- Furubotn, E. G., & Pejovich, S. (1972). Property rights and economic theory: A survey of recent literature. *Journal of Economic Literature*, 10(4), 1137–1162.
- Gdesz, M. (2010). Chapter 13: Poland. In R. Alterman (Ed.), *Takings international: A comparative perspective on land use regulations and compensation rights* (pp. 249–270). Chicago: American Bar Association Publications.
- Gdesz, M. (2011). Regulatory frameworks for land value taxation in Poland. Innovative Land and Property Taxation. United Nations Human Settlements Programme (UN-HABITAT).
- Gdesz, M. (2012). Rozkładanie kosztów urbanizacji. In I. Zachariasz (Ed.), *Kierunki Reformy Prawa Planowania i Zagospodarowania Przestrzennego*. Warszawa: Wolters Kluwer Polska.
- Geuting, E. (2007). Proprietary governance and property development. Using changes in the property-rights regime as a market-based policy tool. *Town Planning Review*, 78(1), 23.
- Gualini. (2001). *Planning and the intelligence of institutions: Interactive approaches to territorial policy-making between institutional design and institution building*. Aldershot: Ashgate.
- Guy, H., & Henneberry, J. (2000). Understanding urban development processes: Integrating the economic and the social in property research. *Urban Studies*, 37(13), 2399–2416.
- Havel, M.B. (2009). Property Rights Regime in Land Development – Analysis of the Influence of Institutions on Land Development in Terms of Property Rights Theory. Helsinki University of Technology. Kiinteistoon ja talousoikeuden julkaisuja, A43 Doctoral dissertation, 311pp.
- Havel, M. B. (2014). Delineation of property rights as institutional foundations for urban land markets in transition. *Land Use Policy*, 38, 615–626.
- Havel, M. B. (2016). Neo-liberal planlegging og eiendomsrett i Polen etter 1989. *Kart Og Plan*, 76, 87–93.
- Havel, M. B. (2017). How the distribution of rights and liabilities in relation to betterment and compensation links with planning and the nature of property rights: Reflections on the Polish experience. *Land Use Policy*, 67, 508–516.
- Healey, P. (1992). An institutional model of the development process. *Journal of Property Research*, 9, 33–44.
- Healey, P. (1997). *Collaborative planning: Shaping places in fragmented societies*. Basingstoke: Macmillan.
- Healey, P. (2007). *Urban complexity and spatial strategies. Towards a relational planning for our times*. London/New York: Routledge.
- Hodgson, G. M. (2004). *The evolution of institutional economics: Agency, structure and Darwinism in American institutionalism*. London: Routlege.
- Izdebski, H. (2013). *Ideologia i zagospodarowanie przestrzeni: Doktrynalne prawno-polityczne uwarunkowania urbanistyki i architektury*. Warszawa: Wolters Kluwer Polska.
- Jacobs, H. M. (2009). U.S. private property rights in international perspective. In G. K. Ingram & Y.-H. Hong (Eds.), *Property rights and land policies*. Cambridge, MA: Lincoln Institute of Land Policy.
- Jasiecki, K. (2013). *Kapitalizm Po Polsku. Miedzy Modernizacją A Peryferiami Unii Europejskiej*. Wydawnictwo IFiS PAN: Warszawa.
- Jędraszko, A. (2005). *Zagospodarowanie przestrzenne w Polsce—drogi i bezdroża regulacji ustawowych*. Wydawnictwo Platan, Kryspinow: Unia Metropolii Polskich; (in Polish).
- Jütting, J. (2003). *Institutions and Development: A Critical Review*, OECD Development Centre, Working Paper No. 210.

- Kalbro, T. (2000). Property development and land-use planning processes in Sweden. In K. Bohme, B. Lange, & M. Hansen (Eds.), *Property development and land-use planning around the Baltic Sea* (pp. 97–111). Nordiego: Stockholm.
- Kauko, T. (2002). *Modelling locational determinants of house prices: neutral network and value tree approaches, Doctoral Dissertation*. Utrecht: Proefschrift Universiteit Utrecht.
- Krabben, E. van der, Buitelaar, E. (2007) Stimulating private development of industrial estates in the Netherlands: A property rights approach, Paper presented at the 23rd annual meeting of the American Real Estate Society, San Francisco.
- Lai, L. W. C. (1997). Property rights justification for planning and a theory of zoning. *Progress in Planning*, 48(3), 161–246.
- Lai, L. W. C. (2002). Libertarians on the road to town planning: A note on the views of Robert Mundell, Karl Popper, Friedrich Hayek, Robert Nozick, Milton Friedman, and Ronald Coase towards pollution. *Town Planning Review*, 73, 289–310.
- Lai, L. W. C. (2005). Neo-institutional economics and planning theory. *Planning Theory*, 4, 7–19.
- Lai, L. W. (2007). The problem of social cost: The Coase theorem and externality explained using simple diagrams and examples to illustrate the role of land use planning in tackling externalities. *The Town Planning Review*, 78(3), 335.
- Lampland, M. (2002). The advantages of being collectivized: Cooperative farm managers in the postsocialist economy. In C. Hann (Ed.), *Postsocialism: Ideas, ideologies, and practices in Eurasia*. London: Routledge.
- Libecap, G. D. (1989). *Contracting for property rights*. Cambridge: Cambridge University Press.
- Lorens, P., (2012) *Rebuilding the post-socialist cities in the age of neo-liberalism—issues and challenges for the planning profession*. 48th ISOCARP Congress 2012.
- Macfarlane, A. (1998). The mystery of property: Inheritance and industrialization in England and Japan. In C. M. Hann (Ed.), *Property relations*. Cambridge: Cambridge University Press.
- Menard, C., & Shirley, M. M. (2008). Introduction. In C. Menard & M. M. Shirley (Eds.), *Handbook of new institutional economics*. New York: Springer.
- Needham, B. (2006). *Planning, law and economics, the rules we make for using land*. London: Routledge.
- Ners, K., (2007) Infrastructure development in Poland: The issues at stake. In: Peterson, G.E., Annez, P.C. (Eds.), *Financing cities. Fiscal responsibility and urban infrastructure in Brazil, China, India, Poland and South Africa*. The World Bank: Sage Publications.
- North, D. C. (1990). *Institutions, institutional change and economic performance*. New York: Cambridge University Press.
- Ostrom, E. (1990). *Governing the commons. The evolution of institutions for collective action*. New York: Cambridge University Press.
- Oxley, M. (2004). *Economics, planning and housing*. Basingstoke/New York: Palgrave Macmillan.
- Peck, J., & Tickel, A. (2002). Neoliberalising space. *Antipode*, 34(3), 380–404.
- Ratcliffe, J., & Stubbs, M. (1996). *Urban planning and real estate development*. London: UCL Press.
- Renard, V. (2007). Property rights and the ‘transfer of development rights’: Questions of efficiency and equity. *Town Planning Review*, 78(1), 41.
- Staniszki, M. (1995). *Kształtowanie krajobrazu Warszawy XX-XXI*. Warszawa: Krajobraz Warszawski, Seria wydawana przez Miasto Stołeczne Warszawę.
- Śleszyński, P., (2014) Aktualne problemy plac planistycznych w gminach. In: Maciejewska, A. (Ed.), *Współczesne uwarunkowania gospodarowania przestrzenią—szanse i zagrożenia dla zrównoważonego rozwoju. Planowanie przestrzenne*. Seria Monografie. Gospodarka Przestrzenna. T. III. Oficyna Wydawnicza Politechniki Warszawskiej.
- Stark, D. (1996). Recombinant property in eastern European capitalism. *American Journal of Sociology*, 101, 993–1027.
- Sturgeon, J. C., & Sikor, T. (2004). Post-socialist property in Europe and Asia: Variations on ‘fuzziness. *Conservation and Society*, 3(1), 1–17.

- Tölle, A. (2014). Zintegrowane formy planowania i zarządzania rozwojem lokalnym a instrumentarium planistyczne. System polski na tle systemu niemieckiego. *Studia Regionalne i Lokalne*, 57(3), 60–75.
- Van der Krabben, E. (1996). *Urban dynamics: A real estate perspective*. Tilburg: University Press.
- Verdery, K. (1996). *What was socialism and what comes next?* Princeton, NJ: Princeton University Press.
- Verdery, K. (1999). Fuzzy property: Rights power and identity in Transylvania's decollectivization. In M. Burawoy & K. Verdery (Eds.), *Uncertain transition: Ethnographies of change in the Postsocialist world*. Lanham: Rowman and Littlefield Publishers.
- Webster, C. J. (2007). Property rights, public space and urban design. *Town Planning Review*, 78(1), 81–102.
- Webster, C. J., & Lai, L. W. C. (2003). *Property rights, planning and markets: managing spontaneous cities*. Cheltenham/Northampton, MA: Edward Elgar.
- Williamson, O. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, 38, 595–613.
- Załęczna, M., & Havel, M. B. (2008). The institutional changes, social capital and old expropriation consequences in Poland. *Nordic Journal of Surveying and Real Estate. Res*, 3, 176–188. Special Series.

Part V

**Standardization Efforts in the Real Estate
Market**

Anchoring and Adjustment in the Mortgage Market: A Regulatory Experiment



Yevgeny Mugerman and Moran Ofir

Abstract This research examines the seminal heuristic of anchoring and adjustment and its effects on the mortgage market. In recent years, the Israeli central bank has imposed protective regulation on mortgage loans in order to protect the banking system from systemic risk associated with highly leveraged homeowners. Using a unique and detailed dataset on mortgage loans from 2011 to 2016, we empirically estimate the impact of these restrictions on household choices and the housing market. In particular, we examine borrowers' response to the three following regulatory restrictions: a payment-to-income (PTI) limit of 50%, a 2/3 limit on the adjustable rate component, and a 30-year maturity limit. We found that overall, the regulatory provisions tested served as an anchor to the borrowers. The most unexpected result we obtained was an increase in mortgage loans maturity following the imposed maturity limit. We concluded that the anchoring and adjustment heuristic may have influenced households' decision in such a way that they perceived the maximum maturity limit as a relevant *average* maturity anchor and consequentially increased mortgage maturity.

1 Introduction

In Israel, as in the rest of the economically developed world, housing remains the most significant asset in most households' portfolios. That is why a rapid change in the prices of residential real estate has severe repercussions for household well-being, for the stability of the financial system, and for decisions made by policymakers and regulators. Understanding the effectiveness of actions taken by regulators and policymakers in times of rapid price increases can shed light on their

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effectiveness in reducing the escalating aggregated financial risk for homeowners on one hand and in shaping household behavior on the other.

The steep rise in residential real estate prices that occurred in Israel from 2007 to 2016—more than 100% in real terms—created a complicated socioeconomic problem that engulfed many Israeli families, mostly young households and low- to mid-income earners. Years of slow and inadequate housing start in the early 2000s, a steep drop in real interest rates following the 2008 financial crisis, and the fact that the Israeli tax system gives investment in real estate an edge over financial assets all combined to create a demand surge. In addition, due to rigid supply-side limitations, the reaction to the rising demand was slow, creating a bottleneck of new homes on which a rising number of investors competed with young households and/or “housing upgraders.” The result was a growing number of young households who could not afford a home.

The rapid rise in prices also created a potential systemic risk to the local financial system, which financed the majority of mortgages. As a precautionary measure, and in order to strengthen the resilience of the financial system in the case of shocks in the real estate sector, the Israeli Supervisor of Banks imposed a number of restrictions, regarded as macro prudential tools (MPTs), between 2010 and 2014. The tools were also designed to moderate the impact on real economic activities when financial risks to the sector would be realized.

Applying a combination of several MPTs can have various consequences for the behavior of the average mortgage lender and borrower and for the stability of the entire financial system. One of the most popular MPTs in the area of mortgages is imposing limitations on the loan-to-value (LTV) ratio. Aggregate cross-country studies find that LTV limits are effective in moderating the increase in house prices, thereby reducing the risks and consequences of bubbles in real estate markets (IMF 2011).

The literature discussing MPTs focuses on their effects on the stability of the financial system as a whole, mostly from the point of view of regulators and financial institutions,¹ rather than on behavior of the individual mortgage borrower. As such, some of the studies find that during downturns in the residential real estate market, LTV limits lower bank losses (Krznar and Morsink 2014; Lim et al. 2011). Thus, further research is needed on the effectiveness of such constraints from the borrowers’ perspective.²

The IMF (2014) used micro data in order to analyze the real estate market and the housing prices in Israel.³ The main MPTs tested in this report were LTV and payment-to-income (PTI) ratio limits. The main findings were that both LTV and

¹Mugerman et al. (2018) propose a dynamic model of bank actions in the shadow of LTV ratio regulation.

²For another example of testing the borrowers’ decision making in a different loan market—peer-to-peer lending—see Ayal et al. (2018).

³The micro data included in the report are based on a survey of households’ plans for housing tenure and expected housing prices.

PTI limits had partial success in lowering the number of transactions, but there was little evidence that neither had any success in lowering the growth rate of housing prices.

Tzur-Ilan (2017) estimated the effect of an LTV limit on loan terms in the Israeli mortgage market and found that this MPT had affected mortgage contract terms by increasing the interest rate, but had not affected credit rationing. The LTV limit induced borrowers to buy cheaper assets and to move farther from high demand locations to lower-graded neighborhoods.

Our paper focuses on three macro prudential tools implemented from 2010 to 2014 and examines the effects they had on the typical borrower. Specifically, we concentrate on limits on the PTI ratio, limits on the maturity of new mortgage loans, and limits on the ratio between the adjustable and fixed rate parts of the loan.⁴ For all three macro prudential tools tested, we find borrowers' decisions to have been affected by a seminal heuristic in the field of decision making under uncertainty: anchoring and adjustment.

The anchoring effect is one of the most frequently tested behavioral heuristics. Highly robust, it also has a variety of implications on financial as well as on nonfinancial decision making. The heuristics was first introduced in Tversky and Kahneman's (1974) seminal paper. As they explain, decision makers make estimates by starting from an initial value that is adjusted to yield the final answer, but the adjustments are typically insufficient: "different starting points yield different estimates, which are biased toward the initial values" (p. 1128).

Following Tversky and Kahneman, Furnham and Boo's (2011) review indicated a significant number of studies demonstrating the prevalence of the anchoring heuristic (e.g., Plous 1989; Chapman and Johnson 1999; Epley and Gilovich 2001; Mussweiler and Englich 2005; McElroy and Dowd 2007; and more recently Hurwitz et al. 2018). Most were conducted with university students in laboratory settings and a list of questions that the participants may not have used in natural situations. Fewer studies had the participants face real-life settings and also showed the heuristic to be robust (e.g., Ariely et al. 2003; Englich et al. 2005; Critcher and Gilovich 2008).

Regarding the volume of the anchoring heuristic, the literature shows that the higher the ambiguity, and the lower the familiarity, relevance, or personal involvement with the problem, the stronger the anchoring effect (Van Exel et al. 2006). In addition, the literature shows that the informational relevance of values may affect decision makers' susceptibility to the anchoring effect (Hastie et al. 1999; Marti and Wissler 2000; Englich et al. 2005). More specifically, Strack and Mussweiler (1997) show that anchor values similar or identical in judgmental dimensions to the estimates yield significant effect on the volume of anchoring.

The remainder of this paper proceeds as follows. Section 2 describes the Israeli housing market, followed by a description of the dataset. Next, Sects. 4 and 5 present the design and results, respectively. Finally, Sect. 6 discusses the findings and conclusions.

⁴See Mugerman et al. (2016) for a psychological explanation of the household choice between adjustable and fixed-rate mortgages, before the regulation.

2 The Israeli Housing Market

The 2008–2009 financial crisis had only a minimal effect on the Israeli economy. Due to prudent financial institutions and a low level of leverage in the household sector, the impact of the crisis on the real economy was limited in time and scope. The Bank of Israel, however, acknowledging the fact that Israel is a rather open economy highly sensitive to fluctuations in exchange rates, lowered interest rates in tandem with other major central banks across the globe. The healthy condition of the local economy, combined with the low-rate environment, contributed to a trend of rising asset prices, mainly residential real estate prices. Thus, as suggested above, from 2008 to 2016, home prices in Israel increased in each year and the total increase was more than 100%.

Concurrently, the volume of housing loans increased by 95%. This phenomenon raised concerns among banking regulators and policymakers. As widely described in the literature, housing prices and mortgages tend to move together and influence each other in a two-way feedback loop (Crowe et al. 2011). These correlated trends impose high risks on borrowing individuals, financial institutions, and the financial system as a whole.

As concern grew, regulators and policymakers enacted a set of MPTs to curb the rapidly growing demands for housing and housing loans. These tools, which included restrictions and guidelines to Israel's commercial banks, were imposed by the Supervisor of Banks, a supervisory division in the Bank of Israel, mainly in order to protect the banking system itself from risks associated with excessively leveraged borrowers.

The first MPT was introduced in May 2010. The Supervisor of Banks set new guidelines requiring banks to maintain an additional allowance of at least 75 basis points for outstanding housing loans with an LTV of over 60% (the LTV was measured on the date the loan was provided). The rationale was that by making the mortgage loans more expensive to the commercial banks themselves, they would be forced to roll over the added cost to borrowers with a higher LTV.

The second MPT was introduced in October 2010. The Supervisor of Banks issued new bank guidelines concerning capital provision for loans with high LTV ratios. The exiting provision required banks to put forward capital provisions ranging from 35% to 75% (depending on the loan's unique characteristics); the new guidelines required 100% provisions to 100%, for loans with an LTV ratio of more than 60% (on the date of issue) and where the variable interest rate proportion of the loan was 25% and higher. Note that the new guidelines did not apply to housing loans originally amounting to less than 800,000 NIS. Since the limits would force the banks to tie up more capital against these loans, borrowers wanting to take a loan with an LTV ratio higher than 60% faced higher interest rates, which made them choose loans with a lower LTV ratio. Following the second limitation imposed by the Supervisor of Banks, banks began repricing loans with LTV ratios higher than 60%.

An additional restriction was the imposition of a differential LTV limit on housing loans on November 2012. This restriction limited the LTV ratio as follows: first-time buyers would be restricted to an LTV ratio of 75%, housing upgraders (who sell their property and buy a new one at the same time) would be restricted to an LTV of 70%, and investors (who own more than one property) would be restricted to 50%. The rationale behind the restrictions was that limiting the investors' leverage would also limit the demand for housing and the price increase trend would lose some steam.

The continuous rise in home prices forced the regulator to impose new measures in February 2013. These focused on the banking system adequacy ratios. For the purpose of calculating capital adequacy ratios, housing loans with LTV ratios of up to 45% would be weighted at 35% (unchanged from previous weighting). Housing loans with an LTV ratio of between 45% and 60% would be weighted at 50%, and loans with an LTV ratio of 60–75% would be weighted at 75%.

The last restrictions were imposed on August 2013, targeting three different aspects of new mortgage loans. First, the PTI ratio was limited to 50% of the borrower's income. Second, the portion of the loan at a floating interest rate was limited to two thirds for all loan periods. Finally, loan maturity was limited to 30 years. Our paper focuses on this set of three restrictions, examining the effectiveness of each separately.

3 The Dataset

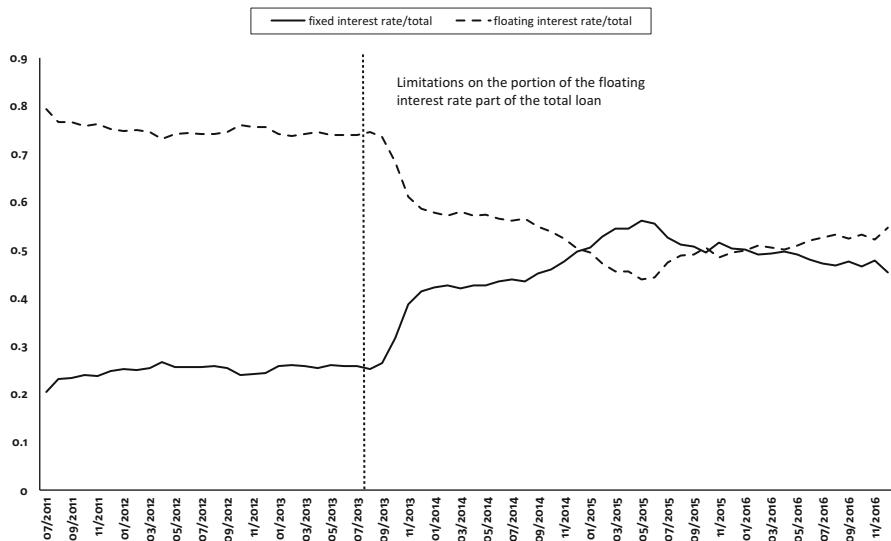
Our main body of data is Bank of Israel data on mortgage loans between July 2011 and December 2016. The sum of mortgages granted (new and renewed) is divided into two main categories: the sum of components that carry an adjustable rate and the sum of components that carry a fixed rate. Graph 1 shows the convergence over time of these two components.

As suggested above, the distinction between the floating (adjustable) and fixed interest rate components of new/renewed mortgage loans was the target of the final restrictions issued by the regulator in August 2013: the floating rate portion of the loan was limited to two-thirds for all loan maturities.

3.1 Data Construction: Maturity

The maturity subcategory is divided into eight tranches, all referring to new or renewed mortgages:

1. Up to and not including 1 year
2. From 1 to 2 years
3. From 2 to 5 years
4. From 5 to 10 years



Graph 1 New/renewed mortgages with maturity of over 25 years as a percentage of total new/renewed mortgages

5. From 10 to 15 years
6. From 15 to 20 years
7. From 20 to 25 years
8. From and including 25 years and above

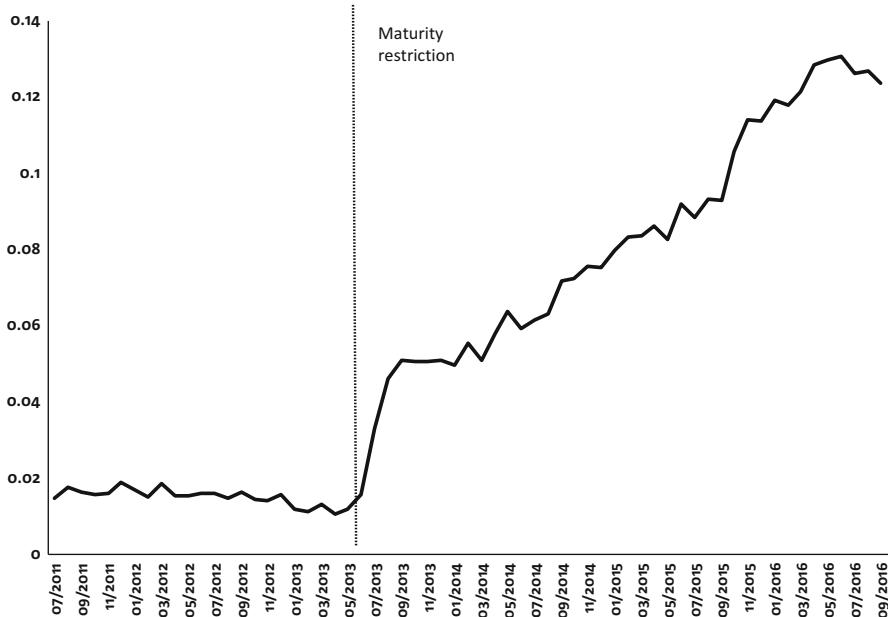
We collapsed the eight tranches into two main tranches in order to examine the effects of the August 2013 regulation: loans with maturity from and including 1 year to 25 years (tranches 1–7) and loans with maturity from 25 years and above (tranche 8). Graph 2 depicts the sharp rise of the mean mortgage maturities following the regulation.

3.2 Data Construction: Payment-to-Income (PTI)

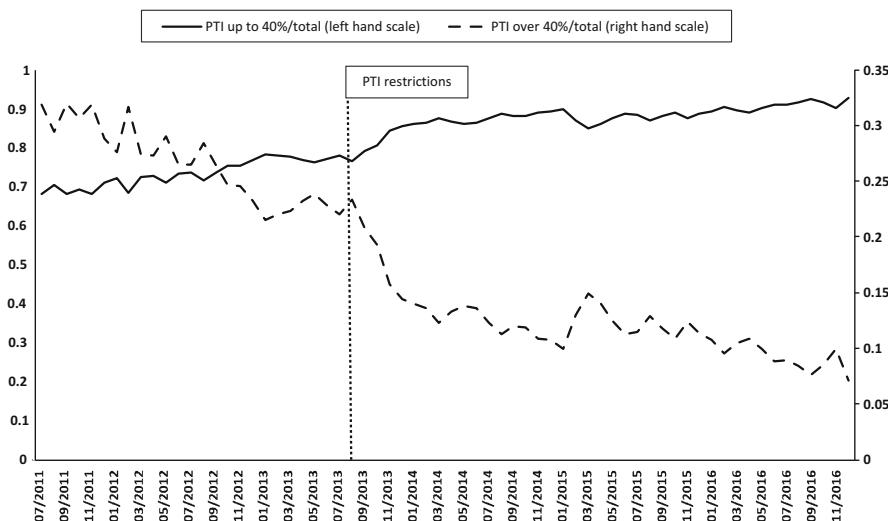
The PTI subcategory is divided into five tranches, all referring to new or renewed mortgages:

1. Up to and not including 20%
2. From 20% to 30%
3. From 30% to 40%
4. From 40% and to 60%
5. From and including 90% and above

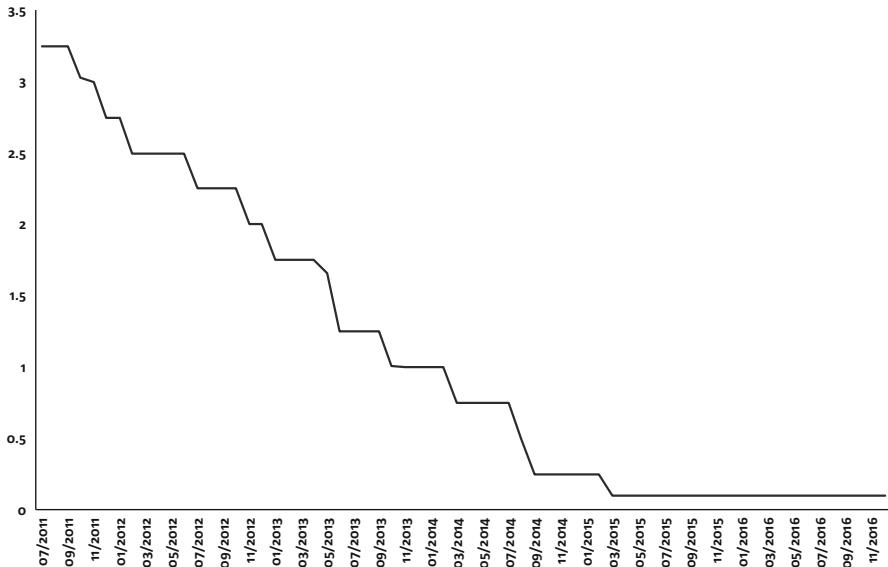
We collapsed the five tranches into two main tranches—up to (1–3) and above 40% (4–5) (Graph 3).



Graph 2 New/renewed mortgages with maturity of over 25 years as a percentage of total new/renewed mortgages



Graph 3 New/renewed mortgages divided by the 40% PTI level

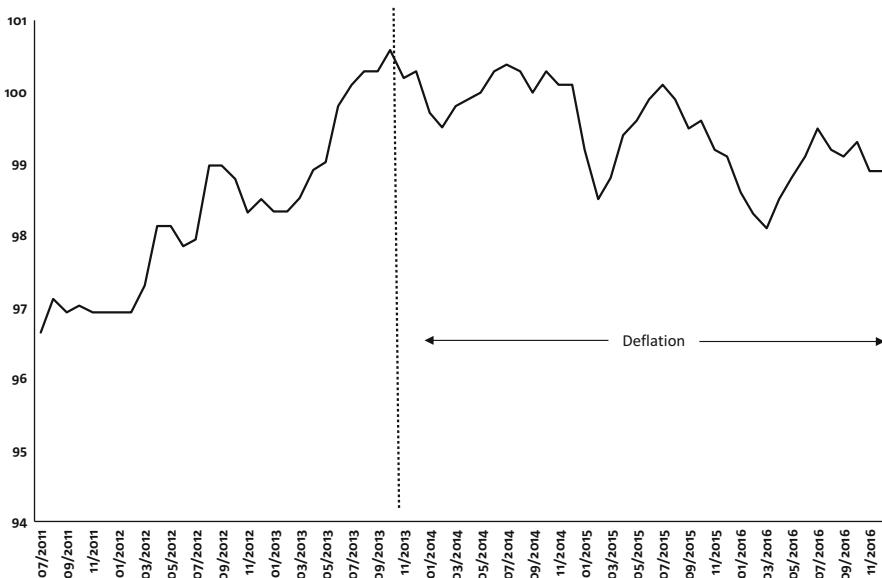
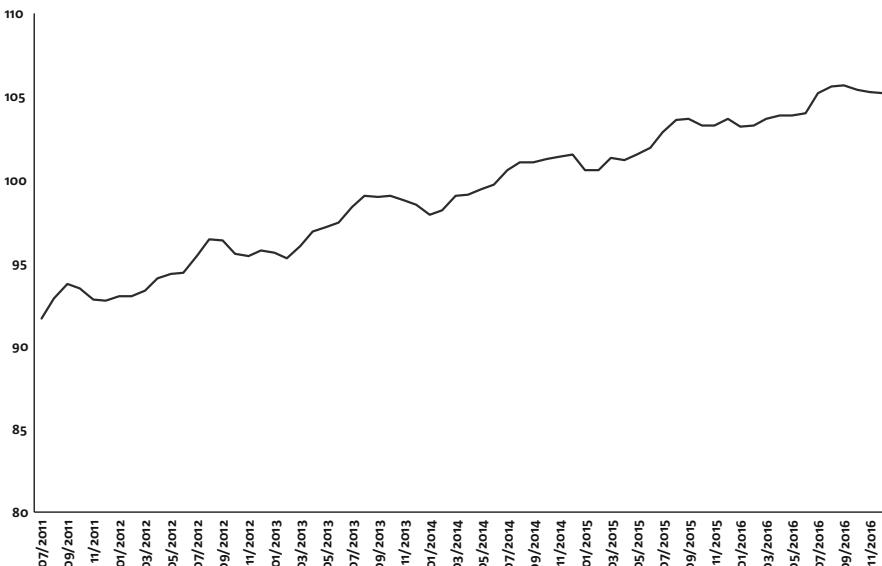


Graph 4 The Bank of Israel's key rates

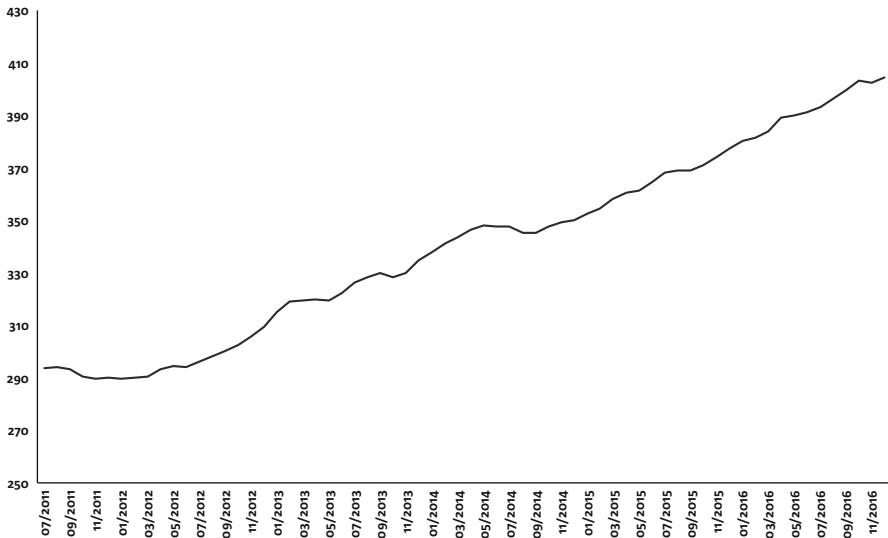
3.3 Control Variables

We used nine control variables related to the Israeli economy and residential real estate market.

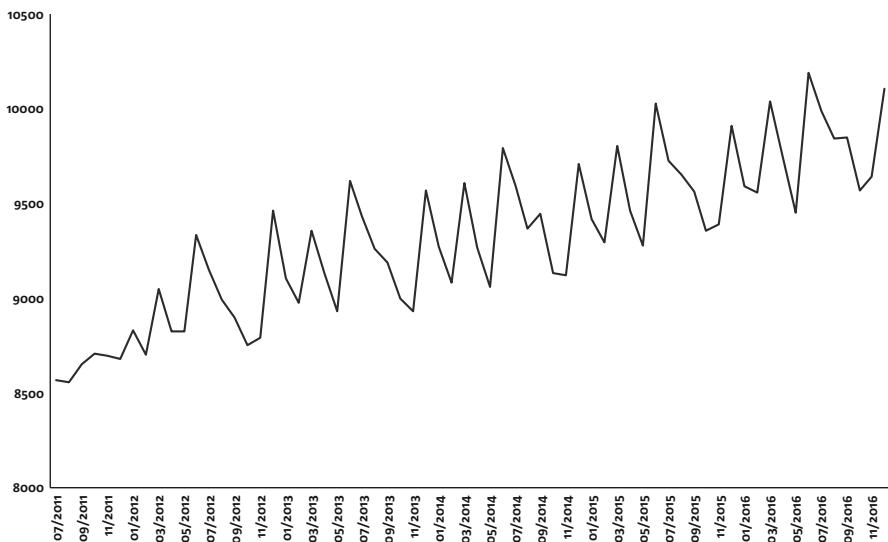
1. *Monthly change in the Bank of Israel's interest rate.* In line with the rest of the developed world, the Bank of Israel has progressively cut its key rates since the great financial crisis to the November 2016 and current level of 0.1% (Graph 4).
2. *Monthly change in the consumer price index (CPI).* During the research period, Israel's CPI has declined for 3 years in a row (2014–2016), thus missing the Bank of Israel's annual inflation target (1%–3%). The reasons for this deflation include regulatory interventions aimed to reduce the local cost of living, the global decline in commodity prices, and the rapid adoption of e-commerce. Note that the largest component of the Israeli CPI is shelter, measured rent, and rent equivalent prices (24.3%, see control variable 3). Importantly, residential real estate prices are *not* part of the CPI (Graph 5).
3. *Monthly change in the shelter component of the CPI,* which, as mentioned above, accounts for 24.3% of the overall CPI. As stated above, the change in shelter prices as represented by the change in rent prices differs from the change in residential real estate prices. The change in shelter prices was 14.7% over the period studied (Graph 6).

**Graph 5** CPI**Graph 6** The shelter price index (24.3% of the general CPI)

4. *Monthly change in residential real estate prices.* During the period examined, residential real estate prices grew by 37.6%, outpacing the change in the CPI's shelter component by 255% (Graph 7).

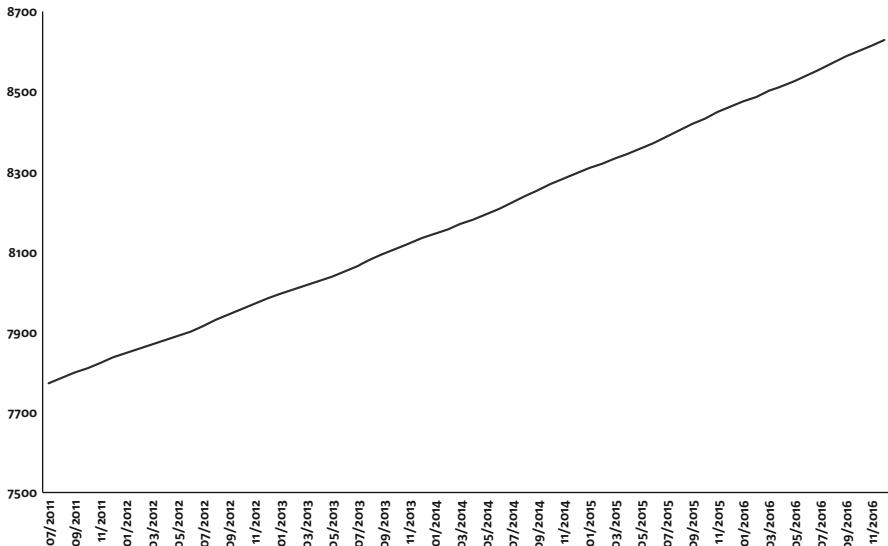


Graph 7 Residential real estate prices (index)



Graph 8 Average monthly wage (NIS)

5. *Monthly change in average monthly wage of all employees.* After a modest increase in unemployment following the financial crisis, Israel's unemployment rate fell in recent years. A tight labor market and the increase in minimum wage in the last decade were among the main contributors to the steady rise in the average monthly wage, as seen in Graph 8.



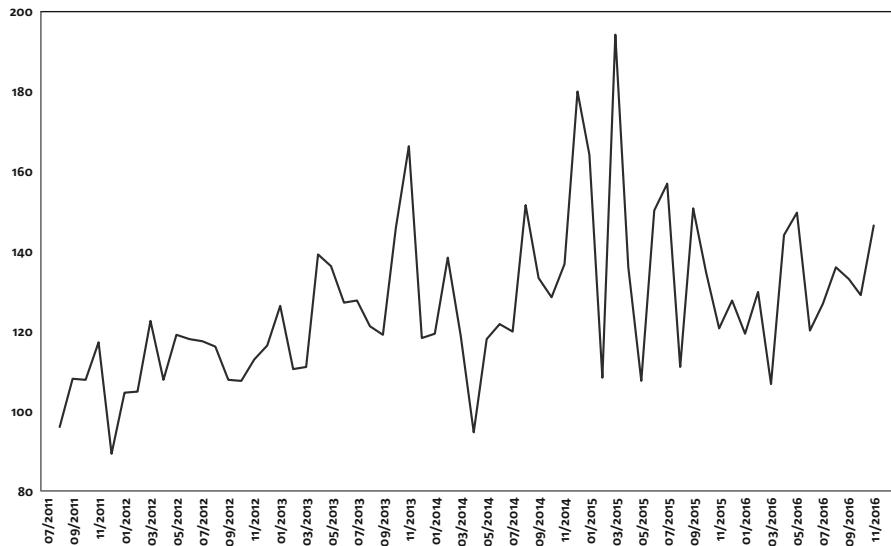
Graph 9 Population (thousands)

6. *Monthly change in population.* The annual growth rate of Israel's population in the examined is 1.8%; this includes Israeli citizens living in Israel and permanent residents (Graph 9).
7. *Monthly change in the number of finished houses.* As shown in Graph 10, despite efforts by the different policymakers to increase the supply of finished houses, their number has been erratic during the research period.
8. *Monthly change in number of housing starts.* As with the number of finished houses, the number of housing starts has failed to create a sizable momentum during the examined period, as shown in Graph 11.
9. Quarterly change in GDP (Graph 12).

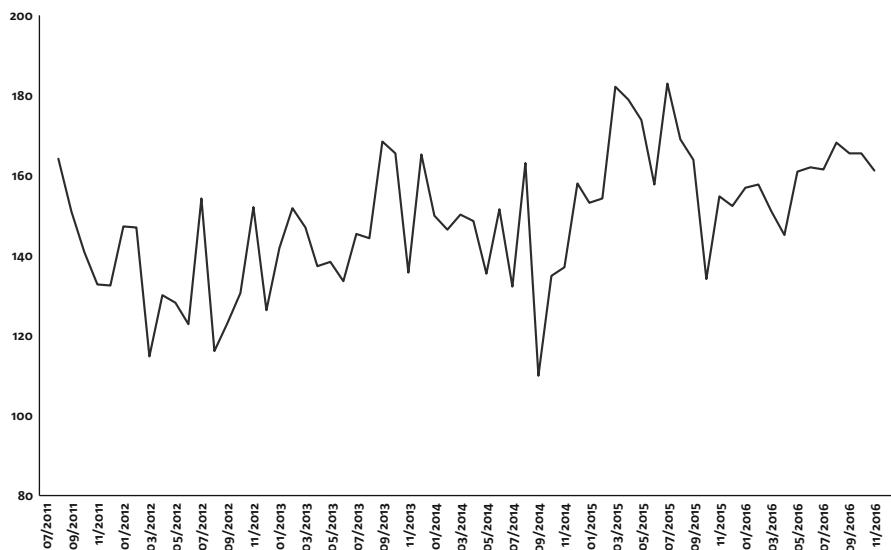
4 Design

Our identification strategy was based on the differences methodology. We employed this methodology to estimate the impact of regulatory intervention on household decisions vis-à-vis these decisions in the pre-regulation period.

As mentioned, we relied on detailed monthly data on mortgage loans (new and renewed) between July 2011 and December 2016. In addition, we collected data on the specific month in which the regulatory change was implemented (8/2013). We then used this data to construct a regulatory provision dummy variable, which equals 1 for the period following the change, effective from the month of the respective regulatory intervention, and 0 otherwise. We regressed the following proportions

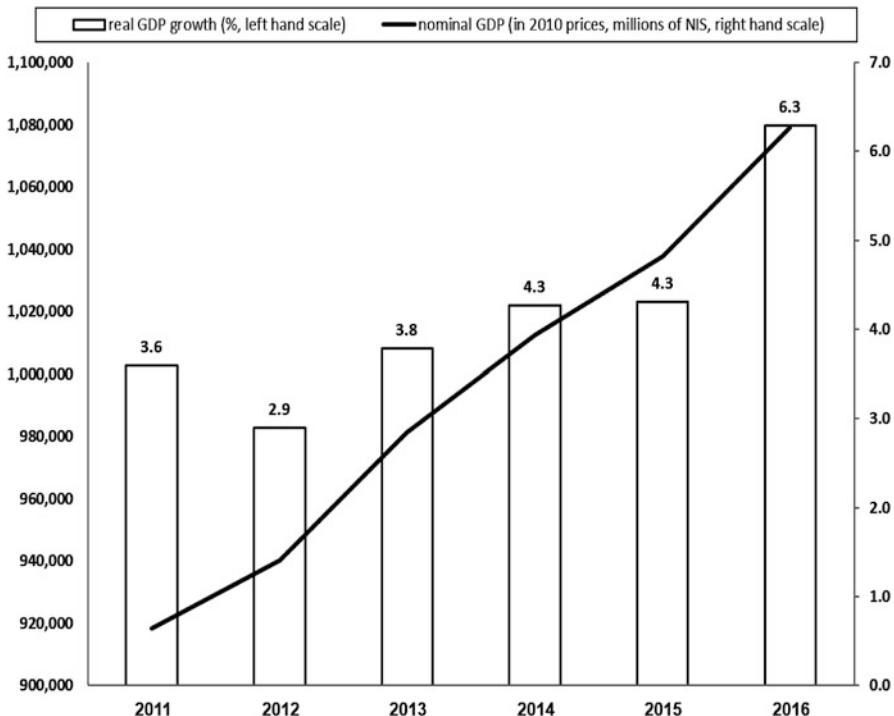


Graph 10 Finished houses index



Graph 11 Housing starts index

(n) of the total mortgages: (1) PTI ratio of over 40%, (2) adjusted interest rate mortgages, and (3) maturities of over 25 years—on the regulatory provision dummy variable as well as on various macroeconomic factors detailed below:



Graph 12 Nominal and real GDP growth rate

$$\text{Household Decisions}_{n,t} = \alpha + \beta^* \text{regulatory provision}_t + \lambda_t + \varepsilon_t \quad (1)$$

where $\text{Household Decisions}_{n,t}$ denotes the specific (n) households' decisions, $\text{regulatory provision}_t$ is a dummy variable that equals 1 for the period following the change and 0 otherwise, and λ_t is the vector of the macroeconomic variables (monthly change in the shelter component of the CPI, \ln ; monthly change in home price index, \ln ; monthly change in the average monthly wage of all employees, \ln ; monthly change in the finished houses index, \ln ; monthly change in the housing starts index, \ln ; monthly change in the nominal GDP, \ln ; and monthly change in population size, \ln).

We examined robust standard errors (clustering on the temporal dimension). Our main interest was in the estimation of β , which captures the differences effect of the regulatory provisions on mortgage choices, *above and beyond* macroeconomic changes over time.

5 Results

Table 1 presents Eq. 1's estimation results of the three regulatory interventions. Each column represents a different regression.

The OLS regression model's dependent variables are as follows:

In Column 1—*proportion of PTI ratio of over 40%*, defined as new/renewed mortgages with a PTI ratio of over 40% divided by the total of new/renewed mortgages.

In Column 2—*proportion of adjusted interest rate mortgages*, defined as the new/renewed mortgages with adjusted interest rate divided by the total of new/renewed mortgages.

Finally, in Column 3—*proportion of maturities over 25 years*, defined as new/renewed mortgages with maturity of over 25 years divided by the total of new/renewed mortgages.

The independent variables are as follows:

Indicator of the respective regulation, equals 1 if the regulation was passed and 0 otherwise

Table 1 Borrowers' responses to protective mortgage regulation

	PTI ratio of over 40% (1)	Adjusted interest rate (2)	Maturity of over 25 years (3)
Indicator of respective regulation	0.1407682*** (0.007927)	-0.2199048*** (0.0136459)	0.0666015*** (0.0070019)
Monthly change—interest rate Bank of Israel (ln)	0.0277565 (0.0331794)	-0.022126 (0.0571168)	0.0573099** (0.0293072)
Monthly change—CPI (ln)	-1.747677 (1.265049)	1.442525 (2.17772)	-0.3547887 (1.11741)
Monthly change—CPI shelter (ln)	0.9465333 (0.9430258)	-2.008387 (1.623373)	0.2364322 (0.832969)
Monthly change—housing price index (ln)	1.840387** (0.728544)	-1.542723 (1.254153)	0.2331187 (0.6435185)
Monthly change—average monthly wage (ln)	0.181859 (0.1175657)	-0.0510427 (0.2023837)	0.0890298 (0.1038451)
Monthly change—finished houses index (ln)	-0.0171757 (0.0196252)	0.0161128 (0.0337838)	-0.0119869 (0.0173348)
Monthly change—housing starts index (ln)	0.0197108 (0.0327009)	-0.0295401 (0.0562931)	-0.0091231 (0.0288845)
Monthly change—GDP (ln)	1.622726* (0.9166388)	0.3057967 (1.577949)	0.5845754 (0.8096615)
Other controls	Yes	Yes	Yes
Observations	65	65	65
R ²	0.8847	0.8522	0.6834

In parentheses: robust standard errors. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively

Monthly change in the key interest rate of the Bank of Israel (ln)
 Monthly change in the CPI (ln)
 Monthly change in the shelter component of the CPI (ln)
 Monthly change in house price index (ln)
 Monthly change in the average monthly wage (ln)
 Monthly change in the finished houses index (ln)
 Monthly change in the housing starts index (ln)
 Monthly change in the nominal GDP (ln)
 Monthly change in population (ln)—not presented

The results show that the regulatory intervention is associated with a statistically significant change in the households' behavior.⁵ This possibly suggests that households' decisions may have been influenced by the regulator-induced anchor. The economic magnitude of this change is fairly high and ranges from 1.6 standard deviations of the dependent variable in Column 3 to 1.9 SDs in Column 2. The coefficients of the other control variables are mostly insignificant.

Nevertheless, borrowers did not always shift in the indented direction. By setting *maximum* limits to PTI and mortgage maturities, the regulator created anchors that were perceived by households as suggested figures in their specific cases.

6 Conclusions

This paper examines a seminal heuristic employed in decision making under uncertainty—anchoring and adjustment—and its effects on the Israeli mortgage market. We focus on the households' choice following the enactment of three main macro prudential tools by the Bank of Israel. The three tools are limitation on the payment-to-income (PTI) ratio, limitation on maturity, and limitation on the proportions of fixed and adjustable rate mortgages.

We find that the regulatory provisions tested influenced the borrowers' response not always as expected by the central bank. For all three regulations tested, the regulatory limit served as an anchor for the borrowers and influenced their decisions. Specifically, we find an increase in mortgage loans maturity following the regulation that imposed maturity limits, an increase in PTI ratio following the regulation that imposed PTI limits, and a decrease in the proportion of adjustable rate mortgages following the regulation that imposed limitation on the proportions of fixed and adjustable rate mortgages.

Since housing is the most important asset in the portfolio of most households, the effect of each individual heuristic may lead decision makers to systematic errors that, in turn, can cause a substantive loss of economic value. A better understanding of the effect of these heuristics on mortgage borrowers' decisions can improve

⁵Note, however, that a positive estimate of β in Equation 1 might not be an accurate measure of such a causal effect.

the design of market reforms in this area in order to maximize market efficiency and minimize households' economic loss. Specifically, the anchoring heuristic has proven to be extremely powerful and influential on people decisions. Our research suggests that this heuristic should be carefully considered, before making regulatory interventions, to avoid possible unintended consequences.

By examining the influence of regulatory restrictions on decision makers' behavior, we believe that our paper can contribute significantly to the understanding of market functioning beyond the theoretical predictions. Our findings concerning this functioning should be further investigated, especially in light of the implications of the recent macro prudential tools adopted by the Bank of Israel.

References

- Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *The Quarterly Journal of Economics*, 118, 73–105.
- Ayal, S., Bar-Haim, D., & Ofir, M. (2018). In I. Venezia (Ed.), *Behavioral biases in peer-to-peer (P2P) lending, behavioral finance: the coming of age*. Singapore: World Scientific Publishers.
- Chapman, G. B., & Johnson, E. J. (1999). Anchoring, activation, and the construction of values. *Organizational Behavior and Human Decision Processes*, 79, 1–39.
- Critcher, C. R., & Gilovich, T. (2008). Incidental environmental anchors. *Journal of Behavioral Decision Making*, 21, 241–251.
- Crowe, C., Dell'Ariccia, G., Igan, D., Rabanal, P. (2011). Policies for Macrofinancial Stability: Options to Deal with Real Estate Booms, IMF Staff Discussion Note 11/02.
- Englich, B., Mussweiler, T., & Strack, F. (2005). The last word in court- a hidden disadvantage for the defense. *Law and Human Behavior*, 29, 705–722.
- Epley, N., & Gilovich, T. (2001). Putting adjustment Back into the anchoring and adjustment heuristic: Differential processing of self-generated and experimenter-provided anchors. *Psychological Science*, 12, 391–396.
- Furnham, A., & Boo, H. C. (2011). A literature review of the anchoring effect. *The Journal of Socio-Economics*, 40, 35–42.
- Hastie, R., Schkade, D. A., & Payne, J. W. (1999). Juror judgment in civil cases: Effects of Plaintiff's requests and Plaintiff's identity on punitive damages awards. *Law and Human Behavior*, 23, 445–470.
- Hurwitz, A., Sade, O., & Winter, E. (2018). *Can mandatory minimum annuity laws have unintended consequences? An experimental study*. Jerusalem: Hebrew University.
- International Monetary Fund. (2011). Macro prudential policy: An organizing framework, IMF Policy Paper SM/11/54.
- International Monetary Fund. (2014). Israel: Selected Issues, IMF Country Report 14/48.
- Krznar, I., & Morsink J. (2014). With great power comes great responsibility: Macro prudential tools at work in Canada, IMF Working Paper WP/14/83.
- Lim, C.H., Columba, F., Costa, A., Kongsamut, P., Otani, A., Saiyid, M., Wezel, T., Wu X. (2011). Macro prudential policy: What instruments and how are they used? Lessons from country experiences, IMF Working Paper WP/11/238.
- Marti, M. W., & Wissler, R. L. (2000). Be careful what you ask for: The effect of anchors on personal injury damages awards. *Journal of Experimental Psychology: Applied*, 6, 91–103.
- McElroy, T., & Dowd, K. (2007). Susceptibility to anchoring effects: How openness-to-experience influences responses to anchoring cues. *Judgement and Decision Making*, 2, 48–53.
- Mugerman, Y., Ofir, M., & Wiener, Z. (2016). How do homeowners choose between fixed and adjustable rate mortgages. *Quarterly Journal of Finance*, 6(4), 1–21.

- Mugerman, Y., Tzur, J., & Jacobi, A. (2018). Mortgage loans and Bank risk taking: Finding the risk sweet spot. *Quarterly Journal of Finance*, 8(4), 1840008.
- Mussweiler, T., & Englich, B. (2005). Subliminal anchoring: Judgmental consequences and underlying mechanisms. *Organizational Behavior and Human Decision Processes*, 98, 133–143.
- Plous, S. (1989). Thinking the unthinkable: The effects of anchoring on likelihood estimates of nuclear war. *Journal of Applied Social Psychology*, 19, 67–91.
- Strack, F., & Mussweiler, T. (1997). Explaining the enigmatic anchoring effect: Mechanisms of selective accessibility. *Journal of Personality and Social Psychology*, 73, 437–446.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124–1131.
- Tzur-Ilan N. (2017). The effect of credit constraints on housing choices: The case of LTV limit, Bank of Israel discussion paper 2017.03.
- Van Exel, N., Brouwer, W., van den Berg, B., & Koopmanschap, M. (2006). With little help from an anchor. Discussion and evidence of anchoring effects in contingent valuation. *The Journal of Socio-Economics*, 35, 836–853.

Dealing with an Anchoring Bias in the Mortgage Market: A Regulatory Approach



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Abstract This chapter investigates whether mortgage regulation assures proper decision-making by borrowers. It offers regulatory responses to mitigate a “mortgage illusion” phenomenon revealed in recent experimental studies. According to these experiments, buyers are influenced by the comparison between the monthly rental payment and the monthly mortgage installment for fixed-rate mortgages. Therefore, consumers are more likely to buy a house when the rent is higher than the mortgage installment. The chapter suggests that regulators account for this phenomenon when designing mortgage policies.

1 Introduction

The policy question we investigate in this chapter is whether the mortgage regulation assures proper decision-making by borrowers. We suggest that people are not as rational as they believe—they take bad mortgage decisions affected by heuristics. Regulators ought to account for this when designing mortgage policies. If they continue to disregard the heuristics driving mortgage takers’ decisions, more mortgages may end up in bankruptcy. This in turn could lead to negative macroeconomic effects on the banking system and real estate market.

At the core of our argument lie the results obtained in experimental studies conducted by one of the authors (Camanho and Fernandes 2018), which demonstrate a “mortgage illusion”: home buyers are influenced by the comparison between the monthly rental payment and the monthly mortgage installment for fixed-rate mortgages. Therefore, they are more likely to buy a house when the monthly rental payment is higher than the monthly mortgage installment. Supporting experiments

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show that the mortgage illusion is not caused by the desire to pay less per month for a mortgage, but by a desire to pay less each month for the rent than for the mortgage. Consumers use the monthly rental payment as a mental anchor and reference point to decide whether to buy a house¹. Moreover, consumers with greater time discounting are more likely to fall for the mortgage illusion. Finally, it was shown that financial education, literacy, and numeracy do not help overcome this bias. The mortgage illusion is a natural cognitive heuristic that leads people into making irrational financial decisions and sign on bad mortgages that can lead the borrower to personal bankruptcy in the midterm, and more generally to loss of stability and resilience in the real estate market, financial institutions, and the entire financial system in the long term.

Based on these findings, we argue that policymakers should establish better regulation that will balance and moderate the effect of the mortgage illusion. The purpose of the suggested regulation is to make the mortgage loan more likely to be repaid, particularly considering the heuristics influencing the home purchase decision. The main role of the regulator, under circumstances of market failures such as monopoly power and asymmetric information that are prevalent in the mortgage market, is to treat the economic distress that stems from excessive borrowing. This suggestion is in line with Sunstein's (2013) "smart regulation" model that aims to simplify regulation and derive real gains from weak paternalism that debiases people from their psychological mechanisms (Sunstein 2006). Through a policy of clerical alert and behaviorally adapted restrictions on mortgage maturity, payment-to-income- and loan-to-value-biased borrowers would be debiased and become better able to repay their mortgages. We thus propose designing regulations in a way that would make the mortgage illusion bias less harmful.

The chapter is structured in four sections. Section 1 describes the main findings of Camanho and Fernandes' (2018) experiments on borrowers' behavior. Section 2 explains the cognitive heuristics and economical decision-making biases involved in mortgage decisions. Next, Section 3 discusses the consequences of the mortgage illusion. Section 4 then proposes regulatory solutions for it. A short conclusion ensues.

2 The Mortgage Illusion

Buying a house is one of the most important financial decisions that households face. For most homeowners, their house or houses are the most valuable assets in their balance sheet. The mortgage amount is the initial amount that the bank lends you to purchase the asset from its owner. It is not the amount eventually repaid to the bank,

¹The anchoring bias describes the common human tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions (sometimes referred to as the "anchoring effect").

because the amount borrowed will have accrued interest and commissions over the years. The interest rate (in percentage) may be either predetermined or variable, but usually indexed. The repayment period is the time over which you commit to repay the full amount of the loan, including interest. The bank has an interest in spreading the repayment over a long period of time and will therefore offer you favorable and tempting conditions, but the borrower's interest is to get out of the bond as soon as possible and shorten the repayment period if possible.

Many factors influence the housing decision, making it a complex and difficult mission to many potential buyers. In addition, there are limited opportunities to learn from experience, since most people buy a house only once or twice in a lifetime. As a result, consumers are often uncertain about their housing decisions. When people are uncertain about a choice, they draw upon intuitive and contextual cues (Slovic 1995). These cues are sometimes difficult to justify rationally. Previous research has shown that housing decisions might be based on market inefficiencies and improper regulation (Brunnermeier and Julliard 2008; Simonsohn and Loewenstein 2006; Genesove and Mayer 2001; Case and Shiller 1988). When people are not accustomed to make such decisions, they tend to rely on heuristics that could hamper their decision-making. In the vast literature on behavioral economics, some heuristics appear to be particularly relevant, such as framing, anchoring, risk aversion, and unrealistic optimism. These might affect our rational thinking and lead us blindly to irrational economical decisions such as taking a bad mortgage. As Mugerman and Ofir present in *this volume*, the mortgage regulation can function as an anchor that affects people's decisions. In a similar context, Camanho and Fernandes (2018) show that people are sensitive to heuristics regarding to the rent they have paid prior to taking the mortgage.

Camanho and Fernandes' test, for the first time, the biasing effect of the anchor heuristic called the "mortgage illusion." Potential buyers affected by this illusion use the monthly rental payment as an anchor for determining the monthly mortgage installment when deciding to buy a house. Consumers, it is found, are more likely to enter mortgage contracts when their rent is higher than the prospective mortgage installment. They use the rental payment as a reference point despite the fact that it is not directly comparable to the mortgage installment and regardless of the interest rate scenario. This cognitive act of anchoring and adjustment frames decision-making in a predictable fashion. For example, suppose an individual pay \$1000 each month for rent. She is then offered either of two 2% mortgages, both worth \$250,000: (1) a 30-year mortgage with a monthly payment of \$922 and (2) a 25-year mortgage with a monthly payment of \$1057. If she were affected by the mortgage illusion, she would be more likely to buy in the former case and more likely to continue paying rent in the latter.

People hold their money in separate accounts, which can be physical, but sometimes only mental. For instance, people have savings for children's education, vacation, or medical emergencies. They are reluctant to withdraw from these accounts to cover unrelated needs. They prefer accumulating expensive debt on their credit cards rather than use their savings. Separate accounts help them keep things manageable. Instead of relying on a comprehensive review of their portfolio,

investors open accounts for each stock and minimize their losses in that specific stock given a certain period (Sussman and O'Brien 2016). Camanho and Fernandes suggest that people lump the monthly mortgage installment and rent in the same mental account. They might set a monthly cap for living expenses whether they pay rent or mortgage.

One reason for this pattern is that home buyers typically earn a higher income when they buy a house than when they used to pay rent and are therefore willing to pay more for a mortgage than for rent. Given that most consumers are debt averse, home buyers are willing to pay off their mortgage as soon as possible. This is evidenced by the fact that the monthly mortgage is on average higher than the monthly rent in all panels examined. The income of home buyers is also higher on average than their income when they used to pay rent. Nevertheless, the distribution of the difference between the monthly mortgage installment after buying a house and the monthly rental payment before buying concentrates around zero, with the mortgage installment nearly the same as the rent.

Camanho and Fernandes observe that people are more likely to buy a house when the monthly installment of the mortgage becomes lower than their current monthly rental payment, regardless of whether a discounted cash flow analysis suggests either renting or buying. Furthermore, switchers from renting to buying concentrate in regions where the monthly mortgage installment is approximately lower than the monthly rental payment. That shows that the mortgage illusion is not caused by a general and objective desire to pay less, but by a subjectively biased desire to pay *less than the rent*.

Camanho and Fernandes found that the mortgage illusion could not be solely explained by budget constraints. In all panels, the correlation between mortgage installment and rent was significant when controlling for income and for the increase in income relative to when households paid rent. This suggests that the effect of monthly rental payment on the monthly mortgage was independent of financial constraints. In fact, merely informing participants about the monthly rental payment increased the likelihood of buying when the mortgage installment was about the same value as the rent. Conversely, when not informed of the monthly rent, the likelihood of buying property linearly increased with monthly mortgage increases. This is consistent with previous research showing that free of the anchoring illusion, consumers are debt averse (Amar et al. 2011), who prefer shorter maturities (Hardisty et al. 2013; Stango and Zinman 2009) and exhibit overconfidence about their repayment ability (Berman et al. 2016).

Camanho and Fernandes also found that individual differences in financial literacy could not explain the mortgage illusion and that financial education was not sufficient to reduce the mortgage illusion. This is consistent with earlier findings that show that personal financial decision behaviors are hard to change (Fernandes et al. 2014).

The mortgage illusion is a cognitive bias that causes potential home buyers to deviate from economically rational choices. Those who incur the illusion might enter into suboptimal if not exploitative mortgage contracts that can be fatal from a microeconomic point of view and aversive to the financial system

on the macroeconomic level. By narrowly focusing on the comparison between the monthly rental payment and the monthly mortgage installment, home buyers overlook crucial terms of the mortgage contract, such as the interest rate. They sign mortgage contracts partly because the rental payment is high enough, the maturity of the mortgage is long enough, or the down payment big enough for the monthly installment to be lower than the rent.

Uncertain about how much they should pay every month, home buyers end up anchoring on the rent they pay. They use this payment as a reference point to the monthly mortgage installment. They focus on the monthly expenses of renting vs. buying and fail to consider that these expenses are part of a longer stream of payments. Rather than employing a discounted cash flow analysis, home buyers resort to the mortgage illusion.

3 Cognitive Heuristics and Economic Decision-Making

Cognitive limitations hinder consumers' ability to make a rational assessment of the optimal debt repayment scheme. Borrowers fail to appreciate the power of compound interest, which leads them to ignore the negative consequences of long-maturity loans for the total cost of the loan (Stango and Zinman 2009). People underestimate how long it takes to eliminate a debt when payments barely cover the interest owed (Soll et al. 2013). It is our natural tendency to use intuitive shortcuts in decision-making (Kahneman and Frederick 2002). Therefore, when evaluating a mortgage, even financially sophisticated individuals may fall prey to the mortgage illusion as they consider the monthly rental payment and mortgage installment at the same time.

Our cognitive resources are limited. Therefore, we are managed by schematic, automatic rules of thumb that are evolutionarily efficient for survival, but are insufficient and ineffective in complicated decisions. Hence, we are subject to heuristics such as availability, repressiveness, anchoring and adjustment framing, loss aversion, and more—all important features of how people evaluate financial prospects irrationally (Tversky and Kahneman 1986). According to prospect theory, decisions depend on comparison of potential outcomes with a reference point, which is constructed narrowly. People dislike outcomes that are lower than a reference point about twice as much as they like to obtain outcomes that are above it, by the same absolute amount (Tversky and Kahneman 1981). Reference points can be based on past outcomes or some future ideal. For instance, people betting on horse races make bigger bets at the end of the day to recover losses incurred earlier on (McGlothin 1956). Investors prefer selling winners rather than losers (Barberis and Xiong 2009). Cab drivers are highly motivated to achieve a targeted daily income and end up going home too early in a particularly profitable day (Camerer et al. 1997). Finally, consumers pay more attention to proportional rather than absolute discounts (Thaler 1985).

These biases arise because of cognitive limitations. Even though people know that gains and losses in total wealth are more relevant, they focus excessively on gains and losses in one part of their wealth, simply because information about those gains and losses is more readily available (Rabin and Thaler 2001). Similarly, people engage in attribute substitution when struggling to find an answer to a decision problem, and substitute the solution to a related simple problem (Kahneman and Frederick 2002). People find adequate, though often imperfect, answers to difficult questions if they are highly accessible. This is evidenced in anchoring, i.e., the fact that people's estimates can be affected by a highly accessible number. For instance, when uncertain about the price of a product, people anchor to a certain reference number and adjust very little from that initial number. The adjustment is often insufficient because people stop when they are no longer certain that they should adjust further. The adjustment is a deliberate attempt to find reasons to distance from the anchor (Simmons et al. 2010). For example, migrants arriving from more expensive cities end up renting pricier apartments despite the fact that the prices in the previous city are no longer relevant (Simonsohn and Loewenstein 2006). Regarding the effect size of the anchoring heuristic, the literature shows that the higher the ambiguity, and the lower the familiarity, relevance, or personal involvement with the problem, the stronger the anchoring effect (Van Exel et al. 2006).

Camanho and Fernandes (2018) therefore confirmed the following dramatic hypotheses: (1) consumers will be more likely to buy a property when the monthly installment of a mortgage is lower than the monthly rental payment; (2) the rent will be a reference point for the monthly mortgage installment such that consumers will prefer about the same monthly amount for their mortgage as they used to pay for rent.

4 The Consequences of the Mortgage Illusion

The excessive focus on benefits in the near future rather than the costs in the more distant future may lead borrowers to ignore the long-term costs of a loan. Consumers who incur the mortgage illusion minimize monthly payments rather than the mortgage's total cost. As expected, these consumers also tend to prefer smaller, sooner payouts regardless of whether these payouts are immediate or occur in the more distant future.

The recent housing crisis in the USA questioned the immunity of home purchasing as a risk-free financial investment. Households took on subprime mortgage contracts they could not afford later (Mian and Sufi 2009). It is possible that one of the reasons that might have pushed those households into the subprime contracts was the mortgage illusion. Behavioral biases can indeed lead to adverse macroeconomic shocks (Korniotis and Kumar 2011).

The housing bust around the 2007–2009 Great Recession in the USA explains in part the rise in mortgages in that period (Adelino et al. 2016), which some believe

to be one of the main triggers of the financial crisis (Brueckner et al. 2012; Gerardi et al. 2013; Mayer et al. 2009). Had home buyers been aware of the mortgage illusion, negative equity might have been prevented. Households who succumb to the mortgage illusion might end up defaulting, worsening their balance sheets and their employment prospects. If a discounted cash flow analysis² proposes renting as the best option, yet the household follows the mortgage illusion, this increases the household leverage, which in turn could lead to personal bankruptcy in the medium term (Mian and Sufi 2011).

In relation to the real estate market, borrowers who will fall prey to the mortgage illusion will not be able to repay their loan. Banks will forfeit their assets and sell them cheaply on the free market or at an auction. This will lead to a flood of apartments and assets on the real estate market, which might bring it, on the one hand, to lower prices. On the other hand, it may lead to higher rental prices as all of those impoverished people who have been biased and do not have money to buy an apartment now have to rent, resulting in a higher demand for renting.

One remaining question is whether real estate agents exploit the mortgage illusion in order to sell expensive mortgages. Realtors may increase the likelihood of selling by suggesting a monthly mortgage installment that is about the same as the monthly rental payment of potential buyers. Real estate agents typically have a strong incentive for selling a house (Levitt and Syverson 2008) and participate in the widespread falsification of income information on mortgages (Mian et al. 2017). Consumers often lack good third-party financial advice. Misconduct and fraud are often observed and rarely enforced among financial advisors (Egan et al. 2018). It is therefore possible that real estate agents exploit the illusion to increase their profits by selling expensive mortgages to households that are unaware of making a negative present value decision.

Camanho and Fernandes' experiments examine what consumers actually do when making mortgage decisions against what theory predicts they should do. As noted, consumers use their monthly rental payment as a reference point. If the monthly mortgage installment is a few dollars lower than the rent, they think they should buy the house. However, the discounted cash flow analysis does not prescribe a monthly mortgage installment, and a low monthly amount greatly extends the maturity date. Consumers should consider the interest rate when deciding about the maturity of a mortgage and on their monthly payments. Instead, consumers target their previous monthly rental payment even when they can pay less or more for their mortgage, when in fact they should avoid using the rent as a reference point. Regulators should monitor whether realtors use the mortgage illusion to sell expensive mortgages.

²Discounted cash flow (DCF) is a method to estimate the value of an investment based on its future cash flows. DCF analysis determines the present value of an expected future cash flow using a discount rate. A present value estimate is then used to evaluate a potential investment. If the value calculated through DCF is higher than the current cost of the investment, the opportunity should be considered.

5 Regulatory Solutions

The mortgage illusion drives individuals to take bad mortgages and to fail to repay them. As a general phenomenon, as stated, this has a systemic negative effect on the entire economy. Below are macro and micro solutions that can help mitigate its effects.

When contracting, potential buyers often exhibit overoptimism about their future income and subsequently often fail to meet their expectations. Thus, smart and adjustable regulation is needed to balance biases in people's mortgage decisions (Bar-Gill 2014). This includes restrictions in the form of macro prudential tools (MPTs): limitation on the payment-to-income (PTI) ratio, limitation on maturity, and limitation on the loan-to-value (LTV) ratio. Other regulations would be an imposed statutory duty on the banks to identify those succumbing to the mortgage illusion when buying real estate. Stricter restrictions for biased borrowers would cause borrowers to sign on a mortgage that is more suitable for their repayment capacity and would be preferable in terms of future cash flow analysis. Moreover, regulatory limitations would moderate the chosen mortgage as a balancing anchor, especially maturity-wise, since the regulations themselves act as a reference point to be attributed cognitively. Finally, imposing statutory duty on the bank's clerks to alert biased borrowers would yield good results, i.e., implementing a practice of clerical alert would break the anchor and deter borrowers from taking bad mortgages. This would defrost their rational system of thinking, so they would overcome their automatic one.

5.1 *Macro Mortgage Regulations*

Since the 2008 crisis, most of the world's central banks have set interest rates down to zero, leading indirectly to a rapid increase in housing prices.

The various restrictions of the banks around the globe are intended to assist the government in its efforts to curb the constant rise in real estate prices (Mugerman and Ofir [this volume](#); Aikman et al. 2014). However, banks are also concerned with their stability and the resilience of the entire financial system. Recession and the low interest rate create an explosive situation, since if the interest rate rises, many of the borrowers may face difficulties in repaying their mortgage. Therefore, banks usually decide on various limitations—partly on the banks and partly on the borrowers.

These restrictions are regarded as MPTs, the most common of which are (1) limitation on the PTI ratio, (2) limitation on maturity, (3) limitation on the proportions of fixed and adjustable rate mortgages, and (4) limitation on the LTV ratio. The latter is one of the most popular MPTs in the area of mortgages. Aggregate cross-country studies find that LTV limits are effective in moderating the increase in house prices, thereby reducing the risks and consequences of bubbles in real estate markets (International Monetary Fund 2011).

The literature discussing MPTs focuses on their effects on the stability of the financial system as a whole, mostly from the point of view of regulators and financial institutions (Mugerman et al. 2018), rather than on behavior of the individual borrower. As such, some of the studies find that during downturns in the residential real estate market, LTV limits lower bank losses (Krznar and Morsink 2014; Lim et al. 2011). The effectiveness of such constraints from the borrowers' perspective is empirically vague (Ayal et al. 2018), although this chapter will offer a micro solution to the mortgage illusion using this regulation as a balance anchor.

In Mugerman and Ofir's research, the main findings were that both LTV and PTI limits had partial success in lowering the number of transactions, but there was little evidence that either had any success in moderating the growth rate of housing prices.

Housing prices and mortgages tend to move together and influence each other in a two-way feedback loop (Crowe et al. 2013). These correlated trends impose high risks on borrowing individuals, financial institutions, and the financial system as a whole. Note that applying a combination of several MPTs can have various consequences for the behavior of the average mortgage lender and borrower and for the stability of the entire financial system. In particular, regulators and policymakers can enact a set of MPTs to curb the growing demand for housing and housing loans. These tools are imposed mainly in order to protect the banking system against risks associated with excessively leveraged borrowers who fail to repay, rather than with consumers who fell prey to the mortgage illusion due to the natural naivety of their cognition.

5.2 *Restriction Adjustment and “Smart Regulation” for Biased Borrowers*

In order for individuals to avoid taking bad mortgages, they need to be matched with mortgage offers that suit them. The mortgage-rent bias is a market failure that needs to be fixed by a corrective regulation. The four regulatory restrictions presented above should be adopted. These restrictions prevent people from taking mortgages they cannot repay. This way, a prospective buyer will take a mortgage that suits her, and will eventually be able to buy the house. At the same time, the real estate market and the economy in general will not suffer.

To benefit from these restrictions, it is essential to identify those borrowers who fall victim to the mortgage illusion and apply tougher regulation to them. For example, when a bank clerk identifies a customer interested in buying an apartment at a monthly value lower than the rent currently paid, regulations should be applied to make that particular mortgage less attractive, so the borrower would abandon it for an alternative mortgage that is rationally more suitable.

Examples of regulatory tightening are that, firstly, biased buyers would be restricted to an LTV ratio that is higher in percentage than the ratio of those who take a mortgage whose monthly price is higher than their former rent. Secondly,

restricting the PTI ratio to a higher percentage of the biased borrower's income. Thirdly, loan maturity should be limited to less years for biased borrowers: they would have to prove a more solid repayment capacity or a more reliable guarantor. Finally, the default setting of maturity for biased consumers would be shorter and they would need to actively seek approval for a longer maturity after showing sufficient repayment capacity; the reason for this proposed regulation is that the default rate has power: experimental and observational studies show that making an option the default increases the likelihood that it is selected (the default effect; Dinner et al. 2011).

Besides the micro cooling effect of these limitations on biased buyers, another rationale behind these restrictions is that they would also limit the global demand for housing and the price increase trend would lose some steam.

5.3 *Limitations as a Balancing Anchor*

Mugerman and Ofir found that, overall, the regulatory provisions tested served as an anchor affecting borrower decision-making (Mugerman and Ofir [this volume](#)). Their most unexpected result obtained was an increase in mortgage loan maturity following the imposed maturity limit. They also found an increase in PTI ratio following the regulation that imposed PTI limits. They conclude that the anchoring and adjustment heuristic may have influenced households' decision in such a way that they perceived the maximum maturity limit as a relevant average maturity anchor and consequentially increased mortgage maturity.

If the regulation serves as an anchor, then it can be used to moderate another anchor, balancing the mortgage illusion. Therefore, a good solution might be to identify biased borrowers and impose a duty on bank clerks to check the rent of those who buy real estate. Subsequently, more rigid regulations should be applied as suggested above.

The mortgage illusion, as stated, leads people to take a high-interest mortgage at a low monthly payment with long maturity. A moderator anchor would be a regulatory limitation of shorter maturity. Thus, a person would be mutually influenced by the two anchors and make a relatively balanced decision.

A more rigid regulation for biased consumers would be beneficial both as constraint to take a suitable mortgage and as a balancing anchor that would moderate the mortgage-rent fallacy. What do these restrictions have to do with "smart regulation"? Behavior change strategies such as "nudging" have become hugely popular with administrations. "Nudging" involves structuring the choices that people make so as to lead them to particular outcomes. Placing fruit next to the supermarket cashier desk, for example, gives a nudge towards healthy eating. A nudging strategy might be seen and understood as a soft paternalism. Thus, it must be used with precision and awareness of both its limitations and its fit within the range of state interventions (Baldwin 2014). Restrictions that keep the mortgage market regulated wisely would force banks to keep the best offers near the proverbial

cashier desk. For example, for borrowers identified as tenants paying a rent higher than their income capacity, mortgages with a higher monthly price and shorter maturity should be proposed first.

5.4 *Clerical Alert*

Recent research suggests that training helps reduce many cognitive biases (Mellers et al. 2015). It is not mere financial or psychological knowledge that will save you from the mortgage illusion, but professionalism and expertise accumulated slowly with experience. More knowledgeable, less confident, and more open-minded individuals can integrate multiple sources and pieces of knowledge as they process information more diligently (Tetlock and Garder 2015). The practice of clerical alert could thus defrost borrowers' rational system of thinking, so they overcome their automatic and biased system and their overoptimism, and avoid assessment failure (Anderssen et al. 2006).

The typical buyer has no experience or expertise in this. Moreover, overcoming the mortgage illusion is not something that can be taught en masse. Thus, a great benefit will be obtained by obligating bank clerks to identify biased buyers and to warn them about the unfeasibility of their chosen mortgage. Similar to what is written on the cigarette box, clerks should warn of the result of taking a bad mortgage, thus preventing from falling for the mortgage illusion, whether due to a natural cognitive bias or due to fraud by advisors and agents.

6 Conclusion

In Camanho and Fernandes' (2018) research, a repeated pattern across household panels worldwide was identified: in all, the distribution of the difference between the monthly mortgage installment after buying a house and the monthly rental payment before buying is concentrated around zero, where the monthly payments are the same. Rental payments before buying a house are used as a reference point for the monthly mortgage installment despite the fact that the two are not directly comparable. The correspondence between the rent and the mortgage installment holds regardless of income in the year of purchase and regardless of the mortgage's profitability.

The chapter pointed at a natural cognitive heuristic that leads people into making irrational financial decisions and sign bad mortgages that can lead the borrower to personal bankruptcy in the medium term, and generally to loss of stability and resilience in the real estate market, in financial institutions, and in the entire financial system.

To mitigate the repercussions of this mortgage illusion, regulatory solutions were proposed in the form of restrictions regarded as macro prudential tools

(MPTs): limitation on the payment-to-income (PTI) ratio, limitation on maturity, and limitation on the loan-to-value (LTV) ratio. Another proposal was to impose statutory duty on the banks to identify potential borrowers biased by the illusion. Stricter restrictions for biased borrowers would cause them to sign a mortgage that is more suitable for their repayment capacity and would be more preferable in terms of future cash flow analysis. Furthermore, regulatory limitations would moderate the selected mortgage as a balancing anchor, especially maturity-wise, since the regulations themselves act as a reference point to be attributed cognitively. Another regulatory proposal was imposing statutory duty on bank clerks to alert biased borrowers, and thereby break the anchor and deter borrowers from taking bad mortgages.

By examining the influence of regulatory restrictions on decision-makers' behavior, this chapter can contribute to the understanding of market functioning beyond the theoretical predictions. Camanho and Fernandes' findings concerning this functioning should be further investigated empirically, in order to adjust specific operational regulations to overcome the mortgage illusion.

References

- Adelino, M., Schoar, A., & Severino, F. (2016). Loan originations and defaults in the mortgage crisis: The role of the middle class. *The Review of Financial Studies*, 29(7), 1635.
- Aikman, D., et al. (2014). *Taking uncertainty seriously: Simplicity versus complexity in financial regulation*. Financial Stability Paper No. 28, Bank of England.
- Amar, M., et al. (2011). Winning the battle but losing the war: The psychology of debt management. *Journal of Marketing Research*, 48, S38.
- Anderssen, E., et al. (2006). Reducing over-optimism in variable selection by cross-model validation. *Chemometrics and Intelligent Laboratory Systems*, 84, 1.
- Ayal, S., Bar-Haim, D., & Ofir, M. (2018). Behavioral biases in peer-to-peer (P2P) lending. In I. Venezia (Ed.), *Behavioral finance: The coming of age* (pp. 367–400). Singapore: World Scientific Publishers.
- Baldwin, R. (2014). From regulation to behaviour change: Giving nudge the third degree. *The Modern Law Review*, 77(6), 831.
- Barberis, N., & Xiong, W. (2009). What drives the disposition effect? An analysis of a long-standing preference-based explanation. *The Journal of Finance*, 64(2), 751.
- Bar-Gill, O. (2014). Consumer transactions. In E. Zahir & D. Teichman (Eds.), *The Oxford handbook of behavioral economics and the law* (pp. 465–490). Oxford: Oxford University Press.
- Berman, J. Z., et al. (2016). Expense neglect in forecasting personal finances. *Journal of Marketing Research*, 53(4), 535.
- Brueckner, J. K., Calem, P. S., & Nakamura, L. I. (2012). Subprime mortgages and the housing bubble. *Journal of Urban Economics*, 71(2), 230.
- Brunnermeier, M. K., & Julliard, C. (2008). Money illusion and housing frenzies. *The Review of Financial Studies*, 21(1), 135.
- Camanho, N., & Fernandes, D. (2018, September 16). *The mortgage illusion*. Retrieved from <https://doi.org/10.2139/ssrn.1856325>.
- Camerer, C., et al. (1997). Labor supply of New York City cabdrivers: One day at a time. *The Quarterly Journal of Economics*, 112(2), 407.

- Case, K. E., & Shiller, R. J. (1988). The behavior of home buyers in boom and post-boom markets. *New England Economic Review, November*, 29.
- Crowe, C. et al. (2013). How to deal with real estate booms: Lessons from country experiences. *Journal of Financial Stability*, 9(3), 300.
- Dinner, I., et al. (2011). Partitioning default effects: Why people choose not to choose. *Journal of Experimental Psychology: Applied*, 17(4), 432.
- Egan, M. L., Matvos, G., & Seru, A. (2018). Arbitration with Uninformed Consumers No. w25150. National Bureau of Economic Research.
- Fernandes, D., Jr, J. G. L., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861.
- Genesove, D., & Mayer, C. (2001). Loss aversion and seller behavior: Evidence from the housing market. *The Quarterly Journal of Economics*, 116(4), 1233.
- Gerardi, K., Goette, L., & Meier, S. (2013). Numerical ability predicts mortgage default. *Proceedings of the National Academy of Sciences*, 110, 28.
- Hardisty, D. J., Appelt, K. C., & Weber, E. U. (2013). Good or bad, we want it now: Fixed-cost present bias for gains and losses explains magnitude asymmetries in intertemporal choice. *Journal of Behavioral Decision Making*, 26, 4.
- International Monetary Fund. (2011). *Macro prudential policy: An organizing framework*. IMF Policy Paper SM11/54.
- Kahneman, D., & Frederick, S. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 49–81). Cambridge: Cambridge University Press.
- Korniotis, G. M., & Kumar, A. (2011). Do older investors make better investment decisions? *The Review of Economics and Statistics*, 93(1), 244–265.
- Krznar, I., & Morsink, J. (2014). *With great power comes great responsibility: Macroprudential tools at work in Canada*. IMF Working Paper No. 14/83.
- Levitt, S. D., & Syverson, C. (2008). Market distortions when agents are better informed: The value of information in real estate transactions. *The Review of Economics and Statistics*, 90(4), 599–611.
- Lim, C. H., et al. (2011). *Macroprudential policy: What instruments and how to use them? Lessons from country experiences*. IMF Working Paper No. 11/238.
- Mayer, C., Pence, K., & Sherlund, S. M. (2009). The rise in mortgage defaults. *Journal of Economic Perspectives*, 23(1), 27.
- McGlothlin, W. H. (1956). Stability of choices among uncertain alternatives. *The American Journal of Psychology*, 69(4), 604.
- Mellers, B., et al. (2015). The psychology of intelligence analysis: Drivers of prediction accuracy in world politics. *Journal of Experimental Psychology: Applied*, 21(1), 1.
- Mian, A., & Sufi, A. (2009). The consequences of mortgage credit expansion: Evidence from the US mortgage default crisis. *The Quarterly Journal of Economics*, 124(4), 1449.
- Mian, A., & Sufi, A. (2011). House prices, home equity-based borrowing, and the US household leverage crisis. *American Economic Review*, 101(5), 2132.
- Mian, A., Sufi, A., & Verner, E. (2017). Household debt and business cycles worldwide. *The Quarterly Journal of Economics*, 132(4), 1755.
- Mugerman, Y., & Ofir, M. (this volume). Anchoring and adjustment in the mortgage market: A regulatory experiment. In R. Levine-Schnur (Ed.), *Measuring the effectiveness of real estate regulation*. New York: Springer.
- Mugerman, Y., Tzur, J., & Jacobi, A. (2018). Mortgage loans and bank risk taking: Finding the risk “sweet spot”. *Quarterly Journal of Finance*, 8(4), 1840008.
- Rabin, M., & Thaler, R. H. (2001). Anomalies: Risk aversion. *Journal of Economic Perspectives*, 15(1), 219.
- Simmons, J. P., LeBoeuf, R. A., & Nelson, L. D. (2010). The effect of accuracy motivation on anchoring and adjustment: Do people adjust from provided anchors? *Journal of Personality and Social Psychology*, 99(6), 917.

- Simonsohn, U., & Loewenstein, G. (2006). Mistake# 37: The effect of previously encountered prices on current housing demand. *The Economic Journal*, 116(508), 175.
- Slovic, P. (1995). The construction of preference. *American Psychologist*, 50(5), 364.
- Soll, J. B., Keeney, R. L., & Larrick, R. P. (2013). Consumer misunderstanding of credit card use, payments, and debt: Causes and solutions. *Journal of Public Policy & Marketing*, 32(1), 66.
- Stango, V., & Zinman, J. (2009). Exponential growth bias and household finance. *Journal of Finance*, 64, 2807.
- Sunstein, C. R. (2006). Boundedly rational borrowing. *University of Chicago Law Review*, 73, 249.
- Sunstein, C. R. (2013). *Simpler: The future of government*. New York: Simon and Schuster.
- Sussman, A. B., & O'Brien, R. L. (2016). Knowing when to spend: Unintended financial consequences of earmarking to encourage savings. *Journal of Marketing Research*, 53(5), 790.
- Tetlock, P. E., & Gardner, D. (2015). *Superforecasting: The art and practice of prediction*. New York: Crown Publishers.
- Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science*, 4(3), 199.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453.
- Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *The Journal of Business*, 59(4), S251.
- Van Exel, N. J. A., et al. (2006). With a little help from an anchor: Discussion and evidence of anchoring effects in contingent valuation. *The Journal of Socio-Economics*, 35, 5.

European Property Law: Competence, Integration, and Effectiveness



Sjef van Erp

Abstract Within the European Union property law is, for the most part, governed by the laws of the member states, not unlike in the United States where property law is foremost state law. Only in certain areas fragments of “European” (i.e., European Union) property law can be found. The European Union only has limited competences to legislate, and if it legislates in the field of property law, member states try to limit this by invoking Article 345 of the Treaty on the Functioning of the European Union (TFEU), which on its face even seems to exclude property law completely from any EU interference. EU law, so it looks like, is not seen by member states as a tool to effectively protect property rights, but as undesirable interference in their national systems of property law. Particularly when it comes to effective protection of property rights, it frequently is not the European legislator who is the most important actor, but the Court of Justice of the European Union (CJ EU), by invoking the principle of “*effet utile*”: EU law should be given full effect by courts to protect, for instance, the rights which consumers have on the basis of both primary (treaty based) and secondary (EU directives and regulations based) law.

1 Introduction

Within the European Union property law is, for the most part, governed by the laws of the member states, not unlike in the United States where property law is foremost state law. Only in certain areas fragments of “European” (i.e., European Union) property law can be found.¹ The European Union only has limited competences

¹See E. Ramaekers, European property law: From fragments to a system (Antwerp: Intersentia, 2013).

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to legislate, and if it legislates in the field of property law, member states try to limit this by invoking Article 345 of the Treaty on the Functioning of the European Union (TFEU), which on its face even seems to exclude property law completely from any EU interference.² EU law, so it looks like, is not seen by member states as a tool to effectively protect property rights, but as undesirable interference in their national systems of property law. Particularly when it comes to effective protection of property rights, it frequently is not the European legislator who is the most important actor, but the Court of Justice of the European Union (CJ EU), by invoking the principle of “*effet utile*”: EU law should be given full effect by courts to protect, for instance, the rights which consumers have on the basis of both primary (treaty based) and secondary (EU directives and regulations based) law.

In this chapter, after having discussed how EU law, albeit fragmented, still may affect property relations in the member states, three examples will be given to illustrate, on the one hand, how limited the impact of EU law is and, on the other hand, yet how far reaching that influence can be in the case law as developed by the CJ EU.

2 The Competence of the EU

The European Union is a supranational organization which has law making power in certain specific areas. To better understand this, first a brief introduction must be given to the rather complicated legal structure of the European Union.

The basic law of the European Union can be found in the Treaty on European Union (TEU), the Treaty on the Functioning of the European Union (TFEU), the Treaty establishing the European Atomic Energy Community (Euratom treaty), and the Charter of Fundamental Rights of the European Union. This is the EU’s primary law. It contains the fundamental structure of the EU (its institutions) and how the EU functions (in terms of competence and decision making). All other EU law is called secondary law, meaning regulations, directives, decisions, recommendations, and opinions. A regulation closely resembles in its effects a national statute. A directive is aimed at member states and imposes a duty to change national law accordingly. A decision is aimed at one particular country or (legal) person. Recommendations and opinions are nonbinding expressions of views.³ Whether the EU has the power

²The European Union is based upon the Treaty on European Union (TEU), the Treaty on the Functioning of the European Union (TFEU), the Treaty establishing the European Atomic Energy Community (Euratom), and the Charter of Fundamental Rights of the European Union. The consolidated texts of these instruments can be found on <https://eur-lex.europa.eu/collection/eu-law/treaties/treaties-force.html>.

³See Article 288 TFEU: “To exercise the Union’s competences, the institutions shall adopt regulations, directives, decisions, recommendations and opinions. A regulation shall have general application. It shall be binding in its entirety and directly applicable in all Member States. A directive shall be binding, as to the result to be achieved, upon each Member State to which it

to legislate in the form of a regulation or a directive depends upon the competence given to the Union in the TEU and the TFEU.

It should also be mentioned that EU law also applies outside the EU itself. This is the result of the Treaty on the European Economic Area (EEA) to which the EU itself, Iceland, Liechtenstein, and Norway are parties. The three last mentioned countries are also members of the European Free Trade Association (EFTA). With the fourth EFTA member, Switzerland, the EU concluded several bilateral treaties. The legal status of the United Kingdom, and particularly of Northern Ireland, is still unclear, given the difficulty to analyze Brexit discussions.

EU law is, according to early and now well-settled case law, autonomous, meaning that it is developing as a separate legal order, but not disconnected from the laws of the member states.⁴ Autonomous development has both a positive and a negative side. The positive side is that uniform or harmonized law is created which breaks through established national law and legal practices in order to create more unity and a level playing field among the various legal systems of the member states. The negative side is that the legal traditions of member states are disregarded. However, even here a positive aspect can be found. EU law should not be seen as the expression at a supranational level of one particular national legal order. Any impression that a member state might receive preferential treatment, thus giving its citizens an advantage over other EU citizens who might not be so familiar with that particular legal system, will be avoided.

The EU's law making results in either harmonization or unification of the law. Harmonization happens after a directive has been implemented in the laws of the member states. These laws then all provide for the same applicable law, but member states are allowed to follow different paths as long as the result is as the directive states. As to harmonization a further distinction must be made between minimum and maximum harmonization. In case of minimum harmonization, EU law creates a floor; in case of maximum harmonization, EU creates a ceiling. If the directive creates a floor, member states, e.g., in areas of consumer protection, can give citizens more protection than required under the directive. However, if the directive is a ceiling, member states cannot go beyond what is required. Unification happens when the laws of the member states are being replaced by rules in a regulation. No further national implementation is needed (although this sometimes still happens to align national law with European provisions), and, distinguishing a directive from a regulation, EU law will in case of a regulation also be binding among citizens and not only between a citizen and the member state.

EU law results, to a lesser or greater degree, in legal integration aimed at facilitating and promoting the common and internal market between the EU's

is addressed, but shall leave to the national authorities the choice of form and methods. A decision shall be binding in its entirety. A decision which specifies those to whom it is addressed shall be binding only on them. Recommendations and opinions shall have no binding force.”

⁴ECJ 5 February 1963 (Case C-26/62, Van Gend & Loos) [1963] ECR 1 and ECJ 15 July 1964 (Case 6/64, Costa/ENEL) [1964] ECR 595, to be found at <https://eur-lex.europa.eu/>. More recent cases can be found on the website of the CJ EU: <https://curia.europa.eu/>.

members. Here again a distinction should be made between two different types of integration: positive and negative. Positive integration means that the laws of the member states are made more uniform (through regulations) or are harmonized (through directives). Negative integration means that certain provisions of national law are considered to be in violation of the original four (now even five) freedoms underlying the internal market: freedom of goods, services, persons, and capital, to which we can now add data.⁵

In the following paragraphs, first positive and then integration will be discussed, looking at private law. Relevant to private law are, what may be called, the negative competence of Article 345 TFEU (excluding “system of property ownership” from the reach of EU law) and the positive competences of TFEU Articles 114 (establishment or functioning of the internal market), 81 (private international law), and 352 (appropriate measures to obtain the objectives of the European treaties). Negative competence should be distinguished from negative integration. It is “negative” in the sense that it (at least seemingly) forbids the EU to act and integrate through regulations or directives (in other words, positive integration), although it may have a clear competence to do so. Negative integration, however, although it results from a provision of national law being declared in violation of EU law, still does result in a form of integration, but not to the same extent as positive integration. In the latter case a whole area of national law is being replaced by uniform or harmonized EU law.

As an autonomous legal order, EU law has proven to be quite effective in establishing a common, internal market. But how effective is EU law from the perspective of individual citizens? In order to give an impression about the level of effectiveness, I will first discuss the competence of the EU to create binding secondary law and the growing tensions which surface between national law and EU law, in light of the growing desire of more and more member states to retain sovereignty or even to see a return of sovereignty already surrendered to the EU. This will be followed by showing the effectiveness of EU law in the area of mortgages created by private citizens, cross-border successions, and the rapidly developing new area of IT (blockchain, smart contracts, and Internet of things). At the end conclusions will be drawn and the question will be answered whether the effectiveness of EU law is as strong as might be needed and expected.

2.1 *Positive Integration*

With regard to positive integration, the TFEU, remarkably enough, has an explicit provision which makes clear that “The Treaties shall in no way prejudice the rules

⁵Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of nonpersonal data in the European Union (text with EEA relevance), OJ 2018, L 303/59.

in Member States governing the system of property ownership.”; in French: “Les traités ne préjugent en rien le régime de la propriété dans les États membres.”⁶ In academic literature there has been some debate about the actual impact of this provision.⁷ In the European Commission’s practice, it seemed to be that this provision provides a tool to justify staying away from complex property law questions, although a cross-border element was present. The Court of Justice of the European Union, however, decided that the impact of the provision is rather limited. That became indirectly clear from decisions such as the “golden share” cases,⁸ in which a government after privatization kept substantial influence over a company, but it became explicit in a case decided by the court’s Grand Chamber concerning privatization of the electricity industry in the Netherlands, the *Essent* case.⁹ In that case the court decided that the decision to privatize or nationalize enterprises was to be solely decided by the member states, but that did not exclude the duty to act in conformity with the four classical EU freedoms. In other words, Article 345 TFEU’s negative influence proves to be fairly restricted. As to the possible impact of the four freedoms in this specific case, the court did not rule.¹⁰

This does not mean that the European Union is then free to act in the area of property law as it pleases. The Union is built on the principle of limited competences, so EU law must be based on a provision in the treaties giving it competence to act. For private law the most important provisions are Articles 114 and 81. Article 114 concerns the establishment and functioning of the internal market and is used in cases where disparity between national legal systems is creating trade barriers; EU law can then create the desired level playing field. Article 81 is about judicial cooperation in civil matters. It is the basis for unifying private international law and has now been used to such a degree that not just areas relating to international civil and commercial cases are being governed by EU private international law but also international succession, matrimonial property, and registered partnership property cases.

⁶According to settled EU law, all texts have equal interpretive value, although the French text is in one of the original languages of the treaties.

⁷Cf. S. van Erp, Article 345 TFEU: A framework for European property law, in: E. Lauroba Lacasa and J. Tarabal Bosch, *El derecho de propiedad en la construcción del derecho privado europeo* (Valencia: Tirant Lo Blanch, 2018), p. 59.

⁸See, among other judgments, ECJ 4 June 2002, Commission vs. Portugal (Case C-367/98) [2002] ECR I-4731, Commission vs. France (Case C-483/99) [2002] ECR I-4781, Commission vs. Belgium (Case C-503/99) [2002] ECR I-4809 and ECJ 28 September 2006, Commission vs. Netherlands (Case C-283/04) [2006] ECR I-9141.

⁹CJ EU (Grand Chamber) 22 October 2013 (joined cases C-105/12 to C-107/12) ECR 2013-677

¹⁰Cf. Th. Papadopoulos, *Privatized Companies, Golden Shares and Property Ownership in the Euro Crisis Era: A Discussion After Commission v. Greece, European Company and Financial Law Review* 2015.

2.2 Negative Integration

As the EU is an autonomous legal order, following the Van Gend en Loos and Costa/ENEL cases, EU law has precedence over national law.¹¹ Violation of any of the four (now five) freedoms results in a national provision no longer being applicable. An example is the cases concerning a permit which was needed to become the owner of a house in certain touristic areas of Austria. Such a permit could imply a violation of the freedom of establishment, capital, and services, which might not be justified on grounds of public policy, because the measures were disproportionate.¹² The outcome was that a provision of Austrian law was no longer valid, as being in violation of EU law. As is the case with positive integration, EU law replaces national law here, but by only excluding the applicability of a national rule without replacing it—as is done in cases of positive integration—with a new EU rule.

3 Effectiveness of EU Law: Three Examples

3.1 Introduction

Given that member states of the European Union all follow the rule of law, and hence guarantee an independent judiciary the decisions of which are followed, mutually trusted and, if necessary, enforced, the effectiveness of EU law can particularly be measured when looking at case law in which EU law is applied. Of course, we should look at the judgments by the highest court in the EU, the Court of Justice of the European Union (CJ EU), but also at national supreme and lower courts applying and interpreting EU law or asking the CJ EU for a preliminary ruling according to Article 267 TFEU. In such preliminary ruling procedures, the CJ EU answers specific questions on EU law, which arose in proceedings pending before national courts. It is then up to the national court to further decide the case, taking into account the ruling by the CJ EU.

A very interesting development is how national courts are working together with the CJ EU when it comes to giving *effet utile* to EU law.¹³ It means that courts should

¹¹ECJ 5 February 1963 (Case C-26/62, Van Gend & Loos) [1963] ECR 1 and ECJ 15 July 1964 (Case 6/64, Costa/ENEL) [1964] ECR 595. Cf. on the history of these cases M. Rasmussen, Revolutionizing European law: A history of the Van Gend en Loos judgment, International Journal of Constitutional Law 2014, p. 136.

¹²Cf. among others the Reisch decision: ECJ (now: CJ EU) 5 March 2002, Joined Cases C-515/99, C-519/99 to C-524/99 and C-526/99 to C-540/99 [2002] ECR I—2157.

¹³See U. Šadl, The role of *effet utile* in preserving the continuity and authority of European Union law: Evidence from the citation web of the pre-accession case law of the Court of Justice of the EU, European Journal of Legal Studies 2015, p. 18.

give full effect to object and purpose of EU law. Sometimes the CJ EU even demands from lower courts that they apply EU law although parties to the proceedings before them did not make any reference to EU law. In other words, sometimes EU law has to be applied *ex officio*.¹⁴

3.2 Mortgages

The area of mortgage law might seem to be far away from the impact of EU law, but the opposite is true. First of all, mortgage credit is seen as highly important for the development of the EU internal market. As it is a given fact that no (mortgage) credit is given without security, the EU even considered to unify mortgage law in order to create a level playing field between the various national mortgage markets with their own particular national rules on mortgage law. The model chosen was that of the German/Swiss *Grundschuld*, which makes it possible to separate the actual monetary claim from the right of mortgage as such. According to this model, the mortgage is laid down in a tradable document, which represents an “abstract” loan arrangement, only connected with the actual loan through a contractual agreement. To put it differently, loan and security were still connected (“accessory”), but not at a property law level, as in most of the EU member states, but merely on a contractual level. In a period where no trade in mortgage loans happened (no secondary mortgage market), this was not a risk for the borrower, but that changed radically when secondary mortgage markets did come into existence. Actual loans could then be separated from abstract loans, which latter type of loans could in fact be enforced in situations where the actual loan might even have been paid off in full. The attempt to create positive integration finally proved to be a failure, when these risks for borrowers became apparent as a result of the financial crisis at the beginning of this century.

That same financial crisis resulted in a series of CJ EU cases on the validity and enforceability of terms and conditions in mortgage loan agreements. In order to protect consumers against their unequal bargaining position against commercial parties using general terms and conditions on a “take it, or leave it” basis, the European Union, already in 1993, enacted the unfair terms directive.¹⁵ If a term contradicts good faith, it shall not be binding on a consumer. To be effective implementing legislation is needed, and courts, so it seemed, only had limited ways

¹⁴In certain areas the CJ EU demands that on the basis of *effet utile* and based on national rules of public policy (‘*ordre public*’), national procedural law must allow courts to provide adequate protection to, e.g., consumers. Examples of legal areas where *ex officio* application may play a role are arbitration/competition law (see the Eco Swiss case (Case C-126/97) [1999] ECR I-3055) and consumer law (cf. the Océano decision (Joined Cases C-240/98 to C-244/98) [2000] ECR I-4941, the Aziz case (Case C-415/11), and the Banif Plus Bank case (Case C-472/11)).

¹⁵Council directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts, OJ 1995, L 1995/29.

of applying EU law as a set of rules overlaying national law. Except for certain specific situations in which the directive has not been implemented on time or has been implemented incorrectly, courts have no tools to apply the directive as such. The same is true if parties do not invoke the possible application of EU law, given that in civil proceedings the parties are leading and they decide which problems are laid before the court to be decided. However, the Court of Justice of the European Union has ruled that in the area of consumer law, courts sometimes have a duty to protect the *effet utile* of EU law. Although respecting national autonomy with regard to civil procedure, the CJ EU pronounced that courts must give full effect to, e.g., the unfair terms directive; otherwise de facto consumers are deprived of the protection which EU law gives them. National law should, in that situation, be discarded. The CJ EU decided this in a series of cases regarding unfair clauses in Spanish mortgage loans, the most prominent decision being the *Aziz* case.¹⁶

3.3 Succession Law

The European legal systems show a considerable diversity in the area of family, matrimonial property, and succession law. Although comparative studies show that certain societal developments can be found everywhere, still also considerable diversity exists. It was, therefore, clear that any attempt to unify, or even harmonize, the law in these areas was bound to fail. The expression of this is Article 83(3) TFEU, making judicial cooperation in civil matters regarding family law conditional upon unanimity. Even though it was attempted, with considerable support from both practitioners and academics, to create uniform rules in the areas of international succession law, matrimonial property law, and registered partnerships property law, the outcome was not the uniformity that its proponents expected.¹⁷ With regard to successions, Denmark, the United Kingdom, and Ireland used their “opt out” status, deciding not to “opt in.” Concerning the matrimonial property and partnership property regulations, enactment only proved to be possible between a limited number of member states, following the so-called enhanced cooperation procedure of Article 326 ff. TFEU. Enhanced cooperation means that a group of

¹⁶CJ EU 14 March 2013, Case C-415/11. See S. Iglesias Sánchez, Unfair terms in mortgage loans and protection of housing in times of economic crisis: *Aziz v. CatalunyaCaixa*, Common Market Law Review 2014, p. 955.

¹⁷Regulation (EU) No 650/2012 of the European Parliament and of the Council of 4 July 2012 on jurisdiction, applicable law, recognition and enforcement of decisions, and acceptance and enforcement of authentic instruments in matters of succession and on the creation of a European Certificate of Succession, OJ 2012, L 201/107; Council Regulation (EU) 2016/1103 of 24 June 2016 implementing enhanced cooperation in the area of jurisdiction, applicable law, and the recognition and enforcement of decisions in matters of matrimonial property regimes, OJ 2016, L 183/1; Council Regulation (EU) 2016/1104 of 24 June 2016 implementing enhanced cooperation in the area of jurisdiction, applicable law, and the recognition and enforcement of decisions in matters of the property consequences of registered partnerships, OJ 206, L 183/30.

at least 9-member states wants to proceed with legal integration, going further than what the other member states find acceptable. This attempt at unification of private international law in the interest of EU citizens who are more and more confronted with legal divergence because of cross-border relationships, therefore, proved to be only partially effective when looking at the participating member states, because even the most successful of these attempts, the Succession Regulation, does not bind all member states.

But also when looking at the content of the Succession Regulation, some very interesting aspects of effectiveness can be found. The regulation states that only one law will apply to the whole of a succession, and this law will be either the law of the last habitual residence of the deceased or the national law chosen by the testator in a last will. Furthermore, only the court of the last habitual residence will be competent to decide succession conflicts. During the drafting process, it became apparent, first of all, that it seemed as if the role of (civil law) notaries in countries where notaries in succession matters did not act under court supervision had been completely forgotten. This resulted in adding a provision that where “courts” were mentioned, also “notaries” should be read, creating the conundrum how to interpret a provision on competence of courts when applied to notaries not acting under court supervision.¹⁸ Then, secondly, notaries—particularly from Germany—began to realize that the impact of having to recognize foreign property rights might result in different solutions as adopted under German law. The fear was that certain changes in property rights might become effective without the traditional role of a German notary and German land registrars. This resulted in a text which now finally states that the regulation does not apply to “the nature of rights *in rem*” and “any recording in a register of rights in immovable or movable property, including the legal requirements for such recording, and the effects of recording or failing to record such rights in a register.”¹⁹ The purpose of the amendment was, without any doubt, to make explicit that the role of (German) notaries and (German) land registrars would not change as a result of the new EU regulation. For general private lawyers not specializing in succession law, the point of the debate became thereafter an almost obscure discussion between private international law experts about recognition of the legal effects of legacies of an immovable. Under German law a legatee only had a personal right to becoming the owner under the legacy and would not become the owner before the immovable by notarial deed had been transferred by the heirs to the legatee. This is the so-called “*legatum per damnationem*” type of legacy. Not all member states, however, take this approach. Poland, to give but one example, also knows a type of legacy which immediately passes ownership upon the death of the testator, the “*legatum per vindicationem*.” In its groundbreaking decision in the *Kubicka* case, and not unexpectedly to the dismay of German notaries and land registrars, the CJ EU, however, pronounced that once under the applicable law the legatee had become owner, administrative provisions

¹⁸ Article 3(2) Succession Regulation.

¹⁹ Article 1(2)(k) and (l).

could not be used to prevent the proprietary effect of that law. In other words, also in Germany the legatee under a “*legatum per vindicationem*” must be recognized as owner, thus giving the legatee full effective protection under the Succession Regulation.²⁰ No notarial deed required. It shows that the effectiveness of EU law, again, is safeguarded by courts, particularly the Court of Justice of the European Union.

3.4 Digitalization

How effective EU will be (or perhaps better, might be) can be seen when looking at the impact of digitalization and the so-called disruptive technologies: distributed ledger technology (better known as blockchain), smart contracts, artificial intelligence, machine learning, robotics, and the Internet of things. At the heart of all these technologies, and the use which is being made of them, are “data.” Data are becoming what a person’s patrimony used to be: a person’s shadow in the outside world that consists of both physical and nonphysical unique objects. Only objects which the law considers to be a part of your patrimony can be seized when you commit a tort or non-perform under a contract. Traditionally, these objects are either physical, such as land, or nonphysical, such as monetary claims and the result of human creativity (e.g., copyright). The fundamental difference, however, between data and these traditional types of object belonging to a patrimony is that data merely exist in immaterial format, linked to a data carrier, can exist in multiple forms (from raw data to data used in customer’s profile), and are non-rivalrous, i.e., can be copied and are for that reason not “unique.” Data which are considered “personal” are given special protection by the EU’s Data Protection Regulation (GDPR).²¹ The GDPR defines personal data as

any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.

The General Data Protection Regulation in its Articles 2 and 3 provides an extensive material and territorial scope. What is interesting to note is that in its first article, the GDPR states that it is aimed not only at protecting natural persons with regard to the processing of personal data but also at securing the free movement

²⁰CJ EU 12 October 2017, Case C-218/16. Cf. S. van Erp and K. Zimmermann, The jmpact of recent EU conflicts of law regulations on land registration, in: G. Muller (et al.), Transformative Property Law, Festschrift in honour of AJ van der Walt (Cape Town: Juta, 2018), p. 318.

²¹Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation, mostly known by its abbreviation: GDPR), OJ 2016L 119/1.

of personal data. This element of free movement is now also to be found in the Regulation on a framework for the free flow of nonpersonal data in the European Union. Data has become such an important economic asset that the European institutions (Parliament and Commission) even talk about freedom of data as the EU's fifth freedom, next to the "classical" freedoms of goods, services, persons, and capital. However, in spite of upgrading data to a fifth freedom, the legal status of data and data transactions is still highly unclear. The digital revolution (according to the World Economic Forum, the Fourth Industrial Revolution) has many aspects.²²

From a technical viewpoint, developments go incredibly fast and the law, although not always and in all respects, is running behind. A further difficulty is that technical developments show their own dynamics. We are now facing blockchain (or better, distributed ledger technology, not only cryptocurrencies), smart contracts (i.e., self-executing computer programs), artificial intelligence (AI), and machine learning, robotics, and the Internet of things (the hybrid reality because of physical things being connected with the virtual world). Each new technology poses its own specific problems, but together the problems are aggregated. When a company uses sensors to check its inventory and, by means of a smart contract, its computer system orders new goods, we see a combination of data generated by sensors, the automatic execution of the smart contract followed by the automated delivery of the goods, all data stored in immutable format using distributed ledger technology. In certain situations, some of the data may be personal in the sense of the GDPR and can therefore not, at least not immediately without consent, be traded. The legal nature of the applicable protection regime is looked upon differently from the angle of privacy protection and trade respectively. From the perspective of privacy law, protection of personal data is completely unrelated to any private law transaction, as it is seen as rooted in fundamental human rights. However, private lawyers, looking at the world economy and the realities of global trade, simply cannot ignore that data are being traded in and that privacy protection is only a limitation on free data trade. In fact, the GDPR itself states this in its first article: "This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data."²³ The effectiveness of privacy protection is already being jeopardized by technical developments. If free trade is seen as the all-enveloping approach governing the data economy, then at the end of the day, privacy protection will be the exception and not the strong rule which protects a person's integrity and it will lack effectiveness.

In any case, national solutions here are quite ineffective or might result in a race to the (regulatory) bottom. The European microstates, such as Andorra, the Channel Islands, Gibraltar, Liechtenstein, Monaco, and San Marino, all aim to become major players in a market governed by new IT developments, desiring to

²²See <http://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>.

²³Article 1 (1) GDPR.

become international centers of virtual trade. An example is Monaco, which intends to introduce a law on blockchain, which is clearly aimed at promoting virtual trade. The “*Exposé des Motifs*” accompanying the draft law states the following: “Ainsi, en devenant le premier État au monde à réguler totalement les blockchains et à agir en faveur de leur usage sur le territoire, Monaco pourrait s’assurer sans coup férir un leadership réel dans une activité économique déterminante.”²⁴ The financial centers Switzerland and Luxemburg too are very active in preparing laws which promote and facilitate IT-related trade.²⁵ European (member) states still see themselves in competition with the European Union, and as a result their legislative initiatives undermine the effectiveness of European attempts to create a balanced governance model for the data economy in which both trade and integrity of the human person are adequately protected.

It will be clear that, given the cross-border nature of data and the technical possibilities to copy, transfer, and delete data, any national solution, unless a country protects itself with a highly effective firewall, can be sidestepped. And if countries create a firewall around them, their data trade will be far less than if they take part in global trade, and this applies even to those countries which have a considerable internal market. From that perspective, it is clear that looking at the leading EU principles of subsidiarity and proportionality, the EU clearly has a competence to act, not to say that the EU must act in the interest of maintaining the integrity of its own internal market with its established freedoms.

Given that the EU has competence, the follow-up question how to create an effective governance model with regard to, e.g., blockchain is partly related to substance and, connected with that, partly related to form. The substantive aspect is that it should be decided which areas are to be governed by EU law, whereas the formal element is how to proceed and which tool to use? Should, given the lack of insight and practical experience, a recommendation be preferred or to give immediate enforceable protection a directive or regulation? Regarding decisions of a more substantive nature, extensive research will have to be done about (1) how IT developments might affect existing law, (2) whether the law as we now know proves to be flexible enough to solve existing and future problems or whether new rules are to be developed, and, if so, (3) how these rules should look like, given the competition between the two legal traditions of civil and common law and between larger and smaller jurisdictions, whereby size in the real world seems to become irrelevant.

²⁴ Proposition de loi No. 237 relative à la blockchain, Exposé des motifs p. 7. English translation: “In this way, by becoming the first state in the world to completely regulate blockchain and proceed to favour its use on our territory, Monaco could ascertain an uncontested real leadership role with regard to an economic activity of growing importance.”

²⁵ For Switzerland see the report by the federal council, legal framework for distributed ledger technology and blockchain in Switzerland. An overview with a focus on the financial sector, published December 2018, and for Luxemburg, see the Projet de Loi portant modification de la loi modifiée du 1er août 2001 concernant la circulation de titres, No 7363 Chambre des Députés, Session ordinaire 2017–2018 (proposed law on tradable documents).

Given the enormous diversity in Europe, a common vocabulary will have to be found, so we all mean the same thing when we use a particular term. Until the Brexit negotiations, English had established itself as the overall EU working language, but with these negotiations, member states such as France and Germany now seem to see their chance to regain their previously existing influence on legal developments in Europe by promoting the use of their own legal language and with that language their own legal vocabulary and way of thinking. Instead of growing convergence, because of the use of English, we now see a rapidly diverging vocabulary, which—regrettably enough—results in the exclusion of those who do not understand terminology in other languages than English. Is “numérique” really the same as “digital,” or does a French speaker, given the context of the French language, in fact refer to a different concept than an English-speaking person, using (mostly American) terminology? In other words, the disintegration of the EU and the resulting revival of legal terminological divergence are aggravating problems, which, by themselves, are already more than complicated enough. Added to this is the choice of form. The more complicated the problems and the more substantially and linguistically diverse opinions in European political fora will be expressed, the more difficult it will become to reach agreement about more far-reaching EU law. It is to be feared that the European legislator will not get much further than recommending to member states what it considers to be appropriate action. The outcome will be that member states will enact national legislation and national courts will develop their own case law in an area which, because of its cross-border nature, badly needs uniform solutions. Legal divergence may result in nonrecognition of foreign law, resulting in legal uncertainty. However, the urgency to reach cross-border consensus in the interest of all, given the importance of the internal market, might be sufficient pressure to overcome substantial and linguistic diversity, resulting in a directive (aimed at harmonization of the law) or a regulation (aimed at unification of the law). The impact of IT will be an interesting test bed to see how effective EU law can be when it comes to completely new developments and the creation of a digital single market.

What is getting clearer, however, is that if binding EU legislative instruments cannot be enacted, the courts will be confronted with the legal problems caused by disruptive technologies and the rise of the data economy. Effective protection of both natural persons regarding their personal data and of businesses as to the right to trade in nonpersonal data will unavoidably result in legal conflicts, which then, in the absence of even an overall legislative framework, must be decided by both national courts and the CJ EU. Their terms of reference will be the European treaties and existing EU secondary law, such as the GDPR and the regulation on the free flow of data. That the CJ EU will not step back from making firm choices can be seen in its various decisions regarding the right to privacy, such as the *Schrems* case about data transfer from the EU to the United States.²⁶

²⁶CJ EU 6 October 2015, Case C-362/14.

4 Concluding Remarks

What can be seen in the past and may be expected to happen in the future is that the effectiveness of European private (international) law, and property law in particular, to a large degree depended and will depend on the role which the Court of Justice of the European Union is willing to play. Even in cases where the European Union acted in the form of a directive or a regulation (positive integration), the *effet utile* (reaching the goals of the EU instrument, given its object and purpose) frequently must be safeguarded by the CJ EU. In certain areas the CJ EU even demands from courts in member states to act ex officio to protect, e.g., the rights of consumers under EU law. The court also plays a major role when it comes to negative integration: cases where national law is seen as violating EU law and the court intervenes to protect the integrity of the common and internal market's legal framework by giving precedence to EU law over national law. Within that framework, particularly the "classical" four freedoms underlying the internal market are shielded: free flow of goods, services, persons, and capital, to which can now be added free flow of nonpersonal data. Regarding the protection of personal data and where the boundary lies between what is "personal" and "nonpersonal," it is to be expected that, for various reasons—one of them being that European (member) states today increasingly tend to see themselves not as part of a broader supranational framework, but as in competition with that framework—EU legislative action will not come swiftly. It can be presumed that, again, the Court of Justice of the European Union will have to fulfill its role as guardian of the effectiveness of both primary and secondary EU law.

References

- Papadopoulos, Th. (2015). Privatized companies, golden shares and property ownership in the Euro crisis era: A discussion after *Commission v. Greece*. *European Company and Financial Law Review*, 12(1), 1–18.
- Iglesias Sánchez, S. (2014). Unfair terms in mortgage loans and protection of housing in times of economic crisis: *Aziz v. CatalunyaCaixa*, *Common Market Law Review*, 51(3), 955–974.
- Ramaekers, E. (2013). *European property law: From fragments to a system*. Antwerp: Intersentia.
- Šadl, U. (2015). The role of effect utile in preserving the continuity and authority of European Union law: Evidence from the citation web of the pre-accession case law of the Court of Justice of the EU, *European Journal of Legal Studies*, 8(1), 18–45.
- van Erp, S. (2018). Article 345 TFEU: A framework for European property law. In E. Lauroba Lacasa & J. Tarabal Bosch (Eds.), *El derecho de propiedad en la construcción del derecho privado europeo*. Valencia: Tirant Lo Blanch, 59–70.
- van Erp, S., & Zimmermann, K. (2018). The impact of recent EU conflicts of law regulations on land registration. In G. Muller et al. (Eds.), *Transformative Property Law, Festschrift in honour of AJ van der Walt*. Cape Town: Juta, 318–340.