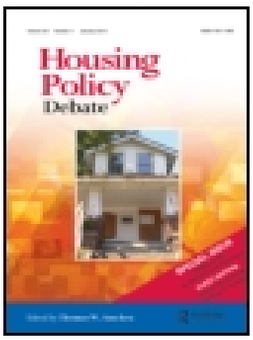

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Long-Term, Multicountry Perspective on Rental Market Regulations

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ABSTRACT

This study introduces a new international longitudinal database of governmental rental market regulations. The regulations are measured using binary variables based on a thorough analysis of real-time, country-specific legislation. Three major restrictive policies are considered: rent control, protection from restriction, and housing rationing. The database covers 101 countries and states between 1910 and 2020. This allows comparisons of regulation intensity across both time and space. The analysis reveals a surge in restrictive policies in the first half of the 20th century. However, following World War II, the evolution of policies diverged: whereas rent control became more flexible or was phased out, tenure security stabilized at a high level or even increased, and housing rationing became used less frequently.

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rental regulation indices; rent control; tenure security; housing rationing

Housing is one of the most important needs for human life. It is also one of the most heavily regulated sectors. Since World War I, in most countries, the government has actively intervened in the housing market, trying to correct existing or imagined market failures. For example, virtually all countries have had, at some point, rent controls. By the early 2010s, such regulations were abandoned by most countries. However, a renaissance of rent control is now observable in many countries. For example, limitations on rent setting were imposed in Paris and Lyon (France) in July 2019 and March 2020, respectively; state-wide rent growth restrictions were introduced in California in January 2020 and are to remain in force until January 2031; and in Berlin (Germany) rents were frozen for 5 years starting in February 2020, to name just a few examples. The outbreak of the COVID-19 pandemic has increased the importance of such measures. After the majority of countries imposed sanitary restrictions, such as lockdowns, in March 2020, the resulting loss of income led to a worldwide wave of eviction bans and rent freezes.[1] Thus, that housing market regulations play an important role is not just historical fact, it is present reality.

Although governments use various combinations of carrots and sticks to achieve their goals, here we concentrate only on stick policies. Specifically, we examine the three restrictive housing market regulations: (a) rent control; (b) protection of tenants from eviction; and (c) housing rationing. Being ubiquitous and often used at a large scale, these policies can affect various aspects of not just the housing market but also the whole economy. They can influence housing prices and rents, the choice between renting and owning, residential construction, the accumulation and distribution of wealth, and residential mobility. Indirectly, they can contribute to the buildup of speculative price bubbles and persistence of unemployment. The assessment of their effects can be facilitated by the creation of indices quantifying the degree of stringency of such governmental interventions. Therefore, the

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purpose of this study is to develop a multicountry, multiperiod database of rental housing market regulations. The corresponding restrictive housing market policies are approximated by a set of indices based on a thorough analysis of all relevant legislation issued in 101 countries (at the national or state level) between 1910 and 2020. This is a unique data set in terms of its spatiotemporal coverage and the scope of regulations it considers. It provides the foundations for a rich variety of comparative analyses of regulations across both space and time as well as valuable input for future econometric analyses of the impacts of such regulations on various aspects of the housing market, in particular, and the overall economy, in general.[2] Moreover, the new database offers a wide international perspective that can be useful for policymaking, given that the need for governmental intervention arises over and over again, such that the experience of similar attempts undertaken in the past can serve as a guideline for policy design. Finally, the data can be used by international investors and consulting companies to support their decision-making, for regulation indices permit the examination of existing and potential regulation-related risks and chances.

This study has several important advantages. First, it covers a very long period of time, which is important given long-lasting effects of governmental regulations upon markets, especially housing markets where a very durable good is traded. Second, it uses a wide panel of countries from all inhabited continents, taking advantage of a wide variety of not just socioeconomic and cultural conditions but also historical paths. Third, it contains a novel indicator that measures the intensity of housing rationing—a form of regulation that, until now, has been neglected in the literature.

The article is organized as follows. The next section describes the tools of housing policy in both narrow and wide senses. In section 2, the existing approaches to measuring housing market regulation indices are discussed, and our approach to constructing the regulation index is explained. In section 3, an exploratory analysis of our regulation indices is carried out. The evolution of the three restrictive policies worldwide and at the continent level is investigated. Finally, section 4 concludes the study.

1. Housing Policy and Its Quantification

1.1. A Toolkit of Housing Policy

Housing policy, in a wide sense, can be defined as the set of all measures applied by a government to affect housing market performance. The main purpose of such interventions is to provide people with housing that is affordable and simultaneously must satisfy certain quality standards. Apart from this, the government can pursue additional goals: political stability, competitiveness of the domestic economy, and even stimulation of industrialization. For instance, during the interwar period, housing rents in Germany were restricted to moderate workers' wage increase requests and to make domestic products less expensive, as a result. In the 1920s, Brazilian authorities sought to increase investments in manufacturing by discouraging real estate investments, which were highly profitable at that time. Eventually, through rent control, the authorities managed to reduce this profitability, thus making investments in the manufacturing sector relatively more profitable (Bonduki, 1994, p. 717).

Governments can take advantage of a large variety of tools to regulate housing markets (see Figure 1 for a schematic representation of housing policies). The instruments of housing policy, in a narrow sense, can be classified as either stimulating or restrictive. Stimulating housing policies come in two forms: object aid, which helps with residential (social) construction; and subject aid, which assists tenants via housing allowances. Restrictive measures encompass rent control, protection of tenants from eviction, and housing rationing. Each of these tools is examined in more detail below.

We start with stimulating tools of housing policy. The first tool is the stimulation of residential construction. The main purpose of this type of housing policy is to expand the supply of housing, especially of inexpensive homes. The rising supply should make housing more affordable. Other purposes are also pursued. It includes, for example, the creation of a strong class of owners who are resistant to communist propaganda, as in West Germany during the Cold War. In aging societies, the purpose of simulating policies is often the accumulation of wealth to provide for old age. Supporting

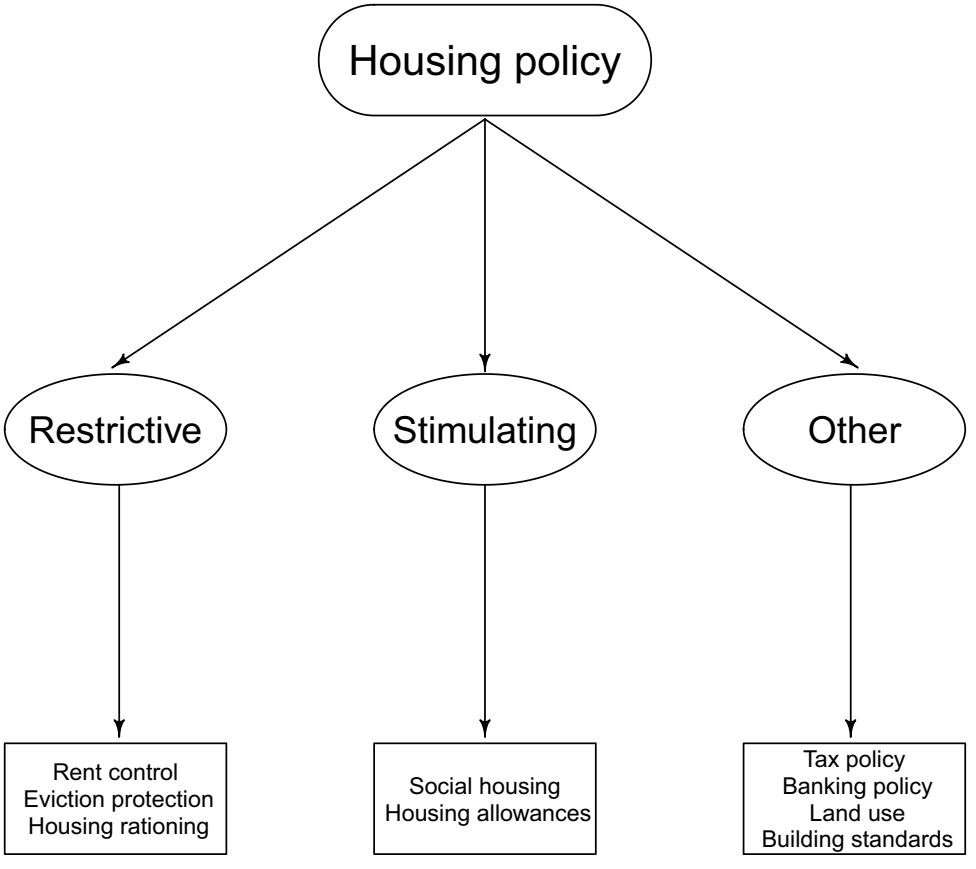

Figure 1. Housing policy tools.

families, improving housing conditions, and fostering the economy through the construction industry, among other things, are also goals of stimulating housing policy (see Haas, 2018). The policy of stimulating residential construction includes the following instruments: (a) provision of state aid in the form of construction subsidies as well as low- or zero-interest loans; (b) provision of state credit guarantees; (c) reduction of taxes and fees (particularly land stamp duty); and (d) provision of building land at lower prices or in the form of a long-term lease.

Using such instruments, the state intends to foster residential building and provide, in the first place, low-income households with affordable housing. This housing—sometimes called social housing—can be either rental or owner-occupied. Sometimes (e.g., in Spain in the 1940–1970s) the state builds rental housing that is to be purchased by the tenants later. In Iceland, in the 1930–1970s, social workers' houses were predominantly built as owner-occupied (see Sveinsson, 2004). Rent for social housing is subject to restrictions and is typically set at the level of construction and operation costs plus a moderate markup representing a fair profit for the landlord. To be admitted as a tenant in social housing requires proving that one has a low enough income. However, once tenants have moved in, their income is almost never verified. As a result, households with increased income continue to occupy social housing, even though they are formally no longer eligible for it. For this reason, many low-income persons cannot gain access to social housing. The problem is that verifying the income levels of households living in social housing and carrying out evictions are both too costly. This is one of the main disadvantages of social rental housing, by decreasing its efficiency.

The second tool for stimulating housing policy is housing allowances. These are state subsidies paid to low-income households or, sometimes, directly to their landlords (for example, in the United States, where this aid is known as housing vouchers). The idea is to cover a part of the housing costs of such households to permit them to live in appropriate conditions. This policy can be considered an alternative or a complement to social housing policy. In this case, means testing can be conducted on a continual basis, with housing allowances adjusted in accordance with the changing income of the household. It is also a more flexible form of aid since it allows households more freedom to choose the dwelling where they would like to live. This is especially the case if such allowances are provided in the form of cash, thus allowing tenants to choose practically any dwelling in the corresponding price segment. A large disadvantage of such a policy is its inflationary effect: especially in the housing market, with its rigid short-run supply, an increase in demand will immediately lead to rising rents and prices.

Next we consider the restrictive tools of housing policy. Historically, the first restrictive tool was the protection of tenants from eviction. Prior to World War I, the corresponding legislation was very liberal. Relations between landlords and tenants were mainly regulated by their rental contract. The contract could have a definite or indefinite duration. If the contract duration was definite, then after it was over, the landlord could evict the tenant without any formalities. During the contract term, the eviction could normally happen only if the tenant violated certain conditions indicated in the contract or in the civil code. One such eviction reason could be the delayed payment of rent.

At that time, contracts, as a rule, were short term, typically up to 1 year. Under normal conditions, this did not cause too many problems for the tenants. However, in extraordinary situations, such as wars, revolutions, and natural catastrophes, that led to acute housing shortages, a loss of housing because of eviction could result in homelessness. Therefore, when faced with such situations, policymakers almost everywhere introduced the following limitations to make the eviction of tenants more difficult. First, existing contracts are automatically prolonged upon their expiration, sometimes indefinitely, sometimes for a short period. Historically, such short-term prolongations often became long term, for the corresponding provisions were steadily extended with each new legal act. Second, landlords are prohibited from breaking rental contracts, except for a more or less clearly identified set of reasons, including nonpayment of rent; urgent need of the landlord or his relatives to move into the dwelling occupied by the tenant; negligent treatment of the housing by the tenant; or the tenant's unacceptable behavior with respect to other tenants or the owner.

Among housing policy instruments, the protection of tenants from eviction is the most durable. During the first few decades after its introduction, it was considered an emergency measure called into existence by extreme circumstances. However, it later became strongly rooted in legislation and in people's minds. In part, this is related to the fact that it does not require any direct manipulation of market prices, unlike rent control policy. An important advantage of this policy is that it makes the rental relation more stable. The disadvantage is that it makes it more difficult to evict bad-faith tenants, thereby decreasing the attractiveness of investments in the housing sector. In Germany, for example, with its strong eviction protection, a tenant-occupied dwelling offered for sale is worth substantially less than an identical vacant dwelling (see Kholodilin, Mense, & Michelsen, 2017).

The second restrictive tool is rent control. The main purpose of this policy is the protection of tenants from rent increases. When housing becomes scarce, rents start growing because, in the short run, which can last several years, it is impossible to extend housing supply quickly. As rent is one of the most important components of household expenditures (in different countries, the share of housing expenses varies around 15–30%), increases in rent strongly affect the purchasing power of the population.

Like many other instruments of modern housing policy, rent control originated during World War I.[3] At the beginning of the war, the vast majority of urban populations in Europe and North America were tenants. Mass mobilization converted them into a powerful force, meaning that the authorities had to respect their interests. Therefore, to avoid social turmoil, governments froze prices for basic

consumption goods and services, including housing rents. Initially, this policy was intended to serve as an interim emergency measure that would be removed as soon as the housing market returned to normality.[4] Nevertheless, once put in place, rent control was prolonged many times, thus remaining in effect for many decades.

Rent control typically includes three elements: (a) rules regulating the setting of rent in newly concluded rental contracts (either for the very first time after the dwelling was completed or after the previous contract was over); (b) rules regulating updating rent within the existing rental contracts; and (c) exceptions, which specify either housing not subject to the regulations or the segments of the housing market subject to stricter controls.

Researchers distinguish between first- and second-generation rent controls (see, e.g., Arnott, 2003).[5] First-generation rent control implies a rent freeze, where the rent is fixed at some basic level. There are different ways of determining basic rent: (a) rent for this or similar dwellings at some date, typically prior to some crucial event (e.g., a war) or at the date of enactment of the corresponding legal act (e.g., in Germany, Poland, and Spain after WWI as well as on the territory of the former Russian Empire during WWI and the Russian Civil War[6]); (b) a certain percentage of the taxable (book) value of the dwelling (for instance, in Chile and Portugal); (c) absolute value (for example, in Italy and the USSR); or (d) a value calculated by the local authorities depending on the structural and locational characteristics of the dwelling (e.g., in the USSR).[7] Governments alone had the power to change the basic rent from time to time. It could not only be raised to cover at least a part of the growing expenses of the landlords, but also decreased in reaction to political or economic crises. The basic rent was reduced, for instance, in Chile in 1925 in reaction to a tenants' strike (Hidalgo Dattwyler, 2003, p. 396), in Italy in 1927 and 1934, in Germany in 1931 as a result of the Great Depression, and in Poland in 1935. First-generation rent controls emerged during World War I and remained in force as late as the 1970s, when they started to be replaced with second-generation rent controls; however, rent freezes are still used in some countries, especially developing ones.

Second-generation rent control implies a more or less free setting of rent when new contracts are concluded, but an imposition of upper bounds on its growth rate within existing contracts. The upper bound of rent growth can be the rate of increase of consumer prices during the preceding year (e.g., in Colombia, Czech Republic, France, Italy, Poland, and Spain), the mortgage interest rate (in Switzerland), or an index of government bonds (in Brazil). Sometimes, even under second-generation rent controls, the rent in the newly concluded contracts can be subject to limitations. For example, since 2015, in areas with an acute housing shortage in Germany, new rent cannot exceed the average market rent for similar dwellings in the same neighborhood by more than 10%.

Figure 2 shows the incidence of rent control in 2019. It is based both on the database presented in this study and on a snapshot of currently used regulations worldwide. Many countries removed rent control completely, whereas some (especially in Europe) transformed the strict first-generation controls into more flexible second-generation ones.

Rent control has both pros and cons. On the positive side, it makes dwellings more affordable for sitting tenants and exerts some anti-inflationary impact. The list of its pitfalls is longer. First, in the case of a positive demand shock on the housing market, rent control slows the transition to the new equilibrium, as shown by Brueckner (2011, pp. 141–143). Second, rent control causes the inefficient allocation of housing when sitting tenants remain, even if their housing needs no longer match the quality and quantity of their present dwelling. Therefore, frequently there are large dwellings in inner cities that are occupied by older individuals who rent them cheaply, whereas large families occupy small, crowded dwellings and pay astronomical rents. This inefficiency does not only arise in cases where legislation splits the rental market into two sectors (controlled and uncontrolled). Even if rent control were extended to the whole rental market, the inefficiency would persist. The restrictions imposed on rents and/or their increases would negatively affect the rental yield, thus making the housing sector less attractive for landlords. Instead of investing in housing, they would start investing in commercial real estate or in stocks. When less money is

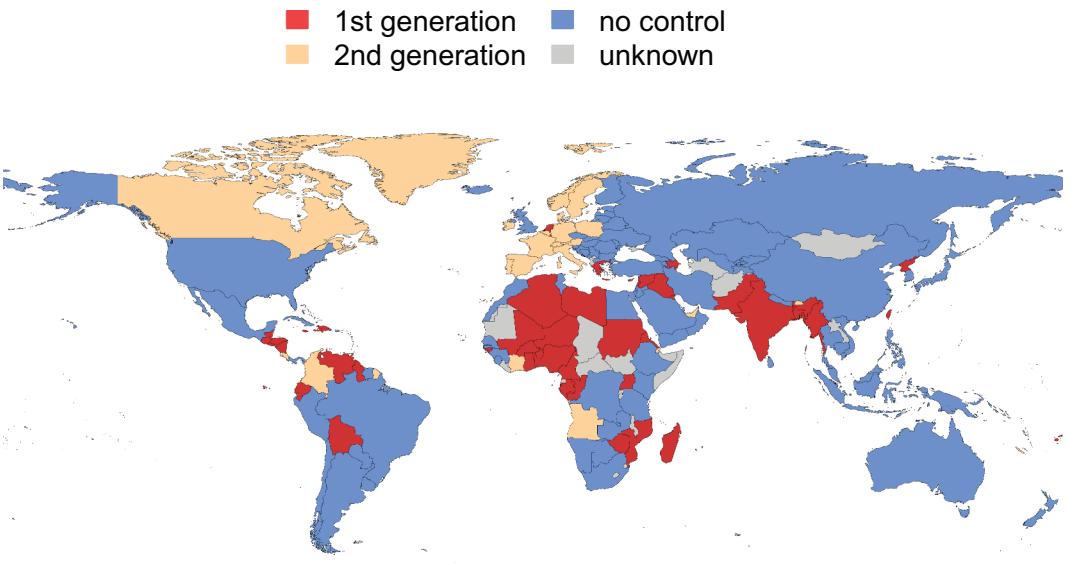

Figure 2. Presence of rent control.

invested in housing, its quality deteriorates and the quantity is reduced. In such a market, when trying to move to a different dwelling instead of paying higher rent, as in the unregulated sector, tenants face longer waiting times, which makes them reluctant to move. As result, small households occupy large dwellings and large households cannot find larger dwellings that would satisfy their housing needs. The only difference in the case of a separated market (controlled and uncontrolled) is that in the case of total rent control, families pay lower rents. However, their desire to find more adequate housing will induce them to make large side payments to landlords, such as key or search money. This is, of course, illegal but it is difficult to detect, particularly when market participants are reluctant to disclose such deals. Third, since it is virtually impossible to legally raise rents,[8] landlords look for workarounds. One widespread practice, for instance, is to force tenants to buy furniture left by the landlord or the previous tenant for exorbitant prices. In some countries (for example, in Portugal prior to World War II), rent can be charged in a foreign currency and, albeit nominally frozen, can grow at the pace of devaluation of the domestic currency. Fourth, for the same reason, landlords can make repairs less frequently in an attempt to restore their rate of return by cutting their expenses. Fifth, keeping the rents artificially low[9] also diminishes the incentive to invest in housing construction, as its rate of return decreases, given the constant rents against the background of other (consumer) prices rising almost without limit. As a result, investors stop investing in either the housing sector in general—thus accentuating the housing shortage—or in the rental housing segment specifically, which is then replaced with owner-occupied housing. A conversion of dwellings into nonresidential premises (e.g., medical practices or lawyer offices) can also happen. Sixth, the perverse incentives can lead to paradoxical reactions. For example, in Chile in 1925, the owners of unhealthy dwellings were ordered to reduce the rent by 50% and freeze it at that level. As a result, some tenants started deliberately degrading their dwellings to achieve an unhealthy state to obtain rent reductions. Finally, prohibitions on freely increasing rent not only reduce the revenue of landlords, they also reduce tax revenues for the government.

The third restrictive tool of housing policy is housing rationing. When there is an acute housing shortage, the government can impose measures such as compulsory disposal of housing, to use fully

the available housing stock. These measures include: (a) registration of both dwellings and tenants to create a register of the available dwellings and those becoming vacant, and to create a waiting list for potential tenants; (b) preservation of housing by banning demolition or conversion of its use to nonresidential purposes (for example, as office space or holiday dwellings for tourists); (c) redistribution of housing by putting new tenants into unused or underutilized housing; (d) setting maximum housing consumption norms (for instance, the maximum floor area or number of rooms per person); (e) mobility restrictions, meaning the creation of obstacles to move into areas with an especially acute housing shortage, while facilitating migration to other areas; and (f) nationalization of private housing by turning it into state property.

In its most extensive form, housing rationing was extensively employed in centrally planned economies, such as Czechoslovakia, Poland, and the USSR. However, it was also used in market economies, for example, in Germany, Italy, Luxemburg, Spain, Switzerland, and even the United States. Most frequently, such measures are used in extraordinary circumstances, when the housing stock is destroyed (e.g., because of bombings, earthquakes, or hurricanes) and cannot be quickly restored. After the market has stabilized, these measures are typically abrogated. Nevertheless, even during peaceful times, housing rationing can be applied. One example is the interdiction against using dwellings for nonresidential purposes or holiday dwellings (e.g., recent restrictions on letting apartments through Airbnb [Lee, 2016]). In North America, prohibitions to demolish or convert rental residential properties into condominiums are also quite widespread. Such policies diminish the attractiveness of the housing sector for investors by increasing their risks. Hence, it can be expected that they will negatively affect housing supply.

The housing policy instruments described here are not usually applied individually, but rather in various combinations. Combined, their effects are sometimes offset and sometimes mutually strengthened. For example, a simultaneous application of eviction and rent controls can substantially reduce incentives to increase the housing supply. Therefore, to compensate for this, the government can use housing rationing, which counteracts the reductions in housing supply to some extent. It can also apply measures that stimulate residential building, thus extending the housing stock through new construction.

The above list is far from exhaustive. The decisions of economic agents concerning construction, as well as the choice between owned and rented housing, are also affected by many other governmental regulations, including, for example, city planning, environmental policies, tax policies, and banking regulations.

City planning imposes constraints on the spatial distribution and density of housing construction. As shown by Hilber and Vermeulen (2016), land-use regulation can reduce the price elasticity of housing supply. Consequently, there will be lower supply at higher prices. Environmental policies that impose stricter requirements on newly built housing (obligatory use of solar batteries, heat insulation, and so on), can increase construction costs, thus increasing house prices and reducing the number of dwelling completions. Through tax policy, the state sets land stamp duty, sets tax rates for the use and inheritance of housing, and provides tax reductions, for instance by subtracting mortgage interest. In this way, it changes the relative cost of both owned and rented housing, thus affecting the choice of a particular form of tenure by making it more or less attractive from a financial point of view. In many countries, tax policy is biased toward homeownership. For example, in the Netherlands and the United States, interest payments are subtracted from taxable income, thus making the purchase of owned housing using borrowed money very attractive. This can lead to the emergence of speculative price bubbles in real estate markets (see Figari et al., 2017). As an offsetting measure, taxation of imputed rent can be used. However, this instrument is rarely used: for example, it is primarily found in the Netherlands, where it applies to all dwellings, and Greece, where it only applies to large dwellings. Banking regulation can generally restrict the supply of mortgages, in some cases to specific individuals based on their income and debt. After the Great Recession of 2008–2009, many countries introduced macroprudential regulations to avoid the buildup of speculative house price bubbles by limiting the mortgage loans provision. Opponents

of this policy argue that it leads to a widening of the gap between the rich and poor, since the latter have a lower purchasing capacity and, hence, are subject to the restraints imposed on mortgage crediting to a larger extent.

Finally, it should be noted that legal acts often do not work, remaining ineffective, if not defunct, in practice. First, laws that are very inconvenient for market participants tend to be avoided through various loopholes. The imaginations of the multitudes of people seeking to find loopholes are much richer than those of the handful of the lawmakers attempting to close these loopholes. Second, to make the laws effective, mechanisms to uncover violations of the laws are needed. The state is unable to provide each dwelling or building with a policeman who enforces compliance with the law. Most frequently, it is interested parties (i.e., tenants) who report violations of the law. However, they are not always willing to do so, because even if they win the process, they remain tenants of the landlord with whom the relationship is then strained. Third, law enforcement is inhibited by ignorance of the laws by the people. For instance, Franco Ubeda (2016), based on a survey of lawyers, landlords, and tenants in Quito, Ecuador, showed that only 1% of landlords and tenants are aware of the legislation regulating the rental housing market. Similarly, in Bogotá, Colombia, only 10.4% of low-income tenants are informed about tenant protection (CENAC, 2007), whereas in several Zambian cities only about 30% of the respondents "had some idea about the existence of some rent controls" (Nzonzo, 2005, p. 28).

1.2. Quantification of Housing Policy

To assess the impact of governmental regulations, they must be measured. This is the subject of leximetrics, a flourishing branch of econometric research. It covers a wide variety of fields, including labor markets (e.g., Nicoletti, Scarpetta, & Boylaud, 1999), shareholder and creditor protection (e.g., La Porta, Lopez de Silanes, Shleifer, & Vishny, 1998), financial reforms (Abiad, Detragiache, & Tressel, 2008), product market regulation (Nicoletti & Scarpetta, 2003), and so on. The housing market is no exception, as shown in Table 1, which provides an overview of studies on restrictive rental market regulations. The majority of studies assess the stringency of housing policies for a single period of time. The cross-sectional dimension varies between four (Miletić, 2016) and 126 countries (Global Property Guide [GPG]). The degree of regulation is measured for various points of time: the stringency of rent control by Malpezzi and Ball (1993) for 1991, a procedural formalism index by Djankov, La Porta, López de Silanes, and Shleifer (2003) for 2000, a rent control index by Andrews, Sánchez, and Johansson (2011) for 2009, and the landlord and tenant law and practice of the GPG for 2017. Kholodilin (2017a) is the first study in which indices depicting the evolution of governmental regulations over time are constructed, whereas Weber (2017) was the first researcher to develop a panel of indices, encompassing 18 countries between 1973 and 2016.

Most studies approximate the intensity of restrictions imposed on the rent. Five of the seven studies also account for tenure security—that is, protection of tenants from eviction. Housing rationing is only included in analyses by two researchers: Miletić (2016) and Kholodilin (2017a). Finally, two studies—Malpezzi and Ball (1993) and Djankov et al. (2003)—attempt to quantify the enforcement of regulations.

When constructing rental market regulation intensity indices, several authors employ similar methods. They start by creating individual (typically, binary) indices, which are then aggregated to a composite index by summing or averaging them. Using nine elements (enforcement, coverage, setting fair rents, new construction, rent adjustment over time, adjustment for new tenants, cost pass-through, annual inflation rate, and tenure security), Malpezzi and Ball (1993) create a rent control index that aims to indicate the overall stringency of rent control within a country. Each variable (except inflation) takes a value of 0 (permissive), 1 (medium), or 2 (stringent). The magnitude of the final index varies from 0 to 21. Djankov et al. (2003) focus on the level of procedural formalism by measuring the procedures that are necessary to evict a tenant: for example, the regulation of

Table 1. Literature on measurement of housing regulations.

Study	Period	Countries	Aspect of regulation			
			Rent control	Tenure security	Housing rationing	Enforcement
Malpezzi and Ball (1993): Stringency of rent control regimes	1991	51 market economies	+	+		+
Djankov et al. (2003): Procedural formalism (Lex Mundi Project)	2000	109		+		+
Andrews et al. (2011): Rental market regulations	2009	30	+			
Global Property Guide (2017): Landlord and tenant law and practice	2017	116	+	+		
Miletić (2016): State involvement with housing tenancy and housing tenure	1918–1928	4	+		+	
Weber (2017): Rental market regulation	1973–2016	18 advanced economies	+	+		
Weber (2017): Rental market regulation	2016	66	+	+		
Kholodilin (2017a): Regulation intensity	1914–2015	1 (Germany)	+	+	+	

Notes: "+" means that the corresponding policy tool is considered in the study. Malpezzi, S., & Ball, G. (1993). Measuring the urban policy environment: An exploratory analysis using rent controls. *Habitat International*, 17(2), 39–52; Djankov, S., La Porta, R., López de Silanes, F., & Shleifer, A. (2003). Courts: The Lex Mundi project. *The Quarterly Journal of Economics*, 118(2), 453–517; Andrews, D., Sánchez, A. C., & Johansson, Å. (2011). Housing markets and structural policies in OECD countries (Economics Department Working Paper No. 836); Global Property Guide. Landlord and tenant law and practice. https://www.globalpropertyguide.com/; Miletić, A. R. (2016). Tenancy vs. ownership rights. Housing rent control in Southeast and East-Central Europe, 1918–1928. *Mesto a Dejiny*, 5(1), 51–74; Weber, J. P. (2017). The regulation of private tenancies — A multi-country analysis (PhD Dissertation). Universität Regensburg, Faculty of Business, Economics and Management Information Systems Department of Economics; Kholodilin, K. (2017a). Quantifying a century of state intervention in rental housing in Germany. *Urban Research and Practice*, 10(3), 267–328.

evidence or the duration of an eviction. To do this, they construct 32 binary variables covering seven aspects of formalism: professionals versus laymen, written versus oral elements, legal justification, statutory regulation of evidence, control of superior review, engagement formalities, and independent procedural actions. Andrews et al. (2011) construct two composite indices, each computed as a sum of the corresponding binary indices: a rent-control indicator (control of rent levels, control of rent increases) and a tenant–landlord relations indicator (ease of tenant eviction, tenure security, and deposit requirements). The GPG uses 18 indices to assess four aspects of rental market regulations: rents, deposits, duration of contract/eviction, and legal system effectiveness. However, the grading system is not transparent: it is not clear how each individual index value is assigned and how they are aggregated to the composite index, which varies between − 2 (strongly pro-tenant) and 2 (strongly pro-landlord). Miletić (2016, p. 57) implicitly uses a similar methodology to other authors by creating six "degrees of the state involvement with housing tenancy and housing tenure": a laissez-faire regime, rent moratorium, rent moratorium with elements of the rent-control system, rent-control system, legally sanctioned requisitioning, and confiscation (i.e., abolition of private property). The sum of these indices produces a composite indicator of state intervention. Finally, in accordance with the literature, Weber (2017) creates two composite indices—rent laws and tenure security—each representing a simple average of underlying individual binary indices. He borrows principal characteristics of both types of regulations from the previous literature. Some other characteristics (e.g., law enforcement) are difficult to quantify for long periods, given that no uniform indicators of it exist and the information cannot be gathered through surveys for periods 20 years ago or more.

Here, we follow the standard approach for the construction of regulation indices. In fact, we rely upon the typology of indicators suggested by Weber (2017). In our approach, the quantification of legal acts is carried out in several steps. This section describes the whole algorithm. Its purpose is to make the approach used here as transparent and replicable as possible. The first step consists of exploring the literature that summarizes governmental housing market regulations in the country of

interest. In a few select cases, a good and systematic description of the evolution of such legislation exists. The main sources of such information are the Tenlaw project at the Universität Bremen[10] for the 28 European Union member states plus Japan, Norway, Serbia, Switzerland, and Turkey; the "Tenancy Law and Procedure in the EU" project of the European University Institute in Florence[11] for 13 EU member states plus Switzerland; the International Labour Office (1924) for the origins of housing policies in 17 European countries (Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Hungary, Italy, the Netherlands, Norway, Poland, Russia, Sweden, Switzerland, and Yugoslavia); historical and legal studies; and preambles of legal acts or parliamentary discussions of law drafts that provide justification of regulations (e.g., Belgium, Portugal, and Romania).

In the second step, a list of relevant legal acts is compiled and the search for their original (not revised) texts is conducted. Since we are interested in the evolution of the housing legislation, we need the real-time texts, as formulated at the moment of their enactment. Most frequently, such texts are found in government or official gazettes. Fortunately, many of these gazettes are digitized and available in online archives. Hence, it is relatively easy to search for the necessary information. In other cases, laws can be obtained free of charge by contacting the national parliaments (as is the case for Denmark, Iceland, and Norway). Still other countries charge fees for providing the relevant laws (e.g,, Bulgaria, Singapore, and Sweden). In those cases where we were unable to locate laws as published in an official gazette, we used drafts of the laws from parliamentary proceedings (e.g., Belgium and Switzerland). In the worst case, answers to questions submitted remotely were not forthcoming (some African, Asian, and Latin American and Caribbean countries) and it was necessary to visit a library in the country of interest. Overall, the number of legal texts collected in this study is quite impressive; it varies widely from just two laws in Angola to more than 100 legal acts in the Czech Republic and in Germany.

In the third step, the compiled legal acts are summarized. The relevant provisions are identified and recorded. In particular, the following fields are captured: area of application, rent control, tenant protection, housing rationing, and bodies responsible for conflict settling and regulation of the housing sphere. Language barriers are an important challenge at this stage. In many cases, knowledge of foreign languages (English, French, German, Italian, and Spanish) permitted the author (whose native language is Russian) to understand the legal texts. In other cases, native speakers helped decipher these texts (e.g., those in Greek). Otherwise, the author employed machine translation (the online Google Translate service) to translate the texts written in the languages he and his colleagues do not speak. Although the quality of modern machine translations is relatively high, there is still room for error.

In the fourth step, the textual summaries of legal acts are mapped into numeric values. Here, we rely upon the approach of Weber (2017) to code rent laws and tenure security, and the approach of Kholodilin (2017a) to code housing rationing. Based on a set of questions (see Table 2), binary variables are constructed that equal 1 if a regulation is more stringent, and 0 otherwise:

$$I_{jt}^{k} = \begin{cases} 1, \textit{if restriction } j \textit{ of type } k \textit{ is present in period } t \\ 0, \textit{otherwise} \end{cases} \quad (1)$$

where k is a regulation type (rent laws, tenure security, or housing rationing) and t is the date on which the law containing this provision is enacted. Thus, each binary variable represents an answer to a question that characterizes a particular aspect of the corresponding regulation type. If the answer is Yes, then the binary variable takes a value of 1; if the answer is No, then the variable takes a value of 0. A positive answer corresponds to more limitations from the standpoint of landlords. Below, the coding is described in more detail.

Rent control. In his dissertation, Weber (2017) defines six binary variables: real rent freeze (rents are not allowed to grow faster than inflation), nominal rent freeze (rents are frozen in nominal terms), rent level control (some government body, arbitration council, or court fixes the rent level at the

Table 2. Rent control.

Variable	Description
Rent control	
Real rent freeze	The dummy equals 1 if landlords may not increase rents by more than the growth of official cost or price indices, and 0 otherwise.
Nominal rent freeze	The dummy equals 1 if rents are determined solely by the government or another institution, and 0 otherwise.
Rent level control	The dummy equals 1 if landlords may not charge rents above a certain rent level, and 0 otherwise.
Intertenancy decontrol	The dummy equals 1 if rent control holds at the beginning of and during the tenancy, and 0 otherwise.
Other specific rent decontrol	The dummy equals 1 if certain kinds of dwellings are not decontrolled (newly built, vacant, or luxurious dwellings), and 0 otherwise.
Specific rent recontrol	The dummy equals 1 if certain kinds of dwellings fall under a stricter rent regime, and 0 otherwise.
Tenure security	
Eviction protection during term	The dummy equals 1 if only justifiable reasons lead to a warranted eviction during the term or rent payment period, and 0 otherwise.
Eviction protection at the end of term	The dummy equals 1 if only reasonable causes lead to a warranted eviction at the end of the term or rent payment period, and 0 otherwise.
Minimum duration	The dummy equals 1 if a minimum period of >2 years is compulsory for every private tenancy, and 0 otherwise.
Short-term tenancies	The dummy equals 1 if short-term tenancies of less than 1 year are not allowed, and 0 otherwise.
Housing rationing	
Registration of housing	The dummy equals 1 if owners are forced to register vacant or all available housing, and 0 otherwise.
Protection of housing	The dummy equals 1 if this type of policy (prohibition to use dwellings for nonresidential purposes, or to merge or demolish dwellings) is enacted, and 0 otherwise.
Creation of housing	The dummy equals 1 if this type of policy (subdivision of large dwellings into smaller ones) is enacted, and 0 otherwise.
Requisition	The dummy equals 1 if this type of policy (compulsory letting of the vacant dwellings) is enacted, and 0 otherwise.
Mobility restriction	The dummy equals 1 if this type of policy (prohibition to move into areas with housing shortage) is enacted, and 0 otherwise.
Conservation of social composition	The dummy equals 1 if areas are delimited where above-the-standard-level modernizations are prohibited, and 0 otherwise.
Housing consumption norms	The dummy equals 1 if restrictions are imposed on the maximum amount of housing being used by tenants, and 0 otherwise.
Nationalization of housing	The dummy equals 1 if the state nationalizes housing stock, and 0 if there is no nationalization or privatization.

beginning of new contracts), intertenancy decontrol (if rent control ceases with a change of tenant), other specific rent decontrol (certain types of dwellings or settlements are no longer subject to the rent control), and specific rent recontrol (certain types of dwellings or settlements are subject to more stringent controls).

Tenure security. The four corresponding binary variables are defined in Table 2. The binary variables *eviction protection during term or period* and *eviction protection at the end of term or period* take a value of 1 if, to evict a tenant during the contract term or at the end of it, the landlord is required to present justified reasons. The *minimum duration* variable equals 1 if the contract duration must be at least 2 years, and the *short-term tenancies* variable is 1 if letting dwellings for a period of less than 1 year is prohibited.

Housing rationing. This policy is approximated with eight binary variables (see Table 2). *Registration of housing* equals 1 if landlords are obliged to register vacant, or all available, premises. The binary variable *protection of housing* is 1 if it is prohibited to use dwellings for nonresidential purposes, to merge or demolish them, or to convert rental dwellings into condominiums. The variable *creation of housing space* equals 1 if the state prescribes the use of all available space for housing purposes (e.g., through the reconstruction or conversion of nonresidential premises or through the subdivision of large dwellings into smaller ones). The dummy variable *requisition* equals 1 if requisition with

subsequent compulsory letting of the vacant dwellings is conducted. *Restriction of freedom to move* has a value of 1 if residential mobility is restricted (e.g., if access to areas with an acute housing shortage is closed to all persons who are neither indispensable for these areas nor residing there on a permanent basis). *Conservation of social composition* has a value of 1 if a balanced social composition of the population, in particular in urban areas, is protected through interdiction to upgrade the dwellings to a state considered above the standard level. The variable *housing consumption norms* has a value of 1 if restrictions are imposed on the amount of housing that might be used by tenants. The dummy *nationalization of housing* takes a value of 1 if the state nationalizes housing stock and 0 if no nationalization or privatization occurs. Unlike requisition, nationalization means the loss of property rights for the owner and no compensation for property taken.

For each regulation type, k, a composite index is computed as a simple average of binary variables:

$$I_t^k = \frac{1}{N_k}\sum_{j=1}^{N_k} I_{jt}^k \qquad (2)$$

where k is a regulation type (rent laws, tenure security, or housing rationing) and N_k is the number of binary indices. For example, for rent laws, the composite index is based on six binary indices. When all of them are equal to 0, their simple average is equal to 0, thus implying that no limitations on rents are present. The more such limitations, the closer the index is to 1. A composite index of 1 indicates the highest intensity of regulations of type k.

The binary and composite indices are constructed for a large, balanced panel of 101 countries covering the period 1910–2010 (see Table 3 and Figure 3). The choice of countries is dictated by the availability of legal acts. The best coverage exists for Europe, Asia, and Latin America. In Africa, mainly former French and Portuguese colonies are covered, since it was relatively easy to locate the historical legal acts for them. For North American countries, coding is complicated by the fact that housing regulations there are created at the regional level, including not only states or provinces but also cities. All in all, our data set covers the majority of the world population, given that the population of countries for which rental market regulation indices are constructed makes up 70.4% of the total world population as of 2010.

Three words of caution should be issued. First, this study focuses mainly on national-level regulations. In the case of federal countries, like Canada, India, Mexico, Pakistan, and the United States, where provinces and states play an important role in determining housing policy, regional regulations are also

Table 3. List of countries for which regulation indices are constructed.

Continent	Countries	Sample size	Total countries
Africa	Algeria, Angola, Benin, Cape Verde, Côte d'Ivoire, Egypt, Gabon, Ghana, Madagascar, Mali, Morocco, Niger, Senegal, South Africa, Togo, Tunisia	16	60
Asia	Armenia, Azerbaijan, China, Cyprus, Hong Kong, India—Delhi, India—Maharashtra, India—Punjab, India—Uttar Pradesh, India—West Bengal, Iraq, Israel, Japan, Jordan, Lebanon, Macao, Myanmar, Pakistan—Punjab, Philippines, Singapore, Taiwan, Turkey	22	51
Europe	Andorra, Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, German Democratic Republic, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, Ukraine	39	54
Latin American and the Caribbean	Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Dominican Republic, Haiti, Jamaica, Mexico (Distrito Federal, Veracruz), Nicaragua, Panama, Peru, Salvador, Trinidad and Tobago, Uruguay	17	52
North America	Canada (Alberta, Ontario, Quebec), United States	4	5 (60)
Oceania	Australia, French Polynesia, New Zealand	3	29
World		101	250

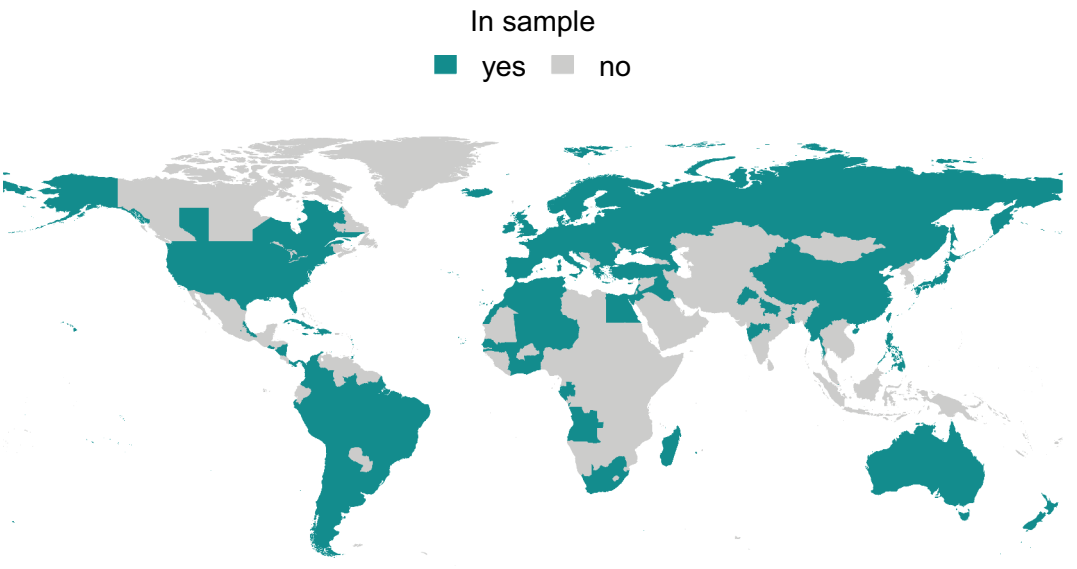

Figure 3. Countries covered by this study.

taken into account. However, municipal policies are, as a rule, not measured here. Given an extremely[12] large number of municipalities and the difficulty (if not impossibility) to access the corresponding historical legislation, considering regulations at the municipal level would be a prohibitively time-consuming exercise with a rather low value added. Nevertheless, we include some important municipalities, such as Berlin and New York, to code their more rigorous regulations compared with the national level, as the dummy variable *specific rent recontrol*. This is reflected in the rent laws index for Germany and the United States. Second, apart from being written in a virtually undecipherable juridical jargon, the legal acts are very complex because of numerous exceptions, procedural details, and cross-references. Hence, any attempt to map them into a set of measurable variables implies that a balance must be struck between the simplicity of the mapping (coding) and the feasibility of the whole task. In other words, the coding should be not oversimplified while allowing regulation indices to be built within weeks instead of months or years. Third, the regulation indices introduced here measure what is written in the legal acts, not their enforcement. To account for the effectiveness of the legislation in each country, institutional knowledge of experienced practitioners is needed. Even if we gain access to such knowledge by interviewing practitioners, it will be limited to at most the last 30 years of their working life; thus, it is not possible to gauge the degree to which laws were enforced in the more distant past.

2. Descriptive Analysis of Housing Policy Indices

2.1. Worldwide and Continent-Specific Perspectives

We start by examining the dynamics of housing market regulations globally, over time. Figure 4 shows the evolution of regulation intensity around the world between 1910 and 2020. The width of each gray area is proportional to the number of countries with the corresponding regulation intensity in each year. The green curve depicts the worldwide median.

Although governmental intervention into the housing market intensified during and after World War I in many countries, the absolute peak of regulation was during World War II. During that period, both the number of regulating countries—as reflected in Figure 4 in the median regulation stringency as well as in the width of shades at 0.8 and 1 for rent laws and at 0.6 for

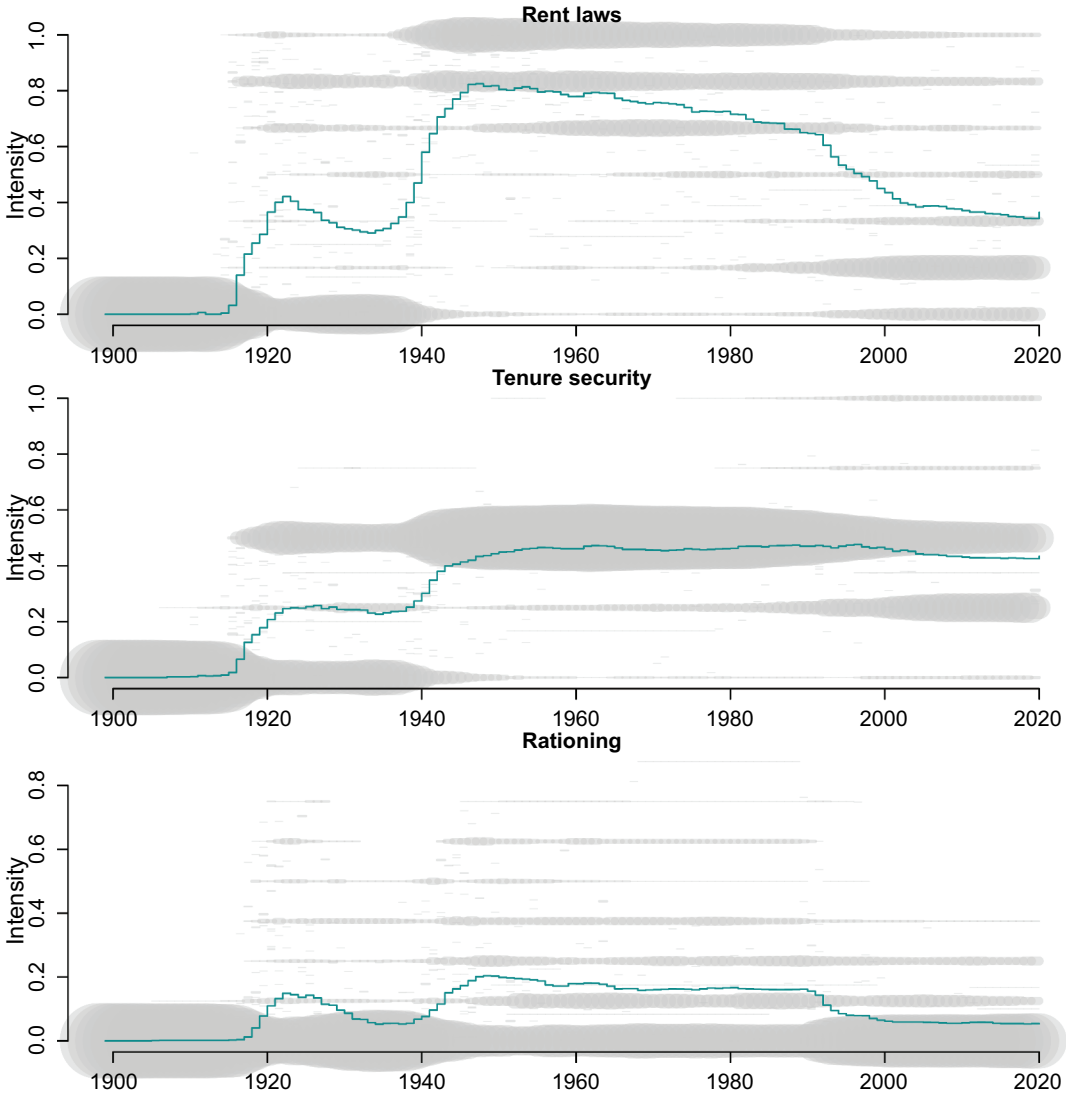

Figure 4. Evolution of housing regulation intensity by countries. The shaded areas are groups of countries with a similar degree of regulation intensity.

tenure security—and country-specific regulation intensities strongly increased. This is true for all types of regulations. The postwar evolution was, however, different. Whereas rent control embarked on a slow but steady downward decline in regulation intensity, tenure security stabilized at a relatively high level around the world, with some countries even strengthening tenant protection further. The stringency of housing rationing also declined. To a large extent, this is explained by the diminishing number of countries taking advantage of this policy, as the worldwide median is equal to 0 starting in the second half of the 1960s. Overall, throughout 1910–2020, most countries had a rather low housing rationing intensity, applying just one rationing measure, whereas a handful of countries employed a battery of such measures. In 2020, an increase in intensity of rent control and tenure security can be observed in the median indices. This reflects the fact that the COVID-19 crisis, which shattered housing markets around the world, forced 47

countries to enhance their protection of tenants from evictions, and forced 20 countries to sharpen their rent control.

Additional insights can be gained from Figure 4, which compares the three regulation types at the continent level. Each line in the graph corresponds to a simple average of regulation indices on a continent. Below, we examine the intensities by each regulation type.

The intensity of rent control by continent is shown in the upper panel of Figure 5. In all cases, the intensity increases to a peak and then stabilizes or decreases. The peaks take place at different times: in Europe, North America, and Oceania, the highest rent control intensity is attained in the 1940s; in Latin America and the Caribbean (LAC) as well as in Asia, it is achieved in the 1950s; and in Africa it is observed in the 1970s. Moreover, Europe and Oceania experienced higher than the world average intensity in the first half of the 20th century; LAC experienced it between 1950 and 1980 and then again from the late 1990s; Africa experienced it between the 1960s and now; and for Asia it occurred between 1980 and the 2000s. Thus, Europe was the first to introduce rent control and to relax it,

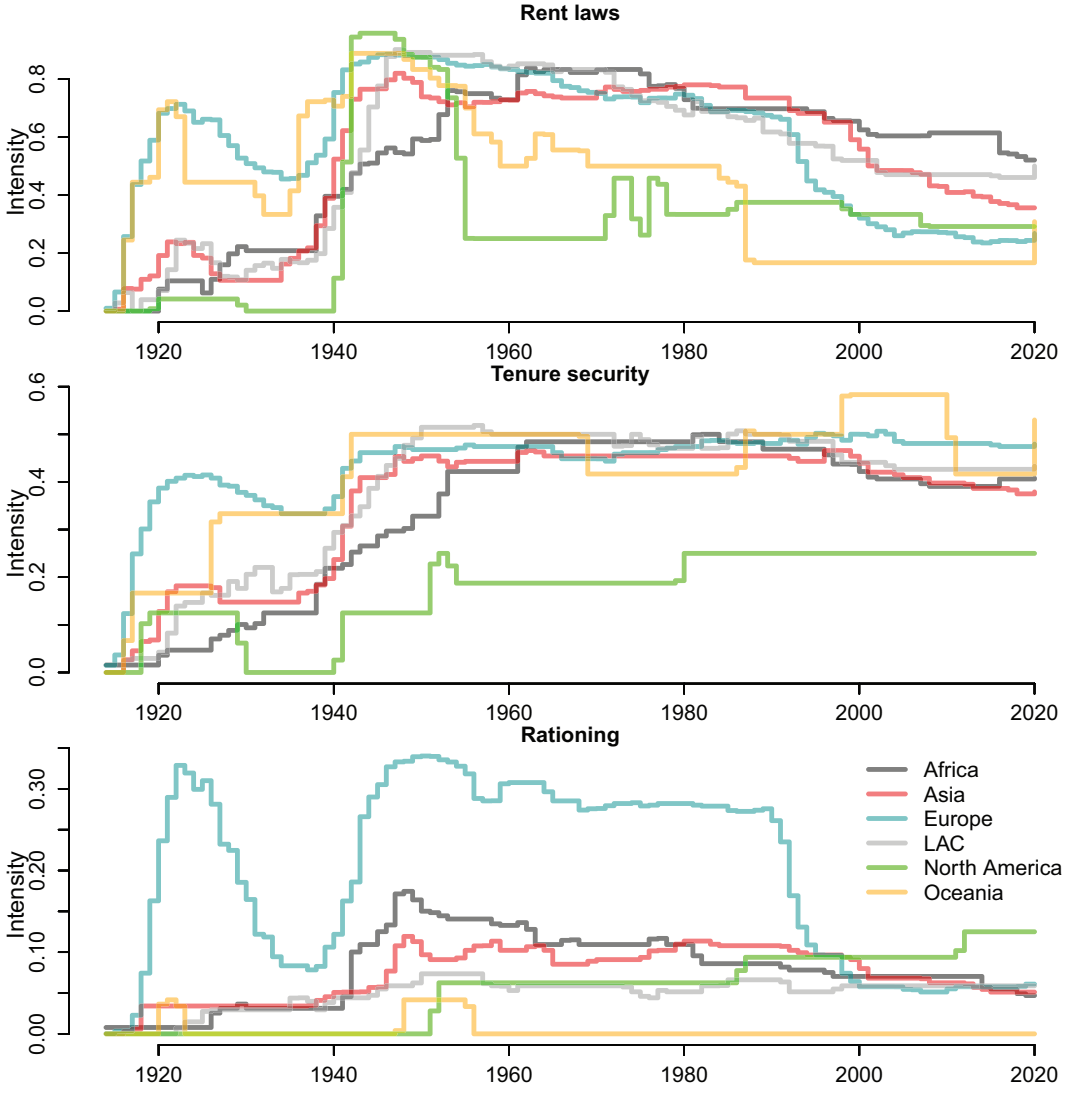

Figure 5. Rental market regulation intensity by continent. LAC = Latin America and the Caribbean.

whereas Africa and LAC lag behind other continents. This is especially true for Africa, where rent control still has a very high intensity. This is related to the transition from first-generation rent control to either second-generation rent control or its complete removal. The evolution of two generations of rent control is shown in Figure 6, where the shares of countries having either first- or second-generation controls are displayed by continent. The sum of the shares of first- and second-generation rent controls is not always equal to 1, because some countries have lifted all restrictions on rent setting. Europe was the first to introduce the more flexible second generation of rent control in the early 1970s. In the early 1990s, the number of European countries with second-generation rent control exceeded that of countries with first-generation rent control. To some extent, this was helped by the transition of former socialist countries to market economies. Second-generation rent control was introduced in LAC in the late 1970s, in Asia in the late 1990s, and in Africa only in the 2010s. Oceania did not have second-generation rent control and went directly to a free market, whereas in Africa and LAC there are still more countries with first-generation rent control than those with the second generation.

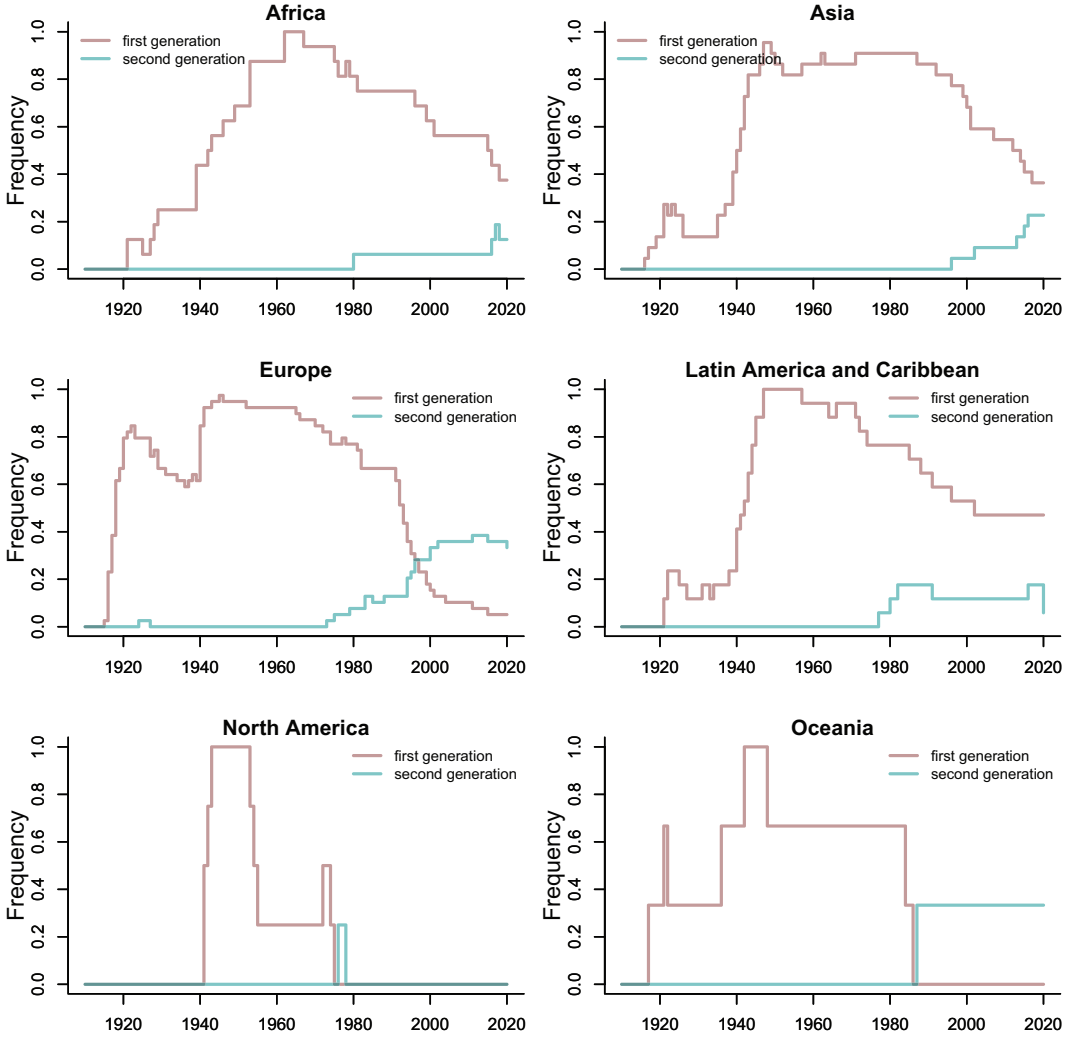

Figure 6. Generations of rent control by continent.

2.1.1. Tenure Security

Another relevant group of laws is tenure security laws. The composite tenure security index averaged by continent is displayed in the middle panel of Figure 5. Unlike rent control, which has tended to decrease since the second half of the 20th century, tenure security displays an almost monotonic upward trend globally, stabilizing at a high level at the turn of the 21st century. Only in North America and Oceania does its intensity diminish after World War II. At the end of our sample period, tenure security is the highest in Europe and the lowest in Oceania. In Asia, it is substantially lower than the global average, whereas in Africa and LAC it almost coincides with the average.

2.1.2. Housing Rationing

The third group includes laws regarding housing rationing. Although this policy has attracted little attention in the literature, it appears to be quite widely used: out of the 101 countries/provinces in our sample, 76.2 (i.e., 77%) used or still use it. The intensity of housing rationing by continent over 100 years is shown in the lower panel of Figure 5. Measures of forceful redistribution of housing and tenants are almost omnipresent across the world. Only North America appears to have escaped such a policy at a large scale. It is known, however, that some U.S. cities (e.g., Santa Monica, California) employ such forms of housing rationing, like the obligatory registration of vacant housing and prohibition of using dwellings for nonresidential purposes (see Keating, 1983). The continent that most actively took advantage of housing rationing is Europe. The two periods of the most extensive use of such policies coincide with the World Wars and their aftermath. Nevertheless, with the passage of time, European countries, although markedly reducing the application of housing rationing, did not completely dismantle it. New forms of housing rationing were even introduced, such as protection of social composition areas in Germany (see Kholodilin, 2017a). In the aftermath of the Great Recession, in some countries, like Spain, housing rationing was reintroduced by several autonomous communities to alleviate the consequences of the burst of the speculative price bubble (Pastrana, 2017). Latin America and Caribbean had a similar, but somewhat lower, intensity of housing rationing to Europe. There were some episodes in the history of Africa and Asia (1950s and 2010s) when their intensity of housing rationing exceeded the worldwide average. Oceania only used such policies in the 1950s.

2.2. Conformity With Alternative Housing Regulation Indices

In this section, we compare our regulation indices with the alternative housing market regulation indices discussed in section 2: the stringency of rent control of Malpezzi and Ball (1993) for 1991, the procedural formalism index of Djankov et al. (2003) for 2000, the rent control index of Andrews et al. (2011) for 2009, and the landlord and tenant law and practice of the GPG for 2017. Whereas the indices of Djankov et al. (2003) and GPG cover various continents more or less uniformly, Malpezzi and Ball's (1993) index is more representative of Europe, Latin and North America, but insufficiently covers Africa and Asia, and Andrews et al.'s (2011) index focuses only on the rich Organisation for Economic Co-operation and Development (OECD) countries. A general feature of all these indices is a low coverage of African countries. Table 4 reports correlations between these and our indices as well as the corresponding *p* values and numbers of observations. To compute the correlations, cross sections of our indices for corresponding years are extracted. For example, to calculate correlations between our indices and those of Malpezzi and Ball (1993), we use only the values of our regulation intensity indices for 1991, whereas the correlations with the indices of Andrews et al. (2011) are computed using our values for 2009. For the calculation of correlations, we use data only for those countries for which our sample overlaps with that of the study with which they are compared. The number of overlapping observations (countries) is shown in Table 4 under each correlation.

The correlations are statistically significant for three indices: Andrews et al. (2011), Djankov et al. (2003), and GPG. First, our rent laws index and RMRI are positively and statistically significantly correlated with the rental market regulation index of the OECD, which is a simple average of the rent control indicator and the tenant–landlord relations indicator. Given a similar composition of

Table 4. Correlation between our indices and alternative indices.

Index	Rent laws	Tenure security	Housing rationing
		Malpezzi and Ball (1993)	
Coefficient value	0.054	0.265	0.261
p value	0.759	0.124	0.130
Number of observations		35	
		Djankov et al. (2003)	
Coefficient value	0.046	0.253	0.079
p value	0.710	0.039	0.526
Number of observations		67	
		OECD: Andrews et al. (2011)	
Coefficient value	0.598	0.201	0.348
p value	0.001	0.315	0.075
Number of observations		27	
		Global Property Guide (2017)	
Coefficient value	− 0.347	− 0.168	− 0.312
p value	0.005	0.185	0.012
Number of observations		68	

our indices and those of the OECD, this concordance is easily explained. Second, the GPG landlord and tenant law and practice index is negatively and significantly correlated with our rent laws and RMRI indices. The negative correlation occurs because the GPG index takes five integer values between −2 (strongly pro-tenant) and 2 (strongly pro-landlord). Again, this relatively strong correlation can be explained by similarities in individual components of the composite indices. The difference can be explained to some extent by the fact that the GPG uses two additional measures that are not present in our indices: enforcement and deposit treatment. Third, the correlation between our tenure security index and the procedural formalism index of Djankov et al. (2003) is positive and statistically significant at the 5% level. In our index, we quantify legal provisions with respect to protection of tenants from eviction, whereas Djankov et al. (2003) focus on the procedures that are necessary to evict a tenant. Although their emphases differ, the two indices relate to the same area of tenure security and display a statistically significant, albeit not very strong, correlation. Fourth, the correlation between our housing rationing index and the OECD index is positive and statistically significant at the 10% level. Given the small sample size—only 27 overlapping countries—this is an impressive result. The OECD measure does not account for any rationing policies, which makes the existence of such a relationship rather puzzling. One explanation may be that stronger housing rationing is associated with more intense rent control and, thus, is indirectly correlated with the overall level of tenant protection as measured by the OECD.

3. Concluding Remarks

In this study, a new long-term, multicountry database of housing market regulations is introduced. The database covers 101 countries/states from 1910 to 2020. The indices are built using a comprehensive analysis of real-time, country-specific legislation. It includes regulation indices concerning such policies as rent control, protection of tenants from eviction (tenure security), and housing rationing. The coding approach, which draws from the rich leximetric literature, maps legal texts into a set of measurable values (indices). The careful design of the regulation indices strikes a balance between the complexity and feasibility of the legal analysis. The database can easily be extended to include new countries and new indicators (e.g., stimulation of residential construction, housing allowances, and land-use regulations). It is continually updated to account for the relevant changes in rental market legislation happening in various countries. The regulation database is open to all and can be accessed online.[13]

In its current state, the database allows for monitoring fluctuations in the intensity of rental market regulations, both past and present. The country-specific fluctuations as well as continent-wide and worldwide waves of regulation intensity can be explained by the exogenous shocks or combinations thereof that hit housing markets in different countries at different times. These can be negative supply shocks or positive and negative demand shocks. The most typical examples of negative supply are destructions of housing stock or failure to renovate it because of wars or earthquakes, hurricanes, and other large-scale natural catastrophes. Positive demand shocks include migration or income increases, whereas the relevant negative demand shocks include income falls—as exemplified by the COVID-19 crisis. All these shocks lead to either rent increases or income reductions, resulting in a growing rental burden on households. When the shocks are large, they affect large segments of the population and, thus, can trigger a sharpening of rental market regulations. Some of these shocks are of a local nature (e.g., earthquakes), whereas others affect entire continents or the whole world (e.g., wars). Local shocks can force individual countries to enhance government intervention into the housing market, whereas global shocks can lead to increases in regulation intensity around the world. This spread of regulations is magnified by the almost instant dissemination of information by various communication channels. Thus, activist groups of tenants are quickly informed about measures undertaken in other regions and countries, and can rapidly lobby for the introduction of similar measures in their city, state, or country.

Another factor that is likely to increase the probability of reregulation is the existence of a tradition of rental market regulation in each respective country. In countries that had governmental intervention in the housing market in the not too distant past, the acceptance of new interventions may be easier to obtain. This effect is enhanced by legal education, which increases the awareness of the general public about tenant rights, makes such rights more enforceable, and renders rental regulations more acceptable.

Moreover, the propensity to regulate depends on the share of renter households. In countries and regions where the majority of households live in rental premises, the eagerness of politicians to introduce, say, rent control, is much higher than in societies dominated by homeowners. Therefore, Berlin and New York are more friendly to rent control than are smaller towns and countryside regions. As shown by Kholodilin, Kohl, Prozorova, and Licheron (2018), the homeownership rate worldwide increased between 1950 and 2008, such that the proportion of renting households declined to less than one third of all households. However, after the Great Recession, and in some countries (e.g., Argentina) even earlier, the trend reversed. Now, more and more households, particularly in large cities, rent rather than own. The reasons for this may be different, ranging from a secular increase in real estate prices (Knoll, Schularick, & Steger, 2017) to growing financialization of the economy, which favors speculative price bubbles, to the advantages of flexible housing in an increasingly globalized world. Regardless of the reason, the growing population of tenants requires more protection, which leads us to expect a new wave of rental market reregulation in the years to come.

Notes

1. For an overview of such COVID-19 related housing policies, see Kholodilin (2020).
2. For example, the indices presented here are used as explanatory variables for homeownership rates (Kholodilin et al., 2018) and residential construction (Kholodilin & Kohl, 2020).
3. Willis (1950) finds numerous examples of such policies in the more remote past. However, rent control then did not have the systematic and mass character that it acquired in the 20th century.
4. In many countries, the legal acts stipulated that rent control should disappear 1–2 years after enactment or several months after the war ended.
5. Alternative classifications also exist. For example, Lind (2001) distinguishes five main types of rent control.
6. For an analysis of rent control acts in the former Russian Empire between 1918 and 1922, see Kholodilin (2017b).
7. For an insightful discussion of the advantages and disadvantages of these methods, see Willis (1949).
8. As a rule, under rent control, rents grow much slower than in a free-market situation, as shown, for example, for Belgium by Bettendorf and Buyst (1997) and for St. Petersburg by Kholodilin, Limonov, and Waltl (2019). The anecdotical evidence that the difference between market and controlled rents is small does not prove the

ineffectiveness of rent control. On the one hand, it may imply that landlords in the uncontrolled sector do not necessarily strive to maximize their profits and set the highest possible rents. On the other hand, in the controlled sector, landlords will tend to maximally exploit the allowed rent increases by setting the rent at the highest legally permitted level. Thus, by setting maximally allowed rents, authorities create incentives to raise rents.

9. As we saw, there are different methods of freezing rents. One is to set the controlled rent equal to the cost plus some fair rent of return. However, as neatly shown by Fogelson (2013), it is extremely difficult to determine such a rate. Therefore, the legally allowed rent, when set by authorities, will necessarily be an artificial construct that often misses reality.
10. http://www.tenlaw.uni-bremen.de/.
11. https://www.eui.eu/DepartmentsAndCentres/Law/ResearchAndTeaching/ResearchThemes/ProjectTenancyLaw.
12. In the United States alone, there are 310 cities with a population of 100,000 or more as of 2018, which can have their own rental market regulations; see U.S. Bureau of Census Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1 2018 Population: April 1 2010 to July 1 2018—United States—Places of 50,000+ Population, at https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-cities-and-towns.html.
13. https://www.remain-data.org/.

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