The Regulation of Private Tenancies

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A Multi-Country Analysis

DISSERTATION

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1 Introduction

Private rental markets are regulated by law and institutions in almost every country in the world today. From a political and social point of view, it has always been a relevant topic in nearly every society. Housing is seen as a basic human need[1], thus regulation of private tenancies usually has the aim of protecting the tenants' interests in affordable habitation. Nowadays, tenants are the second biggest group after homeowners among the OECD member countries. The system of tenancy regulation consists of both laws that regulate rents and laws that ensure a certain amount of tenure security. Rent laws usually govern the amount of rent at the beginning of a tenancy and its progress during the contract period. Tenure security laws govern patterns like the eviction of tenants or set the legal frame for duration patterns of private tenancies.

Rent and eviction control is not a modern phenomenon. There is a rich and long history of regulation of the private rental market. In fact, the regulation of housing reaches back to ancient times. History shows that the balance of power between landlords and tenants is sensitive to rent and eviction laws. Market mechanisms and their outcomes often changed tremendously in reaction to more or less regulation. Thus, the pendulum of regulation has regularly swung back and force in the past centuries. The triggers for private rental market regulation were usually baleful events such as wars, natural and social disasters or economic depressions rather than abstract ideas about better market outcomes (Willis 1950).

In medieval Europe, the regulation of private tenancies was already a common policy tool to manipulate the prices for renting. Yet these activities were usually restricted to single cities such as Paris or Rome. In the 15th century, for example, several popes heavily regulated and deregulated housing in Rome's Jewish quarter either in favour or to the detriment of Jews. In Paris, pestilence, war, and economic downturn forced the government to install massive rent cuts of about 50 percent of the original rent and several eviction restrictions in the 16th century. However, the Parisian rent laws allowed exceptions such as higher rents for newly constructed buildings (Willis 1950). These rules are reminiscent of modern deregulation laws for new constructions. In the same century, Spanish administrations and courts implemented an appraisal system called *tasa* for all rented accommodations. In the 17th century, an official rent commission was installed to set rents properly in Spain. The idea of *tasa* was in force until the mid-19th century (Willis 1950).

In modern age, rent control made its comeback with the start of the First World War. In New South Wales, the first rent control law was implemented just a few weeks after the Great War had started. In the following years rent moratoria and comprehensive rent control laws were implemented in the whole of Europe and its colonies. Regulation in the USA, however, was more fragmented: during the First World War, rent control regimes were installed in several cities rather than in the whole of the country. The First World War was therefore a significant trigger for a worldwide shift towards more rent control. After the First World War, the majority of countries that had installed strict rent control regimes struggled to find a way back to free rental markets (Willis 1950). Subsequent to the political takeover of several non-capitalistic powers

[1] UN Resolution 217 III (A) Art. 25,1948.

such as the fascist regimes in Italy, Spain or Germany, the undertaken deregulations were reversed. With the beginning of the Second World War, a new wave of regulation rolled over private tenancy markets worldwide.

After the Second World War, housing scarcities due to war destructions and great migration pressure prolonged strict rent control regimes in many European countries. It was not until the beginning of the 1960s that the strictest rent control regimes were more or less de-regulated. France, for example, narrowed down rent control to a few low quality rentals in Paris until the beginning of the 1970s. Great Britain or Germany limited rent control in the course of the 1950s and 1960s (Hubert 2003). With the beginning of the 1970s, however, the pendulum swung back again towards more rent and eviction control. Again, the triggers were malevolent developments such as the noticeable slowdown of economic activity at the end of the 1960s, the years of high inflation due to the oil crisis in the 1970s and a remarkable political shift in Western societies in the wake of civil rights movements around the globe.

The analysis in this thesis begins 1973. The deeper analysis of rent and eviction regulation in 18 advanced economies shows that the cycles in regulation have continued until today. The regulation of private tenancy markets experienced a revival in popularity during the 1970s. However, the shift was more heterogeneous and less extreme than during the two World Wars. In contrast to the rent freezing first-generation rent control regimes, the so-called second-generation rent control regimes (Arnott 1995, 2003) allowed rents to be more flexible. In the following years, a wide range of different rent control forms such as cost-pass-through, real rent freeze or vacancy de-control emerged. During that period, several countries experienced with new comprehensive rent and eviction control regimes. For example, Germany implemented a second-generation rent control regime in 1971. In the United States and Canada, several states and cities such as Ontario, Boston or San Francisco installed even softer rent and eviction control regimes. In 1976, France, however, adopted a new comprehensive rent and eviction control that allowed only minor rent movements.

In the 1980s, many advanced economies experienced a process of strong liberalisation. Until the end of the 1990s, the rental market in many countries underwent some kind of deregulation, with a strong focus on rent control laws. Most countries shifted to an even softer rent control regime or even to a full abolishment of any control such as Finland in the 1990s. In the new millennium it was not until the burst of the housing bubbles and the Great Recession in America and Europe that rental market regulation attracted more attention. However, as in the 1920s the current trend is diverse. While countries with a robust economy and a booming housing market, for example Germany, tend to have slightly more regulation countries like Spain and Portugal that suffered heavily under the European debt crisis went through a deregulation of rents.

The historic overview shows that the regulation of private tenancies has always played a crucial role in societies worldwide. But what about its economic effects? The vast majority of economists agree that rent and eviction control regimes foster economic inefficiencies (Alston et al. 1992). Hence, the manipulation of rents often leads to lower housing quality, less new constructions, shrinking rental markets, misallocations of living space or harmful immobility of labour and thus to insufficient distribution of labour throughout the economy (Hayek 1972; Friedman, Stigler 1972; Olsen 1969; Gyourko, Linneman 1990; Basu, Emerson 2000; Munch,

Svarer 2002). Only a minor number of studies show positive effects of special forms of soft rent control regimes (Arnott 1995, 2003; Arnott, Igarashi 2000).

Despite the rather unanimous view of rent and eviction control being harmful, economists often struggle to establish their view on rental market regulation in public debates. Of course, this may be due to many reasons that lie beyond the expertise of economists. Yet doubts remain whether there has been done enough essential research on this field in the past two decades. A closer look shows that empirical evidence of rent control regimes is fragmented (Arnott 1995; Hubert 2003). Comparative analyses of other important markets such as for finance (La Porta et al. 2008; Djankov et al. 2007; Djankov et al. 2008) or labour (Botero et al. 2004; Deakin et al. 2007) have already been published for a large country sample. However, such comprehensive studies are very rare in the case of rental markets. Most empirical studies on rental markets remain regional. It is incontestable that regional analyses are essential for a better understanding of rental markets. Nevertheless, multi-country studies have been neglected. In the past thirty years, there were very few studies dealing with a bigger country sample in the context of rental market regulation (Malpezzi, Ball 1993; Andrews et al. 2011; Cuerpo et al. 2014). As a consequence, there is a tremendous lack of adequate data on rental market regulation (Gstach 2010). A comprehensive time-variant cross-country analysis is also still missing.

1.1 Aim and structure of the dissertation

The aim of this dissertation is to close this gap in the economic literature by creating two new datasets. One covers 18 advanced economies over a period of 42 years. The other is about rental market regulation in 66 countries in 2010. This work combines law and economics by transforming rent and eviction laws into a numerical index that can be used for economic analyses. The relevant information for each country was collected over the course of many years. The resulting data set answers the increasing demand for more applied research and market knowledge that has extremely increased since the financial market crisis in the past decade. It can be used to tackle more research questions beyond the analysis conducted in this thesis.

The dissertation consists of three essays, all dealing with the regulation of rental markets. The first essay focuses on the construction of the new cross-country dataset on private rental market regulation. The methodology of transformation follows approved approaches used mostly by the representatives of the legal origin theory (La Porta et al. 2008; Deakin et al. 2007). The observed country information has therefore been translated into numerical data. The dataset consists of ten dummies that check for different aspects of rent and tenure security regulation. Averaging different groups of dummies create three different indices, namely the rent laws index, the tenure security laws index and the rental market regulation index as an overall index. The results are the first time-variant indices that mirror the level of rent and eviction control for each economy. In addition, the index is employed on a country sample of 66 countries. For data quality reasons, the rent law index only consists of four instead of six dummies. The indices and their dummies are the basis for further analyses of rent and eviction control presented in chapter 3 and chapter 4. While the time-invariant index is used as the dependent variable in chapter 3, the time-variant dataset provides the explanatory variables in chapter 4.

In chapter 3, the determinants of rent and eviction control are analysed by using the time-invariant dataset of 66 countries. The theoretical and empirical approach of this analysis follows the methodologies of studies such as Botero et al. (2004) who analysed the regulation of labour for a large set of countries. The dataset is analysed along three economic theories, namely the legal origin theory, the political power theory (Botero 2004) and the theory of culture (Stulz, Williamson 2003). The analysis shows that tenure security laws are more in favour of tenants in countries with a French legal origin. Furthermore, there is a connection between Protestantism and lower eviction control. Surprisingly, political power only significantly matters for economically more advanced countries. There, the share of leftist and centrist parties in power from 1975 to 2010 has a positive impact on the level of tenure security. However, differences within the country sample in rent control cannot be significantly explained by legal origin, political power or religion.

Chapter 4 sheds light on the effects of different rent control regimes such as the first-generation rent control and second-generation rent control regimes (Arnott 1995) on the development of real rents. For this analysis, the time-variant dataset is used. Two models are presented that aim to explain the mechanisms between rent and eviction control and real rents. As far as the effects of first-generation rent control regimes are concerned, the standard textbook model on rent freezes is used (Frankena 1975; Mankiw 2012). As for the softer regulations of second-generation rent control regimes, however, a more complex theoretical approach is used dealing with information asymmetries and adverse selection (Basu, Emerson 2000; Mora Sanguinetti 2010). The quantitative analysis mostly confirms the effects of regulation on rents portrayed by the two mentioned models. On the one hand, the results of a standard panel estimation show that very strict rent regimes lead to lower real rent appreciations in relation to free rent regimes. On the other hand, second-generation rent control regimes offering time limited tenure security and mandatory minimum duration periods for private tenancies may provoke higher rent appreciations than in free rent regimes. The results show that tenure security has a considerable impact on rents. Hence, this research confirms the unproved assumption of many economists that tenure security matters a lot for its undeniable effects on rents. Finally, free rent regimes on average show very stable real rents over time. This lies in contrast to the often politically motivated fear that free rent regimes provoke heavily rising rents.

2 The Regulation of Private Tenancies – Measured

Abstract

This chapter deals with the country-specific regulation of private tenancies in 18 advanced economies over the course of 42 years. On the basis of detailed country reports the first time-variant indicator of rental market regulation is constructed. The index is based on both rent laws and tenure security laws that cover the classic aspects of first- and second-generation rent control. The index helps to identify three different phases of rental market regulation for the past 42 years. In addition, the index methodology is employed on a greater but time-invariant sample of 66 countries that covers advanced and less advanced economies. Finally, the time-variant index allows insights on the extent to which rent and tenure security laws have converged over the past forty years.

2.1 Introduction

This chapter analyses private tenancy regulation in 18 advanced countries or states[2] since 1973. On the basis of 18 regulation reports a set of ten dummies and three indices is constructed. The panel gives a deep and broad overview of private tenancy law in advanced economies. Regulation that deal solely with public housing are not considered here. The dataset enables a sophisticated analyses of different regulation outcomes across the sample. Time-variant cross-country indices that measure the strength of regulation on private rental markets are still rare in the economic literature. Thus, most studies on private rental markets are based on single-country levels. Often they are just a snapshot due to the lack of adequate data. Therefore, a more general and comprehensive view on private rental market regulation is needed. The aim of this study is to extract a broad dataset on rental market regulation that enable macroeconomic analyses of private rental markets on a more sophisticated level.

Content and methodology of the private rental market regulation index follow the literature in two separate fields. On the one hand, the recent literature on the different styles of rental market regulation - especially rent control and tenure security - provide the basis for the content of the index (Arnott 1995, 2003; Lind 2001; Hubert 1996). The amount of studies about tenure security is slim in comparison to the one addressing rent regulation. However, the presence of a certain level of tenure security is essential for rent regulation to be effective (Arnott 1995, 2003; Lind 2001). It is comprehensible that renters cherish a secure and familiar home (Arnott 1995). Therefore, loose tenure security would put a negative effect on the value of rental dwellings, especially as a substitute to home ownership. Very recently, Whitehead et al. (2012) and Scanlon et al. (2011) concluded that tenure security plays a significant role for rental market regulation.

[2] The countries and states are New South Wales (Australia), Austria, Ontario (Canada), Denmark, United Kingdom, Finland, France, Germany, Ireland, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, California (United States), Massachusetts (United States).

On the other hand, as far as the methodology of indexing is concerned this study follows the well-known legal origin theory (La Porta et al. 2008). For large country samples, the authors of the legal origin theory extracted the regulation of different markets and sub-markets such as finance (La Porta et al. 1998), labour markets (Botero et al. 2004) or private credit markets (Djankov et al. 2007).

The chapter is constructed as follows. First, a short overview of the recent economic literature on rental market regulation in different countries and the methodology of indexing regulation is given. Then the rental market regulation index and its two sub-indices are constructed following the methodology employed by the legal origin theory (La Porta et al. 2008). Finally, the development of rent and tenure security laws are descriptively analysed.

2.2 Literature overview

Up until the end of the housing markets' bubbles in the United States and parts of Western Europe at the end of the past decade the knowledge of the current and past shapes of rental market regulation in Europe and the United States was sparse. Only very recently the interest in the regulation of private tenancy markets has risen due to the need of a better understanding of housing markets. Thus, both international organisations such as the OECD or the European Commission and academia have started to focus on the acquisition of data about rent regulation and tenure security through indexation or country panels.

Scanlon et al. (2011) and Whitehead et al. (2012) conduct cross-country analyses on private rental market regulation. Both works conclude that private tenancy regulation may play an important role for tenure decisions and therefore for the whole housing market. Among others Whitehead et al. find that countries with a regulation that balances the interest of both landlords and tenants may help developing bigger and better-functioning rental markets. According to Scanlon et al. (2011), two main factors are responsible for a more attractive private rental market: a certain amount of tenure security and a country specific tradition towards renting rather than owning.

Haffner et al. (2008) come to similar conclusions by comparing the rental market regulation of five European countries. Very recently, Boer and Bitteti (2014) compare the private rental sector of four European countries. The regulation of rents and the extent of tenure security are part of the study. They conclude that there is a growing importance of the private rental sector policies for the outcome of housing markets and therefore for the whole economy. Furthermore, two big research projects in the field of international law by the European University in Florence (Schmid 2009) and the University of Bremen[3] give detailed snapshots of private tenancy regulation in Europe. However, both projects remain solely descriptive.

A broader indexation of rent regulation and tenure security was contributed by Andrews et al. (2011). Their time-invariant index consists of questionnaire of country experts and is a snapshot of the regulation in 32 OECD countries. It is divided into two areas: the security of tenure

[3] http://www.tenlaw.uni-bremen.de/introduction.html

and the regulation of rents. The two areas consist of five sub-indices that cover rent level control, rent increase control, deposit requirements, ease of tenant eviction and tenure security. The authors show that tighter control comes together with lower homeownership rates and a lower quality of rentals. The European Commission adopted the index for their own analysis (Cuerpo et al. 2014) and adapted it for all members of the European Union. Their analysis showed, among others, that tighter rent regulation can lead to stronger house price dynamics. Furthermore, Kholdilin (2015) constructed an index of housing market regulation for Germany between 1913 and 2015.

Both the present and the past have seen many different regimes of rent and eviction control. Thus, a clear classification of different rent control and tenure security regimes may help to find an adequate assessment of private tenancy regulation. One of the main contributions to the classification of rent control regimes is done by Arnott (Arnott 1995, 2003) who classifies rent control as first- and second-generation rent control regimes. According to Arnott, first-generation rent control regimes are the strictest form of rent control like nominal rent freezing. Second-generation rent control regimes imply a softer rent control. They usually allow rents to move with consumer or cost price developments. A further form of second-generation rent control regimes is known as tenancy rent control regimes. These regimes decontrol initial rents while rent increases during the tenancy are bound to some sort of control. The classifications defined by Arnott are mainly used for the indexation of rent control. Deviating classifications of rent control so far have been conducted by Lind (2001) and Hubert (2003).

In the past twenty years legal origins theory and criticisms (Deakin et al. 2007) thereof contributed to uncovering the drivers and effects of different institutional outcomes throughout the world. The legal origins theory was initially promoted by Rafael La Porta, Francisco Lopez de Silanes, Andrei Shleifer and Robert Vishny (LLSV). According to this theory, the origins of legal systems such as the English common law[4] and the civil law in its French, German and Nordic variants influence national regulatory styles. LLSV started their hypothesis in the field of company and financial law (La Porta et al. 1998) but later adapted it to other markets such as labour markets (Botero et al. 2004), the regulation of private credit markets (Djankov et al. 2007) or the burden of entry regulation (Djankov et al. 2002b) to mention just a few. The legal origins theory predicts that civil law countries are associated with a stricter regulation and a deeper government involvement than common law. Furthermore, the approach claims that common law countries are more likely to produce efficient rules for the governance of the business enterprise than countries with civil law origins (La Porta et al. 2008).

The dataset of this study follows the leximetric approach. The construction of the rent law index, the security of tenure index and the rental market regulation index follows the methodology that is commonly used in legal origins studies. The empirical base for the legal origins approach are multi-country datasets which measure the degree of regulation in particular areas of economic activity. The coding procedures follow leximetric analyses that are a diligent quantification of legal rules (Lele, Siems 2006; Deakin et al. 2007; La Porta et al. 1998). That means that regulating strength of laws is measured by numerical value to the law in a particular field.

[4] Please note that English legal origin are named common law throughout all chapters.

2.3 Methodical framework: measuring rental market regulation

This section examines the different measures of rental market regulation from a conceptual point of view. The already mentioned literature on legal traditions and their impact on the style of institutions or the strength of market regulation produced a rich body of different indicators that measure the level of regulation (La Porta et al. 1998; Botero et al. 2004; Djankov et al. 2007; Deakin et al. 2007). The index solely consists of dummies. The number of variables and the method of coding is similar to the work of La Porta et al. (1998).

The dataset deals with two broad areas: rent law (rl) and tenure security law (tsl). Both areas together represent the rental market regulation (rmr) index. The rmr index is the average of ten dummies dealing with the legal statutes governing private tenancy contracts. They are described in more detail further below. Each of the two areas of regulation form an index that measures rent control or tenure security. The two indices are the average of their dummies. While the rent law index consists of the first six dummies (D1-D6), the tenure security index is the average of the last four dummies (D7-D10). The dummy variables have two outcomes, 'yes' and 'no' or '1' and '0', respectively. Therefore, the indices range between zero and one. An overview of the dummies is given in table 2.1.

The indexation of law and regulation will always give an incomplete picture of reality (Deakin et al. 2007). Therefore, the effort is to approach it as closely as possible. Due to simplicity and transparency reasons, however, the rental market regulation index cannot take every critical aspect into account. For example, different regulations that are tracked by the ten dummies may vary in relevance across the countries, depending on the different roles they play in each system. Therefore, not weighting every single variable of the index individually may cause a problem (Deakin et al. 2007). The rental market regulation indices neglect this aspect since there is no special weighting of the different dummies. This means that the three indices are the average of their respective dummies.

Higher index values correspond to a more severe legal protection of tenants against rent movements and unwanted evictions. That is, the higher each index the higher the level of regulation of private tenancies. At this point, the longitudinal rental market regulation index follows the mentioned approaches of the leximetric literature (Deakin et al. 2007; Botero et al. 2004; La Porta et al. 1998; La Porta et al. 2008). This approach implies that laws regulating private tenancies limit the formal freedom of landlords and the whole market. However, the abundance of such rules enhances the freedom of contract.

Yet the regulation of tenancies does not solely redirect resources from landlords to renters; tenancy law rules may also serve an efficiency aspect as Deakin (2007) argues in the case of labour market regulation. For private tenancies, rules of tenure security and rents may provide insurance against the risks of eviction of the tenant or rising rents. Rules can also compensate for informational asymmetries (Stiglitz 2000) and further inefficiencies that arises due to other uncertainties. Therefore, both a maximum and a minimum score may not be automatically optimal for renters in the end, given the possible inefficiencies (Basu, Emerson 2000, 2003; Arnott 1995) and the mentioned asymmetries it provokes.

In contrast to most of the datasets of legal origin approaches the dataset constructed here is of longitudinal nature (Deakin et al. 2007). That means the panel is not only cross-sectional but also time-variant. This allows a much deeper analysis of the development and distribution of private tenancies regulation (Deakin et al. 2007). Furthermore, the structure allows us to use each dummy separately for further empirical or theoretical work. This holds true especially for more qualitative analysis such as the analysis of special combinations or single regulation outcomes.

The here constructed indices measure formal legal rules. According to Botero et al. (2004) the following two concerns can be made: First, the enforcement of rules may vary over the sample. However, the quality of enforcement cannot be measured directly. But we can get a rough estimate of the enforcement quality. In the case of private tenancy markets the court formalism index for eviction of tenants in the event of outstanding rent payments may be such an control variable (Djankov et al. 2003). In any case, despite the critique that formal legal rules do not fully matter, an extensive literature shows that formal rules do matter a lot (La Porta et al. 1998; Djankov et al. 2003; Botero et al. 2004; Djankov et al. 2007; Djankov et al. 2008). Second, the focus on formal rules is misleading because formally distinct legal systems can and do achieve the same functional outcome as common law systems, only by different means. However, this criticism is not convincing, because rental market law is statutory in every country. Even in common law countries deviations are exceptions and not the rule (Botero et al. 2004).

The indices consider standard contracts and their exemptions. If there are two equitable rent control methods, the more liberal one has been observed. The idea is that lawful tenancy contracts would usually shift to the more liberal version since tenants are generally in a weaker position before the rental contract is signed. Nevertheless, regulatory exceptions such as new construction deregulations or spatial reregulations are taken into account by the index.

This work examines private rental market regulation from 1973 to 2014 on a yearly basis. In order to codify the necessary information, a range of sources was used. First, major reforms were identified by using secondary literature on rental market regulation such as the large accumulation of country reports of the two broad research projects in law by the Florence University and the University of Bremen that were finished in 2005 and 2013, respectively. Second, the identified major reforms were analysed in detail in the mentioned areas covered by rent law and tenure security law. Mainly primary sources such as legal texts were acquired via national law databases or direct requests to the ministry or different tenant and landlord associations. Finally, the qualitatively surveyed tenancy law data was cross-checked with large country surveys like e.g. Whitehead et al. (2012) and Scanlon et al. (2011) or single country reports such as Miron (1995) for Canada Ontario, Satsangi (1998) for France or Jóhannsson (1998) for Finland and Sweden to mention just a few. Interviews or surveys were not used as sources like it was done by the OECD (Andrews et al. 2011) or the Wharton Residential Land Use Regulation Index (Gyourko et al. 2008).

In addition, the index is employed on a much larger country sample of about 66 countries. However, this sample is time-invariant. That means, it is just a snapshot of the regulation of rents and the level of tenure security in the selected countries in 2010[5]. Asian, African and South

[5] The date of some country reports deviate from 2010 but no country report is older than 2005.

American countries' information rely on country reports provided be the website www.globalpropertyguide.com that is also frequently used as a reliable source by international institutions such as the IMF and the OECD (Igan, Loungani 2012; André, García 2012). It should be noted that this source is not considered ideal since the information are not first-hand and not completely cross-checked with other sources. However, due to the lack of any reliable information of rental market regulation data for emerging countries, this online information is seen as the best accessible solution. Since the data for emerging countries is not as accurate as the data for advanced countries, the time-invariant approach checks only for eight dummies, namely D1 to D4 and D7 to D10.

2.3.1 Rent laws

Rent laws are the framework for the determination of rents. Both the fixing of rents at the beginning of a tenancy and its development during the term are directly affected by rent law. However, rent law may also allow exemptions from rent control, e.g. for special contract and dwelling types. Considering the complex structure of rent control laws six dummies capture the most important aspects of rent regulation within a country. The composition of the dummies follows the standard classifications given by Arnott (1995, 2003) and Lind (2001). Hence the rent law index considers first- and second-generation rent control. The six dummies are: (i) real rent freeze, (ii) nominal rent freeze, (iii) rent level control, (iv) intertenancy decontrol, (v) other specific decontrols, and (vi) specific rent recontrol. The first three dummies measure direct rent controls for standard tenancies. The latter three dummies check for exemptions.

Dummy D1 checks whether landlords can raise rents by more than index linked prices or costs per year. Price indices are meant to represent any official consumer or any other official price index. Cost indices stand for official construction cost indices or official mortgage cost benchmarks or indexed housing costs. Dummy D1 turns one if rents cannot grow by more than a cost or price index per year. Dummy D2 deals with a nominal rent freeze. This dummy checks whether rents may not be updated at all or just at a rate that is defined by governments or institutions erratically. Nowadays, this kind of very strict rent regulation is rarely observed in advanced economies. It was not unusual between 1950s and the 1970s in several countries, however. The dummy turns one if rents may not be updated by more than the official fixed rate. This does not exclude the unusual case of the official fixed rate may turn out to be higher than the consumer or cost price index for a special year. Dummy D3 deals with qualitative rent ceilings. There exist several different types of upper rent limits. These ceilings may look like a quality based comparative rent as they are currently used in the Netherlands, a reference rent level as defined in Germany or Sweden, and a so-called fair rent level as was the case in New South Wales or England.

The first three mentioned dummies equal one in case of a very strict rent control regime. Yet there can be rent regulations that have a real rent freeze but not a certain qualitative rent level that may not be exceeded and vice versa. In the former Spanish tenancy law, in comparison, rents were not allowed to be increased by more than the official consumer price index but an upper ceiling for rents did not officially exist.

The remaining three dummies check for exemptions of the current rent regulation system. In reality, many countries have passed laws that limit existing rent controls. The index checks for the four most common ways of deregulation. Therefore, the fourth dummy D4 checks whether rents are not regulated between different tenancies. It is meant to find out about so-called deregulation-reregulation types where the deregulation just refers to the initial rents of new contracts. After the initial rent was set freely or at the common market level the tenancy is recontrolled again. In some Californian cities this kind of deregulation has been used for new constructed dwellings, for example. Arnott (2003) and Lind (2001) also distinguishes between regulation types where rents are controlled for all tenants or just for staying tenants. The dummy turns one if initial rents of tenancies are regulated.

The fifth dummy D5 checks for decontrol of special dwelling types or in certain areas. The most common method here is the deregulation of newly built dwellings. It has been an often used method to enhance investments in rental housing. This kind of deregulation has recently been in use in Denmark and other countries. Other forms of full decontrol are vacancy decontrol or rent level decontrol. Vacancy decontrol can be manifold. Here, vacancy decontrol includes both dwellings that have to be vacant for a longer period and for all rentals in a certain area if the local vacancy rate has risen above a certain level (Lind 2001). Another form may be a full liberalisation of high-end dwellings. That is, rentals become decontrolled if the rents reach a predetermined rent level or the apartments reach a certain amount of quality level. Currently such a system is in use in the Netherlands where rentals with a certain high rent level are free from rent control. The dummy turns one if there is no form of decontrol whatsoever[6].

However, tenancy law may offer the possibility for special dwellings or areas to be controlled stricter. This case is examined by the Dummy D6. The most recent example for such stricter rent control is Germany where rent increases may be restricted in special regions in case there is a serious shortage of free rentals. In Switzerland such spatially enhanced rent control existed also in the 1970s and 1980s. Usually, this kind of exemptions from standard rent controls is not widespread.

[6] Please note that dummy D5 automatically turns one if a free rent regime is in power and dummy D6 automatically turns one in case of full rent regulation.

TABLE 2.1

THE RENTAL MARKET REGULATION INDEX

	Variable	Description
		Rent laws
D1	*Real rent freeze*	The dummy equals one if landlords may not increase rents by more than the growth of official cost or price indices.
D2	*Nominal rent freeze*	The dummy equals one if rents are determined solely by the government or another institution.
D3	*Rent level control*	The dummy equals one if landlords may not charge rents above a certain rent level.
D4	*Intertenancy de-control*	The dummy equals one if rent control holds at the beginning and during the tenancy.
D5	*Other specific rent decontrol*	The dummy equals one if certain kind of dwellings are not de-controlled such as new constructions, vacant dwellings or luxurious housing.
D6	*Specific rent recontrol*	The dummy equals one if certain kind of dwellings fall under a stricter rent regime.
RL	*Rent laws index*	Measures the overall degree of rent control for new and sitting tenants as the average of D1 to D6.
		Tenure security laws
D7	*Eviction protection during term or period*	The dummy equals one if only reasonable reasons leads to a warranted eviction during the term or rent payment period.
D8	*Eviction protection at the end of term or period*	The dummy equals one if only reasonable reasons leads to a warranted eviction at the end of term or rent payment period.
D9	*Minimum duration*	The dummy equals one if a minimum duration period of more than two years is compulsory for every private tenancy.
D10	*Short-term tenancies*	The dummy equals one if short-term tenancies that are tenancies up to a year are not allowed.
TSL	*Tenure security laws index*	Measures the degree of security of tenure as the average of D7 to D10.

2.3.2 Tenure security laws

The tenure security laws address the tenants' protection against eviction and the landlords' rights to repossess their property respectively. Furthermore, legal rules about the duration of tenancies may also play a significant role for landlords and tenants (Arnott 1995). Therefore, the tenure security laws index is the average of four dummies which are: (vii) eviction protection during term or period, (viii) eviction protection at the end of the term or period, (ix) compulsory minimum duration, and (x) the treatment of short-term tenancies.

The dummies D7 and D8 check whether landlords need reasonable reasons in order to evict a tenant or whether they are not bound to any restriction if wanting to evict the tenant. Reasonable reasons are breaches of contract like non-payment of rents, harassment and endangerment of neighbours or damages to the rented dwelling by the tenant. Furthermore, landlords could have reasonable reasons for repossession that are predefined by law, such as own personal needs, sale or restoration and reconstructions.[7] These reasonable reasons have to be defined by law. The dummies D7 and D8 differ in their time-reference. While D7 checks for eviction protection during the term or period of the tenancy, the other dummy do so for tenancies at the end of the term or period of payments. Usually, the latter comes up if time limited contracts or minimum duration periods for tenancies end.

This differentiation is necessary since eviction protection often distinguish between these two stages. There are several countries where landlords may call for eviction at the end of the agreed term without the need of giving any reasons while during the term tenants enjoy full protection. In England, Assured Shorthold tenancies may be finished by the landlord without any reason at the end of the term or at the end of a payment period of a periodical tenancy. Since landlords may favour short contracts due to flexibility reasons in the case of information asymmetries (Basu, Emerson 2000, 2003), tenants face high uncertainty as far as the duration of their private tenancies is concerned. As a consequence, in countries where fixed term tenancies end automatically the duration of private tenancies can shrink substantially to very short periods. This effect has appeared, for example, in the USA where 97.7 percent of all tenancies last one year or less (Genesove 2003). In Great Britain, the median length of tenancies is around two years according to the Office for National Statistics (2011). In Germany, however, tenants enjoy eviction protection both during and at the end of the short-term or payment period. Limited tenancies do not end automatically and evictions are bound to special reasons like personal needs or future restoration plans. As a consequence, tenancies in Germany last longer. Therefore, a typical tenancy lasts around six years (Fuchs, Fitzenberger 2013).

The dummies D9 and D10 primarily deal with duration rules. The ninth dummy of the tenure security laws index checks for a compulsory minimum duration term of more than two years. In some European countries those kinds of tenancy length regulations are in practice. For example, in Spain, France or Italy private tenancies have to last for a minimum duration period of more

[7] Own personal needs mean that not only the landlord but also spouses and near relatives may live in the rental. Restoration is defined as the necessity of a complete restoration. These kinds of mechanisms may be chosen by landlords who plan to enhance the quality of the building in order to attain higher future rent payments. Finally, selling a vacant dwelling as opposed to a rented one might be attractive for landlords at the expense of tenants since unleased dwellings generally obtain much higher prices.

than two years. During that time tenants usually enjoy higher tenure security and rents are controlled stricter. As for Spain, during the compulsory minimum duration period landlords may evict tenants only for heavy contract breaches. After the initial five or eight years landlords in Spain may evict tenants also due to personal needs. Mora Sanguinetti (2010) discusses minimum duration periods and shows, using Basu and Emerson's approach (2000), that these form of regulation can lead to a shrinkage of rental markets and higher rents.

The dummy D10 addresses short-term tenancies. Short-term tenancies are defined as tenancies that are limited in time. The time limitation may go down to less than a year. Tenancies that are limited in time but have a minimum duration are not treated as short-term tenancies. The dummy checks whether short-term tenancies are forbidden by law. In England, New Zealand or US-states like Massachusetts short-term contracts are the most common form of renting. However, in Austria short-term contracts are not allowed. Here, only time limited tenancies are allowed that have to last at least three years with a considerably lower rent level. The dummy turns 1 if classical short-term tenancies are forbidden by law.

2.4 Coding results

2.4.1 Time variant index

Indexing the information about rent laws and tenure security laws for each country or state and each year gives us a unique time-variant index of private rental market regulation for 18 advanced economies for a time period of 42 years starting in 1973. Sometimes rental market laws are made on a regional level, for example in the USA, Australia or Canada. When this is the case, special states are used as a proxy for the whole country. Over the examined time period, the regulation of rentals has changed significantly in the majority of countries. The following three tables show the development of rent laws, tenure security laws and rental market regulation as the composition of all dummies. For the mentioned period, roughly 37 relevant reforms of rental market regulation have been identified in the sample. The index signals 28 reforms of deregulations and 9 reforms that enhancing regulation. According to the dataset, the majority of reforms took place in the last century peaking in the 1980s and 1990s (see figures 2.1 – 2.3 and table 2.2)[8].

The data shows remarkable changes of rental market regulation across countries and over time. Three different phases of regulation can be identified. The first phase is located in the 1970s. It is a time of reregulation in the form of first- and second-generation rent control regimes. For the 1970s the rental market regulation index outlines an increase in regulation. During that time period, a broad reregulation - not only in private rental markets but also in labour and other markets - took place in western countries. Just two decades before the 1970s, first-generation rent control regimes that had been installed during wartime were abandoned or phased

[8] AUS_NSW=Australia=New South Wales, CAN_ONT= Ontario, USA_MA=Massachusetts, USA_CA=California

out in many countries (Hubert 2003). As a consequence, the picture is very diverse across countries: In several European countries, first-generation rent control regimes stayed more or less unchanged until the 1980s. This holds true for example for Spain, England or Finland. On the other hand, countries like France installed more powerful first-generation rent control regimes in the 1970s. The development of rent control regimes is somewhat different in Northern America in the 1970s. There, merely second-generation rent control regimes emerged in parts of several states that had been completely deregulated before, such as in Massachusetts or California. In Ontario the development was similar to those in the USA (Arnott 1995).

The second phase is characterized by a broad trend of deregulation. In the last two decades of the twentieth century many countries experienced a phase of severe deregulation. In some countries the deregulation provoked several reactions of reregulation like in France in 1989 or Spain in 1994. During that period, the vast majority of western European countries changed its rent control regime to a less strict one, such as second-generation or even free rent regimes. Large changes occurred e.g. in England and Finland. In these countries, rent control regimes were adopted with very lax or even no rent control combined with very weak tenure security. In California or Massachusetts, the trend of rent regulation phased out in the 1990s. In Massachusetts, rent control was fully abandoned in 1995. In California, however, several cities still use some form of rent and eviction control. However, the controlled sections of the Californian rental housing markets significantly diminished in the past thirty years. In Canada, the regulation of private tenancies was also steadily liberalised since the 1990s.

The third phase is characterized by a tremendous housing market turmoil. The phase started with the beginning of the new millennium. In the first years of the new decade the price for houses rose tremendously in many countries of the panel. Ownership markets experienced a strong boom. At the end of the first decade the upswing of the house prices was followed by a hurtful downturn of house prices and housing market activity in many advanced countries of the panel. The harmful boom and bust cycles in several advanced economies gave impetus to the interest in housing market regulation such as rent and eviction control. An unambiguous and uniform direction of rental market regulation, however, did not occur in these years. On the one hand, Ireland and Germany installed stricter regulations of private tenancies in the footsteps of a housing market boom[9]. It is noticeable that the Irish tightening of rental market policy in 2004 was significantly larger than the one in Germany in 2015. On the other hand, the financial market crisis and the European debt crisis in the wake of the burst of the great housing market meltdown facilitated sharp rental market deregulations in countries that were received international funding due to their difficult economic situation. Under these circumstances the two Eurozone member states Spain and Portugal[10] underwent a tremendous deregulation that replaced second-generation rent control by fully liberalized rent determination.

[9] The stricter rules for Germany are not illustrated by the figures since the indices end in 2014. However, the stricter rent control law in Germany would have turned D6 from zero to one.
[10] Portugal is not part of the time-variant country panel.

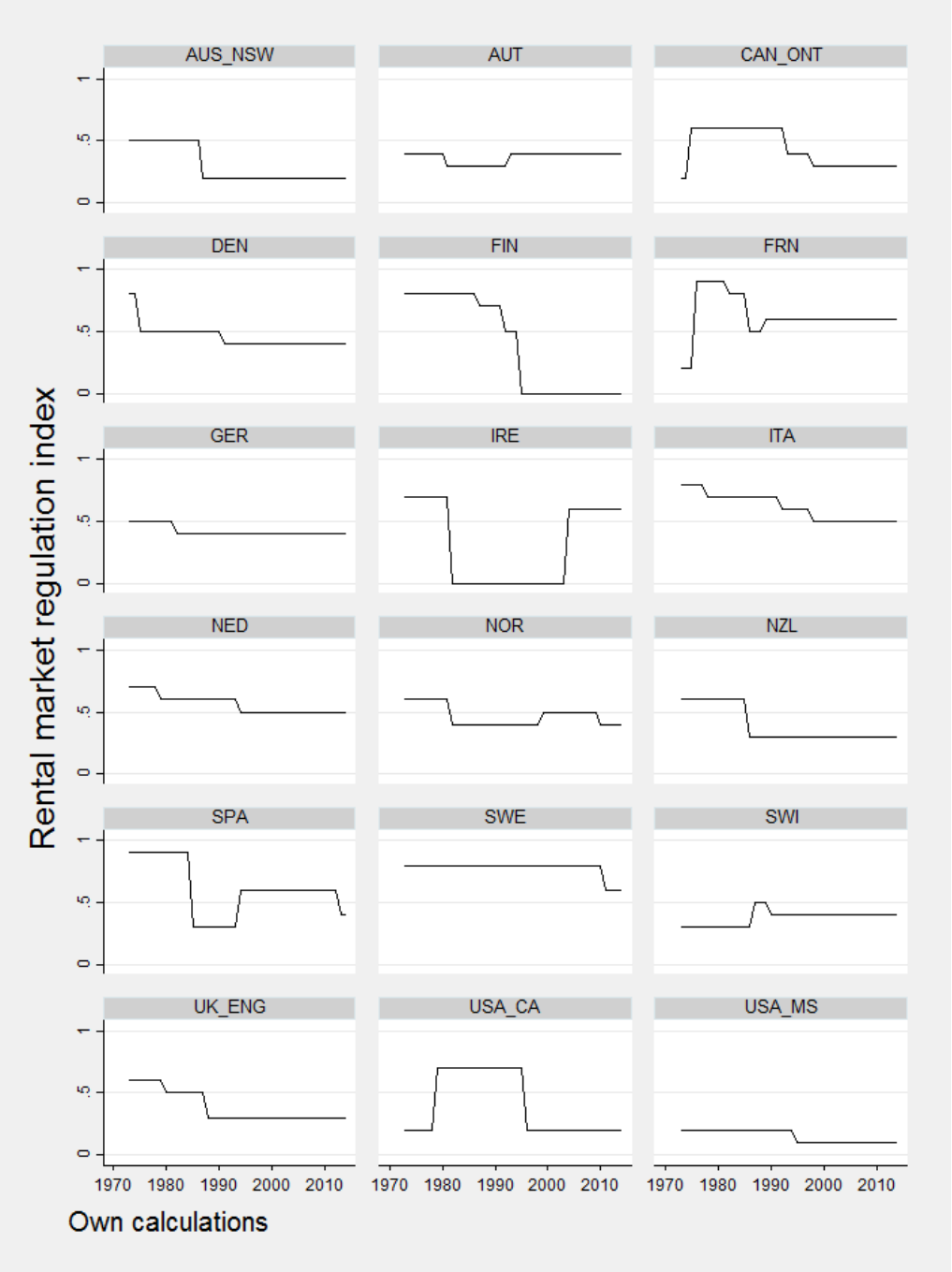


Figure 2.1 Rental Market Regulation Index

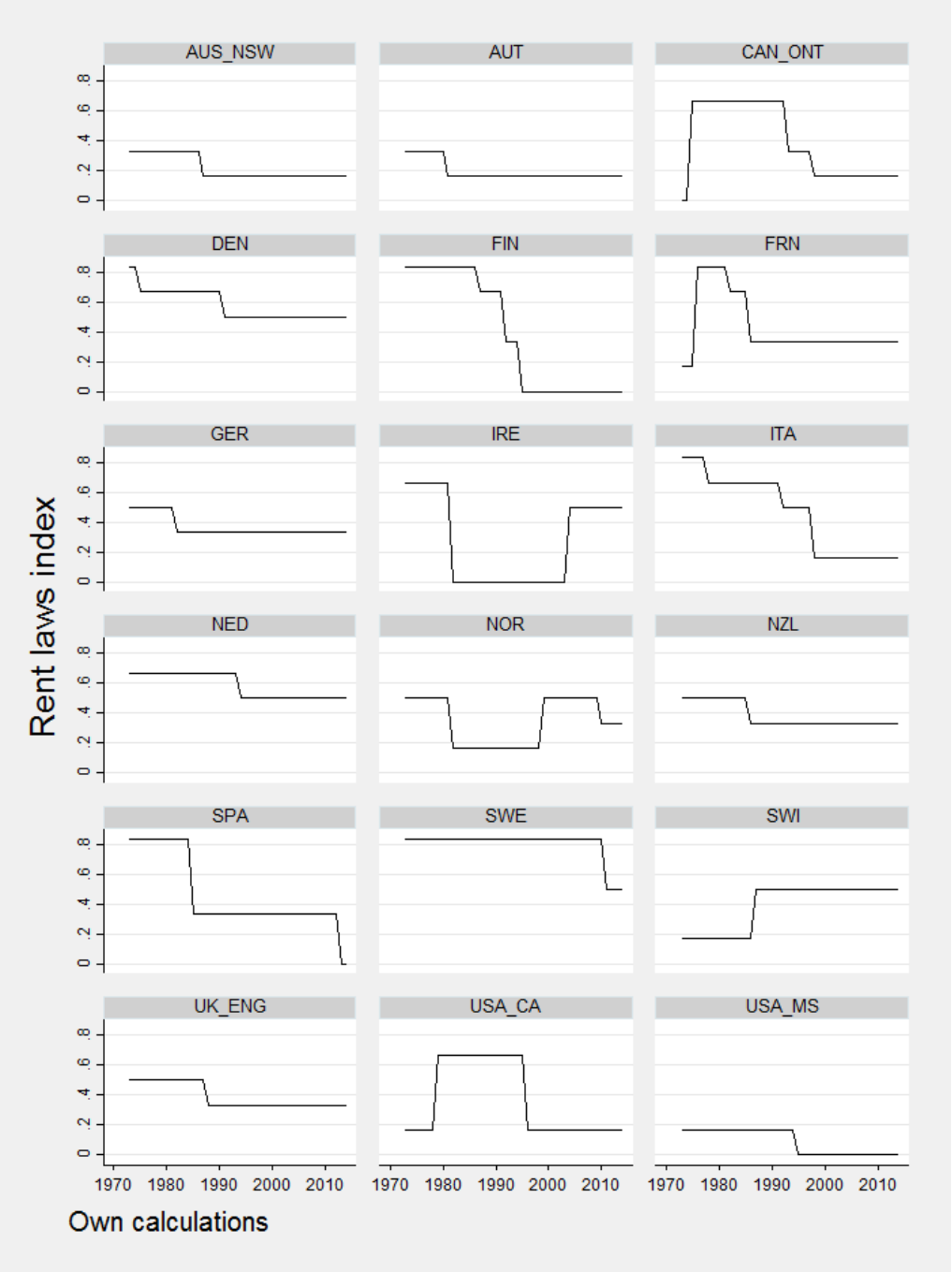


Figure 2.2 Rent Laws Index

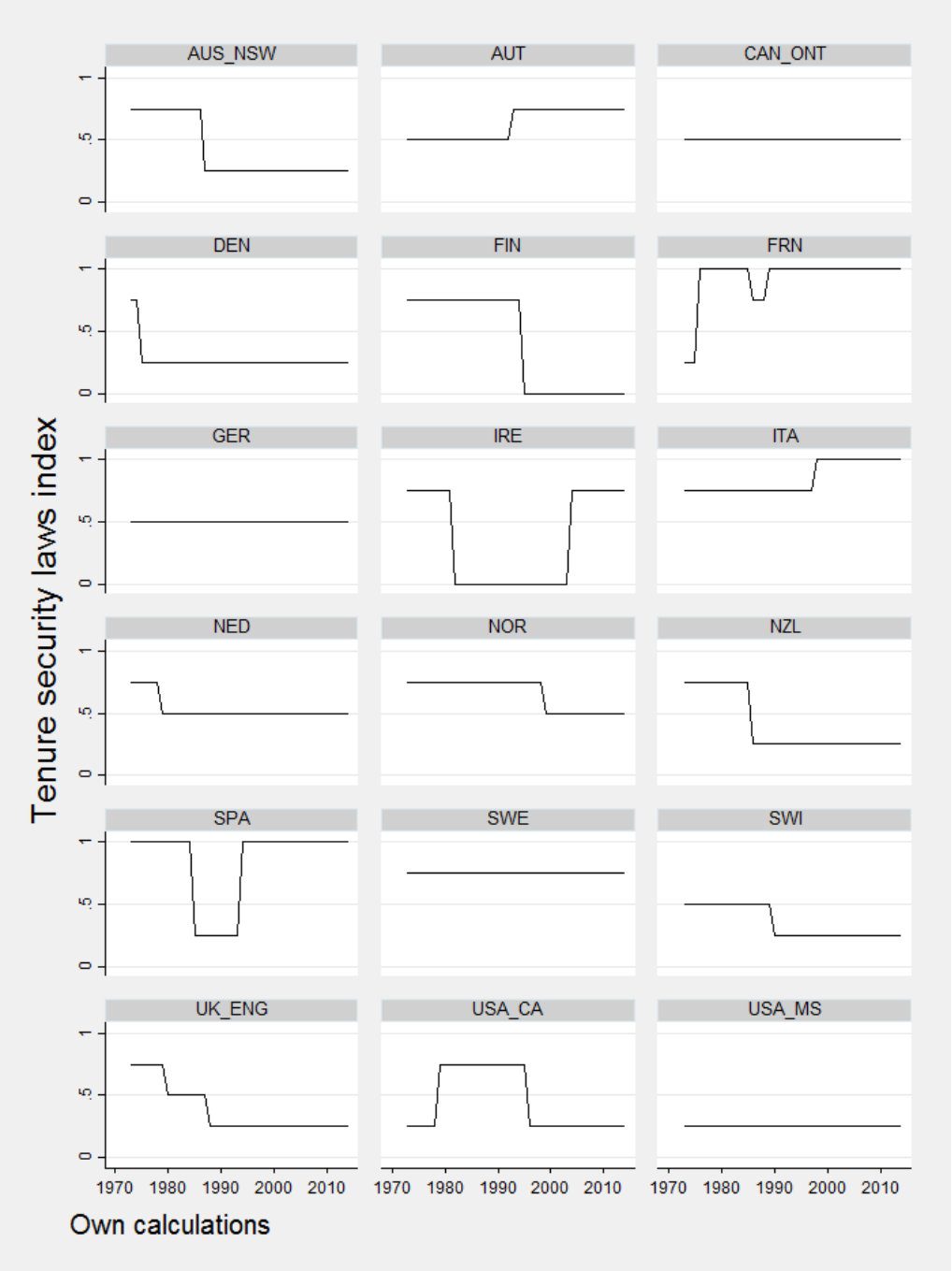


Figure 2.3 Tenure Security Laws Index

2.4.2 Time invariant Index

The time invariant index mirrors the regulation of private tenancies in 66 countries in total. It covers not only the 18 mentioned regions or countries but also 51 economically advanced and less advanced countries from all over the world. In case of the USA, Massachusetts is used as a proxy for the whole USA since it adequately mirrors overall regulation of rents and tenure security in the USA. The index is a snapshot of regulation at the end of the past decade. The level of information on rental market regulation for such a diverse group of countries from all over the world is not as deep as the country group that was covered by the time variant index. Therefore, the index only consists of the eight dummies (D1 to D4 and D7 to D10) as described above. The coding shows that rental market regulation may differ significantly between countries. The determinants of rental market regulation such as the legal origin, the political power or culture for this large set of countries will be analysed in the next chapter. An overview of the single country data can be found in table 3.2 of chapter 3.

2.5 Convergence over time

In the past 42 years the regulation of private rentals followed the broad trends sketched above. From the year 1980 onwards, both rent and tenure security laws experienced a process of net liberalisation. However, the process of rent control liberalisation was much deeper and more evenly distributed than for tenure security. As table 2.2 shows, the mean of the rent control laws index has fallen from 0.57 in 1980 to 0.28 in 2014. In the same time, the tenure security laws index has declined from 0.64 to 0.50. Furthermore, the cross-country standard deviations of the rent laws index became significantly lower than the cross-country standard deviations of tenure security laws index. While the standard deviation of rent control has fallen from 0.28 in 1973 to 0.18 in 2014, the deviation of tenure security laws has risen from 0.21 in 1973 to 0.31 in 2014. In other words, the regulation of rents converged over the whole country panel while tenure security laws have diverged.

According to the legal origin theory (La Porta et al. 2008) the legal tradition is time-invariant predictor of the level of regulation in a country. The authors of legal origin theory showed in numerous studies that regulation in common law countries is generally lower than in countries with a French, Scandinavian or German legal origin (La Porta et al. 1998; Djankov et al. 2002b, 2003; Botero et al. 2004; Djankov et al. 2007). The theory implies that legal origin is the strongest predictor of the diversity of regulation intensities and governmental market interventions. Djankov et al. (Djankov et al. 2007) show that there is no significant convergence of creditor rights or creditor information systems among legal origin over time. In contrast, the convergence theory predicts that regulation converge among countries towards the more successful one. Thus, it contradicts the legal origin theory (Djankov et al. 2007). However, Lele and Siems (2006) show that shareholder protection has converged over time irrespective its legal origin. As far as rent control laws are considered, Whitehead et al. (2012) show a process of broad convergence towards more liberalised markets for a small panel of European countries by comparing rental market regulation in 1980 and 2010.

The time-variant country sample[11] support both the legal origin and the convergence theory[12]. Looking at the development of private rental market regulation for the various legal origins shows clear differences. With respect to the regulation of rents there is a convergence among the different legal origins, especially for common, French and Scandinavian legal origin countries that converged considerable towards lower levels. Table 2.2 shows that rent control has been relaxed on average in common law, French law and Scandinavian law countries but not in German law countries where rent laws index remained more or less unchanged on an already lower average of 0.33 or below. This means that rent control laws are on average more homogenously distributed over the groups of different legal origins. As far as tenure security laws are concerned, the data shows a downward trend in the average level of regulation only for Scandinavian legal origin and common law countries. The level of tenure security in French legal origin countries, in contrast, follows an upward trend. German legal origin countries, in turn, show on average a very robust score of tenure security over time of 0.50. Hence, both legal origins did not converge toward lower levels. This can be interpreted as evidence for the legal origin theory that predicts that countries stick to certain regulatory styles according to their legal origin. However, the convergence of rent control laws between all legal origins and tenure security laws between Scandinavian and common law countries support the theory of a transnational harmonisation of regulation.

The broader legal convergence of rent control laws was part of broad liberalization trends that started in common law countries and were then adapted by Scandinavian and French legal origin countries. Reasons for these convergences could be a more and more globally harmonized view on the 'right policy' on housing markets or a higher impact of certain school of thoughts. As mentioned before, there is a broad consensus among economists that rent control generally harms housing markets. However, the picture is different for tenure security laws. Here the convergence can be detected only between Scandinavian and common law countries. The lesser connection in patterns of regulation in this field may be due to the fact that tenure security is less popular discussed in academia and politics since it is was not seen as a classical intervention in the market price mechanism. The convergence of Scandinavian legal origin countries towards common law countries, however, may be due to a closer connection between Scandinavia and Anglo-Saxon world in the past decades.

[11] There are 7 common law countries, 4 French legal origin countries, 3 German legal origin and 4 Scandinavian legal origin countries in the sample.
[12] Please note that this is a purely descriptive analysis. For a more robust conclusion a more analytical analysis would be needed.

TABLE 2.2
REGULATION OVER TIME

	Rent laws index	Tenure security laws index	Rent laws index	Tenure security laws index
	mean		standard deviation	
1973	0,49	0,63	0,28	0,21
1974	0,49	0,63	0,28	0,21
1975	0,52	0,60	0,25	0,23
1976	0,56	0,64	0,24	0,23
1977	0,56	0,64	0,24	0,23
1978	0,55	0,64	0,23	0,23
1979	0,57	0,65	0,22	0,21
1980	0,57	0,64	0,22	0,21
1981	0,56	0,64	0,23	0,21
1982	0,49	0,60	0,27	0,26
1983	0,49	0,60	0,27	0,26
1984	0,49	0,60	0,27	0,26
1985	0,46	0,56	0,26	0,25
1986	0,44	0,51	0,26	0,23
1987	0,44	0,49	0,24	0,23
1988	0,43	0,47	0,24	0,24
1989	0,43	0,49	0,24	0,26
1990	0,43	0,47	0,24	0,27
1991	0,42	0,47	0,24	0,27
1992	0,39	0,47	0,22	0,27
1993	0,37	0,49	0,21	0,28
1994	0,36	0,53	0,20	0,30
1995	0,33	0,49	0,23	0,31
1996	0,31	0,46	0,22	0,31
1997	0,31	0,46	0,22	0,31
1998	0,28	0,47	0,21	0,33
1999	0,30	0,46	0,22	0,32
2000	0,30	0,46	0,22	0,32
2001	0,30	0,46	0,22	0,32
2002	0,30	0,46	0,22	0,32
2003	0,30	0,46	0,22	0,32
2004	0,32	0,50	0,21	0,31
2005	0,32	0,50	0,21	0,31
2006	0,32	0,50	0,21	0,31
2007	0,32	0,50	0,21	0,31
2008	0,32	0,50	0,21	0,31
2009	0,32	0,50	0,21	0,31
2010	0,31	0,50	0,21	0,31
2011	0,30	0,50	0,17	0,31
2012	0,30	0,50	0,17	0,31
2013	0,28	0,50	0,18	0,31
2014	0,28	0,50	0,18	0,31

Data by legal origin group means				
Common law				
1974	0,33	0,57	0,24	0,24
1984	0,40	0,50	0,25	0,29
1994	0,29	0,32	0,21	0,24
2004	0,24	0,36	0,16	0,20
2014	0,24	0,36	0,16	0,20
French legal origin				
1974	0,63	0,69	0,32	0,31
1984	0,71	0,81	0,08	0,24
1994	0,42	0,81	0,10	0,24
2004	0,33	0,88	0,14	0,25
2014	0,25	0,88	0,22	0,25
German legal origin				
1974	0,33	0,50	0,17	0,00
1984	0,22	0,50	0,10	0,00
1994	0,33	0,50	0,17	0,25
2004	0,33	0,50	0,17	0,25
2014	0,33	0,50	0,17	0,25
Scandinavian legal origin				
1974	0,75	0,75	0,17	0,00
1984	0,63	0,63	0,32	0,25
1994	0,46	0,63	0,28	0,25
2004	0,46	0,38	0,34	0,32
2014	0,33	0,38	0,24	0,32

2.6 Conclusion

This chapter has established a unique index that measures the regulation of private tenancy markets. It is the first time-variant index explaining the regulation of private tenancy markets. The index covers 18 advanced economies from 1973 to 2014 and consists of ten dummies that quantify characteristics of rent control and tenure security in each country. The index is able to mirror established classifications of private tenancy market regulation such as first and second-generation rent control regimes or tenancy rent control regimes (Arnott 1995, 2003). The sources of the index are both rent and tenure security laws and scientific country reports. In addition, this chapter has presented another exceptional index for an even bigger country sample that covers both developed economies and development countries. However, due to data quality reasons, the bigger country sample of 66 countries is just a snapshot of current rental market regulation there. Moreover, only eight of the ten dummies are used because the quality of the data for development countries is too fragmented.

This chapter shows that the time-invariant index properly displays the different stages of rental market regulation since at least 1973. According to the rental market regulation index three phases of regulation may be identified. The first phase covers the 1970s when a trend toward reregulation or properly stated rent laws could be observed in several countries such as the USA, Canada or France. In the course of the 1980s, many advanced economies made a successful transition from strongly to softly regulated rental markets. Especially the regulation of rents was liberalised during that period. The third phase began with the new millennium. It is characterized by a tremendous housing market turmoil. In the first years of the new decade the price for houses rose tremendously in many countries of the panel followed by heavy house price erosions. An unambiguous and uniform direction of rental market regulation, however, did not occur in these years. While some countries re-regulated their rental markets in the phase of booming housing markets, others that were hit by the European debt crisis liberated their rent control regimes.

In addition, the time-variant index shows that the regulation of rental markets supports both the convergence theory and the legal origin theory. On the one hand, there are signs for the convergence of rent control of French and Scandinavian law countries towards common law countries. On the other hand, as far as tenure security laws are mentioned, French and German legal origin countries show on average no signs of convergence with common law countries while Scandinavian law countries do. Thus, the differences in tenure security laws remained more or less stable among the mentioned legal origins.

Appendix A: Time variant country reports

Australia

In Australia the different states are responsible for the regulation of the private residential rental market. Thus, private tenancy law varies within the different states. Yet, to clarify the overview, New South Wales (NSW) as the biggest and most important Australian state is analysed and used in place of the whole country in the following. In NSW the regulation of tenancies has its origin in 1847; the first act was passed in 1899. The period of rent control began with the Fair Rents Act in 1915 (Simpson 1999; Schneller 2013). The most important act after the Second World War was the Landlord and Tenant Act from 1948 (New South Wales Government 8/16/1948). According to the act, rents were strictly regulated by fair rents boards and did not match market rents.

Furthermore, tenancies could not be terminated by landlords without certain grounds (New South Wales Government 8/16/1948, § 62). The act was amended several times, the regulation of rents, however, remained unrestrained until the 1950s. In the mid-1950s, newly built and vacant dwellings were decontrolled (Schneller 2013, §§ 44–50). In 1960 around two-third of all rented dwelling stock was regulated by the Landlord and Tenant Act (Simpson 1999). In 1968 several important amendments were made. As a consequence, fair rents stopped being calculated after the strict principles of 1939. Through new ways of rent calculations tenants and landlords were able to increase rents to the maximum level of a so far fair rent as long the tenant was able to pay it (Schneller 2013). Protected tenancies decreased tremendously in the upcoming years.

In 1987 the new Landlord and Tenant Act became the central law for tenancies in NSW. The act lowered the security of tenure. Tenants just enjoyed eviction protection during the term of time fixed tenancies. However, at the end of the fixed term and the payment period of periodic tenancies, landlords did not need to give special reasons in order to repossess the rented dwelling (Simpson 1999). Rents and their development were free to be agreed upon. However, tenants could claim that rents were excessive if the rent exceeded the comparable rent level calculated by the rent tribunal. Generally, the comparable rent equals market rents for comparable premises (New South Wales Government 5/12/1987, §§ 44–50). After some minor changes the Residential Tenancy Act 1987 was repealed by the Residential Tenancy Act 2010. However, the new act did not tremendously change the regulation of rent and tenure security of the RTA from 1986 (Schneller 2013).

Austria

The Austrian tenancy market was intensively intervened by government before and during the Second World War (Lurger 2005). In the 1960s and 1970s rental market regulation was slightly modified. The most important law adjustments during that period were the Amending Law of

Tenancy 1967 (Bundeskanzleramt 8/4/1967) and the Amendment to Rent Law 1974 (Bundeskanzleramt 7/25/1974). The Amending Law of Tenancy had the aim to liberalise rent and eviction control in 1967. The Amendment to Rent Law, on the other hand, intensified the control of rents and eviction procedures (Amann 1999). On balance, Austrian tenancy law favoured tenants' interests in the 1970s. Rents did not match market rents and tenants enjoyed a high level of tenure security. Rents for rental dwellings built after 1967, however, were free.

In 1981 the Austrian parliament passed the Tenancy Law Act (Bundeskanzleramt 12/1/1981) giving the Austrian rental market regulation its current character. The new act incorporated not only principles of the previous law but also new ways of calculating rents of private tenancies. Nevertheless, there exist several types of regulation for rented dwelling in Austria since both the rules of the Tenancy Law Act 1981 and the Austrian civil code are the basis of the current private tenancy regulation. This makes the Austrian tenancy law very complicated today. Since the implementation of the Tenancy Law Act there have existed three different types of private tenancies. Each is regulated differently – either solely by the Tenancy Law Act from 1981 (type-3-tenancies) or the civil code (type-1-tenancies) or as a mix of both legal sources (type-2-tenancies).

As far as the regulation of rents is concerned, rents of type-1- and type-2-tenancies are not regulated. Here, the rules of the civil code hold. Therefore, the only rule that limits rents and rent increases is the violation of moral principles through deception culminating in dubious high rents. The following dwelling types are type-1- and type-2-tenancies: dwellings built after of 1953[13], one- or double-family-houses and roof top properties that got a building permission after 2001 (Böhm 2002; Bundeskanzleramt 12/28/2001). According to the current numbers of the Austrian tenancy market, the majority of private tenancies fall under a rent free regime (Oberhuber, Denk 2014). Type-3-tenancies, however, provide regulated rents. Rented dwellings of this type are the second biggest group in the private tenancy market. Category rents and benchmark rents are the dominant types of rent regulation here. Considering these two methods of rent control, rents have to follow the principles of comparable rents. Under these rules rents constantly fails market-based rents.

Aspects of duration and eviction procedures of the majority of all rentals are highly regulated in Austria. Both, type-2- and type3-tenancies fall under the strict eviction control rules of the Tenancy Act from 1981. Under this law, landlords may only terminate tenancies for reasonable grounds defined by law (Bundeskanzleramt 12/1/1981). In general, tenancies in Austria are unlimited in time. However, time limited tenancies are allowed in Austria but since 1993 they have had to fulfil a minimum duration of three years (Bundeskanzleramt 11/26/1993). Simultaneously, the rent had to be 25 percent under the comparable rent of a similar dwelling without time limitation. Thus, they currently do not match the conditions of classic short-term tenancies. Before 1993, private tenancies had a time limit of one-year maximum. From 1997 to 2000, time limitation was temporarily raised to ten years (Bundeskanzleramt 12/28/2001).

[13] After the 8th of May 1953.

Canada

In Canada, states are responsible for the regulation of private tenancies. Ontario is the largest province of Canada's nine provinces in terms of its population. Thus, tenancy law in Ontario is presented here. Strict private tenancy rules were introduced for the whole country in 1940 but were abolished soon after the Second World War. At the end of 1960s, the first Tenancy Act in Ontario was passed (Supreme Court of Canada, of 5/28/1981; Miron 1995). The new act only ruled the relation between landlord and tenant. Rents were not touched by that law which distinctly increased the security of tenure. Landlords were just allowed to evict tenants during and at the end of a period for special reasons that were defined by law.

In 1975, the Residential Premises Rent Review Act (RPRRA) established a first-generation rent control regime in Ontario but some rented dwellings were not covered by this law. It applied only to rental dwellings in existence prior to 1976. The new act introduced guideline increases for rents from six to eight percent of the rent per year and also enabled a restricted cost pass-through (Miron 1995). However, the majority of tenancies fell under a first rent control regime. In 1979, the Residential Tenancies Act (RTA) replaced the RPRRA. The new act set guideline rates of rent increase to a maximum of six percent per year. Tenure security did not change. The rent guidelines were in force until 1985 when the Residential Rent Regulation Act (RRRA) pushed the guideline rate to four percent. From 1986 to 1992 rent increases were calculated by a formula related to changes in costs of maintaining rental buildings called the Residential Complex Cost Index. Initial rents had to follow a comparable rent that was the upper rent ceiling. With the RRRA rent regulation rules applied to all rental dwellings irrespective of their construction year and the amount of rent (Richmond, Stobo 1996; Miron 1995).

In 1992 the Rent Control Act (RCA) came into force. The guideline rates now had to follow inflation rates and average costs. Rent increases were not allowed to overdo these guidelines by three percentage points. Hence, there was an upper limit on the maximum permitted rent increase (Richmond, Stobo 1996; Miron 1995). Five years later, the Tenant Protection Act 1997 was passed. It came into force in 1998. The main change to its predecessor was the implementation of intertenancy decontrol meaning that initial rents were decontrolled while rents during the term were regulated by guideline increases (Smith 2003). The Residential Tenancies Act 2006 replaced the Tenant Protection Act 1997 in 2007. Compared to its predecessor, the act set nearly identical guidelines for rent increases but did not control the rents for newly made tenancies. The new act merely focussed on rescheduling the institutional responsibilities. Thus, it replaced the Ontario Rental Housing Tribunal for the Landlord and Tenant Board to resolve disputes between tenants and landlords.

Denmark

The regulation of private tenancies in Denmark began with the First World War. Rent control was relaxed in the aftermath of the war. In the 1930s, however, rent freezes and very high

tenure security were introduced again in the run-up to the Second World War. The first-generation rent control regime survived the Second World War. From 1966 to 1974, rental market regulation was relaxed stepwise. The aim was to lift up rents to market level through fixed rent increase guidelines. However, due to an extraordinary high inflation during those years, the real rent level did not change much (Whitehead et al. 2012; Edlung 2003). At that time most Danish rentals were regulated by the principles of rent determination from 1939 and their amendments (such as the one from 1966). Under this regime, rents followed the value of the rented property. According to the law, rents could not be higher than the rent for a comparable letting. If the rent was remarkably lower than the comparable rent landlords were allowed to raise the rent to this upper rent ceiling (Whitehead et al. 2012; Edlung 2003).

In 1975 the Danish government passed a new law introducing new principles of rent control (Boligreguleringsloven). This law is still the most applied regulation for private tenancies in Denmark holding in municipalities with a population of more than 20,000 inhabitants. Other municipalities can choose between the former regulation named Lejeloven and the updated rent regulation. Under the law, initial rents are restricted by a cost-of-the-dwelling system. During the tenancy, however, landlords are allowed to pass cost increases on to the tenant. Furthermore, rents have to be similar within the same apartment building. Stepped rents have to be defined in the contract. That kind of rent adjustment is only allowed if the initial rent is below the cost-based rent level, however (Whitehead et al. 2012). Tenure security remained high under the new law. Landlords need special reasons defined by law in order to evict the tenant. Short term tenancies are allowed if they last less than two years and end automatically (Scanlon, Kochan 2011).

In 1991, a tenancy law was passed introducing new construction decontrol in Denmark. According to the new act, the rents for private dwellings built after 1991 were decontrolled. Rent increases were limited however to the inflation rate or to annual step-by-step increases (trappeleje) that had to be predefined in the rental contract. In 2004, rents for rooftop dwellings were also deregulated (Whitehead et al. 2012; Edlung 2003). Due to a low post-1991 housing stock, the minority of rented Danish dwellings is currently ruled by this law. The most important system is rather the cost-based rent control system followed by the value-based system (OECD 2006).

United Kingdom

Tenancy law differs in England/Wales, Scotland and Northern Ireland. Since England and Wales constitute by far the largest part of the United Kingdom, tenancy law in England is described here. In England tenancy regulation has undergone a strong transformation process in the past fifty years. The transformation from a highly regulated private tenancy market to the weakly regulated one that it is today began in the 1950s when tenancies with rents above a certain level were deregulated (Hubert 2003). In 1965, a new tenancy law reinvented the regulation of all private tenancies. The basis for all tenancies was from now on the 'fair rent' system. These fair rents stayed more or less unchanged and did not match the level of market rents (Hubert 2003). Tenancies were unlimited in time and tenure security was high. Evictions during and at the end of the term without special reasons were not allowed.

The Housing Act 1980 introduced new forms of regulation and terminated the few remaining controlled tenancies dating back to the 1950s. At that time, the most relevant form of renting was the Regulated tenancy. Rents of Regulated tenancies followed a "fair rent" system (Department for Communities and Local Government 2009b). Tenants enjoyed eviction protection during and at the end of the period or term. Furthermore, the new law allowed the so-called Shorthold that allowed rent contracts to be limited in time (Holmans 2005). Another new tenancy form, the Assured tenancy, applied only to new and renovated dwellings that were in possession of organizations accepted by the Secretary of State for the Environment and, therefore, just played a negligible role (Stephens 2005).

With the Housing Act of 1988 and 1996, English tenancy law has undergone a severe change. Two new forms of tenancy were introduced which are still in effect: the new Assured tenancy and the Assured Shorthold tenancy. The market power of landlords in England has been tremendously strengthened wiht these acts. Most tenants are no longer able to exercise their rights properly (Cowan, Laurie E. 2005). Before the Housing Act of 1996[14], every tenancy had automatically been an Assured tenancy, unless it was agreed upon that it was not. Under the new act, new tenancies automatically become an Assured Shorthold unless it is contracted otherwise (Department for Communities and Local Government 2009a). Nevertheless, Assured Shortholds have quickly become the most common tenancy in England after 1988.

With Assured Shortholds, landlords possess the most power that English tenancy law offers. Tenure security is low since landlords may evict tenants without giving reasons at the end of the contract period. Yet, during the tenancy period tenants enjoy severe tenure security (Department for Communities and Local Government 2009a). Assured tenancies, in comparison, offer tenants much more security since these contracts are usually unlimited in time. Here, the landlord can only regain possession of the dwelling for reasonable reasons that are defined in law (Department for Communities and Local Government 2009a). Initial rents may be negotiated freely for both Assured tenancies and Assured Shorthold tenancies (Cowan, Laurie E. 2005). During the tenancy, rent increases have to be orientated to the fair rent level which consists of a system of comparable rents. Tenants may apply to a rent assessment centre if they think the rent adjustments are set too high. However, under Assured Shortholds tenants cannot exercise these rights properly due to a significant lack of tenure security at the end of the term of the tenancy.

Finland

Due to an economic downturn in the late 1960s, the Finish government strengthened tenure security in 1970 and installed a system of rent regulation in 1974 (Jóhannsson 1998). The new rent law replaced a system of strict rent control. At that period Finish tenancy law was quite regulated and tenants enjoyed a high degree of tenure security. Landlords were only allowed to evict tenants for reasonable reasons that were defined by law (Ralli 2005; Jóhannsson 1998). Under this system, the landlord was allowed to increase the rent according to guidelines that were defined by a council of ministers that involved tenants' and landlords' representatives. In

[14] 28th February 1997

practice, the annually updated rent standards did not match increases in costs of the dwelling not to mention market rents.

From the 1980s onwards a couple of new tenancy acts changed the relationship of tenants and landlords significantly. First, a new tenancy act was passed in 1987 after twelve years of preparation (Ralli 2005). Under the new law tenure security decreased marginally. Landlords were provided with more reasonable grounds to evict tenants (Ministry of the Environment 7/10/1987). Rents had to be reasonable and in compliance with the average rent of the area surrounding the dwelling. The act aimed at implementing a reasonable profit for landlords when letting the flat to a tenant (Ministry of the Environment 7/10/1987; Ralli 2005). During those years, rent increases became easier for landlords though it still remained difficult for landlords to adjust rents. Overall, rents failed to match market rents.

In the early 1990s, the finish tenancy market was tremendously deregulated. It started with the exemption from rent regulation for buildings built after the 1990 for rural areas. It was extended to all contracts signed on or after February 1st, 1992 everywhere in the country, regardless of the age of the dwelling. In 1995, the parliament passed a new law that made the deregulated rent system the sole system for the whole country. Under the new law, which is still in effect, the different parties are able to freely negotiate rents at the beginning and during the tenancy. Thus, a free rent regime is currently in use in Finland. However, rents may not be immorally decoupled from rents of similar dwellings in the surrounding area (Ministry of the Environment 3/31/1995). Tenure security is low in Finland. Landlords are free to give notice whenever they want. Reasonable reasons are needed for the eviction of a tenant but the term "reasonable" is not defined by law. Rent increases during the term are seen as a reasonable ground. Solely, social aspects may play a substantial role at the eviction process at court (Ministry of the Environment 3/31/1995; Ralli 2005). Fixed term tenancies end without any notice at the end of the agreed rent-period (Jóhannsson 1998). Finland is currently one of the most deregulated private tenancy markets in Europe (Lyytikäinen 2006; Ralli 2005).

France

France introduced a strict rent freeze system in the Second World War which in contrast to many other countries did not last long. At the end of the 1940s, French authorities relaxed the regulations of tenancy contracts. Smaller communes were deregulated while only tenancies in larger communes were controlled. In the following decades, the number of tenancy controlled communes steadily shrank. In the mid-1970s, only a minority of private tenancies was regulated. In 1976, France installed a strict nominal rent freeze system to fight high consumer price inflation (Hubert 2003).

In 1982, a system of strict tenancy regulation was established by the law Quillot. The primary goal of the new law was to control rent inflation (Boccadoro, Chamboredon 2005). The Quillot law covered all tenancies for residential living purposes. The new law explicitly favoured the tenant as a reaction to the lack of available lodging and the resulting power of the landlords. The basic elements of the new law were minimum terms of six years only binding for landlords, limited conditions of termination by landlords and strict rent regulations. Rents had to follow

guidelines published by the housing association. The government even had the right to suspend rent adjustment throughout the whole country. Rents for newly constructed rentals, in contrast, could be freely negotiated between tenants and landlords (Moor 1983).

In 1986, the newly-elected Conservative government passed a law that aimed at encouraging landlords to rent out their apartments again (Boccadoro, Chamboredon 2005). The Méhaignerie Act enabled landlords to easily evict tenants after a guaranteed three-year-duration of the tenancy (Law n. 86-1290, §§ 9–10). Furthermore, the act allowed an unrestricted negotiation of initial rents (Satsangi 1998). However, rent adjustment by more than the change of the construction index was not allowed during the there-year-period (Law n. 86-1290, § 15). Despite the newly-gained freedom and power for landlords, tenants still enjoyed high standards of security during the three-years-term.

Only three years later, in 1989, the Mermaz Act was passed. It was a result of a consensus between the different political parties and undid some of the deregulation of the Méhaignerie Act. A minimum term of three years retained. However, the landlord's right to easily evict the tenant after the end of the minimum term was repealed. Initial rents could still be freely negotiated but yearly rent increases could not be higher than the French construction cost index and had to be mentioned in the contract. Furthermore rents may be increased in reference to the comparable rent after the minimum term ended (Law n. 89-462, § 17). Subsequent tenancy acts such as the ones in 1994 and 1998 did not deeply change the Mermaz Act.

Germany

The basic elements of the current German tenancy law were introduced in the 1970s. The German tenancy law is written down in the German civil code (BGB 2011). At that time, the tenant's security issues were strengthened particularly by two laws – the first and second Wohnraumkündigungsschutzgesetz (WKSchG). Furthermore, new rent control rules were enacted at that period (Häublein, Lehmann-Richter 2009). With the Rent Control Act of 1974 (Miethöhegesetz - MHRG) the rules for rent increases were defined (Wurmnest 2005). Yet there were always spatially and/or timely restricted exemptions by law such as the stricter rent control laws in West-Berlin before 1990 or the new rent control law (Mietpreisbremse) from 2015 that can be spatially effective for areas with housing shortages.

Tenants enjoy high standards of security in German tenancy law. Due to the mentioned laws introduced in the 1970s, landlords are seriously restricted in giving notice. Since then, there have not been any essential changes in law as to the security of tenants. In general, the landlord may only evict the tenant for special reasonable grounds that are defined by law. Furthermore, evictions as a result of unjustified rent increases are not possible (Häublein, Lehmann-Richter 2009). Contracts limited in time are treated similarly. According to the German Civil Code contracts limited in time can be terminated only under special circumstances at the end of the rent period (BGB 2011, § 575). The basic rules in German tenancy law for contracts limited in time were introduced in 1982 (Köhler 1983). German rent regulation is based upon several different types of rent regulation and offers rent flexibility in a moderate way. Generally, rent regulation refers to rent increases. The primal rent negotiation can be conducted without any restriction. There

are exceptions, however, if there is a limited offer of dwellings, the landlord may not demand unreasonable rents (BGB 2011, § 558) or if initial rents are restricted by law for certain years for a special region (Mietpreisbremse).

Rent increases during the term are regulated, there exist three different forms. First rents may be increased up to an upper ceiling that is the comparable rent. However, the rent may not be increased by more than 20 % within three years (BGB 2011, § 558). This rule was implemented in 1982 and was modified several times (Köhler 1983). Secondly, the stepped rent increase (Staffelmiete) was implemented in 1982. Here, landlord and tenant may contractually agree upon several prospective rent increases (BGB 2011, § 557). An upper limit does not hold for this kind of rent increases (Rebmann et al. 2008). Yet, immorally high rents are still forbidden. Thirdly, index-claused increases are allowed in Germany to an official cost of living index (BGB 2011, § 557).

Ireland

From the early 1980s until 2004 the majority of Irish tenants did not enjoy any kind of long- or medium term security of tenure and rents. Before tenancies had been regulated by the Tenancy Act 1960 and 1967. However, not all tenancies were covered by this very strict and complicated rent and eviction control law (Ryall 2005). With the beginning of the 1980s, the Irish Supreme Court declared the Rent Restrictions Acts of the 1960s an "unjust attack" on landlords' property rights (Ryall 2005). In the aftermath, the first-generation rent control regime expired and a free rent regime became dominant. Until the beginning of the 1990s there was no significant change in tenancy law in Ireland.

The Housing (Miscellaneous Provisions) Act from 1992 did not change the proportion of power among tenants and landlords in Ireland, it just introduced some minimum standards. The free rent regime was still in force and landlords could easily give notice (Government of Ireland 7/23/1992, §§ 16–18). There existed two main forms of residential tenancies: fixed term and periodic tenancies. Under the law of 1992, both forms were subject to free market rents. As for periodic tenancies, landlords were able to raise rents without any reason if they wanted to. In case the tenant did not accept the rent increase, the landlord was allowed to evict them. Thus, the landlord could fix the rent without restriction. Under a fixed term tenancy, stipulated rents were immutable for the duration of the tenancy. Once the term of the tenancy had ended, however, the landlord was able to increase the rent for a new fixed term tenancy. If the contract period expired, the landlord was not obliged to renew the contract (Ryall 2005).

In 2004, the Irish law enacted a new residential tenancy act. It was the most important change in private tenancy law in decades. Today, it is the basic principle of the Irish tenancy law (Norris 2011). This Residential Tenancy Act increased the tenure security for tenants significantly. The new legal framework covers both, a periodic and a fixed term tenancy (Ryall 2006). According to the new law, initial rents and any subsequent rent adjustments may not be higher than the "market rent" that is defined as the rent that landlords are willing to get and the tenants are willing to pay in regard to other comparable dwellings (Ryall 2006). The most important improvement in terms of the security of tenancies is that tenants enter a statutory tenancy of three

and a half years once they have successfully passed six months of continuous occupation of the implied dwelling. In the first six months of a tenancy, landlords are allowed to evict the tenant without giving reasons. The tenant can enter a new four-years-tenancy only if the landlord does not give notice before the end of the first four-years-tenancy. Then, a new probationary period of six months starts. In case of statutory protection the landlord may terminate the tenancy only on reasonable grounds (Ryall 2006; Norris 2011; Irish Government 7/19/2004).

Italy

After the strict rent control regime during the First World War regulation of tenancies enjoyed a revival in the 1920s. At that time, a first-generation rent control regime was installed. In the upcoming decades several amendments were made. From the Second World War until the end of the 1970s rents were strictly controlled in Italy. In addition, special acts made the termination of rental contracts for landlords nearly impossible (Breccia, Bargelli 2005). According to this restrictive regulation regime, tenancy contracts were automatically renewed (Bianchi 2014). Hence landlords were not able to repossess their rented dwellings or rent their property for a profitable rate of return. Rents filed to match market rents. In these decades, the system of tenancy regulation in Italy equalled a first-generation rent control regime.

The steadily growing public criticism of the predominant tenancy regulation regime culminated in a new tenancy act in 1978 (Law n. 392/1978). The new act represented the first complete set of rules for the regulation of tenancies. Tenants kept the high standard of tenure and rent security and the duration of tenancy was strictly fixed (Bianchi 2014). Rents were determined by a fair rent system that followed the regime of comparable rents with fixed upper ceilings (Law n. 392/1978, § 12). Under the law of 1978, tenancies had to last for at least four years (Law n. 392/1978, § 1). Landlords could not evict tenants without giving special reasons that were defined by law (Law n. 392/1978, § 59). However, contracts automatically end at the end of the minimum duration term (Breccia, Bargelli 2005). In 1992, rent regulation was relaxed by a new act. Under the new statute (Law n. 359/1992) newly built dwellings were excluded from the current rent regulation regime.

In 1998, the current system of rent regulation was established. Under the new act (Law n. 431/1998) most principles of the former Fair Rent Act were substituted by new rules. Thus, initial rents may be negotiated freely between landlord and tenants for ordinary tenancies. That holds even for rent adjustments during the contract period (Law n. 431/1998, § 13). Hence, a free rent regime was established for the majority of tenancies in Italy. Yet, the rents for a special form of private tenancies are heavily regulated, namely dwellings that are supported by the Italian government. Here, rents have an upper limit that is determined by tenant and landlord associations (Breccia, Bargelli 2005). Tenure security is very high under the new act for all tenancies. Minimum terms of four years with strict eviction rules are stipulated by law. These rules hold also at the end of the term. Landlords are only allowed to evict tenants by giving special reasons that are defined by law (Breccia, Bargelli 2005).

Netherlands

Rental market regulation was well developed in the aftermath of the Second World War and tenants in the Netherlands were given much power. At that time, it was nearly impossible for landlords to evict a tenant and rents were raised and lowered by the Dutch government. In the 1960s rent control was slightly relaxed. In the 1970s a tremendous political fight began between advocates of a more liberalized and defenders of a regulated private rental market. In the end, the proponents of a generally regulated rental market came off as the winners. The oil crisis and its massive economic burden for the Dutch economy may have fostered the mentioned development in the Netherlands (Jan van der Schaar 1987). In 1979, the old tenancy law called "Woonruimtewet" was replaced by a new law named "Huurprijzenwet". The introduction of the "Huurprijzenwet" resolved the confusing state of tenancy law at that time and Dutch tenancy contracts maintained regulated (Adriaansens, Fortgens 1990).

According to the Housing Act of 1979, tenants enjoy high protection against eviction by the landlord. Landlords may give notice only under special circumstances which are defined by law. Dutch tenancy law does accept short-termed tenancies. However, an eviction of the tenant at the end of the contract is only lawful in case of personal need by the landlord. Otherwise time limited contracts automatically convert into unlimited contracts (Adriaansens, Fortgens 1990; Rueb, Kaufmann 2005). Rents can be freely negotiated between landlords and tenants. However, the rents have to be in line with the point-system that is linked to the quality of the dwelling. According to that point system, every apartment has a maximum rent that can be charged. The rent regime works like a comparable rent system that is updated once a year. If the rent seems to be too high for the tenant, they may raise a complaint at the "huurcommissie", which lowers the rent if the rent cannot be justified by the points. The "huurcommissie" can be considered a rent tribunal (Adriaansens, Fortgens 1990; Haffner 2011). In 1994 rent became decontrolled for dwellings of higher standards (European Central Bank 2003). Rent increases are possible only once a year for both liberalized and non-liberalized dwellings. Although there was a change in housing law in 2003, rent regulation and tenure security remained more or less unchanged. The new law of 2003 just incorporated the rules about maximum rents into the Dutch Civil Code (Rueb, Kaufmann 2005).

New Zealand

Private residential markets were highly regulated in the aftermath of the Second World War. An important milestone in the post war era was the Tenancy Act of 1955 (New Zealand Parliament 10/21/1955). It established a significant rent and eviction control regime for private tenancies. Rents had to follow the principles of fair rents and were fixed by a rent officer (New Zealand Parliament 10/21/1955, §§ 18–19). The method of fixing the rent was defined by law (New Zealand Parliament 10/21/1955, §§ 20–23). The Tenancy Act 1955 did also address the relation between landlords and tenants: landlords were not allowed to evict tenants without giving reasons that were defined by law; both at the end of and during a term (New Zealand Parliament 10/21/1955, § 36). However, rental dwellings that were constructed after 1955 were excluded

from the Tenancy Act of 1955 (New Zealand Parliament 10/21/1955, § 6). In the following three decades, the act was amended several times and minor changes were made. Yet, in 1973 the Rent Appeal Act was passed which applied to all those dwellings that had not been addressed by the Tenancy Act of 1955 (New Zealand Parliament 10/2/1973, §§ 29–30). It introduced the principles of the equitable rent: Rent Appeal Boards were enabled to assess and fix the equitable rent of the mentioned premises (New Zealand Parliament 10/2/1973, § 6). The equitable rent worked like a comparable rent regime. Rent increases were generously cut to a maximum of 15 percent per year (New Zealand Parliament 10/2/1973, § 8).

After some minor amendments of the current tenancy law private rental market regulation was significantly changed under the Residential Tenancies Act of 1986. It currently holds for the great majority of all rented dwellings. Rents are free to be negotiated under the Residential Tenancies Act. Nevertheless tenants may claim excessive rent increases at Tenancy Tribunals for rental assessment (New Zealand Parliament 12/17/1986, §§ 23–24). According to the act tenancies can be either a short-term or periodic tenancy. Landlords are allowed to evict tenants only for special reasons defined by law (New Zealand Parliament 12/17/1986, §§ 50–55). However, tenancies automatically end at the end of a fixed or periodic term of a tenancy. Periodic tenancies just renew automatically after a special period if no party give notice. Fixed short-term tenancies end automatically at the end of the term. There were several minor amendments to this act in 1992, 1996 and 2010 that did not crucially change the regulation of private tenancies in New Zealand.

Norway

The regulation of private tenancies started during the First World War. In the aftermath of the war rents remained strictly controlled. Passing the Landlord and Tenant Act a softer rent and eviction control regime was introduced in Norway. At that time housing committees were enabled to determine guidelines for rent increases. Often, rent increases more or less equalled the Norwegian inflation rate. Rent adjustments due to renovation work and other improvements were allowed (Whitehead et al. 2012; Lilleholt 2014). Newly built rental dwellings were exempted from rent control. Although there were several amendments to rental market regulation in the years after the Second World War the old control regime was in force in Oslo and Trondheim until the end of the century. In 1982, the number of municipalities that had strict rent restrictions for buildings built before 1940 was reduced from ten to three (Oslo, Trondheim and Bergen). After that, the rent for the majority of rented dwellings was unregulated (Langsether, Medby 2005).

In 1999 a new Landlord and Tenant Act was passed by the Norwegian government. The new act abolished the old regulations of tenancies. Initial rents were and are still allowed to be set freely by tenants and landlords. Rent increases, however, are index-linked. They have to follow the official retail price index in Norway. As in most other countries of the sample, unmorally high rents in relation to the mean rent for similar dwellings are forbidden in Norway. Greater rent increases than the annual growth rate of the retail price index are allowed every three years in

order to match comparable market rents (Whitehead et al. 2012). In 2010, Oslo as the last Norwegian city removed the control of pre-war rental stock (Whitehead et al. 2012). The security of tenure underwent some changes, too. Landlords may not evict without giving special reasons defined by law. However, these eviction rules just hold during the term of a tenancy. Landlords are allowed to get easily repossession of the rented dwelling at the end of a time limited tenancy without giving special reasons. Yet, time limited tenancies have to last at least three years which means that classical short term tenancies - as defined in chapter 2 - are not allowed in Norway (Whitehead et al. 2012; Lilleholt 2014).

Spain

In the aftermath of the Spanish Civil War, there were several updates in Spanish tenancy law. The tenancy market was strictly regulated in those years. The government introduced a new tenancy law in 1964 that dominated the Spanish rental market until the 1980s (Mora Sanguinetti 2010). Under the jurisdiction of the Urban Tenancy Act 1964, tenure security was very high. Landlords had no real chance of repossessing their dwellings while tenants were able to renew their tenancy contracts as often as they wanted, if they reliably paid the rent. Under special circumstances tenants could pass on the right of living in the dwelling. Rent adjustments were hard to achieve for landlords. Even though limited rent increases were possible, the range for rent increases was low. Thus, rents were below true market level. Yet, there was the possibility to increase the rent after the initial five years of the contract (Blas López 2005; Ministerio De Justicia 12/24/1964; Mora Sanguinetti 2010).

In the 1980s, the Spanish government aimed at revitalizing the tenancy market, hence implementing the Boyer Decree in 1985. The Boyer Decree was designed to liberalize the Spanish tenancy market (Blas López 2005). There were three main changes: First, landlords were now allowed to transform private tenancies into business leases. Furthermore, the two parties were free to negotiate the initial rent level. And finally, there was the abolition of the indefinite lease renewal: the two parties were now free to determine the term of the tenancy (Jefatura des Estado 4/30/1985, §§ 7–11; Blas López 2005). Thus, the Boyer decree allowed short term contracts. However, rents in Spain were still linked to the Spanish consumer price index and the new law was only applicable for contracts that were signed after the implementation of the decree.

In 1994, the government introduced a new tenancy act. The Urban Tenancy Act 1994 (Jefatura del Estado 11/24/1994) revisited the idea of blocked rents and lease renewals. The act implemented a minimum term of five years for every tenancy. Even if the two parties agreed on a tenancy lasting less, the tenant could prolong it to a five-year contract. There was only little room for exceptions. Once the minimum term was over, the tenant was able to prolong the contract for three more years up to an all in all contract length of eight years (Blas López 2005). According to the Urban Tenancy Act 1994, landlords and tenants were free to determine the initial rent. In the first five years of the tenancy, rents could only get raised once a year. During that period, the rent increase could not be higher than the annual growth rate of the consumer price index. Afterwards, the amount of rent could be modified according to what the parties agreed upon

but the raise could not be more than 20 % of the original rent (Blas López 2005; Jefatura del Estado 11/24/1994, §§ 17–20).

In 2013 the Spanish government updated rental market regulation in Spain. The aim of the new regulation was to liberalize the up to then deeply regulated tenancy market. According to the Act on Flexibilization and Promotion of the Rental Housing Market (Jefatura del Estado 6/4/2013) the minimum duration for private tenancies was reduced from five to three years and its extension from three to one year. Furthermore, rent increases for new leases are now to be freely determined in the contract. The rent increases need not be bound to the to the consumer price index anymore (Cuerpo et al. 2014).

Sweden

Sweden's tenancy law has not undergone severe changes in the past fifty years. The general act of Swedish tenancy law was introduced into the Land Code in 1970 (Justitiedepartementet 1970). The relevant part for rent issues is chapter twelve of the Land Code ("Hyra"). Since 1970, there have been constant but minor changes in the private tenancy law (Jensen 2005). In Swedish law, the tenant enjoys an extensive protection and landlords may terminate the tenancy under special circumstances that are defined by law (Justitiedepartementet 1970, §§ 42–55). In general, the landlord has to file a suit in the District Court to remove the tenant. Furthermore, the tenant may lose their right of prolongation of the contract if the mutual trust between the two parties has been eroded, for example by repeatedly delayed rent payments or other defaults of the contract by the tenant. Apart from that, it is nearly impossible for the landlord to evict a tenant out of their rented property. The tenant may even sublet the rented dwelling in case of a temporary absence. Furthermore, there is the possibility for tenants to swap dwellings with each other. Short term tenancies cannot be enforced (Jensen 2005; Jóhannsson 1998).

The basis of the Swedish rent regulation is the Principle of User Value ("bruksvärdesprincipen"). It means that rental dwellings with the same utility value should have the same rent. Thus, rents must not be higher than the average rent for a dwelling that is comparable in terms of condition, size and location. If a rent exceeds the rate, tenants have the right to lower the rent through court or Rent Tribunal decision. The rent level is determined by the Associations of Landlords and Tenants. The comparative amount of fair rent is calculated with rents for dwellings owned by municipal housing companies (Jensen 2005). Thus, rents are determined by governmental institutions rather than by market developments.

A new law was introduced by the Conservative government in 2011 and changed the way comparative rents were calculated. It is widely considered an important step towards market rents since before the comparable rent used to be determined by the Association of Landlords and Tenants more or less freely. The changes were outlined in a government declaration of 2010 (Regeringens proposition 2009/10:185). According to the new law, rents for municipal dwellings are no central landmark for fair rents in Sweden anymore. The utility value of a dwelling is now determined by collectively bargained rents, irrespective of whether the owner is a municipal housing company or a private landlord. Furthermore, the new law declares that rent levels that

are considerably below the new comparable rates of dwellings can be adjusted (Socialministerum 3/4/2011).

Switzerland

The Swiss Code of Obligations (SCO) integrated tenancy law in 1881. Under this law, private tenancies the legal contract standard, the termination of tenancies and the responsibilities of landlords and tenants were ruled. However, a deep regulation of rents and high standards of tenure security were nonexistent. In 1911, a revision led only to minor changes. The rules of 1911 in the SCO were not changed until 1970. Yet, several temporary emergency decrees were enacted in the years between 1911 and 1970 leading to a system of controlled rents and higher tenure security. Therefore, the SCO was in force just in the periods of 1912 to 1914 and 1926 to 1936. In the meantime emergency laws and decrees modified the fundamental tenancy law of the SCO. In 1970 any tenancy regulation in Switzerland was abolished. Thus, until 1972 no regulatory rules for private tenancies - except the mentioned rules in the civil code - existed. In those years , there existed no consequent rent regulation (Rohrbach 2012; Furrer, Vasella 2005).

In 1972, a new act (Bundesrat 6/2/1972) was enacted to strengthen tenants' rights in Switzerland. Its main goal was to prevent malpractices in the private rental market. Therefore, a fair rent system was established. Swiss tenancy law had the aim of fighting abusively high rents. Rents had to orientate at the local reference rent (Bundesrat 6/2/1972, §§ 14–15). Thus, rent regulation in Switzerland followed the principle of comparable rents. Furthermore, index-linked rent increases and stepped rents were allowed since they followed the principles of fair rents (Bundesrat 6/2/1972, §§ 11–12). In addition, the security of tenure was enhanced. Landlords were not allowed to terminate a tenancy without having special reasons defined by law. Tenancies limited in time ended automatically at the end of the term. However, these measures were only applicable in regions with housing shortages. This was changed after long political debates in 1986. The act was adopted in 1987. Since then, the regulation holds for the whole Switzerland irrespective of housing shortages (Furrer, Vasella 2005; Rohrbach 2012).

In 1990 another great revision of private tenancy law took place when the former rules were integrated into the SCO (Huguenin, Arnold 2014, § 253). Substantial changes of private tenancy law, however, did not occur (Rohrbach 2012) and there were no significant changes of tenancy regulation. Swiss rent regulation still follows a system of fair rents. As for the security of tenure, the landlord may only give notice for several valid reasons such as non-payment of rents. Tenancies limited in time ends at the end of the period without the landlord having to give reasons.

United States

In contrast to European countries there is not such a rich tradition of regulation of private tenancy markets in the United States. However, there were times when private tenancies were strictly regulated nationwide. Especially during the Second World War private tenancies were

controlled massively as a measure of national emergency. In the aftermath of the war the relaxation of housing shortages through construction lead to an abolishment of tenancy market regulation in the 1950s. Some cities like New York City almost maintained regulating private tenancies (Gilderbloom, Ye 2007; Autor et al. 2014).

In the 1970s a movement towards tenancy regulation emerged in several parts of the United States. The foremost strict rent control regimes were merely restricted to separate municipalities. In those years rent control laws had been enacted in over 170 municipalities, especially in the Northeast of the country and California (Keating, Kahn 2001). Most parts of the country's private residential rent market stayed, however, unregulated. Even during the peak of regulation in the 1970s only a minority of rented dwellings in the United States were regulated by a special rent controlling law. The amount of controlled dwellings shrunk in the following decades due to a countermovement towards less regulated markets. Tenure security stayed low as in most parts of the United States (Dreier 1982). In the following, the regulation of rents and tenure security for California as the largest state and Massachusetts as an exemplary state in the northeast of the country will be analysed as a proxy for tenancy market regulation in the United States.

In California, rental market regulation came up during the 1970s when new construction was low and rents were constantly high. Several cities implemented rent regulating rules in the second half of the 1970s. Los Angeles - the largest city in California - introduced rent control in 1979. First, rents were frozen to their 1978 level for six months. After that, rent increases were limited to a yearly growth rate of 7.6 percent. In 1982, the growth rate was dropped to around 5 percent. However, several exceptions were installed such as vacancies decontrol or single-family house decontrol (Dreier 5/24/1997; Murray et al. 1988). Due to vacancy decontrol the fraction of controlled dwellings in Los Angeles constantly shrank in the following decades. In the rest of California rent regulation was installed in several municipalities at the end of the 1970s. But a trend of deregulation started in the late 1980s in California. New laws such as the Ellis Act from 1985 weakened the position of tenants in controlled dwellings. Nevertheless, the rent control system may have officially ended in 1995 when the Costa-Hawkins Rental Housing Act became law. The bill permits all cities to decontrol vacant dwellings. Under this act all the predominance of the strict rent control regimes in several municipalities in California (e.g. West-Hollywood or Berkeley) finally came to an end. As mentioned before, however, the decline of strict rent controlling regimes had already started in the 1980s in California (Dreier 5/24/1997; Keating, Kahn 2001).

Until today, tenure security for controlled dwellings has been high. Several reasons defined by law have to be fulfilled in order to evict a tenant at the end and during the period of payment. But for uncontrolled tenancies tenure security has been low. For those tenancies, durations on average are low since landlords just offer short time limited tenancies in order to avoid eviction restrictions (Genesove 2003). If possible, landlords widely offer only those time limited tenancies in California and the whole of the USA. Today, this is by far the most common tenancy form in California. Landlords are not allowed to evict tenants without giving special reasons defined by law during the term of the tenancy but can do so at the end of the agreed term without giving reasons.

In Massachusetts rent control regimes were less robust and developed than in California. Here, rent control regimes were only in action in Boston, Cambridge and Brookline by 1979 and

hence not as widespread as in California. As a consequence, rental market regulation did not play such a dominant role on the state-level in Massachusetts as in California. In Cambridge, the strictest rent control regime was implemented starting in 1970. The control regime was made up of tight rent level and rent increase ceilings. Furthermore, the transformation of rented dwellings to condominiums was restricted. However, newly constructed buildings were exempted from this rule in Cambridge (Dreier 5/24/1997; Autor et al. 2014). The Cambridge Rent Control Board limited rent increases for controlled dwellings in the late 1980s to 0.85 percent of the growth of consumption price inflation (Sims 2011). In Boston, a strict regulation of private tenancy was implemented in 1970 as well. However in 1975 a law was passed that deregulated controlled dwellings becoming vacant. Thus, the number of controlled rented dwellings shrank stepwise from 100.000 to 35.000 in 1983 (Dreier 5/24/1997). The rent decontrolled sector was regulated by a rent grievance system against excessive rent increases. In 1995, under the so-called question-9 campaign any form of rent control was abandoned in Massachusetts after a state referendum even though the fraction of controlled private tenancies was already low in 1995. In fact, less than 5 percent of all rented dwellings were controlled at that time (Dreier 5/24/1997). Today, regulation of tenancies is nearly non-existent in Massachusetts. Tenure security is therefore low and just guaranteed during the term of the tenancy.

Appendix B: Time invariant country reports

The country reports are taken from three different sources. They are a snapshot of the regulation of private tenancies at the second half of the past decade. The information on non-European countries are from the website www.globalpropertyguide.com, which is also used by high ranked international institutions such as the IMF and OECD (e. g. Global Housing Watch). In addition, for European countries the work of the TenLaw Project of the University of Bremen[15] and the Florence University (Schmid 2009) are used as reliable sources.

Argentina

In Argentina, initial rents are free to be negotiated between landlord and tenant. However, during the contract rents may not be increased automatically by the rate of inflation or other variable rates. Rent increases during the term have to be determined in the contract.

Tenancies may not last for less than two years and not for longer than ten years. Short term year-to-year tenancies are not allowed. Instead, a minimum duration of two years is mandatory. If the contract period expires, the landlord may repossess the dwelling without need of giving notice.

Armenia

Tenants and landlords are free to negotiate the initial rent. During the period there exist no special rules determining rent increases. Landlords and tenants are free to agree upon rent increases during the contract period as well as upon the length of the tenancy.

Short term tenancies are allowed. Tenancies are automatically unlimited in time if tenant and landlord do not determine a time limitation. Yet, in case of unlimited tenancies landlords are able to evict the tenant without any reasons by giving notice three months in advance. During fixed term tenancies landlords may evict tenants only by giving reasons.

Brazil

Landlords and tenants may agree freely upon the initial rent. Rent adjustments during the contract period have to occur on an annual basis. Annual rent increases may follow official rates, such as the consumer price inflation index but they may not exceed these indices. If there is no annual adjustment rent determined in the contract, rents may be adjusted to fair rent levels

[15] http://www.tenlaw.uni-bremen.de/brochures.html

following the comparable rent approach. Negative or positive rent adjustments may be performed the earliest three years after the start of the contract.

Rental contracts have to last for a minimum period of 30 months. After this minimum duration the landlord may repossess the dwelling without giving reason. If the landlord misses giving notice at the end of the 30-month period, a tenancy unlimited in time starts automatically. Short contracts of less than 30 months are allowed but not common. During the period or term of tenancy landlords may evict tenants only by giving special reasons.

Chile

The rent may be negotiated and adjusted freely by landlord and tenant. There exists no real tenure security. Landlords may terminate the contract by giving notice without giving reasons but they need a judicial eviction by a notary.

China

Much stricter rent laws were abolished in the past decades. Initial rents and rent adjustments during the period may be freely negotiated by landlord and tenants and have to be written down in a contract. There are no time restrictions for private tenancies. However, most tenancies last for around a year. During that term landlords may not evict the tenant without a special reason such as non-payment of the rent. After the tenancy is over landlords may repossess the dwelling without giving notice.

Colombia

Landlords and tenants may agree upon the rent freely if the monthly rent does not exceed the upper ceiling of one percent of the value of the dwelling. Rents may be increased once a year but the increase may not exceed the rate of the consumer price inflation for the last twelve months.

There are no restrictions as to the duration of a tenancy. If nothing else is agreed upon, tenancies last for one year. However, classic short term tenancies do not exist. Landlords are not able to repossess the dwelling during and at the end of the contract without giving a special reason. During the term only an essential breach of the contract by the tenant such as non-payment of the rent allows landlords to give notice.

Croatia

There does not exist any kind of rent control in Croatia. There are no restrictions as to the length of the rent. Nevertheless, tenants do not enjoy any form of tenure security. Tenancies end automatically at the end of a period. In case of tenancies unlimited in time and during an agreed period, landlords may get repossession by giving a 30-day notice without giving a reason.

Czech Republic

Rents are controlled for the great majority of private residential tenancies. However, in the Czech Republic vacancy and new construction decontrol is installed. Rents for controlled tenancies have to follow strict rules of rent determination.

Tenancies are usually unlimited in time. Landlords may evict tenants for a severe breach of the contract such as non-payment of rent and special reasons that are determined by law during the period. For unregulated tenancies, short term tenancies are allowed. Landlords may get repossession of the dwelling at the end of a term.

Ecuador

Rents may not be determined freely by landlords and tenants. The government sets strict upper ceilings for rents in many municipalities. The upper ceilings are calculated by the city council and are orientated at the commercial costs of the dwelling. During the contract period landlords need the governmental rent tribunal's allowance to increase the rent. Higher costs of living are no validate reason for rent increases.

There exists a minimum duration period of two years for all private residential tenancies. At the end of the period landlords may get repossession of the dwelling by giving notice. No special reasons are needed in that case. During the period landlords may only evict tenants for very special reasons determined by law.

Egypt

Initial rents may be determined freely by landlord and tenant in Egypt. If both parties do not agree upon the rent, the reference rent for similar rentals is the benchmark. During the tenancy, the rent may be adjusted annually by the rate of the consumer price inflation. However, the schedule of rent adjustments has to be determined in the contract.

There is no restriction of the length of residential tenancies. Short-term tenancies are allowed and they end automatically at the end of the term. Landlords may give notice without giving

special reason at the end of each rent paying period. During the term or payment period, landlords may only give notice under very special reasons. There exists an older, very strict rent and eviction control law that only holds for the minority of contracts.

Georgia

Rents may be freely determined by landlord and tenant. Both initial rents and rent increases during the contract period do not underlay any restrictions. However, rent increases have to be reasonable. Private residential tenancies indefinite in time may be terminated by giving reason. For those tenancies tenants do not enjoy any kind of tenure security. Therefore, the majority of tenancies are time-fixed and end automatically at the end of the period. During the term special grounds are required to end a tenancy. Thus, landlords may give notice during the term of tenancy for special reasons that are defined by law.

Ghana

In Ghana initial rent and rent increases during the tenancy are not restricted at all. There are also no time restrictions for tenancies. However, tenancies last for the advance payment rent payment period. Therefore, a usual private residential tenancy holds for one to three years. At the end of the period the landlord may get repossession of the dwelling without the need of giving notice. During the term landlords may terminate the contract under special reasons such as the landlords' own requirements.

Greece

There are no rules in Greek civil code that restrict the amount of rents for private dwellings in Greece. Both the initial rent and rent adjustments are generally free from any regulation. Yet, during the tenancy landlords and tenants have to specify any rent adjustments in a contract. If there are no special agreements about rent adjustments, rents may be adjusted annually by two-third of the consumer price inflation over the past twelve months.

Residential tenancies have to last at least three years. This minimum duration period solely applies to the landlord. Tenants are able to leave the dwelling before the three-year-period has ended. Contracts over three years or longer end automatically at the end of the term. Short-term tenancies are not allowed. Tenants enjoy eviction protection during the term of the tenancy.

Hungary

The rents of the majority of private residential tenancies are not regulated in Hungary. Thus, initial rents may be freely determined by landlords and tenants. There are also no restrictions to rent adjustments during the term unless both parties agree upon a new rent. In case there is no agreement, a court has to decide on a rent adjustment. However, rents are strictly controlled for special residences provided for example by the public sector.

Both time limited and time unlimited tenancies are accepted by law. In case of time limited tenancies, landlords may terminate the contract at the end of the time period without giving reasons. However, during the term tenants enjoy a certain level of tenure security. Before the end of the term, landlords may only repossess the dwelling if there occur severe breaches of contract such as outstanding rent payments. Tenancies that are unlimited in time, on the other hand, may be terminated by both parties any time if nothing else is contracted.

India

The vast majority of private tenancies are so-called Lease and License Agreements (LLA). Rents under these agreements are less regulated than the so-called Lease Agreements with their very strict rent control laws. Under the LLA, rents are not regulated, the strict rent controls only apply for private tenancies lasting longer than one year. Usually, the duration of private tenancies under the LLA are restricted to eleven months. Initial rents and rent increases during the term are not regulated by law for LLA tenancies.

There exists no tenure security under LLAs. As written above, the majority of tenancies are short term tenancies. At the end of the time period landlords may repossess the dwelling without any reasons. During the eleven months both parties may terminate the contract by giving notice. Special reasons need not to be fulfilled. Nevertheless, the contract may include special conditions for a termination during term.

Indonesia

Rents may be freely determined by landlords and tenants in Indonesia. Usually, tenants have to pay the rent in advance for the full period the tenancy lasts. Rent increases can be made at the end of every term. It is common that every third year there is an increase that may not be higher than twenty percent of the past year's rent.

Private residential tenancies usually last for one to three years. Landlords are not allowed to terminate the contract without giving reasons before the end of the contract period. However, there are no special rules considering tenure security or the length of private residential tenancies. Both landlord and tenant are free to determine the conditions of the tenancy.

Jamaica

Rent regulation in Jamaica is strict. Landlords have to ask a rent assessment board for rent permission. The board determines an individual rent limit for the rented dwelling. The standard rent ceiling orientates at the value of the living space. In 2007, the rent ceiling was at 7.5 percent of the value. Rents may not be higher unless the board lifts up the ceiling. Yet, there is a tremendous black market for rented dwellings at the luxury level which is not regulated.

Tenancies may be time limited and time unlimited. Short term contracts are allowed. During the term, landlords may not evict tenants without giving special reasons that are defined by law. However, tenants enjoy high standards of eviction protection even if the tenancy has ended.

Japan

Initial rents may be negotiated freely by landlords and tenants. Rents may be adjusted for several special reasons, such as inappropriate rents due to changes in taxes, land and house prices or rents of comparable dwellings in the same area. Both landlords and tenants have to agree the adjustment of the rent.

Private residential tenancies are usually short termed and last for one or two years. Private tenancies end automatically at the end of the term which means landlords need not give any reasons to repossess the dwelling. During the term landlords may give notice for a breach of the contract such as non-payment of the rent or for other special reasons that are defined by law.

Kenya

Rents and rent increases may be freely negotiated by landlords and tenants. There is no rent control for the majority of rented dwellings. Exceptions are rented dwellings in the lower price segment (monthly rent below 35 US Dollar).

Short term tenancies are allowed and mostly used in Kenya. Private residential tenancies that last for more than one or two years are seen as long term tenancies. They end automatically at the end of the term. During the term landlords and tenants may give notice for any reason three months in advance. Landlords may get repossession of the dwelling faster in case of arrears or non-payment of the rent.

Korea

There is no rent control in South Korea at all except in the public housing sector that provides housing for poor people. There exist different ways of renting in South Korea. The majority of private tenancies are so-called Jeongsai tenancies. Here tenants give landlords the rent in form of a deposit that usually amounts to 50 percent of the value of the property. At the end of the contract the tenant gets the money back but without interest. There exist other forms of tenancies such as the Wolse system. Here tenants give landlords a deposit to the amount of up to twenty times the monthly rent and in addition pay a monthly rent. The amount of the rent depends on the amount of the deposit.

Private tenancies usually last for one to three years. They end automatically at the end of the agreed period of time. If landlords are not able to pay back the deposit to the tenant at the end of the tenancy, tenants may stay in the dwelling for free until they get back their money. During the term landlords may only terminate the contract for very special reasons.

Latvia

Initial rents may be determined by landlord and tenants without any restrictions. Rent increases by landlords during the term are allowed, as well. Private residential tenancies are not controlled in their length; any duration of tenancy is possible. If not otherwise agreed upon by landlord and tenant, private tenancies are indefinite. However, landlords may terminate a private tenancy without giving special reasons, they just have to follow a given notice period.

Lebanon

For rental contracts signed after 23rd July 1992 landlords and tenants are free to determine the amount of the initial residential rent. Rent increases are not restricted and follow the guidelines of the contracts. Tenants may prolong the duration of tenancies to up to three years if they wish. Therefore, short term tenancies of less than three years are only possible if the tenant wishes so. After the optional minimum duration of three years the landlord may end the contract without needing special reasons. During the term, landlords may give notice only in case of a breach of the contract. Contracts that were signed before 23rd July 1992 are intensely controlled in their duration. Lifelong tenancies are possible under the old law.

Lithuania

Initial rents may be negotiated freely by landlord and tenant. Rent increases during the term are possible as determined by the residential contract. However, in case of a contract renewal tenants may refuse the rent decided upon by the landlord and instead may go to court in order to determine a new fair rent.

Tenancies may be short termed or indefinite in time. If not otherwise agreed upon, private tenancies are unlimited in time. Tenancies may last for less or more than a year. Tenants and landlords have the right to renew the tenancy to the old or new conditions if both parties agree. Landlords may evict tenants only in case of a breach of the contract such as non-payment of the rent.

Malaysia

Rents may be determined freely by landlords and tenants. However, tenants may go to court in order to lower the rent to a reasonable level in case they think the rent is too high. Private tenancies are not bound to any rules about the length of the tenancy. During the term landlords may only evict in case of a breach of the contract. At the end of the term the landlord may end the tenancy without the need of any special reasons.

Mexico

In urban areas such as Mexico City rents can be freely negotiated by landlords and tenants. Rent increases have to be agreed upon in the contract. In general, rent increases are index-based, e.g. based on the consumer price inflation. Tenancies may be time limited in Mexico City. They may last from one to ten years. Landlords may not evict the tenant unless the tenant breaches the contract such as with non-payment of the rent. At the end of the term, the landlord may repossess the dwelling. In case of tenancies indefinite in time, landlords may terminate the contract within two weeks without a special reason. However, tenants may stay in the dwelling until a court decision that may take a long time, even up to several years.

Morocco

There exists no rent control in Morocco. Tenants do not enjoy any kind of tenure security. There exist no rules for the length of a tenancy.

Nigeria

There is no kind of rent control in Nigeria. Tenancies last as long as the prepayment period of the rent. Generally, this is one to three years. During that term landlords cannot evict tenants without giving very special reasons such as the damage of the dwelling through the tenant.

Pakistan

Tenancy law differs in several regions of Pakistan. In Islamabad, Capital Territory rents may be freely determined by the two parties. Unless landlord and tenant agree differently, the rent increases by 25 percent automatically every third year. Tenancies may last as long as tenants and landlords have agreed upon. At the end of the agreed term, landlords may repossess the dwelling. During the term landlords may terminate the tenancy for very special reasons such as nonpayment of the rent.

Panama

Rents may be freely negotiated by landlords and tenants in Panama. Rent increases can be freely agreed upon by both parties. However, there exists a strict rent control law for low level rentals. In practice, rent increases follow the index of consumer price inflation. In general, there is no restriction in regards to the lengths of a tenancy. Both landlords and tenants may freely determine the duration of the tenancy. Landlords may not evict tenants during the term unless the tenant breaks the contract. In practice, tenancies are time limited from three to twenty years. There are strict rules such as a minimum duration period for rentals in the lower rent segment of less than 150 US Dollar per month.

Peru

Rents may be determined freely by landlords and tenants. There exists no upper limit for rents and increases have to be defined by contract. Otherwise, the rent will remain the same for the duration of the tenancy. There are two types of tenancies in Peru, namely tenancies limited in time and tenancies unlimited in time. Both tenancies are treated differently by law. Time limited tenancies may not last more than ten years and end automatically at the end of the term. During the term, landlords cannot give notice without giving special reasons such as outstanding rent payments. In case of tenancies unlimited in time, landlords may end the tenancy by giving a thirty days' notice. There is no need for special reasons to be fulfilled.

Philippines

There is no rent control in the Philippines. Private tenancies are generally indefinite in the lower end of the market. Often contracts are just orally defined. However, landlords may not evict the tenant without giving special reasons. In the luxury segment of the market, landlords may repossess the dwelling easier, depending on how it is defined in the contract.

Poland

In Poland, rents may be freely determined by landlords and tenants. The rent act of the year 2001 limiting rent increases to the consumer price inflation was abandoned by the constitutional court shortly after it was installed. Since then, even rent increases have not needed to follow special rules. In practice, rent increases are indexed to consumer price inflation.

Private residential tenancies can be limited and unlimited in time. Tenancies limited in time may last no longer than ten years. If they do, they automatically transform to unlimited tenancies. Reasons for eviction and the length have to be written down in the contract. There are no limitations as long as those reasons do not get in conflict with basic rights. In case of a tenancy unlimited in time landlords may not evict tenants without special reasons that are determined by law.

Portugal

For Portugal, the new urban lease act of 2006 will be described here although there was a tremendous liberalisation of the rental market in the aftermath of the European debt crisis. The reason for that is that the analyses here just cover the regulation in 2010. According to the new urban lease act of 2006, initial rents could be determined freely by landlord and tenant. Rent increases generally follow an annual adjustment by the consumer price index.

Private tenancies cannot be shorter than five years unless the tenant wishes so. Landlords may not terminate the contract during the first five years unless special reasons defined by law are fulfilled. At the end of the first five years, the tenancy ends automatically in case of a fixed term tenancy. In case of unlimited tenancies, landlords therefore have to give notice five years in advance.

Romania

There exists no rent control for private residential tenancies. Thus, rents may be freely negotiated by landlords and tenants. Rent increases may follow either the consumer price index or a progressive annual increase. Both can be stipulated lawfully in the contract. If no special clauses

considering rent increases are in the contract, landlords need a court's permission to increase the rent.

Tenancies may be limited and unlimited in time. Time limited tenancies end automatically at the end of the term. During the term landlords may give notice just in case the tenants has failed to pay the rent or breached the contract in other forms. Unlimited tenancies may be terminated by giving notice with respect to special notice periods.

Russia

Rents are not regulated in Russia. Landlords may not adjust the rent more than once a year. Private residential tenancies may be both limited and unlimited in time. In case of a tenancy unlimited in time, landlords and tenants may end the tenancy for any reason. They just need to give notice three months in advance. Tenancies with a fixed duration, however, may only terminated by the landlord during the term in case of a breach of the contract such as non-payment of the rent. At the end of the term the tenancy ends automatically.

Senegal

In Senegal, rents are officially determined by the government according to the market value of the rented dwelling. Rents may be updated during the term only once in three years. If landlord and tenant cannot agree on the increased rent, a court has to fix the new rent level. According to the law, landlords may not increase the rent independently. However, in practice landlords have much more power to set the rent by themselves.

Tenancies may last for at least three years or have to be unlimited in time. Private tenancies with a minimum duration of three years may be renewed for the same time period once the term has ended. Time limited tenancies may not be terminated before the end of the term. At the end of the term the tenancy ends unless tenants and landlords decide to prolong it . Tenancies unlimited in time may be terminated by the landlord by giving a six months' notice in advance. There is no need for any special reasons to be fulfilled in case of a termination of a tenancy unlimited in time.

Singapore

There is no law regulating the amount of rent. Thus, rents may freely be negotiated by tenants and landlords. However, rents of public housing dwellings for poor citizens are determined by the government. There exists no regulation on the length or any termination rules for private tenancies in Singapore. The rules for the tenancy have to be determined in a contract. Yet, basic breaches of contract law such as non-payment of the rent allow landlords to evict the tenant. In

case of time limited tenancies, landlords may give notice prematurely if they financially compensate the tenant.

Slovakia

Apart from rental dwellings financed by public authorities, the rents of private tenancies in Slovakia are not regulated. Rent adjustment rules have to be written down in the contract. Often rent increases orientate at the development of the consumer price level. Tenancies in Slovakia may be limited and unlimited in time. The duration of the tenancy may be decided freely by landlord and tenant and has to be defined in a contract. Landlords may only give notice if special reasons defined by law are fulfilled. However, tenancies limited in time automatically end at the end of the term.

Slovenia

Rents may be determined freely by landlord and tenant in Slovenia but they have to be morally reasonable. During the term, rents may be adjusted following the development of an index such as the consumer price inflation. Tenancies may last for as long as both landlords and tenants wish. During the term, landlords may not give notice unless the tenant has breached the contract by e.g. not paying the rent. Tenancies that are limited in time automatically end at the end of the term.

South Africa

Rents may freely be negotiated by landlord and tenant. However, highly unreasonable rents may be questioned by the tenant in court. The court can lower the rent if the file of the tenant is reasonable. There are time limited and time unlimited tenancies in South Africa. Time limited tenancies may be short termed. Landlords may not evict the tenant during the term of a time limited tenancy. At the end of the term, landlords may repossess the rented dwelling without needing to give reasons. However, the time limited tenancy automatically turns into a periodic (unlimited) tenancy if the tenant stays in the dwelling after the time limited tenancy has ended and the landlord has not given notice. Periodic tenancies, however, may be terminated without giving reasons one month in advance.

Sri Lanka

Rents for tenancies that do not fall under the Rent Act are not regulated in Sri Lanka. The vast majority of rented dwellings is not covered by the Rent Act that came into force in 1972 and was amended several times. Rent increases may be freely determined by landlords and tenants.

Tenancies may be limited and unlimited in time but are usually the latter. Then, landlords may give notice without giving reasons one month in advance. If tenancies are limited in time they are called leases. Leases are not bound to an upper or lower time period. A lease may not be terminated by landlords during the term unless tenants breach basic terms of the contract such as non-payment of the rent.

Tanzania

Rents are not regulated in Tanzania. The Rent Restriction Act of 1984 under which rents were regulated was repealed. Since then, there exists no law regulating rents which are usually paid in advance for the period the tenancy lasts.

The period a tenancy lasts depends on the coverage of the rent in advance payments. Thus, when rent payments cover the rent for the upcoming year, the notice of eviction has to be given one year in advance. Landlords do not need to give any reason in order to repossess their dwelling.

Thailand

Rents may be negotiated freely by landlords and tenants in Thailand. Usually, rents stay unchanged for the whole duration of the private tenancy. Rent increases fall together with a renewal of the contract.

There are no rules for the duration of tenancies. Most tenancies last for up to a year. Landlords may repossess the dwelling at the end of the period by giving notice. Special reasons need not to be fulfilled. During the term, landlords may evict the tenant only for special reasons such as non-payment of the rent.

Tunisia

Rents may be freely negotiated by tenants and landlords in Tunisia. Both the initial rent and rent adjustments during the term are not bound to any upper limits. There still exists an old rent act of 1976 that holds for some old tenancies from the 1970s. However, the vast majority of rented dwellings does not fall under the old rent act.

The duration of tenancies may be freely agreed upon by both parties. During the term, landlords cannot evict the tenant unless the tenant commits a breach of the contract, e.g. non-payment of the rent. At the end of the agreed term, landlords may get repossession of the dwelling without the need for special reasons.

Turkey

Initial rents and rent increases may be freely agreed upon in Turkey. However, if both tenants and landlords cannot agree on an updated rent, the court may determine the rent considering the comparable rent.

Tenancies may be time limited and time unlimited. Tenants and landlords are free to stipulate the duration of the tenancy. Usually, a tenancy lasts for one year. At the end of the term, the landlord may get repossession of their property without giving any reasons. If the landlord does not give notice at the end of the term, the tenancy automatically renews with the same conditions and the same time period. During the term, landlords may not evict tenants without giving special reasons defined by law. For tenancies unlimited in time, tenants cannot be evicted unless special reasons are fulfilled that are defined by law.

Uganda

Rents can be freely determined by landlords and tenants. There are no upper limits for rents. There is no regulation of the duration of tenancies. Usually, they last for two to three years. Landlords may get repossession of the dwelling without giving any reasons if they give notice three months in advance. There are no tenant protection laws.

Ukraine

Rents for privately rented dwellings may be freely negotiated by landlords and tenants. In general, rent increases follow periodical adjustments. Rent adjustments during the term, however, are not regulated by law.

There are no special rules for the duration of tenancies. Tenancies may be time limited as well as unlimited in time. Time limited tenancies end automatically at the end of the term. Landlords need not give notice. During the term, landlords may evict the tenant only for special reasons, such as rent payment failures by the tenant. Tenancies unlimited in time may be terminated by the landlords by giving notice three months in advance. Special reasons need not to be fulfilled.

Uruguay

The initial rent may be freely agreed upon by landlord and tenant in Uruguay. Rent increases are not regulated for dwellings built after 1968. Rent increases for rented dwellings built before 1968 have to follow the development of consumer prices.

Tenancies are time limited in Uruguay. They may not exceed a term of 15 years. Under the unregulated regime, tenancies end at the term if landlords give notice six months before the contract ends. Otherwise, there is a one-year notice period. For regulated dwellings, a minimum duration of two years plus one is compulsory. At the end of the term, the tenancy ends automatically.

Vietnam

The rent may be freely negotiated in Vietnam. There can be a rent increase at the end of the term when landlord and tenant have to negotiate on the terms of a new tenancy. They are not bond to any regulations. Rents are usually paid in advance for the whole length of the tenancy. Private tenancies may last as long as both parties agree upon. Tenancies end automatically at the end of the term. Tenants may renew the tenancy if they inform the landlord within a month before the contract expires.

3 The Regulation of Private Tenancies – its Determinants

Abstract

The aim of this chapter is to detect the determinants of private rental market regulation along three different theories, namely the legal origin theory, the political power theory and the role of culture. The underlying dataset covers rental market regulation in 66 countries. The analyses show a robust and significantly positive relation between French legal origin and the level of tenure security, especially in economically more developed countries. Countries with a Protestant tradition, however, feature a lower level of tenure security. Yet the relationship of religion and the tenure security laws index is not perfectly robust. Furthermore, the political power theory holds only for the richer countries. Here, the share of leftist and centrist parties in power is positively related with stricter tenure security laws. Finally, the regulation of tenure security is correlated with other domains, such as labour market regulation. Considering the level of rent regulation, however, none of the given theories hold up. This may be due to the broad convergence towards less strict rent control in the past decades.

3.1 Introduction

The goal of this chapter is to analyse the basic driving forces of rental market regulation. So far, literature about the drivers of private rental market regulation has been very rare. This is insofar surprising as rental market regulation has been an important topic in economic policies in modern times. Furthermore, the vast majority of economists believe that regulating tenancy markets leads to painfully distorted rents that may cause inefficiencies on housing markets, e.g. housing shortages (Hayek, Pennance 1972).

Yet there exists a rich body of economic literature on regulation of other domains, such as labour markets and its determinants. Most of these studies were written in the context of the legal origin theory (La Porta et al. 2008; Deakin et al. 2007) in the last decade. This literature will be the foundation of this chapter, especially the work of Botero et al. (2004) may be seen as a template. The central question here is to unveil why regulation differs between countries. The aim is to uncover the basic determinants of rental market regulation using the time-invariant country sample that covers 66 countries[16]. To reach the designated target the shortened rent laws index and the tenure security laws index will be analysed along three theoretical approaches of institutional economics, which are the legal origin theory, the political power theory (Botero et al. 2004) and the role of culture (Stulz, Williamson 2003).

The results of this chapter can be summarised as follows. Firstly, legal origin, political power and religion as a proxy for culture cannot properly explain the differences of rent control over the country sample. However, the evaluation of tenure security comes up with a number of different results. Legal origin, religion and political power may significantly influence the level of

[16] Please see chapter 2 for more information.

tenure security. French legal origin is the most robust determinant. It falls together with higher tenure security. Protestantism shows a weaker relationship with tenure security. It falls together with lower tenure security. The share of left and centre parties in power from 1975 to 2010, however, is only significantly correlated with stricter eviction control for more advanced economies. Finally, the level of tenure security significantly correlates with the regulation in other domains such as labour market regulation.

The next section presents a short literature overview of some work in public and institutional choice theory that is relevant to this topic. Subsequently, the three theoretical approaches are explained. Then, the main empirical analysis tests the theory on the basis of the time-invariant dataset. This is followed by a conclusion.

3.2 Literature overview

In theory, there exist different opinions about what determines the level of regulation. On the one hand, political power is seen as an important driver of regulation within a society either through elections or interest groups (Marx 1872; Becker 1983; Buchanan 1985; Olson 1993; Botero et al. 2004). On the other hand, static factors such as the legal origin or the dominant religious beliefs may determine the outcome and level of regulation (La Porta et al. 1998; Botero et al. 2004; La Porta et al. 2008). In recent years, there has been a lack of analysis of the drivers of regulation conducted in the field of rental market regulation. However, a throwback to the last century brings some insights to light. According to the public choice theory agents may influence political decisions, amongst others, through elections or by organising themselves in interest groups. With respect to rental market regulation, agents may try to maximize their personnel utility with their voting decision (Mann, Veseth 1983; Epple 1998). However, voting behaviour is influenced by what people believe to be fair and moral between landlords and tenants (Knetsch et al. 1984; Fallis 1988). The latter may be an explanation for the implementation of fair rent systems.

The decisions of societies on how to regulate rental markets may also be influenced by economic outcomes on housing markets. For example, Mann and Veseth (Mann, Veseth 1983) showed that there is a link between housing market developments and the public choice on rent regulation. Looking at the election in Seattle of 1980, they showed that high mortgage rates, high housing costs in relation to rents and shrinking vacancy rates may fuel rent control referendums and stricter rent regulation. According to Tobin (Tobin 1970), higher price elasticities on rental housing markets can encourage less regulation. Hence there may be a reinforcing loop between stronger regulation due to lower supply of rentals and lower supply due to stronger regulation. However, Schmid (2009) emphasizes that political motivations rather than market developments are central drivers of tenancy law.

The literature on legal origin addressed regulation in other domains over huge country samples. Private rental market regulation has not been included in these studies, yet. Nevertheless, the literature on legal origin and regulation developed a rich body of scientific tools and techniques that will be used in this chapter to analyse the determinants of private rental market

regulation from a macroeconomic perspective (La Porta et al. 1998; Djankov et al. 2002a, 2002b, 2003; Botero et al. 2004).

3.3 Hypotheses

There is a rich tradition of tenancy market regulation in advanced economies. The origins of modern rental market regulation may be roughly located at the beginning of the 20th century. Back then a strongly growing urban population, increasing poverty and the First World War led to precarious living conditions for many people. The imbalance of power between landlords and tenants and the growing sensitivity for human basic needs changed the view of property on rental markets in many countries. By the end of the First World War many European countries had installed very strict rent control regimes to address these issues.

In general, the theory of regulation is based mostly on the assumption of market imperfections that can be corrected by market interventions. In the case of private rental markets this implies that there are economic rents in the relationship between landlords and tenants, and that one party may abuse the other party to extract more rents. This would cause both inefficiencies and unfairness (Botero et al. 2004). Landlords, for example, may demand too high rents or threaten tenants with eviction, hence taking advantage of tenants' moving costs or housing shortages. Landlords could also discriminate against tenants because of their descent, sex or other personal characteristics.

Usually, the regulation of private rental markets aims at protecting tenants from landlords. There is a range of different interventions. The following analysis, however, will solely focus on rent control and tenure security since these have commonly been the principal fields of interest for regulators. Economic literature has classified three forms of rent regulation as first- and second-generation rent control and tenancy rent control[17] (Arnott 1995, 2003).These forms cover nominal rent freezes, real rent freezes, rent level control and initial rent decontrol. As far as the security of tenure is concerned, minimum duration terms, short term contracts or strict eviction rules are often used forms of intervention (Basu, Emerson 2000; Whitehead, Scanlon 2007; Mora Sanguinetti 2010; Scanlon, Kochan 2011). The rent laws index and the tenure security laws index cover these key interventions in private tenancy markets and were presented in detail in the second chapter. These two indices are used here as a proxy for the intensity of private rental market regulation.

To detect the basic determinants of rent regulation and tenure security three main theories - the legal origin theory, the political power theory and the impact of culture - will be tested. Furthermore, the impact of significant economic and social developments such as the income per capita or the urbanisation rate will be tested as determinants of regulation. In the following, the mentioned theories will be shortly illustrated.

As Botero et al. (2004) put it, the legal origin theory plays a significant role in the discussion of institutional evolution. The legal origin theory classifies two major legal traditions, namely the

[17] In this book, tenancy rent control regimes are seen as a specific case of second-generation rent control.

common law that emerged in England[18] and the civil law that evolved from Roman law in Western Continental Europe. The origins of these legal traditions may be dated back until the 12th century. Both were implemented in Europe and the rest of the world by conquest and colonization (La Porta et al. 2008). In the 19th century, civil law was implemented in continental European countries such as Germany and France. This legal origin is characterized by a greater role of substantive and procedural codes. However, judicial discretion, its independence and the role of juries are less prominent than in common law shaped legal systems. Common law favours the importance of decision-making by juries and independent judges. Judicial discretion plays a much more solid role than the code (Botero et al. 2004; La Porta et al. 2008). In addition to French civil law and common law, German civil codes became dominant in Germanic European countries such as Germany or Austria and some Asian countries such as South Korea and Japan. In contrast, the Scandinavian interpretation of civil codes are limited to the Nordic countries in Europe. The newest legal tradition emerged in the sequel of socialism. Socialist law was introduced in the majority of countries of the Warsaw Pact dominated by the Soviet Union (Djankov et al. 2002a; Botero et al. 2004; La Porta et al. 2008).

Considering the regulation of private tenancy markets legal theory predicts three assertions following the principles given by Botero et al. (2004). First, it states that civil and socialist law countries would regulate rents much stricter than countries with common law origin since common law gives the freedom of contract a greater priority. Second, for the same reasons legal theory predicts that common law countries offer a lower security of tenure than other legal traditions. Third, it argues the level of rent regulation and tenure security should correlate with the regulation of other domains in the same country. These three predictions will be tested in the following section.

The political power theory predicts that private rental market regulation depends primarily on who holds the political power within a country. Political power may emerge in two different ways. On the one hand, political decision making predominantly consists of elections assigning power to the party that acquires enough votes for ruling and shaping the law. On the other hand, laws are shaped dominantly by interest groups (Stigler 1971; Posner 1974; Becker 1983; Peltzman 1989; Botero et al. 2004). According to the electoral version of the political power theory, tenancy law is more protective of tenants when a left-wing dominated government is in charge, with rent control being stricter and tenure security being higher. By contrast, conservative parties in government are more in favour of less regulated rental markets. As for the interest group version, rental market regulation is shaped by interest groups such as tenants' or landlords' associations. However, those in power may be limited by institutional checks and balances (Buchanan, Tullock 1962). In contrast dictatorships are less limited in power than democratically elected governments. According to Botero (2004), dictatorships will produce more redistributive and interventionist laws and institutions. In other words, the higher the level of checks and balances such as legislative constraints or constitutions the lower is the level of intervention (Djankov et al. 2002b, 2003; La Porta et al. 2008).

In addition to political power and legal origin cultural aspects such as religion may play a significant role in determining the economic status of a society and hence also its regulation.

[18] Therefore, common law is also known as English legal origin.

Religion is a product of peoples' view of values within their society and therefore shapes the daily business within a country. Thus, religion may serve as an adequate proxy for culture. The exploration of the relationship of religion, culture and economic outcomes has a long tradition. Almost one hundred years ago, Max Weber (1922) as one of the first modern social scientists emphasized the connection between religion and economic growth. According to North (1990), culture is the source of constraints for societies and individuals.

Recent work (Stulz, Williamson 2003; Licht et al. 2005) underpins that culture matters for the outcome of institutional designs and regulation. Using the example of finance, Stulz and Williamson (2003) postulate three channels through which culture affects economics. According to the authors, culture has a bearing impact on societies' values, its institutions and the allocation of resources within the economy. More concretely, they identified religion as a significant driver for the regulation of creditor rights. According to their study, the impact of religion on creditor rights is statistically greater than legal origin or the openness to international trade. They show that predominantly Protestant countries protect the rights of creditors more than Catholic countries. Having these results in mind, countries with a Protestant history supposedly prefer less regulation on private rental housing markets than countries without a Protestant tradition since people in these countries put more emphasis on private property.

3.4 Data

In chapter 2 a new dataset has been constructed that quantifies the regulation of private tenancies in 66 countries. The measures cover two areas of rental market regulation: the regulation of rents and the warranty of tenure security. To achieve the goal of a comprehensive characterization of rental market regulation, laws directly affecting rent pricing and the security of tenure security have been analysed. Finally, the information results were transformed into the rent laws index and the tenure security laws index. Both indices and their composition are described in more detail in chapter 2 of this book.

To test for legal origin theories, the information on legal origin and the regulation of labour by Botero (2004) are used. The dataset covers all the here 66 countries contained in the time-invariant rental market regulation index. Legal origin is divided up into five categories: common law, French legal origin, German legal origin, Scandinavian legal origin and socialist legal origin. The latter covers countries that were heavily influenced by the socialism of the Eastern bloc and communism. There are three variables that reflect aspects of political power theories. The database of political institutions by the World Bank (Beck et al. 2001) is the central source for data on political parties. Using this database, the fraction of years between 1975 and 2010 is computed when the country's chief executive and the legislature were left-wing or centrist. Furthermore, union density - the total workforce affiliated to labour unions in 1997 - is used as a proxy of the mobility of tenants to fight for their rights (Botero et al. 2004). In order to measure the impact of political constraints on regulation activities the share of politically divided governments between 1975 and 2010 are used (Beck et al. 2001).

TABLE 3.1
THE VARIABLES

Rent laws index	Measures the control of rents through rent regulating laws. See chapter two for further details.
Tenure security laws index	Measures the protection of rentors against eviction. See chapter two for further details.
Employment laws index	Measures the protection of labor and employment laws. Source: Botero et al. (2004)
Collective relations laws index	Measures the protection of collective relations laws. Soruce: Botero et al. (2004)
Social security laws index	Measures social security benefits. Source: Botero et al. (2004)
Chief executive and largest party in congress have left or center political orientation	Measures the percentage of years between 1975 and 1995, during which both the party of the chief executive and the largest party in congress had left or center orientation. In the regression tables this variable is abbreviated by *leftist government*. Source: Botero (2004), Beck et al. (2001), World Bank Database of Piolitical Institutions 2015
Union density	Measures the percentage of the total work force affiliated to labor unions in 1997. Source: Botero (2004)
Divided government	This variable measures the probability that two randomly chosen deputies will belong to a different party in a given year. It is missing if there is no parliament or if there are no parties in the legislature; and zero if there are no opposition party seats. This variable is measured as the average from 1975 through 2010. Source: Beck et al. [2001].
Log of Population density	Inhabitants per square kilometre. Source: Worl Bank, World Development Indicators.
Log of GNP per capita	Natural logarithm of GNP per capita in 2010, expressed in current US dollars. Source: World Bank, World Development Indicators.
Urbanisation	The fraction of inhabitants that live in urban areas. Source: World Bank, World Development Indicators
Education	Average years of schooling the total population aged over 25 (average of 1995 and 2000). Source: Botero (2004)
Legal origin	Identifies the legal origin of the company law or commercial code of each country (English, French, Socialist, German or Scandinavian). Source: Botero (2004)
Religion	Identifies the religion practiced by the largest proportion of population. Source: Djankov et al. (2007)
Court formalism index for the eviction of a nonpaying tenant	The index measures substantive and procedural statutory intervention in judicial cases at lower-level civil trial courts in a case for evicting a tenant that has not paid rent. Higher values represent more statutory control or intervention in the judicial process. Source: Djankov et al. (2002a, 2003).
Court formalism index for the collection of a bounced check	The index measures substantive and procedural statutory intervention in judicial cases at lower-level civil trial courts in a case for collecting on a bounced check. Higher values represent more statutory control or intervention in the judicial process. Source: Djankov et al. (2002a, 2003).
Ln number of steps to start a business	Natural logarithm of the number of different procedures that a start-up business has to comply with to obtain a legal status, i.e. to start operating as a legal entity. Source: Djankov et al. (2002a).
Ln number of days to start a business	Natural logarithm of the number of days required to obtain legal status to operate a firm in 1999. Source: Djankov et al. (2002b).
Ln cost to start a business / GDP per capita	Natural logarithm of the cost of obtaining legal status to operate a firm as a share of per capita GDP in 1999. Source: Djankov et al. (2002b).

Variables that cover the dominant religion within a country are taken from the work of Djankov et al. (2007). The data permits breaking up the country panel into groups with Protestant, Catholic, Orthodox, Buddhist, Hindu, Muslim and atheist tradition. Furthermore, some control variables are generated to cover the grade of economic development and demographic aspects. First, the per capita GDP in 2010 is used for economic development (Botero et al. 2004). Second, the population density and the urbanisation rate are used as proxies for the demographics in a country and the tenseness within the housing market. Finally, several measures of regulation are taken from other domains that have mainly been published under the umbrella of legal origin theory (Djankov et al. 2002b, 2003). Table 3.A1 in the appendix gives an overview of the outcomes rent laws and tenure security laws indices, the religion and the political party in power, both for individual countries and for different groupings such as high and low income countries.

3.5 Testing the theories

The following tables present the regression results for the various factors that may influence the level of regulation of private rental markets. Throughout all regressions the level of income per capita is included as a control variable in order to check for income effects on regulation. In table 3.2 the relationship of rental market regulation and legal origin is examined for the country sample. The results show that legal origin matters for the security of tenure but not for the level of rent regulation. Considering tenure security laws, only countries with French legal origin present a significantly higher level of regulation. They have a 0.24 points higher index than common law countries. Countries with German, Scandinavian or socialistic legal origins do not feature a significantly higher index value of tenure security laws than countries with a tradition of common law.[19]

As far as rent control laws are concerned, the picture is different. Legal origin does not significantly matter for rent control. An explanation may be that there exists a strong believe among most economists that strict rent control regimes provoke inefficient market outcomes. Alston et al. (1992) show that the vast majority of economists has a negative view on rent regulation. This strong believe may have influenced politics in the past decades significantly. As discussed in chapter 2, reviewing the past decades in developed countries shows that especially rent laws were deregulated regardless of their legal origin. In total, the connection between legal origin and rental market regulation is significantly weaker than the relationship of legal origin and labour market regulation (Botero et al. 2004).

Table 3.3 addresses the impact of religion on rental market regulation. Religion is used here as a proxy for culture. There is no significant impact of religion on rent regulation. However, there exists a significant relationship between Protestantism and tenure security laws while controlling for income per capita. The regression shows that protestant countries have a 0.21 points lower tenure security laws index value. The result of the regression underpins the work by Stulz

[19] The explanatory power of the regression with tenure security laws as the dependent variable is on a comparatively solid level with R^2 equalling 0.3 percent.

and Williamson (2003) and Djankov et al. (2007) that countries with Protestantism as the dominant religious paradigm respect private property more.

Table 3.4 shows the relationship of rent and tenure security and political power, holding GDP per capita constant for all countries of the panel. The regression results do not hint to any significant impact of politics on the regulation of private tenancy markets. The cross-country analysis cannot attest a connection between the share of leftist parties in governmental responsibility and the level of regulation. This is a surprising result since rental markets were often an object of dispute between parties before elections. Moreover, there does not seem to be a connection between labour union densities as a proxy for the level of tenants' organisations and the stringency of rent and tenure security laws. The same is true for constraints of government such as the mean level of the share of divided governments from 1975 to 2010.

Table 3.5 presents a horse race between the seemingly relevant variables, namely religion and legal origin. Furthermore, the rate of urbanisation and the population density are used her as further control variables in addition to GDP per capita. The regression result confirms that there is no significant relationship between religion and legal origin on the one side and rent control on the other side. However, the relationship between the level of tenure security and religion and legal origin is still significant. The significance level and the impact of Protestantism and French legal origin on tenure security laws are more or less equal to the estimations made before.[20] The two control variables population density and the urbanisation rate are not significant here. This is surprising since one would expect that more densely populated countries or countries with more densely populated areas such as cities have traditionally more precarious housing situations which could foster a stricter rent and eviction control.

GDP per capita is highly significant throughout all estimations. It shows a positive relationship with rent and eviction control. This confirms the work of Botero et al. (2004) that richer countries have more generous social security systems, in this context more protective tenure security laws and stricter rent regulation. The relationship is even stronger and more robust between income and the level of guaranteed tenure security by law. This is in contrast to the well-known efficiency theory predicts that rich countries regulate less since they have less fault-prone markets (Botero et al. 2004). However, these results should be interpreted with some caution since rental market regulation underwent a liberalisation in the past decades especially in more advanced countries. Taking the interaction of regulation and income into account, an instrument variable estimation (Cameron, Trivedi 2005; Baum 2006; Stata Corporation 2007; Wooldridge 2007) underpins that income per capita may be treated here as an exogenous variable[21].

Dividing up the country sample into poor and rich countries delivers some additional insights on the basic determinants of rental market regulation. Looking at the two groups of countries may be interpreted as a robustness check for the earlier estimations. The results are presented in the tables 3. A3 to 3. A6 in the appendix of this chapter. They show the following: First, the significance of French legal origin for tenure security laws is very robust for rich countries. For the poor country group, the connection is statistically weaker, and becomes insignificant if

[20] The explanatory power R^2 of religion and legal origin for tenure security is on a serious level of 0.37.
[21] A 2SLS instrument variable estimation and tests for exogeneity are presented in table 3. A2.

TABLE 3.2
RENTAL MARKET REGULATION AND LEGAL ORIGIN

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	French	German	Scandinavian	Socialist	Constant	Observations	R^2
Rent laws index	0.0423*	0.122	0.00869	0.185	-0.0125	-0.203	66	0,11
	(0.0233)	(0.0938)	(0.129)	(0.213)	(0.0866)	(0.198)		
Tenure security laws index	0.0721***	0.242***	-0.00108	-0.0458	0.0168	-0.358**	66	0,30
	(0.0202)	(0.0715)	(0.111)	(0.160)	(0.0594)	(0.164)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.3
RENTAL MARKET REGULATION AND CULTURE

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	Protestant	Constant	Observations	R^2
Rent laws index	0.0491**	0.0316	-0.217	66	0,06
	(0.0226)	(0.0981)	(0.203)		
Tenure security laws index	0.0793***	-0.205***	-0.290*	66	0,21
	(0.0199)	(0.0663)	(0.164)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.4

RENTAL MARKET REGULATION AND POLITICAL POWER

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	Leftist Government	Divided Government	Union Density	Constant	Observations	R^2
Rent laws index	0.0492**	0,078			-0.246	66	0,07
	(0.0225)	(0.106)			(0.196)		
Rent laws index	0.0452*		0.131		-0.252	66	0,07
	(0.0241)		(0.211)		(0.203)		
Rent laws index	0.0524**			-0.0161	-0.243	60	0,06
	(0.0247)			(0.189)	(0.223)		
Tenure security laws index	0.0610***	0,133			-0.228	66	0,14
	(0.0187)	(0.0935)			(0.165)		
Tenure security laws index	0.0636***		0.0212		-0.205	66	0,12
	(0.0210)		(0.140)		(0.164)		
Tenure security laws index	0.0623***			-0.122	-0.129	60	0,10
	(0.0219)			(0.154)	(0.180)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.5
REGULATION, LEGAL ORIGIN, RELIGION AND CONTROL VARIABLES

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP / Cap.	French	German	Scand.	Socialist	Protestant	Pop. Density	Urban	Constant	Obs.	R^2
Rent Laws Index	0.0237	0.131	0.0327	0.150	0.00608	0.0573	-0.00395	0.00145	-0.134	66	0,12
	(0.0366)	(0.0938)	(0.139)	(0.223)	(0.0800)	(0.122)	(0.0306)	(0.00265)	(0.294)		
Tenure Security Laws Index	0.0873**	0.193**	-0.0392	0.0105	-0.0313	-0.128*	-0.00456	-0.000919	-0.358	66	0,33
	(0.0373)	(0.0809)	(0.124)	(0.156)	(0.0650)	(0.0706)	(0.0205)	(0.00254)	(0.248)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

French legal origin is estimated together with religion, the share of leftist government and the three control variables. Second, the negative impact of Protestantism on the level of tenure security turns out to be weak for both groups. It becomes insignificant if it is estimated together with the share of leftist parties, legal origin and the control variables. This is surprising since it is significant for the whole country sample. Third, the share of left-wing and centrist parties in power between 1975 and 2010 is significant for a higher level of tenure security if the rich country group is considered. Fourth, the rate of urbanisation is significant for the level of tenure security in the poor country panel. A one percentage point higher urbanisation rate falls together with a 0.01 higher tenure security laws index. Urbanisation has an even greater impact than French legal origin here. Finally, with respect to rent control, no additional significant connections can be detected.

3.6 Regulation in different domains

According to Botero et al. (2004), societies regulate different domains similarly even if the targeted areas are completely unrelated. This is a central aspect of the legal origin theory that implies that e.g. rental market regulation is similar in its strictness to the regulation of labour for the same country. Thus, regulatory composition is pervasive across activities. Botero at al. (2004) argue that societies have individual regulatory styles influenced by their legal systems. That means that significant correlations between rental market regulation and regulation in other domains may be a hint to a connection of legal origin and the degree of rental market regulation.

The comparison of rent and tenure security laws with other domains partially supports the mentioned theory. Table 3.6 shows the pairwise correlations of the different indices. While the regulation of rent loosely correlates with other domains, tenure security laws shows a significant correlation with social security laws (Botero et al. 2004), the regulation of labour markets (Botero et al. 2004) and legal formalism indices such as the ease of evicting a tenant (Djankov et al. 2002a, 2003)[22]. In other words, rent regulation correlates much less with other domains than tenure security laws. This is due to the decoupling of rent regulation from tenure security laws, as mentioned above, the perceived ideal of decontrolled rents were implemented successfully irrespective of the legal or regulatory tradition of the country.

The development of the rent laws and tenure security laws indices of the advanced economy panel underpins that view. Table 2.2 in chapter 2 shows that the rent laws index has shrunk much more than the tenure security laws index over the past decades. Furthermore, the regulation of rents converged much stronger over time. Thus, not only the mean index value is much lower in 2014 but also its variance is smaller than the corresponding values of the tenure security laws index. This development shows that tenancy market policies are often applied solely to rent regulation laws in advance countries. Yet tenure security has been addressed less by housing policy in the past decades.

[22] Note that the methodology of the indices may deviate across the here cited studies on legal origin.

TABLE 3.6

CORRELATION BETWEEN REGULATION INDICES

The table shows the pairwise correlation between indices of regulation over 66 countries. The indices are described in the tables 2.1 and 3.1.

	Rent Laws	Tenure Security Laws	Court formalism index for the eviction of a nonpaying tenant	Court formalism index for the collection of a bounced check	Log (number of steps to start a business)	Log (number of days to start a business)	Log (cost to start a business / GDP per capita)	Social security laws index	Collective relations laws index
Rent Laws	1								
Tenure Security Laws	**0.4494*** **	1							
Court formalism index for the eviction of a nonpaying tenant	-0,0245	**0.2885** **	1						
Court formalism index for the collection of a bounced check	-0,0383	**0.2576** **	0.8604***	1					
Log (number of steps to start a business)	-0,0594	0,1528	0.4640***	0.5306***	1				
Log (number of days to start a business)	-0,08	0,1239	0.5047***	0.5558***	0.8426***	1			
Log (cost to start a business / GDP per capita)	-0,146	-0,0182	0.3457***	0.4152***	0.6038***	0.6362***	1		
Social security laws index	0,1341	**0.3260*** **	0,1204	0,0762	-0,157	-0,2511	-0.4343***	1	
Collective relations laws index	0,0669	**0.3302*** **	0.5370***	0.4514***	0.4432***	0.4162***	0,1906	0.2937**	1
Employment laws index	-0,0242	0,1912	0.2813**	0.3372***	0.2678*	0.3245***	0,1413	0.2985**	0.4747***

***= significant at the 1 % level; **=significant at the 5 % level; *=significant at the 10 % level

3.7 Conclusion

This chapter shed light on three central theories of regulation: the legal origin theory, the political power theory and the theory about the impact of culture on the shape of regulating. The results show a divided picture: While the level of rent regulation cannot be explained by any of the mentioned theories, a connection of legal origin, political power and culture may be detected for tenure security laws. The regressions show that the level of rent control and tenure security is positively related to the level of GDP per capita even though its impact is moderate.

As for rent control laws neither legal origin and political power nor religion significantly explain the level of rent control in the country panel. An explanation may be that there exists a strong believe in most countries that strict rent control regimes provoke inefficient market outcomes. This belief may have lowered the level of rent control across legal and religious traditions. Tenure security laws, however, show a significant and robust positive connection to French legal origin. This connection is robust for rich countries but less so for poor countries. In countries with a Protestant majority, on the other hand, there is a more distinct access of landlords to their property through a lower level of tenure security. However, the robustness result is weak if the sample is split into a rich and poor country group. Finally, the share of leftist and centrist parties in power from 1975 to 2010 has a positive impact on the level of tenure security only for the rich country group. The results depict that the impact of legal traditions and political power on tenure security is much stronger in economically developed countries than in less developed ones. This may be due to less developed political and legal structures in poorer countries.

Another important result is the correlation of rental market regulation with the regulation of other domains. All of the chosen measures are taken from recent literature about legal origin. While the regulation of rents does not correlate with any other domain the results of the pairwise correlation show that tenure security laws correlate significantly with labour market regulation and judicial proceedings. This shows that the national regulatory styles are pervasive across activities in a country.

Appendix C: Data table

TABLE 3.A1
MAIN INDICATORS BY COUNTRY

	Rent laws index	Tenure security laws index	Log GDP per capita 2010	Legal origin	Religion	Share of leftist or centrist Government
Argentina	0,50	0,75	8,89	French	Catholic	0,42
Armenia	0,00	0,25	7,60	Socialist	Orthodox	0,00
Australia	0,25	0,25	10,50	Common	Protestant	0,44
Austria	0,00	0,75	10,60	German	Catholic	0,81
Brazil	0,75	0,50	8,64	French	Catholic	0,22
Canada	0,25	0,50	10,50	Common	Catholic	0,61
Chile	0,00	0,00	9,06	French	Catholic	0,58
Colombia	1,00	1,00	8,28	French	Catholic	0,56
Croatia	0,00	0,00	9,26	Socialist	Catholic	0,11
Czech Rep.	1,00	0,75	9,59	Socialist	Athiest	0,67
Denmark	0,50	0,25	10,77	Scandinavian	Protestant	0,42
Ecuador	1,00	0,75	8,09	French	Catholic	0,53
Egypt	0,00	0,25	7,35	French	Muslim	0,00
Germany	0,25	0,50	10,52	German	Protestant	0,42
Finland	0,00	0,00	10,59	Scandinavian	Protestant	1,00
France	0,25	1,00	10,47	French	Catholic	0,42
Georgia	0,25	0,25	7,52	Socialist	Orthodox	0,33
Ghana	0,00	0,25	6,41	Common	Protestant	0,00
Greece	0,00	0,75	9,99	French	Orthodox	0,58
Hungary	0,00	0,25	9,32	Socialist	Catholic	0,89
India	0,00	0,00	6,94	Common	Hindu	0,83
Indonesia	0,25	0,25	7,36	French	Muslim	0,00
Ireland	0,50	0,75	10,75	Common	Catholic	0,67
Italy	0,00	1,00	10,33	French	Catholic	0,75
Jamaica	1,00	0,25	8,36	Common	Protestant	0,67
Japan	0,50	0,25	10,50	German	Buddhist	0,03
Kenya	0,00	0,00	6,37	Common	Protestant	0,00
Latvia	0,00	0,00	8,99	Socialist	Protestant	0,19
Lebanon	0,00	0,75	8,87	French	Muslim	0,00
Lithuania	0,25	0,50	9,10	Socialist	Catholic	0,25
Malaysia	0,25	0,25	10,08	French	Muslim	0,00
Mexico	0,25	0,25	9,00	French	Catholic	0,72
Morocco	0,00	0,00	7,76	French	Muslim	0,42
Netherlands	0,75	0,50	10,68	French	Catholic	0,31
New Zealand	0,25	0,25	10,23	Common	Protestant	0,44
Nigeria	0,00	0,25	6,90	Common	Muslim	0,00
Norway	0,25	0,50	11,10	Scandinavian	Protestant	0,61
China	0,00	0,25	7,97	Socialist	Athiest	1,00
Pakistan	0,00	0,25	6,62	Common	Muslim	0,31
Panama	0,25	0,25	8,72	French	Catholic	0,00

Peru	0,00	0,25	8,18	French	Catholic	0,42
Philippines	0,00	0,50	7,25	French	Catholic	0,44
Poland	0,25	0,50	9,22	Socialist	Catholic	0,83
Portugal	0,25	0,75	9,86	French	Catholic	0,47
Korea	0,00	0,25	10,01	German	Buddhist	0,33
Romania	0,00	0,25	8,64	Socialist	Orthodox	0,58
Russia	0,00	0,25	8,76	Socialist	Orthodox	0,11
S. Africa	0,25	0,25	8,68	Common	Protestant	0,44
Senegal	0,75	0,50	6,69	French	Muslim	0,72
Singapore	0,00	0,25	10,46	Common	Buddhist	0,00
Slovakia	0,25	0,25	9,59	Socialist	Catholic	0,28
Slovenia	0,25	0,25	9,87	Socialist	Catholic	0,50
Spain	0,25	1,00	10,17	French	Catholic	0,69
Sri Lanka	0,00	0,25	7,38	Common	Buddhist	0,83
Sweden	1,00	0,75	10,71	Scandinavian	Protestant	0,78
Switzerland	0,50	0,25	10,97	German	Catholic	0,44
Tanzania	0,00	0,25	6,26	Common	Muslim	1,00
Thailand	0,00	0,25	8,06	Common	Buddhist	0,00
Tunisia	0,00	0,25	8,26	French	Muslim	1,00
Turkey	0,25	0,25	8,97	French	Muslim	0,25
UK	0,25	0,25	10,58	Common	Protestant	0,50
USA	0,00	0,25	10,69	Common	Protestant	0,44
Uganda	0,00	0,00	5,97	Common	Catholic	0,14
Ukraine	0,00	0,25	7,59	Socialist	Orthodox	0,31
Uruguay	0,25	0,75	8,84	French	Catholic	0,17
Vietnam	0,00	0,25	6,80	Socialist	Buddhist	1,00
Mean	**0,23**	**0,38**	**8,92**			**0,44**
Median	**0,25**	**0,25**	**8,98**			**0,44**

		Rent Laws Index	Tenure Security Laws Index	Log GDP per capita 2010	Share of leftist or centrist Government
		Data by GDP per capita			
Below median:	Mean	0,20	0,33	7,73	0,38
	Median	0,00	0,25	7,76	0,33
Above median:	Mean	0,26	0,42	10,12	0,49
	Median	0,25	0,25	10,33	0,47
		Data by left political orientation			
Below median:	Mean	0,17	0,31	8,62	0,18
	Median	0,00	0,25	8,80	0,18
Above median:	Mean	0,28	0,43	9,21	0,68
	Median	0,25	0,25	9,45	0,67

		Data by legal origin			
English legal origin:	Mean	0,15	0,25	8,43	0,41
	Median	0,00	0,25	8,21	0,44
French legal origin:	Mean	0,29	0,52	8,82	0,40
	Median	0,25	0,50	8,85	0,42
German legal origin:	Mean	0,25	0,40	10,52	0,41
	Median	0,25	0,25	10,52	0,42
Scandinavian legal origin:	Mean	0,44	0,38	10,79	0,70
	Median	0,38	0,38	10,74	0,69
Socialistic legal origin:	Mean	0,15	0,28	8,65	0,47
	Median	0,00	0,25	8,99	0,33
		Data by religion			
Protestant	Mean	0,29	0,27	9,61	0,45
	Median	0,25	0,25	10,51	0,44
Not protestant	Mean	0,21	0,40	8,74	0,43
	Median	0,00	0,25	8,85	0,42

TABLE 3.A2
ROBUSTNESS ANALYSIS FOR GDP PER CAPITA

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	French	German	Scandinavian	Socialist	Protestant	Constant	Observations	R^2
Rent Laws Index	0.0389	0.155*	0.0333	0.153	0.0154	0.0716	-0.207	66	0,12
	-0,0255	(0.0916)	(0.125)	(0.224)	(0.0791)	(0.105)	(0.198)		
Tenure Security Laws Index	0.0783***	0.182**	-0.0459	0.0121	-0.0339	-0.131*	-0.352**	66	0,32
	(0.0206)	(0.0791)	(0.121)	(0.156)	(0.0636)	(0.0687)	(0.162)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

INSTRUMENT VARIABLE ESTIMATION

Two-stage least squares regressions of the cross section of countries. The average years of schooling are used here as an instrument for GDP per capita. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. Robust standard errors are shown in parentheses. All variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	French	German	Scandinavian	Socialist	Protestant	Constant	Observations	R^2
Rent Laws Index	0,032	0.160*	0,0489	0,1661	0,00189	0.0769	-0,151	66	0,12
	(0.0323)	(0.0869)	(0.123)	(0.206)	(0.0744)	(0.106)	(0.260)		
Tenure Security Laws Index	0.0720***	0.186**	-0.0314	0.0244	-0.0306	-0.126*	-0.300*	66	0,32
	(0.0221)	(0.0761)	(0.118)	(0.148)	(0.0608)	(0.0644)	(0.176)		

TESTS OF ENDOGENEITY

In case of robust 2SLS regressions the Wooldridge score test (a) and a regression-based test of exogeneity (b) are used instead of the Durbin and Wu-Hausman tests. These tests can tolerate heteroskedastic and autocorrelated errors. The null hypothesis is that GDP per Capita is an exogenous variable.

	(a) Robust score chi2 (1)		(b) Robust regression F(1,58)	
Regression: Rent Laws Index	0,124691	(p-value = 0.7240)	0,112488	(p-value = 0.7385)
Regression: Tenure Security Laws Index	0,190563	(p-value = 0.6624)	0,165371	(p-value = 0.6858)

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.A3
RICH VS. POOR: RENTAL MARKET REGULATION AND LEGAL ORIGIN

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. The results are presented separately for poor and rich countries. Poor countries are countries with GDP per Capita below the sample's median. Rich countries, however, are countries with GDP per Capita above the median of the sample. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	French	German	Scandinavian	Socialist	Constant	Observations	R^2
Rich Countries								
Rent laws index	0.248*	0.149	0.0382	0.158	0.324	-2.395*	33	0,18
	(0.123)	(0.127)	(0.113)	(0.224)	(0.209)	(1.287)		
Tenure Security Laws	0.376***	0.467***	0.0466	-0.0812	0.393**	-3.601**	33	0,37
	(0.129)	(0.150)	(0.127)	(0.167)	(0.186)	(1.351)		
Poor Countries								
Rent laws index	0.0906	0.124	no obs.	no obs.	-0.146	-0.528	33	0,20
	(0.0810)	(0.189)			(0.138)	(0.522)		
Tenure Security Laws	0.0702**	0.211**	no obs.	no obs.	0.0153	-0,315	33	0,36
	(0.0334)	(0.0769)			(0.0389)	(0.2474)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.A4
RICH VS. POOR: RENT LAWS, POLITICAL POWER AND RELIGION

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. The results are presented separately for poor and rich countries. Poor countries are countries with GDP per Capita below the sample's median. Rich countries, however, are countries with GDP per Capita above the median of the sample. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	Leftist Government	Divided Government	Union Density	Protestant	Constant	Observations	R^2
Rich Countries								
Rent Law Index	0.115*	0.0248				-0.917	33	0,07
	(0.0675)	(0.193)				(0.679)		
Rent Law Index	0.108*		0.232			-0.985	33	0,09
	(0.0633)		(0.311)			(0.754)		
Rent Law Index	0.105			0.118		-0.851	32	0,08
	(0.0653)			(0.242)		(0.667)		
Rent Law Index	0.125*				-0.0373	-1.001	33	0,08
	(0.0624)				(0.101)	(0.625)		
Poor Countries								
Rent Law Index	0.121**	0.150				-0.798**	33	0,12
	(0.0508)	(0.144)				(0.375)		
Rent Law Index	0.113**		0.0414			-0.699*	33	0,10
	(0.0528)		(0.285)			(0.379)		
Rent Law Index	0.0995*			-0.189		-0.538	28	0,09
	(0.0581)			(0.266)		(0.406)		
Rent Law Index	0.124**				0.170	-0.778*	33	0,13
	(0.0552)				(0.189)	(0.419)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.A5
RICH VS. POOR: TENURE SECURITY LAWS, POLITICAL POWER AND RELIGION

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. The results are presented separately for poor and rich countries. Poor countries are countries with GDP per Capita below the sample's median. Rich countries, however, are countries with GDP per Capita above the median of the sample. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP per Capita	Leftist Government	Divided Government	Union Density	Protestant	Constant	Observations	R^2
Rich Countries								
Tenure Security Laws Index	0.118*	0.389*				-0.958	33	0,18
	(0.0663)	(0.208)				(0.698)		
Tenure Security Laws Index	0.129*		-0.140			-0.793	33	0,08
	(0.0685)		(0.313)			(0.687)		
Tenure Security Laws Index	0.136*			-0.159		-0.889	32	0,08
	(0.0716)			(0.238)		(0.703)		
Tenure Security Laws Index	0.201***				-0.278***	-1.523**	33	0,24
	(0.0719)				(0.0961)	(0.704)		
Poor Countries								
Tenure security laws index	0.123***	0.0303				-0.637**	33	0,21
	(0.0399)	(0.0831)				(0.290)		
Tenure security laws index	0.116***		0.0827			-0.613**	33	0,22
	(0.0399)		(0.157)			(0.295)		
Tenure security laws index	0.116**			-0.0639		-0.533	28	0,19
	(0.0452)			(0.171)		(0.326)		
Tenure security laws index	0.117***				-0.121*	-0.563*	33	0,24
	(0.0388)				(0.0665)	(0.285)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

TABLE 3.A6
RICH VS. POOR. HORSE RACE BETWEEN THE VARIABLES

Ordinary least squares regressions of the cross section of countries. The dependent variables are (1) the rent laws index, and (2) the tenure security laws index. The results are presented separately for poor and rich countries. Poor countries are countries with GDP per Capita below the sample's median. Rich countries, however, are countries with GDP per Capita above the median of the sample. Robust standard errors are shown in parentheses. All the variables are described in the Tables 2.1 and 3.1.

	GDP / Cap.	French	German	Scand.	Socialist	Protestant	Leftist Gov.	Pop. Density	Urban	Const.	Obs.	R^2
Rich countries												
Rent Laws Index	0.311*	0.196	0.0812	0.163	0.534	-0.102	0.0151	-0.0206	0.00845	-3.624	33	0,24
	(0.157)	(0.211)	(0.175)	(0.235)	(0.412)	(0.102)	(0.224)	(0.0321)	(0.00810)	(2.143)		
Tenure Security Laws Index	0.360**	0.356**	0,0000116	-0.146	0.273	-0.0933	0.455**	0.0110	-0.00215	-3.446*	33	0,53
	(0.139)	(0.151)	(0.121)	(0.179)	(0.258)	(0.0889)	(0.190)	(0.0211)	(0.00541)	(1.694)		
Poor Countries												
Rent Laws Index	0.0295	0.202	no obs.	no obs.	-0.0876	0.278	0.259	-0.0381	0.00219	-0.188	33	0,32
	(0.0800)	(0.147)			(0.106)	(0.206)	(0.169)	(0.0633)	(0.00392)	(0.750)		
Tenure Security Laws Index	-0.0641	0.0491	no obs.	no obs.	-0.0979	-0.0791	0.136	0.0298	0.00999***	0.0960	33	0,51
	(0.0449)	(0.0966)			(0.0737)	(0.0542)	(0.0957)	(0.0301)	(0.00272)	(0.296)		

*** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level

4 Regulation of Private Tenancies – its Effects on Rents

Abstract

Using a new panel with data on private tenancy regulation in 18 advanced economies, two models which analyze the effects of private rental market regulation on real rents are revisited. This chapter shows that the quantitative analysis of the mentioned dataset mostly backs the theory and has three main results. First, very strict rent control regimes do provoke lower real rent growth rates than regimes with free rents. Second, tenure security plays a significant role for the effects of second-generation rent control regimes on rents. The analysis shows that soft rent control regimes with time limited tenure security and minimum duration periods may cause higher rent growth rates than free rent regimes. Third, the data reveals that the mean real rent growth is just slightly over zero for free rent regimes.

4.1 Introduction

One of the main questions in rental market economics is how rental market regulation affects rents. Manipulated rents may cause tremendous distortions in (rental) housing markets. There exists quite a rich body of economic literature addressing the problems that may arise through this channel. To mention just a few, the problems are the deterioration of rented property due to insufficient returns (Olsen 1988, 1969; Börsch-Supan 1986; Gyourko, Linneman 1990), a shift of housing supply towards the ownership market (Turner, Malpezzi 2003), lower housing investments (Malpezzi, Ball 1993), housing shortages (Hayek 1972; Friedman, Stigler 1972) and a higher immobility of households within an economy (Munch, Svarer 2002). This short overview strengthens the suspicion that regulated private tenancies may cause economic damage through a disturbed price (rent) channel.

This chapter will deal with the effects of rental market regulation and the price for renting. Unlike the vast majority of empirical rental market studies the here presented analysis follows a broader approach, testing the effects of rent control and tenure security laws on the development of real rents. The panel consists of 18 advanced economies analysed over the period 1973 to 2014. That means, a cross-market comparison is undertaken rather than a case study (Turner, Malpezzi 2003). Therefore, the analysis may claim high relevance and generalisability since it incorporates the richness of many country experiences with rental market regulation. However, the examination heavily relies on aggregated data, averages and means. To some point the richness of details will be lost through this.

This chapter is the stringent sequel of the preceding two chapters. The analysis will focus on the effects of first-generation rent control regimes, second-generation rent control regimes and free rent regimes on the behaviour of real rents. Since there is a great variety of regulation types within the group of second-generation rent control regimes the effects may vary from type to type. Therefore, these regimes will be evaluated in more detail and largely independently of the

experience with first-generation controls and rent free regimes. The differentiation will be made along the different levels of tenure security. It is a valid assumption that different outcomes of tenure security may manipulate the effects of second-generation rent control regimes differently (Arnott 1995). Therefore, tenure security will play a crucial role in this analysis.

The results can be briefly summarized. First, it is featured that first-generation rent control regimes fall together with lower real rent growth rates. This is in line with the conclusions of the well-known basic textbook model of rent control (Mankiw 2012). Second, tenure security may have a significant impact on the way second-generation rent control regimes work. The empirics show that second-generation rent control regimes with eviction protection during the term and mandatory minimum duration terms generate higher real rent growth rates than in rent free regimes. Third, the rent free regimes do not show significant high real rent appreciation rates. Instead, the data reveals that the mean real rent growth is slightly over zero for free rent regimes.

This chapter is structured as follows: there will be a brief literature overview of the economic effects of rental market regulation. Subsequently, two models are presented that explain the theoretical foundations of the effects of first- and second-generation rent control regimes in comparison to free rent regimes. This is followed by a quantitative analysis beginning with the presentation of the used data and concluding with the descriptive and econometric analyses.

4.2 Literature overview

There exists a rich body of studies on the impact of private tenancy regulation on rental housing markets. They have dealt with the devastating effects of first-generation rent control regimes on housing markets such as perpetuating shortages of rental housing, immobility, oppressed consumer preferences, deteriorated housing stock and misallocation of resources through synthetic rents that are pinned by law well below the market level (Hayek 1972; Friedman, Stigler 1972). The classic supply and demand textbook model explains the distortive dynamics of first-generation rent control regimes of the interplay between the rent and the quantity of housing in a simple but vivid way (Frankena 1975; Mankiw 2012).

The theoretic literature on the effects of second-generation rent control regimes is well developed. However, the opinions on its effects and justification are much more divers than the theory of first-generation rent control. This is due to the wide range of varieties of what softer regulation could look like. The regimes range from strict real rent freezes to loose intertenancy decontrol systems or rent control regimes with loose tenure security. The latter has remained sparsely addressed in economic literature up to now. There are just a few models that deal with aspects of tenure security and its direct effect on rent dynamics as well as the quantity of housing such as Mora-Sanguinetti (2010).

Assuming perfect competition, the majority of theoretical approaches stresses the distorting effects of second-generation rent control regimes on rents and affordable dwellings (Sweeney 1974b, 1974a; Arnott 1987; Arnott et al. 1983). However, Olsen shows that softer regulation regimes can stimulate maintenance via generous cost pass-through and a decontrol of higher quality dwellings (Olsen 1988).

Much more attention, however, is paid to models that deal with imperfect market conditions. The number of models dealing with second-generation rent control regimes under the surface of imperfect competition is growing. This is not only due to the great recession after 2008 and the subsequent critique of modelling under perfect competition. According to Arnott (1995), monopolistically competitive and contract models are the most relevant for the economics of rent control. Monopolistic competitive models usually make use of search-based labour market models (Arnott 1995; Pissarides 1990). Under these conditions, Arnott and Igarashi (Arnott, Igarashi 2000) show that moderate rent controls may be beneficial while stringent rent controls are not.

The theoretical foundation of the so-called contract models is the inherent assumption of asymmetric information. Generally, there exist at least two groups of tenants that are divided up into 'bad' or 'good' ones for the landlords' pursuit of maximized profit. The information asymmetry emerges since landlords are not able to know a tenant's 'real face' before the contract is signed. As long as landlords may not correct their selection by evicting a 'bad' tenant immediately after finding out about their real character, the information asymmetries may fully materialize. It is obvious that the level of tenure security plays a significant role for tenants and landlords and thus for the market outcomes at this point.

In a world of information asymmetries and adverse selection, for example, Basu and Emerson (2000) show that soft rent control regimes cause rental housing market inefficiencies through higher rents and a shrinking rental market. Börsch-Supan (1986) comes to similar results with a contract model that deals with asymmetric information. However, he declares that these results are no indications for welfare losses. Hence, he shows that landlords and tenants may be better off in terms of welfare. Arnott (1995), in turn, states the possibility of a well-designed rent regulation regime that improves market efficiency over the unrestricted market equilibrium.

Most empirical research on rental market regulation remains on a regional level. Often micro-based datasets are analysed for one single town or county. Thereby, the majority of studies deals with North American rental housing markets. Macroeconomically inspired cross-country studies, however, have yet been scarcely published. According to Turner and Malpezzi (2003), empirical studies can be divided up into two groups, namely the analysis of costs and benefits to individual landlords and tenants and the analysis of whole market effects.

The foundation of static cost-benefit approaches usually is the display of discrepancies between controlled rents and free market rents. At this, the market rent for controlled dwellings is estimated with the help of the rents for free rental market objects (Marks 1984; Fallis, Smith 1984, 1985). Turner and Malpezzi (2003) conclude that rent control may cause rents to be ten to twenty percent under the market rent in the United Kingdom, Canada and the United States. Studies on rent control in Spain (Peña, Ruiz-Castillo 1984) and Egypt (Turner, Malpezzi 2003) may detect even higher discrepancies. Other studies, turn their focus on the impact of rent control regimes on the mobility of tenants or the housing quality. Gyourko and Linneman (1990) and Svarer and Munch (2002) show that (soft) rent control regimes with high tenure security may encourage tenants to move less, instead staying longer in the rented dwelling. Further, most studies detect a negative effect of rent control on the quality of housing (Olsen 1969; Gyourko, Linneman 1990).

In empirical literature, less attention is spent on whole market effects of rent controls. So far, only some essential work has been done in this field. Malpezzi and Ball (1993), for example, find a dampening effect of rent controls on the investment in housing in a cross-country analysis through inefficiencies in rental markets. Other studies focus on the effects of rent control on the uncontrolled sector within one area. For New York City Early (2000) shows that rent control regimes encouraged rents to rise in the uncontrolled sector. In turn, Lyyitikäinen (2006) estimates the effect of the abolition of rent controls for Finland. On the basis of a micro dataset he shows that the net benefits of lower rents for tenants due to rent control for tenants do not offset the costs for landlords.

4.3 Theory

The different regimes of tenancy market regulation may cause a range of different effects on rents and the housing market. For the very extreme outcomes, namely fully controlled rents (first-generation rent control regimes) and completely liberated rents, economic theory offers the standard textbook model that consists simply on demand and supply slopes. The model shows in a simple manner how rent freezing under the market level causes inefficiencies and a lower number of rented dwellings. The free market, however, works as the benchmark outcome with pareto-efficient market rents. Its rents are generally higher than the freezed rents (Frankena 1975; Mankiw 2012).

Rent control regimes that do not belong to first-generation rent control regimes or free rent regimes are called second-generation rent control regimes. Most of these regimes emerged in the middle of the past century. However, the rent regimes that belong to this group may differ tremendously and so do their effects on housing markets and rents. A proper model explaining all of its economic effects does not exist yet. Second-generation rent control regimes are softer rent control regimes. They usually allow landlords to adjust rents during or between tenancies under certain conditions. These range from adjustments along the path of consumer price inflation to intertenancy decontrol between tenancies. The latter is also called tenancy rent control regime or third-generation rent control (Arnott 1995, 2003)[23].

In the following, both the effect of first- and second-generation rent control regimes on rents will be explained along two different theoretical approaches. As for first-generation rent control regimes, a basic textbook model will be used. Since an adequate standard model for the effects of second-generation rent control regimes does not exist the theoretical approach by Basu and Emerson (2000) dealing with tenancy rent control regimes will be used here. The model that considers information asymmetries and adverse selection mechanisms shows higher rents than under the free market for rent regimes with a looser rent control between two tenancies but strict rent control and high tenure security during the term.

[23] Note for the wording: Second-generation rent control covers here all soft rent control regimes including tenancy rent control regimes since these regimes all came up in the 1970s and 1980s.

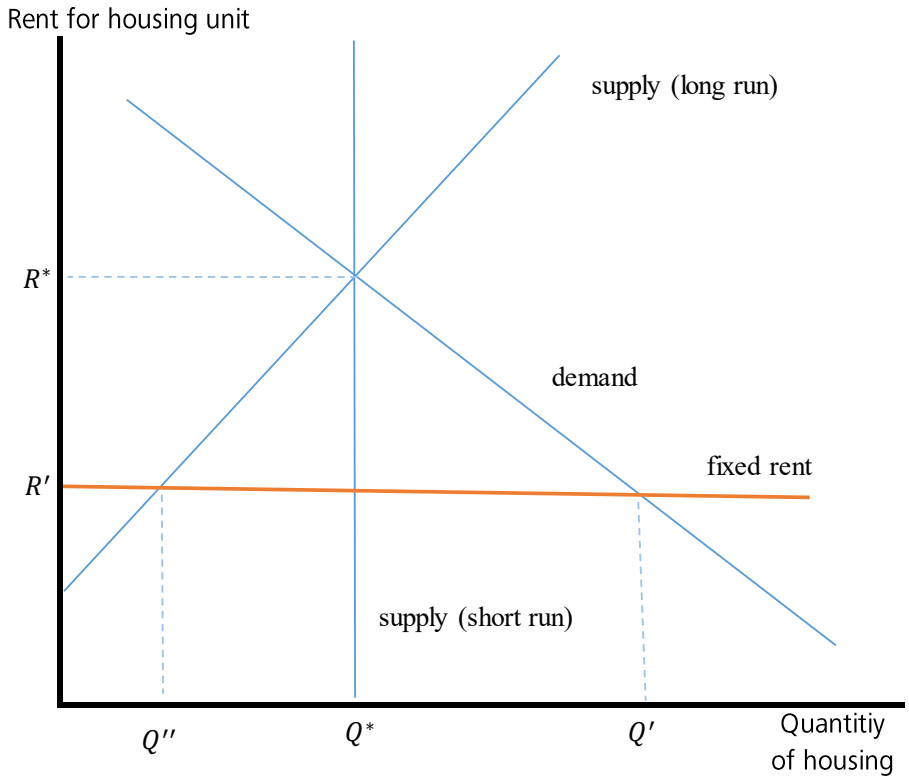
The role of tenure security is not profoundly addressed in economic theory, yet. Nevertheless, tenure security may play an important role for rental housing markets (Arnott 1995). Often models just distinguish between full tenure security and no security at all. Most probably, tenure security does not play a significant role in cases of nominal rent freeze and free rent regimes since the path of rents will not change if tenants change. In softer regimes, however, the level of security for tenants may play a significant role, especially when rents may be determined more freely between tenancies. The theoretical approach of Basu and Emerson (2000) with its extension made by Mora-Sanguinetti (2010) take these aspects of tenure security into account and offers a theoretical explanation for their effects on rents.

4.3.1 The theory of first-generation rent control regimes

The standard textbook model of rent control (Mankiw 2012) is probably the best known example of price controls in economic literature. Figure 4.1 illustrates a conventional supply-and-demand model that deals with the rental housing market. Of course, the here preferred approach is rather an ad-hoc than an explicit model of housing market (Frankena 1975).Nevertheless, it is a well-accepted way of illustrating the effects of strict rent control regimes leading to lower rents and a shrinking supply. There exist many ways of giving the model a deeper theoretical foundation and enhancement such as the introduction of quality adjustments or rent control as a revenue constraint (Frankena 1975; Arnott 1995). Thus, to keep this work as simple as possible none of these enhancements will be discussed here any further.

The assumptions here are the presence of homogeneous dwellings (constant housing services per housing unit), a declining demand curve, an increasing supply curve, and a perfectly competitive market. As the curves show, the scenario of a free rents regime leads to a pareto-efficient market clearing with a rent that equals R* and a quantity of dwellings at Q*. The introduction of a rent ceiling at R′ that is lower than R*, however, provides a pareto-inefficient combination of both quantity and price. A strict nominal rent freeze causes a decline of the quantity of dwellings from Q* to Q′ in the long run that corresponds with the rent restriction at R′. Furthermore, there will be an excess demand for dwellings of Q*-Q′. In a world of strict rent controls an increase in demand would not lead to a higher supply. The quantity would be stuck at the level Q* or Q″ (long run) due to the rent restrictions.

According to Arnott (Arnott 1995), the fixing of rents below the market rent level has three main effects. First, tenants who live in a rent-controlled dwelling benefit from lower rents and long-term tenancies to the detriment of households looking for a proper dwelling to rent. Second, landlords have to face lower returns on their rented dwellings and thus a fall in value of their property. Landlords may lower maintenance expenses or could try to convert the rented dwelling to owner-occupied housing. Third, the below-market rents leads to excess demand on the rental market that may encourage mismatches between tenants and dwellings such as the elderly widow that stays in a big flat even after the family has left while there is an acute housing shortage. Further, excess demand may promote a series of inefficiencies throughout the whole economy such as lower mobility within the labour force, a growing black-market for private tenancies with higher prices for housing or more discrimination against certain households.



Source: Frankeena (1975), Mankiw (2012)

Figure 4.1 Simple Textbook Model of Rent Control

4.3.2 The theory of second-generation rent control regimes

The economics of second-generation rent control regimes are more complex to investigate. On the one hand, there exists a wide range of different regimes that either differ clearly or only in details. In addition, the level of tenure security may influence the effects of second-generation rent control regimes. On the other hand, the market conditions such as perfectly or imperfectly competitive markets may have a bigger impact on market results.

In the following, the model proposed by Basu and Emerson (2000) and its modifications by Mora-Sanguinetti (2010) will be presented. The model helps explaining the effects of contemporary soft regulation regimes including the effects of tenure security. The basic model deals with a strict intertenancy decontrol regime and high tenure security. The modifications made by Mora-Sanguinetti widen the application of the model on contemporary rent regimes.

Basu and Emerson build a partial equilibrium model for the private rental housing market where the market is confronted with information asymmetries between the agents – landlord and tenants - and with adverse selection. The number of tenants may outnumber the number of landlords. Thus, the model also allows for the analysis of market powers. The theoretical foundation of the model is given by the ground-breaking work of Stiglitz and Weiss (1981) on asymmetric information on the market of bank credits.

The tenants are of different 'types' according to the amount of time that they plan to stay in a dwelling. All tenants of the same type are identical. It is assumed that every tenant knows the

length of her stay. In contrast, landlords do not know how long a tenant will stay in the rented dwelling, thus causing asymmetric information. In the basic model of Basu and Emerson, tenants are secure against eviction, and hence they can determine the length of their tenancy.

The number of tenant types is n and indexed by {1, …, n}. A fraction p_i of all tenants is of type I with all fractions summing up to 1. The indices refer to how long a tenant will stay in the same dwelling before moving out into another. If t_i represents the number of years a type i tenant plans to stay in the same dwelling, then the following holds:

$$t_1 < t_2 < t_3 < \cdots < t_n \tag{4.1}$$

According to Basu and Emerson, type 1 tenants are so-called restless souls. They change the rented dwelling every year. Tenants of type n, however, will stay the longest. All the other types are distributed between these two cases. The reasons for the differences in the length of tenancy across types are diverse and can include preferences, professional career paths or family affairs.

One crucial assumption of the model is the presence of inflation, which decreases the purchasing power of the rent the landlord receives every period. Moreover, due to rent control, the landlord is not allowed to adjust rents during a tenancy. Let R denote the initial nominal rent (in period 1) and assume that the inflation rate is given by (1-β). In addition, landlords value rents they receive later less than rents they receive in the present. Therefore, a discount factor δ is introduced into the model. Hence, in real terms, the present value of sum of rent payments for a tenant of type i is given by:

$$R(1 + \beta\delta + [\beta\delta]^2 + (\dots) + [\beta\delta]^{t-1}) \tag{4.2}$$

Once a tenancy ends and a new tenant takes over, the landlord can adjust the nominal rent to compensate for the inflation-induced loss in purchasing power. Summing up the rent income stream for an infinite succession of type i tenants, it can be shown that the landlord receives Rv_i where v_i is given by:

$$v_i = \{1 + \beta\delta + [\beta\delta]^2 + (\dots) + [\beta\delta]^{t_i-1} + \delta^{t_i} v_i\} \tag{4.3}$$

Then, the following holds[24]:

$$i < j \text{ then } v_i > v_j \tag{4.4}$$

[24] The proofs of (4.4) and (4.6) are transferred to the appendix of this chapter for clarity reasons.

Furthermore, the expected present value of returns to the landlord is given by $v_{(i)}$ if all tenants of type i or above are available to get picked by the landlord.

$$v_{(i)} = \sum_{k=i}^{n} \left(\frac{p_k}{\sum_{j=i}^{n} p_j} \right) \{1 + \beta\delta + [\beta\delta]^2 + (\ldots) + [\beta\delta]^{t_k - 1} + \delta^{t_k} v_{(i)}\} \quad (4.5)$$

Here, p_k is the probability that a landlord gets a type k tenant as a renter of the dwelling. Then, the following holds:

$$i < j \text{ then } v_{(i)} > v_{(j)} \quad (4.6)$$

Follow Basu and Emerson, denote the expected present value for the landlord as a function of the initial rents as V(R). It follows that the shorter a tenancy the higher is this present value of the renting. Thus, the model gives implies that landlords would prefer tenants that stay for a short time in order to maximise the (expected) present value of renting. This is due to the value-eroding nature of inflation.

Basu and Emerson introduced adverse selection into their model through an endogenous limitation of tenant types that are willing to rent. The idea is that renters may find it inappropriate to rent if rents are too high. These tenants then opt out for other possibilities of living, such as staying at their family home or entering the ownership market.

The adverse selection mechanism works as follows: Every tenant receives the same utility T from renting a home. The outside option, however, offers a utility of NT. An agent of type i stays in the rental market as a tenant if the difference of T and NT is equal or greater than the present value of rent payments.

$$T - NT = D \geq R v_i \quad (4.7)$$

Taking 4.4 and 4.7 together it follows that the short-staying tenants would leave the private tenancy market first. It has to be noted that D/v_n is the critical value at which the longest staying tenant stop renting and leaves the rental market. From the paragraphs above it follows that:

$$V(R) \text{ reaches its maximum when } R = \frac{D}{v_n} \quad (4.8)$$

Let C denote the exogenously given costs that the landlord incurs when renting out a dwelling (e.g. fees, administrative expenses or maintenance costs). In the original model Basu and Emerson assume, that this cost C is constant[25].

As a result of all the given paragraphs the following function holds for n = 4.

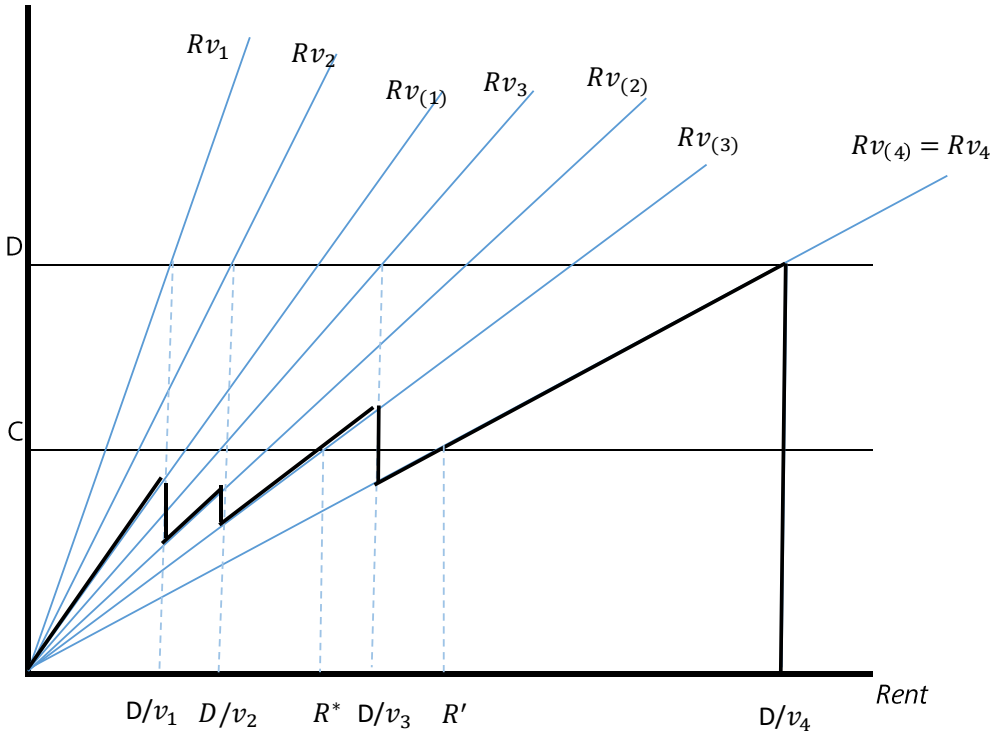
$$V(R) = \begin{cases} V(R) = v_{(1)} \text{ if } & R \leq D/v_1 \\ V(R) = v_{(2)} \text{ if } & D/v_1 < R \leq D/v_2 \\ V(R) = v_{(3)} \text{ if } & D/v_2 < R \leq D/v_3 \\ V(R) = v_{(4)} \text{ if } & D/v_3 < R \leq D/v_4 \\ V(R) = 0 \text{ if } & D/v_4 < R \end{cases}$$

According to the given set of paragraphs figure 4.2 illustrates the function V(R) as a thickened black line. Under perfect competition all tenants are price-takers and landlords are in competition to each other. The graph shows that under perfect competition there are two equilibria, at R* and R'. According to Basu and Emerson, R* is the only competitive equilibrium if landlords may deviate from equilibrium in both directions. They show this intuitively and through a game theoretical approach.

In a world of monopolistic landlords the market equilibrium rent would shift from R* to D/v_4. Here, only the tenants who want to rent a dwelling for four and more years will stay in the market. In contrast, in a free rent regime that allows landlords to fully adjust rents every period, landlords can treat all tenants as type 1. The same holds true for the absence of tenure security where landlords can evict tenants at the end of every period in order to get a new tenant and a higher rent. It follows that the landlord's present value for every tenant is given by Rv_1 hence the equilibrium rent shifts to a rent that corresponds with $R=C/v_1$ or $Rv_1 = C$. It follows that all tenants will stay in the market.

The result of this model can be summarized as follows: Rent control regimes with strong tenure security and strict rent control during the term of a tenancy but a loose control between the tenancy lead to higher rents than on a free market. Moreover, this kind of softer rent control regimes causes an exclusion of tenants who do not want to pay the higher rents. Intuitively, these higher rents compensate the landlord for lower future real rents due to inflation and the inability to adjust rents during the tenancy.

[25] Mora Sanguinetti (2010) argues that C may also rise inversely to the length of tenancies since special housing service costs arise between tenancies.



Source: Own elaboration, Basu & Emerson (2000), Mora Sanguinetti (2010)

Figure 4.2 Equilibrium with Four Types of Tenants

Basu and Emerson show that their results are relatively robust against several modifications. Thus, the introduction of endogenous tenant types, signals, identities and turnover costs do not change the central propositions of the model. A removal of this nowadays often used form of rent control would lead to a decrease of the equilibrium rent and an increase of the people willing to rent. However, the result is sensitive to a change in the rent regime such as the introduction of perfectly inflation-adjusted rents during the term. In that world the adverse selection problem would be overcome (Basu, Emerson 2000).

As far as the adjustment of rents by the rate of inflation is concerned, Mora-Sanguinetti claims the cost of housing increasing faster than the rate of inflation measured by the Harmonized Consumer Price Index for European countries. Thus, the adverse selection problem will usually not be overcome by inflation-linked rent systems. This means, the model formed by Basu and Emerson will also hold for the vast majority of second-generation rent control regimes with looser rent control during the tenancy. Mora-Sanguinetti shows that the inefficiencies in the tenancy market would increase due to the rent control regime with the discrepancy between the legally allowed adjustment rate and market rents.[26]

Finally, Mora-Sanguinetti shows that within the framework given by Basu and Emerson the inefficiencies of rent regimes with time limited protections persist. This variation of tenure security offers tenants full protection against eviction and a stricter rent control for a predetermined fixed term. At the end of the term the protection usually ends. Considering this, tenants enjoy

[26]The theoretical discussion and the proofs may be found under proof 3 and 4 in the appendix.

only a time limited protection by law. In other words, the rental market would only admit tenancies with a minimum duration term without eviction protection at the end of the term. Mora Sanguinetti proves that the expected present value of renting shrinks if the law protects tenants against eviction for a longer period. Thus, since m is the number of periods a tenant is protected against eviction by law, the following holds[27]:

$$v_{(i,m+1)} < v_{(i,m)} \tag{4.9}$$

The result of this subchapter is that both first-generation rent control and second-generation rent control regimes cause inefficiencies on private tenancy markets. However, while nominal rent freeze regimes lead to lower rents and a shrinking rental market, softer regulations may cause higher rents but also a shrinking tenancy market due to inefficiencies through information asymmetries and adverse selection. In the following two subchapters, the here presented theory will be taken to the data and tested empirically.

4.4 Data

This section deals with the variables that will be used in the quantitative analysis. The data gather economic information on 18 advanced economies from 1973 to 2014. Furthermore, a range of mutual exclusive rent control regimes for the whole time period will be presented. Table 4.1 describes the data used as variables and their sources.

The nominal rents mostly come from the OECD. The rents are from the OECD housing market dataset (Kennedy et al. 2006). Rents from countries that are not covered by the OECD data come from official national statistic agencies. Basically, nominal rents are taken from the OECD and national agencies for the different countries, states or towns. Due to a serious lack of data for Ontario, New South Wales, California and Massachusetts, rents from the biggest cities of these states are used as a proxy for the whole state.[28]

The majority of consumer price data is from the Thomson Reuters database. Countries not fully covered by the mentioned database are taken from official national agencies such as the FRED database of the Federal Reserve Bank of St. Louis or the Australian Bureau of Statistics. The real GDP per capita data and the population data are taken from the World Bank Dataset. For all economies, the GDP per Capita is displayed in US-Dollars. For Ontario, New South Wales, England, Massachusetts and California the country data are taken as proxies due to a lack of official state data for such a long time horizon. Nominal house price data for the mentioned countries are mostly from the mentioned OECD database and other databases of official agencies.

[27] The proof of 4.9 can be found under proof 5 in the appendix of this chapter.
[28] House price indices for Austria and New South Wales were too short. The basic series was then continued with a reasonable house price series of the same country by using its growth rates.

The transfer of rental market regulation (see chapter 2) into mutual exclusive rent control regimes is explained in the following. The different rent control regimes are divided up into six mutual exclusive regulation regimes, namely first-generation rent control regimes, second-generation rent control regimes and free rent regimes. Second-generation rent regimes in turn are stratified in four regimes along different levels of tenure security. According to Arnott (1995) tenure security is a crucial determinant of how the regulation of rent may impact rents or the whole housing market. The different regimes are listed from A to D and will be explained in alphabetical order. The source for the differentiation are the different dummies presented in table 2.1.

All second-generation rent control regimes have the same soft rent regulation, which is rent level regulation or real rent freeze regulation as defined in chapter 2. Both a nominal rent freeze regime and a rent free regime are left out here meaning that dummies D1 and/or D3 equal one. Dummy D2, however, is zero. Intertenancy decontrol that is checked by D4 is not considered here. First, this is due to the larger samples for every regime guaranteeing higher quality for the panel estimation. Second, it is assumed that in a world of soft rent control landlords have a stronger bargaining power at the beginning of a tenancy when several tenants contest for a tenancy. Tenants, however, enjoy higher power during the term thanks to tenure security. Then, landlords might be less able to get the maximum lawful rent escalation since tenants may reject the landlord's interest much easier as they already live in the dwelling. Thus, it is assumed that there is always some sort of intertenancy decontrol in soft rent regulation regimes.

The second-generation rent control regime A displays a regime with soft rent regulation and a very high tenure security with eviction protection during and at the end of a term and a mandatory minimum duration and/ or a prohibition of short term tenancies. Regime B checks for a rent regime where tenants are safe from unreasonable eviction during the tenancy but not at the end of a term or period. Furthermore, type-B regimes offer a mandatory minimum duration and/or prohibited short term tenancies as defined in chapter 2. In turn, regime C mirrors another type of tenure security in which tenants are protected from unreasonable eviction during and at the end of a tenancy term or period. Minimum duration terms are not mandatory by law and short term tenancies are not forbidden. Regime D differs from the type-C regime in the way that tenants are only protected during a period or term but not at the end. There are no mandatory minimum durations and short term tenancies are allowed.

TABLE 4.1
THE VARIABLES

Nominal Rents	Australian Bureau of Statistics (Sydney), Statistics Austria, Statistics Canada (Toronto), FRED (Boston, Los Angeles), OECD (all other countries)
Consumer price inflation	Australian Bureau of Statistics (Sydney), Statistics Canada (Toronto), FRED (Boston, Los Angeles, Denmark, France, UK), Thomson Reuters Datastream (all other countries)
GDP per Capita	World Bank (WDI database), in US Dollar (real)
Nominal House Prices	Stapledon (2007) & Australian Bureau of Statistics (Sydney), Statistics Austria (Vienna, Austria), Staistics Canada (Toronto), FRED (Massachusetts, California),
Population	World Bank (WDI database)
first generation rent control regime	Dummy variable that turns 1 if D2 = 1; see chapter 2 for more information
second generation rent control regime A	Dummy variable that turns 1 if D1 and/or D3=1, D2=0, D7=1, D8=1, D9 and/or D10=1; see chapter 2 for more information
second generation rent control regime B	Dummy variable that turns 1 if D1 and/or D3=1, D2=0, D7=1, D8=0, D9 and/or D10=1; see chapter 2 for more information
second generation rent control regime C	Dummy variable that turns 1 if D1 and/or D3=1, D2=0, D7=1, D8=1, D9 and D10=0; see chapter 2 for more information
second generation rent control regime D	Dummy variable that turns 1 if D1 and/or D3=1, D2=0, D7=1, D8=0, D9 and D10=0; see chapter 2 for more information
free rent regime	Dummy variable that turns 1 if D1=0, D2=0 , D3=0; see chapter 2 for more information

First-generation rent control regimes and free rent regimes are not differentiated by tenure security. The underlying assumption is that tenure security does not crucially matter for the evolution of rents for both, first-generation rent control regimes and free rent regimes. As for free rent regimes, it does not matter whether tenure security is high or low since landlords may freely adjust rents at any point of the contract since there are by law no restrictions (Basu, Emerson 2000). On the other hand, first-generation rent control regimes follow a similar logic. As rents cannot be adjusted between or during the term of a tenancy, the effects of tenure security may be negligible. Furthermore, there is nearly a full coincidence of nominal rent freeze[29] regimes and high tenure security in the form of high protection against eviction and minimum duration terms and forbidden short term tenancies.

4.5 Quantitative analysis

The effects of rental market regulation on rents were already examined from a theoretical point of view. At that, the presented models illustrate the diverse reaction of rents to different rent control regimes. While first-generation rent control regimes lead to lower rent dynamics some sort of second-generation rent control regimes may provoke higher rents. However, this holds true for a pure theoretical world. But what about the real world? The aim of this paragraph is to find an answer to this question. In the following, the regulation regimes and their effects on rent dynamics will be empirically tested in a cross-country analysis of 18 advanced economies over the period 1973 to 2014. The effects of the rent regimes will refer to the free rent version which fulfil the function of the benchmark regime. This is in line with the two models where the effects of the different rent control regimes also refer to the free rents market.

Before presenting the results, some aspects should be noted here. First, the goal is to present the interaction between regulation and rent dynamics in the simplest and most transparent way. Thus, standard estimation techniques rather than complex and elusive empirical approaches are used. Second, the robustness of the estimation results is tested by empirical standard tests and standard treatments such as adding country and time fixed effects. However, many adequate control variables such as vacancy rates are not available for the vast majority of economies for the whole observation period. Third, due to a lack of reputable data, information on rents is only available in the form of growth rates. Thus, the empirical analysis focusses solely on the year-on-year growth rates of (real) rents.

[29] Nominal rent freeze can be misleading here since the data shows that nominal rents were indeed adjusted. However, mostly the rent adjustments under these regimes turned out to be much lower than consumer price inflation.

TABLE 4.2
SUMMARY STATISTICS

	Observations	Mean	Standard Dev.	Min	Max
Real rent	725	0,006	0,041	-0,304	0,306
Nominal rent	725	0,051	0,054	-0,363	0,372
Real GDP per capita	725	0,017	0,022	-0,087	0,097
Inflation	738	0,046	0,045	-0,058	0,270
Real house prices	716	0,022	0,088	-0,236	0,609
Nominal house prices	716	0,068	0,096	-0,221	0,852
Population	738	0,006	0,005	-0,017	0,050

Note: The summary statistic shows year-on-year growth rates.

The mean growth rates of real rents for the different rent regimes are presented in table 4.3. The following three impressions can be received: First, real rent dynamics are on average negative for countries with the strictest rent control regime. Second, free rent regimes on average show real rents growth rate of 0.6 percent per year. Third, second-generation rent control regimes of the types B, C, and D show on average higher real rent growth rates. In this group, second-generation rent regimes with eviction protection during but not at the end of mandatory minimum duration term (type-B) show the highest real rent growth rates of more than 2 percent on average.

TABLE 4.3
REAL RENT GROWTH BY REGIME

This table presents the means of real rent growth for each rent regime. The analysis covers the sample of 18 advcanced economies over the period 1973 - 2014. Data descriptions can be found in the tables 2.1 and 4.1.

	Real Rent	Observations	Standard Dev.
First generation rent control regime	-0,012	105	0,048
Second generation rent control regime A	0,004	95	0,030
Second generation rent control regime B	0,022	50	0,077
Second generation rent control regime C	0,010	124	0,025
Second generation rent control regime D	0,009	158	0,023
Free rent regime	0,006	193	0,045

In the following, the effects of regime changes will be analysed. In order to visualise the effect of regime changes on rents the mean growth of real rents three years before and three years after the implementation of a new regime is examined. The results are presented in table 4.4. The results confirm the results of table 4.3 and the theoretical models presented in chapter

4.3. While real rents on average fall in the first two years after the implementation of first-generation rent control regimes real rent growth rates undergo a visible upturn after the implementation of the second-generation rent control regime B. The introduction of a free rent regime in turn does not show any strong rent escalations on average. For the remaining second-generation rent control regimes a clear movement cannot be drawn. At this point it has to be clarified that table 4.4 just descriptively shows real rent movements for a very short period. Therefore, more analytical methods are needed to describe the relationship between rent and eviction control regimes and the movement of rents on a more sophisticated level.

TABLE 4.4
REAL RENT GROWTH BEFORE AND AFTER REFORM

The six figures show the development of the average real rent growth rates for all countries that changed their rent control regime.

The correlations between the different rent regimes and real rent growth gives a foretaste of significant connections between the growth of real rents and the rental market regulation regime. They are displayed in table 4.5. The table shows three significant correlations to the ten percent level: (i) a positive correlation between second-generation rent control regime B and real rents, (ii) a negative correlation between first-generation rent control regimes and real rents, and (iii) a positive correlation between rea GDP per capita growth and real rents. These results so far confirm the theory and previous statistical evaluation.

TABLE 4.5
CORRELATION BETWEEN REAL RENT AND ITS DETERMINANTS

Real rents, real GDP per capita, population and real house prices are annual growth rates.

	Real Rent
First generation rent coontrol regime	-0.17***
Second generation rent control regime A	-0,01
Second generation rent control regime B	0.11***
Second generation rent control regime C	0,05
Second generation rent control regime D	0,05
Free rent regime	0,00
Real GDP/capita	0.07*
Population	-0,02
Real House Prices	0,01

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level

In table 4.6 the results of a panel estimation[30] are presented. The panel analysis follows the recommendations by Djankov et al. (2007) and Bertrand, Duflo, and Mullainathan (2004). Following their approach, the panel estimation addresses serious statistical problems that emerge through heteroscedasticity and serial correlation by the use of robust standard errors and clustered errors. Both country and time fixed effects and robust standard and clustered error terms are used. Using country and years fixed effects, the estimation takes advantage of within-country variation in institutional variables (Djankov et al. 2007). Furthermore, the results of the Hausman test[31] (Hausman 1978) support the decision to use of country fixed effects. However, the simultaneous use of year fixed effects and clustered error terms brings the number of exogenous

[30] The estimations were done with the statistical software Stata (Stata Corporation 2007). The Stata command *areg* is used here instead of the more popular Stata command *xtreg* since the latter does not offer the option of robust standard errors. In general the differences between the commands are only marginal. The results of *xtreg* shows a slightly smaller R^2 and marginally smaller clustered errors. The coefficients are, in turn, identical. Table 4.A6 in the appendix shows the marginal differences between the results of the two Stata commands using table 4.6 as the reference estimation. A deeper discussion of the methodological differences between *areg* and *xtreg* can be found here http://www.stata.com/support/faqs/statistics/areg-versus-xtreg-fe/

[31] The Hausman test can be found in the appendix of this chapter in table 4.A4.

variables in a disproportion to the degrees of freedom of the model. Hence, due to their robustness the results of these estimations have to be handled carefully although the results of this combination are presented.

The dependent variable is the year on year growth rate of real rents for each country and year. Exogenous variables are several dummy variables as identifiers of different rent regimes, namely first-generation rent control regimes and the second-generation rent control regimes A, B, C and D. The other rent regimes except free rent regimes are pooled by a dummy as a control variable since the evaluation and theory did not give a hint for any correlations between real rents and the implementation of such a regime. Furthermore, the growth of GDP per capita is used as a control variable. The panel results show a statistically significant positive effect of second-generation rent control regimes B of 2.6 and 2.7 percentage points on real rent growth rates compared with free rent regimes. Furthermore, first-generation rent control regimes have a significant negative effect of -2.7 to -3.0 percentage points on real rent growth compared with free rent regimes. The growth of real GDP per capita on real rents, however, is not significant for robust and clustered standard errors. According to the estimation results, the adjusted R is on a low to medium level.

According to the panel estimation results, the results mostly back the two theoretical approaches presented above in chapter 4.3. However, not all second-generation rent control regimes with a distinct level of tenure security match the theory. The estimation results show that there is no significant and robust relationship between the rent control regimes A, C and D and real rents. According to Basu and Emerson (2000), even for the regime A and C there should have been significantly higher growth rates than in free rent regimes. An intuitive explanation for this is that landlords may not be able to recalibrate the rents enough if tenancies are designed by law for an unlimited time because tenancies are too long to assess proper higher rents at the beginning. It is very likely that landlords have a much weaker bargaining position in these regimes since they are generally forced to negotiate rent adjustments during the term of a tenancy. In countries where the regulation regime offers tenancies unlimited in time[32] (if D8=1) tenants stay up to ten or more years in the dwelling. In that context landlords have little space for a strong rent bargaining position. However, in regimes with time limited tenancies with a minimum duration of two or more years and no eviction protection at the end of the term, landlords regularly enjoy the more powerful bargaining position. These regimes may come closest to the reality which is theoretically described by Basu and Emerson and Mora Sanguinetti.

To check for the robustness of the estimation results other control variables such as the growth rate of population and the real growth rate of house prices are added. The robustness checks show that these additional variables do not influence the significance of first-generation and type-B second-generation rent control regimes. The results are presented in Table 4.A2 in the appendix. Furthermore, four different country samples are generated for further robustness checks. In each sample several countries with a certain legal origin are excluded. In eleven out of twelve estimations the results of table 4.6 are confirmed. The estimation results can be found in the tables 4.A2 to 4.A4 of the appendix. Finally, the estimation results are even robust against a variation of the estimation's time horizon such as a six years cut-off at the beginning or end of

[32] For more on this please see chapter 2.

the time period (table 4.A5). However, shortening the time horizon dampens the explanatory power of the estimations since most rent freeze systems are located in the 1970s. In other words, the results in table 4.6 are robust against different variations of the underlying data sample. In total, 28 out of 29 robustness checks fully confirm the results in table 4.6.

TABLE 4.6
PANEL REGRESSIONS

This is a panel regression of 18 avanced economies over the period 1973 - 2014. The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Robust standard errors and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1.

	Model 1 Robust SE	Model 2 Clustered SE	Model 3 Clustered SE	Model 4 Robust SE	Model 5 Clustered SE	Model 6 Clustered SE
1st rent control regime	-0.027*** (0.007)	-0.027*** (0.006)	-0.031** (0.011)	-0.027*** (0.007)	-0.027*** (0.006)	-0.030** (0.011)
2nd rent control regimes						
Type-A	-0,004 (0.007)	-0,004 (0.008)	-0,007 (0.009)			
Type-B	0.026* (0.013)	0.026** (0.010)	0.027** (0.009)	0.026* (0.013)	0.026** (0.010)	0.027*** (0.009)
Type-C	0,004 (0.009)	0,004 (0.007)	0,007 (0.009)			
Type-D	-0,003 (0.008)	-0,003 (0.007)	-0.001 (0.008)			
Type-ACD				-0.001 (0.006)	-0.001 (0.006)	-0.002 (0.007)
GDP per capita	0.163 (0.141)	0.163 (0.131)	0,176 (0.144)	0,165 (0.140)	0,165 (0.129)	0.181 (0.143)
Constant	-0.050*** (0.011)	-0.050*** (0.010)	0,005 (0.006)	-0.051*** (0.011)	-0.051*** (0.011)	0.006 (0.005)
Year Effects	YES	YES	NO	YES	YES	NO
Country Effects	YES	YES	YES	YES	YES	YES
Observations	712	712	712	712	712	712
Adjusted R^2	0,13	0,13	0,08	0,13	0,13	0,08

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

4.6 Conclusion

Using a new and unique sample of 18 advanced countries on private tenancy regulation, the proposition of two models considering the effects of private rental market regulation on real rents are quantitatively revisited. This chapter shows that the quantitative analysis of the mentioned dataset most widely backs the theory. This study comes to three main results. First of all, very strict rent control regimes do provoke lower real rent growth rates than regimes with free rents. This result coincides with the basic and very well-known textbook model.

Second, tenure security plays a significant role for softer regulation types that belong to the group of second-generation rent control regimes. The quantitative analysis shows that soft rent control regimes with time limited tenure security mandatory minimum duration periods may cause higher rent dynamics than rental markets under free rents. This is in line with the theoretical approach given by Basu and Emerson (2000) and Mora-Sanguinetti (2010). Their theories state that under adverse selection and information asymmetries, soft rent control regimes lead to higher rents if tenure security is high and landlords have greater power to adjust the rent at the start of the tenancy rather than during the term of a tenancy. In contrast to Basu and Emerson's model, however, a statistically significant rent appreciating effect cannot be shown for soft rent regimes that encourage tenancies unlimited in time through profound eviction protection rules. An explanation may be that landlords are in a weaker position for too long to reach the critical value towards effective bargaining power. This situation is ensured by rent regimes where tenants may stay in a rented dwelling very long due to time-unlimited tenure security.

Third, the rent free regime that is also the benchmark regime on average does not show high real rent appreciation rates. Instead, the data reveals that the mean real rent growth is slightly over zero for free rent regimes. Furthermore, high rent appreciation rates are not conducted shortly after the implementation of free rent regimes. This is antithetic to the often politically exploited view that a lack of regulation tremendously heats up rents.

Appendix E: Proofs of the models

Proof 1 (Basu, Emerson 2000):

It is assumed that $t_j = t_{i+1}$. Let v_j^kbe the present value of rents earned by a landlord whose first k tenants are of type i and all others of type j. (Hence, $v_j^0 = v_j$)

It can be shown that $v_j^1 > v_j$.

$$v_j^1 = 1 + \beta\delta + (\beta\delta)^2 + \cdots + (\beta\delta)^{t_i - 1} + \delta^{t_i} v_j$$

Since $t_j = t_{i+1}$, and given (4.3) and (4.5), it follows that:

$$v_j^1 - v_j = \delta^{t_i} v_j - (\beta\delta)^{t_i} - \delta^{t_i+1} v_j$$

$$v_j^1 - v_j = \delta^{t_i}\left[(1-\delta)v_j - \beta^{t_i}\right]$$

$$v_j^1 - v_j = (1-\delta)\delta^{t_i}\left[v_j - \frac{\beta^{t_i}}{1-\delta}\right]$$

Then $v_j > \frac{\beta^{t_i}}{1-\delta}$.

$v_j$is the present value of the sequence $[1, \beta, \beta^2, \ldots, \beta^{t_i}, 1, \beta, \beta^2, \ldots, \beta^{t_i}, 1, \ldots]$. On the right-hand side there is the present value of the stream $[\beta^{t_i}, \beta^{t_i}, \ldots]$. The first term constantly dominates the former. Thus, since $v_j > \frac{\beta^{t_i}}{1-\delta}$ is true it follows that $v_j^1 > v_j$.

Furthermore, $v_j^k > v_j^{k-1}$, ∀k, and that $\lim_{k\to\infty} v_j^k = v_i$, therefore it follows that $v_i > v_k$.

Proof 2 (Basu, Emerson 2000):

For all k,

$$v_k = 1 + \beta\delta + (\beta\delta)^2 + \cdots + (\beta\delta)^{t_k - 1} + \delta^{t_k} v_k$$

Or

$$(1 - \delta)v_k = 1 + \beta\delta + (\beta\delta)^2 + \cdots + (\beta\delta)^{t_k - 1}$$

Substituting this in (4.5), it follows

$$v_{(i)} = \frac{\sum_{k=i}^{n} \left(\frac{p_k}{\sum_{j=i}^{n} p_j} \right) (1 - \delta^{t_k}) v_k}{1 - \sum_{k=i}^{n} \left(\frac{p_k}{\sum_{j=i}^{n} p_j} \right) \delta^{t_k}}$$

Or

$$v_{(i)} = \frac{\sum_{k=i}^{n} p_k (1 - \delta^{t_k}) v_k}{\sum_{k=i}^{n} p_j - \sum_{k=i}^{n} p_k \delta^{t_k}}$$

It has to keep in mind that in case the term v_k was not on the right side of the latter equation the whole term would equal one. It is obvious that $v_{(i)}$ is the weighted average of all v_i for i= 1,…,n. According to Basu and Emerson, if j > i, change the following term from v_j, …, v_n to v_i, …, v_{j-1} then v_i is gotten from v_j. From $v_k > v_j$, for all k < j, (see proof 1 further up), it follows that $v_{(i)} > v_{(j)}$.

Proof 3 (Mora Sanguinetti 2010):

In the following the basic model of Basu and Emerson (2000) with perfectly inflation-adjusted rents is displayed.

If landlords are allowed to adjust rents every period by the same amount of the inflation the following holds with δ as a discount factor:

$$v_i = \{1 + \delta + \delta^2 + \cdots + \delta^{t_i - 1} + \delta^{t_i} v_i\}$$

This may be also written as:

$$v_i = \frac{(1 - \delta^{t_i})}{(1 - \delta)(1 - \delta^{t_i})} = \frac{1}{(1 - \delta)}$$

The missing of any sub-index describing the tenant's type shows that the type is irrelevant for the calculus of the landlord.

If perfect inflation-adjustment is allowed equation (4.5) may be simplified to:

$$v_{(i)} = \frac{1}{(1 - \delta)}$$

This equation, again, shows that the tenant's type becomes irrelevant for the landlord's calculus.

It follows that the type of the tenant now is also irrelevant for the decision of renting overall. It follows that:

$$\frac{R}{(1 - \delta)} \leq T + NT$$

Proof 4 (Mora Sanguinetti 2010):

Now, let assume that landlords may adjust the rents after every period by the inflation rate but the adjustments constantly miss the increase of the true market rents that grow by 1-γ. Furthermore, it has to be assumed that θ is the growth rate that is allowed by rent laws. In this case θ may be the rate of the overall inflation. It has to kept in mind that $\theta = 1 - \beta$. According to that, the adjustments fail to offset the true dynamics of rents. The stream of income can be showed by the following stream.

$$1 + (\gamma + \theta) + (\gamma + \theta)^2 + \cdots + (\gamma + \theta)^{t_i - 1} + 1 + (\gamma + \theta) + (\gamma + \theta)^2 + \cdots + (\gamma + \theta)^{t_i - 1} + \cdots$$

Adding the discount factor δ leads to:

$$v_i = \{1 + \delta(\gamma + \theta) + (\delta(\gamma + \theta))^2 + \cdots + (\delta(\gamma + \theta))^{t_i - 1} + \delta^{t_i} v_i\}$$

That is:

$$v_i = \frac{1 - [\delta(\gamma + \theta)]^{t_i}}{[1 - \delta(\gamma + \theta)(1 - \delta^{t_i})]}$$

It is easy to see that the following holds:

If i < j then $v_i > v_j$

To proof this equation under these special assumptions it is assumed that t_j=t_{i+1}. In addition, it is assumed that v_j^k is the present value of rents to the landlord whose first k tenants are of type i while all others are of j-type tenants. It can be seen that $v_j^1 > v_j$. If R = 1, the following equation holds:

$$v_j^1 = 1 + \delta(\gamma + \theta) + (\delta(\gamma + \theta))^2 + \cdots + (\delta(\gamma + \theta))^{t_j - 1} + \delta^{t_j} v_j$$

Since $t_j = t_{i+1}$ it follows that

$$v_j^1 - v_j = (1 - \delta)\delta^{t_i}\left(v_j - \frac{(\gamma + \theta)^{t_i}}{(1 + \delta)}\right)$$

Finally, it may be concluded that:

$$\frac{(\gamma+\theta)^{t_i}}{1-\delta} < v_j$$

The last equation implies that $v_j^1 > v_j$ since it must be true that $v_i > v_j$ if $v_j^k > v_j^{k-1}$ and $lim_{k\to\infty} v_j^k = v_i$.

As in the basic version of the model $v_{(i)}$ shows the income stream of a landlord for all type-i-tenants and above are available for renting.

$$v_{(i)} = \sum_{k=i}^{n} \left(\frac{p_k}{\sum_{j=i}^{n} p_j}\right)\left(1+\delta(\gamma+\theta)+(\delta(\gamma+\theta))^2+\cdots+(\delta(\gamma+\theta))^{t_k-1} + (\delta(\gamma+\theta))^{t_k} v_{(i)}\right)$$

This can be rewritten as follows:

$$v_{(i)} = \frac{\sum_{k=i}^{n} p_k(1-\delta^{t_k})v_k}{\sum_{j=i}^{n} p_j - \sum_{k=i}^{n} p_k \delta^{t_k}}$$

It can be proofed that the following holds then:

$$If\ i < j\ then\ v_{(i)} > v_{(j)}$$

As noted before, v_k is:

$$v_k = 1+\delta(\gamma+\theta)+(\delta(\gamma+\theta))^2+\cdots+(\delta(\gamma+\theta))^{t_k-1}+\delta^{t_k}v_k$$

That equals,

$$(1-\delta^{t_k})v_k = 1+\delta(\gamma+\theta)+(\delta(\gamma+\theta))^2+\cdots+(\delta(\gamma+\theta))^{t_k-1}$$

Then, $v_{(i)}$ can be written as:

$$v_{(i)} = \frac{\sum_{k=i}^{n}\left(\frac{p_k}{\sum_{j=i}^{n} p_j}\right)[1+\delta(\gamma+\theta)+(\delta(\gamma+\theta))^2+\cdots+(\delta(\gamma+\theta))^{t_k-1}]}{1-\sum_{k=i}^{n}\left(\frac{p_k}{\sum_{j=i}^{n} p_j}\right)\delta^{t_k}}$$

It follows from the combination of the two former equations:

$$v_{(i)} = \frac{\sum_{k=i}^{n}\left(\frac{p_k}{\sum_{j=i}^{n} p_j}\right)(1-\delta^{t_k})v_k}{1-\sum_{k=i}^{n}\left(\frac{p_k}{\sum_{j=i}^{n} p_j}\right)\delta^{t_k}}$$

According to Mora-Sanguinetti this equals the equation at the beginning of the proof:

$$v_{(i)} = \frac{\sum_{k=i}^{n} p_k(1-\delta^{t_k})v_k}{\sum_{k=i}^{n} p_j - \sum_{k=i}^{n} p_k\delta^{t_k}}$$

The term $v_{(i)}$ is a weighted average of $v_i, v_{i+1}, \ldots, v_n$. If j > i then $v_{(i)}$ is obtained from $v_{(j)}$distributing the weight that j had among the rest of the values of v (i.e. for i, i+1, … , j-1). It may be concluded so far that if k < j and$v_k > v_j$, then it must follow that $v_{(i)} > v_{(j)}$(in case j < i).

The following calculus for the decision of renting holds under the given assumptions:

$$T - NT = D > Rv_i$$

Proof 5 (Mora Sanguinetti 2010):

To prove 4.10, it is known that,

$$v_{(i,m+1)} - v_{(i,m)} = \frac{\sum_{k=i}^{m+1} p_k\left(1-\delta^k\right)v_k}{\sum_{j=i}^{m+1} p_j\,(1-\delta^j)} - \frac{\sum_{k=i}^{m} p_k\left(1-\delta^k\right)v_k}{\sum_{j=i}^{m} p_j\,(1-\delta^j)}$$

This equation may be also written as:

$$v_{(i,m+1)} - v_{(i,m)}$$
$$= \frac{\sum_{k=i}^{m} p_k(1-\delta^k)v_k \left(\frac{\sum_{k=i}^{m} p_k(1-\delta^k)v_k}{\sum_{j=i}^{m} p_j\,(1-\delta^j)} - \frac{\sum_{k=i}^{m+1} p_k(1-\delta^k)}{\sum_{j=i}^{m+1} p_j\,(1-\delta^j)} \right) + p_{m+1}(1-\delta^{m+1})v_{m+1}}{\sum_{j=i}^{m+1} p_j\,(1-\delta^j)}$$

The term is lower than zero as it can be seen in the following term:

$$v_{(i,m+1)} - v_{(i,m)} = \frac{p_{m+1}(1-\delta^k)v_k \left(\frac{\sum_{k=i}^{m} p_k(1-\delta^k)v_k}{\sum_{j=i}^{m} p_j\,(1-\delta^j)} - \frac{\sum_{k=i}^{m+1} p_k(1-\delta^k)}{\sum_{j=i}^{m+1} p_j\,(1-\delta^j)} \right)}{\sum_{j=i}^{m+1} p_j\,(1-\delta^j)} < 0$$

Appendix F: Rent control regimes

TABLE 4.A1

THE RENT CONTROL REGIMES

US1 is Massachusetts/ Boston; US2 is California/Los Angeles; First is First-generation rent control regime; A is 2nd-genration rent control regime A; B is 2nd-genration rent control regime B; C is 2nd-genration rent control regime C, D is 2nd-genration rent control regime D; free is free rent regime

	AUS	AUT	CAN	DEN	UK	FIN	FRN	GER	IRE	ITA	NED	NZL	NOR	SPA	SWE	SWI	US1	US2
1973	A	C	free	first	A	first	free	C	first	first	A	A	A	first	first	free	free	free
1974	A	C	free	first	A	first	free	C	first	first	A	A	A	first	first	free	free	free
1975	A	C	first	D	A	first	free	C	first	first	A	A	A	first	first	free	free	free
1976	A	C	first	D	A	first	first	C	first	first	A	A	A	first	first	free	free	free
1977	A	C	first	D	A	first	first	C	first	first	A	A	A	first	first	free	free	free
1978	A	C	first	D	A	first	first	C	first	B	A	A	A	first	first	free	free	free
1979	A	C	first	D	A	first	first	C	first	B	C	A	A	first	first	free	free	first
1980	A	C	first	D	C	first	first	C	first	B	C	A	A	first	first	free	free	first
1981	A	free	first	D	C	first	first	C	first	B	C	A	A	first	first	free	free	first
1982	A	free	first	D	C	first	first	C	free	B	C	A	free	first	first	free	free	first
1983	A	free	first	D	C	first	first	C	free	B	C	A	free	first	first	free	free	first
1984	A	free	first	D	C	first	first	C	free	B	C	A	free	first	first	free	free	first
1985	A	free	first	D	C	first	first	C	free	B	C	A	free	D	first	free	free	first
1986	A	free	C	D	C	first	B	C	free	B	C	D	free	D	first	free	free	first
1987	D	free	C	D	C	A	B	C	free	B	C	D	free	D	first	C	free	first
1988	D	free	C	D	D	A	B	C	free	B	C	D	free	D	first	C	free	first
1989	D	free	C	D	D	A	A	C	free	B	C	D	free	D	first	C	free	first
1990	D	free	C	D	D	A	A	C	free	B	C	D	free	D	first	D	free	first
1991	D	free	C	D	D	A	A	C	free	B	C	D	free	D	first	D	free	first
1992	D	free	C	D	D	A	A	C	free	B	C	D	free	D	first	D	free	first
1993	D	free	C	D	D	A	A	C	free	B	C	D	free	D	first	D	free	first
1994	D	free	C	D	D	A	A	C	free	B	C	D	free	A	first	D	free	first
1995	D	free	C	D	D	free	A	C	free	B	C	D	free	A	first	D	free	first
1996	D	free	C	D	D	free	A	C	free	B	C	D	free	A	first	D	free	free
1997	D	free	C	D	D	free	A	C	free	B	C	D	free	A	first	D	free	free
1998	D	free	C	D	D	free	A	C	free	free	C	D	free	A	first	D	free	free
1999	D	free	C	D	D	free	A	C	free	free	C	D	B	A	first	D	free	free
2000	D	free	C	D	D	free	A	C	free	free	C	D	B	A	first	D	free	free
2001	D	free	C	D	D	free	A	C	free	free	C	D	B	A	first	D	free	free
2002	D	free	C	D	D	free	A	C	free	free	C	D	B	A	first	D	free	free
2003	D	free	C	D	D	free	A	C	free	free	C	D	B	A	first	D	free	free
2004	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2005	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2006	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2007	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2008	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2009	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2010	D	free	C	D	D	free	A	C	B	free	C	D	B	A	first	D	free	free
2011	D	free	C	D	D	free	A	C	B	free	C	D	B	A	A	D	free	free
2012	D	free	C	D	D	free	A	C	B	free	C	D	B	A	A	D	free	free
2013	D	free	C	D	D	free	A	C	B	free	C	D	B	free	A	D	free	free
2014	D	free	C	D	D	free	A	C	B	free	C	D	B	free	A	D	free	free

Appendix G: Robustness analysis

TABLE 4.A2
ROBUSTNESS CHECK

The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Robust standard errors and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1. The models A1-A3 check for further control variables such as the year-on-year real house price growth rate and the year-on-year population growth rate. The models A4-A6 check for a smaller country sample where common law countries are excluded.

	Model A1 Robust SE	Model A2 Clustered SE	Model A3 Clustered SE	Model A4 Robust SE	Model A5 Clustered SE	Model A6 Clustered SE
1st rent control regime	-0.034***	-0.034***	-0.037**	-0.030***	-0.030**	-0.035**
	(0.008)	(0.008)	(0.013)	(0.008)	(0.011)	(0.012)
2nd rent control regimes						
Type-B	0.023*	0.023**	0.025***	0.016***	0.016***	0.017***
	(0.013)	(0.008)	(0.007)	(0.006)	(0.004)	(0.005)
Type-ACD	-0.009	-0.009	-0,007	-0.004	-0.004	-0.005
	(0.007)	(0.007)	(0.009)	(0.006)	(0.006)	(0.006)
Population	1,113	1,113	0.930			
	(0.724)	(0.656)	(0.738)			
House Prices	-0,021	-0,021	-0.032			
	(0.022)	(0.037)	(0.043)			
GDP per capita	0.224	0.224	0,254	0,109	0,109	0.016
	(0.158)	(0.156)	(0.206)	(0.123)	(0.243)	(0.158)
Constant	-0.047***	-0.047***	0,004	-0.036**	-0.036**	0.013
	(0.016)	(0.012)	(0.007)	(0.016)	(0.011)	(0.006)
Year Effects	YES	YES	NO	YES	YES	NO
Country Effects	YES	YES	YES	YES	YES	YES
Observations	690	690	690	430	430	430
Adjusted R^2	0,12	0,12	0,09	0,25	0,25	0,16

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

TABLE 4.A3
ROBUSTNESS CHECK

The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Robust standard errors and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1. The models A7-A9 check for a smaller country sample where French law countries are excluded. The models A10-A12 check for a country sample where the Scandinavian legl origin countries are excluded.

	Model A7 Robust SE	Model A8 Clustered SE	Model A9 Clustered SE	Model A10 Robust SE	Model A11 Clustered SE	Model A12 Clustered SE
1st rent control regime	-0.024*** (0.008)	-0.024*** (0.006)	-0.026** (0.011)	-0.028*** (0.009)	-0.028*** (0.008)	-0.031* (0.015)
2nd rent control regimes						
Type-B	0.044** (0.022)	0.044** (0.015)	0.035* (0.019)	0,027 (0.020)	0.027* (0.015)	0.033*** (0.010)
Type-ACD	-0,001 (0.007)	-0,001 (0.008)	-0,003 (0.007)	0,004 (0.008)	0,004 (0.007)	0,001 (0.009)
GDP per capita	0,282 (0.147)	0,282 (0.155)	0,267 (0.183)	0,19 (0.191)	0,19 (0.126)	0,195 (0.168)
Constant	-0.049*** (0.013)	-0.049*** (0.016)	0,005 (0.005)	-0.062*** (0.011)	-0.062*** (0.010)	0,003 (0.007)
Year Effects	YES	YES	NO	YES	YES	NO
Country Effects	YES	YES	YES	YES	YES	YES
Observations	548	548	548	561	561	561
Adjusted R^2	0,11	0,11	0,06	0,13	0,13	0,08

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

TABLE 4.A4
ROBUSTNESS CHECK

The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Simple, robust and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1. The models A13-A15 covers the estimations for a panel where german legal origin countries are excluded. The models A16 and A17 shows the Hausman test analysis. A16 and A17 are estimated with the Stata command *xtreg* as specified in Stata.

	Model A13 Robust SE	Model A14 Clustered SE	Model A15 Clustered SE	Model A16 Simple SE	Model A17 Simple SE
1st rent control regime	-0.028*** (0.008)	-0.028*** (0.006)	-0.030** (0.012)	-0.030*** (0.006)	-0.022*** (0.005)
2nd rent control regimes					
Type-B	0.024* 0.013	0.024** 0.010	0.028** (0.001)	0.027*** (0.007)	0.021*** (0.007)
Type-ACD	-0,007 (0.008)	-0,007 (0.008)	-0.00 (0.010)	-0,002 (0.007)	0,002 (0.004)
GDP per capita	0.161 (0.154)	0.161 (0.150)	0.213 (0.158)	0.181*** (0.068)	0.167** (0.067)
Constant	-0.050*** (0.013)	-0.050*** (0.011)	0.004 (0.007)	0,006 (0.005)	0,004 (0.004)
Hausman test				chi2 (4) = 12.98 p-value= 0.0114	
Year Effects	YES	YES	NO	NO	NO
Country Effects	YES	YES	YES	YES	NO
Observations	597	597	597	712	712
Adjusted/ Within R^2	0,12	0,12	0,08	0,08	0,07

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

TABLE 4.A5
ROBUSTNESS CHECK

The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Robust standard errors and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1. The models A18-A20 covers the estimations for a panel that starts in 1979. The models A21-A23 shows the estimations results for a panel that end already in 2008.

	Model A18 Robust SE	Model A19 Clustered SE	Model A20 Clustered SE	Model A21 Robust SE	Model A22 Clustered SE	Model A23 Clustered SE
1st rent control regime	-0.020*** (0.006)	-0.020*** (0.006)	-0.017*** (0.003)	-0.029*** (0.008)	-0.029*** (0.006)	-0.034** (0.012)
2nd rent control regimes						
Type-B	0.023* (0.013)	0.026** (0.009)	0.023** (0.008)	0.038*** (0.013)	0.038* (0.022)	0.040* (0.021)
Type-ACD	-0.002 (0.006)	-0.002 (0.005)	-0.002 (0.007)	-0.001 (0.007)	-0.001 (0.007)	-0.002 (0.007)
GDP per capita	0.194 (0.141)	0.194 (0.151)	0,206 (0.164)	0,087 (0.130)	0,087 (0.128)	0.071 (0.110)
Constant	-0.002 (0.013)	-0.002 (0.015)	0,007 (0.005)	-0.049*** (0.011)	-0.049*** (0.011)	0.009 (0.006)
Year Effects	YES	YES	NO	YES	YES	NO
Country Effects	YES	YES	YES	YES	YES	YES
Observations	641	641	641	606	606	606
Adjusted R^2	0,04	0,04	0,04	0,17	0,17	0,11

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

TABLE 4.A6
ROBUSTNESS CHECK

The rent control regimes are discrete variables euqal to one if the respective criterions are fullfilled. Simple standard errors and clustered standard errors are in parantheses. The dependent variable is the real rent growth rate. Variables are described in table 4.1. The models A24-A29 covers the estimations for panels that were estimated with the Stata command *xtreg* instead of *areg* . The results in table 4.6 and 4.A4 are almost identical.

	Model A24 Simple SE	Model A25 Clustered SE	Model A26 Clustered SE	Model A27 Simple SE	Model A28 Clustered SE	Model A29 Clustered SE
1st rent control regime	-0.027*** (0.007)	-0.027*** (0.006)	-0.031** (0.011)	-0.027*** (0.007)	-0.027*** (0.006)	-0.030** (0.011)
2nd rent control regimes						
Type-A	-0,004 (0.007)	-0,004 (0.007)	-0,007 (0.009)			
Type-B	0.026*** (0.007)	0.026** (0.010)	0.027*** (0.009)	0.026*** (0.007)	0.026** (0.010)	0.027*** (0.009)
Type-C	0,004 (0.009)	0,004 (0.007)	0,007 (0.009)			
Type-D	-0,003 (0.009)	-0,003 (0.007)	-0.001 (0.009)			
Type-ACD				-0.001 (0.007)	-0.001 (0.006)	-0.002 (0.007)
GDP per capita	0.163* (0.093)	0.163 (0.129)	0,176 (0.142)	0.165* (0.092)	0,165 (0.127)	0.181 (0.141)
Constant	-0.050*** (0.011)	-0.050*** (0.010)	0,005 (0.006)	-0.051*** (0.011)	-0.051*** (0.011)	0.006 (0.005)
Year Effects	YES	YES	NO	YES	YES	NO
Country Effects	YES	YES	YES	YES	YES	YES
Observations	712	712	712	712	712	712
Within R^2	0,18	0,18	0,08	0,18	0,18	0,08
Between R^2	0,01	0,01	0,01	0,00	0,00	0,01
Overall R^2	0,14	0,14	0,04	0,14	0,14	0,04

***= significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

5 Conclusion of the Dissertation

This dissertation offers important new insights into rental market regulation. So far, economic literature on rental market regulation fails to provide a comprehensive overview of private tenancy regulation over a suitable number of countries and years which can be properly used for quantitative and qualitative economic analyses. It is the aim of this dissertation to close this problematic gap and noticeably enhance the knowledge on the economics of rent and eviction control. The results of this work provide a proper base for further research on rental markets on a cross-country level.

The first essay (chapter 2) develops the essential requirements for the two consecutive chapters. This chapter's centrepiece is the construction of variables properly describing the regulation of private tenancies. Ten dummies are presented that check for different outcomes of rent and eviction control. Three indices have their source in these dummies, namely the rent laws index, the tenure security laws index and the rental market regulation index which is the composite measurement of all dummies. The measurements are employed on a time-variant panel covering 42 years and 18 advanced economies and a time-invariant panel covering 66 countries at 2010. The data sources range from first hand data to country reports where rent and tenure security laws are already summarised. The methodology follows scientifically recognised procedures of transformation law and regulation patterns into quantitative units of measurement (La Porta et al. 2008; Deakin et al. 2007). Furthermore, the dummies properly check for characteristics of scientifically recognized classifications such as first- and second-generation rent control regimes or tenancy rent control regimes (Arnott 1995, 2003).

The time-variant data confirms the different phases of regulation over the past 42 years. In addition, it can be shown that the convergence theory stating that regulation converges over time irrespective of its legal origin (Djankov et al. 2007) mostly holds for rent control laws. As far as tenure security laws are concerned, the data shows a converging downward trend in the average level of tenure security only for Scandinavian legal origin and common law countries. The two following essays build upon the indices that were created in this chapter. While in chapter 3 the basic determinants of the level of rent and eviction control are investigated on the basis of the time-invariant dataset, chapter 4 explores the effects of the different rent control regimes on real rents.

In chapter 3, the basic determinants of rental market regulation are examined. Three theories of government regulation are employed on rent and eviction control, namely the political power theory (Botero et al. 2004), the legal origin theory (La Porta et al. 2008) and the theory on the impact of culture (Stulz, Williamson 2003). The political power theory states that regulation is formed by politically empowered leaders promoting themselves or their interest group. The legal origin theory, in turn, argues that regulation is determined by its legal tradition. However, regulation may also be shaped by cultural aspects such as religion which is used as a proxy for culture in chapter 3. Due to a lack of time-variant political power variables, the theories are tested on the basis of the time-invariant index from chapter 2. The procedure of analysis in chapter 3 mainly follows the scientific work of Botero et al. (2004) who investigated the regulation of labour in 85 countries.

The results of several ordinary least squares regressions show that legal origin significantly matters for the level of tenure security. French legal origin countries have significantly higher levels of tenure security. This relationship is more robust for more developed countries. Countries with a Protestant history, however, have less eviction control. Though, this relationship is not as robust as the impact of French legal origin. The positive impact of leftist and centrist oriented parties in power on the level of tenure security only matters for high developed economies. Furthermore, the regulation of eviction correlates with the regulation in other domains, e.g. labour market regulation. The different outcomes of rent control over the country sample, however, cannot be explained by any of the given theories. Furthermore, there is no significant correlation with other domains. This may be due to the convergence of rent control in the past three decades that is shown for the time-variant dataset in chapter 2.

In chapter 4, the effects of rent and eviction control on the development of real rents are theoretically and quantitatively examined along mutual exclusive rent regimes using the time-variant dataset. The theoretical foundation of the effects of rent and eviction control on rents is set by two scientifically sound models. First, the well-known simple standard textbook model (Frankena 1975; Arnott 1995) is used to illustrate the market mechanisms of first-generation rent control regimes usually involving very rigid rent freezing. Second, the model of Basu and Emerson (2000) which is enhanced by Mora-Sanguinetti (2010) is used to show the effects of second-generation rent control regimes on rents under the realistic assumptions of asymmetric information and adverse selection. The quantitative approach loosely follows the work of Djankov et al. (2007) who investigated the effect of credit market institutions on the structural development of credits for a great number of countries over the past 25 years. The results of several descriptive statistics and standard panel regressions using robust and clustered errors to check for heteroscedasticity and serial correlation confirm the theoretical approaches. On the one hand, real rents are significantly lower in nominal rent freeze regimes than in free rent regimes. On the other hand, special second-generation rent control regimes cause significantly higher rent dynamics. Second-generation rent control regimes are divided up along their different levels of tenure security. It turns out that soft rent control regimes with time limited tenure security for a mandatory minimum duration period cause higher real rent dynamics. It is therefore one of this chapter's most important proofs for the significance of tenure security for the development of rents.

The results of the fourth chapter show that both strict rent control regimes and softer rent control regimes with limited tenure security may cause distorted rents that in turn lead to high burdens for the whole housing market. The literature on the effects of distorted rents within the whole housing market is rich. Yet other second-generation rent control regimes do not show significant deviations from the benchmark regime of free rents. Another important result is that free rent regimes on average show tremendously stable real rents. What kind of policy implication may be drawn from these results? First, the results underpin that nominal rent freeze regimes and soft rent control regimes with time limited tenure security should be avoided. Second, as far as the dynamics of real rents are concerned, free rent regimes may be an advisable rent regime.

This dissertation is a prelude to further rental market regulation research based on large country samples. The analyses presented here show that using large country samples for a long

time horizon lead to worthwhile and more general results that will certainly enhance the reputation of economic research on rental market regulation. Thus, further research on the basis of the given dataset should be conducted dealing with other effects such as homeownership rates, the investments in housing and the stability of housing markets. The field for further research is large and many more important rental market phenomena are yet to be discovered.

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