



**337 Report** by Paula Arndt and Katharina Wrohlich

## Gender quotas in a European comparison: tough sanctions most effective

- Gender quotas with tough sanctions significantly increase proportion of women in top bodies of large companies
- Moderate sanctions like in Germany markedly less effective
- Results should not be expected from optional commitments to gender equality



**345 Report** by Konstantin Kholodilin and Sebastian Kohl

## Housing market regulation has contributed to the worldwide triumph of home ownership

- Extensive international database allows for analysis of the intensity of rental market regulation in 27 countries over 100 years
- Study shows that rental market regulation has an effect on home ownership rates

## LEGAL AND EDITORIAL DETAILS

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DIW Berlin — Deutsches Institut für Wirtschaftsforschung e.V.

Mohrenstraße 58, 10117 Berlin

[www.diw.de](http://www.diw.de)

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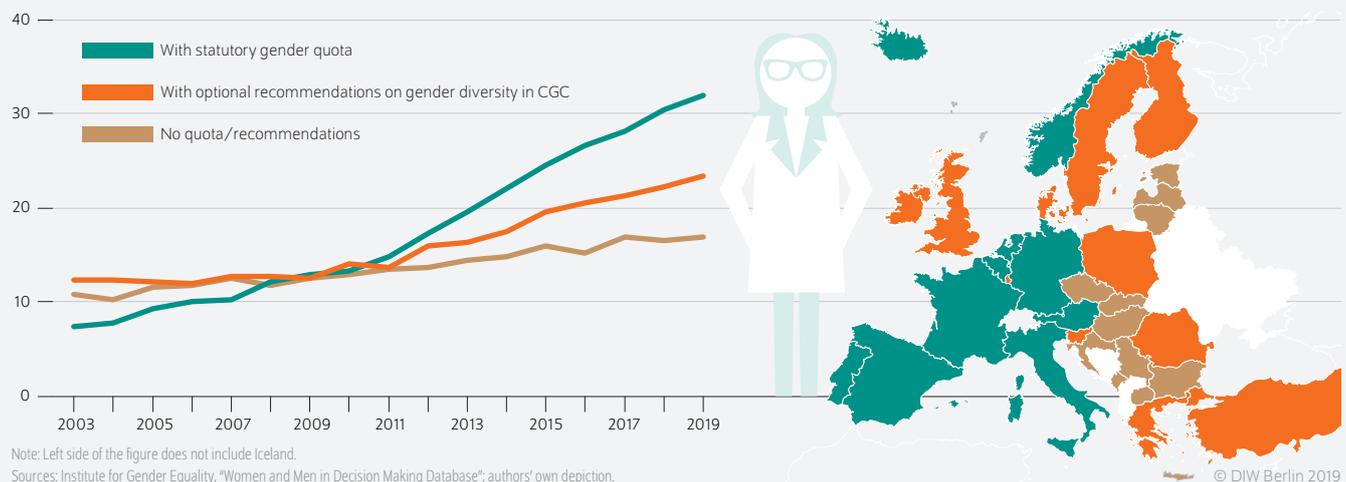
AT A GLANCE

## Gender quotas in a European comparison: tough sanctions most effective

By Paula Arndt and Katharina Wrohlich

- Study compares the proportion of women in the top supervisory and decision-making bodies of large companies in selected European countries
- Countries with a gender quota and tough sanctions significantly increased the proportion of women in decision-making bodies
- Moderate sanctions like the “empty chair” in Germany are markedly less effective
- Voluntary commitments or quotas with no sanctions do very little
- Such findings should be taken into account when introducing quotas in other areas such as politics, science, and media

### Proportion of women in private sector top bodies increasing significantly faster due to gender quotas; voluntary commitments are ineffective



#### FROM THE AUTHORS

*“Many countries rely on optional recommendations to achieve a higher proportion of women in top bodies in the private sector and in other areas, such as politics, science, and the media. Our analysis shows that not much should be expected from such voluntary recommendations.” — Katharina Wrohlich —*

#### MEDIA



Audio Interview with Katharina Wrohlich (in German)  
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# Gender quotas in a European comparison: tough sanctions most effective

By Paula Arndt and Katharina Wrohlich

## ABSTRACT

Women remain significantly underrepresented in the top decision-making bodies in the private sector. Over the past few years, increasingly more European countries have introduced statutory gender quotas to combat this underrepresentation. Other European countries have instead relied on voluntary gender diversity recommendations in the national corporate governance codes. Statutory gender quotas are significantly more effective than recommendations, as a descriptive comparison of the development of the proportion of women in the highest decision-making and supervisory bodies of the largest publicly traded companies in Europe shows. Quotas are even more effective if companies are threatened with harsh sanctions such as fines or liquidation in case of noncompliance. This suggests that voluntary commitments to recommendations or legal quotas without tough sanctions are not effective methods to increase the proportion of women in top positions significantly. This should be considered when discussing quotas for other areas such as politics, science, or the media.

Women are still significantly underrepresented in the top decision-making bodies in the economy in Germany, in Europe, and worldwide. In the 200 top-earning companies in Germany, only 27 percent of supervisory board members and 9 percent of executive board members are women.<sup>1</sup> Women are also underrepresented in areas such as politics, science, and the media. For example, currently only 31.2 percent<sup>2</sup> of German *Bundestag* members are women and 23 percent of professors at the largest German universities are women.<sup>3</sup>

Over the past few years, this issue has gained increasingly more attention, such as in reports on the “Thomas Cycle” and “Hans Brake.”<sup>4</sup> The debate has increased the pressure on politicians to counter inequalities between women and men in leadership positions, and many European countries have introduced statutory gender quotas for the top decision-making bodies. In 2015, Germany passed a law on equality for women and men in managerial positions, both at private companies and in the civil service (*Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst, FüPoG*).<sup>5</sup> Similar quotas are demanded for leadership positions in other areas, such as the German media,<sup>6</sup> science,<sup>7</sup> and medi-

<sup>1</sup> Cf. Elke Holst and Katharina Wrohlich, “Increasing Number of Women on Supervisory Boards of Major Companies in Germany: Executive Boards Still Dominated by Men,” *DIW Weekly Report* no. 3 (2019): 19–34 (available online; accessed on September 4, 2019. This applies to all other online sources in this report unless stated otherwise).

<sup>2</sup> Cf. Deutscher Bundestag, *Abgeordnete: Frauen und Männer* (2019) (in German; available online). For a detailed look at the proportion of women in the German *Bundestag*, *Landestagen*, and on a local level over time, see Daniela Arregui Coka, Ronny Freier, and Johanna Mollerstrom, “Gender Parity in German Politics: Further Effort Required,” *DIW Weekly Report* no. 37 (2017): 365–373 (available online).

<sup>3</sup> Cf. Stefan Schmidt, “Gender-Debatte an Hochschulen: An diesen Unis arbeiten die meisten Professorinnen,” Press release from the WBS Gruppe, 2018 (in German; available online).

<sup>4</sup> A study from the AllBright-Stiftung showed that there were more people named Thomas or Michael (49) on the executive boards of DAX companies than there were women (46) in 2017, cf. AllBright, *Ein ewiger Thomas-Kreislauf? Wie deutsche Börsenunternehmen ihre Vorstände rekrutieren* (2017) (in German; available online). Similarly, in 2018, the magazine *Die Zeit* reported that there had been more civil servant state secretaries named Hans than female state secretaries since 1949. Cf. Kai Biermann, Astrid Geisler, Karsten Polke-Majewski, and Sascha Venohr, “Die Hans-Bremse,” *Zeit Online*, October 8, 2018 (in German; available online).

<sup>5</sup> An in-depth description of the history of the *FüPoG* can be found in Norma Burow, Alexandra Fedorets, and Anna Gibert, “Frauenanteil in Aufsichtsräten steigt, weitere Instrumente für die Gleichstellung gefragt,” *DIW Wochenbericht* no. 9 (2018): 150–155 (in German; available online).

<sup>6</sup> Cf. Pro Quote, *Wir legen die Latte höher: 50 Prozent!* (2018) (available online).

<sup>7</sup> Cf. Deutscher Bundestag, “Frauen in Wissenschaft und Forschung - Mehr Verbindlichkeit für Geschlechtergerechtigkeit,” Drucksache 17/9978 (2012) (in German; available online).

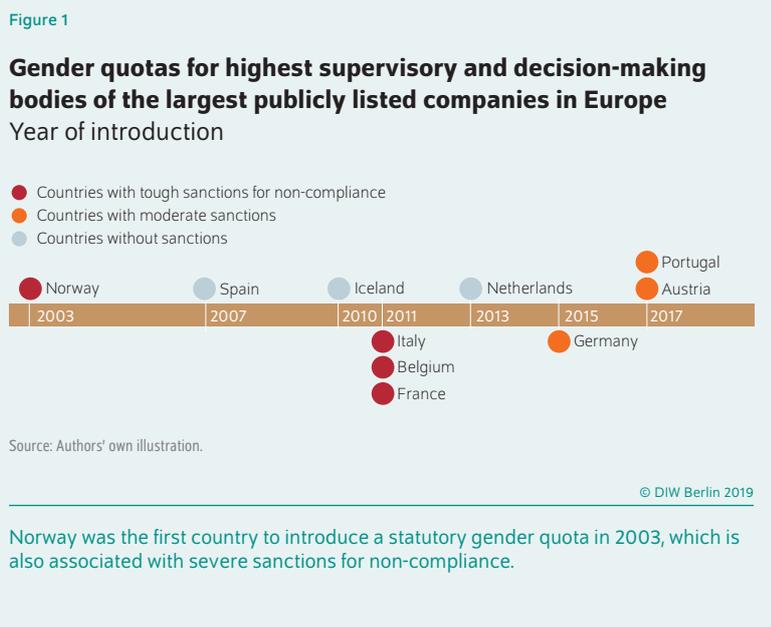
cine.<sup>8</sup> Gender quotas for politicians have also been discussed for some time. In January 2019, Brandenburg became the first German *Landtag* to pass a gender parity law. This stipulates that all parties wishing to take part in the 2024 state elections must fill their candidate lists alternately with men and women.<sup>9</sup> A similar law was passed in Thuringia for their *Landtag* in July 2019.<sup>10</sup> Gender quota laws for candidate lists on a national level exist in some European countries as well (such as Belgium, France, Portugal, Spain, and Slovenia).<sup>11</sup>

### Ten European countries have introduced statutory gender quotas

Over the past 16 years, ten European countries have introduced a statutory gender quota for the highest supervisory and decision-making bodies<sup>12</sup> of certain private sector companies (Box and Figure 1). In 2003, Norway became the first country in the world to introduce a binding gender quota for all publicly traded and state-owned companies. Spain became the first EU state to introduce a binding quota for large, publicly traded companies and was followed by Iceland, Belgium, France, Italy, and the Netherlands. Germany passed a gender quota law in 2015. Since 2016, publicly traded companies with employee representation on their supervisory boards (full codetermination) must allocate all vacant supervisory board seats to women until the 30 percent quota has been reached.<sup>13</sup> A very similar law was passed a year later in Austria and most recently in Portugal.

The legal provisions in these countries sometimes differ greatly, especially in regards to sanctions in the event of quota noncompliance. Iceland, Spain, and the Netherlands do not apply sanctions. Iceland introduced a gender quota in 2010 in the midst of the financial crisis, which affected the country particularly negatively. No sanctions were imposed, but the restructuring of the private sector because of the financial crisis led to major changes in corporate culture.<sup>14</sup>

**8** Cf. Pro Quote Medizin, *Was wir wollen – Offener Brief "Pro Quote in der Medizin,"* (in German; available online).  
**9** Cf. Tagesspiegel, "Brandenburg beschließt Gesetz für mehr Frauen im Landtag," *Tagesspiegel Online*, January 31, 2019 (in German; available online).  
**10** Cf. Spiegel Online, "Thüringer Landtag beschließt Paritätsgesetz," *Spiegel Online*, July 5, 2019 (in German; available online).  
**11** Cf. Deutscher Bundestag, "Geschlechterparität in nationalen Parlamenten der EU-Staaten," *Wissenschaftliche Dienste, Ausarbeitung WD 1-3000 – 016/18* (2018) (in German; available online).  
**12** Not all European countries have a dual system as in Germany (as well as Austria and the Netherlands) where the executive and supervisory bodies are separated. Some countries have a monistic system with a single top decision-making body (executive committee), such as in Spain and Belgium. A third group of countries allow both systems and companies may choose for themselves which they would like to implement. These countries include Sweden, France, and Italy. In Belgium and Spain, the gender quota applies to the entire executive committee. In countries that allow companies to choose, the quota applies to the non-executive members of the supreme decision-making body (France) or to the entire highest decision-making body (Italy) of the companies that choose a monistic system. Cf. Elke Holst, Anne Busch, and Lea Kröger, "Führungskräfte-Monitor 2012," *DIW Politikberatung kompakt*, no. 65 (2012): 87 (in German; available online).  
**13** The law stipulates a gender quota (not a women's quota) of 30 percent. This means that supervisory boards of the affected companies must be comprised of at least 30 percent male members and 30 percent female members. It would be unlawful for the share of men on a supervisory board to fall below 30 percent. Cf. the entry on "Geschlechterquote" in the DIW Berlin Glossary (in German; available online).  
**14** Cf. Audur A. Arnardottir and Throstur O. Sigurjonsson, "Gender Diversity on Boards in Iceland: Pathway to Gender Quota Law Following a Financial Crisis," in *Gender Diversity in the Boardroom*, vol. 1, ed. Catherine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach (2017), 75–101.



The three countries that have only recently (since 2015) introduced binding quotas (Germany, Austria, and Portugal) only impose moderate sanctions. In Germany and Austria, the concept of the “empty chair” functions as a sanction.<sup>15</sup> One supervisory board position must remain vacant until the quota is reached. In Portugal, noncompliance leads to a warning and the noncompliant appointment is considered provisional.<sup>16</sup>

In contrast, rigid sanctions in case of noncompliance were introduced alongside statutory quotas in Norway, France, Italy, and Belgium. Companies are fined for noncompliance at the very least. Some countries dole out harsher punishments: In Norway, a noncompliant body is not allowed to register if it has not met the statutory quota.<sup>17</sup> After repeated warnings, the company is threatened with compulsory liquidation. In France, a new board member appointment is annulled if the legal quota is not met. In addition, the attendance fee payment is suspended until the quota has been met.<sup>18</sup> Similar sanctions are also planned in Belgium: If the quota is not met when new members are elected, the appointments are null and void. Furthermore, companies must also expect financial losses, as attendance fees for the noncompliant body will be abolished.<sup>19</sup> Italy has a supervisory authority responsible for monitoring quota compliance. Companies can be penalized with sanctions of up to one million euros for noncompliance.<sup>20</sup>

**15** Cf. Österreichischer Nationalrat, *Gleichstellungsgesetz von Frauen und Männern im Aufsichtsrat* (GFMA-G, 104, Bundesgesetz), as well as BMFSFJ, "Förderung von Frauen in Führungspositionen: Kabinettschließt Gesetzentwurf zur Quote," Press release, December 11, 2014 (in German; available online).  
**16** Cf. L&E Global, *Portugal: Gender quotas for director and supervisory bodies* (2017) (available online).  
**17** Aagot Storvik and Mari Teigen, "Women on board. The Norwegian Experience," *International Policy Analysis* (2010).  
**18** Bredin Prat and Hengeler Müller, *Board-Level Gender Quotas in the UK, France and Germany* (2016).  
**19** Abigail Levrau, "Belgium: Male/Female United in the Boardroom," in *Gender Diversity in the Boardroom*, vol. 1, eds. Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach (2017): 155–175.  
**20** Alessandra Rigolini and Morten Huse, "Women on Board in Italy: The Pressure of Public Policies," in *Gender Diversity in the Boardroom*, vol. 1, eds. Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach (2017): 125–154.

A further eleven European countries have voluntary recommendations on gender diversity in leadership positions in their corporate governance codes (CGC, Box) instead of a statutory gender quota. These codes are issued by national commissions and provide recommendations on current national and international standards of good and sustainable corporate governance. The companies' voluntary commitment is ensured by the "comply or explain" approach, which requires the companies to comply with the CGC and to disclose reasons for failing to comply with the guidelines in their annual report. The companies may decide themselves if they want to follow the CGC or not. If a company decides to follow the CGC, then the "comply or explain" approach applies.<sup>21</sup>

### Increase in proportion of women largest in countries with statutory quotas

Through the European Institute for Gender Equality (EIGE), the European Commission has been providing data on the proportion of women in different sectors in European countries through the Women and Men in Decision Making Database since 2003.<sup>22</sup> The analysis in this Weekly Report encompasses the proportion of women in the highest supervisory and decision-making bodies of the largest publicly traded companies in European countries from 2003 to 2019.<sup>23</sup> The countries were divided into three groups: 1) countries with statutory gender quotas, 2) countries with voluntary gender diversity recommendations in the CGC, and 3) countries without any binding quotas or voluntary recommendations. At the beginning of the observation period, countries that introduced a gender quota in 2003 or later were still well below the countries without a quota. (see Figure on page 337). Sixteen years later, the situation is reversed: In countries that introduced a gender quota in 2003 or later, the proportion of female board members is 15 percentage points higher on average than in countries without a quota. The difference between countries with quotas and countries with recommendations is nine percentage points. Over the entire period, the countries with a legal quota increased the proportion of female supervisory board members of the largest listed companies almost fivefold, while the proportion in the countries without a legal quota only rose from eleven to 17 percent. This suggests that legal quotas are significantly more effective than non-binding, voluntary recommendations.

The design of the statutory quota also influences its effectiveness. Norway, Italy, Belgium, and France impose the toughest sanctions. A descriptive comparison of tough sanction countries with countries that impose moderate or no sanctions shows that the countries with the toughest sanctions

#### Box

### Political background to gender diversity in companies, a European comparison

In Europe, there are major differences in gender parity policies for private companies. Some countries have introduced statutory, binding gender quotas for the highest decision-making and supervisory bodies of certain companies. In 2003, Norway became the first country to introduce a quota of 40 percent for supervisory boards of state-owned and publicly traded companies with harsh sanctions in the event of noncompliance. Since then, a further nine countries have adopted quotas, including Germany in 2016 (Table).

A second group of countries lacks statutory gender quotas for companies' supervisory or decision-making bodies, but rather has gender diversity recommendations in their corporate governance codes (CGC). These codes are government-issued, voluntary, country-specific guides that provide recommendations on current national and international standards for good and responsible corporate governance. A total of 21 European countries include a gender equality target in their CGCs. Ten of them are countries with a statutory gender quota and 11 only have recommendations and no further legal regulations. These countries include Sweden, Finland, Denmark, Great Britain, Ireland, Greece, and Poland.

The third group of countries have neither a binding quota nor gender diversity recommendations in the CGC. In addition to Malta and Cyprus, this group of nine countries mainly includes Eastern and Southeastern European countries.

<sup>21</sup> Cf. Patricia Gabaldon, Heike Mensi-Klarbach, and Catherine Seierstad, "Gender Diversity in the Boardroom: The Multiple Versions of Quota Laws in Europe," in *Gender Diversity in the Boardroom*, vol. 1. *The Use of Different Quota Regulations*, eds. Cathrine Seierstad, Patricia Gabaldon, and Heike Mensi-Klarbach (Cham: Springer International Publishing, 2017): 233-254.

<sup>22</sup> Cf. European Institute for Gender Equality, *Gender Statistics Database* (available online).

<sup>23</sup> See Footnote 12.

## GENDER QUOTAS IN EUROPE

Table

### Statutory gender quotas and gender diversity recommendations in Corporate Governance Codes in Europe

Country	Law passed	Share to be achieved	Deadline	Committee	Affected companies	Management system	Sanctions
Norway	2003	40 percent	2006 for newly private limited companies 2008 for private limited companies	Board of directors	Listed	One-tier	Forced dissolution; registry rejects registration of the board
Belgium	2011	33 percent	2017 for largest listed companies 2019 for listed SMC	Board of directors	Listed	One-tier	Empty chair; after one year suspension of the payment of attendance fees
France	2011	20 percent/ 40 percent	2014/2017	Non-executive managers	More than 500 employees and more than 50 million euros turnover in the last three years	Mixed	Nullity of appointments and suspension of attendance fees
Italy	2011	20 percent/ 30 percent	2012/2015	Supervisory- and management board/ board of directors	Listed	Mixed	100,000 to 1 million euros penalty for board of directors, 20,000 to 200,000 euros for audit committee
Germany	2015	30 percent	2016	Supervisory board	Listed and co-determined	Two-tier	Empty chair
Austria	2017	30 percent	2018	Supervisory board	Listed and at least 1,000 employees	Two-tier	Empty chair
Portugal	2017	20 percent/ 33 percent	2018/2020	Supervisory board/ board of directors	Listed	Mixed	Mandate is considered temporary
Spain	2007	40 percent	2015	Board of directors	4,11 million euros assets, 22.8 million euros annual turnover or more than 250 employees	One-tier	No sanctions
Iceland	2010	40 percent	2013	Supervisory board	Listed or limited liability company with more than 50 employees	Two-Tier	No sanctions
Netherlands	2013	20 percent/ 30 percent	2020/2023	Supervisory- and management board/ board of directors	More than 250 employees, more than 20 million euros assets or more than 40 million euros net sales	Mixed	No sanctions

With recommendations	Corporate Governance Code	First initiative	Current version	Affected companies	Sanctions
Sweden	The Swedish Corporate Governance Code	2005	2010	Listed	Comply-or-explain
Finland	Finnish Corporate Governance Code	2008	2015	Listed	Comply-or-explain
Luxembourg	The X Principles of Corporate Governance of the Luxembourg Stock Exchange	2009	2017	Listed	Comply-or-explain
Slovenia	Slovene Corporate Governance Code	2009	2016 (Updated 2018)	Listed	Comply-or-explain
Denmark	Recommendations on Corporate Governance	2010	2014	Listed	Comply-or-explain
United Kingdom	UK Corporate Governance Code	2010	2016	Listed	Comply-or-explain
Greece	Hellenic Corporate Governance Code	2013	2013	Listed	Comply-or-explain
Turkey	Principles of Corporate Governance	2014	2014	Listed and companies with limited liability	Comply-or-explain
Poland	Code of Best Practice for WSE Listed Companies	2015	2015	Listed	Comply-or-explain
Romania	Bucharest Stock Exchange Corporate Governance Code, A corporate governance rule for all BSE-listed companies	2015	2015	Listed	Comply-or-explain
Ireland	The UK Corporate Governance Code (2012) Irish Corporate Governance Annex (2010)	2012, 2010	2010, 2012	Listed	Comply-or-explain

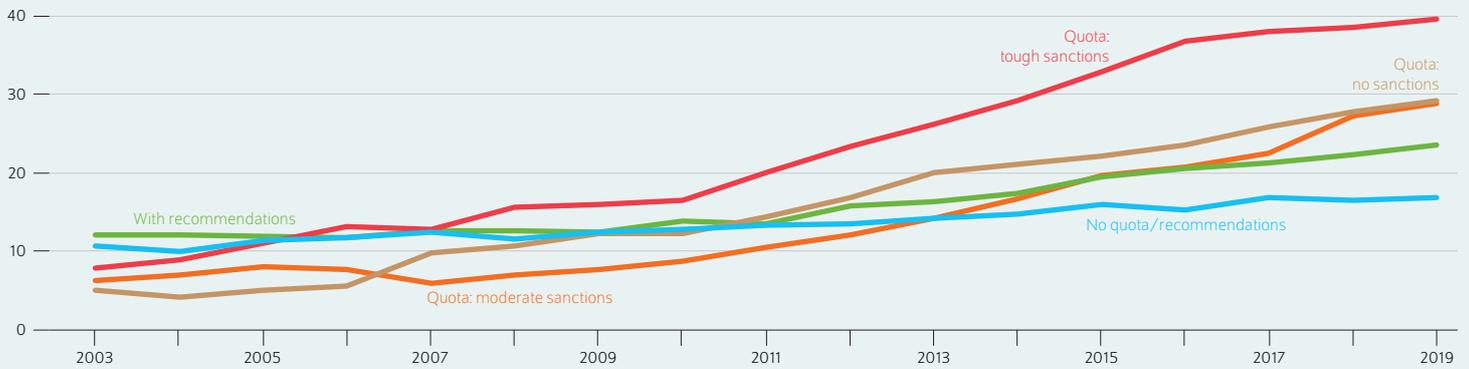
#### No quota or recommendations

Bulgaria
Czech Republik
Estonia
Croatia
Cyprus
Lithuania
Malta
Slovakia
Latvia

Source: OECD; Cathrine Seierstad, Patricia Gabaldon und Mensi-Klarbach (2017): Gender Diversity in the Boardroom; Deloitte; authors' own research based on the national Corporate Governance Codes of all countries included in the analysis.

Figure 2

**Share of women in highest supervisory and decision-making bodies of the largest companies in Europe<sup>1</sup> by strength of sanctions in countries with gender quota**  
In percent



<sup>1</sup> Excluding Iceland.

Source: Institute for Gender Equality (EIGE), *Women and Men in Decision Making Database*.

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Gender quotas combined with tough sanctions such as fines or liquidation are by far the most effective.

Figure 3

**Share of women in highest supervisory and decision-making bodies in countries with statutory gender quotas without sanctions**  
In percent



Source: Institute for Gender Equality (EIGE), *Women and Men in Decision Making Database*.

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The development in Iceland stands out, but it is a special case because of fundamental upheavals following the financial and economic crisis.

were able to increase the proportion of women the most (Figure 2). When comparing countries with quotas and moderate sanctions with countries with quotas and no sanctions, the increase in the proportion of women on the highest supervisory or decision-making bodies of the largest publicly traded companies was very similar; at the beginning of the observation period, both were roughly the same. From 2007 to 2017, the proportion of women in the countries without sanctions was even higher than in countries with moderate sanctions. The latter group has been able to catch up with quota countries without sanctions since 2018. In this comparison, however, it should be noted that in the group of countries with moderate sanctions (Germany, Austria, and Portugal), the quota was only introduced after 2015, while in Spain and the Netherlands the quota was introduced in 2007 and 2013, respectively.

Looking more closely at the development of the proportion of women in individual countries with a binding gender quota, Iceland stands out in the group of countries without sanctions (Figure 3). In the three years following the introduction of the quota, the proportion of women in Iceland tripled from 16 to 48 percent. No other country experienced such a sharp increase, even those with tough sanctions. The situation in Iceland is probably related to its unique experience during and following the global financial crisis of 2008. The country was hit very hard by the crisis in 2008. The Icelandic *króna* fell by more than 50 percent at times, and in 2008 and 2010, inflation rates were over 30 percent. As a result, there was a major loss of confidence in the management levels of the private sector, particularly in the financial sector. This led to both a major upheaval in private sector management and a change in corporate culture. These factors probably explain this especially large increase in the proportion of women in

Iceland after 2010 to a significant degree.<sup>24</sup> The increase in the proportion of women in top bodies after the introduction of the quota was much less dynamic in the two other quota countries without sanctions (Spain and the Netherlands). In the four countries with statutory quotas and tough sanctions (France, Italy, Belgium, and Norway, Figure 4), the proportion of women on the corresponding bodies significantly increased after the quota was introduced. In countries with moderate sanctions, including Germany, this is only the case to a lesser extent (Figure 5).

**Conclusion: Voluntary recommendations and quotas without sanctions are not effective**

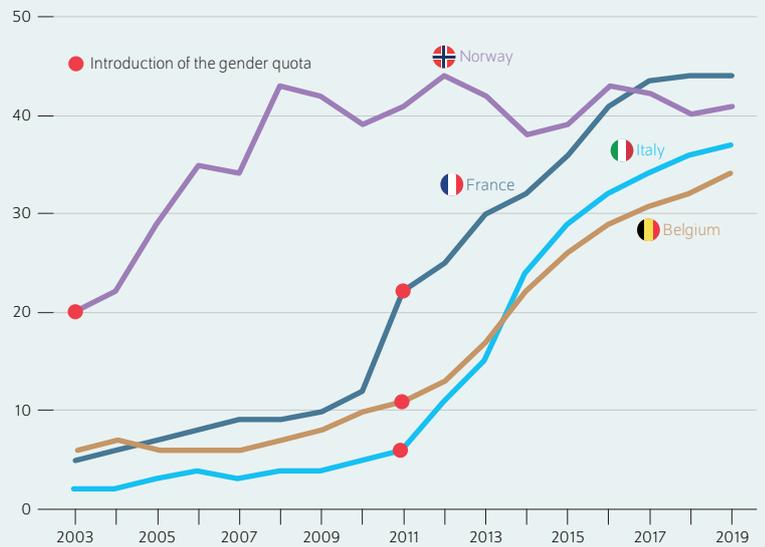
Statutory gender quotas are more effective than voluntary recommendations for increasing the proportion of female board members. This is suggested by the descriptive comparison in this Weekly Report, for which the development of the proportion of women in the highest supervisory and decision-making bodies of the largest listed companies in European countries was examined. Countries that had introduced a gender quota for the private sector since 2003 recorded a significantly higher increase in the proportion of women than the countries with voluntary recommendations. Countries with voluntary recommendations only improved the situation slightly more than countries with no recommendations or quotas at all.

Moreover, a comparative analysis suggests that quotas associated with severe sanctions for noncompliance are more effective than quotas without any or with only moderate sanctions. In the countries that combine gender quotas with harsh sanctions, such as financial penalties or even liquidation, the proportion of women in the top bodies of the largest listed companies rose significantly more than in countries with moderate sanctions (such as the “empty chair” in Germany) or without sanctions.

In addition to the private sector, quotas are being discussed for other areas increasingly, such as politics, science, and the media. The present findings indicate that voluntary commitments to gender diversity in sectors beyond the private sector would not be particularly effective. Binding quotas with sanctions in the case of noncompliance seem to be the most effective means of ensuring that men and women are represented more equally on supervisory and decision-making bodies in the future.

Figure 4

**Share of women in highest supervisory and decision-making bodies in countries with statutory gender quotas combined with tough sanctions**  
In percent



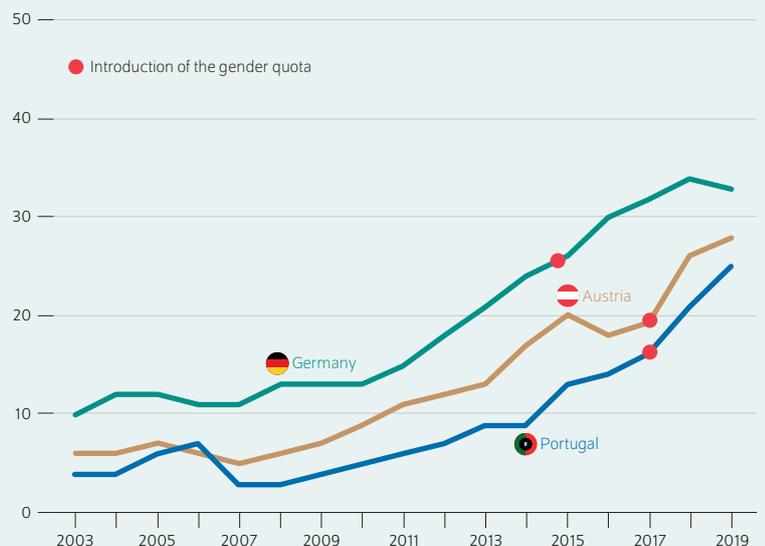
Source: Institute for Gender Equality (EIGE), Women and Men in Decision Making Database.

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If countries that apply tough sanctions in case of noncompliance to the gender quota, companies increase their share of women much faster.

Figure 5

**Share of women in highest supervisory and decision-making bodies in countries with statutory gender quotas combined with moderate sanctions**  
In percent



Source: Institute for Gender Equality (EIGE), Women and Men in Decision Making Database.

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In countries that apply moderate sanctions in case of noncompliance to the gender quota, the share of women increases to a lesser extent than in countries where tough sanctions are applied.

24 Cf. Arnardottir and Sigurjonsson, “Gender Diversity on Boards in Iceland.”

## GENDER QUOTAS IN EUROPE

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**Paula Arndt** is a Student Researcher in the Gender Economics Research Group at DIW Berlin | [parndt@diw.de](mailto:parndt@diw.de)

**Katharina Wrohlich** is Head of the Gender Economics Research Group at DIW Berlin | [kwrohlich@diw.de](mailto:kwrohlich@diw.de)

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AT A GLANCE

## Housing market regulation has contributed to the worldwide triumph of home ownership

By Konstantin Kholodilin and Sebastian Kohl

- The effects of rental market regulation are often discussed, but mostly in a short-term, national framework
- New set of international data allows for long-term analysis of the effects of rental market regulations
- Rent control and rationing of housing had a strong effect on home ownership rates in all countries examined
- Indirect effects on home ownership should be taken into account when designing rental market regulations
- Interests of both tenants and investors must be taken into account

### Rental market regulation has an effect on home ownership rates

When rents are capped ...

... landlords put up their apartments for sale because renting them is not profitable enough any more.

... regulated housing remains affordable, renters hang on to their home, queues build up ...

... the rents of unregulated housing rise ...

... households looking for housing are forced into buying property.



### FROM THE AUTHORS

*“Especially in German cities there is lots of discussion around new measures to cap rents. Policymakers should be aware of the correlation between rental market regulation and home ownership rates. The more regulated the rental market, the more people live in their own homes, renters are in a way pushed out of the market.”*

— Konstantin Kholodilin, author —

# Housing market regulation has contributed to the worldwide triumph of home ownership

By Konstantin Kholodilin and Sebastian Kohl

## ABSTRACT

The present report presents new historical data based on country comparisons and research results regarding rent control and its long-term effect on the home ownership rate in 27 countries. Policy measures of rent control, protection against eviction, and housing space management have been widespread in most of the countries studied—particularly in continental Europe—in the past 100 years. At the same time, the rate of home ownership in those countries has steadily risen in the long term. The present analysis shows that in the past century, the triumph of home ownership has not only been the result of relevant incentive measures and financial market liberalization. Indirectly, it is also due to rent control.

The state has good reasons to pursue housing policy. In industrialized countries, such policy regulates the rental housing market. It does so for two reasons, first, to reduce the asymmetry between tenants and owners and second, to counteract short-term supply rigidity. If demand for housing rises suddenly, rent is expected to rise due to housing space scarcity. State regulation can moderate the rise and meet the responsibility of providing a roof over every head.

Rents have risen in Germany since 2010, which has pivoted the spotlight back to the subject of rent control. The pros and cons of the price-stabilizing “rent brake” (*Mietpreisbremse*) implemented in Germany in 2015 and other price-regulating measures are hotly debated and new models are in development. For example, the Berlin Senate is planning to implement a rent cap that freezes rents for five years.<sup>1</sup> More widespread application of the right of first refusal, a rent freeze in social conservation areas,<sup>2</sup> further tightening of the rent brake, restricting real estate purchases for foreigners,<sup>3</sup> and expropriation of the housing stock of private real estate companies<sup>4</sup> have been offered as solutions in some regions. Economists are wary of regulatory measures (see Box 1), such as intervention in free-market price setting, because they have a reputation for hindering investment in the long term, reducing tenant mobility, and raising the difference between rents for existing housing stock and new units.

Further, they distort the competition between the purchasing and rental markets that result from the interplay between supply (investors, landlords) and demand (tenants). On the supply side, the rental market is subject to price restrictions, while the home ownership market has remained free. When rents are capped (and as a result, landlords’ expected yields), it is rational for investors to pull out of the rental housing

<sup>1</sup> Berlin Senate Chancellery, “Senat beschließt Eckpunkte für ein Berliner Mietengesetz/Mietendeckel,” press release, June 18, 2019, (in German; available online, accessed June 20, 2019).

<sup>2</sup> Ulrich Zawatka-Gerlach, “SPD schlägt fünf Jahre Mietenstopp in Berlin vor,” *Der Tagesspiegel*, January 22, 2019 (in German; available online, accessed June 17, 2019; this applies to all other online sources in this report unless stated otherwise.)

<sup>3</sup> Julia Lühr, “Berlin will den Immobilienkauf für Ausländer einschränken,” *Frankfurter Allgemeine Zeitung*, August 27, 2018 (in German; available online).

<sup>4</sup> See the “Deutsche Wohnen enteignen” initiative website (in German); and Lena Klimpel, “Mit Enteignungen gegen Wohnungsnot?” *tagesschau.de*, April 5, 2019 (in German; available online).

segment. On the demand side (those seeking a place to live), rent stabilization initially makes renting a home more attractive. Since the supply of regulated apartments is scarce, however, queues form and the cost of finding an apartment rises significantly. Before regulatory intervention, tenant groups are highly heterogeneous, including well-to-do tenants and those with lower incomes. Tenants with higher incomes have a better chance of obtaining regulated apartments because from the landlords' viewpoint, their ability to pay is greater. On the other hand, tenants differ when it comes to patience. Those who already have an apartment in the relevant city have more time to look for a new apartment. Most newcomers urgently need a place to live. This is why they will take the ownership route, in which purchase costs are high but the costs of finding a home are relatively low. The expansion in the housing supply is also likely to lead to prices falling in that sector and even more people purchasing their own homes. However, it is not clear which effect has more weight, regulatory intervention in the price of renting or the price-depressing effect of additional housing in the market. Indeed, the latter is indirectly due to regulation.

The long-term effects of rent regulation on the housing market—on the size of the rental market in particular—have rarely been discussed. While much research has been done on home ownership and subsidized housing, empirical research on rental markets, in international comparison in particular, has been neglected.<sup>5</sup>

One reason for this is certainly the marked diffusion of home ownership in many countries and the political focus on subsidized housing. Even in countries with a low proportion of home ownership, such as Germany, the number of tenants has steadily decreased in the long term. Home ownership rates in Europe are very heterogeneous on the regional level (see Figure 1). While they are very high in some places at the periphery of the continent, significantly fewer households live in owner-occupied real estate in Central Europe. In Germany, 45.5 percent of the population rent their home, while in Switzerland the proportion is only 37.4 percent. Often, policy makers consider tenant households as “would-be-owners” and provide them with cheap loans, or they support them as “former owners.” For example, the state came to the rescue in Spain when many home-owners were unable to pay back their loans during the 2008–2009 economic crisis.<sup>6</sup>

Tenants comprise the majority of residents or a significant minority in many major cities in the countries studied. The way rental agreements are regulated is therefore a key component of housing policy.

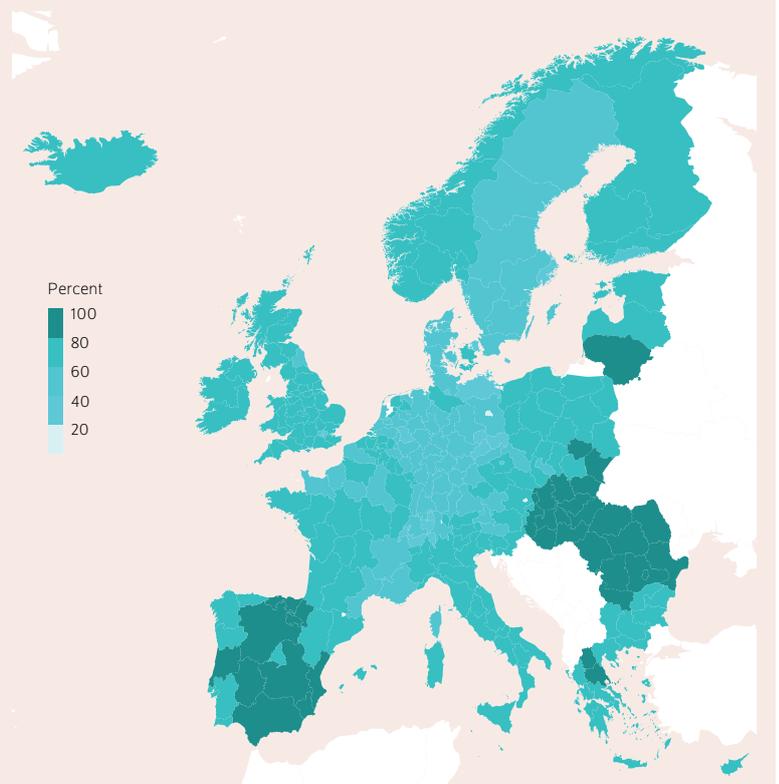
The reasons for the comparatively low amount of rental market research include insufficient and inadequately comparable data. The situation has been considerably improved

<sup>5</sup> Most studies focus on the U.S. and some Scandinavian countries. None of the studies the authors are familiar with have an internationally comparative dimension.

<sup>6</sup> For example, the regions of Andalusia, Aragon, and Catalonia applied measures to protect households that could no longer pay their mortgages against foreclosure.

Figure 1

### Home ownership rates in Europe In percent, for European regions<sup>1</sup>



<sup>1</sup> NUTS2 regions. The NUTS classification divides the European Union into easily comparable territorial units, see the European Commission [website](#) for more information.

Source: Eurostat, authors' own depiction.

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At the European periphery many own their homes; in central Europe the home ownership rates are lower.

thanks to new databases (see Box 2). Combining these enabled us to address the question of how rent regulation has affected the home ownership rate since it was initially implemented during World War I in western countries, and derive some implications for today's debate.<sup>7</sup>

## A brief history of rent regulation and home ownership

### Different rent regulation traditions

Based on the data and the rent regulation index derived from it (see Box 2), it is possible to outline the past 100 years of the history of rent regulation (see Figure 2). In most European countries, it began during World War I with strict price

<sup>7</sup> The article summarizes the following current research findings of the authors, published in English: Konstantin Kholodilin et al., “Social Policy or Crowding-out? Tenant Protection in Comparative Long-run Perspective,” *DIW Discussion Paper* no. 1778 (2018) (available online). A shorter version appeared as: Konstantin Kholodilin and Sebastian Kohl, “Verdrängung oder Sozialpolitik? Der Effekt von Mietregulierung auf das Wohneigentum,” *Wirtschaftsdienst*, Volume 99, 2019, No. 5 (2019): 363–366.

## Box 1

**Policy tools for housing market regulation**

Housing policy is defined as the measures the state uses to influence the situation in the housing market. State interventions in the rental market often have the goal of supplying people with affordable, quality living space. This often serves a country's higher-level goals, including political, social, and economic stability.

The state has a wide range of tools to accomplish this goal. They can be divided into supportive or restrictive instruments. There are two kinds of supportive measures: property support (support for (subsidized) housing construction) and personal support (support for households in the form of a housing allowance). The restrictive instruments work on three levels: rent control, protection against eviction, and housing space management.

*Rent control.* The main goal of rent control is to protect tenants against speculative or excessive rent increases. When housing space is scarce, as a rule rents begin to rise—either due to the rate of new construction being too low in relation to the population increase, a decline in the housing stock due to war or natural catastrophe, or there is surplus demand in the rental housing market. In the short term, it is virtually impossible to adjust housing supply to demand. Given this situation, price regulation was originally established as a short-term solution. Later, it turned into a permanent intervention in market mechanisms.

Modern rent controls were initiated during World War I. Back then, the “first generation” of rent regulation was implemented. It is also the tightest form of such regulation and can be described as freezing rent prices. This type of rent control was often rolled back in the years after the war but experienced a widespread revival during World War II.

*Protection against eviction.* This policy's purpose is to reduce the risk of eviction for tenants. Popular instruments are laws on minimum terms for rental contracts or minimum legal requirements for termination of such contracts. The legal specification of pre-defined reasons for eviction such as personal need, delays in rent

payment, or disturbing the peace in the building plays a key role. Tenant protection has a special role in housing market regulation, since it closely corresponds to rent regulation. For example, certain types of tenant protection in combination with special price regulations—such as the legal minimum term for rental contracts when rents for the existing housing stock are regulated but rents for new apartments are not—can make rents rise to a significantly greater level than they would in an unregulated market.<sup>1</sup>

Before World War I, eviction law was extremely liberal everywhere in the world. Upon contract expiration, landlords could evict tenants without much effort. In the course of the 20th century, in many countries the legal situation changed to the advantage of tenants, who to this day benefit from robust protection against eviction. At the same time, regulation intensity has fluctuated over the past 100 years as it did in the case of rent control.

*Housing rationing.* The goal of this policy is to conserve scarce housing space. It is applied to both the supply and demand sides. On the supply side, measures designed to avoid the loss of apartments to the rental market are implemented. For example, rental units are often prohibited from being demolished, misappropriated, combined, or converted into condominiums. On the demand side, maximum standards for living space per person can be specified, or freedom of movement can be restricted by limiting the number of people who can move to areas with a strained rental market.

Some measures can be classified as housing policy by extension, including construction standards, urban planning, environmental protection, fiscal policy, and bank regulation. These measures can all affect the incentives in the residential real estate market.

<sup>1</sup> Jan Philipp Weber, “The Regulation of Private Tenancies – A Multi-Country Analysis,” dissertation at Universität Regensburg (2017).

controls as an instrument of consumer protection on the home front. In the period between the wars, price regulation was often retained in a weaker form. It was revived during World War II and in continental Europe ultimately became the second-generation price controls of the second half of the 20th century. They permitted relative rent increases but indexed them to various indicators of the general increase in the cost of living.

In times of war and directly afterward, the rental housing market was the target of profound intervention, often in the form of wartime decrees. The measures even went as far as forced billeting. Many of the measures were then dismantled, but some—including social conservation areas (Milieuschutzgebiete) or restrictions on short-term rental

(such as Airbnb)—have survived and in recent years, even regained some importance. Protection against eviction also arose within the context of war and is still a component of rental law in some places today. Of course rental agreements were legally regulated before the war, but the laws were generally about renting in general and not specific to housing. When they did, they simply contained provisions against exorbitant rent increases (usury laws).

Wartime decrees were exceptional measures, but they were often incorporated into civil law after the war. These developments primarily affected countries in central and continental Europe. In southern and northern European countries, state intervention was somewhat more extensive than it was in countries with a Germanic legal tradition.

Figure 2

Rental regulation intensity<sup>1</sup> by legal origin

1 See definition in Box 2.

Source: Authors' own calculations.

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Countries with a German legal tradition used to have strict rent control mechanisms, which have been softened over the past three decades.

That tradition of detailed regulation can be contrasted to the more liberal Anglo-Saxon way of doing things. In countries such as the U.S., for example, rents were also regulated during times of war or other crises (for example, during the oil crisis of the 1970s), but that remained an exception. After the war or when the inflation shock had ebbed, the regulations were gradually dismantled. A national rent policy did not emerge in the U.S. afterward, and therefore the relevant regulations of the country's cities have markedly different histories and levels of intensity.<sup>8</sup> Those countries did not develop strong tenant protection systems, and housing rental was often considered only a temporary residual form of housing with a social stigma attached.

### Varying prevalence of home ownership

Since World War I, the home ownership rate in Western countries has risen constantly, and it is converging at a high level (see Figure 3). South European countries and some in northern Europe have developed into strongholds of home ownership: Norway has a rate of 77.5 percent, for example. The rates there are even higher than those of the Anglo-Saxon countries, where home ownership was historically more firmly established. The German-speaking countries continue to lag behind (see Figure 1).

### Rent regulation has reduced the number of rental units

Home ownership has triumphed for many reasons: the generally higher level of prosperity, the ageing of society, an expansion in the housing stock, the spread of condominiums, steadily falling real interest rates, and in many countries, policy measures that support home ownership.

Multivariate time series analyses confirm these traditional explanations (see Box 3 and Table). For example, the dependency ratio of non-working age persons to the working age population has a positive influence on the increase in home ownership, whereas the long-term interest rate has a negative one. Surprisingly, the per capita GDP also has a negative influence, which might support the theory that in poorer countries, home ownership functions as insurance against negative economic trends.<sup>9</sup>

The analysis also shows that in the long term, tighter housing space management and rent price controls correlate with a rise in the home ownership rate. Protection against eviction, on the contrary, was found to be insignificant. The influence of rent control is not linear. Once rent control has reached a certain level (an index value of 0.79 or higher), tighter price controls do not correlate with a continued rise in the home ownership rate.

<sup>8</sup> Since World War II, the city of New York has had a rent regulation system in which first generation (rent control) and second generation (rent stabilization) regulatory elements both exist at the same time. See Timothy Collins, *An introduction to the New York City rent guidelines board and the rent stabilization system* (2016) (available online, accessed August 23, 2019). In California, on the other hand, the Costa-Hawkins Act has restricted municipal implementation of rent control systems since 1995.

<sup>9</sup> As an additional control variable, the purchase price-to-rent ratio has the expected negative sign (relatively higher purchase prices make home ownership less attractive), but the coefficient is not statistically significant. This is why the variable was not used in the present analysis.

## Box 2

## New data on home ownership and rent regulation

The new rent regulation data<sup>1</sup> include: regulation indexes on rent, tenant protection, housing space regulation, and the rate of ownership in 27 countries since World War I. They are: Australia, Belgium, Chile, Denmark, Germany, Finland, France, Greece, India, Ireland, Israel, Italy, Canada, Luxembourg, Morocco, New Zealand, the Netherlands, Norway, Austria, Portugal, Sweden, Switzerland, Singapore, Spain, South Africa, the UK, and the U.S. The data are based on a collection of all relevant historical rental laws in each country and the coded content of 18 binary categories: for example, if there is a real or nominal price freeze, if tenants have eviction protection, or if building demolition is prohibited. These categories were aggregated to create regulation indexes for the areas of

rent control, protection against eviction, and housing space management, plus a global index.<sup>2</sup> The higher the index value, which was standardized to values between 0 and 1, the tighter the rental market regulation.

The table shows the definition of the data, its sources, and some descriptive statistics (minimum, average value, maximum, and standard deviation). The panel is not balanced since the number of decades per country varies from two for Greece (from 2000–2010) to 11 for the U.S. (1910–2010). On average, the data cover five decades per country.

<sup>1</sup> The data set is still growing but has already been published. See Konstantin Kholodilin, Jan Philipp Weber, and Steffen Sebastian, "Rental Market Regulation over the Last 100 Years in an International Comparison," *DIW Weekly Report*, no. 45 (2018): 453–464 (available online), and <https://www.remain-data.org/>.

<sup>2</sup> For more detailed information, see Konstantin Kholodilin, "Measuring Stick-Style Housing Policies: a Multi-Country Longitudinal Database of Governmental Regulation," *DIW Discussion Papers*, no. 1727 (2018) (available online); and Jan Philipp Weber, "The Regulation of Private Tenancies – A Multi-Country Analysis," dissertation at Universität Regensburg (2017).

## Table

## Data description

Description	Source	Period	Minimum	Mean	Maximum	Standard deviation
Home ownership rate defined as a share of owner occupied dwellings in total housing stock, in percent	Kohl (2017), Compendium of Housing Statistics of the UN, national statistical offices	1910–2018	19.950	59.149	96.175	16.230
Rent laws index, [0,1]	Own calculations	1910–2017	0.000	0.429	1.000	0.372
Square of rent laws index, [0,1]	Own calculations	1910–2018	0.000	0.338	1.000	0.354
First-generation rent control index, [0,1]	Own calculations	1910–2018	0.000	0.439	1.000	0.466
Second-generation rent control index, [0,1]	Own calculations	1910–2018	0.000	0.068	1.000	0.241
Tenure security index, [0,1]	Own calculations	1910–2018	0.000	0.317	1.000	0.251
Housing rationing index, [0,1]	Own calculations	1910–2018	0.000	0.092	0.875	0.163
Rental market regulation index, [0,1]	Own calculations	1910–2018	0.000	0.373	0.833	0.285
Condominium dummy (1, if condominium law is active)	Own calculations	1910–2018	0.000	0.425	1.000	0.482
Real GDP per capita, 1990 international Geary-Khamis dollars	Maddison Project Database	1910–2016	0.521	11.050	77.638	12.320
Ratio of dependent (younger than 15 and older than 64 y.o.) population to working-age (15 through 64 y.o.) population, [0,1]	World Development Indicators of the World Bank and European University Institute	1899–2016	0.255	0.614	1.113	0.157
Housing completions by 1000 inhabitants	Kohl (2018) <sup>2</sup>	1860–2010	0.251	5.437	15.203	2.765
Long-term interest rate, in percent	Macrohistory database, OECD	1870–2017	0.670	6.175	87.376	6.132

<sup>1</sup> Sebastian Kohl, "Homeownership, Renting and Society: Historical and Comparative Perspectives" London: Routledge (2017).

<sup>2</sup> Sebastian Kohl, "Too much mortgage debt? The effect of financialization on new construction and residential capital investment," unpublished manuscript (2018).

The effect of rent control on the home ownership rate may be due to two factors. First, the landlords of regulated apartments can no longer rent them profitably and subsequently offer them up for sale.<sup>10</sup> Second, there are also non-regulated apartments and their rents rise faster than they would in the absence of regulation.<sup>11</sup> The market is obviously divided into two segments. The first is a regulated market with very low rents and tenant households that do not want or are not able to give up their apartments because they would not be able to rent under such good conditions anywhere else; the second is a free market with very high rents. In many countries with a similar market structure, for example Sweden or the United Kingdom, many people are forced to become home owners because they cannot find affordable apartments to rent.

Other factors may have played a role in the spread of home ownership, such as direct support for home ownership and financial market liberalization. For the period starting in 1970, these factors can be measured in two indexes. On the one hand, for several decades experts from OECD countries have been asked how effective they think the measures in support of home ownership are. This index is indeed able to provide a partial explanation of the increase in the home ownership rate.<sup>12</sup> On the other hand, the International Monetary Fund (IMF) summarized the degree of financial market liberalization in many areas (the development of securitization markets, for example) and in many countries into a financial reform index.<sup>13</sup>

Adding these two indexes to the estimate does not change the main finding that rent control has a positive influence on the home ownership rate.

The findings point in a direction similar to the one indicated by anecdotal evidence and American studies:<sup>14</sup> profound intervention in rent prices or the housing stock causes landlords to sell their rental units to tenants. When income is rising, more and more tenants can afford to purchase their homes. In the context of rising housing scarcity—exactly the circumstances under which rent control is applied most intensively—many have no choice other than to purchase their homes.<sup>15</sup> With the spread of alternative investment opportunities such as stocks, flight from the rental market becomes a real option.

<sup>10</sup> A similar effect is expected for Berlin as a result of the planned rent cap. See Ralf Schönball, "Sieben Thesen zum geplanten Mietendeckel," *Der Tagesspiegel*, June 17, 2019, (in German; available online).

<sup>11</sup> See Konstantin Kholodilin, Andreas Mense, and Claus Michelsen, "Mietpreisbremse ist besser als ihr Ruf, aber nicht die Lösung des Wohnungsmarktproblems," *DIW Wochenbericht*, no. 7 (2018): 107–117 (available online).

<sup>12</sup> Mikael Aterhög, "The Effect of Government Policies on Home Ownership Rates: An International Survey and Analysis," in *Home Ownership: Getting in, Getting from, Getting out*, eds. John Doling and Marja Elsinga (Amsterdam: Delft University Press, 2006), 7–34.

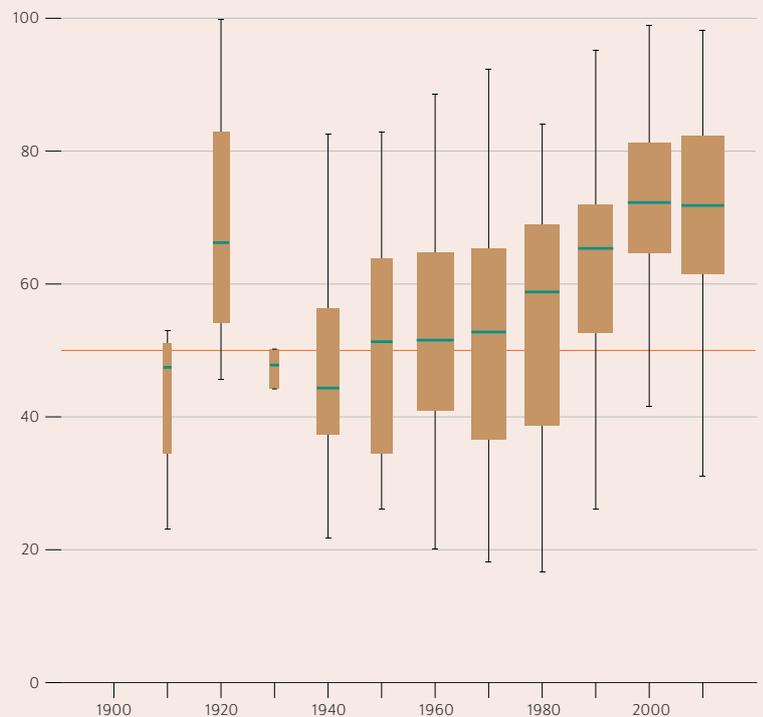
<sup>13</sup> Abdul Abiad, Enrica Detragiache, and Thierry Tresselt, "A New Database of Financial Reforms," *IMF Working Paper* 8/266 (2008) (available online).

<sup>14</sup> Daniel K. Fetter, "The Home Front: Rent Control and the Rapid Wartime Increase in Home Ownership," *NBER Working Paper*, 19604 (2013) (available online) studied the rise in the home ownership rate in the U.S. in the wake of price controls during and after World War II.

<sup>15</sup> Fetter, *The Home Front*.

Figure 3

### Worldwide home ownership Home ownership rate in percent



Sources: Comisión Económica para América Latina y el Caribe (CEPAL), United Nation Statistics Division (UNSD), national statistics offices, authors' own depiction.

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Up to the global financial crisis of 2008–2009 the home ownership rate rose steadily, since then it has been stagnating or even declining.

### Conclusion: rent control has long-term effect on home ownership and policy measures must take this into account

Housing market regulation is a social policy instrument with a long history. It is used worldwide on a regular basis. It balances out the interests of landlords and tenants and takes into account that homes are an economic good with many special features. Supply is inflexible in the short term, and waves of strong demand trigger very strong price reactions. This can cause households to spend larger and larger proportions of their income on rent<sup>16</sup> and get pushed out of the rental market, eroding social structures and causing parts of the population to lose access to the regular housing market. Such trends can be observed in many German cities, and the pressure on policy makers to counter the development is growing. On the other hand, real estate is an investment good whose appeal is determined to a great extent by its flexibility of use and the opportunity to generate profits. There is obviously a long-term relationship between the supply of rental housing and the intensity of regulatory intervention, just as

<sup>16</sup> See Christian Dustmann, Bernd Fitzenberger, and Markus Zimmermann, "Housing expenditures and income inequality", *ZEW Discussion Paper*, No. 18-048 (2018) (available online, accessed September 2, 2019).

Table

## Influence of selected factors on the home ownership rate

	Model 1	Model 2	Model 3	Model 4
Rent control in previous decade	10.08*** (2.88)			21.86* (9.09)
Rent control (squared) in previous decade				-12.20 (8.93)
First-generation <sup>1</sup> rent control in previous decade			3.30 (1.83)	
Second-generation rent control in previous decade			-0.56 (2.80)	
Protection against eviction in previous decade	2.46 (3.61)		3.80 (4.57)	0.81 (3.79)
Housing space management in previous decade	6.46 (8.47)	7.73 (8.52)	6.90 (8.90)	3.72 (8.66)
Aggregated regulation in previous decade		14.29** (4.62)		
Dependence ratio	24.66 (13.64)	23.21 (13.76)	21.15 (14.59)	19.80 (14.03)
GDP per capita	-12.51* (4.79)	-10.96* (4.75)	-12.76* (5.05)	-12.19* (4.77)
Housing completions per 1,000 inhabitants	5.93** (1.74)	5.55** (1.75)	5.25** (1.82)	6.29*** (1.75)
Interest rate	0.622* (0.328)	0.661** (0.331)	0.686** (0.343)	0.674** (0.329)
Possibility of buying single units	-1.282 (2.240)	-0.913 (2.252)	-1.452 (2.348)	-1.476 (2.233)
R <sup>2</sup>	0.29	0.27	0.23	0.31
Adj. R <sup>2</sup>	-0.08	-0.10	-0.18	-0.07
Observations	130	130	130	130

1 See Box 1.

2 Refers to the first-time introduction of the possibility to buy single apartments. According laws were passed in the 1950s and 1960s. Prior to that, it was usually possible to buy entire apartment buildings only.

Reading example: the first figure (10.08) means that any increase of 0.1 in the rent control intensity corresponds to a one-percent increase of the home ownership rate.

Significance levels: \* p<0,10, \*\* p<0,05, \*\*\* p<0,01.

Source: Authors' own calculations.

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## Box 3

## Estimation methods

Since the existing data have two dimensions (time and countries), the estimates were based on panel data models. The model was formulated like this:

$$y_{it} = \beta'x_{it} + \gamma'r_{i,t-1} + \mu_i + \delta_t + v_{it}$$

in which  $y_{it}$  stands for the change in home ownership rate (WEQ) of country  $i$  in decade  $t$  in comparison to the previous decade;  $x_{it}$  is a vector of the control variables;  $r_{it}$  is the vector of the rent regulation index (here the data are taken with a time delay of one decade here to avoid possible endogeneity);  $\mu_i$  are country-specific fixed effects,  $\delta_t$  are decade-specific fixed effects, and  $v_{it}$  is the error term. Home ownership rates were differentiated to correct for possible autocorrelation. The estimates were carried out with country-decades as cases, since home ownership rates are surveyed relatively infrequently and the annual time series would have too many gaps.

the demand for rental housing is likely to be determined by regulation: higher levels of tenant protection increase the appeal of renting in the short term.

The present report shows that the intensity of the regulation leads to a different balance in the stock of rental units and condominiums in the long term. Part of the globally observed difference among home ownership rates can be explained by differences in regulatory intensity. The evidence based on micro data also supports this relationship.<sup>17</sup>

This must be considered when planning further intervention in the housing market, as currently under discussion in many German cities—Berlin in particular. The more profound the market intervention, the greater the long-term negative effect on the supply of rental units. When designing new regulatory measures for the rental market, the balance between the interests of tenants and those of investors must be preserved.

<sup>17</sup> Rebecca Diamond, Timothy James McQuade, and Franklin Qian, "The effects of rent control expansion on tenants, landlords, and inequality: Evidence from San Francisco," *American Economic Review* 109 (9) (2019): 3365–3394.

**Konstantin Kholodilin** is a Research Associate in the Macroeconomics department at DIW Berlin and Professor at the NRU HSE St. Petersburg | [kkholodilin@diw.de](mailto:kkholodilin@diw.de)

**Sebastian Kohl** is a Senior Researcher at the Max-Planck Institut for the Study of Societies | [kohl@mpifg.de](mailto:kohl@mpifg.de)

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