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How Do Taxation and Regulation Affect the Real Estate Market?

In the past decade, housing costs have risen tremendously. While real estate prices in Germany have increased by around 50percent, major cities have experienced an even stronger surge (Baldenius et al. 2020; Mense et al. 2019). Likewise, rents have substantially increased, particularly in major cities. More recently, the Covid-19 pandemic and the shift to working from home seem likely to have reinforced the trend to suburbanization, which has led to rising real estate prices also in big cities' surrounding areas. Hence, the affordability of housing is perceived to be an urgent social problem. Policymakers have adopted numerous measures intended to reduce housing costs. These include taxes, homeownership subsidies, or rent regulation.

How do such measures work? Do they in fact reduce housing costs, or do they rather bring about other, sometimes unintended, effects? In several projects, we exploit big data on property prices and rents to answer such questions. These include advert data from 17 million properties offered for sale between 2005 and 2019 from F+B, as well as detailed rent data from immowelt. In addition, we make use of large-scale surveys to study how the Covid-19 pandemic and the shift to working from home affect housing preferences and the choice where to live.

The following article provides an overview of four projects that assess the effects of regulation and taxation as well as the pandemic's impact on the German real estate market, using large-scale property price as well as survey data. The projects aim to provide answers to the following questions: Do subsidies make housing purchases more affordable? How do real estate transfer taxes affect house prices? How does rent regulation such as the Berlin rent cap affect the real estate market? And, which future trends in the housing market can be expected given the pandemic's potentially long-lasting impacts on residential preferences?

KEY MESSAGES

- **Rent caps can have significant unintended consequences through lower housing supply**
- **Instead of making housing more affordable, purchase subsidies have provided a windfall for sellers**
- **The real estate transfer tax levied on properties' purchase price substantially decreases property prices**
- **The Covid-19 pandemic may leave long-lasting impacts on Germany's housing market**
- **Policymakers would be well advised to take into account such trends and side effects when formulating policy**

HOME-OWNERSHIP SUBSIDIES ARE PASSED THROUGH INTO PROPERTY PRICES

Rising property prices have led to calls for housing subsidies, aiming to make housing more affordable. While many policy measures target renters, several countries have implemented home-ownership subsidies, most often through mortgage interest deductions. Rather than subsidizing property purchases through the consideration of mortgage interest payments in the tax code, both the German federal and the Bavarian state government introduced direct real estate purchase subsidies in 2018. While the federal subsidy, the so-called Baukindergeld, explicitly targeted families and depended on the number of children, the State of Bavaria introduced an additional flat-rate subsidy. This housing purchase subsidy (Bayerische Eigenheimzulage) subsidized the purchase or construction of real estate for all households that met certain rather generous income criteria with 10,000 euros.

How do such subsidies affect property prices? Contrary to public perception, such subsidies do not necessarily benefit the buyers of real estate: if subsidies increase the demand for real estate, prices may rise in response. In fact, most empirical evidence on mortgage interest deductions points to a pass-through into property prices (see, e.g., Bourassa et al. 2013 or Gruber et al. 2021).

Using big data on property prices offered within 50 kilometers of the Bavarian interstate border, Krolage (2022) analyzed to what extent the direct housing purchase subsidy is passed through into prices. Exploiting that the home-ownership subsidy is exclusively granted in Bavaria, the study applied a differences-in-differences approach. More precisely, Krolage compared regional trends

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in neighboring border regions, controlling for characteristics of the properties such as floor space, construction year, or the presence of amenities. This approach assumed that property prices in regions on both sides of the Bavarian interstate border would have followed the same trends in 2018 if the same policies had been in place on both sides. This assumption was validated by comparing price trends in previous years: Trends moved in parallel on both sides of the Bavarian border until they then diverged with the introduction of the Bavarian subsidy scheme in the second half of 2018. A disproportionate rise in Bavarian property prices after the introduction of the subsidy indicated a price increase attributable to the subsidy.

Indeed, this descriptive finding was confirmed by a thorough empirical analysis. The difference-in-differences results show that the prices of Bavarian single-family homes increased by about 10,000 euros in the second half of 2018 compared to adjacent regions in neighboring states. That is, house prices have on average risen by the subsidy amount, which indicates a full capitalization of the subsidy.

In contrast, no such effect was found for apartments. This is attributable to the large share of apartments which are purchased as investment properties. As the subsidy only applies to owner-occupiers, the market for apartments is much less affected.

Further robustness checks confirmed heterogeneous effects across property types: price increases are largest for medium-sized single-family houses, which are most likely acquired by families eligible for the subsidy. Linking housing to household survey data confirmed this finding: prices may even increase by more than the subsidy amount for houses with the highest likelihood of subsidization.

In addition to increasing house prices, such a subsidy scheme may foster construction of new properties. Applying my methodology to construction permits indeed provides suggestive evidence that the subsidy gave rise to a slight increase in construction activity.

Overall, the study shows that the subsidy scheme did not fulfill policymakers' expectations. Rather than making property prices much more affordable, the subsidy scheme gave rise to substantial price increases. Hence, on average, buyers of single-family homes do not benefit. Instead, the subsidy scheme redistributes from property purchasers and taxpayers towards property developers and existing homeowners who can attain higher prices when selling their house.

REAL ESTATE TRANSFER TAX RATES STRONGLY REDUCE PROPERTY PRICES

Taxing property purchases constitutes an important source of public revenue in many countries. However, such taxes have come under criticism for preventing property transactions and for making housing unaffordable. Against this background, we use an event study design to assess the effects of permanent real estate transfer tax changes on the housing market (Dolls et al. 2021).

Understanding the effects of such taxes is key for policymakers. On the one hand, the tax leads to additional incidental purchase costs. On the other hand, taxation can also influence the prices sellers can demand. If demand for real estate falls as a result of a tax increase, prices may even drop significantly. In this case, sellers rather than buyers bear the effective tax burden.

In Germany, the real estate transfer tax (RETT), which is charged on a property's purchase price, constitutes an important source of revenue for the states. Since 2006, German states have had the flexibility to autonomously set their RETT rates. This has led to – often several – increases in tax rates in all states but Bavaria and Saxony.

We exploit the fact that the different German states increased their tax rates at different points in time to conduct a so-called event study. This allows us to separate the effect of the tax increase from general price trends. We estimate the price effects of a one-percentage-point increase in the RETT rate with large-scale price data, accounting for property characteristics, such as living space and the presence of a balcony or parking space.

Figure 1 shows the price trend before and after a RETT increase over time. The first vertical red line indicates the announcement of the tax increase, and the dashed vertical line indicates the timing of the increase. Our estimates indicate that prices drop significantly in response to a RETT increase. About one year after the tax increase, a one-percentage-point increase in the tax rate leads to a 3-percent drop in prices.

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Effects are larger for apartments than for houses, which is attributable to the average apartment having shorter holding periods. As apartments are more often considered as an investment and are resold more frequently, lower expected future resale values lead to a stronger decline in apartment prices.

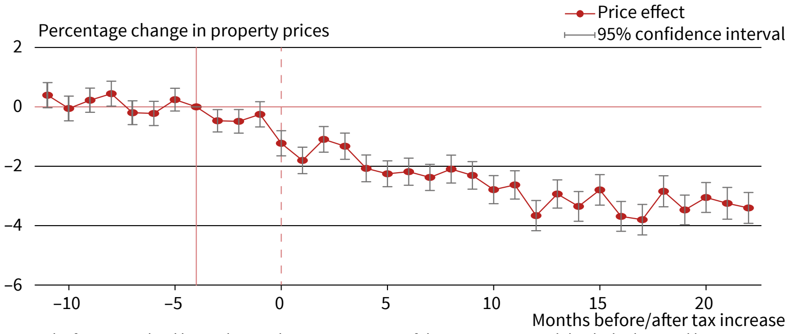
Counterintuitive to public perception, these declines in prices are particularly strong in growing housing markets: Prices drop more in growing cities where the bargaining power of sellers is high. This is because buyers in growing cities are already at the upper limit of what they can afford. Consequently, higher taxes reduce the net-of-tax price buyers are willing to pay. Therefore, sellers need to decrease their offer prices in response.

Overall, our results show that the real estate transfer tax is borne by sellers. This suggests that real estate transfer taxes do not make properties less affordable for first-time buyers. Rather, reducing such taxes will likely enable sellers to charge higher prices, resulting in windfall profits for sellers.

This finding is also relevant in the current policy debate: to facilitate the acquisition of owner-occupied residential property, the current coalition agreement envisages an exemption amount for the real estate transfer tax. Our findings indicate that this may not necessarily benefit buyers.

Figure 1

Effects of a One-percentage-point Increase in the Real Estate Transfer Tax on Real Estate Prices



Note: The first vertical red line indicates the announcement of the tax increase, and the dashed vertical line indicates the timing of the increase.
Source: Dolls et al. (2021).

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RENT REGULATION REDUCES RENTS IN A REGULATED SEGMENT, BUT WITH ADVERSE EFFECTS ON HOUSING SUPPLY AND UNREGULATE RENTS

Declining affordability of housing has led to intense discussion about rent regulation, particularly rent caps. Proponents expect long-run drops in rents and relief for people struggling with high rents. Critics, on the other hand, point to possible unintended consequences, such as a drop in investment and a decline in the supply of housing. Arlia et al. (2022) studied these consequences for the case of the Berlin rent cap.

The “Law on Rent Limits in the Housing Sector in Berlin” was passed on February 23, 2020, in response to rising rents. The law implemented the so-called Berlin rent cap that limited rents for apartments. In addition to a freeze on rents at the cut-off date of June 18, 2019, a rent cap was defined depending on the residential location, year of construction, and furnishing of the apartment: net rents that were more than 20 percent above the respective rent cap were no longer permitted. However, this did not apply to new apartments built from 2014 onwards. Ultimately, the rent cap was declared unconstitutional by the Federal Constitutional Court on April 15, 2021. Immediately, the ceilings no longer applied and rents could be raised again.

This implementation and sharp reversal make this setting ideal for the study of the effects of rent regulation. Arlia et al. (2022) studied how purchase prices and rents developed in the regulated and unregulated segments, i.e., those built as of 2014. To study this policy, access to timely data on the housing market in Berlin and other major German cities was key. The authors leveraged an extensive data set provided by the German real estate portal immowelt.de. The final dataset includes more than 460,000 rent ads and more than 160,000 purchase ads for Berlin and the 13 next largest cities in Germany.

To identify the impact of the rent cap on prices and housing supply, Arlia et al. estimated a linear regression model that compared price and rent trends in Berlin with those in all other German cities with at least 500,000 inhabitants. The regression was weighted by the characteristics of the apartments, so that the distribution of apartment characteristics in Berlin and the comparison cities was identical. This ensured that divergent trends were not simply due to other apartments coming onto the market in Berlin.

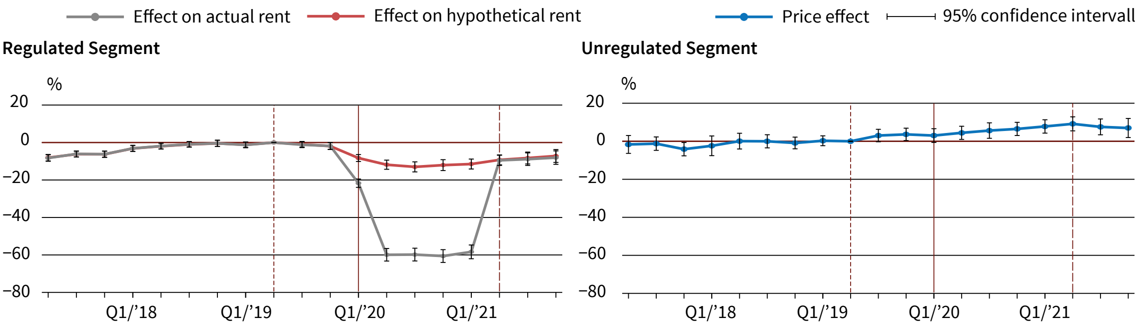
Figure 2 shows the development of rents in the regulated and unregulated segments. Rents of apartments that were subject to the rent cap fell sharply after the introduction of the rent cap. In the regulated segment, we distinguish between actual rents and hypothetical rents: In many cases, contracts stipulated a higher rent if the rent cap was abolished. While the rent cap was in effect, the lower rents applied (actual rent). After the abolition, the higher rents came into effect (hypothetical rent).

In turn, rents in the unregulated segment, i.e., apartments built in 2014 or later, increased significantly. The introduction of the rent cap has thus led to a bifurcation of the real estate market: tenants of regulated apartments benefited, while tenants of newer apartments had to bear higher rental costs. Since the abolition of the rent cap, rent trends are slowly converging again.

The development for purchase prices was similar in the regulated segment. Compared to the other cities, purchase prices also rose less. This is the case even after the abolition of the rent cap. There were no clear effects on purchase prices in the unregulated segment.

Figure 2

Development of Asking Rents in Berlin Compared to Other Major Cities



Note: The chart shows the differences in growth rates of asking rents (per square meter) between Berlin and the 13 next largest cities in Germany in the regulated (left) and unregulated (right) segments for the period Q2 2017 to Q4 2021. The base period for calculating growth rates is Q2 2019. The first dashed vertical line marks Q2 2019, the date of publication of the rent cap bill and the cut-off date for calculating the rent cap (June 19, 2019). The solid vertical line marks Q1 2020, the effective date of the rent cap bill. The second dashed vertical line marks Q2 2021, the date the rent cap expires.
Source: immowelt.de; authors' calculations.

Finally, Arlia et al. examined the impact of the rent cap on housing supply. The rent cap led to a striking collapse in the supply of apartments: after the introduction of the rent cap, up to 60percent fewer rental apartments were on offer. Even after the abolition of the rent cap, the supply of housing continued to be comparatively low. Conversely, the supply of unregulated apartments increased after the introduction of the rent cap and fell afterwards.

Rent regulations such as the rent cap are repeatedly proposed by policymakers. The analyses show that the rent cap had heterogeneous impacts on different groups. Individuals with an existing rent contract in the regulated segment did indeed pay lower rents. By contrast, housing costs rose for people who had to move to the unregulated segment of the real estate market, for example, due to a relocation. Additionally, reduced supply presumably made it harder to find an apartment. While the policy did reach its intended goal of reducing rents in the regulated segment, it also had major negative unintended consequences.

THE COVID-19 PANDEMIC AND THE SHIFT TO WORKING FROM HOME MAY HAVE LONG-LASTING IMPACTS ON THE GERMAN HOUSING MARKET

The Covid-19 pandemic triggered a huge, sudden uptake in working from home, as individuals and organizations responded to contagion fears and government restrictions on commercial and social activities. Recent research reveals that the big shift to work from home will likely endure after the pandemic ends (see Bloom et al. 2021, Criscuolo et al. 2021 and Aksoy et al. 2022, among others). Since the outbreak of the pandemic, there has been speculation about its effect on the housing market, in particular whether it might lead to urban flight and rural revitalization.

In order to shed light on the long-term effects of the pandemic and the shift to working from home on the German housing market, Dolls and Mehles (2021) examined residential preferences in the German population. They rolled out a large-scale survey of 18,000 people in urban, suburban, and rural areas in Germany in May 2021. A key finding of their study is that survey participants from urban areas show a higher willingness to fundamentally change their housing situation compared to respondents from suburban and rural areas. Nearly 13 percent of respondents from the 14 large German cities with more than 500,000 inhabitants say they plan to move away from the big city within the next 12 months. Short-term plans to move in this group are disproportionately more common among younger and middle-aged people and among households with children. The willingness to move among respondents from suburban or rural areas is significantly lower than among the group of metropolitan residents.

About 46 percent of respondents with short-term relocation plans indicated that their plans were influenced by the Covid-19 pandemic. The most frequently cited relocation destinations of metropolitan respondents with short-term relocation plans are smaller metropolitan areas with populations of 100,000–500,000, and suburban areas around larger cities, while rural areas play only a minor role. These results suggest that the Covid-19 pandemic and the shift to working from home will reinforce the existing trend of suburbanization, rather than trigger rural revitalization.

The above findings have important implications for municipal infrastructure planning, for example in the areas of mobility and education. They suggest that better (public transport) connections between suburban and urban areas and an expansion of the education infrastructure in suburban areas and in smaller metropolitan areas will become more important.

POLICY CONCLUSION

Large-scale real estate data permits a thorough analysis of policies affecting the real estate market. Our findings indicate that subsides, taxes, and regulation do not always work as intended. Instead, purchase subsides drive up prices and do not make housing more affordable, while, in contrast, real estate transfer taxes lead to a reduction in property prices. Such an understanding is vital for future policymaking: Our insights help shed light on numerous current policy proposals, ranging from rent regulation to tax breaks.

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