
ACCENTRO
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Nationwide Analysis of Rents and
Owner-Occupied-Housing Costs in Germany
by the German Economic Institute

INCLUDING SPECIAL SECTION:
Incoming Migration: What is
the Post-Pandemic Outlook?

6th Edition

ACCENTRO HOUSING COST REPORT 2021

Nationwide Analysis of Rents and Owner-Occupied-Housing Costs
in Germany

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Summary

The purpose of the user-cost-of-housing approach is to compare rental costs with the recurrent costs borne by homeowners. While the approach is used to determine the relative economic benefit of owning your home outright versus renting your home, it also identifies over- or under-valuations in the market.

Over the past year, interest rates for mortgage loans experienced another significant drop, whereas the returns on alternative investments declined as well. Both of these trends caused owner-occupied housing costs to decline last year. In many parts of Germany, the plunge in mortgage interest has also prevented a rise in annuity, meaning the sum of interest and capital repayment that borrowers shoulder to finance a mortgage loan. The development of this parameter, which is decisive for the user-cost-of-housing approach, may also help to explain why prices for residential real estate just kept on going up last year. The price growth seen last year despite the uncertainties associated with the coronavirus pandemic therefore comes as no surprise from the angle of the user-cost-of-housing approach, as it reflects the persistent undervaluation of residential real estate in Germany.

In the wake of the pandemic, the incoming migration to Germany declined last year, slowing the demographic growth as a whole. The migration flow is, however, expected to rebound and rise again in the medium term, and the country's major cities in particular will remain relevant target regions for both internal and external migrants. A permanent reversal of the demographics in Germany's major cities is therefore not to be expected in the medium term.

1. Introduction

The ACCENTRO Housing Cost Report 2021 represents the sixth annual edition of the report. At its core, the report compares the housing costs borne by owner-occupiers with rental costs paid by tenants. Comparing the costs of these two accommodation options is not just highly interesting from a personal point of view, but also permits conclusions about the housing market in general. This edition also marks the second time that the Accentro Housing Cost Report is published during the ongoing coronavirus pandemic, which has impacted Germany as much as the rest of the world. By the first half of 2021, meaning the time of the report's publication, the vaccination campaign has gathered momentum in Germany, so that it is reasonable to assume that dining, shopping and travelling will become easier before the end of this year. Hopes are running high that the pandemic will be overcome soon.

In its opening section, last year's Housing Cost Report discussed the potential ramifications of the coronavirus pandemic for residential property markets. Based on the report findings, it was assumed at the time that the coronavirus pandemic would not cause an abrupt deterioration of prices on the market (see Sagner/Voigtländer, 2020). As it turned out, prices on the homeownership market did continue to rally in 2020, and significantly so. This coincides with the insight that owner-occupied housing costs continued to decline last year while the economic benefits of homeownership over renting kept rising. The reason for this, in addition to yet another substantial interest rate drop for mortgage loans, is not least a decline in opportunity interest rates, as the economic turbulences of the year behind us also struck deep



2. Owner-Occupied-Housing Costs

2.1 Notes on the Methods Used

Making Rents and Owner-Occupancy Costs Comparable

The effort to make the costs of renting and those of owner-occupying your own property comparable necessitates a few assumptions regarding the situation of owner-occupiers. The costs of renting are directly obtained from the respective rent level. The section below will compare the costs of letting or occupying residential accommodation, respectively. On the tenant side, the comparison will use the base rent before heating costs as benchmark. Unlike tenants, owner-occupiers need to factor various individual line items into the calculation of their housing costs. The approach taken to calculate the owner-occupied housing costs are based on the studies conducted by Poterba (1984) and Himmelberg et al. (2005). Included in the owner-occupied housing costs are expenses regularly incurred by the owner, such as, for instance, the costs associated with the debt financing of a mortgage loan. Here, it is important to differentiate between the financing costs, meaning the payment of interest and the capital repayment. The capital repayment component is not part of the owner-occupied housing costs because its purpose is wealth-building. It is excluded from the comparison because the tenant side lacks a wealth-building aspect. The components of the owner-occupied housing costs break down into various components, and can be represented in mathematical form as follows:

$$\begin{aligned}
 SNK_{k,t} = & P_{k,t} \cdot (b \cdot i_{F,t}) + P_{k,t} \cdot (s + a) - P_{k,t} \cdot \widehat{\Delta P}_k \\
 & + P_{k,t} \cdot (1 - \tau_t) \cdot (1 - b) \cdot i_{A,t} \\
 & + P_{k,t} \cdot (m_{k,t} + g_{k,t} + n + e) \cdot (1 - \tau_t) \cdot i_{A,t} \\
 & + P_{k,t} \cdot (m_{k,t} + g_{k,t} + n + e) \cdot i_{F,t}
 \end{aligned}$$

The owner-occupied housing costs SNK are determined on the level of Germany's 401 rural and urban districts k for a given year t . Of key importance when determining the owner-occupied housing costs is the purchase price P of the owned property, quoted in euros per square metre of dwelling floor area in a given district and year. A certain share b of the price is borrowed, subject to a borrowing rate of i_F . The higher the purchase price, the leverage and the mortgage interest are, the higher the owner-occupied housing costs are bound to be. Unlike tenants,

This year's report will venture a look at post-pandemic times. In particular, it will discuss the repercussions for international migration and its implications for German cities. Immigration from abroad has played a key role in the real estate boom that Germany experienced over the past decade. Based on provisional figures released by the Federal Statistical Office (Destatis), Germany's incoming migration took a nosedive in 2020, thereby slowing the population growth of prior years. The strong migration flow seen during the past decade appears to be ebbing. However, demographic forecast are predicting significant growth rates in the years ahead, especially for the major German cities. There are sound reasons for it, and a reversal in the demographics of the cities is not be expected in the medium term.

The other parts of the report are structured as follows: First, the methodology underlying the user-cost-of-housing approach is elaborated and illustrated using an example. Next, the results for the nationwide average and Germany's seven largest cities are presented over time, followed by the results for Germany's rural districts. The report will then move on to present the results of the annuity calculation, which put the results of the user-cost-of-housing calculation into perspective. Finally, the implications of the coronavirus pandemic for the incoming migration to Germany, and for the migration flow within Germany, will be discussed before the report concludes with a medium-term outlook for the post-pandemic development.

property owners must also factor in the costs of maintenance s and amortisation a which will cause the value of the property to deteriorate over time unless the necessary capital expenditures are made. This cost item should therefore be considered on an opportunity basis. Either the capital expenditures are actually made, keeping the property value stable, or they are skipped, causing the property value to decline. Thus, the costs are incurred either way. This is matched by the performance ΔP_k of the property. A positive performance will lower the owner-occupied housing costs. It should be noted that the equity interest $1 - b$ in the property financing arrangement could have been invested on the capital market rather than in real estate. The calculation imputes that the alternative investment would pay interest at a rate of i_A . Interest income from the alternative investment would be taxable at a rate of τ . In addition, buying property generates incidental acquisition costs. These include the estate agent fee m , the real estate transfer tax g as well as the notary fee n and the charges for entering the title in the land register e . The incidental acquisition costs, just like the equity paid down, could have been spent on an alternative investment. Any income from that would also be subject to taxation. The higher the imputed interest on the alternative investment, the higher the owner-occupied housing costs. Finally considered is the fact that the incidental acquisition costs have no equivalent value in the form of a property asset. In order to be able to take these costs into account, it is assumed that the financing markets are fully flexible, and that even the equity capital share is debt-financed and subject to debt interest. This aspect is new and was not considered in the calculations of prior years.

Data Sources

Below, the owner-occupied housing costs are measured for each of Germany's 401 rural and urban districts. The measurement presupposes knowledge of the regional property prices. The property prices used are obtained from two different data sources. To permit a direct comparison of owner-occupied housing costs and rents, the respective prices and rents obviously need to reference comparable properties. Actually sold and rented residential properties can differ considerably from one region to the next, and over time. So, in order to ensure that properties are actually comparable, the survey relies on hedonic prices.

The data include initial selling prices or resale prices of fully refurbished period flats in good locations and with high-spec interior fit-outs, on the one hand, and new-tenancy rents for comparable flats, on the other hand. The calculation of the owner-occupied housing costs also takes account of appreciation. The anticipated long-term appreciation we use is based on the data by F + B (2021). These data let us analyse the extended time horizon from 2005 through 2020. This is done by measuring the average annual performance per rural district or urban district, as the case may be. The analysed time period includes both the Zero Years, a time when the property price level was actually regressive in parts of Germany, and the more recent boom decade. In order to keep the fast price growth rates of recent years from attaining too much weight, the price growth rate is capped at an annual maximum of three percent.

The percentage of the equity capital share, the survey relies on diverse publications by financial intermediary Dr. Klein, whose figures are in turn taken from real estate financing arrangements handled by the Europace platform.

The higher the average equity capital commitment, the lower the owner-occupied housing costs. In this regard, we impute a uniform average value for all rural districts and urban districts in a given year. It should be noted that significantly lower equity shares are also associated with interest rate markups. These interest rates also represent imputed average values without regional differentiation. The interest rates imputed in the calculations are obtained from surveys of Deutsche Bundesbank.

The mortgage interest rate we applied represents the average effective interest rate that German banks charge for housing loans to private households with an initial fixed interest period of more than ten years (Deutsche Bundesbank, 2021b). The average current yields of domestic bearer bonds are used as opportunity interest rate for the investment (Deutsche Bundesbank, 2021a). These returns would have to be taxed, and the average tax rate assumed here matches the definition used for Germany's financial statistics in this context (Federal Ministry of Finance, 2020).

Variables and Data Sources

Table 2.1

Variable	Explanation	Source
P_{kt}	Purchase price, in euros per sqm of dwelling floor area	vdpResearch (2021)
b	Debt capital share	Dr. Klein (2021)
$i_{F,t}$	Mortgage interest rate	Deutsche Bundesbank (2021a)
$i_{A,t}$	Current yields, bearer bonds	Deutsche Bundesbank (2021b)
τ_t	Tax rate	BMF (2019)
$\widehat{\Delta P}_k$	Purchase price changes	F+B (2020)

Source: German Economic Institute (IW)

Calculation of Owner-Occupied Housing Costs, Using an Example

The level of the incidental acquisition costs varies from one German state to the next. Depending on the state, the real estate transfer tax rate ranges from 3.5 percent in Saxony and Bavaria to 6.5 percent in Brandenburg and Schleswig-Holstein. Aside from the real estate transfer tax, the estate agent's fee is also subject to serious regional differences. Prior to the introduction of the "Act on the Distribution of Estate Agent Fees for Brokering Sales and Purchase Agreements for Flats and Single-Family Homes" (see Federal Law Gazette I 2020, p. 1245) on 23 December 2020, buyers used to have to pay the entire agent's fee of up to 7.14 percent of the purchase price in some regions. This used to be the case in Berlin and Brandenburg, for instance. In other states, such as Bavaria, the agent's fee used to be split between buyer and seller. The introduction of the new law has considerably lowered the agents' fee for buyers in some areas (see Sagner/Voigtländer, 2021). Since this year's survey only considered annual values up to and including 2020, the changes are not yet reflected in the measurement of the owner-occupied housing costs. The costs of the land register entry and the notarial charges are assumed to be uniform nationwide.

The example below illustrates the measurement of the owner-occupied housing costs. As key parameter of the owner-occupied housing costs, a price of 4,000 euros per square metre of dwelling floor area is imputed. The incidental acquisition costs break down into the real estate transfer tax, whose rate varies from one region to the next and which is assumed to be six percent in the case at hand, as well as the estate agent's fee, which is also subject to regional differences and here assumed to be 3.57 percent, plus costs for the land register entry and the notarial charges, assumed to be an aggregate amount equal to 1.525 percent. All things considered, the incidental acquisition costs in the example add up to 11 percent or 444 euros per square metre. The assumed leverage equals around 85 percent. The borrowed capital is subject to an annual interest rate of 1.2 percent. The remaining 15 percent of the purchase price, which represents the equity capital paid down, generate opportunity costs in an amount of 1.75 percent. This rate reflects the average current yield rate paid on domestic bearer bonds, which dropped by 0.75 percentage points between 2019 and the pandemic year of 2020. This sort of interest income would be taxable. To calculate the tax dues, the average tax rate according to the delimitation used in the financial statistics of 2019 was adopted for 2020. The rate was 23.2 percent. Another assumption used in the example is a long-term price growth rate of 2.5 percent annually. Maintenance costs equal to 1.0 percent and a depreciation rate of 2.0 percent were also assumed. Based on all of these assumptions, the calculation of the owner-occupied housing costs returned the following results:

$$\begin{aligned}
 & \text{SNK}_{\text{Musterstadt}} \\
 &= 4000 \cdot (0,85 \cdot 0,012) + 4000 \cdot (0,01 + 0,02) - 4000 \cdot 0,025 + 4000 \\
 & \cdot (1 - 0,232) \cdot (1 - 0,85) \cdot 0,0175 + 4000 \cdot (0,0357 + 0,06 + 0,01525) \\
 & \cdot (1 - 0,232) \cdot 0,0175 + 4000 \cdot (0,0357 + 0,06 + 0,01525) \cdot 0,012
 \end{aligned}$$

For a flat of 100 square metres, it identified owner-occupied housing costs of 8,015 euros per year or 6.68 euros per square metre and month. Assuming a monthly rent rate of 9.00 euros per square metre for an equivalent flat, the cost advantage of owner occupancy would equal 26 percent.

Separating Owner-Occupied Housing Costs from the Annuity Calculation

As mentioned above, the capital repayment component of the financing arrangement is ignored in the context of owner-occupied housing costs because it serves a wealth-building purpose. The interest payments represent costs charged by the bank for making the borrowed capital available. The capital repayment component, by contrast, generates no economic benefit for the bank, and it is directly matched by the equivalent value of the purchased property. In classic annuity accounting, these two components are merged. After all, their sum represent the amount that has to be paid to the lender on a monthly basis. The annuity level becomes relevant when a given household has to decide how much of the household income can be spent on mortgage financing.

But this is not the fundamental idea underlying the user-cost-of-housing approach. Rather, it is based on the premise that the costs of renting a home should, in the long-term, match the costs of inhabiting an owner-occupied home. This means that only the cost components are of relevance. The classic annuity calculation only considers the debt capital interest as costs. By contrast, the owner-occupied housing cost approach takes opportunity costs into account, too. Opportunity costs represent the costs that are generated by the fact that capital is tied up in the property. Also taken into account are hypothetical returns that could have been generated if the capital had been spent on an investment product with a similar risk profile. Another aspect that the annuity calculation fails to consider are the costs for refurbishments and depreciations, nor does it include the appreciation of the property.

That said, the annuity calculation still serves an important purpose. Potential property buyers are therefore well advised not to consider either one of the two approaches in isolation. The section below will therefore include the results of a classic annuity calculation, too.

2.2 Findings for Germany

The nationwide average in owner-occupied housing costs has declined year on year, as Figure 2.1 shows. In 2020, the owner-occupied housing costs averaged 4.32 euros, whereas new-tenancy rents for comparable flats averaged 9.89 euros. This translates into a cost advantage of 56 percent. The only time during the past 10 years that registered a steeper drop in owner-occupied housing costs was between 2014 and 2015. Between 2015 and 2018, owner-occupied housing costs suffered a trend reversal. The level of interest rates remained more or less unchanged during this period, whereas selling prices kept rising. But a short while later, between 2018 and 2019, owner-occupied housing costs declined again when the effective interest rate German banks charged on housing loans with an initial fixed-interest period of more than 10 years dropped from 1.96 percent to 1.54 percent – a nose-dive by 22 percent. As a result, owner-occupied housing costs decreased by 9 percent over the same period of time. Interest rates continued to deteriorate last year, dropping to 1.22 percent or by 21 percent compared to 2019, and more or less matching the decrease of the prior year. Notwithstanding the analogous interest rate drop, owner-occupied housing costs declined substantially faster than they had the year before. The steep drop in owner-occupied housing costs is explained by the development of opportunity interest rates. Current yields on domestic bearer bonds experienced a drastic year-on-year drop last year, from 2.54 down to 1.75 percent, which implies a 31-percent decline. This means that homeownership has become more profitable relative to this investment alternative. A decrease in opportunity interest will lower owner-occupied housing costs. The pandemic year of 2020 and the associated uncertainties for businesses are therefore reflected even in the way the economic benefits of homeownership are trending.

Trend in owner-occupied-housing costs and rents ¹⁾

Population-weighted German ²⁾ average, in euros per square metre of dwelling floor area and month

Figure 2.1



¹⁾ Passing rents (F+B, 2021) refer to a dwelling of medium specification fit-out and state of repair. Rents on new leases (vdpResearch, 2021) and selling price are based on transaction data and refer either to initial selling prices or to resale prices of fully refurbished flats in good locations and with high specification fit-out.

²⁾ With no population data for 2020 available yet, the population weightings of 2019 were adopted for 2020, too. To do the census reset of 2011 justice, retrograde calculation was used for 2010 as defined by the BBSR Federal Institute for Research on Building, Urban Affairs and Spatial Development (2018).

Source: German Economic Institute (IW)

2.3 Findings for the “Big 7” Cities

Owner-occupied housing costs also registered a one-year drop in Germany’s seven largest cities, the so-called “Big 7.” Due to their large populations, they strongly influence findings on the national level anyway. When calculating owner-occupied housing costs, it is assumed that the interest rate level of mortgage loans is identical to that of alternative investments. Whenever the owner-occupied housing costs change at a faster or slower pace in one district than in another between two periods, it is prompted by changes in the relationship of rents to prices. Accordingly, the cross-sectional comparison of a given year always also measures the ratio of prices to rents.

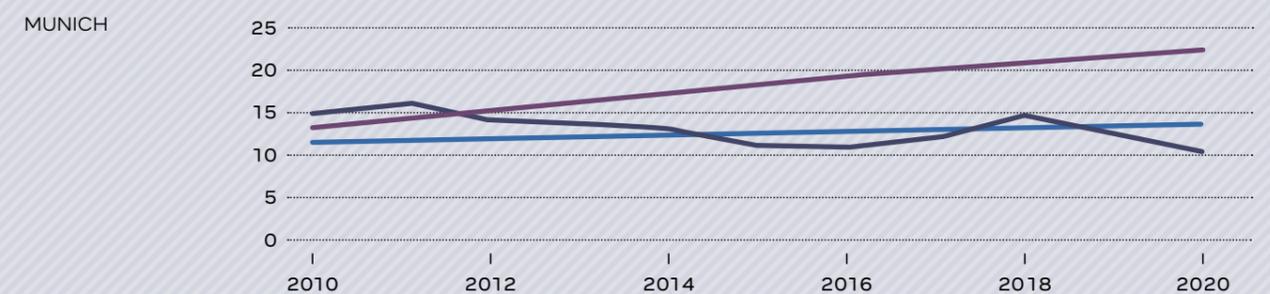
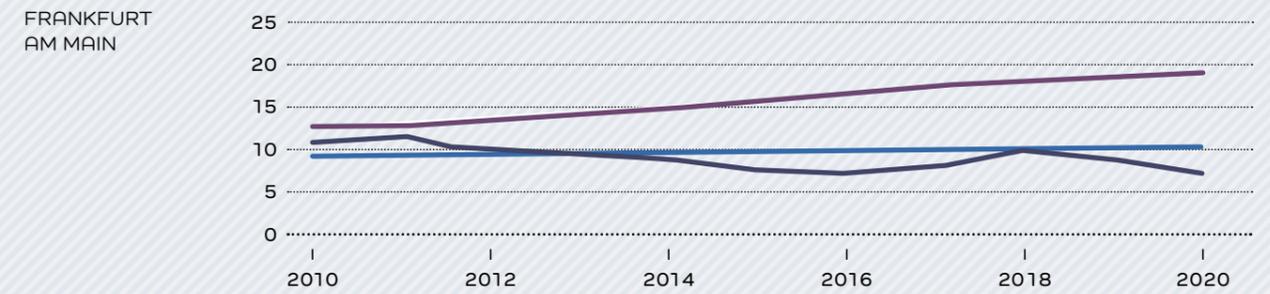
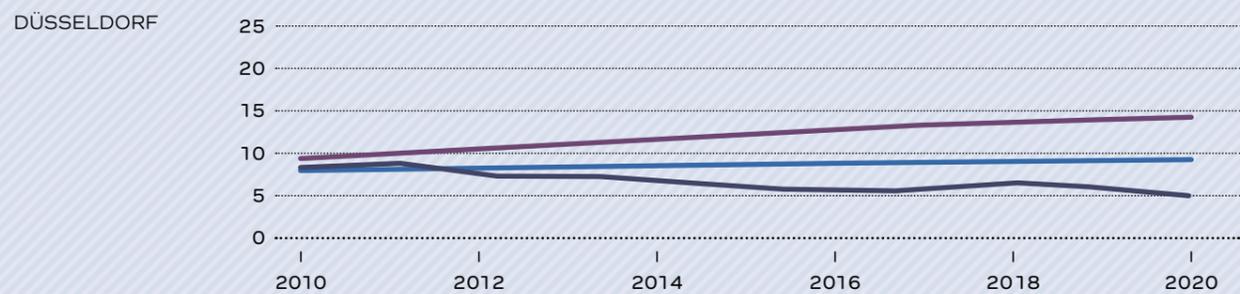
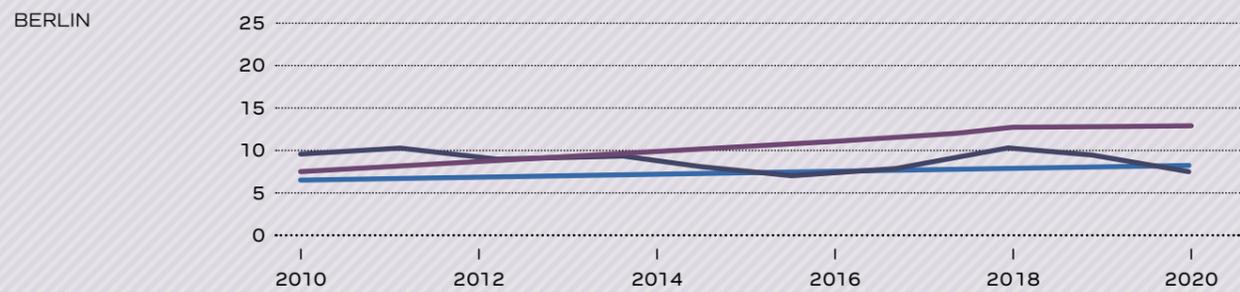
Among the seven largest German cities, the cost advantage of owner occupancy in 2020 was lowest by far in Berlin at 41 percent. While this matches the picture of previous years, it was bolstered last year by Berlin’s rent cap, which caused average new-tenancy rents, in our case for fully refurbished flats, to linger on the prior-year level whereas condominium prices kept on climbing. But even in Berlin, the owner-occupied housing costs declined last year, for the above reasons. Among the “Big 7,” the advantage of homeownership is greatest in Cologne and Düsseldorf with 65 and 64 percent, respectively.





Owner-occupied-housing costs and rents in Germany's metropolises
in euros per square metre of dwelling floor area and month
Figure 2.2

— Owner-occupied-housing costs — New tenancy rents — Passing rents





The cost advantage of owner occupancy directly relates to the ratio of purchase price to annual rent—or price-to-rent ratio—and the gross initial yield. The higher the cost advantage of owner occupancy in a given region, the higher the gross initial yield and the lower the price-to-rent ratio. The connection is illustrated in Table 2.2 for the “Big 7” cities. The relative cost advantage of owner occupancy of 41.1 percent in Berlin translates into a gross initial yield of 2.7 percent and a 36.4 price-to-rent ratio. The average rent level for fully refurbished flats in good locations and with good interior specifications equalled 12.70 euros in 2020, and was therefore much lower than in any of the other Class A cities in Germany. Meanwhile, the price level for comparable flats equalled 5,546 euros, thereby exceeding the levels in Cologne or Düsseldorf where, inversely, rent rates are higher than in Berlin. By far the priciest city now, as then, is Munich with new-tenancy rents of 22.10 euros and average selling prices of 8,411 euros per square metre. Rents in Munich therefore top those in the German capital by 74 percent, while prices are 52 percent higher.

2.4 Findings for Rural Districts and Urban Districts

In almost all of Germany’s rural and urban districts, owner-occupied housing costs are lower than rents for a comparable dwelling. Rental costs undercut the costs of owner-occupancy only in two districts, these being Hagen and Gelsenkirchen. They are, however, not the only cities in the Ruhr where the advantage of owner-occupancy is negligible. The phenomenon is explained, on the one hand, by the rather low gross rent multipliers and, on the other hand, by the modest growth in property prices over the past years. The price growth, which is based on data provided by F + B (2021), shows a more or less stable price level in these districts and cities since 2005. The price expectations that enter into the measurement of the owner-occupied housing costs are based on the long-term developments since 2005, but are capped at 3 percent annually to ensure that temporary growth spikes of past years are not given too much weight. This means that in regions with price growth rates of 3 percent or more, the price growth alone offsets the annual costs for depreciation and refurbishment works as imputed above. Owner-occupied housing costs are higher in rural districts that reported slower price growth rates, assuming that the other facts and circumstances are identical.

Relation of cost advantage of owner occupancy, gross initial yield and gross rent multiplier in German metropolises in 2020

Table 2.2

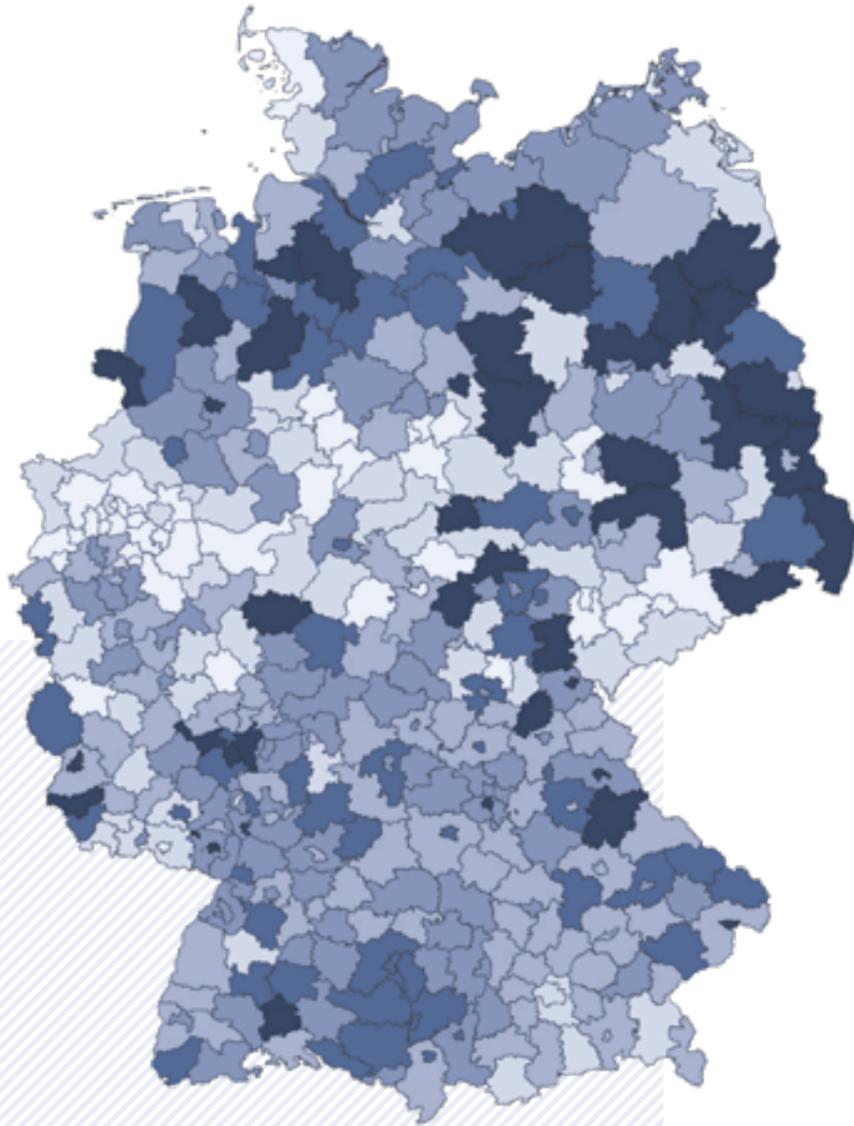
City	Cost advantage of owner occupancy	Gross initial yield	Gross rent multiplier	Rents	Selling prices per sqm
Berlin	41.1 %	2.7 %	36.4	€ 12.70	€ 5,546
Düsseldorf	64.3 %	4.3 %	23.2	€ 14.40	€ 4,010
Frankfurt a. M.	60.6 %	4.0 %	24.8	€ 19.10	€ 5,689
Hamburg	50.3 %	3.1 %	32.0	€ 16.90	€ 6,482
Cologne	65.1 %	4.4 %	22.6	€ 15.10	€ 4,104
Munich	53.6 %	3.2 %	31.7	€ 22.10	€ 8,411
Stuttgart	58.1 %	3.6 %	27.9	€ 16.40	€ 5,496

Source: IW Economic Institute, data source: vdpResearch

Figure 2.3 shows the cost advantage of owner occupancy for Germany’s 401 rural districts and urban districts. It was highest in the rural district of Sömmerda in Thuringia. Yet the parameters of rural districts in Brandenburg also suggest rather high economic benefits for owner-occupiers. On a national level, the largest German cities rank below the nationwide average. This means that owner-occupiers may have a cost advantage over tenants, but it is lower than the German average, except in the cities of Cologne and Düsseldorf. If you list the 401 districts by economic benefit, meaning that the district with the greatest economic benefit would top the list, then Berlin would come in at 354, Düsseldorf at 128, Frankfurt am Main at 224, Hamburg at 327, Cologne at 113, Munich at 305, and Stuttgart at 274. In the case of Berlin, this would imply that the cost advantage of owner-occupancy in the city is lower than in 353 of the 401 districts.

Figure 2.4 depicts the trend in economic benefit for owner-occupiers over time, both for Germany as a whole and by type of region. As already mentioned, the term “Big 7” is used for Germany’s seven largest cities, also called “Class A” cities. The “major city” category comprises major independent cities below the “Big 7”, including the regions of Hanover, Saarbrücken and Aachen, and adds up to 63 cities overall. The suburban districts for cities of either type were also identified. On the whole, 36 districts that are not major cities in their own right are grouped around the periphery of the “Big 7” cities. The suburban districts around the other major cities add up to a total of 115. The remaining districts that are neither a major city nor located on the periphery of any major city or “Big 7” city, are grouped together in the category “Other” districts. Figure 2.4 a) shows the development in the various types of regions over time. The parallel curves show that the cost advantage of owner occupancy has evolved almost in lockstep, judging by the population-weighted average of the regional types. Moreover, the cost advantage in the “Big 7” cities and the other major cities generally fell short of the national average, undercutting it by 5 percentage points each in 2020, as illustrated by Figure 2.4 b). Conversely, the economic benefit is greatest in the districts straddling the city limits of the “Big 7” cities. This finding is driven by the great economic benefit registered in the rural districts of Brandenburg, the state surrounding Berlin on all sides.

Comparative view of owner-occupied-housing costs and rents¹⁾
 In 2020, in percent
 Figure 2.3



Economic benefits of homeownership versus renting

- < 37.8 %
- 37.8 – 54.6 %
- 54.6 – 61.6 %
- 61.6 – 65.6 %
- 65.7 – 69.0 %
- > 69.0 %

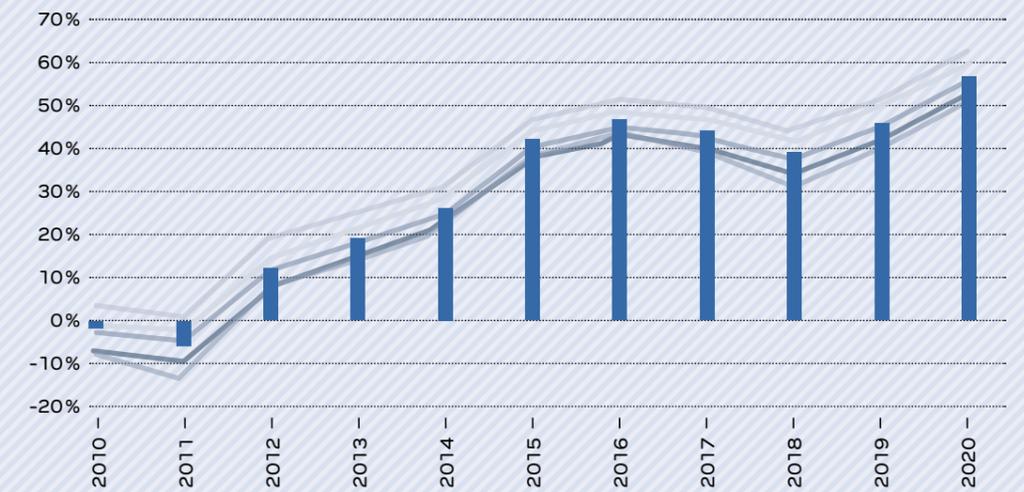
¹⁾ New-tenancy rents

Source: German Economic Institute (IW)

Trend in economic benefits of homeownership, by type of region¹⁾ and difference to national average²⁾

a) Trend in economic benefits

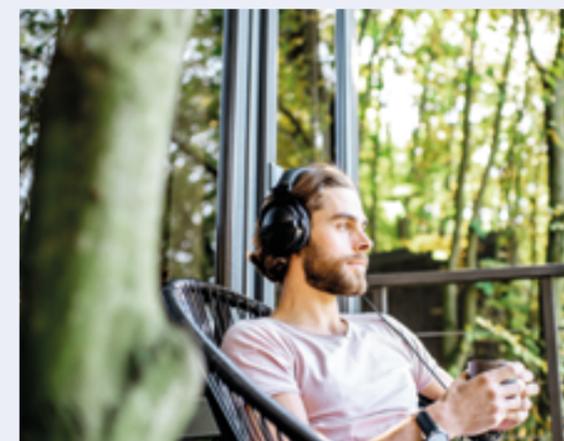
Figure 2.4 a



- Germany (401)
- Major city (63)
- Suburbs, major city (115)
- "Big 7" (7)
- Suburbs, "Big 7" (36)
- Others (180)

¹⁾ Number of districts and cities in the respective group in brackets.
²⁾ Difference in percentage points.

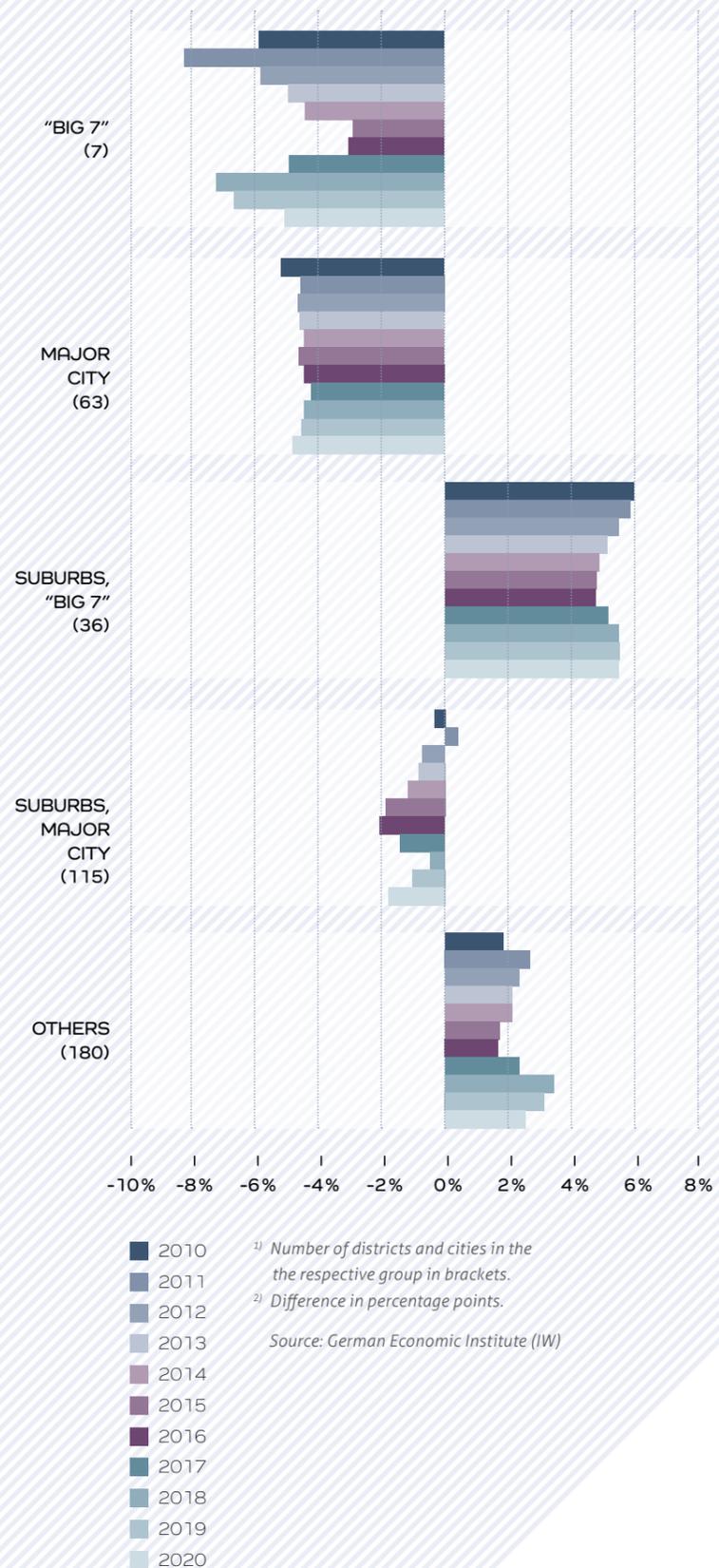
Source: German Economic Institute (IW)





Trend in economic benefits of homeownership, by type of region ¹⁾ and difference to national average ²⁾

b) Difference to national average
Figure 2.4



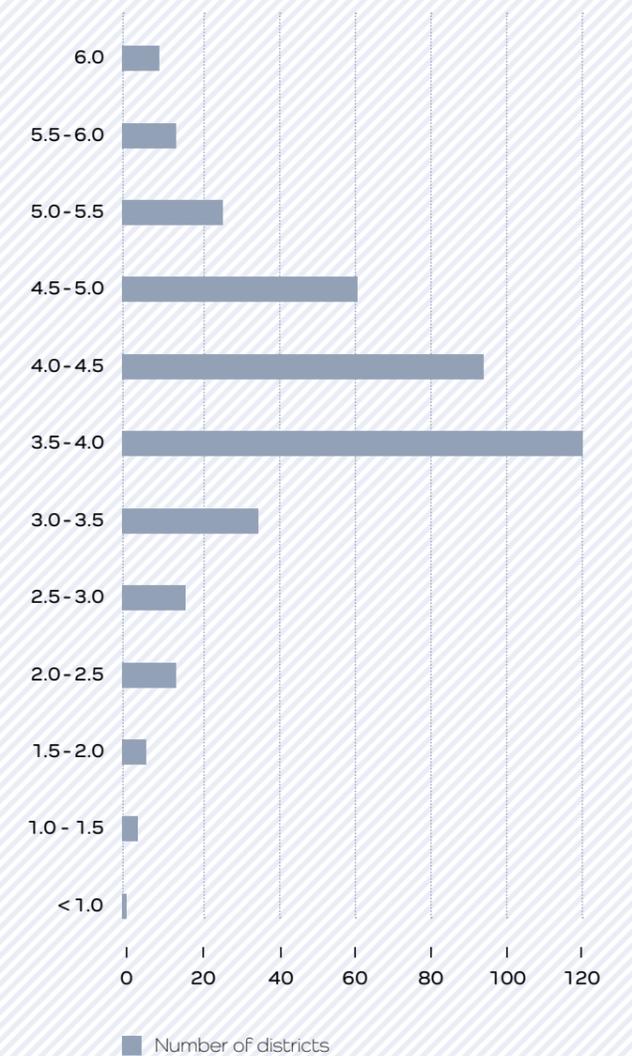
2.5 Interest Rate Sensitivity on the District Level

The level of owner-occupied housing costs is essentially defined by the interest level. The user-cost-of-housing approach considers both the mortgage loan interest and the trend in current yields of domestic bearer bonds (corporate bonds), which are used to measure the profitability of alternative investment options. Whenever interest on mortgage loans drops, so do owner-occupied housing costs. If current yields on domestic bearer bonds drop, owner-occupied housing costs will also drop. In 2010, the average level of interest rates on mortgage loans with an initial maturity of more than 10 years still stood at 3.98 percent, and thus 2.76 percentage points higher than in 2020 (Deutsche Bundesbank, 2021a). This means that, over a 10-year period, the interest expenses for mortgage loans have declined by almost 70 percent. The fact also explains why the affordability of homeownership did not deteriorate dramatically in large parts of Germany despite the price hikes, as a look at the price trends alone would seem to suggest. The current yields of bearer bonds of domestic companies have also fallen in recent years; having equalled 4.04 percent in 2010, they were down to 1.75 percent by 2020, less than half of that (Deutsche Bundesbank, 2021b). Both trends enhanced the attractiveness of homeownership in recent years.

As far as the economic benefit of owner-occupied housing costs goes, there is no need to be concerned about a rise in mortgage interest in most districts, as Figure 2.5 shows. It depicts the number of districts in each group that qualify for the neutral interest rate. In 121 districts, the mortgage interest rate that implies an equilibrium between owner-occupied housing costs and rental costs ranges between 3.5 and 4.0 percent. The higher the cost advantage of owner occupancy, the higher therefore the neutral interest rate. Assuming that the ratio of prices to rents and opportunity interest rate remains stable, it appears that a moderate rise in interest rates for mortgage loans would not change the economic benefit of owner-occupied housing costs over rents in most of Germany's districts. In 305 out of 401 German districts, the neutral interest rate is 3.5 percent or higher, compared to less than 3.5 percent in 77 districts.

Neutral interest rate ¹⁾ on the district level
In 2020, in percent

Figure 2.5

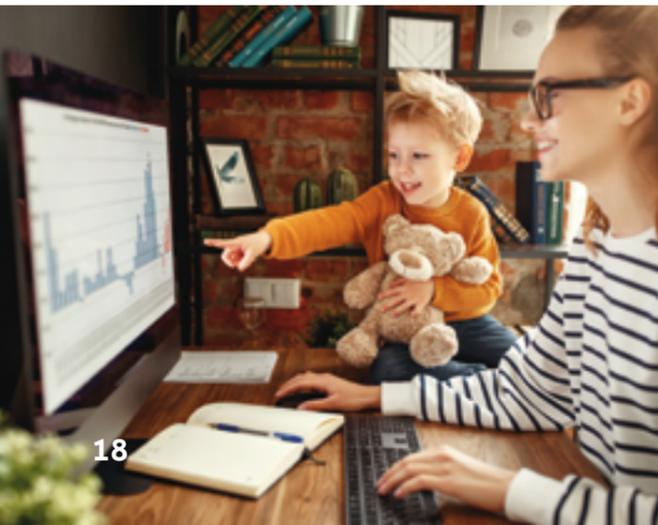


¹⁾ Mortgage rate at which the owner-occupied-housing costs match the rental costs (new tenancy).

Source: German Economic Institute (IW)

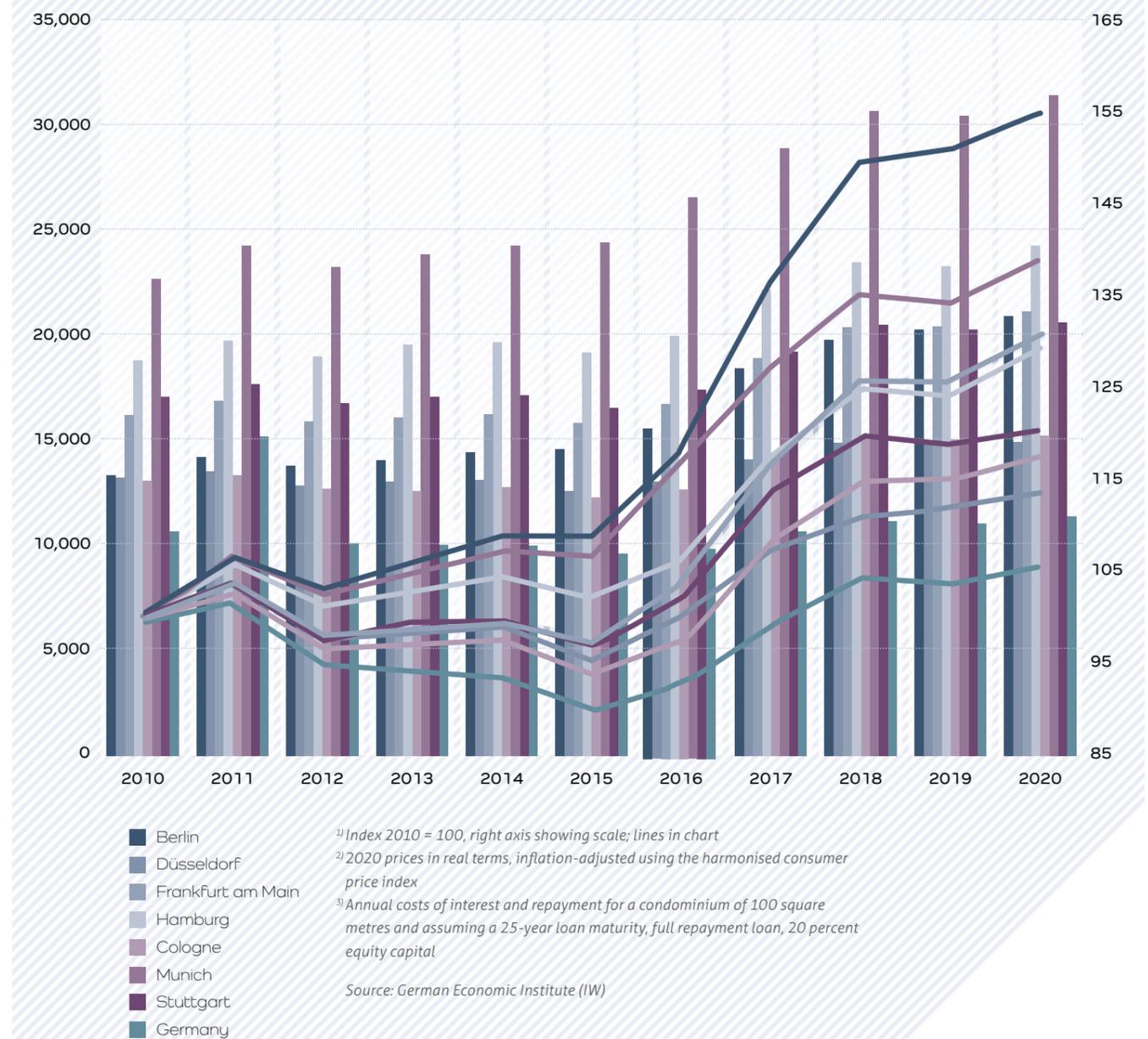
2.6 Annuity Trend and Level

During the onset of the pandemic, there was much speculation about the prospective development of property prices during this phase of uncertainty and economic recession. By now, more than a year after the first lockdown started, the residential property markets have proven their stability. Prices for owner-occupied dwellings continued to increase throughout last year. One thing that supported the trend was a further interest rate cut for mortgage loans, which made it possible to finance higher purchase prices. On top of that, the image of homeownership in Germany has improved over the past years. At no other time in recent history did people spend as much time within their own four walls as they did last year. For many people, this meant: work, childcare, leisure – everything transpired at home. Polls among households and individuals revealed regularly that the level of contentment is higher among people owner-occupying their homes than that felt by tenants. More space, more tranquillity and a nicer residential environment, these are aspects associated with homeownership that further increased demand among home buyers (Kempermann et al., 2020).



Condominium prices in the biggest German cities also continued to go up, despite fears of price setbacks (see Oberst/Voigtländer, 2020; Braun/Simons, 2020): Prices increased by 6 percent year on year in Düsseldorf and Stuttgart, by 7 percent in Cologne and Berlin, by 8 percent in Munich and Frankfurt am Main, and by an actual 9 percent in Hamburg. The good news for potential buyers is that the annuity, meaning the sum of interest payments and repayments of the principal, did not rise at the same pace (see Figure 2.6). Across Germany, this ratio rose only at a very moderate rate year on year, which is explained by a significant interest rate drop. At the same time, prices rose at much slower rates in large parts of the country – the focus on the “Big 7” often results in a distorted picture here. In truth, Germany divides into three groups of virtually equal size: roughly one third of the population lives in small towns of 20,000 residents or less, one third in mid-size cities of 20,000 to 100,000 residents, and the last third in major cities of more than 100,000 residents. Among these, the smaller towns and rural areas are the ones considered the main homeownership markets. The homeownership rate in the countryside is significantly higher than in major cities. Only one in four urban households owner-occupy their homes while three out of four rent theirs. The ratio in the countryside is exactly the other way round (Sagner/Voigtländer, 2019). That being said, it is the urban realm that is most affected by a serious imbalance between (potential) demand for homeownership and the corresponding supply, which is why price hikes have long spilled over into the suburban regions of the major cities. Still, the savings potential in the suburbs remains high, assuming a willingness among households to commute to work (Sagner/Voigtländer, 2021).

Trend ¹⁾ and level ²⁾ of the annuity ³⁾ in Germany and the “Big 7”
Figure 2.6



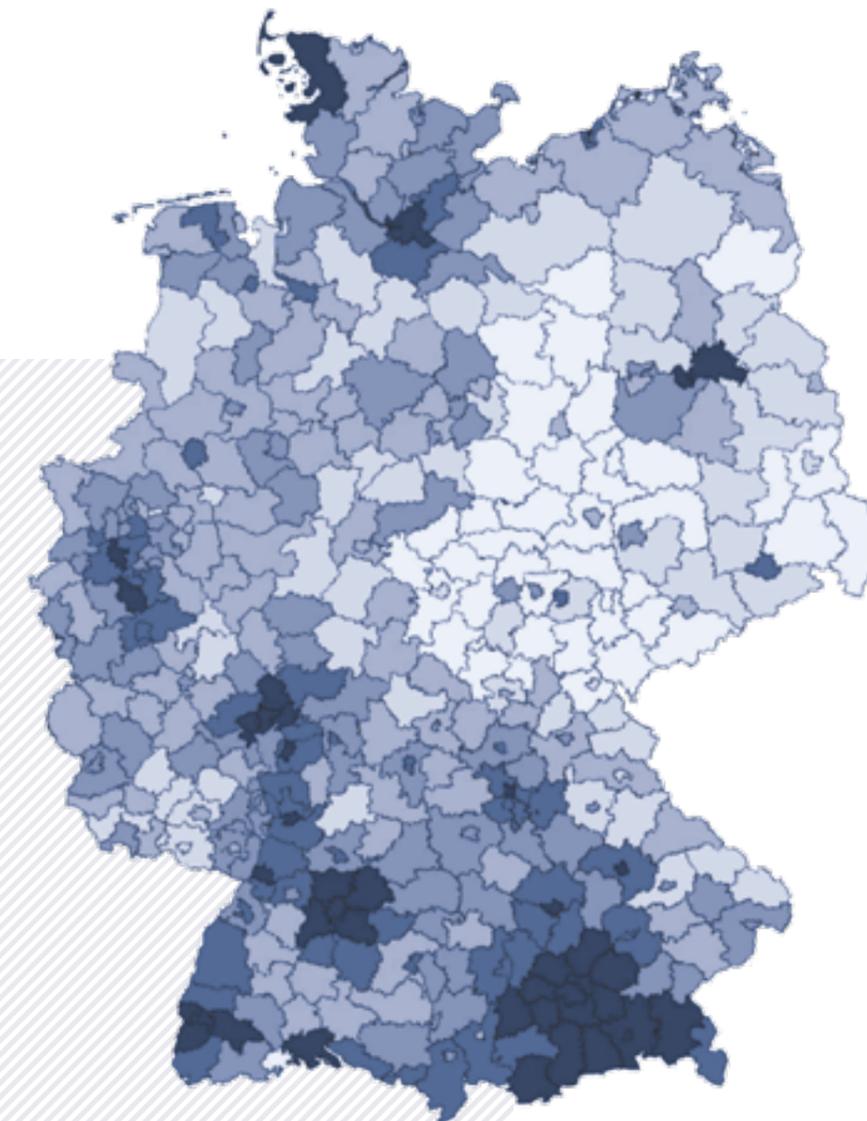
This is demonstrated not least by the regional comparison of annuities, as depicted in Figure 2.7. In the median district of Germany's 401 rural districts and urban districts, a 100-square-metre flat, financed with a 25-year fully amortising loan and with 20 percent of the purchase price paid down in equity capital, will cost a buyer 8,826 euros per year or 735 euros per month. The median divides Germany's districts into two groups, resulting in 200 districts where real estate financing is more expensive, and 200 where it is cheaper. Predictably, financing arrangements in the major cities cost substantially more. In Berlin, for example, financing an average purchase price of 5,546 euros per square metre for a fully refurbished period flat of 100 square metres in a good location and with good interior specification will cost 20,688 euros per year or 1,724 euros per month. The annual rent for a comparable flat would come to 15,240 euros or 1,270 euros per month, which is less than the annuity. But this does not at all imply that it is cheaper to rent than to owner-occupy your home in Berlin, because the model calculation shows that owner-occupiers start repaying the principal at a repayment rate of 3.5 percent with their very first instalment. In the scenario at hand, owner-occupiers therefore save nearly 190 percent more than they pay in interest, which amounts to 444 euros during the first month of financing whereas the capital repayment component amounts to 1,280 euros.

Thus, the capital repayment component is almost identical to the rent amount, the difference being that the rent is transferred into the landlord's account, whereas the capital repayment increases the occupier's own wealth. The most affordable cities among the "Big 7" are Düsseldorf (14,958 euros) and Cologne (15,309 euros). In Munich, by contrast, the annuity would come to 31,375 euros per year or 2,615 euros per month for interest and capital repayment – the going rate for a comparable rental flat being 2,210 euros a month. The suburbs of Munich is also much pricier than the rest of the country, as Figure 2.7 clearly illustrates, but the other Class A cities as well as other major cities also stand out among the districts surrounding them. The most affordable regions nationwide, in terms of absolute prices, are still the rural districts in East Germany.

However, the price level in the eastern part of the country perked up not only in the districts of Brandenburg that are inside Berlin's gravy belt, but also in the popular major cities of Dresden and Leipzig. Leipzig - rather than Berlin or Munich - is the city in Germany with the single-biggest population increase over the past ten years. Here, the average square-metre price in 2020 was 2,631 euros, which translates into an annuity of 9,814 euros per year or 818 euros per month. At 820 euros, the monthly base rent before heating actually tops the annuity.



Differences in annuity level ¹⁾ in real estate financing
In 2020, in percent
Figure 2.7



¹⁾ Annual costs of interest and repayment for a condominium of 100 square metres and assuming a 25-year loan maturity, full repayment loan, 20 percent equity capital

Source: German Economic Institute (IW)

3 Incoming Migration: What Is the Post-Pandemic Outlook?

The incoming migration to Germany plays a key role in explaining the real estate price boom the country has experienced over the past 10 years. Three influencing factors combined during the 2010s: For one thing, there was an extreme reduction in interest rates that was due both to the rise in savings worldwide, but also due to monetary policy (see Demary/Voigtländer, 2018); secondly, the labour market boomed, causing the number of gainfully employed persons in Germany to increase by around 4 million people (Werding, 2019). This in turn boosted income levels and increased the willingness to buy homes. And thirdly, Germany experienced a very strong incoming migration. Between 2010 and 2019, a total of 14.2 million people moved to Germany, while around 9.7 million left the country. If you assume, for simplicity sake, that every two people form one household on average, then the incoming migration alone would generate an additional housing demand of around 2.25 million flats. During the 2000s, the migration balance was 960,000 only, from which an extra housing demand of 480,000 flats can be derived, using the same simplification.

A closer look at the three influencing factors and their impact on real estate prices, the interest rates show the lowest potential for further price growth. After all, the key lending rate is barely above zero. While further reductions may seem possible, and while even negative mortgage interest rates cannot be ruled out, a reduction like the one seen during the past 10 years is not to be expected. That said, the user-cost-of-housing approach applied in this survey reveals that the interest rate trend is not yet fully reflected in the price growth.

A repeat of the growth previously seen on the labour market also seems virtually impossible. Then again, it depends definitively on the third influencing factor, incoming migration. Another thing to be considered is the fact that an intensifying labour shortage is likely to drive up wages. As long as the economy keeps growing, demand for real estate as well as the willingness to pay among occupiers could keep rising, and the strongest increase is to be expected from a rise in the number of gainfully employed persons.

Both gainful employment and ultimately the economic growth hinge essentially on incoming migration. Germany depends on immigration because the demand for skilled workers can no longer be met by domestic professionals alone (Geis-Thöne, 2019). Business surveys by the IW German Economic Institute have shown repeatedly that nothing stalls investment and expansions like the shortage in skilled workers (Burstedde et al., 2018).

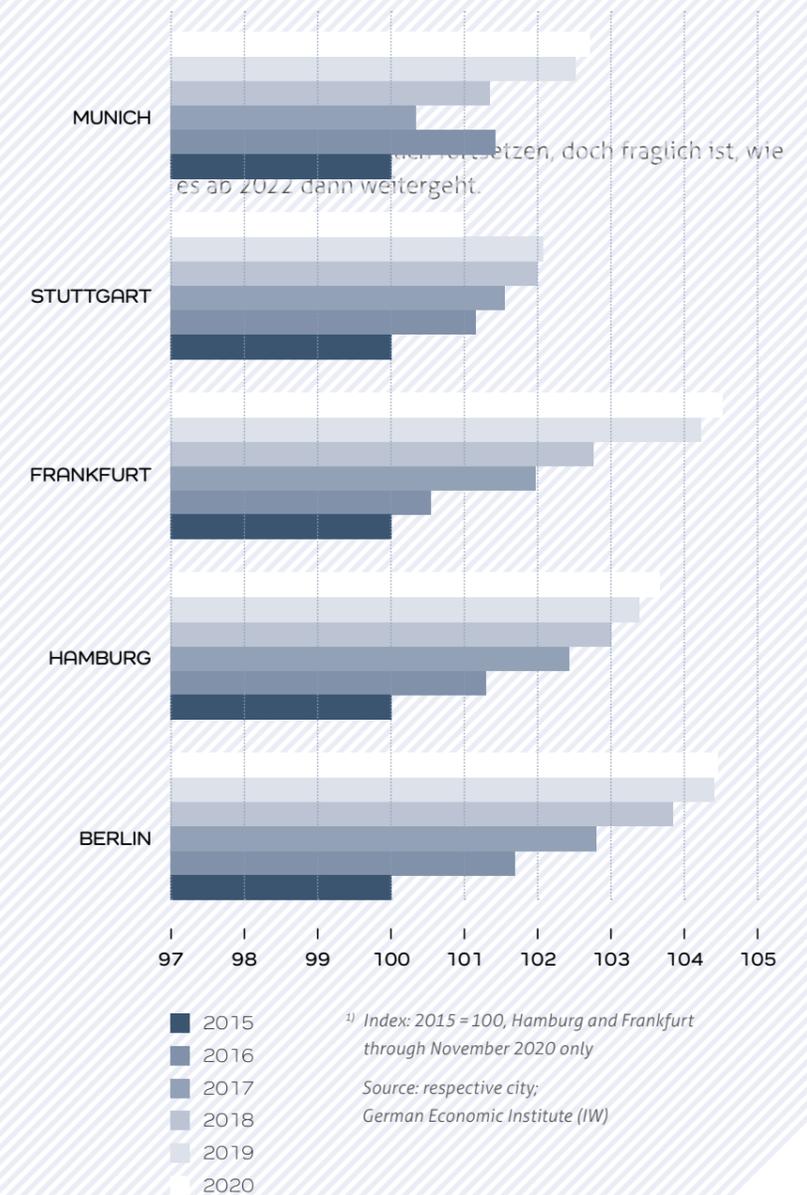
However, incoming migration is fraught with uncertainties of its own. After all, the incoming migration is not only defined by domestic factors in Germany, such as labour demand, the willingness to adapt or the wage level, but also by conditions in other countries with a keen demand for skilled labour, and the parameters in the immigrants' countries of origin.

While little is certain about the way forward, it is safe to say that incoming migration is of particular significance for major cities. After all, new arrivals in the country gravitate toward the major cities because these are internationally known, because they make it easiest to connect to other immigrants, and not least because they offer the widest variety of jobs. Especially Berlin has grown quickly in recent years because of the incoming migration of international skilled workers, the balance of incoming versus outgoing migration equalling 40,000 to 50,000 people in some years.

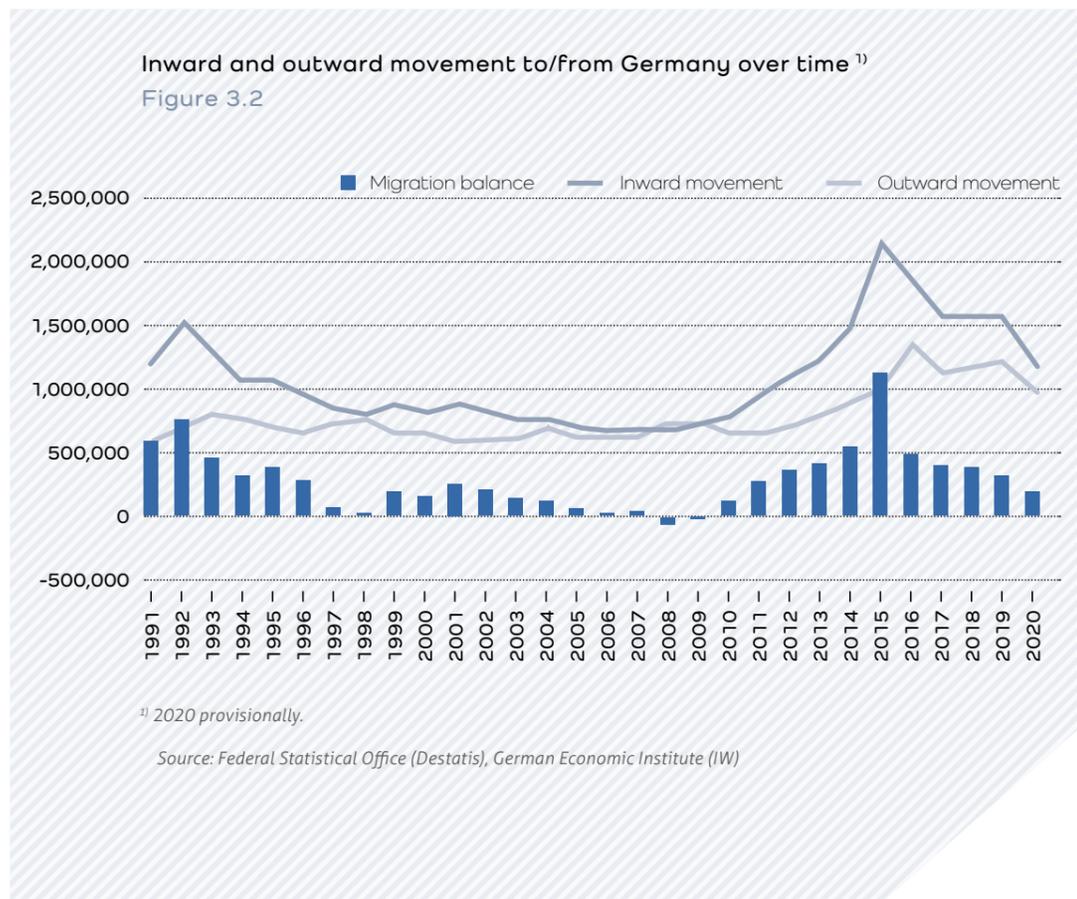
Figure 3.2 shows that the immigration in Germany can be highly volatile. In 1992, incoming migration amounted to 1.5 million people, yet in 1998, immigration was half that number while outmigration maintained the same level. In 2015, more than 2,1 million people moved to Germany – a banner year that involved mostly skilled workers and not refugees.

Demographics in selected cities ¹⁾

Figure 3.1



The number of immigrants has declined drastically lately. According to the figures of the Federal Statistical Office, incoming migration to Germany totalled 1.18 million in 2020, while the outward movement came to 0.98 million. The ongoing coronavirus pandemic is likely to keep the incoming migration on a low level in 2021 as well, or may even push it down further yet. The consequences are most conspicuous in the cities, although data are available only for some of them. Demographic growth in Hamburg, Frankfurt and Munich slowed down noticeably last year, stagnated in Berlin, and actually turned negative in Stuttgart. While this year will probably see the demographic trend continue along the same lines in the major cities, there is no telling what 2022 will bring or the years thereafter.



The latest demographic forecast by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR, 2021), published in March of 2021, expects the major cities to bounce back and resume their fast growth. According to the forecast, Munich will grow by 2.5 percent between 2020 and 2035, Stuttgart by 4.1 percent, Hamburg by 4.9 percent, and Frankfurt by an actual 7.4 percent. Compared to the past 15 years, the growth rate would be more moderate, but still be strong.

Generally speaking, demographic forecasts are always fraught with grave uncertainties, especially small-scale forecasts, because migration can make a difference in any number of ways. However, at least three arguments point to continued growth in the big cities.

First of all, the migration between the major cities and their suburbs typically follows a wave pattern. Between 1991 and 2002, the internal migration balance was consistently negative for the cities, consistently positive between 2003 and 2013, and has been consistently negative since 2014.

The phenomenon is connected not least to the way prices develop. During the 1990s, prices skyrocketed, driven by strong incoming migration in the major cities, among other reasons. Many households subsequently started looking for alternatives in the suburbs. After the price growth slowed and eventually stagnated when the supply in the cities expanded, people increasingly moved back to the city. Midway through the past decade, the situation reversed itself again, with high rents and prices prompting an exodus to the suburbs. The coronavirus pandemic makes it reasonable to assume that the outflow into the suburbs will continue in the years ahead because of the greater supply beyond the city limits and because many households need to commute less often, working increasingly from home. Worth noting, however, is that moving out of the city is particularly attractive for families. For young people and generally for small households, the city will retain its appeal because of its wider cultural spectrum, its leisure options and the proximity to other people. Once the strain in the metropolitan markets eases, the migration wave will wash back toward the city.

But secondly, there is reason to doubt that the strain will ease at all. International migration has ebbed because travelling and moving is subject to severe restrictions. Nevertheless, more than a million people came to Germany last year. And the inflow could soon grow again. The coronavirus pandemic affects the world's entire population, yet its repercussions could be very unevenly distributed. Industrial countries seem to have an easier time coping with the crisis because their vaccination programs make faster progress. The precarious situation in India or Brazil illustrates the massive problems that the coronavirus pandemic has created for poorer countries. But even inside the EU, the consequences of the crisis will differ from one macro-economy to the next. A look at youth unemployment (aged 25 or younger), for instance, illustrates the point. In Germany, unemployment within this group increased moderately from 5.7 percent to 6.0 percent between October 2019 and October 2020, but in the EU as a whole, it rose from 14.9 percent to 17.5 percent (Eurostat, 2020). In Sweden, Ireland, Portugal, Spain and Bulgaria, it grew by more than 5 percentage points. Because of these two reasons—differences in vaccination progress and differences in economic impact—the OECD (2020) expects an imminent rise in international migration movements. If this came to pass, Germany could once again become one of the preferred destination countries due to its persistently keen demand for skilled workers, and specifically the major cities would benefit from the inflow.



Whether or not the incoming migration would once again benefit the major cities more than others depends, thirdly, on structural shifts in the economy. Industrial manufacturing tends to require fewer human resources due to advances in automation. Conversely, more hands are needed in the service sector and knowledge-intensive industries. Major cities provide ideal conditions to meet this need (see Moretti, 2012). In fact, the possibility for direct exchange is often the decisive factor that drives innovation, so that physical proximity will keep playing a key role. Since this sort of communication can often take the form of video conferences, metro areas could keep expanding outward in future. But there is little evidence to suggest that physical proximity will cease to play a role for the collaboration at work. Accordingly, major cities will continue to figure prominently as residential locations.

All things considered, it is therefore reasonable to assume that a trend reversal in urban growth is unlikely. Major cities will retain their attractiveness both for the domestic population and for new arrivals from abroad. While their growth may experience a temporary lull or even a dip this year, it can be expected to bounce back and gather momentum in the medium term. As a result, the major cities will remain relevant for investors of every type.

4 Conclusion

The costs of owner-occupancy experienced a year-on-year decline last year. Accordingly, homeownership has become even more attractive, not least in relation to the development of rents. The expectations of the previous year's report that the coronavirus pandemic would cause no market price crashes in the short term were confirmed by events on the ground.

Homeownership actually gained in appreciation in 2020. Never before did people spend so much time at home. This fact combined with the need for more self-determination and for extra floor space to drive up demand for homeownership. As the user-cost-of-housing approach shows, opting for homeownership continues to be attractive from a financial point of view, too. Owner-occupied housing costs undercut rental costs in nearly every region. And yet, Germany remains a nation of tenants. The large tenant share of the population explains the focus of the body politic on this group. The focus is in most cases motivated by social policy goals, and plausible. But policymakers should not underestimate the wealth-building aspect of homeownership as a social policy instrument. Few political parties touch upon this aspect in their election manifestos for Germany's general election in autumn of 2021. Raising the homeownership rate could positively help to alleviate the wealth inequality, as a look at other countries shows. The body politic should therefore embrace schemes that facilitate the decision to buy a home, especially for young households as a group whose homeownership rate has actually declined in recent years. Efforts toward this end should focus on the reduction of incidental acquisition costs. While the interest rate development of recent years has weighed in on the funding side to the benefit of potential homeowners, there is no equivalent to level the playing field on the side of the capital adequacy requirements. Rather, incidental acquisition costs have climbed in sync with property prices over the past years, and represent an insurmountable obstacle for young households in many cities.

Concrete examples for efficient political reforms that lower the threshold to homeownership have long been known to exist in other countries, a good case in point being the combination of a tax holiday and a tiered tax rate in the context of the stamp duty land tax in the United Kingdom (Hentze/Voigtländer, 2017). In some parts of Belgium, the real estate transfer tax is moreover portable, meaning that real estate transfer taxes already paid will be credited to you if you move from one freehold residential property to another, e. g. from a condominium into a single-family detached home. This makes it easier for households that opted for homeownership at a young age to adapt their homes to their evolving accommodation needs further down the road.

Of course, housing policy should not purely focus on urban areas, because a large proportion of the German population lives in small towns and rural areas, and these are the country's main homeownership markets. Economically undeveloped rural areas pose serious challenges for the body politic as outmigration pressure and the high vacancy rates it causes are becoming increasingly problematic. A sound, target-oriented government home-buying scheme could offer a perspective in such areas, even and especially for young people, and provide a framework that encourages them to stay. When dovetailed with municipal investments in education and infrastructure improvements, a government home-buying scheme could also alleviate the pressure on the strained housing markets in Germany's major cities.

The pressure will continue to build up, because it is safe to expect the migration into the major cities, which is only pausing, to bounce back once the pandemic has been overcome. Housing in conurbations will therefore remain attractive to investors. After all, the user-cost-of-housing approach highlights, on the one hand, the fact that residential property continues to offer price upside potential and that the acquisition costs are lower than the rent revenues. On the other hand, continued demographic growth ensures the lettability of dwellings for the long term. Even if performance of the housing market will be less dynamic in this decade than it was in the previous one, the focus of national and international investors will remain on residential real estate.



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REGION		OWNER-OCCUPIED-HOUSING COSTS 2020, IN EUROS/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
SCHLESWIG-HOLSTEIN				
01001	Flensburg	2.84	61.2	3.9
01002	Kiel	3.61	63.6	4.2
01003	Lübeck	3.51	66.9	4.6
01004	Neumünster	2.88	61.0	3.9
01051	Dithmarschen district	3.49	50.8	3.2
01053	Herzogtum Lauenburg district	3.45	62.9	4.1
01054	Nordfriesland district	5.08	37.2	2.2
01055	Ostholstein district	3.71	65.0	4.4
01056	Pinneberg district	3.74	66.3	4.5
01057	Plön district	3.17	62.2	4.0
01058	Rendsburg-Eckernförde dis.	3.00	64.3	4.3
01059	Schleswig-Flensburg district	2.81	62.5	4.0
01060	Segeberg district	3.40	68.5	4.9
01061	Steinburg district	3.26	58.7	4.1
01062	Stormarn district	3.96	65.5	4.4

02000	Hamburg	8.41	50.3	2.9
LOWER SAXONY				
03101	Braunschweig	3.51	63.1	4.1
03102	Salzgitter	4.64	28.7	2.4
03103	Wolfsburg	2.89	70.5	5.2
03151	Gifhorn district	2.96	60.0	3.7
03153	Goslar district	5.09	20.5	2.2
03154	Helmstedt district	3.06	52.9	3.8
03155	Northeim district	2.92	51.3	3.6
03157	Peine district	2.48	65.1	4.4
03158	Wolfenbüttel district	5.86	21.9	2.1
03159	Göttingen district	4.34	52.3	3.5
03241	Hanover district	3.63	63.0	4.1
03251	Diepholz district	2.70	69.3	5.0
03252	Hameln-Pyrmont district	4.23	34.9	2.7
03254	Hildesheim district	3.23	55.8	4.0
03255	Holzminden district	5.58	3.9	1.4
03256	Nienburg (Weser) district	2.03	67.7	4.7

03257	Schaumburg district	4.34	35.3	2.7
03351	Celle district	3.58	54.7	3.7
03352	Cuxhaven district	3.16	60.4	3.8
03353	Harburg district	3.79	65.5	4.4
03354	Lüchow-Dannenberg district	2.08	60.8	3.8
03355	Lüneburg district	3.53	67.3	4.7
03356	Osterholz district	2.54	69.1	5.0
03357	Rotenburg (Wümme) district	2.07	73.4	5.8
03358	Soltau-Fallingb.ostel district	2.20	68.6	4.9
03359	Stade district	3.31	67.3	4.7
03360	Uelzen district	2.20	67.2	4.6
03361	Verden district	2.75	68.7	4.9
03401	Delmenhorst	2.71	65.7	4.4
03402	Emden	4.23	53.5	4.6
03403	Oldenburg	3.69	64.1	4.2
03404	Osnabrück	3.02	69.2	5.0
03405	Wilhelmshaven	2.45	61.7	4.0
03451	Ammerland district	3.01	63.3	4.1
03452	Aurich district	2.88	63.6	4.1
03453	Cloppenburg district	2.15	72.7	5.7
03454	Emsland district	2.36	69.0	4.9
03455	Friesland district	3.17	56.0	3.3
03456	Grafschaft Bentheim district	2.61	70.0	5.1
03457	Leer district	3.34	59.3	3.7
03458	Oldenburg district	2.87	67.4	4.7
03459	Osnabrück district	2.59	65.5	4.4
03460	Vechta district	2.97	60.4	3.8
03461	Wesermarsch district	2.38	66.4	4.5
03462	Wittmund district	4.17	37.8	2.2
BREMEN				
04011	Bremen	3.90	64.2	4.3
04012	Bremerhaven	3.06	49.8	3.4
NORTH RHINE-WESTPHALIA				
05111	Düsseldorf	5.14	64.3	4.3
05112	Duisburg	6.89	9.4	1.6

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
05113	Essen	6.86	22.0
05114	Krefeld	7.02	21.1
05116	Mönchengladbach	5.30	33.7
05117	Mülheim an der Ruhr	6.42	31.7
05119	Oberhausen	5.95	24.7
05120	Remscheid	5.98	17.0
05122	Solingen	4.11	53.3
05124	Wuppertal	8.02	1.0
05154	Kleve district	4.37	44.7
05158	Mettmann district	4.75	55.2
05162	Rhein-Kreis Neuss district	4.26	60.6
05166	Viersen district	5.53	36.4
05170	Wesel district	6.10	30.7
05314	Bonn	4.72	64.5
05315	Cologne	5.26	65.1
05316	Leverkusen	4.25	57.9
05334	Städteregion Aachen district	3.66	66.4
05358	Düren district	3.95	48.0
05362	Rhein-Erft-Kreis district	3.92	64.3
05366	Euskirchen district	4.89	41.1
05370	Heinsberg district	3.39	57.0
05374	Oberbergischer Kreis district	5.40	29.8
05378	Rheinisch-Bergischer Kreis distr.	4.07	61.6
05382	Rhein-Sieg-Kreis district	4.05	59.9
05512	Bottrop	4.09	50.7
05513	Gelsenkirchen	6.80	-1.5
05515	Münster	4.55	66.1
05554	Borken district	3.86	49.9
05558	Coesfeld district	3.99	49.5
05562	Recklinghausen district	6.63	12.8
05566	Steinfurt district	2.84	62.6
05570	Warendorf district	2.72	65.6
05711	Bielefeld	3.54	62.7
05754	Gütersloh district	3.26	60.2
05758	Herford district	3.89	46.6
05762	Höxter district	4.18	21.2
05766	Lippe district	4.40	42.1

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
05770	Minden-Lübbecke district	3.81	48.5
05774	Paderborn district	3.16	62.0
05911	Bochum	6.88	20.0
05913	Dortmund	4.11	53.8
05914	Hagen	7.50	-7.2
05915	Hamm	3.20	52.9
05916	Herne	5.99	11.8
05954	Ennepe-Ruhr-Kreis district	5.21	32.4
05958	Hochsauerlandkreis district	4.30	34.8
05962	Märkischer Kreis district	6.87	3.3
05966	Olpe district	4.41	47.6
05970	Siegen-Wittgenstein district	3.92	56.0
05974	Soest district	3.64	51.5
05978	Unna district	5.57	22.6
HESSE			
06411	Darmstadt	5.26	63.5
06412	Frankfurt am Main	7.52	60.6
06413	Offenbach am Main	4.76	61.6
06414	Wiesbaden	5.75	59.5
06431	Bergstrasse district	4.05	60.3
06432	Darmstadt-Dieburg district	4.06	62.7
06433	Gross-Gerau district	3.65	70.1
06434	Hochtaunuskreis district	6.06	57.4
06435	Main-Kinzig-Kreis district	3.89	61.9
06436	Main-Taunus-Kreis district	5.59	58.9
06437	Odenwaldkreis district	2.68	66.5
06438	Offenbach district	4.53	63.2
06439	Rheingau-Taunus-Kreis dis.	4.86	54.6
06440	Wetteraukreis district	4.15	62.3
06531	Giessen district	3.50	65.0
06532	Lahn-Dill-Kreis district	3.99	46.8
06533	Limburg-Weilburg district	5.07	34.2
06534	Marburg-Biedenkopf district	3.26	69.2
06535	Vogelsbergkreis district	1.99	67.4
06611	Kassel	3.05	66.4
06631	Fulda district	2.84	60.0

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
06632	Hersfeld-Rotenburg district	5.11	23.8	2.2
06633	Kassel district	2.80	62.1	4.0
06634	Schwalm-Eder-Kreis district	3.01	53.0	3.5
06635	Waldeck-Frankenberg district	3.31	49.0	3.5
06636	Werra-Meißner-Kreis district	2.55	57.5	4.7

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
	RHINELAND-PALATINATE			
07111	Koblenz	3.62	63.4	4.1
07131	Ahrweiler district	2.96	65.6	4.4
07132	Altenkirchen (Westerwald) dis.	2.71	62.9	5.2
07133	Bad Kreuznach district	3.02	62.2	4.0
07134	Birkenfeld district	3.31	42.9	3.4
07135	Cochem-Zell district	2.72	52.3	3.1
07137	Mayen-Koblenz district	3.06	57.0	3.7
07138	Neuwied district	2.77	60.4	3.8
07140	Rhein-Hunsrück-Kreis district	2.51	59.6	3.8
07141	Rhein-Lahn-Kreis district	3.59	48.7	3.4
07143	Westerwaldkreis district	3.12	53.5	4.0
07211	Trier	3.64	70.7	5.3
07231	Berncastel-Wittlich district	3.17	56.0	3.3
07232	Eifelkreis Bitburg-Prüm district	2.87	67.4	4.7
07233	Vulkaneifel district	5.37	11.9	1.7
07235	Trier-Saarburg district	3.60	61.3	3.9
07311	Frankenthal (Pfalz)	4.80	46.7	3.3
07312	Kaiserslautern	2.71	66.9	4.6
07313	Landau in der Pfalz	2.95	69.9	5.1
07314	Ludwigshafen am Rhein	3.56	62.9	4.1
07315	Mainz	4.83	66.9	4.6
07316	Neustadt an der Weinstrasse	3.57	59.5	3.7
07317	Pirmasens	3.65	32.4	2.7
07318	Speyer	3.25	69.4	5.0
07319	Worms	3.20	64.8	4.3
07320	Zweibrücken	2.66	63.1	4.5
07331	Alzey-Worms district	2.58	67.3	4.7
07332	Bad Dürkheim district	3.25	62.7	4.0
07333	Donnersbergkreis district	2.45	63.4	4.8
07334	Germersheim district	3.12	63.3	4.1

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
07335	Kaiserslautern district	3.57	50.4	4.1
07336	Kusel district	2.51	59.5	4.2
07337	Südliche Weinstrasse district	3.24	61.9	3.9
07338	Rhein-Pfalz-Kreis district	3.32	63.5	4.1
07339	Mainz-Bingen district	3.08	70.1	5.1
07340	Südwestpfalz district	3.55	47.0	3.7

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
	BADEN-WÜRTTEMBERG			
08111	Stuttgart	6.87	58.1	3.5
08115	Böblingen district	5.25	59.0	3.6
08116	Esslingen district	5.02	61.7	3.9
08117	Göppingen district	4.13	60.7	3.8
08118	Ludwigsburg district	4.92	62.2	4.0
08119	Rems-Murr-Kreis district	4.94	58.8	3.6
08121	Heilbronn	4.17	61.0	3.8
08125	Heilbronn district	3.55	63.7	4.2
08126	Hohenlohekreis district	2.91	65.8	4.4
08127	Schwäbisch Hall district	3.11	61.6	3.9
08128	Main-Tauber-Kreis district	2.90	58.6	3.6
08135	Heidenheim district	3.17	59.9	3.7
08136	Ostalbkreis district	3.59	61.9	3.9
08211	Baden-Baden	4.20	65.6	4.4
08212	Karlsruhe	4.67	66.2	4.5
08215	Karlsruhe district	3.77	63.0	4.1
08216	Rastatt district	3.50	63.6	4.1
08221	Heidelberg	6.85	59.0	3.6
08222	Mannheim	4.21	65.8	4.4
08225	Neckar-Odenwald-Kreis dis.	2.31	66.5	4.5
08226	Rhein-Neckar-Kreis district	3.87	63.9	4.2
08231	Pforzheim	3.38	64.8	4.3
08235	Calw district	2.87	66.3	4.5
08236	Enz district	3.88	57.9	3.5
08237	Freudenstadt district	3.86	51.7	3.7
08311	Freiburg im Breisgau	5.89	62.9	4.1
08315	Breisgau-Hochschwarzwald dis.	4.78	56.9	3.4
08316	Emmendingen district	4.08	59.6	3.7
08317	Ortenaukreis district	3.73	57.6	3.5

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
08325	Rottweil district	2.74	66.2	4.5
08326	Schwarzwald-Baar-Kreis dis.	3.19	62.4	4.0
08327	Tuttlingen district	2.60	70.7	5.3
08335	Konstanz district	5.21	60.5	3.8
08336	Lörrach district	3.96	65.9	4.5
08337	Waldshut district	3.31	62.4	4.0
08415	Reutlingen district	4.25	63.0	4.1
08416	Tübingen district	4.66	64.7	4.3
08417	Zollernalbkreis district	2.67	67.1	4.6
08421	Ulm	4.00	69.0	4.9
08425	Alb-Donau-Kreis district	2.92	68.9	4.9
08426	Biberach district	2.85	68.0	4.8
08435	Bodenseekreis district	4.32	68.2	4.8
08436	Ravensburg district	3.60	66.6	4.6
08437	Sigmaringen district	2.86	63.8	4.2

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
BAVARIA				
09161	Ingolstadt	5.20	63.9	4.2
09162	Munich	10.25	53.6	3.1
09163	Rosenheim	5.06	60.4	3.8
09171	Altötting district	3.27	60.2	3.7
09172	Berchtesgadener Land dis.	4.25	58.3	3.5
09173	Bad Tölz-Wolfratshausen dis.	5.83	58.1	3.5
09174	Dachau district	6.12	58.4	3.5
09175	Ebersberg district	6.01	60.7	3.8
09176	Eichstätt district	4.29	58.0	3.5
09177	Erding district	5.21	60.6	3.8
09178	Freising district	5.76	60.3	3.7
09179	Fürstenfeldbruck district	6.27	59.5	3.7
09180	Garmisch-Partenkirchen dis.	6.41	49.9	2.9
09181	Landsberg am Lech district	4.55	62.1	3.9
09182	Miesbach district	6.81	53.3	3.1
09183	Mühldorf am Inn district	3.01	65.4	4.4
09184	Munich district	8.75	50.5	2.9
09185	Neuburg-Schrobenhausen dis.	3.68	60.4	3.8
09186	Pfaffenhofen an der Ilm dis.	3.97	60.7	3.8
09187	Rosenheim district	4.63	60.8	3.8

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
09188	Starnberg district	7.15	58.9	3.6
09189	Traunstein district	4.80	54.3	3.2
09190	Weilheim-Schongau district	4.48	61.4	3.9
09261	Landshut	4.49	61.3	3.8
09262	Passau	3.04	70.8	5.2
09263	Straubing	3.06	64.8	4.3
09271	Deggendorf district	2.91	65.0	4.3
09272	Freyung-Grafenau district	2.20	66.7	4.5
09273	Kelheim district	3.02	67.5	4.7
09274	Landshut district	3.87	57.0	3.4
09275	Passau district	3.00	60.6	3.8
09276	Regen district	2.21	65.9	5.1
09277	Rottal-Inn district	2.35	66.5	4.5
09278	Straubing-Bogen district	2.18	68.8	4.9
09279	Dingolfing-Landau district	2.86	60.8	3.8
09361	Amberg	3.20	61.4	3.9
09362	Regensburg	6.28	56.4	3.4
09363	Weiden in der Oberpfalz	2.21	71.6	5.4
09371	Amberg-Sulzbach district	2.26	67.7	4.7
09372	Cham district	2.59	56.8	3.4
09373	Neumarkt in der Oberpfalz dis.	3.10	64.4	4.2
09374	Neustadt an der Waldnaab dis.	2.51	62.0	3.9
09375	Regensburg district	3.86	58.5	3.6
09376	Schwandorf district	2.25	69.7	5.0
09377	Tirschenreuth district	2.02	58.8	3.6
09461	Bamberg	4.00	66.6	4.5
09462	Bayreuth	3.43	65.4	4.4
09463	Coburg	2.88	64.1	4.2
09464	Hof	1.93	69.4	5.0
09471	Bamberg district	2.99	57.9	3.5
09472	Bayreuth district	2.67	61.3	3.9
09473	Coburg district	2.18	68.8	4.9
09474	Forchheim district	3.00	64.3	4.2
09475	Hof district	2.01	62.8	4.8
09476	Kronach district	3.95	39.2	3.0
09477	Kulmbach district	1.97	72.7	5.6
09478	Lichtenfels district	2.55	60.8	3.8

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
09479	Wunsiedel im Fichtelgebirge d.	2.03	59.4	3.8
09561	Ansbach	3.25	66.1	4.5
09562	Erlangen	5.19	62.6	4.0
09563	Fürth	3.70	69.4	5.0
09564	Nuremberg	4.36	65.4	4.4
09565	Schwabach	3.87	63.8	4.1
09571	Ansbach district	3.04	60.6	3.8
09572	Erlangen-Höchststadt district	3.85	61.9	3.9
09573	Fürth district	3.66	62.6	4.0
09574	Nürnberger Land district	3.74	61.5	3.9
09575	Neustadt an der Aisch-Bad Windsheim district	2.63	62.4	4.0
09576	Roth district	3.29	60.4	3.7
09577	Weissenburg-Gunzenhausen d.	2.66	60.3	3.7
09661	Aschaffenburg	4.30	60.9	3.8
09662	Schweinfurt	3.15	62.5	4.0
09663	Würzburg	4.30	62.6	4.0
09671	Aschaffenburg district	3.30	64.9	4.3
09672	Bad Kissingen district	2.66	63.0	4.5
09673	Rhön-Grabfeld district	2.33	62.5	4.0
09674	Hassberge district	2.35	58.0	3.5
09675	Kitzingen district	2.37	64.1	4.2
09676	Miltenberg district	4.96	37.9	2.9
09677	Main-Spessart district	2.85	60.9	3.8
09678	Schweinfurt district	2.58	61.5	3.9
09679	Würzburg district	3.07	66.3	4.5
09761	Augsburg	4.48	62.7	4.0
09762	Kaufbeuren	2.63	68.6	4.9
09763	Kempten (Allgäu)	3.32	67.5	4.7
09764	Memmingen	3.57	67.0	4.6
09771	Aichach-Friedberg district	3.81	61.5	3.9
09772	Augsburg district	3.82	62.2	3.9
09773	Dillingen an der Donau dis.	2.52	65.5	4.4
09774	Günzburg district	3.09	64.4	4.2
09775	Neu-Ulm district	3.54	68.7	4.9
09776	Lindau (Bodensee) district	4.54	62.8	4.0
09777	Ostallgäu district	3.87	62.1	3.9

	REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
09778	Unterrallgäu district	2.89	67.9	4.7
09779	Donau-Ries district	2.99	64.0	4.2
09780	Oberallgäu district	4.35	58.5	3.6
SAARLAND				
10041	Stadtverband Saarbrücken d.	3.94	52.5	3.5
10042	Merzig-Wadern district	2.90	69.5	5.1
10043	Neunkirchen district	3.76	43.0	3.4
10044	Saarlouis district	2.53	68.4	5.1
10045	Saarpfalz district	3.60	52.0	3.7
10046	Sankt Wendel district	2.90	58.5	4.0
BERLIN				
11000	Berlin	7.48	41.1	2.4
BRANDENBURG				
12051	Brandenburg an der Havel	2.94	52.6	3.1
12052	Cottbus	2.81	58.0	4.1
12053	Frankfurt (Oder)	3.67	47.6	3.2
12054	Potsdam	5.22	59.8	3.8
12060	Barnim district	2.39	69.8	5.2
12061	Dahme-Spreewald district	2.50	71.6	5.6
12062	Elbe-Elster district	2.22	60.4	4.0
12063	Havelland district	2.55	70.0	5.2
12064	Märkisch-Oderland district	2.56	68.8	5.0
12065	Oberhavel district	2.63	71.1	5.4
12066	Oberspreewald-Lausitz dis.	3.09	48.5	4.4
12067	Oder-Spree district	2.19	74.3	6.2
12068	Ostprignitz-Ruppin district	2.06	65.7	4.5
12069	Potsdam-Mittelmark district	3.82	62.5	4.1
12070	Prignitz district	1.59	74.0	6.1
12071	Spree-Neisse district	1.68	71.5	5.5
12072	Teltow-Fläming district	2.86	65.6	4.5
12073	Uckermark district	1.62	73.4	6.0

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
MECKLENBURG-WESTERN POMERANIA			
13003 Rostock	3.98	59.8	3.7
13004 Schwerin	2.65	66.9	4.6
13071 Mecklenburgische Seenplatte district	2.59	60.2	4.8
13072 Rostock district	2.63	64.9	4.3
13073 Vorpommern-Rügen district	2.84	63.6	4.1
13074 Nordwestmecklenburg district	2.76	62.7	4.0
13075 Vorpommern-Greifswald dis.	4.26	47.4	3.5
13076 Ludwigslust-Parchim district	1.84	71.7	5.5

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
SAXONY			
14511 Chemnitz	5.87	6.9	1.5
14521 Erzgebirgskreis district	2.72	53.1	4.9
14522 Mittelsachsen district	4.64	21.3	2.3
14523 Vogtlandkreis district	3.29	39.0	3.7
14524 Zwickau district	3.92	35.7	3.7
14612 Dresden	3.89	55.3	3.3
14625 Bautzen district	2.07	67.7	6.5
14626 Görlitz district	1.55	72.3	6.9
14627 Meissen district	3.18	54.0	3.9
14628 Sächsische Schweiz-Osterzgebirge district	1.74	72.8	5.7
14713 Leipzig	3.21	60.9	3.8
14729 Leipzig district	2.62	59.6	4.5
14730 Nordsachsen district	1.74	72.9	6.0

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
SAXONY-ANHALT			
15001 Dessau-Rosslau district	2.78	55.2	4.5
15002 Halle/Saale district	2.57	66.2	4.5
15003 Magdeburg	2.72	59.5	3.7
15081 Altmarkkreis Salzwedel dis.	1.37	74.6	6.1
15082 Anhalt-Bitterfeld district	4.01	36.4	3.5
15083 Börde district	1.66	70.8	6.1
15084 Burgenlandkreis district	3.54	40.9	4.2
15085 Harz district	2.68	54.6	4.8

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
15086 Jerichower Land district	2.31	59.5	5.5
15087 Mansfeld-Südharz district	1.86	66.2	5.6
15088 Saalekreis district	2.29	63.7	6.2
15089 Salzlandkreis district	2.89	50.1	4.3
15090 Stendal district	2.89	51.0	4.7
15091 Wittenberg district	1.44	73.9	6.0

REGION	OWNER-OCCUPIED-HOUSING COSTS 2020, IN €/SQM	COST ADVANTAGE OVER RENTING 2020, IN PERCENT	NEUTRAL INTEREST RATE IN PERCENT
THURINGIA			
16051 Erfurt	3.33	61.7	3.9
16052 Gera	3.74	35.6	3.1
16053 Jena	3.80	66.6	4.6
16054 Suhl	2.83	57.7	5.0
16055 Weimar	3.11	63.4	4.1
16056 Eisenach	4.86	26.4	2.6
16061 Eichsfeld district	2.70	49.0	3.7
16062 Nordhausen district	1.50	73.1	5.8
16063 Wartburgkreis district	2.30	59.7	5.2
16064 Unstrut-Hainich district	3.59	37.0	3.7
16065 Kyffhäuserkreis district	2.73	48.4	4.2
16066 Schmalkalden-Meiningen district	2.04	65.4	5.8
16067 Gotha district	1.87	70.8	5.9
16068 Sömmerda district	1.19	81.7	8.8
16069 Hildburghausen district	3.48	44.8	4.1
16070 Ilm-Kreis district	3.87	42.2	3.7
16071 Weimarer Land district	1.88	68.7	5.6
16072 Sonneberg district	3.76	32.9	3.1
16073 Saalfeld-Rudolstadt district	2.07	66.0	5.3
16074 Saale-Holzland district	2.44	64.1	5.2
16075 Saale-Orla district	1.61	73.2	7.0
16076 Greiz district	3.87	30.8	3.1
16077	3.37	40.9	3.6

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