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Catella Research

HOUSING MARKET RANKING GERMANY 2015

Regional Housing Markets under the Microscope

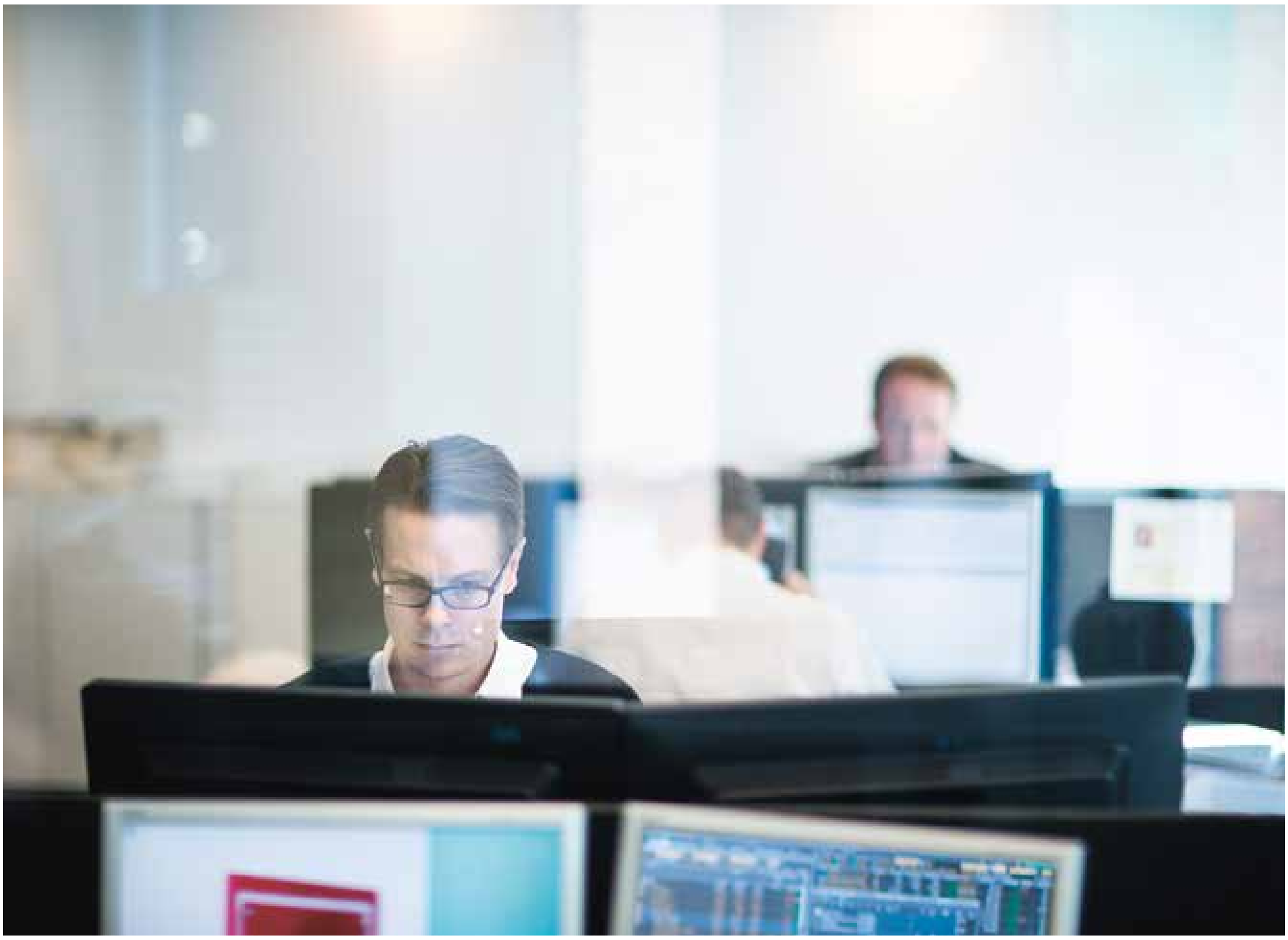
About Catella

Catella is a leading financial advisor and asset manager in Europe, active in the property, fixed income and equity areas. The strong regional presence in twelve countries and roughly 500 employees form the basis of our success.

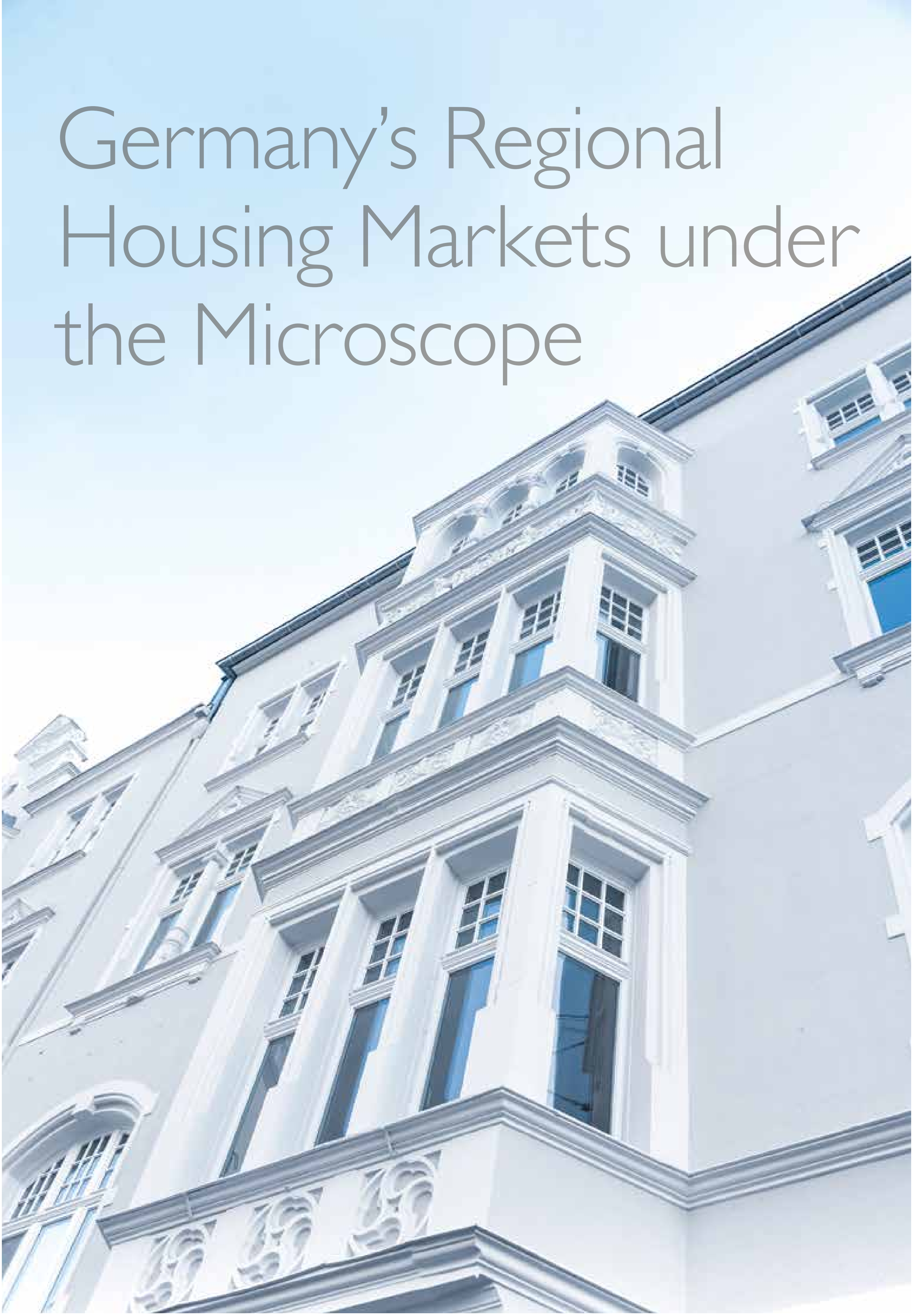
Catella has been active in the German real estate market since 1990 at five locations with approximately 80 employees and is represented by Catella Property Deutschland and Catella Real Estate AG. At the locations in Düsseldorf, Hamburg, Berlin, Frankfurt and Munich, we offer a portfolio of real estate services that provides efficient advising for investors in all stages of the investment cycle and for individual solutions for companies.

The scope of services includes: research and valuation, investment and letting, product management and development as well as capital markets, equity and debt advisory. Catella Real Estate AG, which creates funds products for institutional investors and major private customers, has been based in Munich since 2007. Each individual fund has a different emphasis – by region as well as by asset class.

Content



Germany's Regional Housing Markets under the Microscope



I Capital Flow Reaches Regional Housing Markets

The German housing markets are experiencing a huge boom phase from a domestic and international perspective, as is clearly evidenced by the continuous reporting in the press, the statements and announcements made by many investors that they will play an even more active role in the German housing market and the figures and data. The scope of this market's momentum is reflected in current national issues such as the "rent brake" (Mietpreisbremse) and discussions of rent indices as well as international aspects such as takeovers and expected stock market flotations or IPOs. Despite regulatory interventions, the outlook remains positive.

Yet it is difficult to provide qualified answers to the question of **where investors should make further investments,** especially as the focus has moved towards the investment horizon outside of the so-called top 7 locations in the past weeks.

This, in no small part, is due to a market structure, which, unlike the rest of Europe, tends to be characterised by two elements:

- a different geographical city structure without a dominating centre of investment

and

- an overall lack of market transparency

"The regional housing markets always have their own individual profile" is a frequently expressed view. This may be so for an assessment limited to prices and rents, but in a period of dramatic globalisation of investor funds, more than ever are global requirements profiles entangling with these supposedly local conditions. **"Where to invest"** is thus the key question for fund allocation. Particularly in Germany, with its highly polycentric structure, allocation decisions and tactical weightings are often difficult.

Outside of the housing markets in Germany's so-called top 7 locations, with several exceptions, there are pronounced transparency deficits. For us, transparency does not relate to the offering prices found on well-known search engines. For long-term investments, structural aspects are ultimately a stronger consideration than price levels as of a particular date. This is where the motivation for Catella Research's comprehensive housing location ranking exercise comes from. The top 7 locations have been deliberately excluded on account of their higher level of transparency on structural grounds as well as due to the existing availability of information on them. All of the cities assessed as part of this exercise have a population of at least 50,000. This is a critical threshold for a fungible market that reflects both demand and supply parameters. The cities examined as part of this study were selected on the basis of additional parameters, and a **total of 70 locations** outside of Germany's investment centres were included in this assessment. These 70 regional housing markets represent the potential investment universe for national and international investors in Germany.

2 Methodology of the Housing Market Rankings

A **scoring model** is particularly suitable as a method for **quantified analysis** and **qualified presentation** of a large number of cities. One advantage of this method is the clarity of the resulting location ranking. However, readers should bear in mind that this exercise does not identify any city as a clear winner or clear loser. Instead, each location must be analysed in terms of individual factors that ultimately reflect the level of risk exposure as well as the yield expectation. This thus results in no categories for „winners“ and „losers“ as such but rather in a geographically defined range of investments, which are differentiated from each other in terms of risk parameters. Potential investors can make tactical investment decisions and identify a location cluster based on this information in comparison with their specific investment requirements.

For the **2015 Catella housing market ranking exercise**, the indicators presented in Tab. 1 have been selected for classification of the market in question.

These factors have been classified within quantiles, in terms of their respective percentage rankings, and projected onto a numerical scale between 0 and 100. The highest possible score for a particular city is thus 100.

The indicators used are defined on the basis of the following sub-scorings:

- socioeconomic data
- structural risk
- liquidity risk
- location potential

Tab. 1: Scoring structure, with relevant indicators

SUB-SCORE	Weighting	Assessed factors	Weighting within sub-score
Socioeconomic data	25 %	Demographic trends 2000-2014	25 %
		Purchasing power	15 %
		Unemployment rate	12.5 %
		Retail sales indicator	7.5 %
		Retail purchasing power indicator	7.5 %
		Centrality indicator	10 %
		Development of employees liable for social security contributions 2010–2013	22.5 %
Structural risk	20 %	Ratio of employees liable for social security contributions to overall population	30 %
		Location is undergoing structural changes	15 %
		Risk due to dislocation within sub-market	10 %
		University town	20 %
		Position within metropolitan area	25 %
Liquidity risk	20 %	Liquidity risk and market liquidity	100 %
Location potential	35 %	Rent expenditure vs. income	25 %
		Demographic trends up to 2030	50 %
		Competition/level of new building activity	15 %
		Difference between the rent level for the location and the average rent for the assessed cities	10 %

The factors and forecasts shown here are based on 2014 data, except for the categories „Development of employees liable for social security contributions 2010–2013“ and „Ratio of employees liable for social security contributions to overall population.“

Source: Catella Research 2015

The choice of these sub-components ensures that key indicators influencing the housing market have been included within the overall assessment.

- The **“socioeconomic data”** sub-ranking mainly reflects the strength of a city and its significance for the surrounding region. In addition, factors such as demographic trends between 2000 and 2014, the unemployment level, and the proportion of employees liable for social security contributions provide information on the level of demand as well as the economic strength of households residing in a given location.

- The **“structural risk”** sub-ranking considers factors that include decisive aspects affecting future demographic trends and the future potential/future attractiveness of this housing location. Issues such as a city’s position within a metropolitan area, whether it is a university town, and whether it is undergoing a process of structural change are thus key risk factors shaping its current level of attractiveness and thus its future demographic trends.

- The sub-segment **“liquidity risk”** or “market liquidity” generally describes the availability of investment opportunities at the location in question. For investors looking to diversify, there is not enough market availability with a high level of liquidity risk.

The assessment of the **market liquidity** of an individual location is based on the following factors:

- Evaluation of housing transactions based on the volume and the number of sold properties at the respective location

- Market experience from acting as a real estate advising company as well as from accompanying transactions at the individual locations.

- The **“location potential”** segment mainly considers factors affecting the future development of the respective housing market. Demographic trends are the primary criteria for this sub-ranking, but factors such as the level of competition and the volume of new building activity are also key considerations influencing future housing market trends. These factors have been incorporated to ensure the inclusion of key housing market indicators, for a comprehensive presentation of the housing markets.

The four above-mentioned sub-components have been defined in order to determine the **overall score** for a given city, but are themselves influenced by a range of factors. The weightings variously assigned for this purpose thus result in scores for each sub-component of the Catella ranking exercise. The four sub-components have likewise been weighted and ultimately yield the overall score for each city. We have assigned the “location potential” sub-component the strongest weighting in relation to the future development of an individual housing market, in terms of its future attractiveness. This close connection between positive population development and a high score illustrates how locations that are witnessing constant population growth are experiencing a structurally positive baseline situation.

3 Profiles of the Top 10 Housing Markets

The top-ranked cities can be identified after calculating and weighting the various factors (cf. Tab. 2). The overall scoring places the 70 housing locations assessed within a range of 17.09 to 62.66. The average for all 70 locations is 45.55. With 45.44 points, Karlsruhe comes the closest to this. Within the top 10, the scores are between 55.67 and 62.66 out of a possible total of 100 points.

- All these cities have **above-average ratings** (Ø 50.02) for the socio-economic data sub-ranking.

Ingolstadt, Regensburg and Erlangen especially have performed highly positively for this sub-ranking, with scores in excess of 80 points. The key factors for all of these cities are their positive demographic development between 2000 and 2014 (Erlangen: +4.6%; Regensburg and Ingolstadt approx. +10% each), their above-average purchasing power, and their low level of unemployment (between 3.6% and 4.4%). In all of the top 10 locations, the proportion of employees liable for social security contributions underwent a positive change in the period from 2010 to 2013 (+4.66% to +18.08%).

- For the **"structural risk"** sub-ranking, too, with the exceptions of Braunschweig and Wolfsburg every top 10 location has achieved a rating which is higher than the average level of 41.3 points.

Wolfsburg's key deficits are that it is not situated within a metropolitan area and its lack of university-town status. In this ranking, Braunschweig is notable for its low proportion of employees liable for social security contributions and also on account of the process of structural change it is currently undergoing. In the "structural risk" sub-ranking, Darmstadt is the clear winner out of all of assessed locations. This city has picked up points above all due to its position within a metropolitan area, its university-town status, and its low to negligible risk of dislocation within individual housing sub-markets.

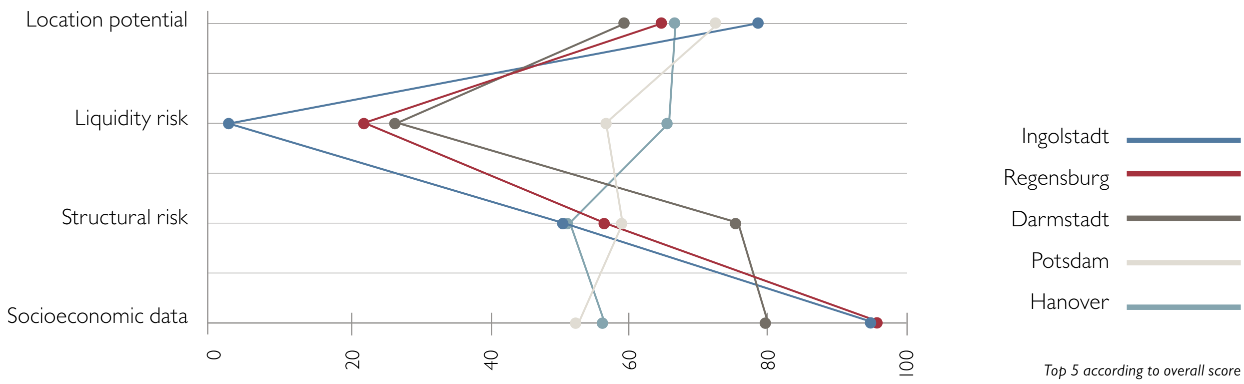
- Half of the cities in the top ten performed below average (Ø of all 10 locations was 37.70) in the **liquidity risk/market liquidity sub-ranking**.

According to the assessment of Catella Property, the cities Hanover and Wolfsburg have the best market liquidity. There are ample opportunities for housing investments here. Locations such as Potsdam, Braunschweig, and Freiburg also offer ample opportunities for investors looking to diversify. The market liquidity in Ingolstadt and Erlangen is particularly striking in contrast. Despite both locations having above-average scores in the other sub-rankings, there is a high risk of investors being unable to secure sufficient further investment offerings.

- All top 10 cities are characterized by **above-average** location **potential (Ø 47.71)** in comparison with the average level for all 70 housing locations assessed.

The key factor behind these high sub-rankings is demographic trends in these cities in the period up to 2030, which will naturally have a positive impact, housing demand, on the level of new building activity. The clear winners for this factor are Potsdam, with a predicted population growth of 8.59%, and Ingolstadt, with a projected increase of 6.06% by 2030.

Profiles of the top 5 housing markets



Source: Catella Research 2015

Tab. 2: Catella housing market ranking 2015 – 70 cities assessed and their sub-rankings

#	CITY	FEDERAL STATE	Overall Score	Socioeconomic data score	Structural risk score	Liquidity risk score	Location potential score
1	Ingolstadt	Bavaria	62.66	93.95	50.8	2.90	81.23
2	Regensburg	Bavaria	62.02	94.31	55.4	21.74	65.72
3	Darmstadt	Hesse	61.76	79.89	74.6	28.99	60.22
4	Potsdam	Brandenburg	61.65	52.79	57.9	53.62	74.71
5	Hanover	Lower Saxony	60.91	57.39	50.4	65.22	66.96
6	Braunschweig	Lower Saxony	59.39	70.43	37.1	53.62	67.54
7	Wolfsburg	Lower Saxony	59.35	74.93	40.7	65.22	55.51
8	Freiburg im Breisgau	Baden-Württemberg	58.11	69.93	53.3	53.62	55.00
9	Nuremberg	Bavaria	57.04	63.04	68.6	28.99	62.17
10	Erlangen	Bavaria	55.67	81.88	56.3	2.90	66.74
11	Lüneburg	Lower Saxony	55.19	59.09	55.1	28.99	67.39
12	Münster	North Rhine-Westphalia	55.08	79.20	47.7	2.90	71.88
13	Osnabrück	Lower Saxony	53.85	55.25	40.5	65.22	53.99
14	Bremen	Bremen	53.58	46.41	37.4	65.22	61.30
15	Augsburg	Bavaria	53.03	66.09	49.1	21.74	63.84
16	Erfurt	Thuringia	52.93	39.13	47.0	53.62	65.80
17	Heidelberg	Baden-Württemberg	52.55	73.91	69.6	21.74	45.14
18	Bonn	North Rhine-Westphalia	52.30	59.82	49.3	2.90	76.88
19	Dresden	Saxony	51.84	54.31	33.4	65.22	52.97
20	Hanau	Hesse	51.73	63.30	40.9	65.22	41.96
21	Oldenburg	Lower Saxony	51.01	67.61	43.3	0.00	72.68
22	Rostock	Mecklenburg-Western Pomerania	50.33	28.41	32.5	53.62	74.28
23	Ludwigshafen am Rhein	Rhineland-Palatinate	50.02	55.76	40.4	65.22	42.75
24	Mannheim	Baden-Württemberg	49.93	56.34	61.1	28.99	50.94
25	Fürth	Bavaria	49.88	68.15	41.7	28.99	53.41
26	Jena	Thuringia	49.09	50.69	48.0	2.90	74.93
27	Wiesbaden	Hesse	48.78	51.38	59.8	21.74	56.09
28	Kiel	Schleswig-Holstein	48.46	50.40	26.4	65.22	50.07
29	Hildesheim	Lower Saxony	48.24	40.87	33.7	65.22	52.10
30	Paderborn	North Rhine-Westphalia	47.74	51.70	55.0	2.90	66.38
31	Würzburg	Bavaria	47.65	65.58	56.2	2.90	55.51
32	Fulda	Hesse	47.63	73.62	49.1	28.99	38.91
33	Dortmund	North Rhine-Westphalia	47.58	26.52	34.8	95.65	42.46
34	Kassel	Hesse	46.95	43.62	47.4	65.22	38.62
35	Aschaffenburg	Bavaria	46.85	57.46	62.5	28.99	40.51
36	Mainz	Rhineland-Palatinate	46.81	63.66	60.8	28.99	36.96
37	Ratingen	North Rhine-Westphalia	46.69	38.73	46.1	28.99	62.83
38	Gütersloh	North Rhine-Westphalia	45.89	57.25	49.4	28.99	45.43
39	Bamberg	Bavaria	45.83	63.12	61.0	2.90	49.35
Ø 40	Karlsruhe	Baden-Württemberg	45.44	67.86	55.8	2.90	47.83
41	Neuss	North Rhine-Westphalia	45.37	58.62	37.0	28.99	50.07
42	Koblenz	Rhineland-Palatinate	44.78	70.14	56.4	28.99	29.06
43	Aachen	North Rhine-Westphalia	44.13	44.93	45.2	28.99	51.59
44	Gießen	Hesse	43.79	48.33	43.6	53.62	35.07
45	Bielefeld	North Rhine-Westphalia	43.68	49.67	33.9	65.22	32.68
46	Essen	North Rhine-Westphalia	42.50	28.19	36.1	65.22	43.41
47	Weimar	Thuringia	42.43	23.95	44.6	1.45	77.83
48	Leverkusen	North Rhine-Westphalia	42.43	34.96	17.6	65.22	48.91
49	Saarbrücken	Saarland	41.18	38.26	42.5	65.22	28.77
50	Leipzig	Saxony	40.96	47.61	29.5	65.22	28.91
51	Göttingen	Lower Saxony	40.39	48.22	44.4	2.90	53.91
52	Duisburg	North Rhine-Westphalia	39.84	11.34	31.3	98.55	31.52
53	Wuppertal	North Rhine-Westphalia	39.53	22.32	17.3	98.55	30.80
54	Offenbach am Main	Hesse	38.61	19.31	35.1	28.99	59.93
55	Lübeck	Schleswig-Holstein	37.91	39.93	24.7	65.22	28.41
56	Krefeld	North Rhine-Westphalia	37.90	31.05	14.6	65.22	40.51
57	Oberhausen	North Rhine-Westphalia	37.49	26.92	13.9	65.22	42.68
58	Solingen	North Rhine-Westphalia	37.12	39.13	19.4	53.62	36.38
59	Mönchengladbach	North Rhine-Westphalia	36.61	30.58	21.3	53.62	39.93
60	Trier	Rhineland-Palatinate	35.10	53.41	40.8	2.90	37.17
61	Recklinghausen	North Rhine-Westphalia	34.22	20.72	17.0	95.65	18.62
62	Kaiserslautern	Rhineland-Palatinate	33.27	20.83	32.1	65.22	24.57
63	Bochum	North Rhine-Westphalia	33.04	27.61	26.8	65.22	22.10
64	Hamm	North Rhine-Westphalia	32.26	27.43	10.1	65.22	29.57
65	Heilbronn	Baden-Württemberg	31.57	63.59	30.1	2.90	25.94
66	Coburg	Bavaria	29.98	62.28	45.9	2.90	13.26
67	Siegen	North Rhine-Westphalia	27.48	41.12	33.2	28.99	13.62
68	Detmold	North Rhine-Westphalia	27.33	33.80	33.5	21.74	22.39
69	Remscheid	North Rhine-Westphalia	18.84	23.33	11.3	28.99	14.13
70	Herne	North Rhine-Westphalia	17.09	0.00	23.3	28.99	18.99

Source: Catella Research

4 Analysis of Sub-scores

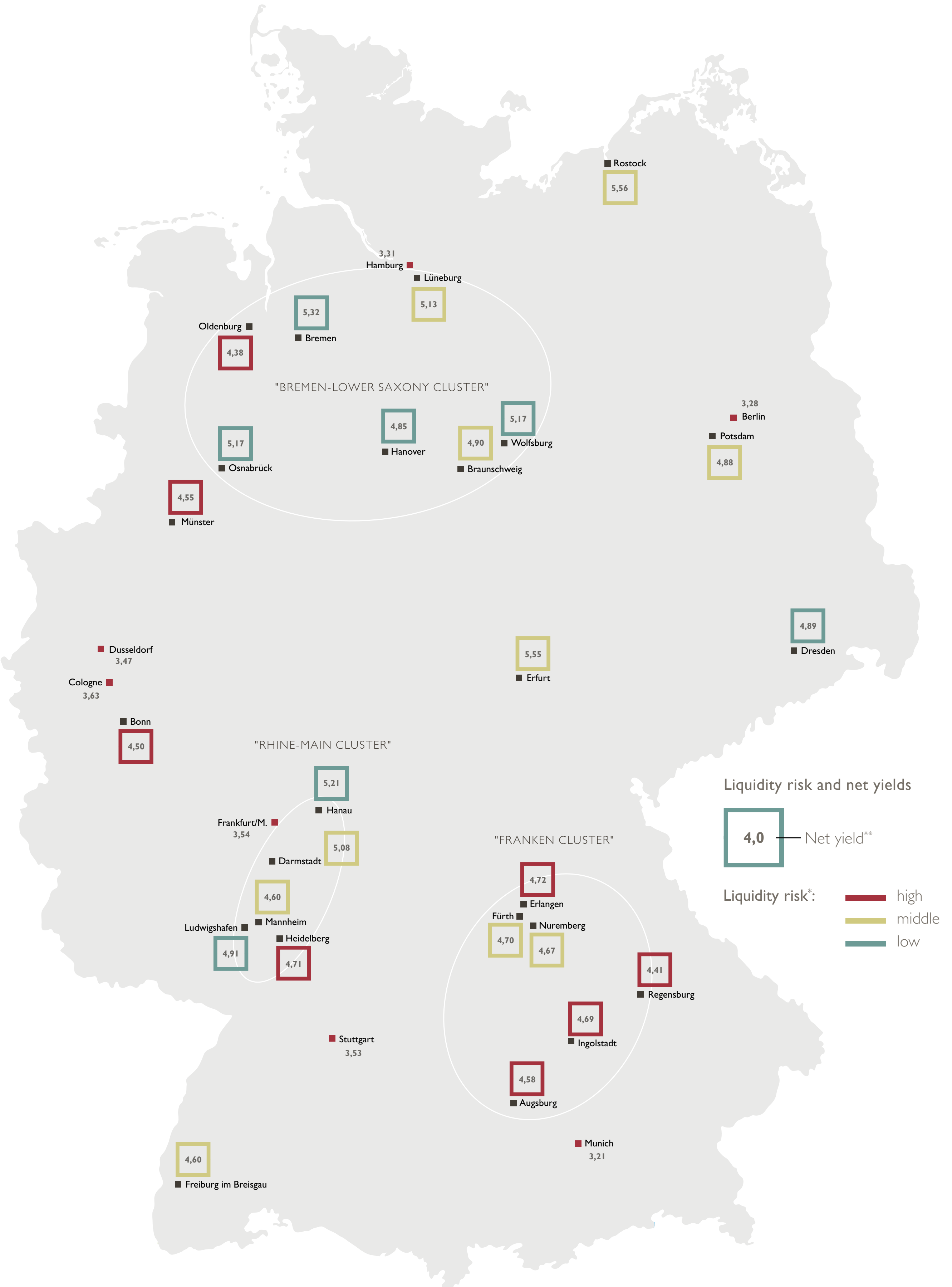
In the socioeconomic data category, the city of **Regensburg** has been ranked in first place with 94.31 points, just ahead of **Ingolstadt** (93.95 points). While Regensburg has at least one top-10 ranking for all of the assessed socioeconomic factors, in the “structural risk” and “location potential” sub-rankings it is only ranked 14th and 15th respectively. For the “structural risk” sub-ranking, this city may benefit from the structural change it is currently experiencing as well as its university-town status, but it is not situated within a metropolitan area with a strong commuter belt. However, the opposite is true for the cities Darmstadt (immediate vicinity to Frankfurt am Main/ Rhine-Main metropolitan area) and Nuremberg, which together with the neighbouring cities Fürth, and Erlangen, make up a metropolitan area with a population of more than 1.2 million.

Heidelberg (ranked 17th), **Fulda** (32nd), and **Koblenz** (42nd) are further cities occupying the mid-range to lower rankings within the overall scoring exercise. However, in the “socioeconomic” sub-ranking all three of these locations have made it into the top 10 and are particularly notable for their positive demographic developments, their low unemployment rates, and their high centrality indicators. Fulda has also taken first place out of all 70 of the locations assessed in terms of its unemployment level (3.5%) and its centrality indicator (195.5). For the “structural risk” sub-ranking, these three locations are ranked no lower than 23rd place and vary in terms of the individual indicators examined. While each of these locations is a university town, Heidelberg and Koblenz have undergone a far-reaching process of structural change, unlike Fulda. The city of Heidelberg also benefits from its positive location within the Rhine-Neckar metropolitan region. However, in contrast to Heidelberg Koblenz and Fulda offer solid potential for likely rent rises. With an average rent of € 9.70/m² Heidelberg is clearly above the mean value for all 70 locations assessed (€ 7.09/m²) and is ranked 68th in terms of the potential for rent increases. The cities of Erlangen and Freiburg (highest rent levels) have the lowest rankings for the “location potential” sub-ranking.

Conversely, 6 cities within the Ruhr area alone are among the top 10 cities for the lowest rent levels and the strongest deviation from the average rental level for all 70 locations assessed. They include cities such as **Herne**, **Hamm**, **Duisburg**, and **Bochum**. For the “location potential” sub-ranking, these cities are ranked last due to their negative demographic outlook. Within the field of “structural risk,” none of these cities has undergone a far-reaching process of structural change. Only for the “market liquidity” sub-ranking is the city of **Duisburg** the top-ranked location, with 98.6 points, and thus has a high density of supply. Conversely, **Regensburg and Ingolstadt** are characterized by weak market liquidity and have thus been ranked 51st and 56th in the “market liquidity” scoring. In other words, over a medium- to long-term time frame, **Duisburg** offers greater investment opportunities than **Regensburg** and **Ingolstadt**.

A high unemployment rate, low purchasing power, and a declining population over the past 10 years are thus further aspects that account for the Ruhr area cities' rankings at the bottom end of the overall Catella ranking exercise. On closer inspection, much the same is true of **Aschaffenburg**, **Mainz**, and **Bamberg**. All three cities occupy mid-range rankings within the overall scoring (35th–39th positions). However, within the "structural risk" sub-ranking, these locations all appear within the top 10, which mainly reflects their position within metropolitan areas as well as a stable proportion of employees liable for social security contributions. For the other sub-rankings "location potential" and "market liquidity," these locations only appear towards the bottom of the table. A low level of new building activity and the low volume of investment opportunities (weak market liquidity) at these locations are two further key factors accounting for these cities' moderate overall rankings. The opposite, at least in terms of the sub-score „location potential," is the case in **Rostock** (74.28); this can primarily be traced to positive forecasts through 2030 for population growth.

Regional housing investment clusters in the top 25 locations 2015



* *Liquidity risk based on Catella Housing Market Ranking 2015*
** *Net yields: rental income minus management costs vs. gross initial outlay*

Source: Catella Research 2015

An assessment of the geographic distribution of the top 25 locations shows that the strong housing markets are clearly clustered in northern and southern Germany. Eleven of the top 25 locations are in Bavaria and the Rhine-Main area. A further seven are situated in Lower Saxony and Bremen.

It is notable that many top 25 cities have middling to low levels of market liquidity, i.e. these cities offer a low volume of housing investments. In line with economic principles, assuming a corresponding level of demand, a low volume of supply is reflected in higher prices, which for housing markets is expressed in terms of low yields. This is particularly apparent in the cases of **Oldenburg** and **Bonn**, with yields of between 4.38% and 4.5%, which is partly attributable to a low liquidity level. However, **Münster** and **Erlangen** also offer relatively low yields with a comparatively low level of liquidity. Accordingly, in addition to the **yield** and the **performance** of the housing market in question, the available **volume of investments** should also be considered.

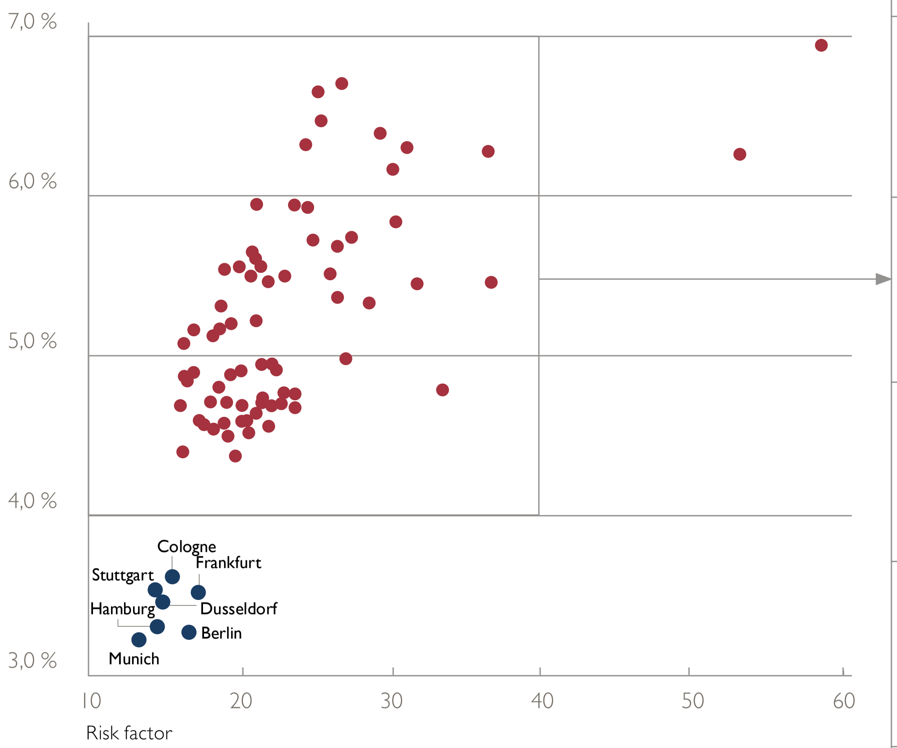
5 Investment Opportunities / Return/Risk Profile 2015

The analysis and assessment of these 70 housing locations lead to the identification of advantageous locations for investment decisions. However, the yield – a key factor from the point of view of investors – has deliberately not been included in this location ranking, which is primarily intended to reflect the location quality rather than investment performance. In this final section as a risk indicator quality is correlated with the specific achievable market yield for the respective market. In order to plot the level of risk on the x-axis, the scores have been transformed by means of an inverse function and multiplied by 1,000. The yield has been plotted on the y-axis.

This clearly shows that the top 7 housing markets are among those with the lowest level of risk exposure according to this scoring. This is due to factors such as **transparency**, **market liquidity**, and also the **location potential** that is associated with these cities' attractiveness. However, in these locations this attractiveness and assumed safety are reflected in **low yields**. Accordingly, yield-focused investors should increasingly also focus on B locations. Catella Research has therefore identified a potential investment corridor featuring locations with an investment corridor (cf. p. 13).

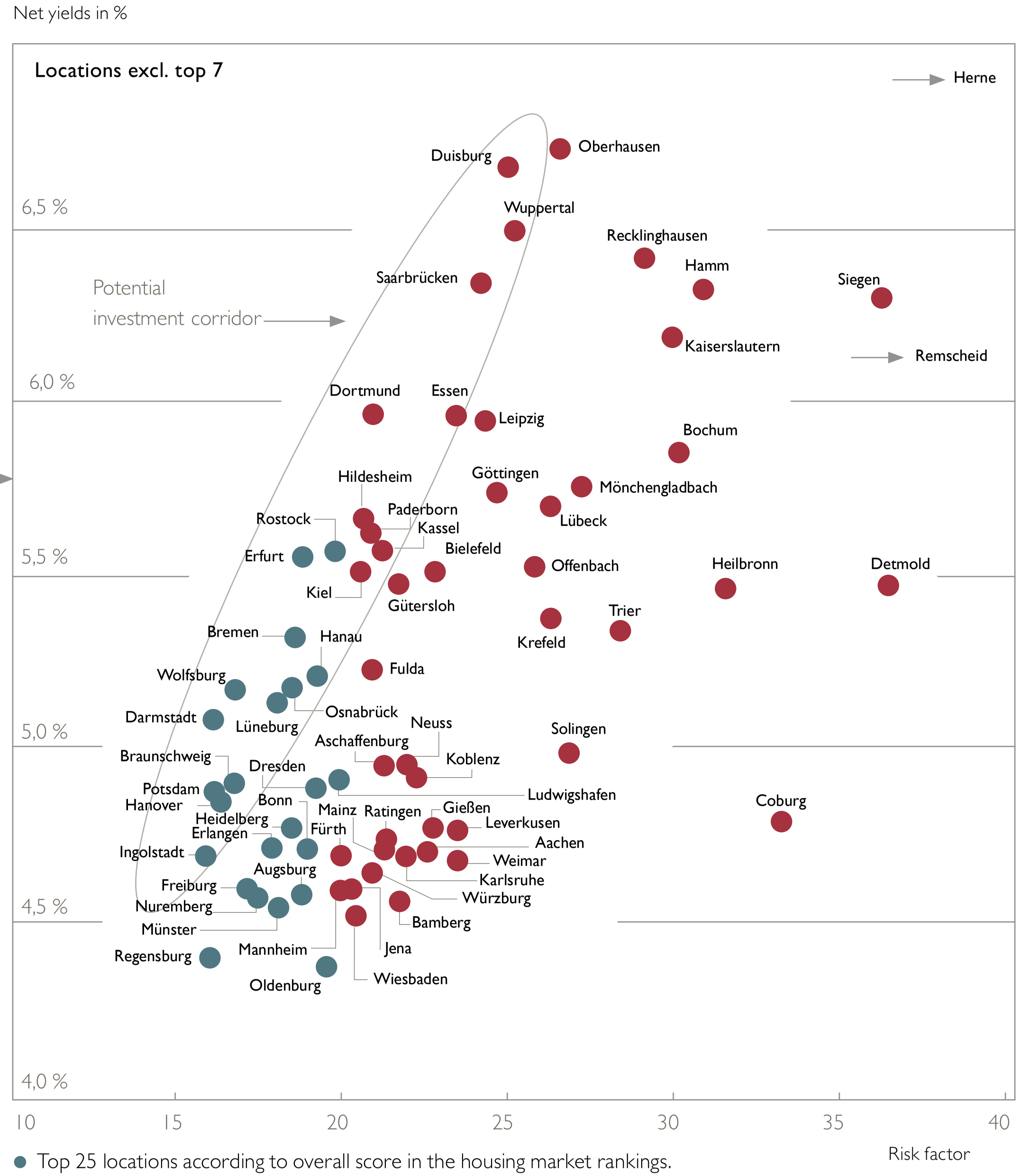
Thus **Erfurt** should be preferred to **Oldenburg**, since both cities have roughly the same level of risk but a higher initial yield is achievable in Erfurt. Investors should therefore select cities for their investments in line with their level of risk affinity or else diversify their investments across multiple cities and thus spread their risk exposure.

Risk/return profile for housing markets in 77 locations in Germany 2015



● Housing market assessed and ranked in 70 locations
● Housing market top 7 locations

Source: Catella Research 2015



● Top 25 locations according to overall score in the housing market rankings.
● Remaining 45 locations according to overall score performance in the housing market rankings

Risk factor based on Catella Research Housing Market Ranking Germany 2015

6 Conclusion

The analysis by Catella Research forms the basis for the actual decision made by the investors. While the scorings and rankings tables always have a leader (Ingolstadt in this case) and a final position (Herne in this case), this universe of investments of 77 locations represents only the maximum offer for investors in the German market. And this is, as always, determined by the expectations of interest rates for capital expenditure and the resultant risk. The challenge for each national and international investor to find their option in all of the many investment alternatives can ultimately only be assessed by evaluating their purchase profiles in comparison to the knowledge of the local market. At present, the hype surrounding German residential real estate is undoubtedly characterised by the – lack of – alternative investment options, which is shown by state of global interest rates but also by the expected returns. In light of this, the often-cited problem of exiting a market does not represent an obstacle for investing in smaller locations per se. This supposed lack in fungibility during periods of downswings in the market is evidenced in the current analysis particularly clearly in the above-average returns – in all of Germany.

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