bulwiengesa

Survey

Office Market: Investment Opportunities in German Secondary Locations

Client: DEMIRE - Deutsche Mittelstand Real Estate AG

Frankfurt am Main, April 2018

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PRELIMINARY REMARK

DEMIRE (Deutsche Mittelstand Real Estate AG) has commercial real estate holdings in mid-sized cities and in up-and-coming locations on the periphery of German metro regions. To raise awareness for so-called second-tier cities, DEMIRE asked bulwiengesa to conduct an analysis of selected cities in Germany, this being the second edition of the survey that was conducted for the first time in 2017.

The survey focuses on the office segment. The analysed cities are depicted in the map chart below. Compared to the 2017 survey, the selection of analysed cities was expanded by adding another ten cities (Lüneburg, Ingolstadt, Kempten, Reutlingen, Karlsruhe, Mannheim, Potsdam, Jena, Chemnitz and Essen) to the survey.

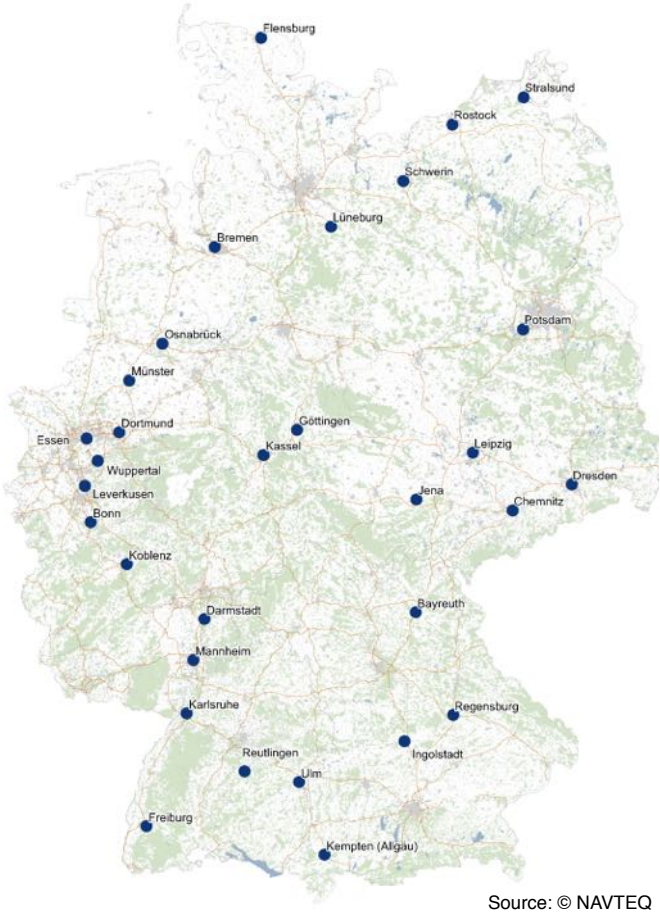
Survey Structure

The survey now before you divides into four chapters that are thematically interlinked. It starts with an Executive Summary that outlines the return / risk representation of the second-tier cities. The subsequent chapter will elaborate the structure of Germany's office real estate market. To put it into perspective, this snapshot will be compared to the office markets in France and the United Kingdom. The primary parameter in this context will be the distribution of the office take-up in the cities of each country. Another benchmark compared in the chapter is the gross value added. The third chapter will conduct a detailed analysis of the second-tier cities by comparing them to Germany's seven Class A cities. Parameters used for this comparison include the trends in office occupancy, in office vacancy, in office employment and in office take-up as well as construction activity, transaction volume and net initial yields. With the market environment in the second-tier cities established in the third chapter, the final chapter will discuss the yield upside of value-add properties in the secondary cities. The chapter will also present an asset managed by DEMIRE in Leipzig (Gutenberggalerie) to illustrate the points made. The survey will conclude with a summary of the key findings in tabular form.

About the Methodology

The idea is to raise awareness for, and the transparency of, Germany's second-tier cities, and the real estate market data of our proprietary RIWIS[1] information system will be used toward this end.

Overview of Second-Tier Cities



Source: © NAVTEQ

[1] RIWIS = bulwiengesa's proprietary regional information system for Germany's real estate industry.

1 EXECUTIVE SUMMARY

The market action in France and the United Kingdom is dominated by their first cities, Paris and London, respectively. Compared to these and other countries in Europe, the German office real estate market is characterised by a different market structure – a polycentric one. In addition to Germany's "Big Seven", there are other cities characterised by dynamic market action and positive economic parameters. For investors, these present interesting investment opportunities. The market dynamics of selected second-tier cities was therefore investigated for the purposes of this survey, using a variety of different parameters. The analysis returned the following findings:

Trend in Average Rents

In the wake of country's upbeat economic development, the German office markets has shown a rather handsome performance in recent years. The Class A markets, for instance, achieved rent growth rates of 28 % over the past ten years. Some of the small locations (second-tier cities) registered an even brisker performance, reflected in rent hikes of over 40 %.

Trend in New Office Completions

Speculative building activity (without pre-lettings) could push up vacancy rates in time of slowing demand. Unlike in the Class A markets, where the share of unlet floor area approximates 40 % at the start of a given project, new developments in second-tier cities are generally aligned with demand, i.e. they tend to show a high pre-let ratio. It is a good way to reduce the risk associable with market upheavals.

Trend in Vacancies

The vacancy rate represents a given office market's share of available floor area, and is an important indicator for the situation on that market. In nearly all Class A cities, the bullish performance of the office markets helped to bring down vacancies significantly. Analogously, several second-tier cities also registered a substantial reduction of their vacant office space. The trend is explained, on the one hand, by a rise in demand and, on the other hand, by a demand-driven number of completions.

Trend in Office Jobs

The development of office employment is an important demand indicator for office accommodation. The highly positive economic conditions of recent years triggered a fast increase in office employment, with growth rates of 19 % reported from the Class A cities and of up to 39 % from the second-tier cities. Going forward, the office job growth is expected to continue and to have a favourable effect on the market situation.

Trend in Office Take-up

The office take-up, meaning the volume in lettings and owner-occupancy, mirrors the dynamic and activity of a given market. The sensible thing to do prior to investment decisions is to ensure the investment asset is of market-consistent size. The relation of the take-up to the underlying stock reflects the propensity of tenants to relocate. The latter is much more pronounced in the Class A markets than in the second-tier cities.

Investment Market

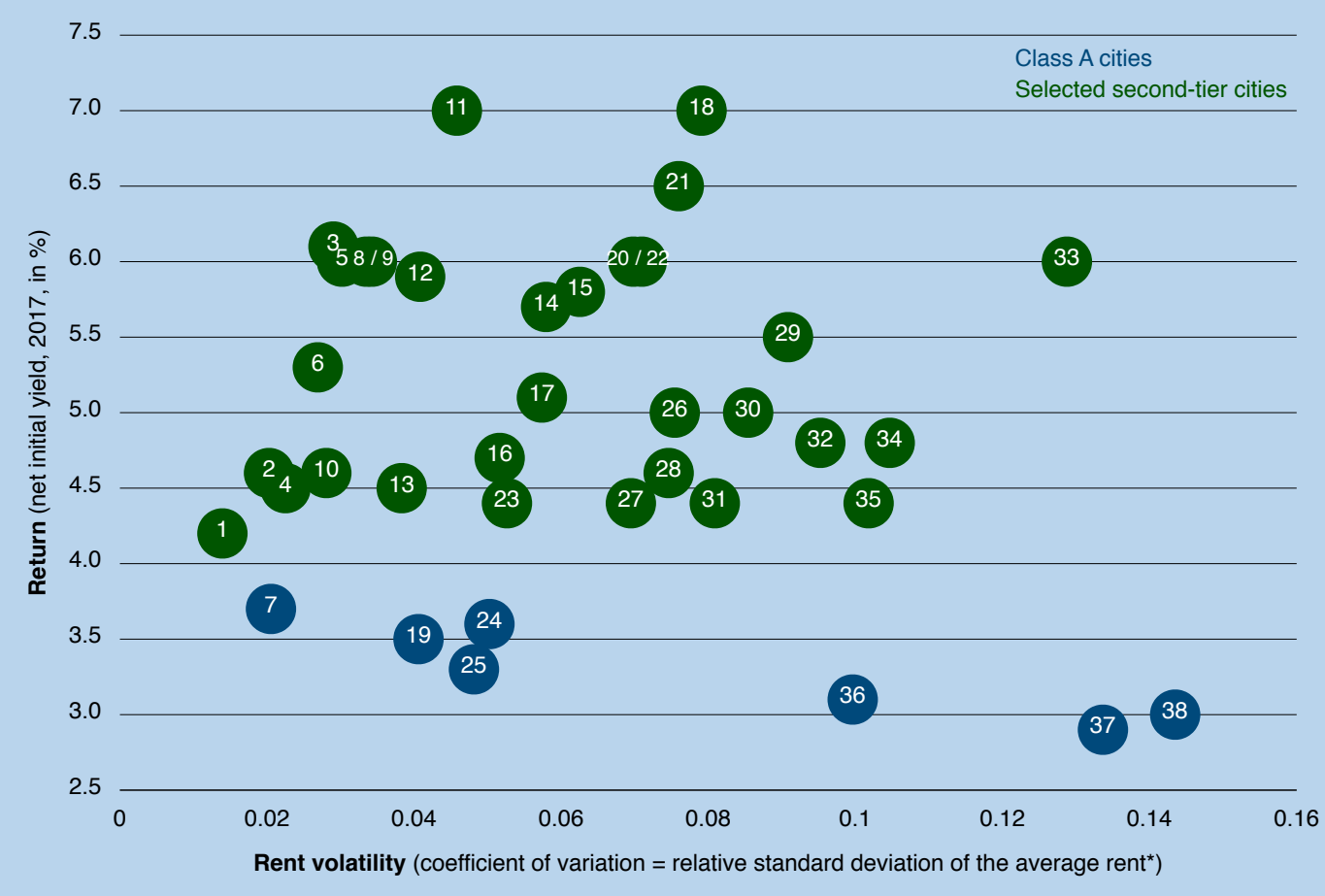
In the absence of investment opportunities and low yield expectations in the markets of the Class A cities, players invest increasingly in second-tier cities. In 2017, approximately 27,5 billion euros were invested outside the major metropolises – thereof 15 billion euros in second-tier cities. The heightened interest in the second-tier cities is explained by the higher yield average combined with a very stable rent level. While rising demand will push the net initial yields down to historic lows even in the second-tier cities, the yield spread between these markets and the Class A cities is still considerable at 2 percentage points.

Risk / Return Representation

Within the framework of the present survey, the Class A markets and secondary markets were also studied in regard to their stability of income and the achievable return on investment. The findings are represented in the chart on the next page. They suggest that the yield upside is higher in every one of the second-tier cities than in the Class A markets. The bracket of achievable net initial yields extends from 4.1 % in Bonn to 7.0 % in Stralsund and Chemnitz. By contrast, the average achieved in Class A cities is only 3.2 %. The already mentioned stability of income in many of the second-tier cities is reflected in the rent volatility as well: Markets like Bonn and Dortmund, for instance, show a very low spread of rents, thereby minimising the risk of rent corrections on the market side. Conversely, locations like Berlin and Munich – but also places like Kempten and Regensburg – combine market fluctuations with a comparatively high rent volatility.

To put the return potential and the earnings risk in relation, a quotient of yield and volatility was created. It is mapped in the chart on the next page. As the chart suggests, cities like Bonn and Dortmund have very favourable relations, whereas the Class A cities (Berlin, Munich and Hamburg) and even Leipzig are found at the bottom of the list because of their massive rent fluctuations.

Risk / Return Representation



Selection of cities** sorted by return- / risk-quotient***								
1	Bonn	Sec.-tier cities	14	Leverkusen	Sec.-tier cities	27	Münster	Sec.-tier cities
2	Dortmund	Sec.-tier cities	15	Wuppertal	Sec.-tier cities	28	Dresden	Sec.-tier cities
3	Koblenz	Sec.-tier cities	16	Bremen	Sec.-tier cities	29	Kassel	Sec.-tier cities
4	Essen	Sec.-tier cities	17	Ulm	Sec.-tier cities	30	Osnabrück	Sec.-tier cities
5	Bayreuth	Sec.-tier cities	18	Stralsund	Sec.-tier cities	31	Freiburg (B.)	Sec.-tier cities
6	Rostock	Sec.-tier cities	19	Stuttgart	A cities	32	Potsdam	Sec.-tier cities
7	Düsseldorf	A cities	20	Jena	Sec.-tier cities	33	Kempten (Allgäu)	Sec.-tier cities
8	Flensburg	Sec.-tier cities	21	Schwerin	Sec.-tier cities	34	Regensburg	Sec.-tier cities
9	Göttingen	Sec.-tier cities	22	Lüneburg	Sec.-tier cities	35	Leipzig	Sec.-tier cities
10	Darmstadt	Sec.-tier cities	23	Karlsruhe	Sec.-tier cities	36	Hamburg	A cities
11	Chemnitz	Sec.-tier cities	24	Cologne	A cities	37	Berlin	A cities
12	Reutlingen	Sec.-tier cities	25	Frankfurt	A cities	38	Munich	A cities
13	Mannheim	Sec.-tier cities	26	Ingolstadt	Sec.-tier cities			

*The relative standard deviation (average rent) refers to the period between 2008 and 2017.
**Cities shaded in yellow were added to the survey since the previous edition of 2017.
***The risk/return quotient is obtained by dividing the net initial yield by the relative standard deviation of the average rent.
Source: RIWIS

2 THE PECULIARITIES OF GERMANY'S OFFICE REAL ESTATE MARKET

In addition to the seven metropolises (among them Hamburg, Berlin and Munich), Germany's office real estate market includes a large number of second-tier cities, some of which show a brisk market dynamic. In order to structure the hierarchy of German metropolises and second-tier cities, bulwiengesa categorised them into Class A through Class D cities according to their functional significance. The categorisation is based on the performance of different parameters such as office take-up or prime rent. The next chapter will highlight the peculiarities of the German office real estate market.

Comparing Germany, France and the United Kingdom – in Terms of Office Take-up

The map at the end of this chapter shows, inter alia, the distribution of the office take-up among Germany's "Big Seven" cities and the examined second-tier cities in 2017, along with selected cities in France (Lille, Lyon, Marseille, Central Paris) and in the United Kingdom (Birmingham, Edinburgh, Glasgow, Central London, Manchester). It clearly reveals the difference between the polycentric market structure of Germany and the reference countries: In France, around 67 % of the take-up is concentrated in a single city – Central Paris – while the office market in Central London accounts for around 87 % of the take-up in the UK. Within the Central London market, about 51 % is absorbed in the City of London and around 41 % in London's West End and Midtown.

By contrast, Germany's seven leading metropolises, taken together, only account for a combined take-up share of around 62 %, and the examined second-tier cities only for about 18 %. Out of the total, the highest take-up was registered in Berlin with a share of around 16 %. In 2017, the German capital actually set a new record with an office take-up of about 1,010,000 sqm RAC. This increase in take-up is based on the sustained growth of the service industry and the TMT sector (technologies, media and telecommunication), which also accounts for the majority of start-ups. The city with the smallest share of the "Big Seven" take-up total is Stuttgart, accounting for around 4 %.

Office Take-up (2017)		
City	**Office Take-up**	**in %**
France (FR)		
Marseille	564,600 sqm	7 %
Lille	881,600 sqm	11 %
Lyon	1,092,200 sqm	14 %
Paris Central	5,222,700 sqm	67 %
FR total	**7,761,100 sqm**	**100 %**
United Kingdom (UK)		
Glasgow	60,200 sqm	2 %
Edinburgh	95,700 sqm	3 %
Birmingham	121,700 sqm	3 %
Manchester	198,300 sqm	6 %
London Central	3,064,800 sqm	87 %
UK total	**3,540,700 sqm**	**100 %**
Germany (GER)		
Stuttgart	264,000 sqm	4 %
Cologne	307,000 sqm	5 %
Düsseldorf	325,000 sqm	5 %
Frankfurt (Main)	624,000 sqm	10 %
Hamburg	635,000 sqm	10 %
Munich	750,000 sqm	12 %
Berlin	1,010,000 sqm	16 %
second-tier cities	1,117,000 sqm	18 %
other cities	1,223,800 sqm	20 %
GER total	**6,255,800 sqm**	**100 %**

Sources: PMA (France / United Kingdom); bulwiengesa (Germany)

Interim Summary

Compared to other European countries, the take-up in Germany is not concentrated in a single metropolis but spread across a number of diverse cities. With these parameters in mind, the German office market should be understood as having a polycentric structure.

Comparing Germany, France and the United Kingdom – in Terms of Gross Value Added (GVA)

Another criterion for comparing the market structures in France, the United Kingdom and Germany is the parameter of the gross value added. The gross value added is an indicator for the economic performance of a given municipality. The subsequent table shows the gross value added in selected cities and regions in France, the United Kingdom and Germany in 2015.

Here as elsewhere, the polycentric market structure in Germany becomes apparent: In greater London, roughly 23 % of the UK's entire gross value added is being generated. Other British cities such as Glasgow or Manchester account for only about 1 % each. In France, the Île de France region, which includes Paris among other cities, delivers an actual 30 % of the country's gross value added. The other regions show figures between 2 % and 7 %.

This contrasts with the German Class A cities, which collectively generate only a gross value-added share of around 19 %. Berlin and Hamburg make the highest single contributions to the gross value added with a share of around 4 %. The Hanseatic City of Hamburg is one of Germany's leading business locations. Home to the third-largest port in Europe, the city has a domestic and international significance that radiates far into the metro region. The fact is reflected not least in the city's economic key ratios – such as gross value added per employee. At approximately 81,000 euros per employee (2015), the ratio is well above the German average (63,000 euros/employee). Similarly, the GVA in Berlin was characterised by steady growth over the past years, achieving a new all-time high in 2015. It is attributable primarily to developments in the various service sectors as well as to forward-looking industries such as media/information and communications technology.

The examined second-tier cities account for a collective gross value-added share of around 12 %. Among the selected cities, Bremen tops the list with a gross value added of approximately 24.6 billion euros. Being another hanseatic city, its port represents a major economic factor with its shipyard industry along with the sectors transport and logistics. Next in line after Bremen are the cities Essen and Bonn.

Gross Value Added (GVA)* (2015)		
City / Region	**GVA (in Mio. Euro)**	**in %**
France (FR)		
Provence-Alpes-Côte d'Azur (Marseille)	136,574	7 %
Nord-Pas-de-Calais (Lille)	97,546	5 %
Auvergne (Lyon)	32,615	2 %
Île de France (Paris)	589,843	30 %
rest FR	1,093,245	56 %
FR total	**1,949,824**	**100 %**
United Kingdom (UK)		
Glasgow City	27,036	1 %
Edinburgh City	25,401	1 %
Birmingham	34,154	1 %
Manchester	23,462	1 %
London (Region)	521,360	23 %
rest GB	1,665,049	73 %
UK total	**2,296,462**	**100 %**
Germany (GER)		
Stuttgart	46,031	2 %
Cologne	55,850	2 %
Düsseldorf	42,984	2 %
Frankfurt (Main)	60,195	2 %
Hamburg	97,317	4 %
Munich	93,777	3 %
Berlin	111,442	4 %
second-tier cities	330,420	12 %
other cities	1,891,646	69 %
GER total	**2,729,662**	**100 %**

*The cities in the various German states are grouped with different NUTS levels.
Sources: Eurostat (France / United Kingdom); bulwiengesa (GER)

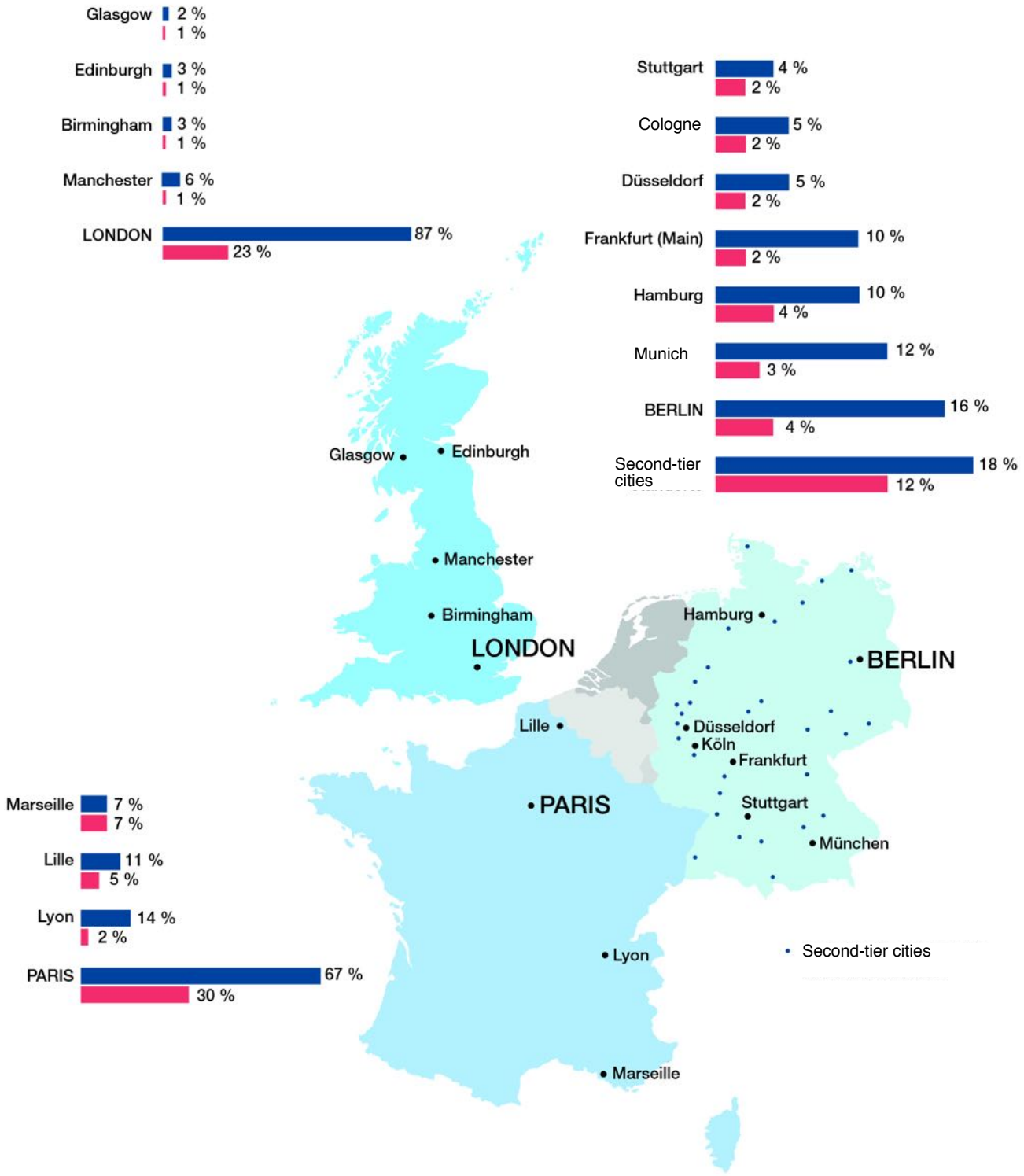
Interim Summary

Unlike in France and the United Kingdom, the German gross value added is generated everywhere in the country. The fact highlights the prominence of mid-market companies for the German economy, as these companies often have their principal places of business in second-tier cities.

Second-tier cities versus metropolises in the various German states

Office Take-up (2017)
GVA (2015)

All figures in percent, share in the respective state-level total.



3 FOCUS SUBJECT: THE OFFICE REAL ESTATE MARKETS OF GERMANY'S SECOND-TIER CITIES

Compared to the office real estate markets in the United Kingdom and France, the German market is characterised by a large number of smaller cities, some of which show a brisk market dynamic. The key ratios of these cities will be discussed in the sections below. They will analyse, in addition to the development of office rents, office vacancies, office employment and office take-up, the construction activity and the liquidity of each market. The period under review here extends from 2008 through 2017.

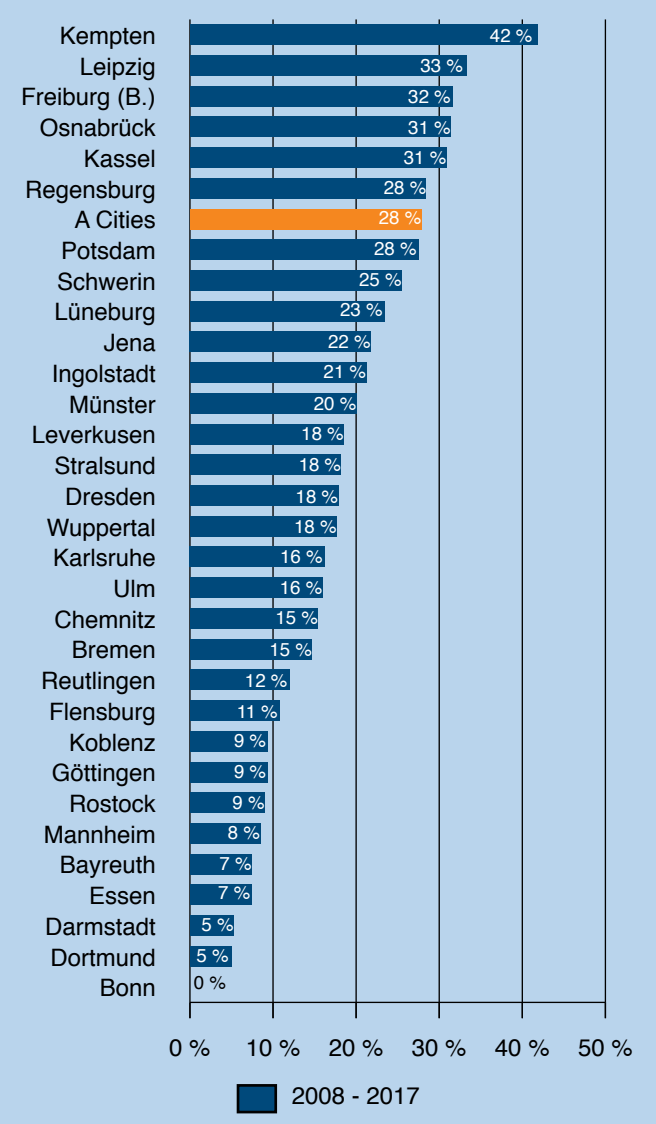
Trend in Average Rents (2008 - 2017)

The currently excellent market environment is also reflected in the performance of the second-tier cities. As the chart on this page suggests, the average rent[2] has experienced upward growth in virtually all of the examined cities when looking at the past ten years. The relevant margin for growth ranges from around 5 % in Darmstadt to 42 % in Kempten. Leipzig (+33 %), Freiburg (+32 %), Osnabrück (+31 %) and Kassel (+31 %) counts among the cities with the fastest rental uplift.

Starting from a low-level rent average (2008: 5.50 euros/sqm RAC), the city of Kempten has established itself as an attractive regional office market in the alpine foothills of Bavaria. What draws many companies to the city is particularly the science & research sector around the Kempten University of Applied Sciences and a strong food technology sector. Important plants in addition to retail multiple Feneberg Lebensmittel GmbH and dairy company Edelweiss GmbH also include the Schur Flexibles GmbH packaging manufacturer and the logistics operator Dachser (principal place of business). A sound demand/supply ratio in this town has pushed up the average rent to 7.80 euros/sqm RAC (2017).

In terms of office stock and take-up, Leipzig counts among the most important office markets in East Germany, along with Dresden. Known for its trade fairs, the city has seen its office market perform rather handsomely in recent years. Both prime rents and average rents experienced a surge, whereas the vacancy rate dropped noticeably to 9.9 % (2017). The high vacancy rate when compared to other second-tier cities is a legacy of the difficult 1990s. It has been in decline since 2005, not least because vacant buildings facing obsolescence were taken off the market. Generally speaking, the office market in Leipzig has shown signs of regeneration in recent years. No growth impulses have been registered in Bonn lately – at least not in regard to the average rent. At first glance, this may seem odd, given the generally very healthy market environment and the booming demand in the so-called Federal City and former West-German capital. The prime rent, for instance, which is traditionally paid not in the town centre but in the federal district submarket, rose by around 17 % or 2.90 euros/sqm RAC since 2015. By the end of 2017, it achieved its highest-ever level of 19.60 euros/sqm RAC. The trend is primarily attributable to signings for new-build schemes within this submarket. Moreover, the vacancy rate is down to 2.4 % at the moment. But the relative supply shortage is not yet reflected in the average rent, which has followed a stable trend since 2008.

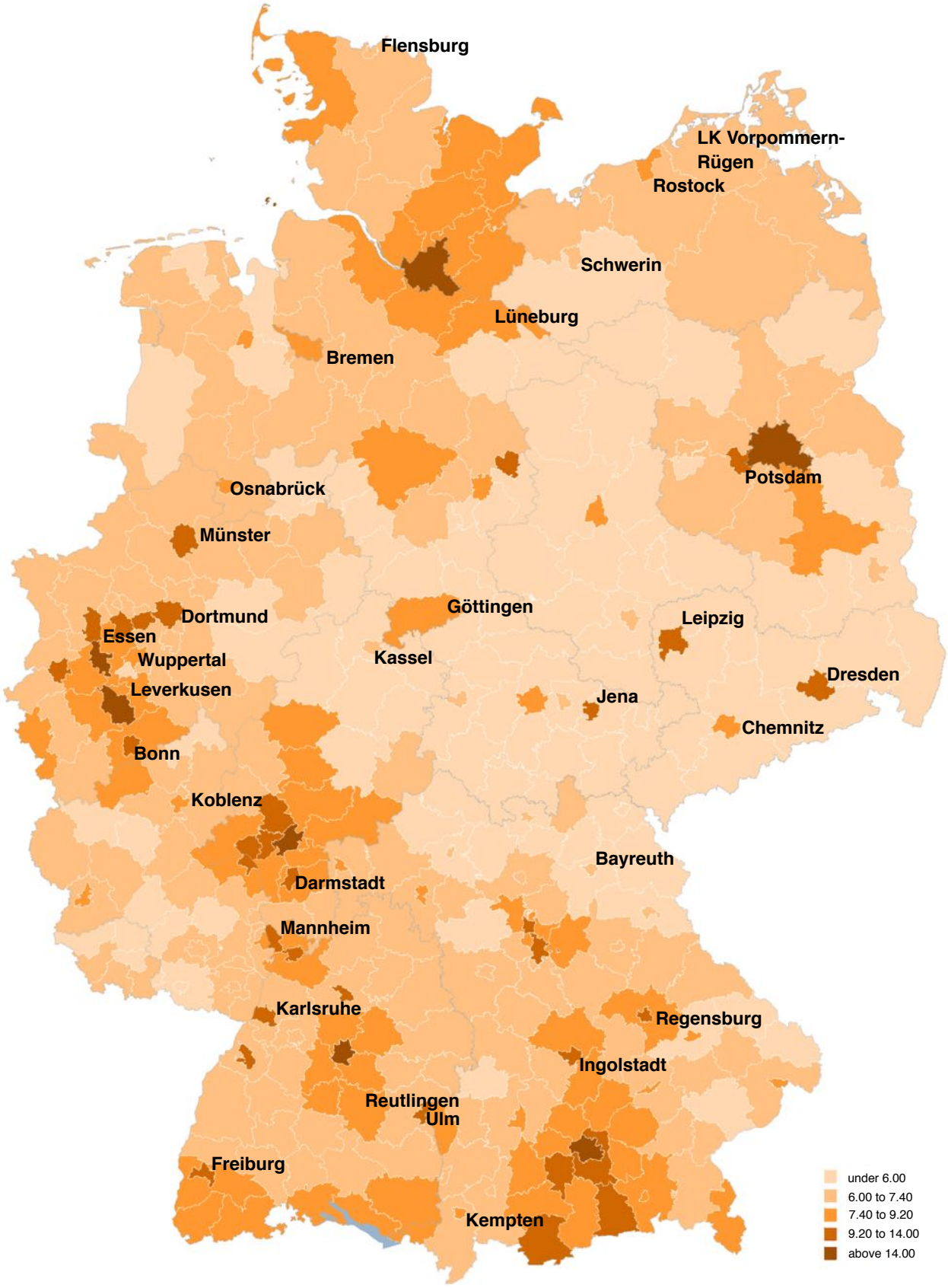
Development of the average rent (CBD offices) in the cities surveyed (2008 - 2017)



Source: RIWIS

[2] Average rent = to determine the average rent, the rents negotiated for the leases that were signed during the defined period of time are weighted with the floor area rented before the mean is calculated.

Average rent (CBD offices) in the cities surveyed in euros/sqm RAC (2017)



Source: © NAVTEQ

Interim Summary

In the wake of country's prospering economic development, the German office markets has shown a rather handsome performance in recent years. The Class A markets, for instance, achieved rent growth rates of 28% over the past ten years. Some of the small locations (second-tier cities) registered an even brisker performance, reflected in rent hikes of over 40%.

Trend in New Office Completions

The attractiveness of an office market is also mirrored in its completion rate. Shown below are the completions in the examined cities for the period 2008 through 2017. They are important to map because they will lend themselves to meaningful inferences during the analysis of office employment and office vacancies.

The average construction activity over the past ten years shows that completion rates were highest in some of the Class B cities selected, specifically Essen, Bremen, Dortmund, Münster, Bonn and Mannheim. Conversely, the lowest rates were found in the Class D cities of Jena, Leverkusen, Kempten, Flensburg, Reutlingen, Bayreuth, Göttingen, Schwerin, Lüneburg and Stralsund. The spectrum among the cases selected ranges from around 700 sqm RAC/year in Stralsund to 36,000 sqm RAC/year in Essen.

The market action in Essen shows comparatively fast momentum for a Class B city. It is evident in the completion rate, among other factors, which was the highest in 2017 among the cities selected. The past five years saw construction start for a number of buildings intended either for owner-occupancy or as head offices by ThyssenKrupp, Funke Mediengruppe, AOK Rheinland and DB Schenker, among other companies. By the end of 2017, Essen was on record with the second-biggest completions volume during the period under review. Owing to large-scale projects such as the 3rd construction stage of the Europa-Center complex, it added up to 70,000 sqm RAC.

Overview – new office space added (2017)

City	Market size, in sqm RAC	New office space added, in sqm RAC
Essen	3,142,000	73,000
Mannheim	2,076,000	37,000
Bonn	3,236,000	27,000
Münster	2,224,000	26,000
Freiburg (B.)	1,372,000	25,000

Source: RIWIS

Another city where a large volume of new completions came on-stream during the period under review is Bremen. The new office space put on the market caused the overall stock to keep growing steadily – bringing the total up to more than 2.6 million sqm RAC by year-end 2017. To put this in context, historic completion rates of the past ten years ranged from 7,200 sqm RAC (2011) to 51,100 sqm RAC (2016). The 2016 figure includes the new scheme at Domshof for the Bremer Landesbank with 20,000 sqm RAC, among other completions. By contrast, hardly any office accommodation was completed in Stralsund during the period under review. This is attributable to the market action during the second half of the 1990s. Between 1995 and 2000, around 110,000 sqm RAC in new office space were put on the market which still have not been entirely absorbed (the vacancy rate being 12.4 % in 2017).

Floor space stock (2017) in relation to new-built (08 - 17)

City	Office stock, in sqm RAC	... thereof new-built
Ingolstadt	645,000	24 %
Ulm	866,000	14 %
Darmstadt	1,613,000	14 %
Kempten	315,000	13 %
Freiburg (B.)	1,372,000	13 %
Regensburg	1,043,000	12 %
Essen	3,142,000	11 %
Münster	2,224,000	11 %
Bremen	2,641,000	11 %
Mannheim	2,076,000	11 %
Kassel	1,149,000	11 %
Dortmund	2,618,000	11 %
Jena	607,000	10 %
A cities	79,713,000	10 %
Koblenz	994,000	10 %
Osnabrück	915,000	10 %
Potsdam	1,351,000	10 %
Flensburg	397,000	9 %
Leverkusen	667,000	9 %
Bayreuth	430,000	8 %
Karlsruhe	2,394,000	8 %
Reutlingen	451,000	8 %
Rostock	1,014,000	7 %
Bonn	3,236,000	7 %
Chemnitz	13,093,000	6 %
Dresden	2,631,000	5 %
Lüneburg	328,000	5 %
Wuppertal	1,623,000	4 %
Göttingen	709,000	4 %
Leipzig	2,724,000	4 %
Schwerin	721,000	3 %
Stralsund	210,000	3 %

Source: RIWIS

Interim Summary

Speculative building activity (without pre-lettings) could push up vacancy rates in time of slowing demand. Unlike in the Class A markets, where the share of unlet floor area approximates 40 % at the start of a given project, new developments in second-tier cities are generally aligned with demand, i.e. they tend to show a high pre-let ratio. It is a good way to reduce the risk associable with market upheavals.

Trend in Vacancy Rates (2008 - 2017)

The currently available supply in office accommodation of a given city is reflected in the respective vacancy rate[3] (see chart), which ranged from 1.5 % in Freiburg to 12.4 % in Stralsund by the end of 2017. The highest rates were reported from the East German second-tier cities of Stralsund, Chemnitz, Schwerin, Leipzig and Dresden, which is explained by the high floor space supply dating back to the 1990s. Here, the excess supply created in the post-reunification years has (still) not been entirely absorbed by the market.

Overview – Vacancy Rate (2017)

City	Vacancy in sqm	Vacancy Rate
Stralsund	26,000	12.4 %
Chemnitz	158,000	12.1 %
Schwerin	80,000	11.1 %
Leipzig	270,000	9.9 %
Dresden	215,000	8.2 %
:	:	:
Koblenz	23,000	2.3 %
Ingolstadt	13,000	2.0 %
Münster	39,000	1.8 %
Göttingen	12,000	1.7 %
Freiburg	20,000	1.5 %

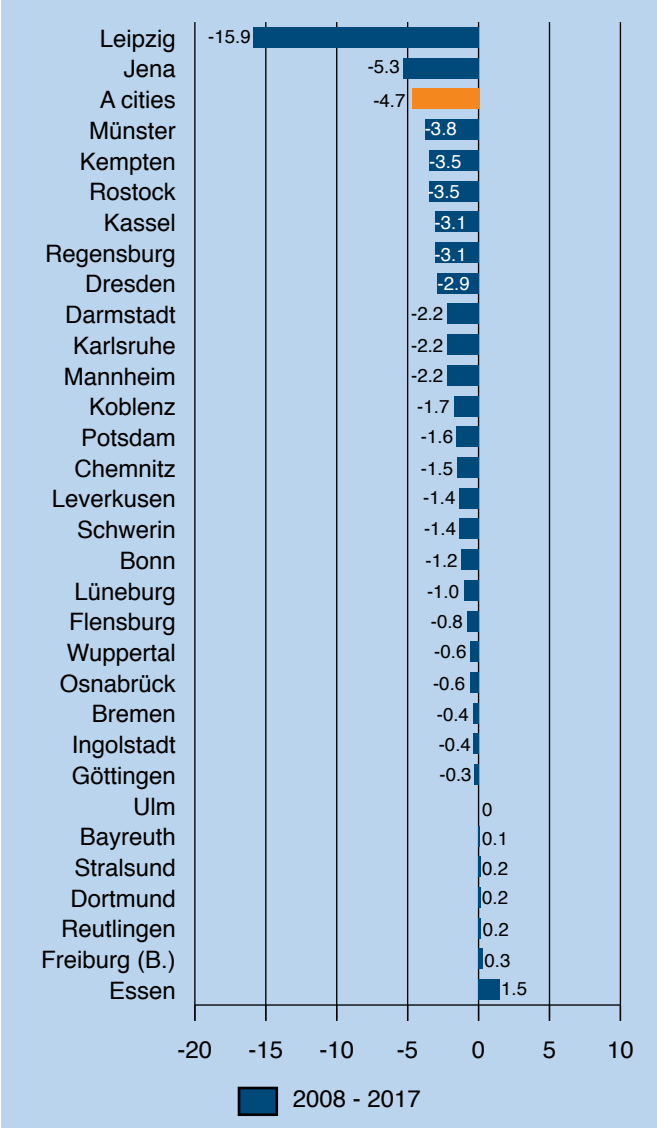
Source: RIWIS

As far as the general trend goes, however, the vacancy rate dropped in all of the cities except in Bayreuth, Reutlingen, Dortmund, Stralsund, Freiburg and Essen (see chart) during the analysed period of 2008 through 2017. With the exception of Stralsund, the office vacancy rates in the listed cities have returned to a low level. During the period surveyed, the vacancy rate in Freiburg, for instance, has barely moved, rising from 1.2 % in 2007 to 1.5 % in 2017. This puts it below the level of so-called fluctuation reserve which is essential for any well-functioning office market.

[3] The term "office vacancy rate" refers to the usable office space vacant at the end of a given year, taking into account only marketable properties while ignoring structural vacancy.

Similarly, the office vacancy rate in Essen went up by 1.5 percentage points during the period under review. While the city's vacancy rate used to be around 5 %, it rose to more than 6 % in 2017 after Karstadt vacated around 40,000 sqm RAC of office space.

Trend in vacancies in percentage points (2008 - 2017)



Source: RIWIS

The fastest reduction of vacant office space during the period under review was reported from Leipzig (-16 %) and Jena (-5 %). Jena, for one, has spent the past few decades transforming itself from an industrial town into a high-tech location in the fields of optics and photonics, health technology and precision engineering. The transition is driven by the local university with its student body of around 18,000 and other scientific institutions such as the research organisations Fraunhofer Society and Max Planck Society. The local research and science landscape has also stimulated the city's office market.

Interim Summary

The vacancy rate represents a given office market's share of available floor area, and is an important indicator for the situation on that market. In nearly all Class A cities, the bullish performance of the office markets helped to bring down vacancies significantly. Analogously, several second-tier cities also registered a substantial reduction of their office space vacancies. The trend is explained, on the one hand, by a rise in demand and, on the other hand, by a demand-driven number of completions.

Trend in Office Employment (2008 - 2017)

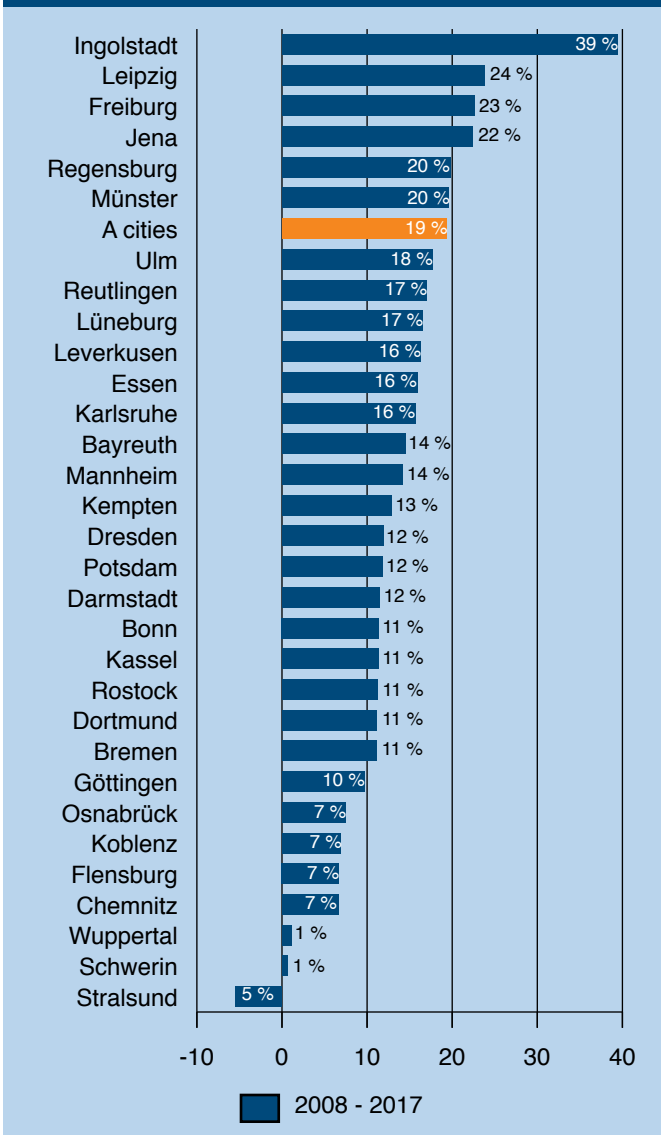
The trend in office jobs[4] is an important demand indicator for office accommodation. As the subsequent chart illustrates, all of the selected cities – with the exception of Stralsund – experienced an upward trend in office employment during the period of 2008 through 2017. Notably Ingolstadt, Leipzig, Freiburg and Jena registered growth rates in excess of 20 %.

The most dynamic growth in office employment among the second-tier cities was reported from Ingolstadt with a rate of around 39 %. The city's location in the Bavarian heartland and within the Munich metro region has been attracting highly productive companies. In addition to the automotive industry – the city being Audi's principal place of business – the trades and the tertiary sector play important roles for Ingolstadt's economy. Lately, the service sector has been gaining in economic significance for the city. Specifically, 11.9 % of the office jobs in the city belonged in the area of other high-end corporate services in 2015, which implies an increase by 2.4 percentage points since 2010. In terms of office employment, the city also boasts the fastest growth rate within the case selection for the forecast period 2017 through 2021.

Conversely, office employment in the cities of Wuppertal and Schwerin is subject to slow growth rates of 1.1 % and 0.6 %, respectively. This suggests that the structural change that the cities' economies have undergone since 1960 or 1990 – Wuppertal as a centre of textile and metalworking, Schwerin as a manufacturing hub for leather goods – is progressing slowly.

The less auspicious market key ratios of Stralsund are also reflected in the analysis of office employment in the city. Between 2008 and 2017, it suffered a decline by around 5 %. Given the present economic parameters, there is nothing to suggest that the situation in Stralsund will improve any time soon, with the unemployment rate at 14.0 % in 2017 (Germany as a whole: 6.3 %) and a gross domestic product per gainfully employed person in the County of Vorpommern-Rügen at c. 49,900 euros in 2015 (Germany: 70,400 euros per gainfully employed person).

Trend in Office Employment*
(2008 - 2017)

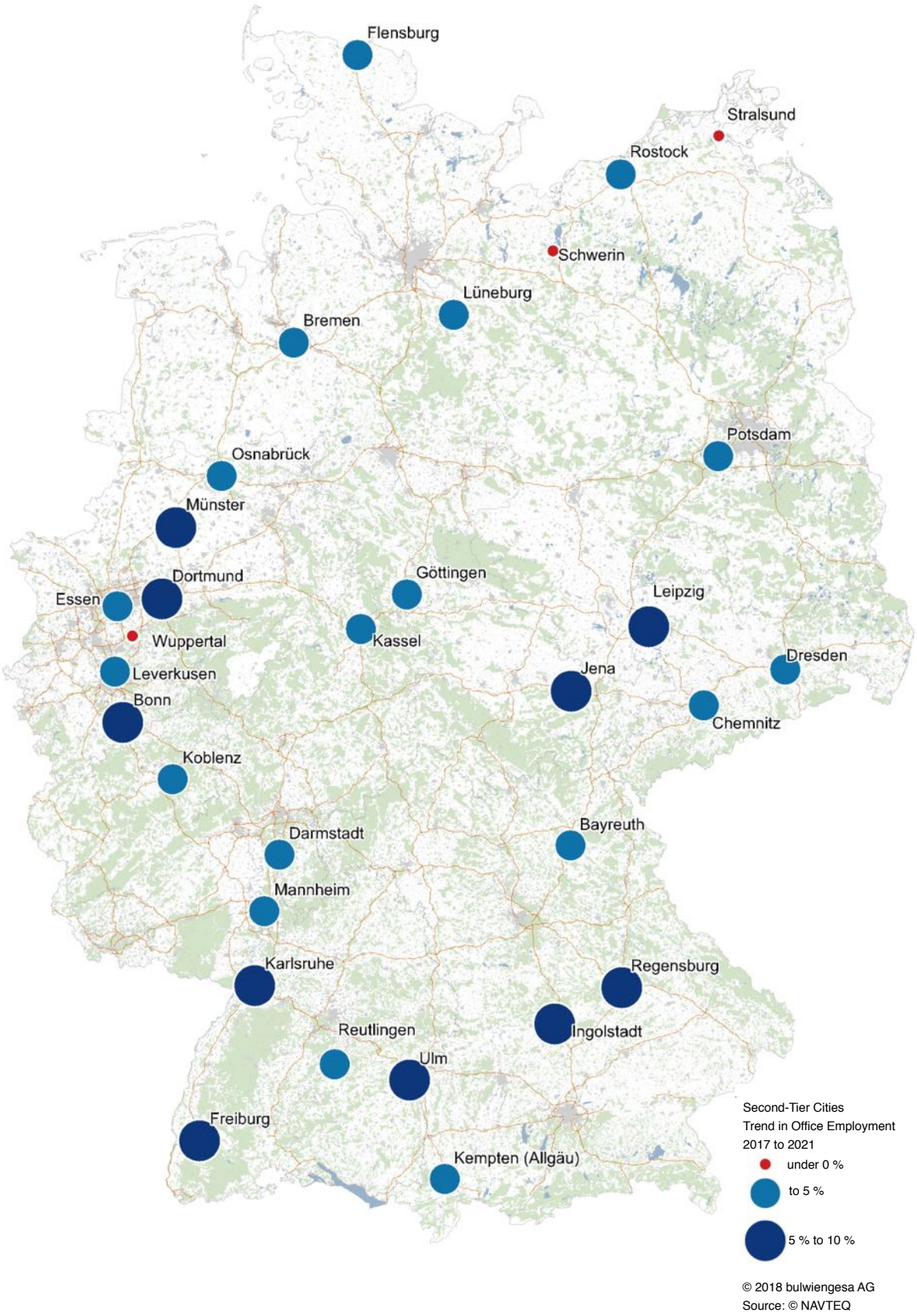


*For the cities Göttingen, Lüneburg, Reutlingen, figures are available only on the county level.
Source: RIWIS

The forecast period of 2017 through 2021 (see the map below) is expected to bring positive growth in office employment for all of the cities surveyed, with the exception of Wuppertal, Schwerin and Stralsund. Here, Ingolstadt tops the list with the highest growth expectations (+10 %) because of the continued expansion at Audi, specifically of its Research & Development department. Next in line are Leipzig (+7 %), Freiburg (+7 %) and Münster (+6 %).

[4] The number of office jobs is determined via a drilldown of insurable employees by professions. It is based on profession-specific quotas for insurable employees according to the Dobberstein method, which are supplemented with specific quotas for civil servants, self-employed persons and family workers.

Trend in Office Employment in % (2017 - 2021)



Source: © NAVTEQ

Interim Summary

The trend in office employment is an important demand indicator for office accommodation. The highly positive economic conditions of recent years triggered a fast increase in office employment, with growth rates of 19 % reported from the Class A cities and up to 39 % from the second-tier cities. Going forward, the office job growth is expected to continue and to have a favourable effect on the market situation.

Trend in Office Take-up (2008 - 2017)

The demand for office accommodation is mapped in the representation of the take-up[5]. Among the cities included in the selection, the Class B cities stand out because, unlike the Class C and D cities, they not only boast the highest completion rates but also the highest average annual take-up. The overall take-up spectrum among ranges from around 4,300 sqm RAC in Stralsund to 112,000 sqm RAC in Essen. While Essen thus tops the list among the analysed cities in terms of construction activity with an annual average of 36,000 sqm RAC, the high completions rate is matched by keen demand.

Darmstadt, a city known as science hub, shows a take-up of around 45,000 sqm RAC/year, which puts it in the upper half among the cities included in the case selection. The letting business in the city is characterised primarily by small-scale signings. The city's lead sectors include chemicals, pharmaceuticals and bio-engineering as well as the information and communication technology, mechanical engineering and electrical engineering. The take-up in this city extends from 32,000 sqm RAC (2009) to 67,000 sqm RAC (2014).

Among the cities with a robust take-up is Wuppertal, too. With a floor space stock of about 1.6 million sqm, Wuppertal has the second-largest office market among Germany's Class C cities – after Erfurt. The take-up ranges from 15,000 sqm RAC (2016) to 34,000 sqm RAC (2013).

With a take-up of around 20,000 sqm RAC/year, Koblenz is another city showing a robust performance. The market action here is defined by public-sector administration (federal and state level authorities) as well as by the finance, credit and insurance business (one of Germany's major insurance companies, Debeka, having its head office here). Similarly positive are the other metrics of Koblenz: The average rent in the town centre is in the top segment among the Class D cities, whereas the vacancy rate counts among the lowest.

At the bottom of the take-up list are the cities Kempten (5,600 sqm RAC/year) Lüneburg (5,400 sqm RAC/year) and Stralsund (4,300 sqm RAC/year). In the case of Stralsund, slow take-up coincides with a high vacancy rate, which is therefore almost impossible to bring down.

Office Take-up

City	Take-up in sqm RAC (ø 2008 - 2017)	Take-up in % of the total stock
Frankfurt	425,800	4.2 %
Düsseldorf	313,700	4.1 %
Munich	546,600	4.0 %
Hamburg	510,400	3.7 %
Leipzig	98,400	3.6 %
Cologne	274,500	3.6 %
Essen	112,100	3.6 %
Berlin	666,000	3.5 %
Stuttgart	249,700	3.2 %
Dortmund	82,100	3.1 %
Mannheim	65,000	3.1 %
Bremen	820,400	3.1 %
Dresden	79,200	3.0 %
Darmstadt	45,300	2.8 %
Osnabrück	25,400	2.8 %
Bonn	89,000	2.7 %
Münster	58,700	2.6 %
Ingolstadt	15,300	2.4 %
Regensburg	24,200	2.3 %
Stralsund	4,300	2.0 %
Koblenz	19,700	2.0 %
Jena	11,800	1.9 %
Leverkusen	12,800	1.9 %
Ulm	16,400	1.9 %
Flensburg	7,500	1.9 %
Kempten	5,600	1.8 %
Potsdam	23,500	1.7 %
Freiburg	22,600	1.6 %
Lüneburg	5,400	1.6 %
Karlsruhe	38,900	1.6 %
Wuppertal	25,900	1.6 %
Bayreuth	6,800	1.6 %
Kassel	16,700	1.4 %
Rostock	13,400	1.3 %
Reutlingen	5,700	1.3 %
Göttingen	7,000	1.0 %
Chemnitz	11,500	0.9 %
Schwerin	6,300	0.9 %

Source: RIWIS

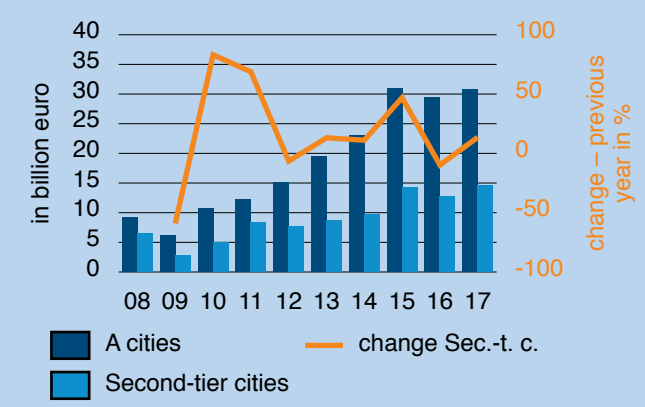
[5] The take-up is quoted as an annual sum and limited mainly to the office space (in sqm RAC) that is transferred through letting (no lease renewals, no lease-backs), but also includes accommodation acquired by owner-occupiers. The key date for take-up is the day a lease is signed or the day that marks the start of construction on or the acquisition of owner-occupied properties, as the case may be.

Interim Summary

The office take-up, meaning the volume in lettings and owner-occupancy, mirrors the dynamic and activity of a given market. The sensible thing to do prior to investment decisions is to ensure the investment asset is of market-consistent size. The relation of the take-up to the underlying stock reflects the propensity of tenants to relocate. The latter is much more pronounced in the Class A markets than in the second-tier cities.

Investment Market

Transaction volume commercial property (2008 - 2017*)



*No data available on years before 2008
Source: RIWIS

Since the financial crisis in 2009, investments in German commercial real estate[6] have steadily increased in volume. The trend is reflected in the transaction total, too: Compared to 2010, when approximately 16 billion euros were invested in Class A cities and second-tier cities, the investment volume in 2017 added up to approximately 45 billion euros, of which 15 billion euros were investment outside the metropolises. This translates into a growth by nearly 200 %. Accordingly, the year-end transaction total of 2017 represents a new record level in the wake of the consolidation in 2016. Out of the total, foreign investors were responsible for roughly 48 % of all transactions in the commercial real estate sector.

Generally speaking, the Class A cities remain the preferred investment location with a 5-year average share of around 80 % of the total volume (2013 - 2017). But market players invest increasingly in second-tier cities, too. These registered a year-on-year increase in transaction volume by around 14 % in 2017.

Among the various segments, office real estate remains the most popular class of investments. It accounts for around 55 % of all investment in 2017. Next in line were retail real estate (20 %) and logistics real estate (9 %). Investor demand for office real estate manifests itself in the headline yield of a given market. Over the past years, it has hardened considerably. In the absence of investment opportunities in Germany's "Big Seven" cities and given the elevated rates of return in second-tier cities, the latter have moved into the focus of investors lately. As a result of this development, net initial yields[7] in all of the cities selected for this survey in 2017 have dropped to a new all-time low (see table).

Overview – net initial yield (2016 / 2017)

City	NIY 2016	NIY 2017	Basis points
Chemnitz	7.9 %	7.0 %	-90
Stralsund	7.3 %	7.0 %	-30
Schwerin	7.1 %	6.5 %	-60
Koblenz	6.5 %	6.1 %	-40
Bayreuth	6.7 %	6.0 %	-70
Flensburg	6.5 %	6.0 %	-50
Göttingen	6.6 %	6.0 %	-60
Jena	6.3 %	6.0 %	-30
Kempten	6.5 %	6.0 %	-50
Lüneburg	6.6 %	6.0 %	-60
Reutlingen	6.0 %	5.9 %	-10
Wuppertal	6.4 %	5.8 %	-60
Leverkusen	5.8 %	5.7 %	-10
Kassel	6.0 %	5.5 %	-50
Rostock	5.9 %	5.3 %	-60
Ulm	5.5 %	5.1 %	-40
Ingolstadt	5.5 %	5.0 %	-50
Osnabrück	5.6 %	5.0 %	-60
Potsdam	5.3 %	4.8 %	-50
Regensburg	5.1 %	4.8 %	-30
Bremen	5.3 %	4.7 %	-60
Darmstadt	5.3 %	4.6 %	-70
Dortmund	5.0 %	4.6 %	-40
Dresden	5.0 %	4.6 %	-40
Essen	5.0 %	4.5 %	-50
Mannheim	5.0 %	4.5 %	-50
Freiburg (B.)	5.0 %	4.4 %	-60
Karlsruhe	5.0 %	4.4 %	-60
Leipzig	5.0 %	4.4 %	-60
Münster	5.0 %	4.4 %	-60
Bonn	4.6 %	4.2 %	-40
A cities	3.6 %	3.2 %	-40

Scource: RIWIS

[6] Commercial real estate = office, retail and logistics real estate along with certain other properties (hotels, senior-living real estate, etc.)

[7] Net initial yield (NIY) = this ratio puts the net rental income in relation to the purchase price before the property-specific incidental acquisition costs. Accordingly, a low net initial yield rate suggests a high asking price.

By the end of 2017, net initial yield rates in the surveyed second-tier cities ranged from 7.0 % in Chemnitz to 4.2 % in Bonn. In terms of prime yields (net initial yield), Bonn is the priciest among the Class B cities in Germany. Year on year, the net initial yield for centrally located office schemes hardened by another 40 basis points and stood at 4.2 % by the end of 2017. This means that the net initial yield rate in Bonn is 40 basis points below the average of the Class B cities, which is around 4.6 %.

Most expensive among the Class C and D cities is Freiburg (4.4 %) and Ingolstadt (5.0 %), respectively. Generally speaking, net initial yields are highest in Class D cities due to their small market footprint.

Interim Summary

In the absence of investment opportunities and low yield expectations in the markets of the Class A cities, players invest increasingly in second-tier cities. In 2017, approximately 27,5 billion euros were invested outside the major metropolises – thereof 15 billion euros in second-tier cities. The heightened interest in the second-tier cities is explained by the higher yield average combined with a very stable rent level. While rising demand will push the net initial yields down to historic lows even in the second-tier cities, the yield spread between these markets and the Class A cities is still considerable at 2 percentage points.

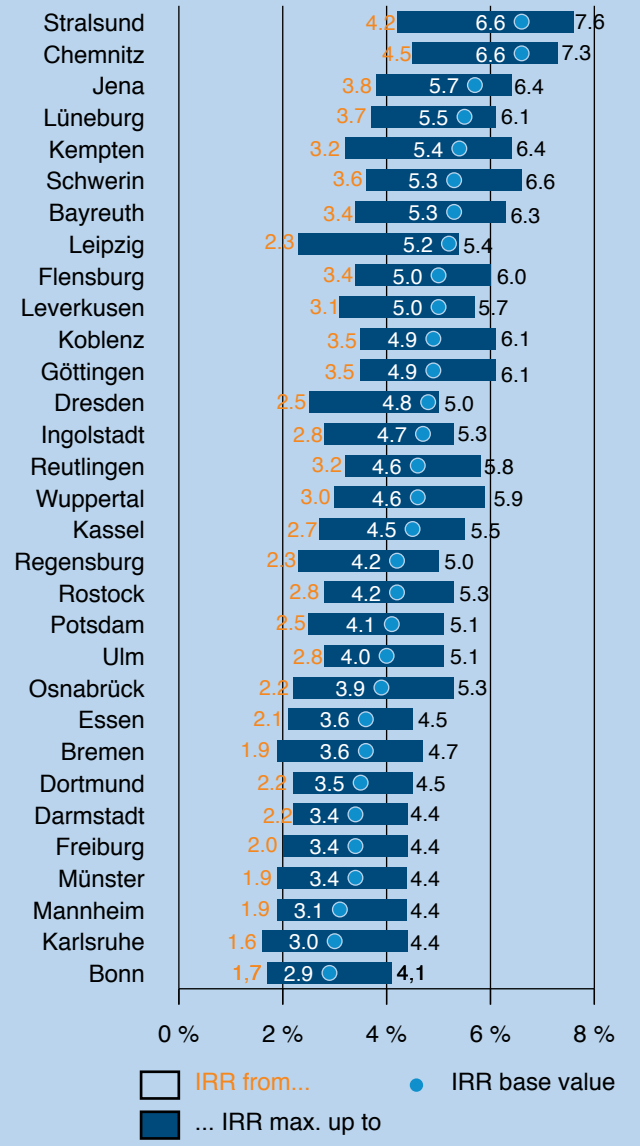
4 PERFORMANCE POTENTIAL OF SECOND-TIER CITIES

A good way to map the performance of real estate investments is the application of the IRR method (internal rate of return). Within the framework of survey to determine lucrative investment destinations ("5 % Studie: Wo investieren sich noch lohnt"), bulwiengesa has modelled the return potential for the entire German real estate market. The survey distinguishes between core property (stable rental situation, good location) and non-core property (impaired properties). Methodologically, an ownership period of ten years is assumed, followed by a sale (exit). With a view to the uncertainties of the current investment market that make it hard venture forward-looking predictions, no further yield compression is projected (initial yield = exit yield). The chart on the side here shows the findings for the second-tier cities examined. The analysis refers purely to the property effects while disregarding other levers (e.g. through financing effects). Accordingly, the internal rate of return serves as relevant benchmark for an investment.

The currently strong need for yield has caused the IRRs to take a nosedive in recent years. This explains why prime properties (core property) in Germany's Class A cities only return yields between 1.6 % and 3.7 % despite the bright rent outlook. This is where second-tier cities come into play, as some of them come with far higher return potential. Market-consistent investments in cities like Stralsund, Chemnitz or Jena, for instance, will generate initial yields between 5.7 % and 6.6 % even when buying high-quality assets.

The return potential shown (core) may actually be topped through active property management. Yield-oriented investors will therefore buy properties with certain flaws (such as vacancies) in high-quality locations. Vacancy reductions and/or rent increases can sustainably raise the value of such properties and with it their return on investment. But such an investment strategy presupposes in-depth knowledge of the local market, on the one hand, and adequate acquisition volumes, on the other hand. Special attention should be paid to the size of a given market, which in the case of office markets is reflected in the take-up. The mixed-use property Gutenberggalerie in Leipzig, which DEMIRE acquired in 2015, is a fine example for the successful implementation of such a strategy.

IRR – Second-Tier Cities*



*Applies to core office locations
Source: bulwiengesa "5% Studie 2017" (2018 update)

Digression – Appreciation in the DEMIRE Portfolio

Leipzig – Gutenberggalerie		
	Acquisition (May 2015)	**Status (31.12.2017)**
EPRA-Vacancy rate	30 %	10 %
Rental income	1.3 million euros	1.7 million euros
Market value	19.0 million euros	27.5 million euros
Illustrative IRR* 2015 - 2022	8.7 %	

*Projected sale at current market value
Source: DEMIRE

The mixed-use property, which includes retail units, a hotel (122 rooms, 4-star), an underground car park and offices, is located downtown in the sub-market "Grafisches Viertel," a commercial location of long-standing tradition. The 9-storey building with about 23,000 sqm of usable area is superbly positioned in terms of its architecture, aesthetics and functionality. The design of the atrium is inspired by the historic courtyards and arcades once typical of Leipzig's town centre. The excellent micro-environment of the property, which was raised in 1994, its convenient access to public transportation, and its high building quality justify rent rates between 6.50 euros/sqm and 7.50 euros/sqm.

DEMIRE substantially reduced the vacancy by introducing a new use concept to stimulate the retail business. The successful lease signings since the acquisition show that commercial units with sound transport links in central locations of second-tier cities are subject to brisk demand, and that commercial property with vacancies offer an attractive value-added potential.

bulwiengesa

Summary of findings

	ø-rent, CBD, in euros/sqm RAC (2017)*	Trend in ø-rent, CBD, forecast through 2021	Vacancy rate (2017)**	Development of vacancy rate (forecast through 2021)	NIY*** central locations (2017)**	Trend in NIY, central locations (forecast through 2021)
Bayreuth	7.2 (+1.4 %)	↑	2.8 % (- 40)	↓	6.0 % (- 70)	↑
Bonn	10.5 (+1.9 %)	→	2.8 % (+ 20)	↑	4.2 % (- 40)	↑
Bremen	8.6 (+ 1.2 %)	↑	4.2 % (- 30)	↑	4.7 % (- 60)	↑
Chemnitz	7.5 (+ 4.2 %)	↑	12.1 % (- 20)	↓	7.0 % (- 90)	↑
Darmstadt	10.0 (+ 2.0 %)	↑	2.8 % (- 180)	↓	4.6 % (- 70)	↑
Dortmund	10.5 (0.0 %)	↑	4.2 % (- 80)	↓	4.6 % (- 40)	↑
Dresden	9.9 (+ 2.1 %)	↑	8.2 % (- 20)	↓	4.6 % (- 40)	↑
Essen	10.2 (+ 4.1 %)	↑	6.5 % (+ 90)	↓	4.5 % (- 50)	↑
Flensburg	7.2 (+ 7.5 %)	↑	4.8 % (- 30)	↓	6.0 % (- 50)	↑
Freiburg (B.)	12.5 (+ 8.7 %)	↑	1.5 % (+ 10)	→	4.4 % (- 60)	→
Göttingen	8.2 (+ 1.2 %)	↑	1.7 % (- 10)	→	6.0 % (- 60)	↑
Ingolstadt	9.7 (+ 3.2 %)	↑	2.0 % (- 10)	→	5.0 % (- 50)	↑
Jena	9.5 (+ 5.6 %)	↑	3.5 % (- 30)	↓	6.0 % (- 30)	↑
Karlsruhe	9.3 (+ 1.1 %)	→	3.3 % (- 30)	↑	4.4 % (- 60)	↑
Kassel	7.2 (+ 5.9 %)	↑	3.9 % (- 60)	↓	5.5 % (- 50)	↑
Kempten	7.8 (+ 1.3 %)	↑	3.5 % (- 10)	→	6.0 % (- 50)	↑
Koblenz	8.2 (+ 2.5 %)	↑	2.3 % (- 90)	↓	6.1 % (- 40)	↑
Leipzig	10.0 (+ 6.4 %)	↑	9.9 % (- 150)	↓	4.4 % (- 60)	↑
Leverkusen	7.7 (+ 1.3 %)	↑	4.9 % (- 40)	↓	5.7 % (- 10)	↑
Lüneburg	9.5 (+ 5.6 %)	↑	4.0 % (- 10)	↓	6.0 % (- 60)	↑
Mannheim	11.5 (+ 0.9 %)	↓	4.8 % (+ 40)	↑	4.5 % (- 50)	↑
Münster	10.2 (+ 2.0 %)	→	1.8 % (- 30)	→	4.4 % (- 60)	↑
Osnabrück	8.8 (+ 3.5 %)	↑	3.4 % (- 20)	↓	5.0 % (- 60)	↑
Potsdam	10.2 (+ 2.0 %)	↑	3.3 % (- 40)	↓	4.8 % (- 50)	↑
Regensburg	9.5 (+ 2.2 %)	↑	4.3 % (- 100)	↓	5.9 % (- 30)	→
Reutlingen	8.4 (+ 1.2 %)	→	4.7 % (- 130)	↑	5.9 % (- 10)	↑
Rostock	8.5 (+ 1.2 %)	↑	5.9 % (- 60)	→	5.3 % (- 60)	↑
Schwerin	6.9 (+ 1.5 %)	→	11.1 % (0)	↓	6.5 % (- 60)	↑
Stralsund	6.2 (+ 1.6 %)	↑	12.4 % (0)	↓	7.0 % (- 30)	↑
Ulm	11.3 (+ 0.9 %)	→	3.8 % (- 20)	↓	5.1 % (- 40)	↑
Wuppertal	8.0 (+ 1.3 %)	↑	4.9 % (- 40)	↑	5.8 % (- 60)	↑

*The figure in brackets represents the percentage change on year earlier.; **The figure in brackets represents the change on year earlier in basis points.; ***NIY = net initial yield; note: cities shaded in yellow were added to the survey since the previous edition.

ANNEX

General Classification of Cities

Overview A-, B-, C- and D-Cities							
City	Category	City	Category	City	Category	City	Category
Berlin	A	Lübeck	C	Gelsenkirchen	D	Neuss	D
Düsseldorf	A	Magdeburg	C	Gera	D	Oberhausen	D
Frankfurt (Main)	A	Mainz	C	Gießen	D	Offenburg	D
Hamburg	A	Mönchengladbach	C	Görlitz	D	Oldenburg	D
Köln	A	Mülheim (Ruhr)	C	Göttingen	D	Paderborn	D
München	A	Offenbach (Main)	C	Greifswald	D	Passau	D
Stuttgart	A	Osnabrück	C	Gütersloh	D	Pforzheim	D
		Potsdam	C	Hagen	D	Plauen	D
Bochum	B	Regensburg	C	Halberstadt	D	Ratingen	D
Bonn	B	Rostock	C	Halle (Saale)	D	Ravensburg	D
Bremen	B	Saarbrücken	C	Hamm	D	Recklinghausen	D
Dortmund	B	Wuppertal	C	Hanau	D	Remscheid	D
Dresden	B			Heilbronn	D	Reutlingen	D
Duisburg	B	Albstadt	D	Herne	D	Rosenheim	D
Essen	B	Aschaffenburg	D	Hildesheim	D	Salzgitter	D
Hannover	B	Bamberg	D	Ingolstadt	D	Schweinfurt	D
Karlsruhe	B	Bayreuth	D	Jena	D	Schwerin	D
Leipzig	B	Bergisch Gladbach	D	Kaiserslautern	D	Siegen	D
Mannheim	B	Bottrop	D	Kassel	D	Solingen	D
Münster	B	Brandenburg (Hl.)	D	Kempten (Allgäu)	D	Stralsund	D
Nürnberg	B	Bremerhaven	D	Koblenz	D	Suhl	D
Wiesbaden	B	Chemnitz	D	Konstanz	D	Trier	D
		Coburg	D	Krefeld	D	Tübingen	D
Aachen	C	Cottbus	D	Landshut	D	Ulm	D
Augsburg	C	Dessau	D	Leverkusen	D	Villingen-Schwenn.	D
Bielefeld	C	Detmold	D	Lüdenscheid	D	Weimar	D
Braunschweig	C	Düren	D	Ludwigshafen	D	Wilhelmshaven	D
Darmstadt	C	Eisenach	D	Lüneburg	D	Witten	D
Erfurt	C	Flensburg	D	Marburg	D	Wolfsburg	D
Erlangen	C	Frankfurt (Oder)	D	Minden	D	Würzburg	D
Freiburg	C	Friedrichshafen	D	Moers	D	Zwickau	D
Heidelberg	C	Fulda	D	Neubrandenburg	D		
Kiel	C	Fürth	D	Neumünster	D		

Classification of Locations

The cities picked by bulwiengesa AG for the RIWIS database are grouped into 4 categories depending on their functional significance for the international, national, regional or local real estate market.

Class A cities: Germany's leading centres, having national and in some cases international significance. Large functional markets across segments.

Class B cities: Major cities of national and regional significance.

Class C cities: Important cities of regional and to some extent national significance, and serving as centre for the surrounding region.

Class D cities: Small towns of regional focus with a central role for the directly surrounding countryside; marked by lower market volume and take-up.

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