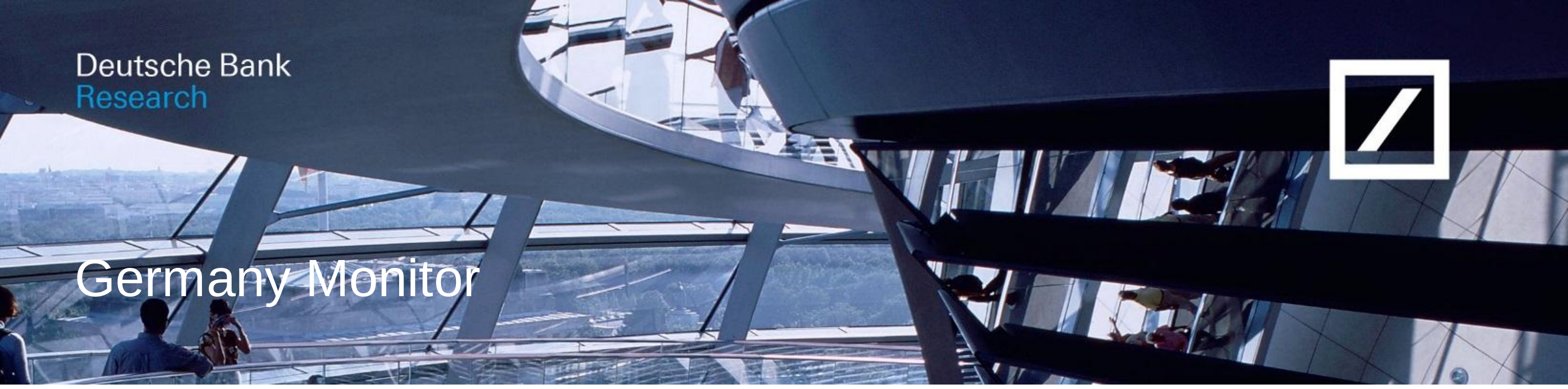

March 14, 2019

Germany property and metropolis market outlook 2019

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The key message is: The house price cycle in Germany should remain in place in 2019. But we expect much more divergence across regions and a heavily increasing complexity of causal impact channels.

Led by immigration and the continuous labour market uptrend, house prices and rents will likely continue to rise. Even at current levels, the willingness to take out loans ought to persist, due to low interest rates. The nationwide cycle looks set to continue until 2022 or beyond.

On balance, however, the complexity of the house price cycle is increasing. First, because additional policy measures to put the brakes on further soaring rents and property prices may be on the cards. Whilst these efforts – as previous attempts – are likely to miss their target by a wide margin, in our view, alternative options – including poorer building quality – could play a greater role in the future.

Second, the existing divergence between regions ought to widen further. The North-South divide – in the west and in the east – is likely to grow, with price and rent dynamics in the southern cities clearly exceeding those in their northern counterparts. Moreover, the cycle in cities where building activity is relatively elastic and population growth fairly low could come to an end in the upcoming years, i.e. before the nationwide cycle.

Key messages from the housing markets in the metropolises: Munich's construction activity will remain insufficient. In Berlin, the labour market argues for a long super cycle. Housing prices in Frankfurt soared by 15% in 2018. In Hamburg, price momentum looks set to slow, led by its less dynamic labour market. Prices for newly built and existing homes in Düsseldorf diverge sharply. In Stuttgart, supply shortages are likely to continue for years to come, and Leipzig, the Little Berlin, is booming.

Regarding the office market, demand looks set to remain strong. Vacancies continue to decline, whilst the number of office workers, prime rents and average rents are likely to remain on the uptrend. Against this backdrop, rent dynamics may accelerate sharply, above all in cities with very low vacancy rates.

For several years, we have been warning about the increasing risk of overvaluations and a full-blown price bubble in the German housing market. The price uptrend is likely to continue for years to come, in Germany as a whole and in most major cities.

German residential and commercial real estate market

	Data sources	Source of forecast	Unit	2016	2017	2018	2019
Residential property prices (126 cities)*	bg	DB	%yoy	8.7	9.3	8.6	7.4
Prices and rents (126 cities)…							
…for existing properties							
Single-family house	bg	DB	%yoy	5.2	5.3	7.3	5.0
Terraced house	bg	DB	%yoy	6.7	6.5	8.5	7.0
Apartments	bg	DB	%yoy	10.4	10.7	9.1	8.0
Re-letting	bg	DB	%yoy	5.5	6.9	3.3	3.3
Yields	bg	DB	%	4.5	4.4	4.1	4.0
…for new properties							
Apartments	bg	DB	%yoy	8.5	10.0	7.7	7.0
Terraced house	bg	DB	%yoy	8.0	7.9	9.4	7.0
Rents	bg	DB	%yoy	5.6	6.0	5.0	4.5
Yields	bg	DB	%	3.6	3.4	3.4	3.3
National housing market							
New dwellings	FSO	FSO	in '000	278	285	300	315
Demand per year	iw	iw	in '000	405	371	370	377
Demand per year	ConM	ConM	in '000	350	350	350	350
Demand per year	DB	DB	in '000	377	361	360	363
National housing demand							
Population	FSO	FSO	in million	82.3	82.7	83.1	83.3
Net migration	FSO	FSO	in '000	499.9	416.1	450.0	400.0
Households	FSO	FSO	in million	41.0	41.3	41.7	41.8
Employment at year-end	FSO	DB	in million	44.0	44.6	45.0	45.4
Employment growth	FSO	DB	%yoy	1.3	1.4	1.2	0.9
Unemployment rate	ILO	DB	%	4.1	3.8	3.3	3.0
Unemployment rate	FSO	DB	%	6.1	5.7	5.2	4.8
Wage growth	FSO	DB	%yoy	2.2	2.3	2.5	2.9
Office property (126 cities)							
Area							
Total space	bg	DB	in million sqm	183.7	184.5	185.9	186.5
New space	bg	DB	% share	0.5	0.5	0.7	0.7
Vacancy rate	bg	DB	%	6.1	5.7	5.2	5.0
Demand							
Employment	bg	DB	in million	19.9	20.2	20.5	20.6
Office employment	bg	DB	in million	7.4	7.6	7.7	7.8
New office employment	bg	DB	in '000	128.2	140.3	126.2	75.9
Mortgage market							
New mortgages per year	Bbk	DB	EUR bn	235.3	230.1	223.6	220.0
Total mortgages	Bbk	DB	EUR bn	1016.5	1053.0	1086.8	1100.0
5-10Y mortgage rate	ECB	DB	%	1.6	1.7	1.7	1.9

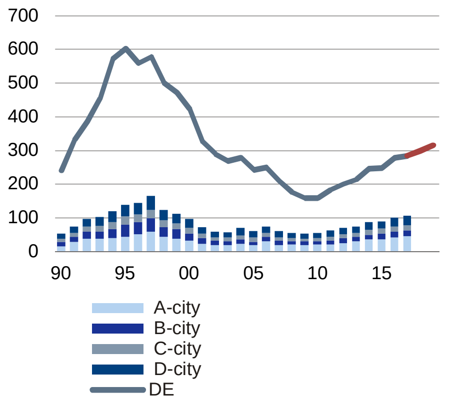
*total, based on Bundesbank weighting scheme
Abbreviations: bg = bulwiengesa, FSO = Federal Statistical Office, iw = iw Cologne, ConM = Bundesministerium des Innern, für Bau und Heimat (Construction ministry) , ILO = Intenational Labour Organization, DB = Deutsche Bank, Bbk = Bundesbank, EcB = European Centralbank

Source: Deutsche Bank Research

German housing market

1990–2017 Completions 1

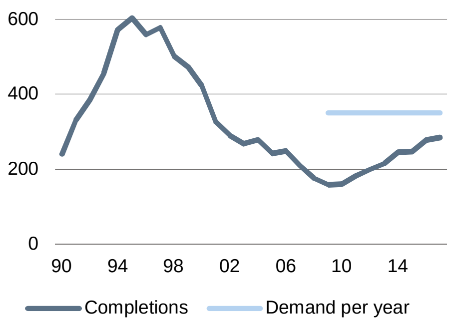
No. of dwellings in '000



Sources: riwis, National Statistical Office, Deutsche Bank Research

Building completions 2

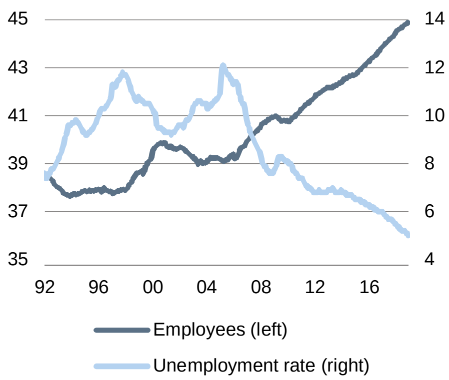
No. of apartments in thousands p.a.



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Germany: Labour market 3

right y-axis: in %
left y-axis: in m



Sources: Deutsche Bank Research, Federal Employment Agency, Federal Statistical Office

Economic backdrop: Will housing supply tighten further?

In 2019 – as in the preceding years – the nationwide gap between supply and demand is unlikely to shrink. All factors which contributed to the supply shortage of recent years continue to persist. After average growth of only 5% p.a. in the period from 2015–2017, we expect completions to have risen to just 300,000 in 2018, followed by a further uptick to 315,000 in 2019 (to be released in spring 2019 and 2020, respectively). Based on these expectations, the cycle ought to continue until 2022, at least. By then, additional annual housing supply may for the first time in this cycle exceed additional annual demand of 350,000 residential units (estimate of the Federal Ministry of the Interior, Building and Community). Based on the forecast of the iw Cologne, however, over 370,000 new apartments would on average have to be completed between 2018 and 2020 to meet demand.

If demand over the entire cycle since 2009 is aggregated with newly constructed residential units, there is a shortage of well over 1 million units, particularly in the large cities and metropolises. Although the fact that supply has been lagging demand for a multi-year period could lose some market relevance in the future, pent-up demand looks set to be very high. It may take many years to reduce the overhang, even after annual completions exceed annual housing demand.

Strong price momentum, on the other hand, could come to a swift end, as many investors would either trim back demand or possibly even divest, which might automatically trigger a self-fulfilling chain of events and end the price cycle.

The small number of construction plots has often been mentioned as the major stumbling blocks to a more dynamic expansion of new construction in this cycle. Going forward, however, the multi-year shortage of qualified construction workers ought to be an even greater bottleneck. Measures to compensate for the lack of skilled labour are already limited today. According to our analysis[1], construction activity may not only be slowed because the shortage in general intensifies, but also due to a lack of executive staff (master craftsmen who can work as supervisors). Resulting from demographic effects, as the baby boomers are approaching retirement age, these structural bottlenecks look set to weigh on new construction in the long term. Following a steady increase in recent years, construction costs are therefore likely to rise even more dynamically in future. At the same time, a clear deterioration in construction quality may be looming, as qualified workers become scarcer.

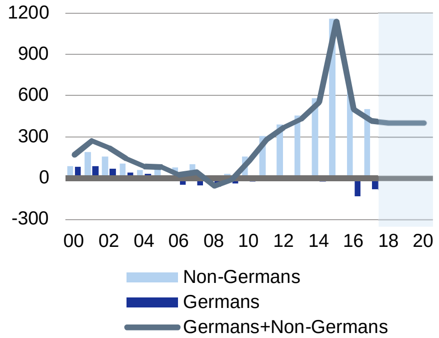
Housing to remain in high demand

Along with favourable interest rates, the ongoing labour market boom is a major driver of current high housing demand. Throughout the cycle, key labour market indicators have improved. Since 2009, employment has risen by nearly 10%. At the same time, the unemployment rate has fallen by c. 3pp and wages excluding one-off payments have soared by 20% according to the Bundesbank. We expect these trends to continue in 2019. In our view, employment is likely to edge up further and wages look set to rise at a similar rate as in 2018, i.e. by around 3% yoy. Moreover, we expect a further decline in the unemployment rate to 4.9%.

[1] Möbert, Jochen: Anyone out there for construction work? Focus Germany. September 2018.

2000–2017 Net immigration plus
2018–2020 Bundesbank forecast* 4

in '000 per year



*supposed distribution across years, Bundesbank assumes a cumulated upsurge in migration of 1,2 m.

Sources: Deutsche Bank Research, Federal Statistical Office

2017: Top 10 European countries of origin 5

Net migration in #000

1. Romania	68.2
2. Poland	33.4
3. Croatia	29.1
4. Bulgaria	29.0
5. Italy	24.2
6. Greece	13.2
7. Hungary	0.3
8. United Kingdom	5.3
9. Spain	5.0
10. Lithuania	4.1

Sources: Federal Statistical Office, Deutsche Bank Research

In the international comparison, the German labour market also stands out. Taking second rank in the European championship, Germany is only outperformed by the Czech Republic, with regard to the unemployment rate and youth unemployment rate. Chances to find a job are, as a consequence, much better in Germany than in many other countries. Moreover, the income gap between Germany and other major European countries, particularly the major sources of migrants in the east of Europe, continues to persist. Against this backdrop, Germany ought to remain a highly attractive immigration destination in the foreseeable future. In 2017, the major countries of origin were the eastern European countries, along with the southern European countries and the UK. Between 2012 and 2017, average net immigration (excluding the 1.1 million migration influx in 2015) totalled c. 450,000 per year. According to the Bundesbank, this figure is likely to decline only marginally, down to on average 400,000 p.a. in the period from 2018 to 2020. Assuming this forecast is correct, around 83 ½ million people would be living in Germany by the end of 2020, which argues for high housing demand in the future. Thanks to immigration, some regions where infrastructure is poor have also seen their populations rise, possibly because housing is scarce and prices are high in the large cities and metropolises. If immigration continues, the boom may also spread to other regions with little infrastructure.

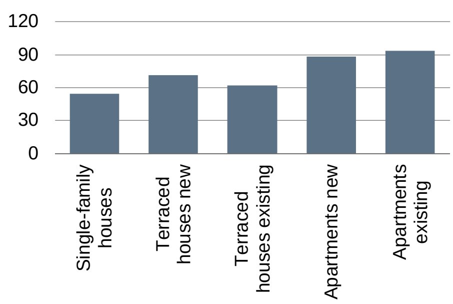
Another potential driver of housing demand is asset growth. Principally because of low interest rates, aggregate private household wealth in the entire cycle since 2009 has risen successively by roughly EUR 3,800 bn or over 40%, according to the Federal Statistical Office, with property asset growth largely paralleling that of financial assets. Although the bulk of assets does not trigger market transactions, it can be speculated about whether the generation of heirs will not be more willing to sell inherited assets and buy new objects. The Deutsche Institut für Altersvorsorge (German Institute for Retirement Provision) expects average inheritance flows up to 2024 to amount to around EUR 300 bn per year, of which roughly two-thirds will be transferred from one generation to the next. Given supply shortages in the large cities and metropolitan areas, these flows are another factor pointing to higher prices.

Led by higher incomes and wealth and the trend towards single-person households, living space per person has been rising almost steadily. With prices likely to edge up further, this trend ought to reach its limits in the future. Living space is already stagnating in roughly one-fourth of the 126 cities (bulwiengesa) and looks set to decline in many regions, as the price uptrend continues. This development could be further reinforced by demographics, when a growing number of Germans retire and demand for smaller apartments increases.

Price momentum likely to slow in 2019

2009–2018 House and apartment prices 6

%

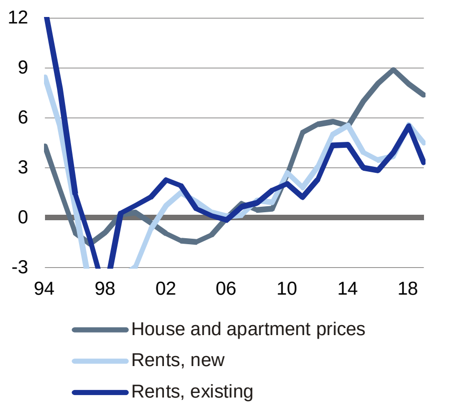


Sources: riwis, Deutsche Bank Research

In the face of particularly tight supply, prices for residential property (Bundesbank weights) in the metropolises (A-cities) surged by around 95% during the cycle as a whole. B and C cities also recorded marked increases of c. 70%, in D cities prices were up by 60%. In eastern Germany, residential property is much more affordable, with the average cost across all 26 east German cities with a total population of 7.5 million at EUR 280,000, compared with on average EUR 460,000 in the west. Despite the different levels, prices in east and west Germany have soared at nearly the same rate of c. 65% across all asset classes, i.e. houses and apartments. Whilst prices for single-family and terraced houses (existing / new) and new apartments in the east advanced at a 5-10% faster rate than in the west during the cycle as a whole, those for existing apartments were up more sharply in the west at 80%, compared with "only" 60% in the east. For historical reasons, however, existing apartments in both regions differ clearly with respect to their level of quality.

Germany: Residential property 7

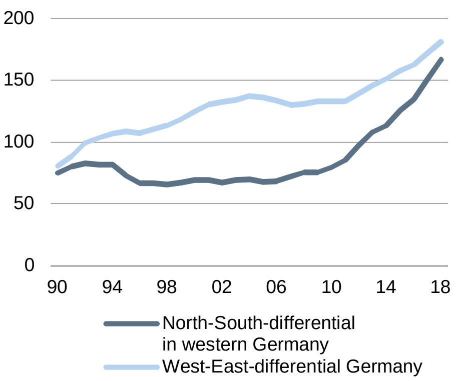
% yoy



Sources: riwis, Deutsche Bank Research

Single family houses in 126 cities 8

in EUR '000



Source: riwis, Deutsche Bank Research

In the west, the gap is clearly widening, as illustrated by a breakdown into the 53 cities in the northern states (Schleswig-Holstein, Lower Saxony, Northrhine-Westfalia, Hamburg and Bremen) and the 47 cities in the southern counterparts (Rhineland-Palatinate, Saarland, Hesse, Baden-Württemberg and Bavaria). In the period from 1990 to 2009, the price gap between one-family houses in the south and the north was roughly unchanged, at c. EUR 75,000, but has widened sharply since then to over EUR 160,000. Whilst the price of an average single-family house in the north was EUR 382,000 in 2018, it surged to EUR 549,000 in the south. This reflects the economic divergence between northern and southern Germany.

Given the tight market situation in 2018, prices in Germany as a whole advanced at nearly the same pace as in the preceding years, with house and apartment prices up by an average 8% in the 126 cities. At just under 10%, the strongest increases – as in recent years – were recorded in the metropolises. In the B and C cities, prices for houses and apartments edged up by around 7 ½%, compared with an increase of 6 ½% in the smaller D-cities. As in the preceding years, the lowest growth rate in the 126 cities was c. 2%. The price boom in 2018 also translated into higher rents, albeit at a slower pace. Whereas rents for newly completed and existing homes still rose by 6–7% in 2017, growth slowed to just 5% and 3 ½%, respectively in 2018. Following steady increases in the preceding years (2014: 3%, 2015: 3.8%, 2016: 5.5%, 2017: 7%), the decline in rents for existing homes is particularly surprising. Whilst this may be regarded as a countermovement following the uptrend of previous years, it could be surmised that the slowdown is partially owed to the discussion surrounding stricter rent control laws. In 2014 – when the debate over the introduction of a rental brake (adopted in March 2015) was at its peak in the German Bundestag and the media – rent growth already slowed to 3%. The breather may therefore only be temporary, which argues for an acceleration of rent growth in the years ahead, unless, of course, the new rent-control laws lead to changes in behaviour. But with residential space likely to become even scarcer, this would clearly come as a surprise, in our view.

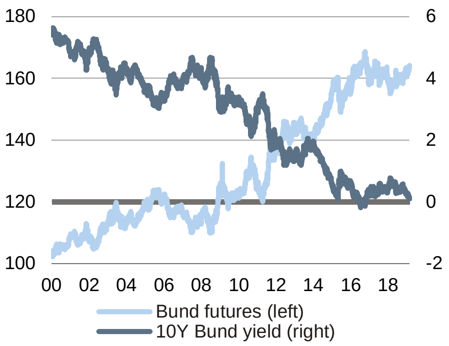
2019 marks the 11th year of the current cycle. We expect a continued uptrend of prices and rents and, as a consequence, lower rental returns. However, price momentum should slow somewhat, given economic weakness and our expectation of slightly higher mortgage rates. In some cities and regions, residential property already seems overvalued. Assuming the cycle remains in place until 2022 or beyond and prices continue to rise in line with our expectations, the risk of a price bubble in the German housing market is clearly increasing and investors' gains of previous years will possibly be wiped out, once the cycle comes to end.

Rate outlook: Limited increases expected in our baseline scenario

In 2008, mortgage rates started their steep decline. From over 5%, 5–10-year mortgage rates plunged to a record low of under 1.5% at the end of 2016, before picking up slightly. Starting from 1.7% at year-end 2017, we expect further modest increases for 2018. In many euro countries, numerous structural problems continue to be immanent. But thanks to buoyant global growth from late 2016 into the first half of 2018, employment also rose and some central European countries actually reached full employment. As a consequence, demand for labour was high, triggering strong wage growth in 2018. Against this backdrop, we reckoned with further positive growth impulses and a marginal uptick in core inflation, following the lacklustre trend of recent years. With this in mind, we – correctly – forecast the end of the ECB's multi-trillion asset purchase programme. Even though the ECB intends to continue reinvesting the payments from maturing securities after the end of net purchases, as announced at the

Bund futures vs. yields 9

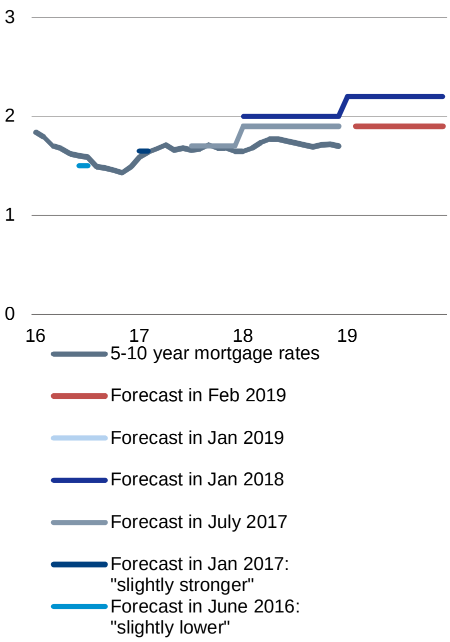
left y-axis: index
right y-axis: %



Source: Bloomberg Finance LP

5–10 year mortgage rates and DB forecast history 10

in %



Sources: Bundesbank, Deutsche Bank Research

start of its bond purchases in 2015, and therefore remains a key market player, we expected Bund yields to inch up slightly at year-end 2018, led by slowing demand for sovereign bonds.

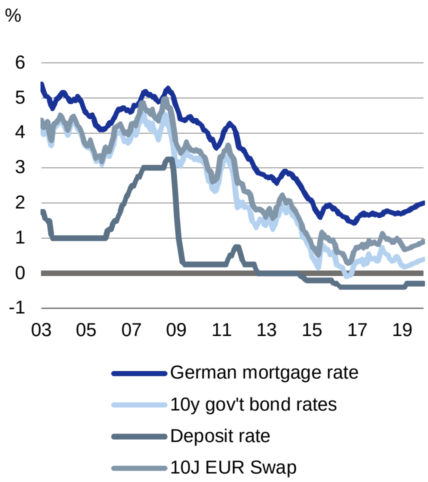
However, the positive economic backdrop was thwarted by political uncertainties, particularly in the second half of 2018. The re-adjustment of US trade policy and the budget dispute between the EU Commission and Italy were unsettling factors, as well as the protests in France and the political chaos surrounding the Brexit. Eventually, the uncertainty was also reflected in the hard data and growth faltered. In the third quarter, output even contracted in some countries, including Germany, which was hard hit by some negative one-off factors, especially in the auto industry. At the end of 2018, the flight to safety in financial markets pushed 10-year Bund yields down to around 0.15%. As a result, our expectation of higher 5-10-year mortgage rates had not materialised by November 2018.

As news were still negative in early 2019, both with respect to political uncertainty and hard economic data, sentiment is largely pessimistic at the start of the year. In the face of the unclear Brexit path and the unpredictable outcome of the trade dispute between China and the US uncertainty remains high. Moreover, attention is starting to focus on new issues such as the dispute between the US President and the House of Representatives, which – irrespective of the government shutdown – could resume in 2019 when the debt ceiling has to be raised. But worries are growing in Europe, too. For Germany, we expect growth of just 0.5% in 2019. Italy has already slipped into recession, at least according to the two-quarter definition. Following slightly negative growth in the third quarter of 2018, the Italian economy contracted again in the fourth quarter. Moreover, the protests in France and the likely widening of French deficits to over 3% of GDP in 2019 are weighing on financial market sentiment. Last, but not least, EU(ro)sceptic parties could expand their power in the European Parliament at elections in late May 2019. At the European level, key policy decisions could hence be impeded or even fall by the wayside. The potentially negative news flow, above all in the first half of 2019, would support expectations of low interest rates.

If, however, distortions fail to materialise in the first half of the year and the economy does not lose further steam, current heightened uncertainty could fade in the course of the year. From the current perspective, at least, the number of negative events looming in the second half of the year is considerably lower than in the first half. Contrary to 2018, we therefore expect interest rates to edge up marginally to well under 1%. Starting from a multi-months-low below 0.10% Bund yields ought to rise to 0.4% by year-end 2019, in our view. The markets seem to share this view, as exemplified by the far more subdued reaction of swap markets, where volumes are several times those of bond markets. With 10-year swap rates falling to just 0.63%, the spread widened to more than 50 basis points, a 7-year high. The – in our opinion – correct market view is also reflected in our expectation of higher swap rates. For year-end 2019, we expect 10-year swap rates of 0.9%.

At around 1.7%, 5–10-year mortgage rates for new loans remained more or less unchanged from throughout 2018, according to the ECB. Led by declining Bund yields, spreads were widening over most of the period. bulwiengesa's data releases in December, in particular, pointed to a surprisingly sharp surge in 2018 residential property prices. From a historical point of view – at least – some cities and regions are not only heading for overvaluations, but an outright bubble, if prices continue to rise at current rates. Against this backdrop, risk premiums on lending look set to increase, and the particularly aggressive credit conditions of recent years could soon be a thing of the past. In our opinion, 5–10-year mortgage rates ought to inch up further to 1.9% by year-end 2019. Based on our Bund forecast, spreads will enter into a sideways movement at

5–10Y Mortgage rate vs. ECB deposit rate 11



Sources: ECB, Deutsche Bank Research

around 150 basis points in the further course of the year, which – in historic terms – almost corresponds to the 90th percentile.

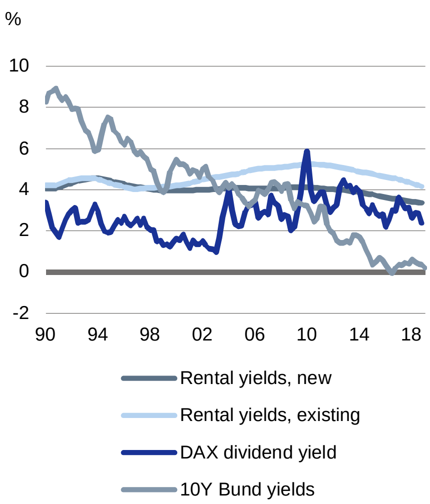
In conclusion, it should again be noted that our baseline scenario is based on the assumption that the underlying economic trend remains positive, despite numerous risks weighing on growth. We therefore stick to our overall view of slightly higher interest rates. This holds for Bund yields, swap rates and mortgage rates.

Rate outlook in the risk scenario: Declining interest rates

If growth slows further, monetary and fiscal countermeasures will probably follow in the near future. According to the media, first considerations are already being given in the German Ministry of Finance to enhancing depreciation schemes and, if necessary, cutting income tax, should the economy lose further momentum. Moreover, the ECB's measures implemented in response to shifts of the inflation rate from the target of "below, but close to, 2%" were timely and comprehensive, at least in recent years. Even though the discussion ought to be back on the front burner, if risks of stagnation or even recession increase, a resumption of massive asset purchases beyond the reinvestment programme – especially in the sovereign bond markets – is not a likely option, given the ECB's internal rules. Downward pressure on Bund yields from new monetary measures would therefore be much more limited than in the preceding years. Another factor corroborating this view is the current discussion as to whether deposit rates, which are paid by banks to the ECB, should be tiered in future. In this event, money market rates might also be less negative than today (3M Euribor currently at c. -0.30%). And with money market rates turning somewhat less negative, downside potential for capital market rates would be limited, too.

When will the house price cycle end? Not in 2019!

Yields of key asset classes 12



Definition: Rental yield = actual rents (re-letting) to market prices

Sources: Bloomberg Finance LP, bulwiengesa, Deutsche Bank Research

Although some cycles lasted much longer – as in Ireland and Spain, where the market boom continued from the 1980s to the early 2000s – the typical duration of a house price cycle is only five years. The prolonged ten-year cycle is therefore a striking case and one of most interesting and economically pressing questions is: When will the price cycle end? Especially with respect to financial stability and potentially negative effects on the economy, the risk of a sharp setback increases with every upward spike. We see a higher probability that the upward cycle is nearing its end, if

1. Supply is massively expanded and vacancies rise. In view of the limiting factors for new construction activity, however, the cycle is unlikely to end before 2022, in our opinion.[2]

2. Labour migration to Germany ceases, because euro countries which have so far been reluctant to introduce reforms to boost economic growth. According to recent official data of the Federal Statistical Office, net immigration to Germany was 416,080 in 2017. In its Monthly Report of June 2018, the Bundesbank expects net immigration in the period from 2018 to 2020 to come to 1.2 million.

3. Interest rates rise palpably and, as a consequence, rental returns in the German residential property market become much less attractive.

4. People clearly prefer renting a home over buying it. In 2017, rents for re-let housing surged to a 23-year high of 6.9% yoy. Even though rental dynamics slowed considerably in 2018 and further political measures to

[2] See Focus Germany. More signs of slowing (underlying) growth. June 2018.

tighten rent-control laws can be expected, residential property market shortages point to a continuation of the rent uptrend.

In our opinion, the four above-mentioned conditions are unlikely to materialise in 2019. We therefore expect the price cycle to remain in place. As in the past ten years, prices look set to rise at a faster pace than rents. Whilst this would put further downward pressure on initial rental returns, property market assets ought to be more attractive than capital market investments – for both private and institutional investors. This constellation argues against a near-term end of the cycle, as property market yields look set to clearly outperform long-dated German government bonds in the years ahead. Moreover, many real-estate assets are also more attractive than the highly volatile prices and dividends of public companies. Rental returns of around 4% per annum in Germany as a whole are hence likely to attract additional investors and, at times of crisis, real-estate investments will probably be preferred over financial assets, just as they were in recent years.

Key housing policy issues

Given our expectation of further price and, in particular, rent increases, housing policy is one of the most pressing issues for policymakers. Given rising political pressure, efforts to tie the German housing market into a regulatory straitjacket that is even tighter than today can be expected in the years ahead. In the face of potentially more restrictive legal and regulatory provisions, however, the question arises as to whether many market participants will increasingly consider alternative measures. Especially against the backdrop of our expectation of further tightening housing supply, arguably even beyond the metropolises and, partly, the metropolitan areas, these measures could play a more relevant role going forward. With causal relationships hence turning more complex, analysis might be more challenging than in the past ten years. Moreover, the shortages and possibly myopic housing policy guidelines could have dramatic implications for society. Prudent housing policy would make allowances for alternative measures and their potential impact during the legislative process.

Alternative measures that are already in existence today but may play a greater role in future and potential issues to be addressed by housing policy:

1. For the construction industry: Given increasingly complex rules and regulations, a shortage of qualified workers and staff who can work as supervisors, full order books and continued high demand for housing, building quality looks set to deteriorate.

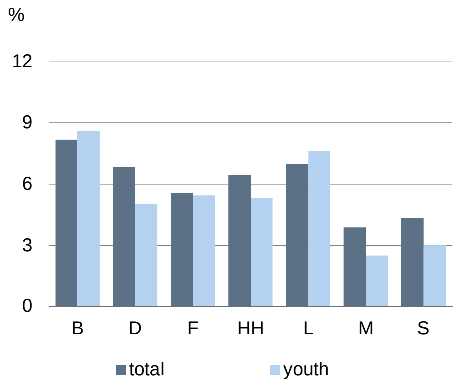
2. For landlords: Rental black market activities. If the legal and regulatory framework continues to tighten, excessive service prices and commodity sales to tenants could become the rule.

3. For private households: Since the introduction of the mortgage credit directive, new lending growth has been virtually flat, although borrowers are taking on higher debts. Accordingly, the number of new borrowers is declining, probably because fewer private households can afford to buy an apartment or a house.

a. Will credit markets emerge outside the banking sector that support regulatory arbitrage?

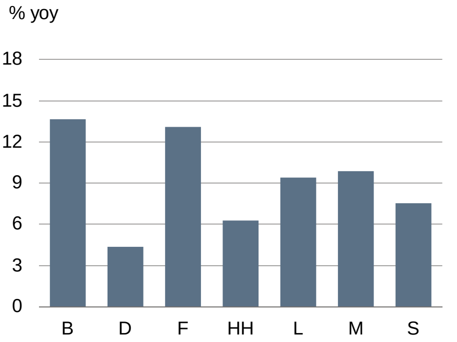
b. Will private households act as entrepreneurs when buying houses/ apartments and subsequently rent out the property to themselves, in factual, but not in juridical, terms?

2018 Unemployment and youth unemployment rate (15–25 years) 13



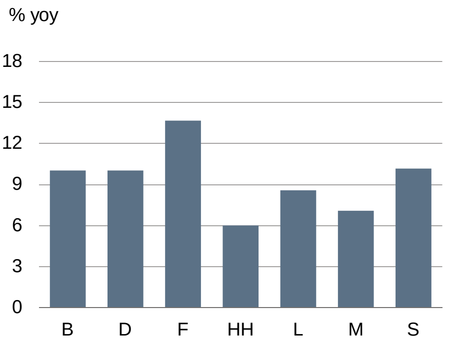
Sources: Federal Employment Agency, Deutsche Bank Research

2018 Apartment prices, existing 14



Sources: riwis, Deutsche Bank Research

2018 Apartment prices, new 15



Sources: riwis, Deutsche Bank Research

4. If neither a. nor b. materialises, the question arises as to whether a decline in lending would also mark the end of the cycle.

5. If neither a. nor b. materialises, another issue that arises is: Will the ownership rate decline, because private households are pushed out of the market by institutional and foreign investors?

6. This is inevitably followed by the question as to whether the Transparency Register will be used following such a development, to impede foreign purchases of houses and apartments in Germany.

Increasing divergence in the metropolises

Munich: Construction activity to remain insufficient in the decade ahead

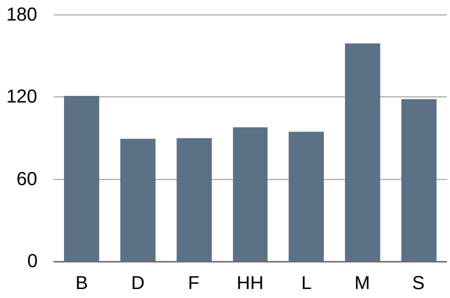
Rising slightly to 8,300 residential units in 2017, new construction activity in Munich was nearly in line with the city administration's target of 8.500 units for the 2017–2021 period. Between 2012 and 2016, 37,000 new residential units were completed in Munich, as suggested by official data. Throughout this period, building activity did not accelerate, though. During the entire cycle from 2009 to 2017, the number of newly built units was 56.600, according to bulwiengesa – up by only c. 5% on the entire nine-year period from 2000 to 2008 when property prices still rose in line with inflation. Price elasticity is therefore close to zero. In Munich, the average number of persons per household is 1.7. When multiplied by the new residential units completed between 2009 and 2017, this is equivalent to residential space for approximately 100,000 people. In the same period, however, population rose from 1.36 million in 2009 to 1.54 million in 2017, an increase of 180,000 inhabitants. Exclusively based on the number of people who have recently moved to Munich, there is a shortage of over 40,000 residential units. Going by the city administration's target, housing supply in Munich is hence almost 10 years behind demand – or even more, given the ongoing trend towards single-person households. In 2018, nearly 54% of households in Munich were one-person households, the third-largest rate in Germany as a whole (126 cities), behind Regensburg (55.4%) and Würzburg (54.3%).

Another driver of housing demand is Munich’s very dynamic labour market. As in the preceding years, total employment growth amounted to roughly 3% in 2017, but – like in the rest of Germany – looks set to have slowed last year. For 2018, we therefore expect an increase of only c. 2%. During the cycle as a whole, employment surged by a total of 25% – a sharp increase relative to other cities, which was only surpassed by Ravensburg and Wolfsburg (each 26%), Tübingen (27%), Gütersloh (28%), Regensburg (29%), Leipzig (30%), Berlin (33%) and Ingolstadt (36%). In Munich – as elsewhere – employment growth ought to lose momentum, also due to full employment and a shortage of qualified job candidates. At present, Munich already has the lowest unemployment rates of all A-cities, (total 3.9%, foreigners 8.0%,[3] youth 2.5%) and – in addition – benefits from a rising share of university graduates. According to the Federal Employment Agency, their percentage of total employment subject to social security contributions soared from 28% to almost 34% over the past five years, the highest share in Germany. After declining for a

[3] Unemployment figures for foreigners from 2016. Data for 2017 and 2018 are not available, as the figures were distorted by the refugee influx. In Munich, only 14,500 foreigners were unemployed in 2018, the lowest level in the current cycle (peak of 17,200 in 2015), which should have pushed the unemployment rate of foreigners below 8%.

2009–2018 Apartment prices, existing 16

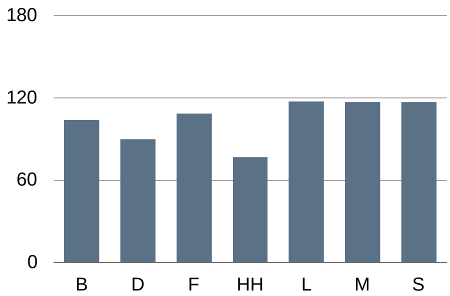
price surge in %



Sources: riwis, Deutsche Bank Research

2009–2018 Apartment prices, new 17

price surge in %



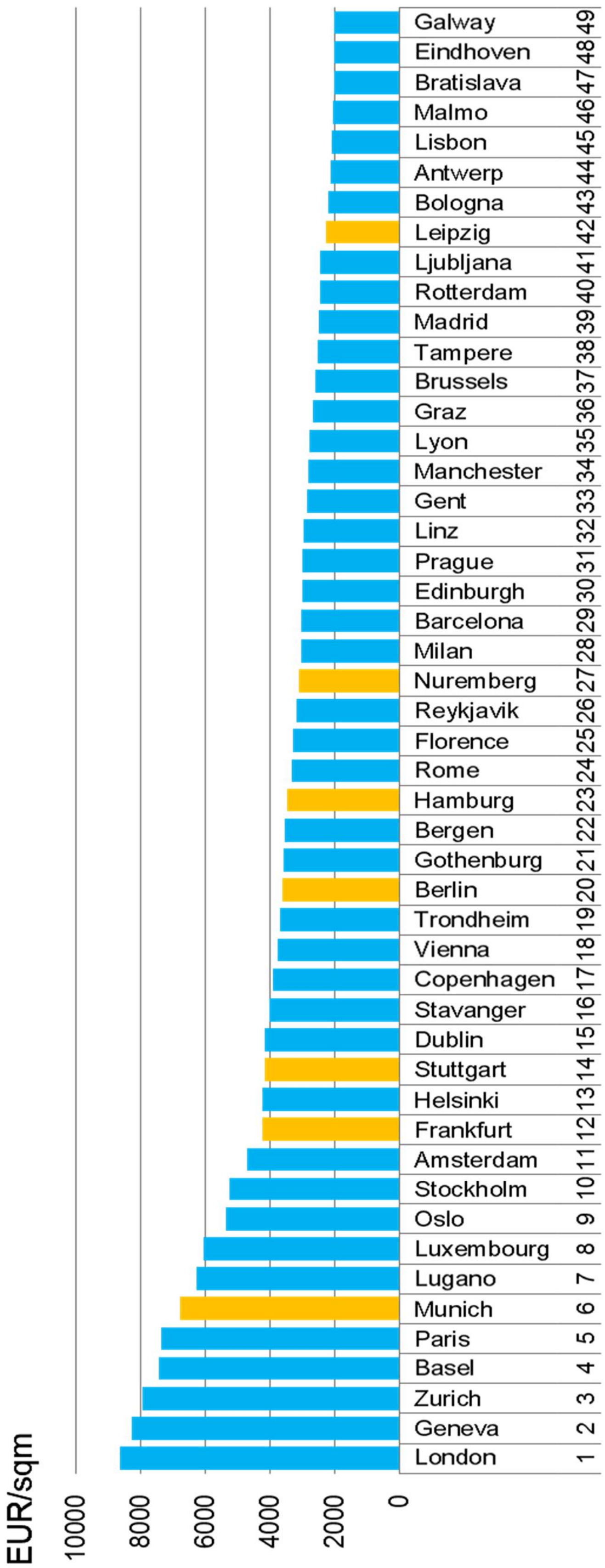
Sources: riwis, Deutsche Bank Research

multi-year period, the residential vacancy rate is de facto zero by now. Since mid-December, a new ordinance prohibiting any wrongful use of residential space enables the city administration to levy fines of up to EUR 500,000. In this context, residential space is considered to be “wrongfully used” not only if it is used for commercial purposes or as a holiday home, but also if it is vacant for more than three months. However, these measures are likely to be insufficient in view of the sheer size of the problem. That space is particularly scarce in Munich is further underscored by the office market. In this segment, the vacancy rate declined steadily, down from nearly 10% in 2010 to well below 2% in 2018. Only Erlangen, Freiburg, Göttingen, Ludwigshafen and Münster have lower rates, compared with c. 4% in the other metropolises (A-cities).

From an international point of view, Munich – Germany’s most expensive city – seems fairly valued. According to Numbeo[4], house prices per sqm outside the city centre amount to EUR 6,790, a year-over-year increase of around 6 ½%. In the European comparison, Munich took rank 6 in 2018, up from rank 7 in 2017 and rank 14 in 2016. In principle, the sharp uptrend in prices is confirmed by bulwiengesa. In 2017, prices for terraced houses and apartments climbed by c. 6 ½% and 10% yoy, respectively. That the uptrend in rents and prices will come to an end anytime soon is unlikely, given current construction activity. But price pressure also looks set to remain strong in the medium to long term, as suggested by the city administration’s current planning forecast (of April 2017), which expects population to rise to around 1.7 million by 2022. This translates into c. 150,000 new residents or nearly 90,000 new residential units. In light of the current shortage of 40,000 apartments, more than 130,000 new residential units would hence have to be completed by 2022. And population is likely to rise further, according to the city administration's forecast. By 2035, an additional 150,000 new residents are expected to push Munich's population up to 1.85 million. A relief phase after 2022 is hence an unlikely scenario. Given the structural bottlenecks, the question arises as to when and at what level the strong price pressure will eventually ease. As construction activity in Munich is simply too sluggish, at least relative to its population growth, the message for investors is clear: The uptrend in Munich looks set to continue. In London and several Swiss cities, sqm prices outside the city centre already come to more than EUR 7,000, according to Numbeo.

[4] See Numbeo Doo (www.numbeo.com).

Europe: Apartment prices outside of the city centre above EUR 2000



Download from numbeo.com as of 28-Dec-2018.

Sources: Numbeo Doo, Deutsche Bank Research

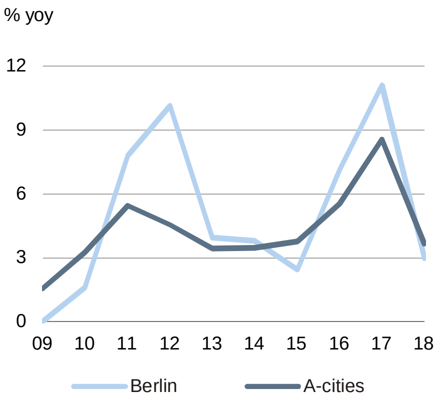
Berlin: No longer "poor, but sexy"

Berlin found it difficult to adapt to the market economy after Germany's reunification. Both parts of the divided city, the eastern and the western, had to cope with fundamental changes – the eastern for obvious reasons, the western because it had benefited from generous subsidies until then. Berlin has therefore been lagging behind the rest of western Germany for decades. By now, however, it is not only catching up with western German metropolitan areas, but even beginning to overtake them. Employment growth in cutting-edge industries suggests that Berlin is truly becoming an innovation hub. And this development serves as an excellent basis for the residential market. While we mainly focus on developments in 2018 in this article, the house price trends are likely to remain in place for some time to come.

In 2018, prices for existing terraced houses in Berlin rose by 14% yoy and climbed to a new all-time high, at considerably above EUR 300,000. Despite this jump, which considerably exceeded the uptrend in most other major metropolitan areas in Germany, house prices in Berlin are still relatively low. In fact, terraced houses in major cities (A-cities) in western Germany currently cost c. 50% more than in Berlin. Back in 2009, the difference was only 30%, and in the 1990s, prices were still largely similar. Prices for new terraced houses rose considerably as well, namely by more than 10% yoy, whereas prices for single-family homes were up by "only" 5%. Single-family homes in Berlin are just about half as expensive as in western German metropolitan areas. Apartment prices underwent a similar development. Prices for existing apartments rose by more than 15% and those for new apartments by more than 10%. According to bulwiengesa, Berlin is currently the 11th most expensive German city in terms of apartment prices (up from rank 15), and according to Numbeo, it is the twentieth most expensive city in Europe, with square metre prices outside the city centre amounting to EUR 3,600.

In Berlin, too, the price increases are caused by a significant shortage of available housing. Many observers believe that the lack of available construction plots is one of the main reasons for this. However, qualified labour is in short supply as well, not only in Berlin, but also in other cities. According to the Berlin statistical office, the number of workers in the construction sector declined slightly in year-on-year terms between January and September 2018. At the same time, the number of hours worked rose by almost 5%. In 2017 (latest available figures), only 15,700 residential units were completed, i.e. 0.8% of the total number of existing homes. Bearing in mind the increase in hours worked, the number of completions probably rose to more than 16,000 residential units or 0.9% of existing homes in 2018. However, this is only a fraction of what is required as the population grows.

2009–2018 Berlin vs. A-cities: Reletting 18



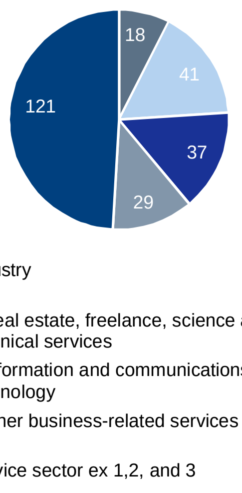
Sources: riwis, Deutsche Bank Research

Between 2011 and 2017 (latest available figures), Berlin's population increased by nearly 290,000 and the number of households by almost 200,000. Robust demand is not least due to the favourable labour market development. Employment growth amounted to c. 4% in both 2016 and 2017 and probably continued at that pace in 2018. Since 2009, employment has increased by more than 30% in accumulated terms. In line with this, unemployment has been declining for years and fell to 7.6% in November 2018. Berlin's labour market is normalising in comparison to that in other German cities. A look at the historical figures shows just how impressive the development is. In 2003, the unemployment rate was still above 20%.

A sector analysis yields additional, interesting insights into Berlin's labour market. Manufacturing traditionally is an important sector in Germany, with one out of four jobs that are subject to social security contributions being found in this industry. However, it plays only a subordinated role in Berlin, where only one out of eight employees with a job that is subject to social security contributions works in manufacturing. Employment growth mainly took place in the services sector, where more than 200,000 jobs were newly created between 2013 and 2018. This figure is above the total number of manufacturing jobs subject to social security contributions. Almost half of these new jobs were created in three services sectors only (WZ2008): first, professional, scientific and technical services, which include real-estate services; second, other business services; and third, the information and communications sector, which has registered the strongest growth rate since 2013 (more than 50%). Berlin has clearly positioned itself as a start-up hub. According to figures prepared by the city of Berlin, more than 500 digital companies were newly established in 2017, i.e. more than in Hamburg, Munich and Frankfurt taken together. In addition, one out of ten digital companies is founded in Berlin.[5] As a result, the share of university graduates among those who hold a job that is subject to social security contributions has increased by more than 5 pp between 2013 and 2018, to more than 26%. Employment growth in knowledge-based and future-oriented sectors points to sustainable growth. It would therefore not come as a surprise if the Berlin labour market not only caught up with the labour markets in western German large cities, but even overtook them.

2013–2018: More than +200.000 Jobs added in the service sector 19

in '000



Sources: Federal Labour Office, Deutsche Bank Research

This trend has already had a favourable effect on Berlin's budget. Between 2014 and 2018, public-sector spending increased by c. EUR 5 bn, to EUR 28.6 bn. At the same time, social security expenditure (i.e. spending by social and youth services) declined by EUR 1.5 bn, and their share in total expenditure was down from 28% to 24%. Investment and public-sector construction spending increased by almost EUR 1 bn during this period. Moreover, Berlin reduced its public-sector debt from more than EUR 60 bn in 2012 to less than EUR 55 bn in 2018. Further structural debt and fiscal improvements are likely as the real estate and economic boom continues, particularly as the population continues to rise. More than 260,000 people are expected to move to Berlin until 2030. For years to come, a steady rise in demand for housing will meet with relatively inelastic supply. As the ownership rate is particularly low in Berlin (15.6% according to the census of 2011, compared to more than 20% in other metropolitan areas and 45.9% in Germany as a whole), many tenants may want to acquire their own homes, even though rent growth has slowed significantly, at least for existing apartments. The annual rate of increase dropped from 7% in 2016 and a peak at 11% in 2017 to only 3% in 2018. Apart from the slowdown in rent growth, numerous factors point to a super-cycle in Berlin, which might continue far beyond 2020. Housing in Berlin might thus contribute to a trend which will make Berlin one of the most expensive German and European cities, just as the city is becoming one of the most innovative, too. Berlin is no longer "poor, but sexy", as its former mayor Wowereit famously said in 2003. Rather, it might soon be "rich and innovative".[6]

Home prices in Frankfurt up by 15% in 2018

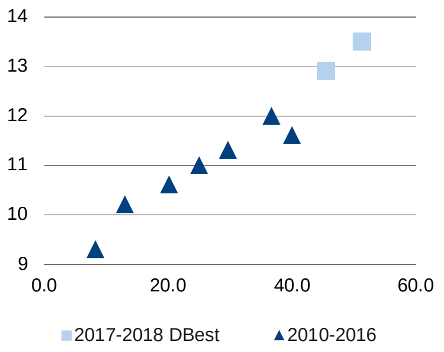
According to official figures provided by the city itself, Frankfurt counted 744,100 inhabitants by mid-2018, i.e. almost 90,000 (13%) more than in 2010. This number rises to 761,700 if those who have their secondary residence at Frankfurt are included as well. Just like in any other year of the current cycle, Frankfurters moved out of the city to one of the smaller towns scattered around it. However, these outflows were more than compensated by new citizens, who come from the rest of Hesse, the rest of Germany and, above all, abroad. Frankfurt is a highly international city; it is home to 174,500 Germans with a migration background and 218,800 foreigners. For years now, it has been the

[5] Gründungsdynamik in der Berliner Digitalwirtschaft nimmt weiter zu. Press release by the city of Berlin, 12 December 2018.
[6] Originally published on Jan 15, 2019.

German city with the highest proportion of foreigners, at currently almost 30%. The population looks set to grow further in the coming years. According to a forecast prepared in 2015, Frankfurt expects the number of inhabitants to rise to 810,000 by 2030. This is an increase by 60,000 from today. The number of households looks set to rise from currently c. 420,000 to more than 450,000 by 2030. Demand for residential space is boosted by the labour market development, if to a somewhat smaller extent than in other large cities. The number of gainfully employed Frankfurters has risen by roughly 18% since 2009. A relatively high proportion of them are university graduates. In 2018, c. 28% of all regular employees in jobs which are subject to social security contributions were university graduates. Unemployment has declined for twelve years in a row, from a peak at 10.9% in 2006 to currently 5.0% (November 2018). This is below the average for German metropolitan areas (A-cities), which is above 6%. Youth unemployment has continued to decline, to currently 5.0%. The favourable labour-market situation should prop up demand for residential space.

Rent vs. flat deficit 20

y-axis: Rents, existing in EUR/qm
x-axis: No. of flats in '000

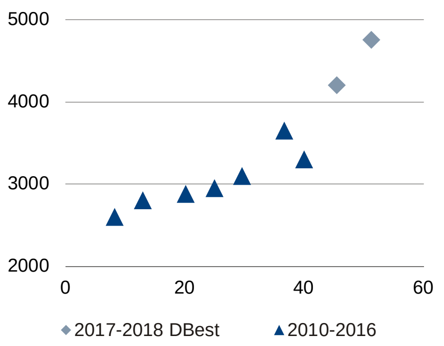


Sources: City of Frankfurt, riwis, Deutsche Bank Research

At the same time, supply growth is slow. According to bulwiengesa, the number of building permits granted per year has risen from 2,400 residential units in 2009 to 5,900 in 2017. The number of completions, however, was much slower to increase. In fact, in each of the years between 2014 and 2016, only slightly more than 4,000 units were completed. 2017 was the first year in which more than 5,000 residential units were built. This makes Frankfurt the only metropolitan area where the number of completions amounted to more than 1% of existing units for several years in a row. Nevertheless, there is a significant supply gap. During the current cycle, 31,400 residential units housing probably c. 60,000 people were completed. However, the number of Frankfurters increased by 90,000 during the same time. Residential space is obviously in short supply. According to the city's latest official figures, c. 36,700 residential units were urgently needed in 2016, down from 40,000 in 2014. This narrowing of the gap between supply and demand is a positive surprise, seeing that price trends seemed to suggest a widening. However, we believe that the shortage of residential space intensified again in 2017 and 2018 in comparison to 2016. First, population growth was relatively sluggish in 2016, with less than 4,000 people moving to Frankfurt. It picked up again in subsequent years, to about 10,000 per year (figures from bulwiengesa). Second, Brexit was a positive demand shock for Frankfurt. Between 2016 and 2018, prices for existing homes rose by an accumulated 44%, i.e. considerably more strongly than between 2009 and 2015 (32%). This price boom probably intensified supply shortages, particularly since Brexit is an incentive to build more high-priced apartments. All in all, it seems that more than 40,000 residential units were lacking in 2018. And it will take until a date far into the coming decade to reduce the demand overhang.

Apartment prices vs. flat deficit 21

y-axis: Prices, existing in EUR/qm
x-axis: No. of flats in '000



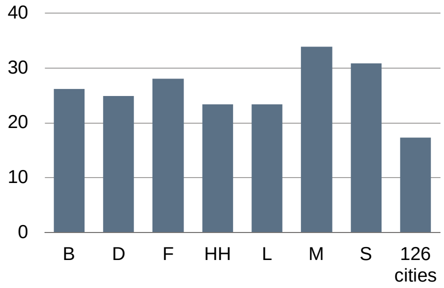
Sources: City of Frankfurt, riwis, Deutsche Bank Research

In line with this shortage, prices for new and existing apartments rose by almost 110% and 90%, respectively, between 2009 and 2018. Prices for new and existing terraced houses were up by c. 90% and almost 80%, respectively, and prices for single-family homes were up by almost 70%. At the same time, rents for both re-let and newly let apartments rose by c. 50%. Just like in other large cities and in Germany as a whole, rent growth slowed in Frankfurt in comparison to the preceding year. In 2018, rents for re-let apartments were up by 5% and rents for newly let apartments by 2.6%, i.e. not much above the rate of inflation. Nevertheless, the price momentum is strong. Prices for single-family homes rose by more than 6% yoy and those for all other types of residential space by at least 10%. Due to the Brexit, 2019 will certainly be an interesting year. A hard or a crash Brexit might certainly give the Frankfurt residential market a major boost. Still, a crash Brexit is not our baseline scenario. While the risk of such a development is certainly increasing, we expect only 5,000 additional workers to move to Frankfurt. This should lead to demand for 5,000 more apartments in the city. In short, our "Brexit" study of 2016 is still well worth reading.[7]

Hamburg: Less favourable labour-market trend dampens price momentum

2018 Share of employee subject to soc. contr. with academic degree 22

% all employee subject to social contribution



Sources: Federal Labour Office, Deutsche Bank Research

For many people, Hamburg is clearly the most beautiful German city, and it does well in international rankings, too. However, the city also illustrates the economic north-south divide in Germany, as it lags behind its peers in the south of the country. Hamburg's population growth is relatively subdued compared to that of other metropolitan areas. Between 2011 and 2017, the number of inhabitants rose only by a total of just 112,000 or roughly 6%.[8] This is probably one reason why demand for residential space is somewhat lower. The number of building permits rose considerably to a new all-time high in 2017, at 12,500, and the number of completions increased significantly, too, to almost 8,000. 52,100 residential units were completed during the cycle. With 1.7 people living in a Hamburg household on average, this means that the new apartments can house about 90,000 people. With more than 20,000 still looking for accommodation, the vacancy rate declined from c. 1.5% in 2011 to 0.5% in 2017 (figures from Empirica).

The local labour market continues to lag behind that of other German metropolitan areas with regard to a number of indicators, such as employment growth, the proportion of university graduates among all employees who hold a job that is subject to social security contributions and unemployment (total, youth, foreigners). Nevertheless, employment in Hamburg has increased by almost 20% during the cycle, and the share of undergraduates has risen by several percentage points, to roughly 23%. Employment growth differs from that in other metropolitan areas in qualitative terms, too. Between 2013 and 2018, it was strongest in the hospitality sector, the construction sector and the social sector.

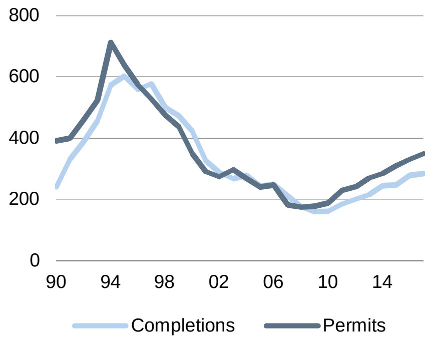
As house price growth slows, employment growth in the construction sector is likely to decline and dampen demand for housing in turn. At the same time, the academic environment in Hamburg is less favourable. According to international university rankings, there is a significant north-south divide in Germany, and Hamburg is relatively low on the list in comparison to its considerable potential. In fact, the city's university only ranks 14th of all German universities in a global ranking prepared by the Times. Numerous universities in smaller cities do better. Hamburg's university also suffers from a relatively high student-teacher ratio and a relatively low proportion of international students.

7 Möbert, Jochen, Matthias Naumann and Martin Lippmann: Crumbs or pie? How much will Frankfurt's property market benefit from Brexit? Deutschland-Monitor. Deutsche Bank Research. 2016.

8 Our outlook for 2018 put population growth during the period between 2009 and 2015 at 0.7%. The considerably higher figure for the period 2011–2017 is due to the significant effect of the census in 2011, which showed that Hamburg had almost 70,000 inhabitants less than assumed, and to relatively strong population growth in both 2016 and 2017. In each of these years, more than 20,000 people moved to Hamburg.

Germany: Housing market 23

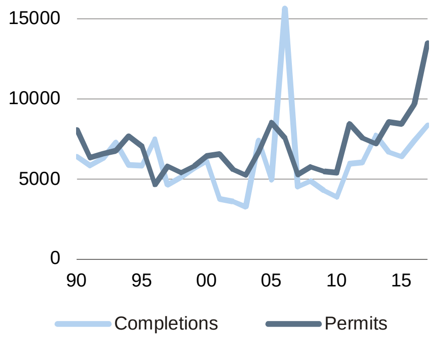
No. of dwellings in k



Sources: riwis, Deutsche Bank Research, Federal Statistical Office

Munich: Housing market 24

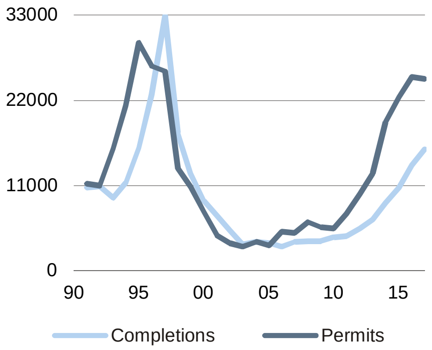
No. of dwellings



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Berlin: Housing market 25

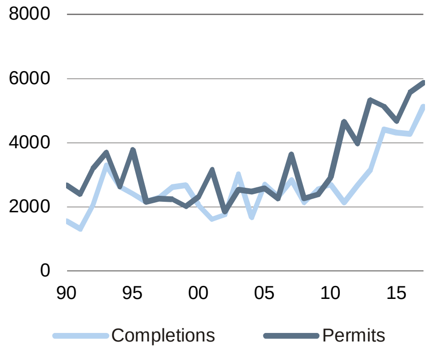
No. of dwellings



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Frankfurt: Housing market 26

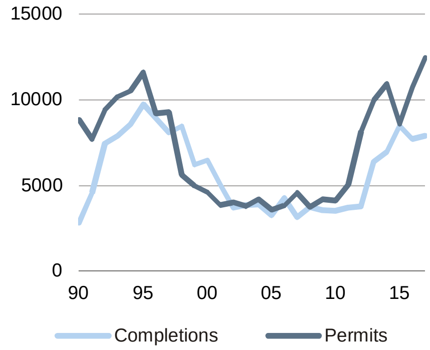
No. of dwellings



Sources: riwis, Deutsche Bank Research, Federal Statistical Office

Hamburg: Housing market 27

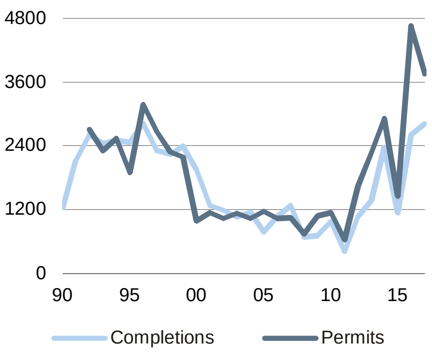
No. of dwellings



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Dusseldorf: Housing market 28

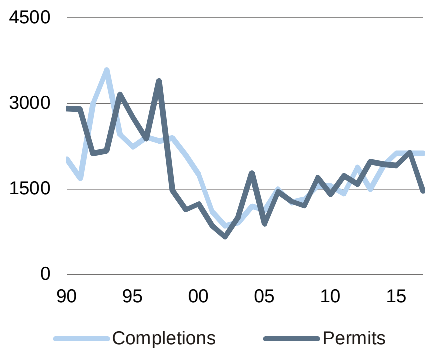
No. of dwellings



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Stuttgart: Housing market 29

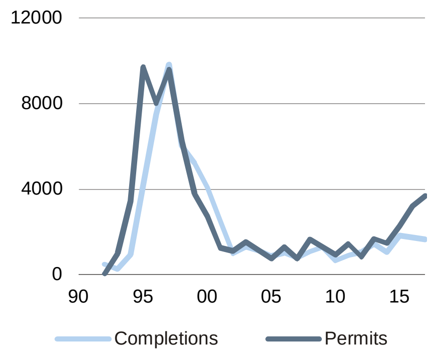
No. of dwellings



Sources: riwis, Federal Statistical Office, Deutsche Bank Research

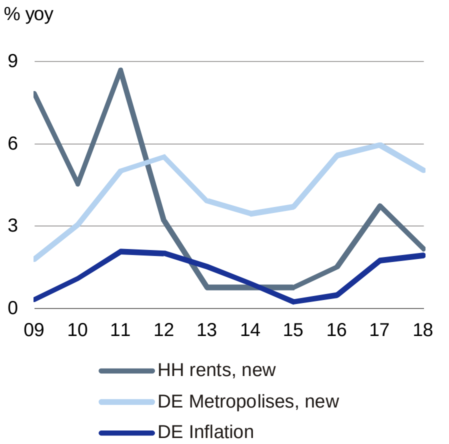
Leipzig: Housing market 30

No. of dwellings



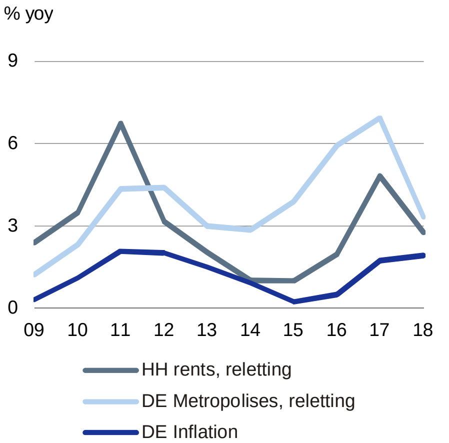
Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Hamburg: Rents vs. benchmarks 31



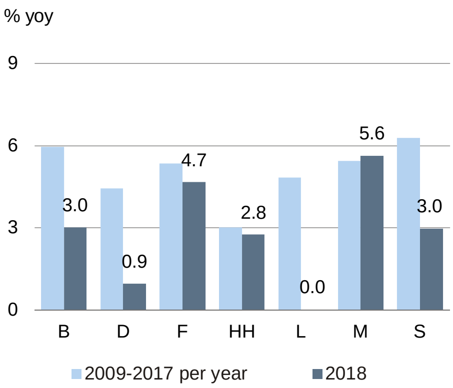
Sources: riwis, Federal Statistical Office, Deutsche Bank Research

Hamburg: Rents vs. benchmarks 32



Quellen: riwis, Federal Statistical Office, Deutsche Bank Research

Rental growth, reletting 33



Sources: riwis, Deutsche Bank Research

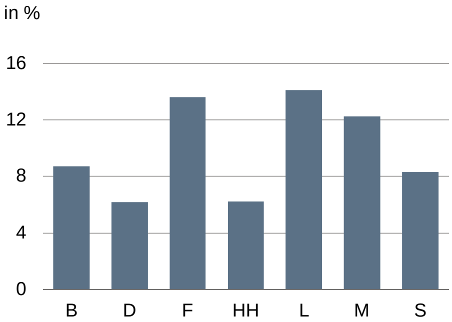
As the population is growing more slowly and the labour market development is relatively subdued, Hamburg's ambitious goal of completing more than 10,000 apartments per year merits particular attention. This means that the number of completions per year amounts to more than 1% of the total number of existing residential units (almost 950,000). At the same time, Hamburg expects relatively subdued population growth. The number of inhabitants is expected to rise to 1.84 million by 2020 (forecast of August 2014) and to 1.85 million by 2030. This is only a slight increase from the latest actual figures for 2017 (1.83 million). If these forecasts materialise, Hamburg will be one of the German metropolitan areas with the weakest growth rates. While we expect a somewhat higher population growth, the official figures imply limited price potential. We believe that this is correct. If Hamburg successfully boosts new construction in line with its plans, vacancy rates might rise again, above all from 2020.

Against this background, the price cycle might flatten sooner in Hamburg than in other cities. In addition, the market might respond more sensitively to interest rate developments once the rate level normalises. If the number of completions exceeds the plans, prices and rents might decline again, at least a bit. The downward potential is probably limited in any case, as the city of Hamburg has been pursuing a forward-looking housing policy for some time now and even a local government led by the Social Democrats should be more interested in sideways-moving than in declining prices and rents. In addition, as the price gap in comparison to other metropolitan areas widens, potential price and rent declines in Hamburg should remain limited. From an economist's vantage point, an early end to the cycle would, in fact, be quite welcome, as it would limit the risk of setbacks, which may lead to economic damage.

As the uptrend has been relatively weak in the past, Hamburg has dropped further down in the list of the German cities where housing is most expensive. In 2018, the city's apartment prices per sqm were only on rank 5 in Germany, down from rank 2 in 2015. Today, housing is more expensive in Munich, Konstanz, Frankfurt and Stuttgart, and Ingolstadt, Freiburg, Regensburg, Heidelberg and Rosenheim look set to overtake Hamburg in the coming years. In 2018, prices for existing apartments were up by somewhat more than 6% year-on-year. Prices for existing terraced houses rose by about 8 ½% and those for single family homes by 3¼%. Once again, price trends in Hamburg were subdued in comparison to those in other German metropolitan areas (averages: apartments: 9 ¼%; terraced houses: 8 ¾%; single family homes: almost 8%). Numbeo confirms this subdued uptrend. Square metre prices for apartments outside the city centre came in at EUR 2,400 at the end of 2014 and rose by "only" 45%, to EUR 3,500, by the end of 2018. Rent growth was subdued as well. In 2018, rents for re-let and newly let apartments were up by 2.8% (average for all metropolitan areas: 3.7%) and 2.2% (average: 4.1%), respectively. The same applies to the cycle as a whole from 2009 to 2018, with rents for re-let apartments and new apartments rising by +30% (average for all metropolitan areas: 50%) and +29% (average: 47%), respectively. As described above, rents in Hamburg look set to grow less strongly than in other metropolitan areas. At the moment, rents for re-let apartments are slightly above EUR 11/sqm in Hamburg, putting the city on rank 10 among the 126 cities observed by bulwiengesa (down from rank 7 in 2016).

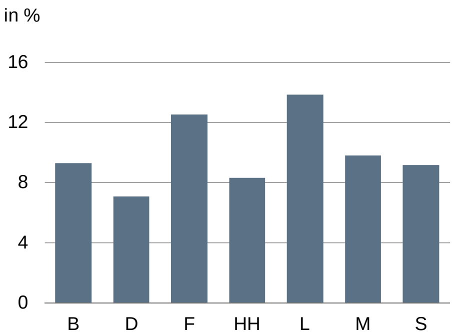
Düsseldorf: Significant differences in prices for new and existing homes

2011–2018 Population growth 34



Sources: riwis, Deutsche Bank Research

2011–2018 Household growth 35



Sources: riwis, Deutsche Bank Research

Düsseldorf has seen its population rise by only about 5 ½% or 34,500 since 2009. According to official figures, 639,400 people lived in Düsseldorf in 2017, with the share of foreigners amounting to almost 23% and the share of those with a migration background coming to more than 40%. The number of households grew at a subdued rate, too, at 7 ½% across the cycle or almost 3,000 per year. The federal state's statistical office assumes that Düsseldorf's population will increase by almost 11,000 by 2020 and by another 47,000 by 2030. With 1.8 persons living in a household, this is equivalent to slightly more than 3,000 new households per year until 2020 and about 2,600 afterwards. The significant increase in the number of completions in 2016 and 2017 points to relatively low future price pressures. In these two years, 2,600 and 2,800 new apartments were completed, respectively, up from an average of only 1,150 for the period from 2009 until 2015. As the environment, while favourable, is obviously less dynamic, the vacancy rate is somewhat higher than in other metropolitan areas, at 1.4% (JLL, as of June 2017). Still, it is considerably lower than in previous years, when it sometimes amounted to more than 3% (based on the number of electricity meters and apartments which were vacant for more than three months). If construction activity picks up considerably, Düsseldorf might therefore experience oversupply and the cycle might end sooner than in other metropolitan areas. Just like its Hamburg counterpart, the Düsseldorf housing market might be relatively rate sensitive.

Other demand drivers, such as employment growth, lagged behind the average of other metropolitan areas, too; employment, for example, was up by almost 15% in Düsseldorf between 2009 and 2018, compared to an average of 23% for all metropolitan areas. The overall unemployment rate (6.5% in November 2018) and the unemployment rate among foreigners (c. 13%) is currently about 1 pp above the average for all metropolitan areas. Youth unemployment declined in comparison to the preceding years and is now in line with the average in metropolitan areas, at 4.6%. The share of university graduates among all employees who hold a job that is subject to social security contributions rose from about 20% in 2013 to almost 25% in 2018 (average for all metropolitan areas in 2018: more than 27%).

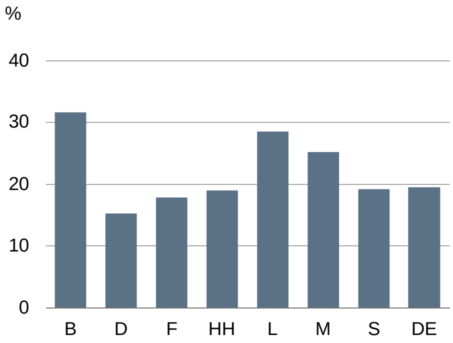
Both the decline in vacancies and the pick-up in construction activity are reflected by house prices and rents, which have increased less dynamically than in other metropolitan areas. Prices for both existing and new apartments rose by 90% between 2009 and 2018 (averages for existing and new apartments in all metropolitan areas: 112% and 100%, respectively). Prices for both existing and new terraced houses were up by about 80%, and those for single-family homes rose by 60%. Both figures are at or below the average in comparison to other metropolitan areas. Rents for re-let properties rose by about 43%, those for new properties by 40% (averages for all metropolitan areas: c. 50% and 47%, respectively). Our more cautious outlook for the market in Düsseldorf in 2018 turned out to be justified. Prices for existing apartments and terraced houses were up by only 4.3% and 3.9%, respectively, whereas they rose by an average 8.7% and 9.2%, respectively, in all metropolitan areas.

In contrast, prices for new buildings went through the roof. Prices for new apartments were up by 10%, those for new terraced houses by more than 12%. Moreover, the price momentum for those two types of real estate has tended to accelerate during the cycle. This is probably due to the scarcity of plots, as is the divergence in prices for new and existing properties. Moreover, the city of Düsseldorf demands high prices for plots, which is why construction prices and, in turn, market prices rose disproportionately in 2018.

Stuttgart: Bottlenecks to remain for years to come

Since 2011, Stuttgart's population has increased only by 7% or 45,600 people. This slow growth is remarkable, seeing that the city is situated in a basin and has only limited room for new construction. In addition, there are numerous dynamic cities in the vicinity, such as Mannheim, Heidelberg, Karlsruhe, Konstanz, Freiburg, Ulm and others. Just like the federal state of Baden-Württemberg as a whole, these cities rely heavily on the car industry and on mechanical engineering. The local companies are highly international and export-oriented and benefit from globalisation. Moreover, this environment has a favourable effect on research activity. Many of these cities are home to excellent universities. Due to this economic structure, Baden-Württemberg as a whole is experiencing population growth. Since 1990, about 1.2 million people have moved to the state from abroad or from other German regions.

2009–2018 Employment growth subject to social insurance 36



Sources: Federal Labour Office, Deutsche Bank Research

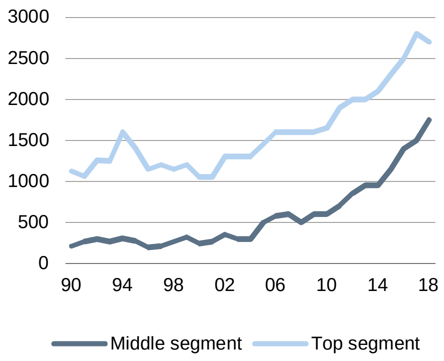
Stuttgart's labour market has done very well during the whole cycle. The unemployment rate was down to 4.0% in November 2018, and youth unemployment even dropped to 2.8%. The number of unemployed foreigners continued to decline as well in 2018, starting from already low levels. In contrast, employment growth was slightly below the average, at 19%, probably because Stuttgart's location in a basin limits the available space. However, employees in Stuttgart are highly educated. Almost 31% of those who hold a job that is subject to social security contributions are university graduates. This ratio is only exceeded by Munich and Erlangen (almost 34%) and Jena and Darmstadt (c. 32%). Despite the favourable labour-market development, construction activity has been subdued. Between 2015 and 2017, only about 2,100 residential units were completed, which is equivalent to about 0.7% of existing homes. The significant decline in the number of building permits in 2017, to 1,460 (the lowest level since 2010), does not suggest that the situation has improved quickly after 2017. Supply looks set to remain limited in the long run, too. While the construction of an underground railway station ("Stuttgart 21") will free up more than 100 hectares in the city centre for new projects, these plots will not be available until the middle of the next decade at the earliest. Moreover, the station's completion date has been repeatedly postponed. As of November 2018, the construction activities were expected to be completed by the end of 2025. And even after that year, the official forecasts are for marginal population growth at best.

The restricted supply and strong economic activity have driven house prices up. Prices for existing apartments have risen by almost 120% since 2009 and by 7.5% in 2018 alone. Prices for new and existing terraced houses and single family homes have increased by c. 50% during the cycle. In 2018, prices for these properties were up between 7.2% and 10.6%. The price increases have fed through to rents as well. Rents for re-let and new apartments have risen by 68% and 65%, respectively, during the cycle. In 2018, rents for new residential units were up by 9%, but those for re-let properties only by 3%. Stuttgart's labour market looks set to remain in good shape, despite recent negative headlines for the auto industry. Demand for housing should remain high in the coming years, too. This means that the real estate cycle will likely continue for some years to come and that prices and rents should rise further.

Leipzig: "Little Berlin" is booming

Price difference: Berlin minus Leipzig 37

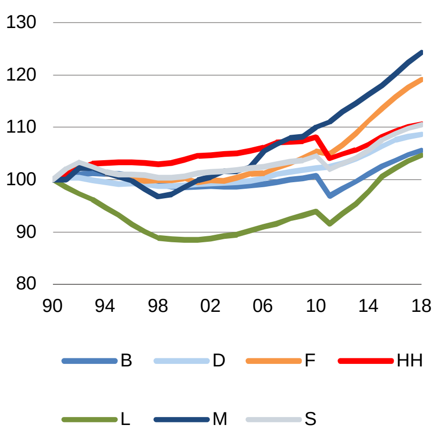
EUR/qm



Sources bulwiengesa, Deutsche Bank Research

Population 38

1990=100



Note: 2011 Census led to a correction of population figures

Sources: riwis, Deutsche Bank Research

The north-south divide in Germany is visible not only in the western, but also in the eastern part of the country. All eastern German cities where employment has grown by more than 20% are in the south, namely Dresden, Leipzig and Jena. Leipzig is clearly the record holder among eastern German cities, having seen employment increase by 28.5%.[9] Moreover, the development of the Berlin housing market will probably spill over to Leipzig, which is quite well connected with the capital. A train journey from Berlin to Leipzig takes only about 70 minutes. Leipzig is therefore likely to become an attractive alternative for many companies or households from Berlin as apartment prices differ by about EUR 2,000 per square metre in the middle market segment and even EUR 3,000 per square metre in the upper segment. Leipzig offers numerous advantages and is probably the most interesting property market in eastern Germany.

At the same time, Leipzig is not really a metropolis; in 2018, it had only about 588,400 inhabitants. Still, this is an increase by almost 80,000 since 2011. The growth rate amounts to c. 13%, and the number of households grew at the same clip. In western Germany, only Gießen (a university city) is expanding at a similar rate. Leipzig's integrated city development concept for 2030 assumes that growth will remain strong and that the number of inhabitants will rise to 720,000 by 2030. And not only employment growth, but also the decline in unemployment is impressive. Unemployment has dropped from almost 22% in 2005 to 6.1% in November 2018 and is now near the average for western German cities. Youth unemployment, at 7.6%, is near western levels, too. Unemployment among foreigners is the only exception, at almost 20%. It is structurally higher than in western cities – a phenomenon that is visible in many eastern German cities. The share of university graduates among those employees who hold a job that is subject to social security contributions amounted to only just above 23% in 2018 and is below the average not only in comparison to western, but also in comparison to many other eastern German cities. Still, Leipzig may be able to catch up in this area, as the number of students is steadily growing. By now, about 40,000 students are living in the city, and more than 30,000 of them were enrolled in the university alone in the winter semester 2017/18.

Construction activity is subdued. Only 11,700 residential units were completed during the cycle, which is equivalent to about 0.4% of the total existing homes (per year). The number of building permits was slow to rise during the cycle, too. In 2017, it amounted to c. 1% of the existing homes. Still, similar to developments in Berlin, construction activity might lag considerably behind the number of building permits. One reason for sluggish construction activity is that vacancy rates are still high, if declining. According to the city of Leipzig, the vacancy rate amounted to c. 3% in 2015, down from almost double that rate in 2011. In the city centre it was below 2% even back then. Since 2015, vacancies in Leipzig as a whole and in the city centre have probably continued to decline. As the population increases and construction activity remains subdued, bottlenecks are likely in the coming years. In the medium to long term, housing might even become scarce, similar to the development in western metropolitan areas. However, vacancy rates are probably higher in numerous smaller cities around Leipzig, which means that people can move more easily to the surrounding towns than in western Germany.

Declining vacancy rates directly feed through to prices. In 2018, house prices in Leipzig were up by a double-digit rate. Prices for new terraced houses rose by almost 17% (the strongest increase in Germany), those for existing homes by

[9] Greifswald, a town with only 56,700 inhabitants on the Baltic Sea, has seen even stronger employment growth, at c. 50%. However, to some extent this is probably due to statistical effects, as labour agencies in the region were merged.

15% and those for single-family homes by 12%. This reflects Leipzig's catch-up potential; in fact, house prices are about half as high as in Hamburg. Prices for existing and new apartments rose strongly as well, by about 10%. During the cycle, prices for existing houses and apartments rose by an accumulated 80%, and prices for new homes more than doubled. Rents rose during the cycle, too. The only piece of data which runs counter to a continuation of the cycle is the stagnation of rents for re-let properties in 2018. Nevertheless, we expect the cycle of the Leipzig residential market to continue. As population and the number of households grow, scarcities will probably intensify. Just as in Berlin, the cycle looks set to continue for years to come.

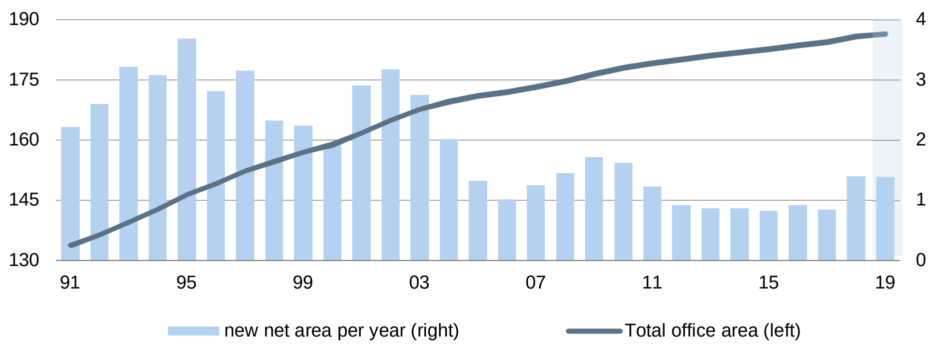
German office market

Office market: Declining vacancy rates, stronger rent growth in the medium term

In Germany as a whole, employment rose by more than 400,000 in 2018, to a total of c. 45 million employees. According to our calculations, slightly more than 40% of this total increase took place in the 126 cities observed by bulwiengesa. This applies to both employment as a whole and to jobs subject to social security contributions. Many of these new employees work in offices. In the 126 bulwiengesa cities, 126,200 additional office jobs were created in 2018, which means that the total number of office workers rose to 7.7 million. Assuming that each of them needs on average c. 23 sqm of space, this translates into additional space requirements of about 2.9 million sqm in 2018. This is an increase by about 1.6%. At the same time, new construction (adjusted for demolished buildings) amounted only to 1.4 million sqm or 0.7%. Overall, almost 186 million sqm of office space were required in the 126 bulwiengesa cities. Due to this imbalance, the vacancy rate declined for the seventh year in a row, to 5.2% in 2018, and dropped below the long-term average of 5.6% for the first time in this cycle.

Total and new net office area 39

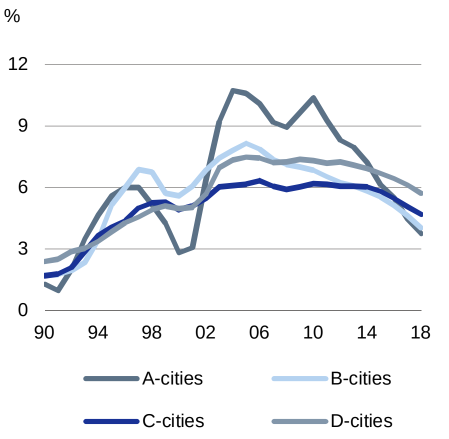
both y-axes: square meter in million



Sources: riwis, Deutsche Bank Research

However, vacancy rates differ considerably from city to city. In 19 out of the 126 cities, they even rose in year-on-year terms, mostly by a few tenths of a percentage point. This was largely the case in smaller cities, where the increases in available office space were relatively large. In eastern Germany in particular many cities still register two-digit vacancy rates. In Brandenburg an der Havel the vacancy rate is the highest at almost 20%. In contrast, the vacancy rate dropped below 5% (the rate usually defined as natural rate) in 80 out of the 126 cities in 2018. In fact, it is even below 3% in 30 cities and below 2% in nine (Berlin, Erlangen, Freiburg, Göttingen, Ingolstadt, Ludwigshafen, Munich, Münster and Tübingen). About one-third of the total increase in the number of office workers during the cycle took place in these cities. As economic activity remains strong, new office space is urgently needed.

Office: Vacancy ratio 40

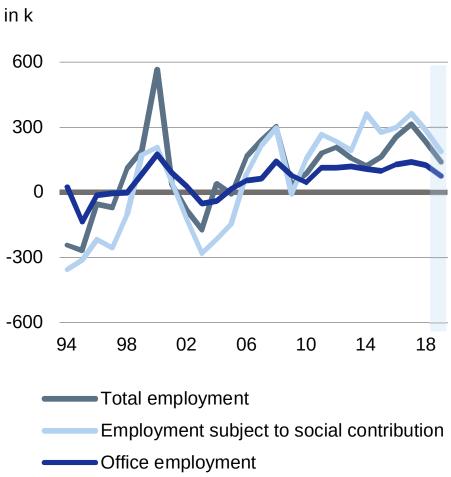


Sources: riwis, Deutsche Bank Research

In 2018, top rents in city locations, peripheral city locations, peripheral locations and central business districts averaged slightly more than EUR 10 per sqm across Germany, with average rents rising to EUR 8.40. Both series have reached new highs since 2001. In addition, both series have seen the strongest year-on-year rises since 1992, at about 3%. Current bottlenecks are increasingly feeding through to rent growth, with rents going through the roof if vacancy rates are very low. This is also visible from average rents in metropolitan areas (A-cities). Vacancy rates in these areas have declined to less than 4%, and both top and average rents were up by more than 5% year-on-year in 2018. Moreover, both series reached new all-time highs during the current cycle, at EUR 21.60 and EUR 16.30 per square meter, respectively, and even exceeded the peaks seen after the German reunification.

Initial rent yields fell across all segments in 2018, both in metropolitan areas and nationwide. Nationwide, they declined to 7.6% in peripheral areas in 2018, down from 8.7% in 2009, and to 5.6% in central locations, down from 7.1% in 2009. Risk premiums for offices in metropolitan areas declined even more strongly. Rent yields in peripheral areas have almost halved in comparison to 2009, from more than 7% in that year to 4.0%. In central areas, they were down to about 3%, from 5.4% in 2009. Office properties in central metropolitan areas are increasingly priced like safe investments. This trend is understandable, seeing that people are moving towards metropolitan areas and interest rates are low. However, much of the development is due to the expectation that the large euro-area countries will register lower growth rates than Germany in the long run. This assumption might be wrong, at least in the very long run, as the demographic effects are highly unfavourable: the German population is ageing.

Employment in 126 cities 41



Sources: riwis, Deutsche Bank Research

We expect employment to grow further in 2019, even though recent data point to a slowdown. We forecast an increase by 360,000 in 2019. 160,000 new jobs will probably be created in the 126 bulwiengesa cities, with the number of office workers rising by almost 76,000 to a total of 7.8 million as the economic slowdown in Germany as well as the shortage of labour takes its toll. This would be the smallest increase since 2010, when only 47,100 new jobs were created. It would also be below the average for the cycle as a whole. On average, more than 100,000 new office jobs have been created each year during the cycle since 2009. Just like in the last few years, many new jobs will probably be created in cities with low and very low vacancy rates. As a result, another 2 million sqm or a bit more than 1% of the current existing space will probably be needed in 2019. Adjusted for demolished buildings, new construction amounted on average to less than 1% of the existing space during the cycle. It is therefore likely that vacancy rates will decline again, from 5.2% in 2018 to 5% in 2019.

They might even drop further in subsequent years. Over the last few years, investments in commercial space have lagged behind investments in residential space, mainly due to high vacancy rates for office space. As vacancies decline, competition for construction managers, construction workers and machinery and equipment will increase and construction activities in the two segments will probably converge. As capacity utilisation in the construction sector is at a historical high, we expect investment activity to be relatively price-inelastic. Overcapacities are unlikely, at least in Germany as a whole and for the next few years, and the cycle in the office market will probably not end any time soon. In addition, many of today’s managers have probably seen what happened when supply was excessive around the turn of the millennium and after the reunification in the east and are unlikely to engage in speculative new construction projects.

Overall, rents are likely to rise in the medium term. However, due to numerous political uncertainties and the fact that overall growth is expected to slow considerably, rent growth will probably slow in 2019. Following an increase by about 3% (both top and average rents) in 2018, we now forecast rent growth of about 2 ½%. Nevertheless, rent growth will remain strong or even accelerate in some cities with particularly low vacancy rates.

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Printed by: HST Offsetdruck Schadt & Tetzlaff GbR, Dieburg

ISSN (Print): 2511-8552