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REAL ESTATE MARKET GERMANY 2018 | 2019

Strong demand drives up residential and office rents in metropolitan areas

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DZ HYP

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PREFACE

Dear readers,

As one of the leading commercial real estate banks in Germany, DZ HYP regularly analyses the markets it actively covers, in order to better assess opportunities and risks. This year, the eleventh edition of the German real estate market study focuses on real estate market developments concerning retail, office and residential buildings at Germany's top locations – namely Hamburg, Berlin, Dusseldorf, Cologne, Frankfurt, Stuttgart and Munich.

As a whole, these real estate markets continue to benefit from the positive economic environment in Germany. The trend of high demand on office markets is continuing, supported by favourable labour market data – at the same time, there is an increasing shortage of floor space. Therefore we expect an increase, albeit on a moderate level, of the most expensive rents for all top locations during the current and the next year. The same applies to residential investment markets [at the top locations mentioned], where population growth is outstripping building completion figures. Despite accelerating housing construction, no relief to this pressure is in sight. Hence, the boost in rent levels is likely to continue throughout the forecast period. City-centre retailers, in contrast, are increasingly feeling the pressure of online competition, leading to reluctant demand for floor space. We reckon top rents within this segment, which have been stagnating since 2015, will remain on the same level until year-end 2019.

The study presents a detailed discussion of the increasingly sought-after co-working model – a market that especially capitalises upon the shortage of office floor space. The range of flexible labour market solutions is vast, providing numerous possibilities for several sectors – not just the start-ups and freelancers.

The German real estate market study is of course also available in German. All current reports can be downloaded from our website; feel free to contact us if you prefer a hard copy.

Yours sincerely,

DZ HYP

October 2018

SUMMARY

This eleventh edition of our market report shows growth for office and residential properties, but subdued sentiment for retail

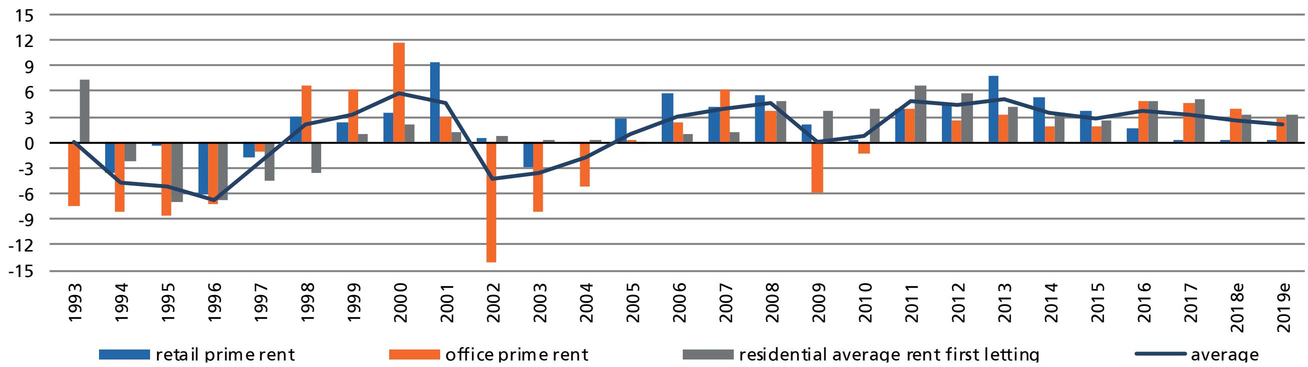
» Economic conditions for the commercial real estate markets in the seven top German locations of Berlin, Cologne, Dusseldorf, Frankfurt, Hamburg, Munich and Stuttgart could scarcely be any better. However, trends vary, as was the case last year. We discuss this in the current, eleventh edition of our annual market report which analyses the retail, office and residential segments.

» Conditions remain buoyant in the two sub-markets of office and residential. High demand, combined with a shortage of supply, are driving up rents here again. However, the picture is different for prime high street locations in the retail sector, which have long been the driver for the commercial real estate market. Increasing tough competition from the emergent online shopping segment has visibly dampened demand for sales space from retailers. Prime rents, which have risen to peak levels in the retail sector since 2013, are therefore stagnating.

» The fact that e-commerce has not yet hit the retail sector even harder is partly due to the economic trend, which has cooled slightly as a result of international problems, but which essentially remains healthy. The ninth year of the upturn is leading to record employment, lower levels of unemployment than for decades, and growth in wages and pensions. The seven major cities we have reviewed are also expanding, and are benefiting from demographic growth, higher levels of employment, and large numbers of tourists. Customer potential in the retail sector is increasing here, as are the number of office jobs needed and housing demand.

» Thanks to the favourable economic climate and continuing very low interest rates, investor demand for commercial real estate remains high. There is a good chance that investment volume will be as high in 2018 as in the three previous years. However, further growth is unlikely given the continuing shortage of core properties. Investors are therefore increasingly compromising in terms of location and property quality. The decline in yields for new rentals has nevertheless slowed at the level reached, which in some cases is less than 3 per cent annually.

TOP LOCATIONS: HOME AND OFFICE RENTS CONTINUE TO RISE, BUT RETAIL STILL STAGNATING
RENTS COMPARED TO PREVIOUS YEAR IN % (TOP LOCATIONS)



Source: BulwienGesa, DZ BANK Research forecast

Retail – rents stagnate after prolonged boom

Retail: online shopping is also capping rent growth in emergent top locations

» There are increasing signs that sentiment for city centre retail is deteriorating. As of the end of August, the merger of Karstadt and Kaufhof, which has been under discussion for many years, is clearly close to completion. Despite buoyant economic conditions, the number of insolvencies in the retail sector is growing. And planned retail developments, such as the expansion of the HessenCenter in Frankfurt, are now being cancelled. Instead, considerable sums are being spent on the refurbishment of many shopping centres in order to continue to attract customers.

» Retail activity close to city centres remains very buoyant in the seven top locations thanks to the growing number of potential customers. Contributory factors here are rapid demographic growth in cities and their catchment areas, and high visitor volumes. High street shopping areas are correspondingly full. Customers come to walk around, and eat in the many restaurants, but are no longer buying as much. The proportion of e-commerce relative to total retail sales is not in fact overly high at 10 per cent. However, clothing, footwear and electronics are to a large extent purchased online, with a particular impact on city centre retail.

» Retailers are reacting to the shift to online shopping by focusing on certain locations and reducing the size of shop floors. However, demand for space from restaurants, city-centre supermarkets and fitness centres has stabilised. Levels of prime rents are therefore being maintained, having climbed by around 40 per cent to an average of nearly EUR 300 per sqm in the last ten years. We expect rents to remain stable in the forecasting period up to 2019. However, landlords will have to make concessions. These will include shorter contract periods with options to extend, and sales-related rental clauses.

FORECASTS FOR RETAIL PROPERTIES

	Prime rents in EUR per sqm			Change in prime rents in % vs. prev. yr.		
	2017	2018e	2019e	2017	2018e	2019e
Berlin	310	310	310	0.0	0.0	0.0
Dusseldorf	280	280	280	1.8	0.0	0.0
Frankfurt	300	300	300	0.0	0.0	0.0
Hamburg	285	285	285	0.0	0.0	0.0
Cologne	255	255	255	2.0	0.0	0.0
Munich	345	345	345	0.0	0.0	0.0
Stuttgart	250	250	250	0.0	0.0	0.0
Top locations average	**298.4**	**298.4**	**298.4**	**0.3**	**0.0**	**0.0**

Source: BulwienGesa, Feri, DZ BANK Research forecast
The prime rent represents the average of the top 3 to 5 per cent of market rentals, and the figure stated does not therefore correspond to the absolute prime rent.

Office – lower vacancy rate dramatically reduces supply of space

Office: high demand for space drives up prime rents in all top locations

» Despite continuing strong employment growth in top locations, office space there has only expanded to a manageable extent in recent years. The supply of available office space has thus fallen dramatically. In Berlin, Munich and Stuttgart, the vacancy rate has shrunk to around 2 per cent, and to around 4 per cent in Hamburg and Cologne. It is therefore becoming increasingly difficult for potential tenants to rent large interconnecting space in their desired locations. Reserves of vacant property are more extensive only in Dusseldorf and Frankfurt, where more than 7 and more than 8 per cent of office space respectively remains unoccupied.

» In this climate, it is not surprising that prime rents are rising in all top locations. However, apart from Berlin, rent growth is fairly moderate. Clearly, even the space shortage is not prompting cost-conscious companies to enter into expensive rental contracts. In order to contain fixed costs, they are also taking up the growing supply of coworking space, particularly if they only need space temporarily. The success of this on-trend flexible renting of fully equipped office space is also attributable to the shortage of space. We expect the moderate increase in prime office rents to essentially continue in the forecasting period up to 2019 as the number of vacant properties continues to fall.

FORECASTS FOR OFFICE PROPERTIES

	Prime rents in EUR per sqm			Change in prime rents in % vs. prev. yr.		
	2017	2018e	2019e	2017	2018e	2019e
Berlin	30.0	32.7	34.0	7.1	9.0	4.0
Dusseldorf	24.5	25.0	25.5	0.0	2.0	2.0
Frankfurt	38.5	39.5	40.5	8.5	2.6	2.5
Hamburg	26.5	27.0	27.5	1.9	1.9	1.9
Cologne	21.0	21.5	21.9	0.0	2.4	2.0
Munich	36.0	37.0	38.0	3.7	2.8	2.7
Stuttgart	21.4	22.0	22.5	8.6	2.8	2.3
Top locations average	**29.3**	**30.5**	**31.3**	**4.7**	**4.1**	**2.8**

Source: BulwienGesa, Feri, DZ BANK Research forecast
The prime rent represents the average of the top 3 to 5 per cent of market rentals, and the figure stated does not therefore correspond to the absolute prime rent.

Residential – housebuilding picks up, but insufficient to meet housing needs

Residential: housing markets in top locations remain strained and continue to drive up rents

- Reserves of vacant properties have long since been used up in housing markets in the top locations. As a result of strong demographic growth, new building lags behind housing demand despite an increase in the number of completions. This is making construction more difficult. On the one hand, the pressure is mounting in the seven cities whose populations have increased by 1 million people since 2007. While building land is becoming more scarce, protests by residents are increasing. On the other hand, capacity in the construction sector has been largely exhausted, which is also driving building costs up sharply. This is widening the gap between the number of homes approved and actually completed.
- There is no sign of conditions easing in the housing markets, and the upward momentum for residential rents is therefore likely to persist in the forecasting period up to 2019. However, we expect the pace of growth in the initial rents we have reviewed to weaken, because the larger number of completions is improving the supply of fairly expensive new apartments.

FORECASTS FOR RESIDENTIAL PROPERTIES

	Average initial rents in EUR per sqm			Average initial rents in % vs. prev. yr.		
	2017	2018e	2019e	2017	2018e	2019e
Berlin	12.5	12.9	13.2	4.2	2.8	2.7
Dusseldorf	12.8	13.2	13.5	1.6	3.1	2.3
Frankfurt	15.1	15.5	16.0	2.0	2.6	3.2
Hamburg	13.9	14.3	14.7	3.7	2.9	2.8
Cologne	12.5	13.0	13.5	4.2	4.0	3.8
Munich	18.5	19.2	20.0	8.8	3.8	4.2
Stuttgart	14.5	15.4	16.0	11.5	6.2	3.9
Top locations average	**14.0**	**14.4**	**14.9**	**5.1**	**3.4**	**3.2**

Source: BulwienGesa, Feri, DZ BANK Research forecasts

CURRENT ECONOMIC CLIMATE IN GERMANY

German economy still on a growth course despite headwind

German companies remain very calm in the face of the international risks. The ifo business climate index, which fell again slightly in July, picked up again surprisingly strongly in August. Despite all the current risks and uncertainties, German companies remain convinced of the stability of the domestic economy. One reason for this is the easing of the USA/Europe trade dispute following the meeting between Trump and Juncker. However, an escalation of the conflict between the USA and China could still take its toll. The continuing relatively wide gap between positive assessments of current conditions and more sceptical expectations has often served as a warning sign in the past and may be indicative of a forthcoming economic slowdown. Current survey results nevertheless show that sentiment in German boardrooms remains positive. This is also due to the fact that sectors which are very strongly geared to the domestic market remain extremely buoyant, first and foremost the construction industry, where companies are currently struggling to keep up with orders. True, macroeconomic growth will probably come in below 2% in 2018, however we still expect a positive result. Given the uncertain global conditions and the shortage of skilled workers, the German economy will be unable to exceed these levels for the time being.

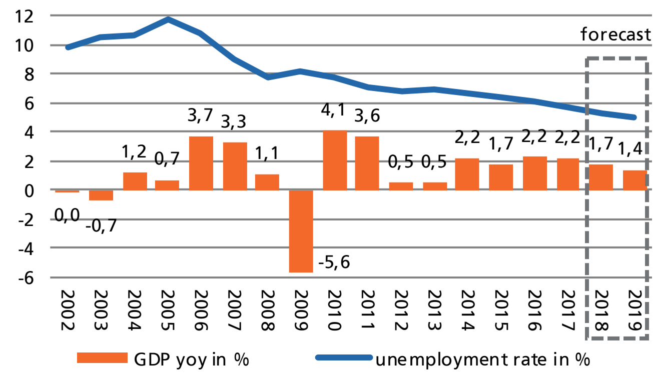
Inflation rate nudges above 2%

Based on preliminary calculations, the inflation rate in Germany – measured by the EU Harmonised Index of Consumer Prices – reached 2.1 per cent in July, unchanged from the previous month. Food and energy prices have shown above-average growth of 6.6 per cent and 2.6 per cent respectively within a year. We still forecast that the average inflation rate will reach 1.9 per cent in 2018, and will remain virtually unchanged in 2019.

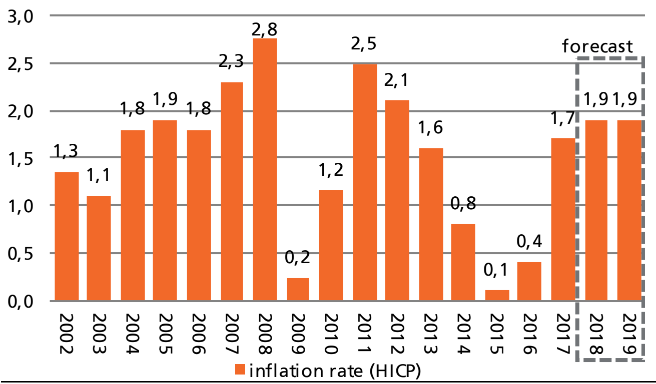
ECONOMIC FORECAST GERMANY

in % y-o-y	2016	2017	2018e	2019e
GDP	**2.2**	**2.2**	**1.7**	**1.4**
Private consumption	2.1	1.8	1.3	1.7
Public consumption	3.9	1.3	0.8	1.6
Investment	3.1	3.2	3.5	2.9
Exports	2.6	4.7	3.2	3.5
Imports	3.9	5.2	3.1	4.9
Unemployment rate (in %)	**6.1**	**5.7**	**5.2**	**5.0**
Inflation rate (HICP)	0.4	1.7	1.9	1.9
Budget balance (in % of GDP)	0.8	1.1	0.7	0.6

MACROECONOMIC GROWTH AND UNEMPLOYMENT



TREND IN CONSUMER PRICES (HICP)



Source: DZ BANK Research

HICP = Harmonised Index of Consumer Prices

COWORKING – A FAD OR A MODEL FOR SUCCESS?

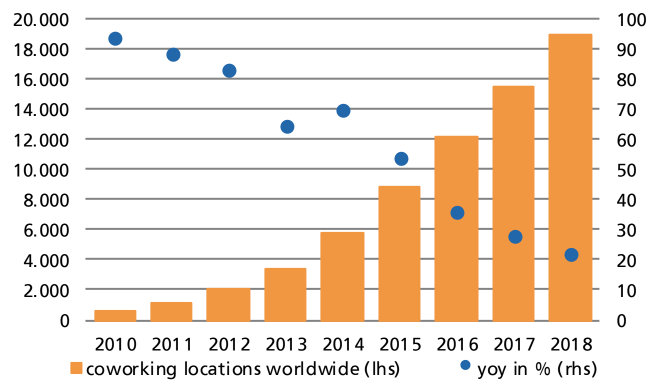
Strong growth in coworking widespread in office market

Coworking is currently a hot topic in the office market. A few years ago this was a virtually unknown concept, but today no report on the office market can ignore it. However, what exactly is coworking, which is often depicted as young people sitting on comfortable leather sofas with laptops? And is it a sustainable concept for the office market in a working world increasingly influenced by digitalisation, or is it merely a passing fad? It is certainly growing fast. Since coworking space was first made available in San Francisco in the middle of the last decade, the number of international coworking locations has literally exploded. Today there are around 20,000 locations worldwide providing working space for a total of 1.9 million users.

Working in a living room atmosphere

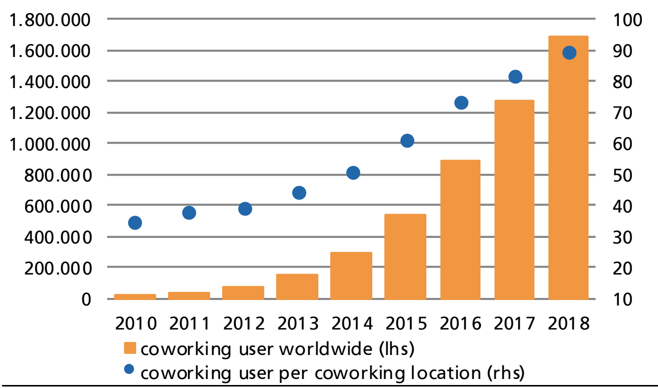
According to a survey by Savills (February 2018), around 550 "flexible workspaces" are available in the market in Germany. The largest proportion consists of 350 coworking spaces based on the narrower definition of the term. Coworking typically consists of rented office workspace equipped with furniture and printers which is ready for immediate use on a flexible - in other words short-term and temporary - basis. Instead of a traditionally partitioned office structure, working areas consist of shared space. The environment is trendy and provides a high quality environment with seating areas and leisure facilities. Offer is geared mainly to entrepreneurs, self-employed people, and freelancers. Communications and networking are a high priority. Operators are mainly local, semi-professional suppliers who also occasionally organise collaborative events for users.

NUMBER OF COWORKING LOCATIONS GROWS RAPIDLY WORLDWIDE



Source: Statistica / deskmag

COWORKING LOCATIONS BECOMING LARGER: AVERAGE NUMBER OF USERS IN LOCATIONS INCREASING



Source: Statistica / deskmag

Coworking in an office market usually refers to hybrid space

However, the main interest in coworking is not focused so much on the pure form of the concept. Office markets are geared more to national or international suppliers such as Design Offices, Mindspace, rent24 or the WeWork hybrid concept. Around 70 locations in Germany are in the market in this segment, particularly in the Top 7 cities, and they are proliferating. They combine a relaxed coworking environment with separate workplaces, in other words offices for individuals and teams which were previously supplied mainly by professionally run business centres. Hybrid coworking providers are extending their user group in this way to include established companies seeking a large degree of privacy, which rules out shared working space. Similar to traditional business centres, the providers of the hybrid concept are mainly situated in attractive office locations.

FLEXIBLE WORKSPACE – DIFFERENT CONCEPTS

Business centres	Coworking spaces	Hybrid coworking
User contract	Community memberships	Community memberships and/or user contract
Individual and team offices	Open-plan	Open-plan, individual and team offices
Professional office services (e.g. secretariat services)	Printers, internet, catering/drinks	Printers, internet, catering/drinks
High-value furnishings	Simple furnishings	High-value furnishings
Professional suppliers	Semi-professional and local suppliers	Professional suppliers
Users are mainly companies, self-employed people and freelancers	Users are mainly entrepreneurs, start-ups, self-employed people and freelancers	Users are entrepreneurs, start-ups, self-employed people and freelancers

Source: derived from Savills

Original form of flexible rented office space is traditional business centre

The traditional form of business centre mentioned above, which consists of fully equipped and flexibly rented office space, is available in 130 locations in Germany. Most are operated by Regus which has around 3,000 locations worldwide. Customers are mainly offered high-value office space in attractive office locations, supplemented by extensive services, such as a secretariat. The working space is separated with a typical structure of office floors. There are generally no communal areas.

Advantage of hybrid coworking is the broad range of supply, making the concept attractive to many user groups

The key feature of the hybrid space on offer is its broad user group: in addition to entrepreneurs, start-ups, the self-employed and freelancers, it is of particular benefit to established companies with their own office locations. Flexible office space offers various advantages for them. Workers can be accommodated here if there is insufficient office capacity at their own premises. Working space can also be provided in places where the company does not have offices of its own. The space can also be used by project teams which can work together successfully here, and - intentionally - carry out specific tasks outside the company location. Established, and financially strong companies are welcome customers for coworking providers. Around two thirds of work places are therefore provided in physically separate areas, in contrast to the pure form of the concept.

For users of hybrid coworking space, space availability is more important than “pure coworking for its own sake”

This type of space allocation is in keeping with a survey of coworking users and providers carried out by Colliers in spring 2018. The main reasons cited for renting space were low fixed costs where only a temporary increase in space is needed, and a lack of space available at the desired location. The third criterion is the need for space in a start-up or growth phase. The original coworking concept, for example involving an exchange of space with other users, a modern working environment and new working methods, is also important to users, but is not quite so popular. Good technical infrastructure and the availability of conference space is very important. General office services and lounges/communal areas are also regarded as positive features. Interest in communal events is fairly limited. City-centre locations in major cities are preferred.

Professional coworking providers account for 5 per cent of office space in the Top 7

Professional coworking providers let around 200,000 sqm of office space in the seven top locations in 2017, five times as much as in the previous year, and around 5 per cent of total take-up. This is a substantial volume given that providers have only been active to any significant extent in Germany since 2015. Conversely, take-up among coworking providers by the narrower definition is marginal, similar to that of business centres.

HYBRID COWORKING OFFER BASED ON THE EXAMPLE OF WEWORK

Offer	Costs	Services provided	Particularly suitable for
Hot desk (coworking)	From EUR 280/ month	Guaranteed working space in lounge area. User brings laptop and looks for a free place.	- Teleworkers and part-time workers - Customer meetings - more than one week per month
Own desk (coworking)	From EUR 340 / month	User has access to a specific desk in communal working area.	- Start-ups and small agencies - Team work and growth - daily use
Private office (business centre)	From EUR 470 / month	Separate, lockable offices which provide space for teams of various sizes. Ready for occupancy and equipped with desks, chairs and cupboards.	- Companies - Core teams, satellite teams - Independence within a community
	For all the above users, some of the following are subject to a charge: conference rooms, printers, internet, postal/package service, refreshments, cleaning, access to other WeWork locations		
Individually structured of-fice environ-ment	individual	Depending on individual requirements, a floor/building is fitted out and made available to the user.	- large companies

Source: WeWork

However, future demand is difficult to gauge

Future demand for professional hybrid coworking space is difficult to gauge. So long as office demand remains high and space is in short supply, providers are likely to benefit. However, how will the situation look if the supply of office space generally improves or demand for office space falters as a result of an economic slowdown? Established companies could opt out of coworking locations previously used because of a shortage of space. However, it is also possible that, despite higher rents, they have learned to appreciate the flexibility of this type of space, and will use coworking arrangements permanently in addition to their own premises in order to reduce dependency on long-term rental contracts. However, an economic crisis would be likely to hit providers of coworking harder.

Competition for coworking providers likely to increase

Providers of coworking are also facing competition as business centre operators such as Regus also jump on the bandwagon. The office property investor alstria has established Beehive - its own coworking concept. As the success of coworking concepts grows, office landlords could themselves become providers by adapting some office space and offering fully equipped working premises as well as vacant office space. This would enable them to service various demand segments themselves and potentially generate higher rental revenue.

Space concepts require special expansion of office floors

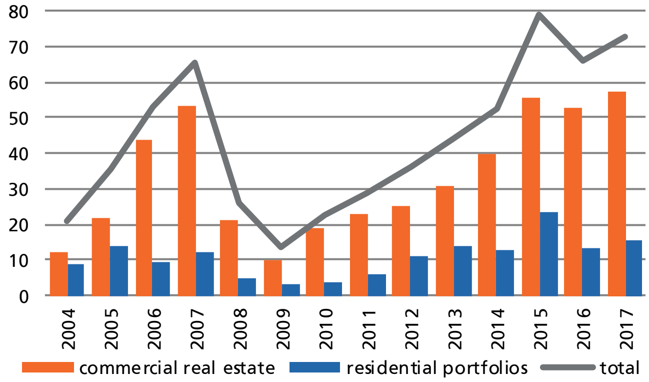
The particular type of space in demand from hybrid providers differs from usual rental demand and poses a challenge for investors and owners of office properties. For it is virtually impossible for coworking providers to realise their space concepts in office floors which are generally fully completed. In fact, the optimal scenario for coworking concepts is to acquire space at the “shell” stage of construction. It is therefore of relevance to landlords whether the professional coworking business model proves sustainable. We expect professional coworking to have substance and not to remain merely a short-lived trend in the office market. However, the supplier structure could continue to evolve.

WILL RENTAL YIELDS ALSO PICK UP AGAIN WHEN INTEREST RATES RISE?

Demand for commercial properties remained high in first half of 2018

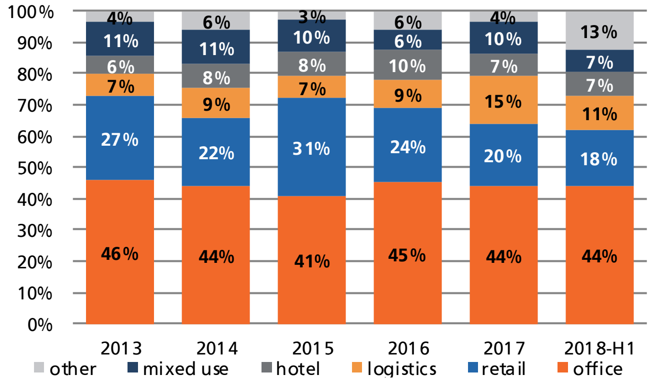
Commercial properties are very popular for investment purposes. After increasing for several years, annual investment volume has reached around EUR 55bn since 2015. Amounts in the double-digit billions have also been invested in housing portfolios. This trend continued in the first half of 2018 when EUR 26bn was spent on commercial properties and EUR 11bn on multi-family homes. While, as usual, nearly half of market volume relates to office properties, the market share for retail properties has declined by several percentage points. The decline in purchases is mainly due to a supply shortage. First-class properties are rare and generate only meagre yields, prompting investors to increasingly look outside prime locations and to focus more on properties which have weaknesses.

COMMERCIAL PROPERTIES AND HOUSING PORTFOLIOS STILL IN DEMAND FROM INVESTORS IN 2017



Source: Ernst & Young

OFFICE PROPERTIES ALSO THE MOST FREQUENTLY TRADED ASSET CLASS OF COMMERCIAL REAL ESTATE

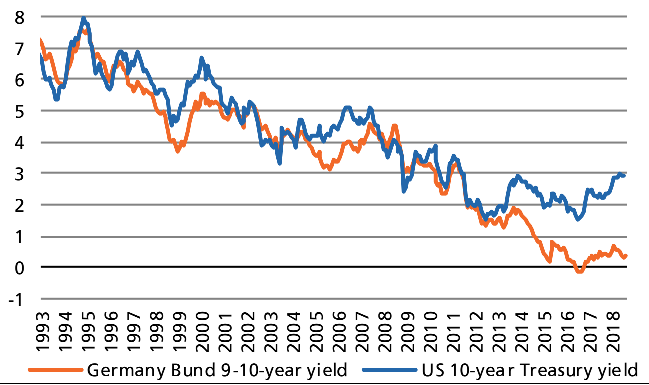


Source: JLL, Colliers (Hotels)

Rental yield falls below 3 per cent for prime commercial properties in the Top 7

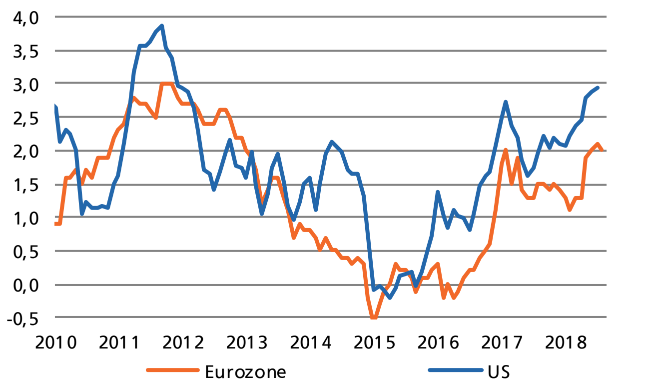
High demand has led to a steady decline in yields. While prime office and retail properties were still generating initial rental yields of around 5 per cent ten years ago, the corresponding figure today is closer to 2 per cent. And multi-family homes currently cost 10 to 15 years of rent more than in 2008. However, bond yields have fallen even more sharply, and the divergence from them therefore remains very wide. There are nevertheless signs that the trend is gradually reversing. Interest rates in the United States have already bottomed out due to the buoyant economy and a visible increase

BOND YIELDS PICKING UP AGAIN IN THE USA, WHILE BUNDS ARE ONLY JUST EDGING ABOVE ZERO
YIELDS OF BUNDS AND US GOVERNMENT BONDS IN %



Source: Datastream, OECD

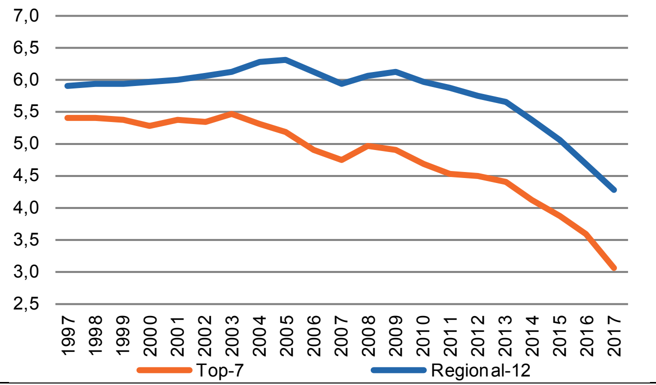
AS INFLATION RISES, LOW INTEREST RATES IN EUROPE ARE ALSO LIKELY TO END
INFLATION RATES IN THE EUROZONE AND THE USA IN %



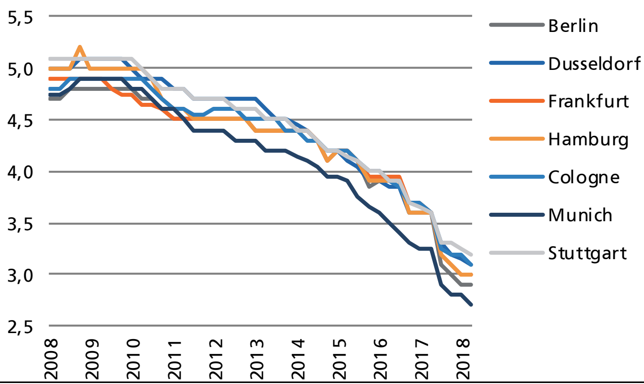
Source: Bureau of Labor Statistics, Eurostat in inflation. The Eurozone still lags behind, but economic output is growing here too, unemployment is falling, and consumer prices are rising. Yields also therefore look set to rise in the Eurozone. Although the ECB will maintain its expansionary monetary policy for some time yet, the likely phasing out of its bond purchase programme in the autumn will signal a gradual shift. The favourable economic climate in Germany and the shortage of properties in most places still speak for buoyant rental business. Rental yields are nonetheless expected to increase as interest rates pick up. However, it is virtually impossible to gauge how strong this trend will be.

As expansionary monetary policy is phased out, rental yields could show movement

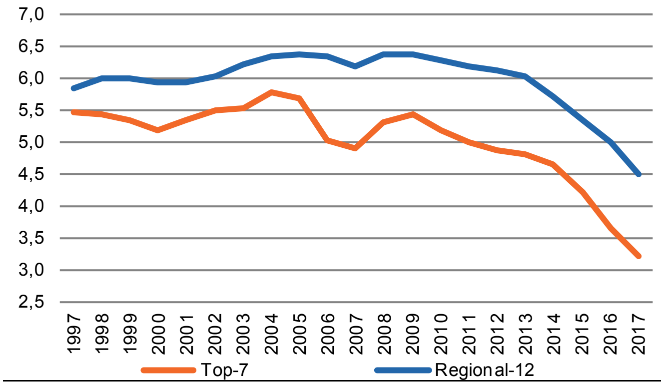
RETAIL: TREND IN INITIAL RENTAL YIELD
NET INITIAL YIELD IN CENTRAL RETAIL LOCATIONS IN %



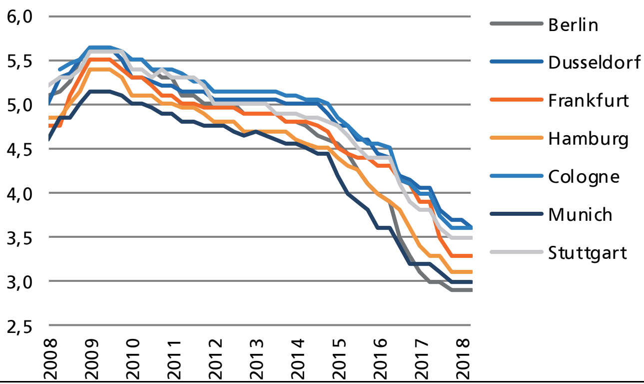
RENTAL YIELD IN INDIVIDUAL TOP LOCATIONS
NET INITIAL YIELD IN CENTRAL RETAIL LOCATIONS IN %



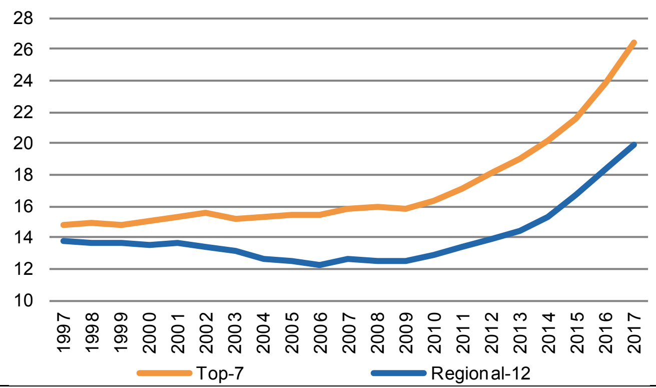
OFFICE: TREND IN INITIAL RENTAL YIELD
NET INITIAL RENTALS IN CENTRAL OFFICE LOCATIONS IN %



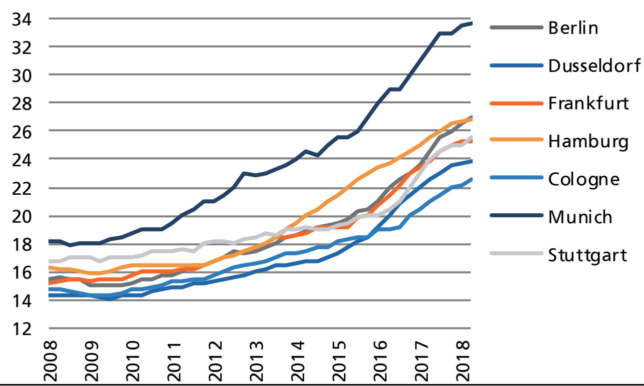
YIELD TREND IN INDIVIDUAL TOP LOCATIONS
NET INITIAL YIELD IN CENTRAL OFFICE LOCATIONS IN %



RESIDENTIAL: RENT MULTIPLE FOR MULTI-FAMILY HOMES
AVERAGE RENT MULTIPLE



RENT MULTIPLE IN INDIVIDUAL TOP LOCATIONS
AVERAGE RENT MULTIPLE



Source: BulwienGesa

Source: BulwienGesa

Explanation: net initial yields for office/retail properties are calculated from the net annual rent and total purchase price including additional costs. For the multi-family home multiple, the purchase price is divided by the "cold" rent in the first year and thus corresponds to the reciprocal value of the gross initial yield.

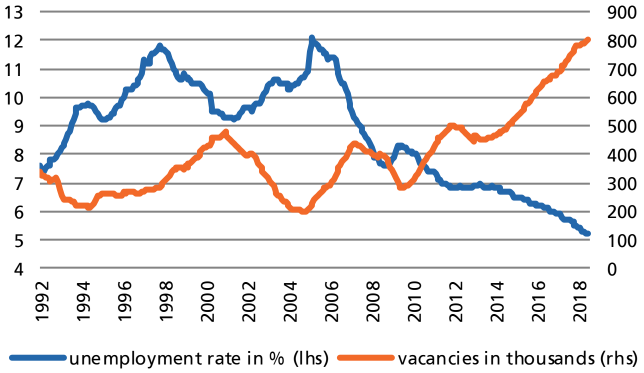
Top 7: Index of top locations Berlin, Dusseldorf, Frankfurt, Hamburg, Cologne, Munich and Stuttgart
Regional 12: Index of regional centres Augsburg, Bremen, Darmstadt, Dresden, Essen, Hannover, Karlsruhe, Leipzig, Mainz, Mannheim, Munster und Nuremberg

RETAIL PROPERTIES

Germany is doing well. There are good reasons why the Federal Republic is one of the most popular countries of destination for immigrants. In recent years prosperity has increased further thanks to the economic upturn under way since 2010, which provides an attractive climate for retail activity. The main contributory factors here are record levels of employment, leading to a visible increase in wages and pensions. Not even international crises such as the forthcoming Brexit or the trade conflict initiated by US President Trump have seriously dampened positive consumer sentiment so far.

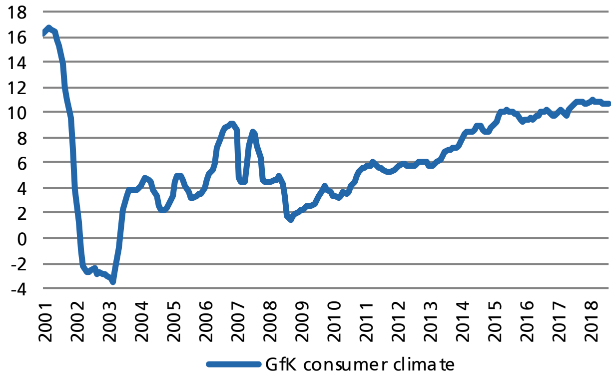
Things are good for the Germans, retail conditions could scarcely be any better

LABOUR MARKET SHOWS NO WEAKNESS: UNEMPLOYMENT FALLING, JOB VACANCIES INCREASE TO RECORD LEVEL



Source: Bundesbank

NEITHER BREXIT NOR TRADE WAR CAN DAMPEN GERMAN CONSUMER SENTIMENT

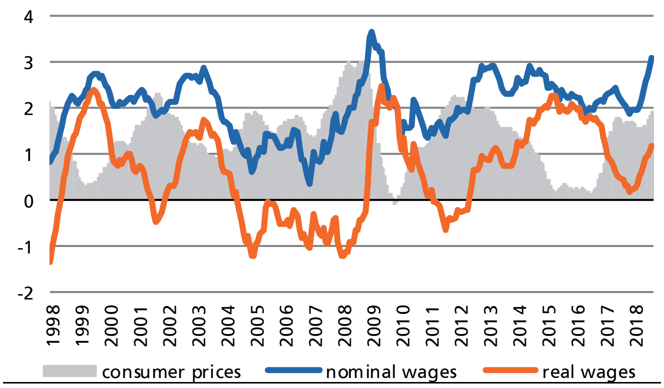


Source: GfK

In the ninth successive year of the upturn, the labour market is contributing to full employment in an increasing number of regions. The unemployment rate calculated by the Federal Employment Agency fell to 5.2 per cent in August 2018. The harmonised figure reported by Eurostat is significantly lower again at just over 3 per cent, currently the lowest level in the Eurozone. In an increasing number of sectors it is impossible for companies to find enough suitable candidates to fill job vacancies and take up training places.

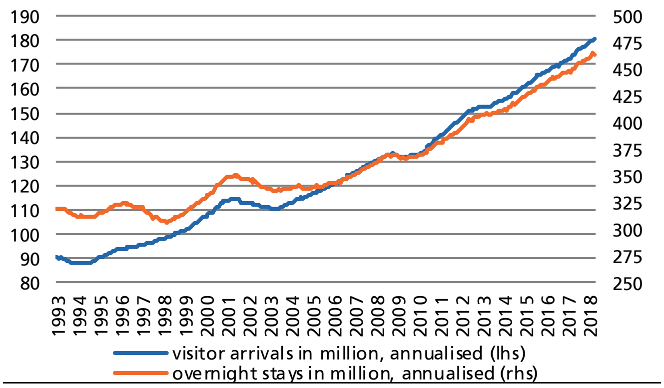
Labour market drives growing prosperity

INFLATION DILUTES REAL WAGE GROWTH SLIGHTLY
YEAR-ON-YEAR IN PER CENT (6-MONTH AVERAGE)



Source: Federal Statistical Office, Thomson Reuters

TOURISM FLOURISHING: SHOPPING TRIPS INCREASINGLY IMPORTANT FOR RETAIL SECTOR



Source: Federal Statistical Office

On closer inspection, only real wage growth has weakened slightly compared to the three previous years. Between 2014 and 2016, consumer prices increased only marginally, thus reducing nominal wages only slightly. However, inflation has now

Higher inflation brakes real wage growth

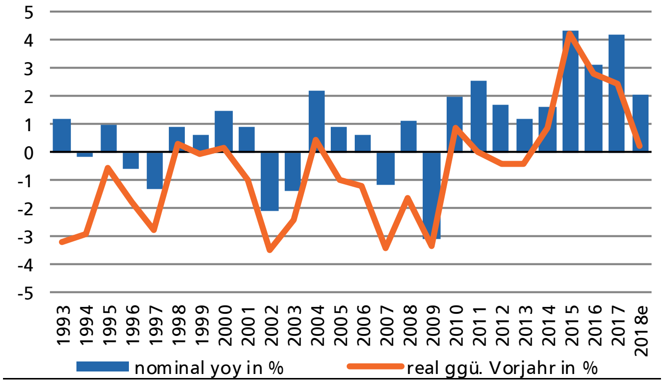
reached the European Central Bank's target of 2 per cent again, clearly offsetting the additional financial scope provided by solid wage growth. It is all the more positive that, after many years of growth, tourism in Germany also shows no sign of weakening. City breaks remain popular, and growth in visitor numbers is leading to longer queues outside popular museums, and increasing footfall in city centres.

Online shopping also impacting on top locations

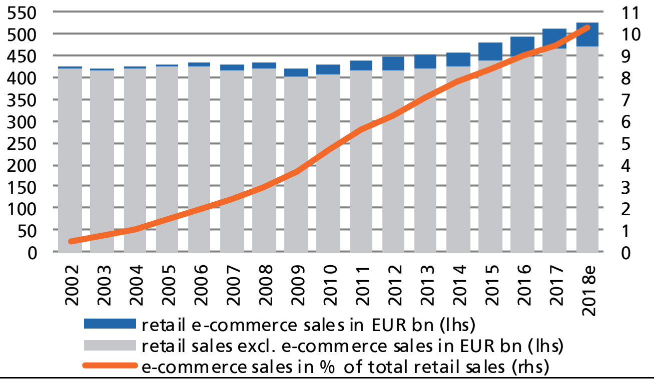
Online shopping a growing concern for city centre retailers

However, the full impact of positive consumer sentiment is not being felt by city centre retailers and retail landlords. Changes in shopping habits as a result of digitalisation are now also a cause of concern in attractive high street locations and shopping centres. For many of the products on offer here such as clothing, shoes and electronics, are no longer being purchased by customers in shops, but ordered online, using a PC at home or a smart phone while travelling. Conversely, local suppliers, such as supermarkets, are less affected by the online boom. The proportion of e-commerce to total retail sales therefore remains manageable at around 10 per cent; however, the impact is greater for city centre retail activity which is trend-driven.

ON AN INFLATION-ADJUSTED BASIS THE GERMAN RETAIL SECTOR HAS ONLY GROWN IN A FEW YEARS *



IMPORTANCE OF E-COMMERCE TO RETAIL SECTOR AS A WHOLE GROWS FROM YEAR TO YEAR *



Source for both charts: HDE

* Retail sales excl. cars, petrol stations and drugstores, excl. VAT

Retail sales growth only briefly reached high levels

It would be easier for the high-street retail sector to absorb the impact of the 10 per cent annual growth in online shopping if overall market growth was stronger. True, retail sales showed strong annual growth ranging from 3 to more than 4 per cent between 2015 and 2017. However, these years were exceptions, since no sales growth on this scale had previously been recorded since the beginning of the 1990s. If we also take account of the growth in consumer prices, the picture becomes even gloomier. Adjusted for inflation, retail sales have grown in only a few years out of a 25-year period, essentially from 2014 to 2017, a phase characterised by high nominal sales growth and low inflation.

Price-adjusted retail sales likely to stagnate this year

Conversely, there are signs of only zero growth in inflation-adjusted retail sales this year. The German Retail Association (HDE) thus expects growth of 2 per cent in total retail sales. However, this is only marginally higher than the expected trend in inflation, and the retail sector could therefore stagnate again despite generally excellent conditions. Based on the much stronger growth in online business, this even indicates a slight decline in high-street retail sales.

Pedestrian zones in small and medium-sized towns already suffering visibly from e-commerce

In many pedestrian zones, particularly in small and medium-sized towns, the abovementioned trend is already clearly visible. Footfall is limited and vacant properties are obvious. The situation is not quite as bad in many growing regional centres and of course in top locations, where shopping streets and shopping centres are generally packed. However, this trend is also leaving its mark on top German retail locations.

Retailers adapt sales channels and reduce sales space

National and international retailers are adapting their in-store concepts to the altered conditions. They are reacting to the shift towards e-commerce - via companies' own online shops or large internet traders such as Amazon or Zalando - by scaling down sales space, concentrating on fewer locations and reducing branch size. However, rental costs are still being kept in check more by other measures. Generally speaking, rent increases are no longer acceptable in high-street locations. In some places, a shift is also taking place away from expensive locations towards much cheaper neighbouring areas. In particular, shorter rental contracts with fixed rents are being agreed and are being replaced by short leases of 3 years with an extension option; sales-related rental payments have also become commonplace.

Retail landlords lose some demand

Conditions are also therefore becoming more challenging for retail landlords. The era of automatic demand for sales space in top locations and of rents outpacing sales is over. Weaker demand for space is also being accompanied by a growing supply of new developments in shopping streets and shopping centres built in recent years. An increasing number of retail chains have also gone bankrupt in the recent past. Examples are Butlers, Strauss Innovation, Wöhrl and – only a few weeks ago – Bench.

More difficult to market space

Instead, it is likely to take longer to market sales space, rental contracts could become shorter, and rent payments more volatile as a result of vacant properties, insolvency or rents linked to sales. This means that high purchase prices for retail properties are also less likely to be justified by the prospect of rising rents, as in the past. The structure of the customer base and requirements are also shifting. Fashion retailers are often being replaced by restaurant chains, supermarkets and drugstores, as well as fitness studios. Owners of retail properties will also have to adjust to shorter periods between refurbishment measures, in order to ensure that their properties remain attractive to chain stores and their customers.

Retail: comparison of top locations

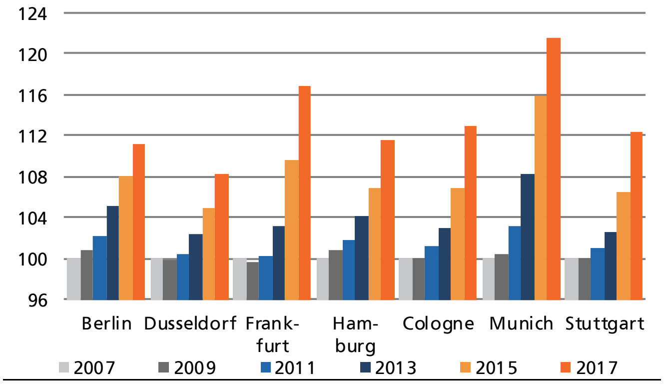
Top locations benefit as retail destinations from strong demographic growth

In contrast to many other cities, demographic growth and flourishing tourism are enabling city-centre locations in prime locations to offset the decline in sales caused by online shopping. The populations of the seven top locations jointly have grown by around 1 million people since 2007. The population of Berlin alone has grown by around 360,000 people. This is creating significant additional purchasing power of nearly EUR 6 bn in the seven top locations, based on the average per capita figure of EUR 5,825 in Germany in 2018 calculated by GfK. The fact that some of this is spent in city centre shops and shopping centres at least mitigates the decline in sales caused by e-commerce.

Strong growth in visitor numbers creates additional sales potential

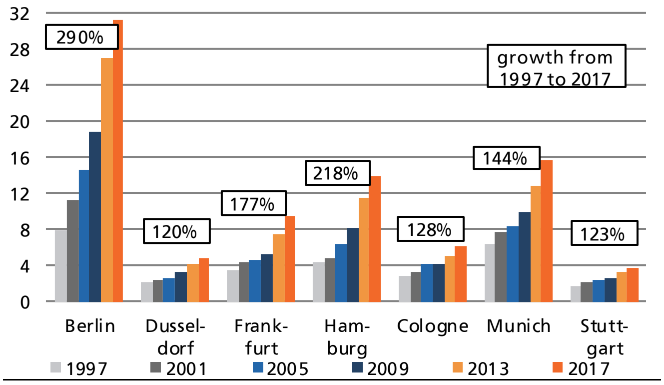
However, the strong growth in the number of visitors has also clearly become a more important economic factor. This is already evident from the large number of hotels which have opened in major German cities. Below the line, around 85 million overnight stays were reported in the top seven locations in 2017, considerably more than in the past. In 1997 the figure was around 29 million, rising to about 50 million in 2007. This growth of 35 million overnight stays within ten years - 14 million of which were in Berlin - generates substantial cash flows for restaurants and hotels, as well as additional revenue for the retail sector. Shopping tourists from abroad in particular, for example from the Gulf states or China, often spend large amounts.

STRONG DEMOGRAPHIC GROWTH ALSO CREATES MORE SALES POTENTIAL IN TOP LOCATIONS
POPULATION 2007 = 100



Source: Feri

IMPORTANCE OF VISITORS AS A DEMAND GROUP INCREASING FOR TOP RETAIL LOCATIONS
OVERNIGHT STAYS IN MILLIONS



Source: BulwienGesa, German Tourism Association (2017)

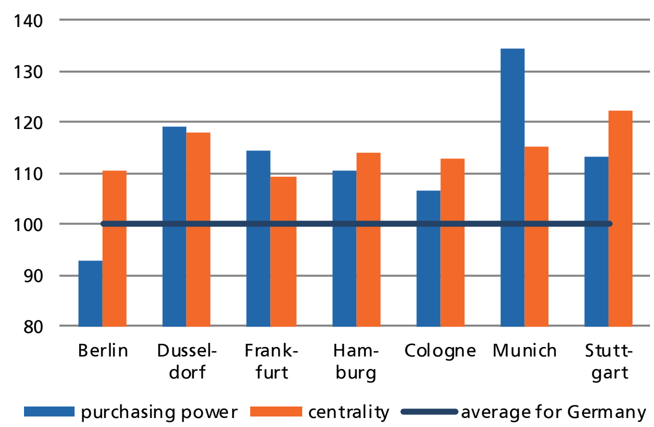
Sales space has expanded strongly over a long period…

Sales space has also nevertheless expanded strongly, although at a much slower rate than the very strong growth visible up to about 2010. Combined with high levels of migration to the Top 7 cities, sales space per capita has essentially stagnated since 2010. Average per capita sales space is around 1.7 sqm in the top locations, although this also includes all retail segments – i.e. also supermarkets and drugstores.

… and, in conjunction with stagnating retail sales, has depressed sales floor productivity

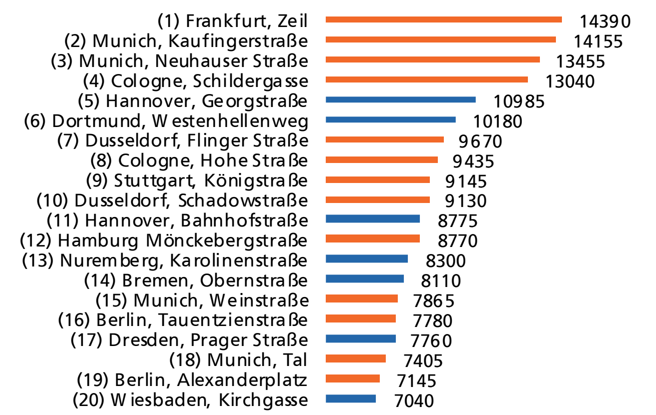
The slower growth in sales space, and growth in retail sales, have clearly had a positive impact on sales floor productivity – sales per sqm of sales space. For while sales floor productivity fell or at best stagnated between the beginning of the 1900s and 2008, sales per unit area recovered considerably again subsequently. However, the levels reached 25 years ago have not been regained. Since these are also nominal sales figures, the retail sector is clearly worse off today in terms of inflation-adjusted sales than 25 years ago.

TOP WEST GERMAN LOCATIONS SHOW CONSISTENTLY ABOVE-AVERAGE PURCHASING POWER



Source: BulwienGesa

SHOPPING STREETS IN TOP LOCATIONS WELL REPRESENTED IN TOP 20 BASED ON FOOTFALL

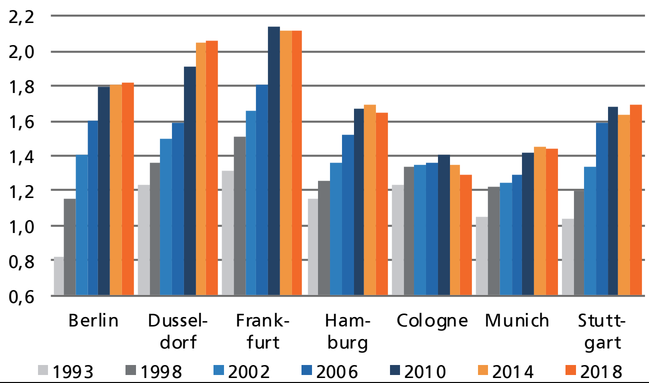


Source: JLL/EHI calculated on 14 April 2018 (Saturday) from 13h to 16h

Peak rents up sharply despite falling sales floor productivity

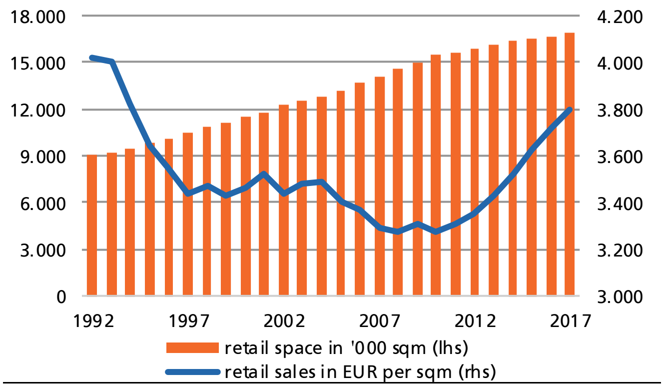
In contrast to the longstanding stagnation or decline in sales floor productivity, prime rents in all the top locations have picked up strongly since the end of the 1990s. Conversely, rent trends in most other large German cities are much flatter. High demand for space in top locations, which has driven rents up, is based on their particular attractions for national and international retailers. Because of their significant purchasing power, high footfall, and international flavour, they are well suited for retailers seeking to enter the German market or test new retail concepts. Other large cities are particularly appropriate for expansion strategies, and because they are more numerous, they are more interchangeable.

DEMOGRAPHIC GROWTH HALTS INCREASE IN PER CAPITA SALES SPACE
PER CAPITA SALES SPACE IN SQM



Source: Feri

SALES FLOOR PRODUCTIVITY ONLY POSITIVE AGAIN IN THE LAST FEW YEARS
RETAIL SALES PER SQM IN EURO (TOP 7)

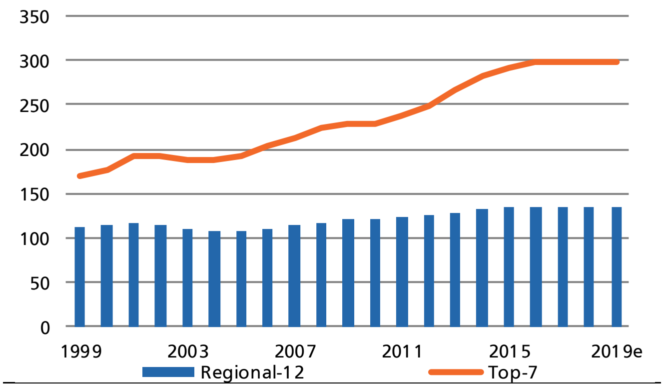


Source: Feri

Only ten years later, when the upturn which followed the financial crisis led to retail sales growth in 2010, sales floor productivity also picked up again. For some years it has been moving in parallel with the continuing growth in prime rents. However, the rent rally in the retail sector ended in 2016 after nearly 20 years at an average of nearly EUR 300 per sqm. During this period, average prime rents almost doubled. Neither the attractions of the top locations supported by demographic growth, falling unemployment and continuing growth in the number of visitors, nor the increase in sales floor productivity facilitated a further increase in rents. With rents already high, and given the continuing success of online shopping, prime city-centre retail locations have also reached the financially viable limits of rental expenditure for sales space.

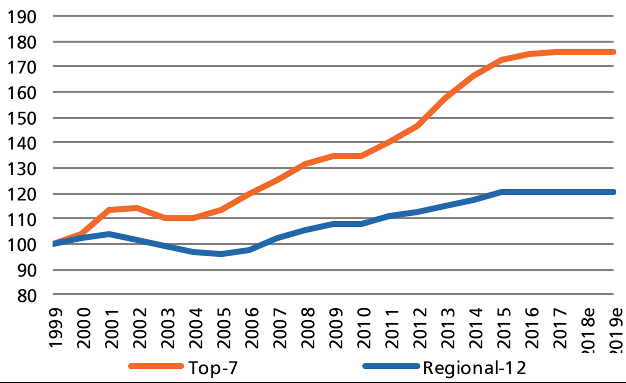
Increase in average prime rents halted in 2016 at just under EUR 300 per sqm

RETAIL: PRIME RENTS STAGNATING, HAVING ALMOST DOUBLED SINCE THE END OF THE 1990S (TOP 7)
PRIME RETAIL RENTS IN EURO PER SQM



Source: BulwienGesa, DZ BANK Research forecast

WIDE DIVERGENCE IN PRIME RETAIL RENTS BETWEEN REGIONAL CENTRES AND TOP 7
PRIME RETAIL RENTS, INDEXED, 1999 = 100



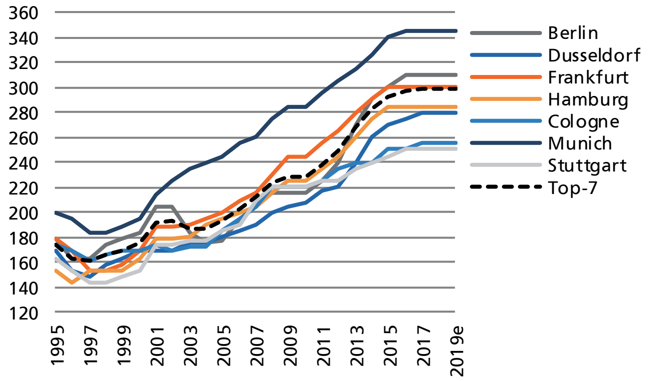
Source: BulwienGesa, DZ BANK Research forecast

Up to 2016, prime rents in all seven top locations increased visibly. However, the pace varied. On average, prime rents increased by around 40 per cent between 2007 and 2017. However, the rate of increase was only half this level in Stuttgart, while prime

Within 10 years prime rents have risen by 20 to 50 per cent depending on the top location

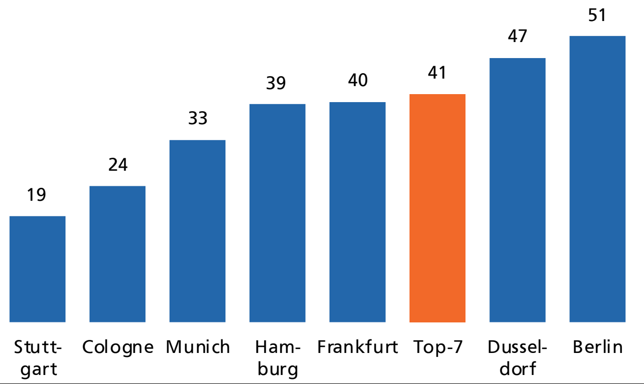
rents in Berlin and Dusseldorf picked up by only about 50 per cent. In mid-2018, prime rents per sqm were in the region of EUR 100. The two cheapest locations are Stuttgart and Cologne at EUR 250 and EUR 255 respectively. Levels in Dusseldorf and Hamburg are similar at EUR 280 and EUR 285 per sqm. The three most expensive cities are Frankfurt, Berlin and Munich at EUR 300, 310 and 345 per sqm. Prime rents everywhere have remained stable since mid-2017.

RETAIL: RANGE OF PRIME RENTS BETWEEN MUNICH AND STUTTGART NEARLY EUR 100 PER SQM
PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, DZ BANK Research forecast

IN THE LAST TEN YEARS, PRIME RENTS HAVE RISEN MODERATELY TO STRONGLY, DEPENDING ON THE LOCATION
PRIME RETAIL RENTS, INCREASE BETWEEN 2007 AND 2017 IN %



Source: BulwienGesa

Food courts a recipe for success? An easier adjustment for retailers than landlords

While retailers can adjust to the shift in customer behaviour caused by digitalisation by realigning their sales channels, landlords have to adapt sales space as demand from retailers declines. It remains to be seen whether the gap can be closed by the many restaurants and large food courts which are increasingly a feature of shopping streets and shopping centres. However, since eating out has become increasingly popular in Germany in recent years, the prospects for the catering sector are good.

The next few years will be challenging for the retail sector

In any case, city centres and shopping centres are likely to continue to face challenges in the years ahead as customer preferences change, and not only because it will be virtually impossible to implement rent increases. The merger of Kaufhof and Karstadt, which is close to completion (per the end of August), could prove to be a game changer, because it will probably lead to a number of store closures. However, top city centre locations are not expected to suffer, since footfall should remain high there.

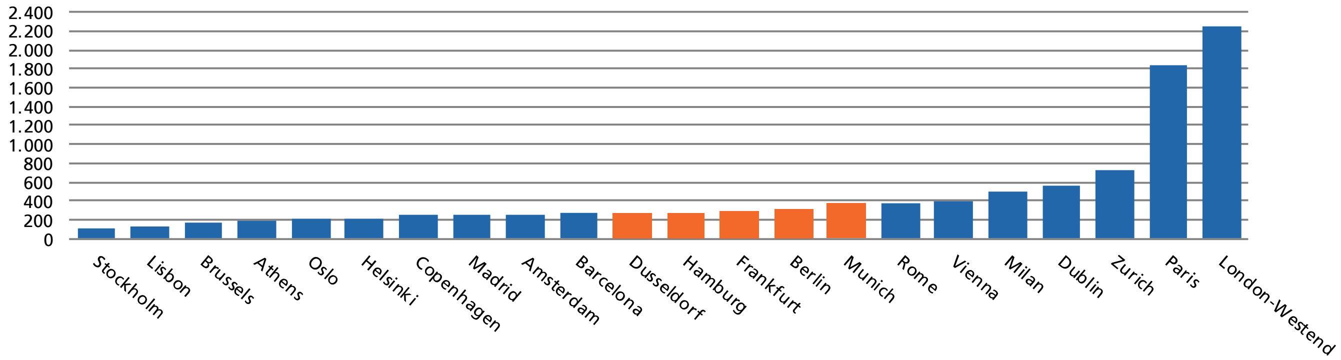
European retail

In the European retail sector, London and Paris still enjoy a clear lead in terms of rent levels. Prime rents in top German locations are average by European standards, despite a buoyant economy and years of strong growth in retail rents. However, when making comparisons with other countries, it has to be borne in mind that capital cities often function as pre-eminent shopping locations in many countries. For example, this is the case in France/Paris, Austria/Vienna, the UK/London, and Ireland/Dublin. A large proportion of retailer interest is thus focused on these locations, since there are no equivalent alternatives. The situation is different in Germany which has seven top retail locations, giving retailers more choice.

Prime rents in large German cities average by European standards

PRIME EUROPEAN RETAIL RENTS: LEVELS ARE AVERAGE IN LARGE GERMAN CITIES, BUT MUCH HIGHER IN LONDON AND PARIS

PRIME RETAIL RENTS IN EUR SQM MONTHLY

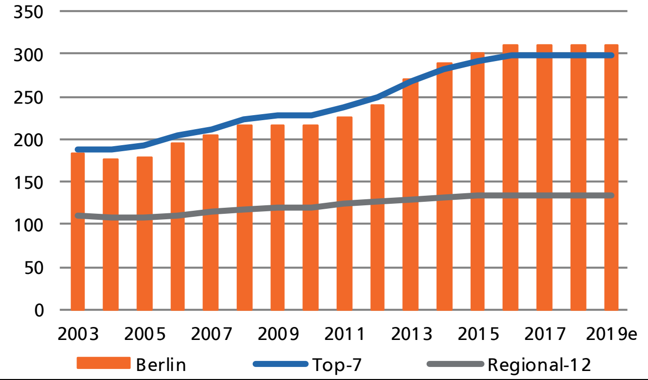


Source: BNP Real Estate

Per: Q4/2017

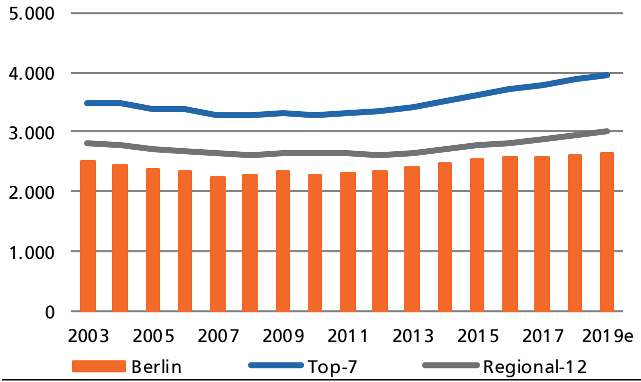
Retail space in Berlin

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

Berlin has become a top retail location even Europe-wide

Berlin has done exceptionally well as a retail location and, for some time now, the city has been scoring high with investors and retailers alike, driven by a catchment area of over five million people, strong population growth, and the fact that it is a trend-setter and tourist high spot with 31 million overnight stays p.a. Foreign retailers in particular are still keen on Berlin as their point of entry into the German market. Moreover, there has been a marked improvement in Berlin's economic situation with an increase of almost 300,000 in the number of people in employment in the space of ten years. Nevertheless, Berlin is still economically weak. The city scores 93 for purchasing power which is still well below the German-wide average of 100 points. Berlin's retail sector differs from the other top locations in view of its size and the fact that it has a few geographically quite separate shopping areas which are also very different in character. They include the Kurfürstendamm and Tauentzienstraße where rents are the highest, the Alexanderplatz with its high footfall and Friedrichstraße. The trendy Hackescher Markt is also in a good location. The shopping "miles" are bolstered by a large number of shopping centres such as the huge Mall of Berlin. The city is getting two more, the EAST SIDE MALL which opens in the autumn of 2018, while the Schultheiss-Quartier opened its doors to customers for the first time in August, as the first shopping centre in Moabit. As in the other top locations, the increase in floor space and growing online shopping have brought to a halt the rise in prime rents in Berlin at EUR 310 per sqm after a 50% increase over ten years up to mid-2016. The situation is expected to be unchanged this year and next.

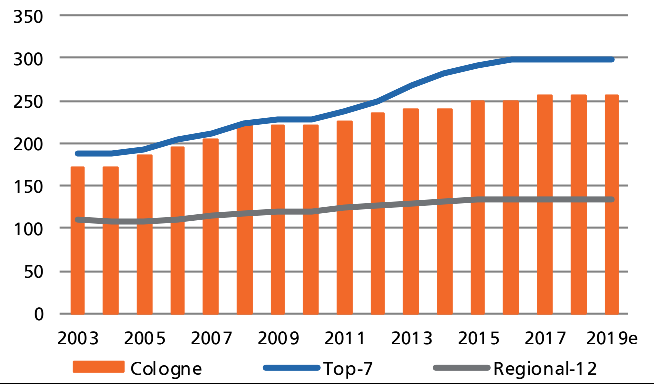
RETAIL SPACE IN BERLIN

		2016	2017	2019e	2019e
Demand					
Per cap. disposable income	EUR/month	1,648	1,683	1,713	1,749
Unemployment rate	%	9.8	9.0	8.5	8.2
Retail sales	EUR m/% yoy	16,348 / 2.5	16,832 / 3.0	17,279 / 2.7	17,756 / 2.8
Retail sales	EUR/sqm	2,579	2,593	2,621	2,642
Supply					
Retail space	in sqm '000	6,339	6,490	6,591	6,720
Retail space	% yoy	0.7	2.4	1.6	2.0
Retail rents					
Prime/secondary location	in Euro/sqm	310 / 14.5	310 / 15.5	310 / 15.5	310 / 15.5
Prime/secondary location	% yoy	3.3 / 0.0	0.0 / 6.9	0.0 / -3.2	0.0 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

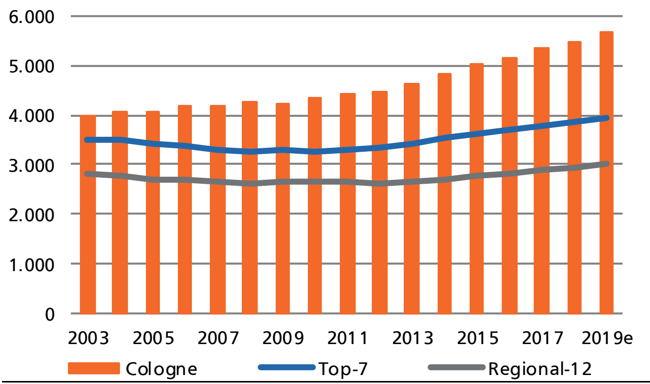
Retail space in Cologne

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

Strong retail location in western Germany

Along with Dusseldorf, the million-strong city of Cologne is the second most important shopping location in Germany's West, a fact which has led to heightened competition. This is likely to be one of the reasons why Cologne now lags behind in the top segment in terms of prime rents, along with the fact that it has a relatively good supply of retail space. Unlike Dusseldorf, Cologne's city centre concentrates more on the mass market. This is true above all of the Schildergasse which has a high footfall and is 90 per cent occupied by high-street brand names. However, lately, Hohe Straße has had to battle with vacant stores. Cologne also has trendy locations which stand out from the typical retailer mix. Moreover, a fairly small luxury segment has become established in the Domkloster/Wallraffplatz area which is likely to benefit from the remodelling of the Dom Hotel. One plus point in the inner city is the three-mile long shopping promenade and the fact that the city offers is an attractive visit experience. A three-million strong catchment area, large number of shoppers from the Benelux countries and over six million overnight stays by tourists and trade fair visitors are all of interest for retailers. However, purchasing power is slightly lower than in the other top western German locations. Unlike in other big shopping destinations, there have been no large-scale retail developments and there are none on the horizon. Slightly larger projects include the refurbishment of the DuMont Carré and of the former family-run clothing store Jacobi in Hohe Straße, in which the Saturn flagship store moved in across five storeys in May 2018. Prime rents are likely to remain at EUR 255 per sqm during the forecast period up to 2019.

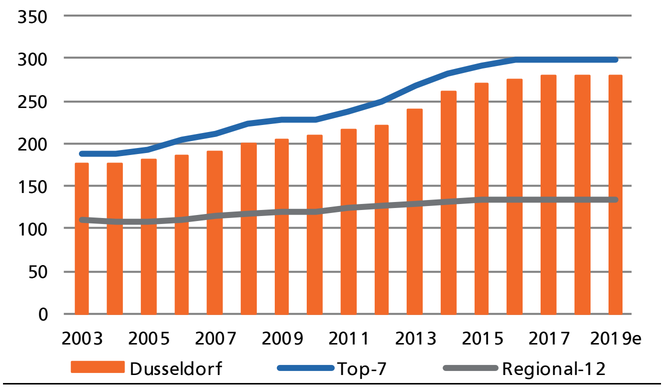
RETAIL SPACE IN COLOGNE

		2016			2017			2018e			2019e		
Demand													
Per cap. disposable income	EUR/month	1,836			1,861			1,885			1,916		
Unemployment rate	%	8.7			8.4			8.0			7.7		
Retail sales	EUR m/% yoy	7,263	/	2.8	7,505	/	3.3	7,735	/	3.1	7,994	/	3.3
Retail sales	EUR/sqm	5,157			5,329			5,487			5,665		
Supply													
Retail space	in sqm '000	1,408			1,409			1,410			1,411		
Retail space	% yoy	-0.1			0.0			0.1			0.1		
Retail rents													
Prime/secondary location	in Euro/sqm	250	/	15.0	255	/	15.0	255	/	15.0	255	/	15.0
Prime/secondary location	% yoy	0.0	/	0.0	2.0	/	0.0	0.0	/	0.0	0.0	/	0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

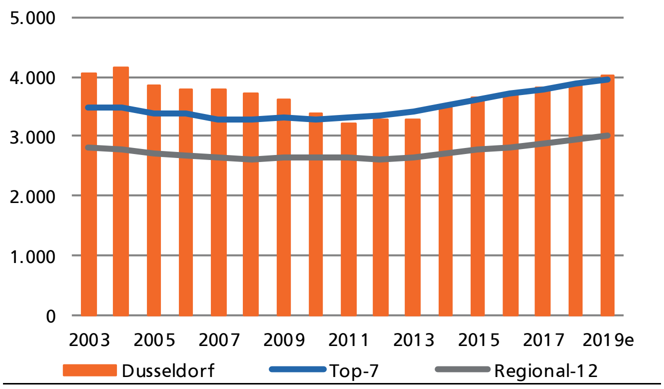
Retail space in Dusseldorf

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

After years of building works in Dusseldorf's city centre, the end is at last is sight

For the past decade or so, Dusseldorf has been one big building site. The flyover has now been replaced by a tunnel and the new underground Wehrhahn line will provide better connections between the local transport network and high-street locations. Existing department stores have been modernised – Carsch-Haus, Kaufhof, Sevens and Kö-Galerie – and new ones added along with shopping centres such as the Kö-Bögen I. However, work on the spectacular Kö-Bogen II and new pedestrian area in the hitherto rather unattractive Schadowstraße have to be completed (scheduled for 2020) before the city can take advantage of all this building work. However, even in its old guise, the shopping location, which is synonymous with fashion and luxury, has performed well. The strength of the location reflects a large catchment area of two million people and high purchasing power, beaten only by Munich among the top seven. Unlike Berlin with its various decentralised shopping locations, retail in Dusseldorf is concentrated in the city centre, which accounts for a large share of one third of all shopping space in the city. Only Stuttgart has a similar concentration; in the remaining top seven, the city centre accounts for a maximum of a quarter of the total sales space. In addition, the luxury end of the Dusseldorf market, the "Kö" offers a quality visit experience, with a wide choice of places to eat and drink. The former strict split between a "bank side" and a "shopping side" is gradually disappearing. Last year, prime rents climbed to EUR 280 per sqm in spite of the endless building site in the city centre, although we expect them to remain unchanged until the end of 2019. Whether or not prime rents can then start picking up after the city's facelift will depend to a large extent on future conditions in the retail sector.

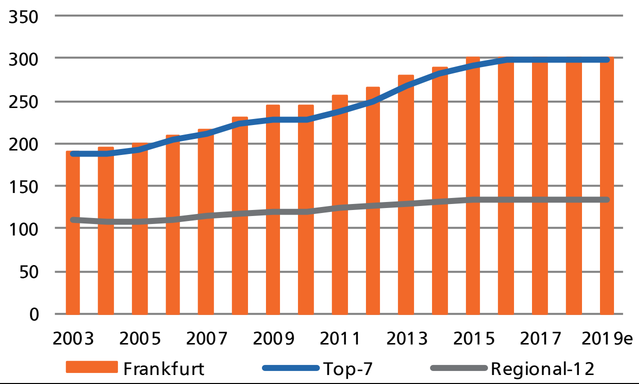
RETAIL SPACE IN DUSSELDORF

		2016			2017			2018e			2019e		
Demand													
Per cap. disposable income	EUR/month	2,145			2,191			2,232			2,278		
Unemployment rate	%	7.8			7.4			7.0			7.0		
Retail sales	EUR m/% yoy	4,624	/	3.4	4,782	/	3.4	4,937	/	3.3	5,110	/	3.5
Retail sales	EUR/sqm	3,728			3,810			3,902			4,005		
Supply													
Retail space	in sqm '000	1,240			1,255			1,265			1,276		
Retail space	% yoy	0.9			1.2			0.8			0.9		
Retail rents													
Prime/secondary location	in Euro/sqm	275	/	16.0	280	/	16.0	280	/	16.0	280	/	16.0
Prime/secondary location	% yoy	1.9	/	0.0	1.8	/	0.0	0.0	/	0.0	0.0	/	-1.3

Source: Feri, BulwienGesa, DZ BANK Research forecasts

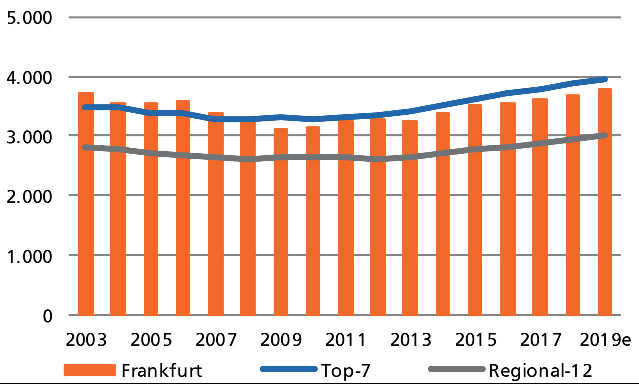
Retail space in Frankfurt

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

Big names pulling out of Frankfurt, highlighting growing challenges facing top locations

Frankfurt is one of the strongest retail locations in Germany with an affluent catchment area of 2.3 million inhabitants, a growing population, rising number of people in employment and visitors, all of which make the city even more attractive for retailers and hospitality firms. The market has responded to demand for retail space with a series of developments such as the Skyline Plaza shopping centre which opened near the trade centre in 2013; the centre is popular because of a large food court. Other examples are developments in the upmarket Goethestraße such as One Goetheplaza or the Ma'Ro. Most of the building at present is in the mass market Zeil area. The Zeilgalerie which has been pulled down is being replaced next to the Kaufhof by the new UpperZeil. Just a stone's throw away, after not even ten years in operation, the MyZeil shopping centre is undergoing a complete modernisation programme which will include a new restaurant area, Foodtopia, and an exclusive programme-cinema. On the eastern edge of the city, the HessenCenter was due to be modernised and expanded. However, the increase in floor space now seems to have reached capacity, and plans to expand the HessenCenter have been scrapped. Moreover, according to press reports, Kaufhof which wanted to take over most of the UpperZeil, which is nearing completion, is now pulling out. It has been known for some time that the branch in the Nordwestcenter is due to close in 2019. Prime rents are the most stable feature of the Frankfurt retail sector at present, having been unchanged at around EUR 300 per sqm since the end of 2015. We cannot see any headroom for prime rents during the forecast period up to 2019.

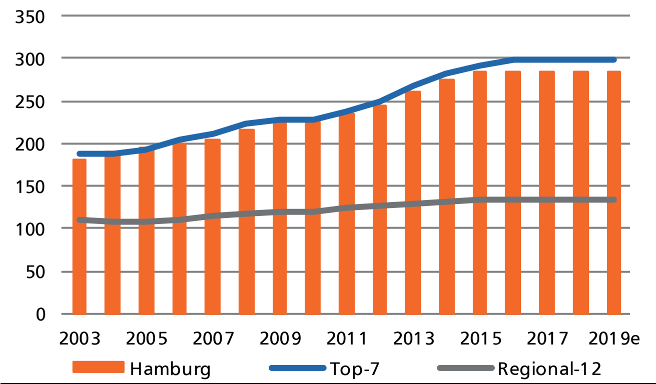
RETAIL SPACE IN FRANKFURT

		2016			2017			2018e			2019e		
Demand													
Per cap. disposable income	EUR/month	1,861			1,900			1,935			1,973		
Unemployment rate	%	6.3			5.9			5.7			5.6		
Retail sales	EUR m/% yoy	5,459	/	3.4	5,648	/	3.5	5,814	/	2.9	5,995	/	3.1
Retail sales	EUR/sqm	3,555			3,630			3,703			3,793		
Supply													
Retail space	in sqm '000	1,536			1,556			1,570			1,580		
Retail space	% yoy	2.2			1.3			0.9			0.6		
Retail rents													
Prime/secondary location	in Euro/sqm	300	/	17.5	300	/	17.5	300	/	17.5	300	/	17.5
Prime/secondary location	% yoy	0.0	/	-2.8	0.0	/	0.0	0.0	/	0.0	0.0	/	0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

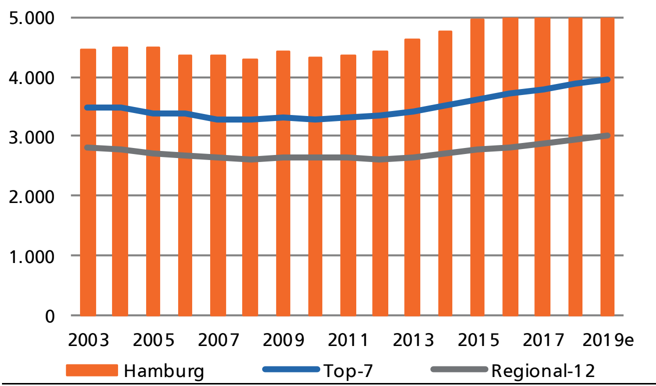
Retail space in Hamburg

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

Many retail developments enhance the attraction of Hamburg as a retail location

The leading shopping location in N. Germany is backed by a solid economic trend, population growth, high purchasing power and a large catchment area of 3.5 million people. In addition, the city has a flourishing tourism trade with some 14 million overnight stays p.a. and close to 900,000 cruise ship visitors. The city offers a broad range of shopping options from conventional mass consumer locations such as the Spitalerstraße and Mönckebergstraße in the eastern part of the city to luxury destinations such as the Neuer Wall in west Hamburg. In between, there is the Europa-Passage with its new Food Court as the only big shopping centre in the heart of the city. All in all, however, the supply of retail space is tight at only 350,000 sqm, which is roughly the same as in the much smaller city of Dusseldorf, although clear progress is being made through a large number of smaller and medium-sized projects. Prime rents have been less dynamic and have been unchanged since the end of 2015 at EUR 285 per sqm. In spite of attractive conditions, an increase is not expected during the forecast period until 2019 because of the success of e-commerce. Two major projects are likely to have an impact on the future of retail. Firstly, a long way in the future, the extension of the city's central station, which would benefit the crossing into the Spitalerstraße. In contrast, the new shopping centre being built by developer Unibail Rodamco in the southern Überseequartier in the HafenCity will have an impact much sooner. As an island solution with 200 shops and almost 70,000 sqm of sales space, the development which is due to open in 2021 could lead to significant competition for the inner city.

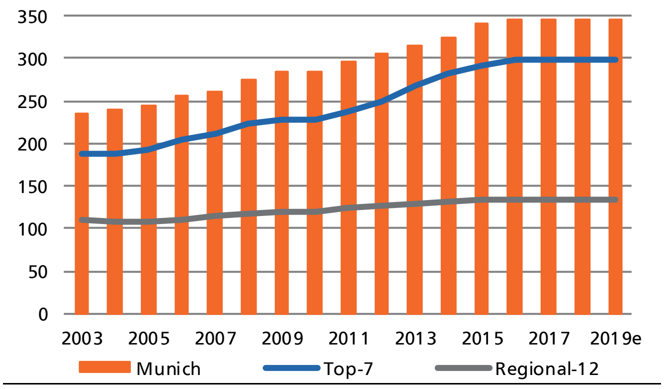
RETAIL SPACE IN HAMBURG

		2016	2017	2018e	2019e
Demand					
Per cap. disposable income	EUR/month	2,052	2,084	2,112	2,145
Unemployment rate	%	7.1	6.8	6.4	6.3
Retail sales	EUR m/% yoy	15,279 / 3.9	15,904 / 4.1	16,480 / 3.6	17,094 / 3.7
Retail sales	EUR/sqm	5,119	5,312	5,482	5,661
Supply					
Retail space	in sqm '000	2,985	2,994	3,006	3,019
Retail space	% yoy	0.4	0.3	0.4	0.4
Retail rents					
Prime/secondary location	in Euro/sqm	285 / 40.0	285 / 40.0	285 / 40.0	285 / 40.0
Prime/secondary location	% yoy	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

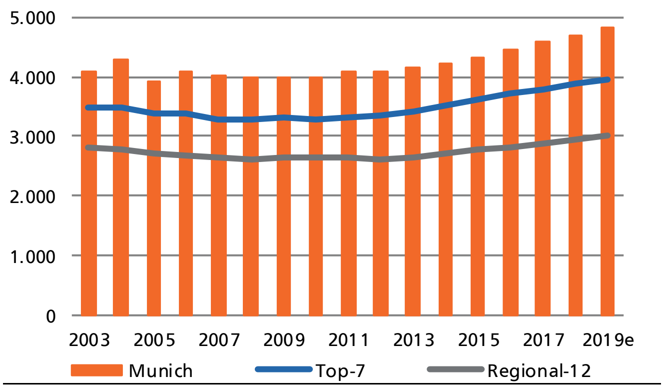
Retail space in Munich

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

Even as Germany's leading shopping destination, Munich should become even more attractive through the many developments underway

Munich is number one in the German retail sector with the highest level of prime rents, retail-space productivity and purchasing power. One major factor in this is an economically strong and exceptionally affluent catchment area of over three million inhabitants, which moreover is growing very fast. In addition, the city welcomes many visitors from home and especially abroad, who account for around 16 million overnight stays p.a. Munich's attraction as a retail destination is also boosted by the fact that the city offers a high-quality visit experience with many cafés and restaurants and a broad range retail offer ranging from the mass-market outlets, to old specialist stores and luxury shops. All these factors mean that Munich has by far the highest prime rents in the German retail sector at EUR 345 per sqm. In addition, although the city has quite a substantial amount of retail space at around half a million sqm, it has not been able to keep up with high demand, not least because it hardly increased for a long time. However, this has changed with city-centre projects such as the Palais an der Oper or the Hofstatt. In addition, there are current developments which will soon boost available retail space, such as the old Hettlage building / the Alte Akademie, the remodelling of the Sattlerplatz or – slightly outside the city centre – the Forum Schwanthalerhöhe in the former XXXLutz, which will be turned into a conventional shopping centre by 2019. The biggest project is Munich's new central station which is expected to take until the end of the next decade to complete. We expect the improvement in space supply and the fact that demand is being dampened by e-commerce to keep a lid on Munich's prime rents until 2019.

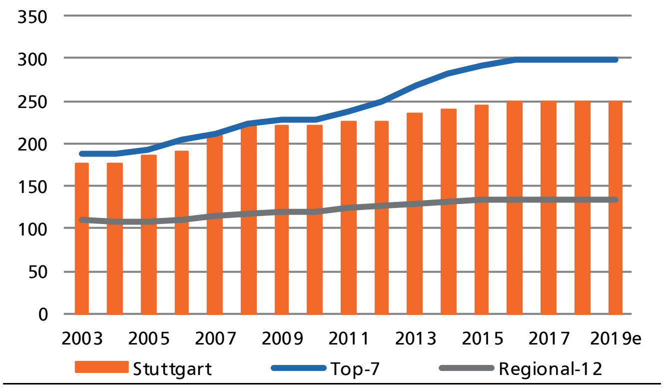
RETAIL SPACE IN MUNICH

		2016	2017	2018e	2019e
Demand					
Per cap. disposable income	EUR/month	2,362	2,416	2,463	2,516
Unemployment rate	%	4.6	4.2	3.9	3.7
Retail sales	EUR m/% yoy	9,317 / 3.9	9,689 / 4.0	10,028 / 3.5	10,389 / 3.6
Retail sales	EUR/sqm	4,471	4,595	4,704	4,817
Supply					
Retail space	in sqm '000	2,084	2,109	2,132	2,157
Retail space	% yoy	0.7	1.2	1.1	1.2
Retail rents					
Prime/secondary location	in Euro/sqm	345 / 38.0	345 / 39.0	345 / 39.0	345 / 39.0
Prime/secondary location	% yoy	1.5 / 2.7	0.0 / 2.6	0.0 / 0.0	0.0 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

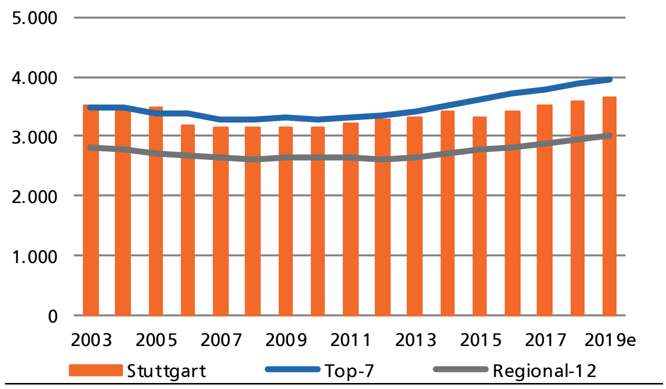
Retail space in Stuttgart

PRIME RETAIL RENTS IN EUR PER SQM



Source: BulwienGesa, Feri, DZ BANK Research forecasts

RETAIL SALES IN EUR PER SQM



Source: Feri

The city has coped well with the increase in retail space from three new shopping centres in a short space of time

The retail sector in Stuttgart benefits from 2.8 million inhabitants in a catchment area with a strong economy. Although the number of visitors to the city does not score the top mark, tourism is still important with over 6,000 overnight stays per 1,000 inhabitants. The strength of the city as a retail location and shortage of retail space in the prime location which is the Königstraße has prompted the development of several large inner-city retail projects, which led to an increase of over 20 per cent in sales space in one go: the MILANEO and Gerber shopping centres with a combined 60,000 sqm of retail space opened almost at the same time in the autumn of 2014, at opposite ends of the city centre shopping district. Nevertheless, the prime rent had increased a little more to EUR 250 by the spring of 2016, since the new centres not only increased sales space, but also the city's attraction. Since then, however, the prime rent has stagnated. Contributory factors are likely to have been not only muted demand for space from retailers and the opening in the spring of 2017 of the Dorotheen Quartier with a further 10,000 sqm of shopping floor, which is likely to have a positive impact on the luxury end of the market in Stiftstraße. The fear which was still being expressed quite recently that increasing retail space would be too much for the city has not materialised. The Königstraße has retained its dominant position in Stuttgart's retail scene, helped also by new stores such as the fashion outlet Saks Off 5th, the second Primark branch in Stuttgart and a Uniqlo store. This year, the Dutch cult department store Hema has opened a branch. Prime rents have been stable since 2016 and we expect this to continue during the forecast period up to 2019.

RETAIL SPACE IN STUTTGART

		2016			2017			2018e			2019e		
Demand													
Per cap. disposable income	EUR/month	2,112			2,149			2,179			2,216		
Unemployment rate	%	5.3			4.7			4.5			4.3		
Retail sales	EUR m/% yoy	3,636	/	3,0	3,749	/	3,1	3,852	/	2,8	3,964	/	2,9
Retail sales	EUR/sqm	3,417			3,507			3,580			3,659		
Supply													
Retail space	in sqm '000	1,064			1,069			1,076			1,083		
Retail space	% yoy	0.4			0.4			0.7			0.7		
Retail rents													
Prime/secondary location	in Euro/sqm	250	/	15.0	250	/	16.0	250	/	16.0	250	/	16.0
Prime/secondary location	% yoy	2.0	/	3.4	0.0	/	6.7	0.0	/	0.0	0.0	/	0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

OFFICE SPACE

Like the housing market, the supply of available office space has become very tight

Whereas the shortage of housing is deeply felt by the public, office space has often been associated with a persistent vacancy problem, and consequently new office buildings are often regarded as superfluous. In fact, the opposite is true. Office space is as much in short supply in many office locations as housing. At the same time, the situation is almost more difficult for those needing office space, because unlike in the housing market where demand is for single homes, demand in the office market is often for larger, connecting spaces. Smaller office units spread over a town are irrelevant in such cases.

Until a few years ago, the office market was still characterised by relatively high vacancy rates

However, the times of high vacancy rates in the office market are not all that far back in time. The large number of office buildings which were constructed – often speculatively – during the dotcom boom after the turn of the millennium led the vacancy rate to shoot up. It remained high for almost ten years during the international financial market crisis and subsequent euro debt crisis, and is still the basis for the current perception that there are high vacancy rates in the office market. With the increasing housing shortage, many empty old office buildings were converted into living space. This was also an attractive proposition because flat rents had increased sharply and often exceeded office rents apart from in the best inner-city locations.

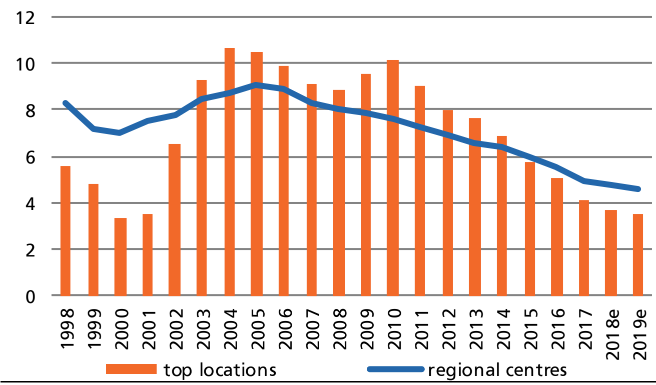
High vacancy rates dampened construction of new office space

Against that background, new office building fell to a low level. Between 2011 and 2017, less than 800,000 sqm of new office space came to the market in the top seven locations. In contrast, from the year 2000 to 2010, there was an average of almost 1.3 sqm of new office space becoming available every year. In spite of the shortage, the delivery of new space is likely to remain under the 1 million sqm mark in 2018 as well. There signs of a much higher level of new space coming to the market for the first time since 2009 with an estimated 1.3 million sqm, but not until next year.

Vacancy rate in 2019 likely to fall to its lowest level in almost 20 years

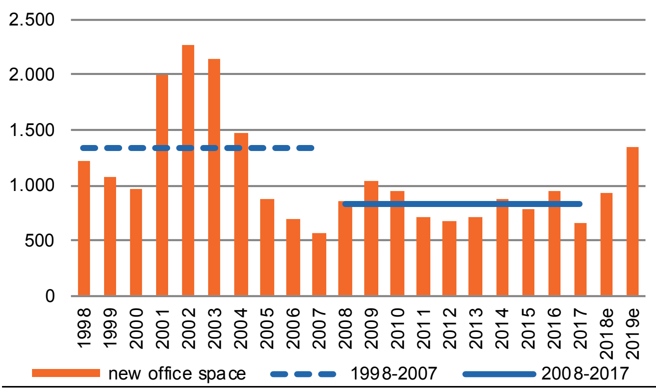
This space is urgently needed since the average vacancy rate in the top seven locations is likely to fall to 3.5 per cent by 2019. The rate is already down to 2 per cent in Berlin, Munich and Stuttgart. Supply in the office market is therefore likely to remain tight since it will not be so easy to ease the bottleneck rapidly, even with a high level of completions.

OFFICE SPACE VACANCY RATE CONTINUES TO FALL SHARPLY
VACANCY RATE AS PER CENT



Source: BulwienGesa, DZ BANK Research forecasts

OFFICE CONSTRUCTION SLOWLY PICKING UP MOMENTUM
ACCESS TO NEW OFFICE SPACE TOP SEVEN LOCATIONS IN '000 SQM



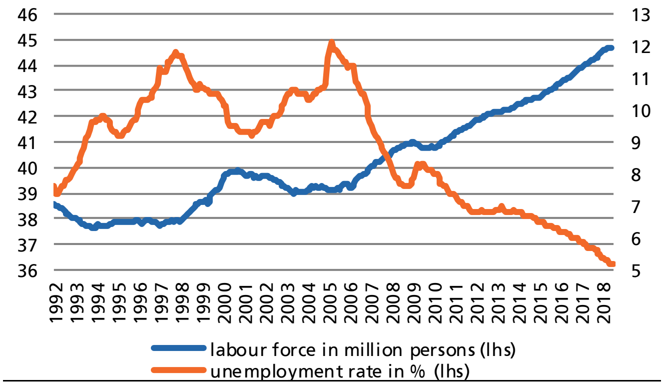
Source: BulwienGesa

Number of office workers growing much faster than office space

Fast growing economy in the top locations leading to a sharp rise in the workforce

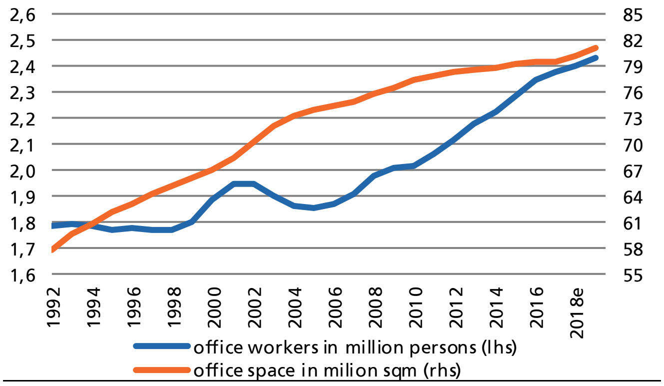
The top locations in particular are proving to be engines of growth, and, in spite of high rents, they stand out as attractive locations for companies. They score points in view of outstanding transport links not only with other German cities, but also by making big international cities easily accessible – often via direct flights. In addition, there are big labour markets. The cities in question are also attractive with a broad range of leisure and cultural activities on offer. On balance, the strong momentum in the labour markets can easily absorb the rising labour force potential. In spite of a sharp rise in the number of inhabitants, unemployment rates in all the top locations are falling. This applies above all to Berlin, where the unemployment rate has fallen from a high of 19 per cent in 2005 to around 8 per cent in July 2018.

SO FAR, GERMAN LABOUR MARKET SHOWS NO SIGNS OF FATIGUE



Source: Bundesbank, Bundesagentur für Arbeit

OFFICE EMPLOYMENT GROWING MUCH FASTER THAN OFFICE SPACE IN ALL THE TOP LOCATIONS



Source: BulwienGesa, Feri, DZ BANK Research forecasts

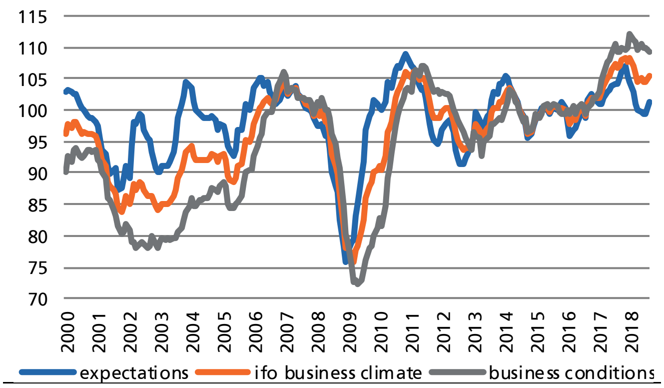
Office work in top locations has grown four times as fast as office space since 2007

Whereas offices space in the top locations has only increased at a muted space for some time, the number of office workers has risen sharply. Within the space of ten years, their numbers have swelled by around 500,000 to 2.4 million − an increase of almost 25 per cent, whereas the amount of office space in the top locations has only grown by 6 per cent to around 80 million sqm. Whereas office workers had almost 40 sqm of space in 2006, that figure is now down to just under 33 sqm. Berlin is the biggest office location in Germany with around 19 million sqm, ahead of Hamburg and Munich which each have around 14 million sqm. Frankfurt only has just under 10 million sqm. Dusseldorf, Cologne and Stuttgart each have not quite 8 million sqm.

No sign of any lasting easing in the office market

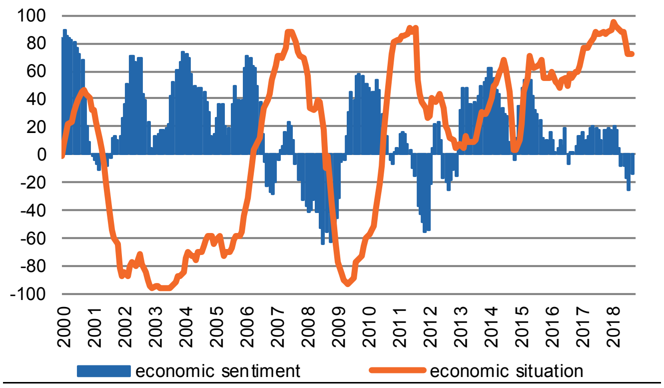
The situation in the office markets is likely to remain tight for the time being. Although the construction of new office projects has picked up, in view of the existing scarcity of space and likely further rise in the number of white collar workers, there is no sign of any lasting improvement on the horizon. Demand for office space would be even higher if it were not dampened by a shortage of qualified labour. The number of advertised vacancies in Germany has almost doubled in the space of ten years to 800,000 most recently.

RECENTLY WEAKER EXPECTATIONS RECOVERED SIGNIFICANTLY IN AUGUST
IFO BUSINESS CLIMATE: 2015 = 100, SEASONALLY ADJUSTED



Source: ifo Institute

ECONOMIC SITUATION STILL RATED AS QUITE GOOD, BUT EXPECTATIONS HAVE DETERIORATED
ZEW INDEX: BALANCE OF POSITIVE AND NEGATIVE ASSESSMENTS

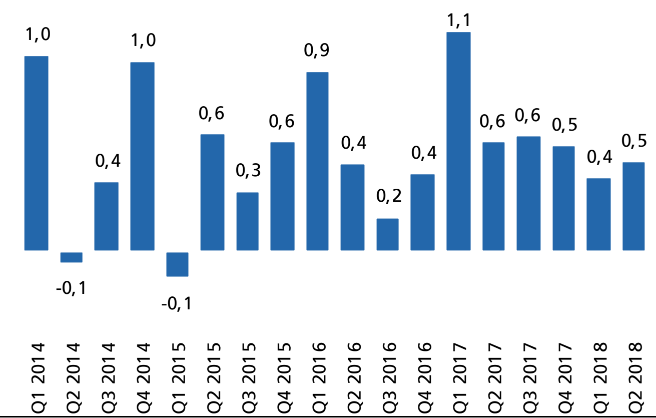


Source: ZEW

So far, there are no signs of any end to job growth. However, the pace could slow down if companies adopt a more cautious attitude in view of an increase in the number of international crises such as the US trade dispute, Brexit or the tense situation in the Middle East. This is also reflected in the assessments of companies and economic experts surveyed by the ifo Institute and the Zentrum für Europäische Wirtschaftsforschung (ZEW). Whereas the situation of companies and the state of the German economy are still rated as good, expectations have declined considerably. This also fits in with a slower though still solid GDP trend, which grew by 0.5 per cent in Q2 against the previous quarter (Q1 2018 0.4 per cent). In contrast, the DAX30 is trading well below the 13,500 or so points which the index reached at the beginning of 2018.

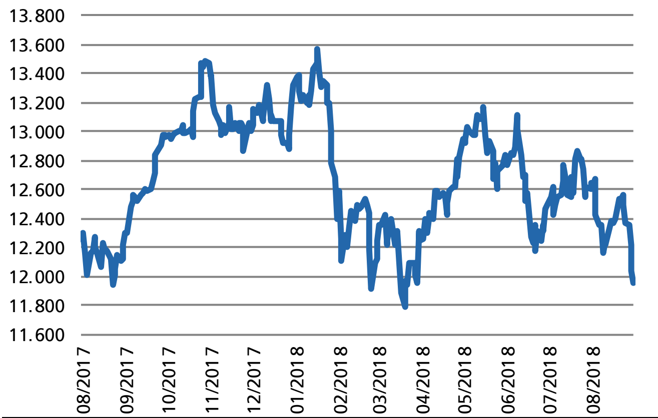
Companies upbeat about their present situation, but expectations show growing doubts

WHEREAS THE GERMAN ECONOMY IS STILL PURRING IN SPITE OF MANY FLASH POINTS…
REAL GDP VS. PREVIOUS QUARTER (%)



Source: Federal Statistical Office

…SHARES PRICES OF COMPANIES LISTED IN THE DAX30 HAVE FALLEN SHARPLY SINCE THE BEGINNING OF THE YEAR
DAX30 IN POINTS



Source: Deutsche Börse

All in all, the office market has done well in what have been generally positive conditions. This was clear from a high office take-up figure last year and in H1 2018, and from a rise in prime rents. Whereas the reason for the increase in prime rents is obvious in view of the scarcity of available space and high demand, it is slightly surprising that office space take-up still hit a new record in 2017.

Office market did well in 2017 against robust economic background

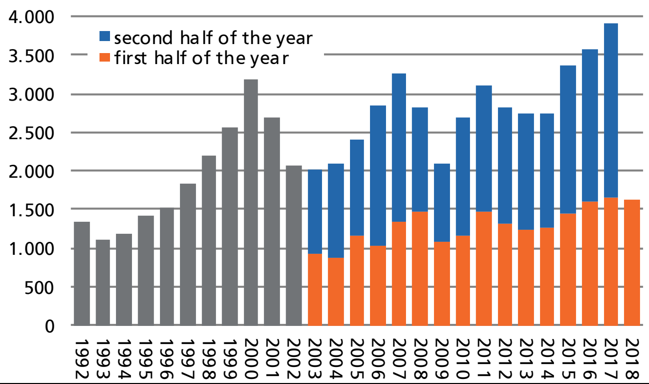
In all in 2017, 3.9 million sqm of office space was transacted, which, in relation to the existing space represents a new record. The highest level reached previously was in the year 2000 at 4.8 per cent; in 2017, the figure was in fact 0.1 percentage points higher. In spite of a further decline in the supply of office space, there was another substantial take-up in H1 2018. At over 1.6 million sqm, it was only marginally down on the figure in H1 2017.

New record office uptake hit in 2017, which would have been even higher without the shortage of space

The high volume can also be explained in light of the fact that a large number of large-scale contracts involve newly built office space which will only be completed in a few years' time. In contrast, such large letting transactions are now hardly possible from the existing stock. For that reason, sourcing new office space can definitely take several years of planning until completion. However, this also means that companies with short-term space requirements are sometimes forced to defer or even shelve their plans.

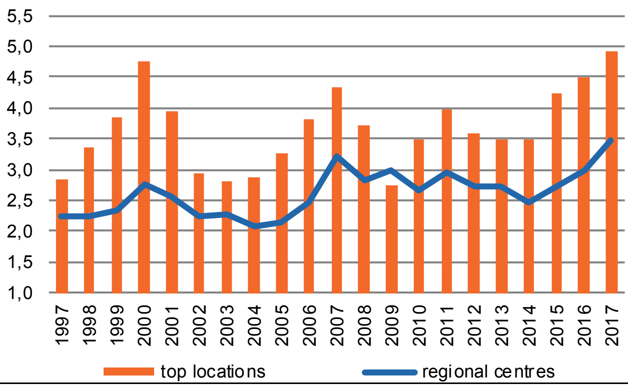
Letting activities increasingly moving to new-build projects

OFFICE SPACE TAKE-UP CLIMBED TO NEW RECORD IN 2017 IN SPITE OF TIGHT SUPPLY
OFFICE SPACE TAKE-UP IN '000 SQM



Source: BulwienGesa

ALMOST 5% OF OFFICE SPACE CHANGED TENANT IN 2017
OFFICE SPACE TAKE-UP AS % OF STOCK



Source: BulwienGesa, DZ BANK Research forecasts

Flexible office space for rent for coworking purposes benefiting from shortage of stock

Sometimes, companies are also forced to opt for coworking spaces which are increasingly being offered in top locations. Within the space of just a few years, the proportion of such space in relation to the total office stock has grown from close to zero to over 5 per cent. It is precisely the shortage of quickly available office space which is a major factor in the strong growth of this still relatively new offer of flexible office space for rent, which was originally targeted mainly at start-ups and freelance workers. Although the latter are also an important customer segment, the coworking boom is now being driven mainly by demand from established companies, requiring temporary space, for expansion plans for example, but which fail to find suitable premises.

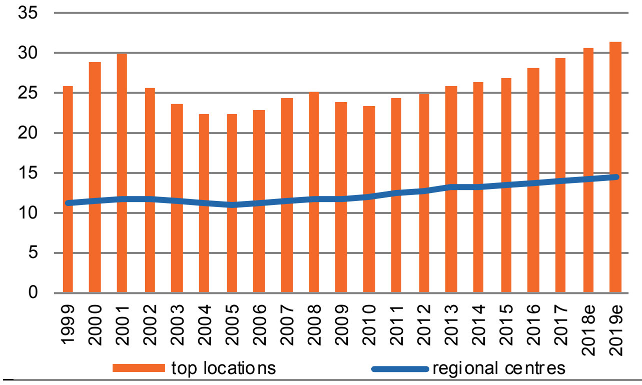
Boom in flexible offices, not least because it makes up for part of the unmet demand for office space

Companies offering coworking space benefit from the need for office space which allows them to let fully equipped and fitted modern office units at a significant premium in relation to letting empty office space. In addition to the office fittings, this will also include various services, whether they are actually needed by each coworking tenant or not. According to figures from Jones Lang Lasalle, almost 80,000 flexible workspaces are expected to be available soon over 750,000 sqm at already up-and-running or firmly planned coworking locations. We dedicate a separate section from page 7 to a description of this specific form of sub-letting of office space.

Flexible workspace quickly likely to rise to almost 80,000 fully equipped spaces

CONSISTENT RISE IN PRIME RENTS SINCE 2011

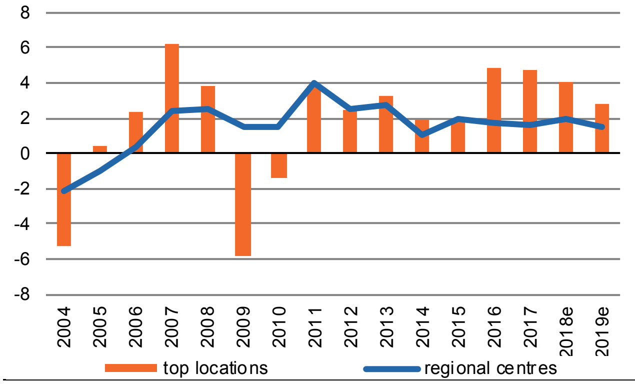
PRIME RENT IN EURO PER SQM



Source: BulwienGesa, DZ BANK Research forecasts

BERLIN OFFICE MARKET ABOVE ALL CONTRIBUTED TO A SHARP INCREASE IN PRIME RENTS IN 2016 AND 2017

PRIME RENTS VS. PREVIOUS YEAR (%)



Source: BulwienGesa, DZ BANK Research forecasts

Demand for office space could fall when baby boomers retire

In view of a robust labour market and further GDP growth, demand for office space is likely to continue to grow. However, demand for office space in the next few years will not only depend on the state of the economy; it will also be influenced by other factors. Demographics and digitalisation in the world of work are also likely to play a part. The first of the baby boomers will be reaching retirement age at the beginning of the next decade, thus weakening labour workforce participation. However, the impact can be mitigated by postponing retirement age, higher workforce participation by women or through immigration.

Will the future world of work involve working from home or working in the office?

One as yet unanswered question is how increasingly smart technology will impact on demand for office space. A sharp rise in working from home could lead to a fall in demand for workspace in offices. As a result, companies and public-sector employers would save on the cost of office space, and a reduction in the number of commuters would ease the burden on public transport infrastructure. Even the housing markets in conurbations could benefit from such a trend. However, it is also possible that presence in the office will remain the norm in day-to-day working life. At least this is the path adopted by the big names in digitalisation such as Apple, Facebook or Google, which have sprawling campuses as their head office in Cupertino, Palo Alto and MountainView where they try to make office work as attractive as possible to their staff by offering them first-class staff restaurants, gyms, etc.

Office: comparison of top locations

White-collar work is increasing much faster than office space in all the top locations

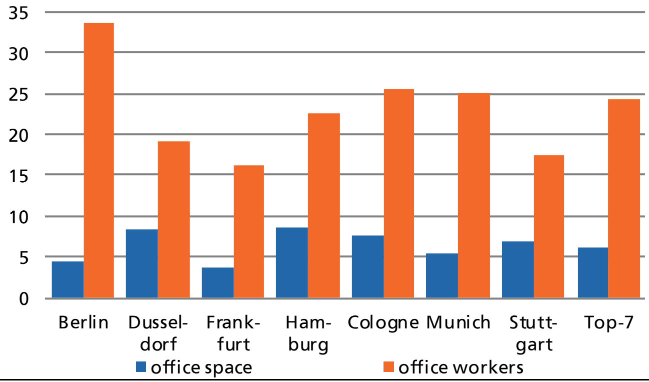
The attraction of top locations for companies described earlier has led to a sharp rise in the number of office workers in all seven locations. The increases within the space of ten years range from just over 15 per cent in Frankfurt to over 30 per cent in Berlin. In contrast, office space at the top locations has grown much more slowly. During the same period, the increase was within a range of 4 per cent in Frankfurt to not quite 9 per cent in Hamburg.

Office vacancy rate down from 7 to 3 million sqm in the space of ten years

However, ten years ago, there was nothing of the present urgency to build office space. Back then, there was almost 7 million sqm of vacant office space, and therefore demand could easily be met from the existing stock. However, job growth picked up with the economic upturn which began in 2010 and is ongoing, leading to a rise in demand for office space. However, there was only a marginal increase in new building.

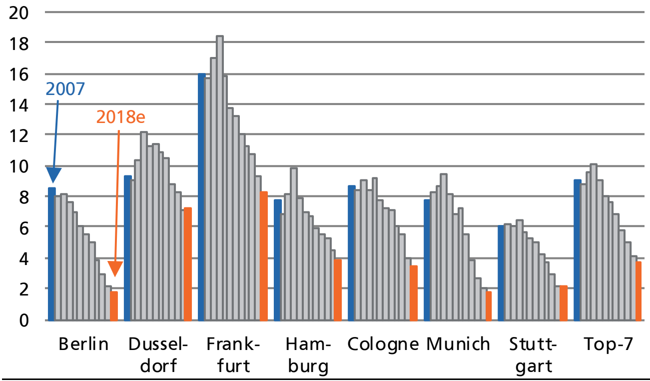
Even the fact that rents started picking up again failed to lead to a stronger upturn. Consequently, the amount of vacant space continued to dwindle to 3 million sqm by the end of Q2 2018.

OFFICE WORK INCREASING MUCH FASTER THAN OFFICE SPACE IN ALL TOP LOCATIONS,...
INCREASE FROM 2007 TO 2017 (%)



Source: BulwienGesa, Feri

... LEADING TO A VERY RAPID FALL IN THE HIGH LEVEL OF VACANT SPACE OF A FEW YEARS AGO
VACANCY RATE (%)

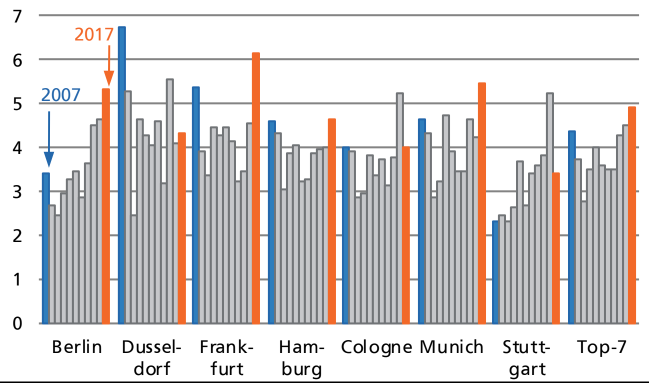


Source: BulwienGesa, DZ BANK Research forecasts

Hardly any vacant office space left in Berlin, Cologne, Munich and Stuttgart

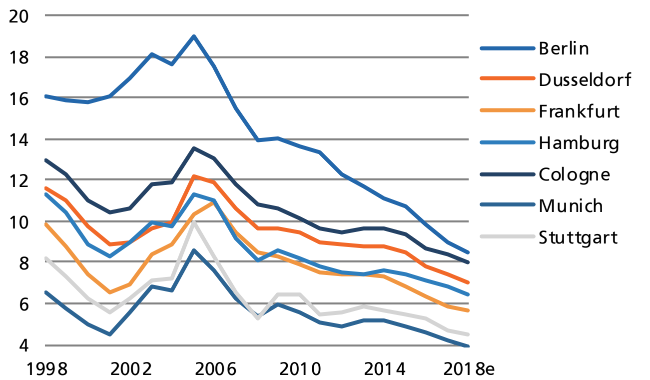
Frankfurt accounts for almost two thirds of the vacant space at 865,000 sqm along with Dusseldorf and Hamburg with around 550,000 sqm respectively. With vacancy rates of 4 per cent in Hamburg, 7.2 per cent in Dusseldorf and 8.5 per cent in Frankfurt, the supply of office space is still relatively good in those cities. Things are not looking quite so good for anyone looking for space to rent in Stuttgart which has 170,000 sqm of vacant office space, in Cologne or Munich which each have around 260,000 sqm or Berlin with 360,000 sqm. In the case of the latter, moreover, the space is distributed over the entire city and consists to a large extent of older and less attractive space. The vacancy rate is 2 per cent in Berlin, Munich and Stuttgart and up to just over 3 per cent in Cologne.

BERLIN, FRANKFURT AND MUNICH TOP THE RANKINGS FOR OFFICE SPACE TAKE-UP
OFFICE SPACE TAKE-UP AS % OF OFFICE STOCK



Source: BulwienGesa

DYNAMIC LABOUR MARKETS: IN SPITE OF STRONG POPULATION IN-FLUX, UNEMPLOYMENT DOWN IN ALL TOP LOCATIONS
UNEMPLOYMENT RATE (%)



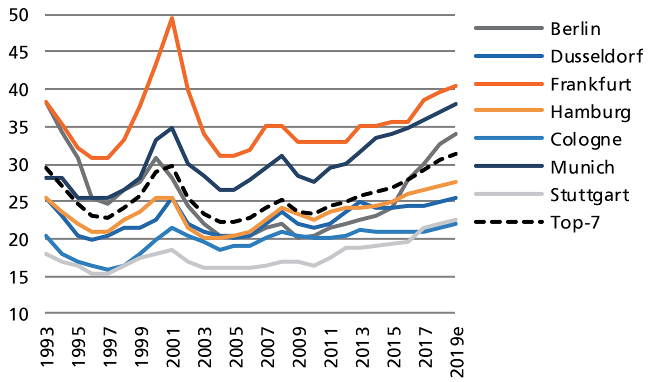
Source: BulwienGesa, DZ BANK Research forecasts

Office take-up in Berlin exceeds 1 million sqm

In spite of a shrunken supply of office space, office space take-up was very high in some cases. Take-up in Berlin in 2017 amounted to over 5 per cent of the existing office space; the figure in Frankfurt was even above 6 per cent. Berlin was the first German office market to reach a take-up of over 1 million sqm. It was followed by

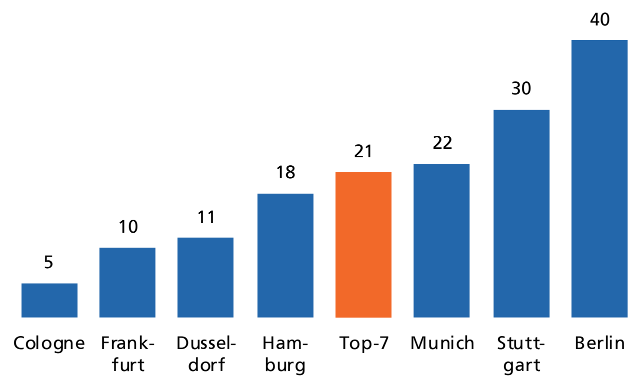
Munich at 750,000 sqm ahead of Hamburg and Frankfurt with around 630,000 respectively. Take-up in the three other locations – Dusseldorf, Cologne and Stuttgart – was around 300,000 sqm in 2017.

OFFICE RENTS HAVE MOSTLY RISEN MODERATELY
OFFICE PRIME RENTS IN EURO PER SQM



Source: BulwienGesa, DZ BANK Research forecast

THE ONLY SHARP INCREASE IN PRIME RENTS HAS BEEN IN BERLIN
INCREASE IN PRIME OFFICE RENTS FROM 2007 TO 2017 (%)



Source: BulwienGesa, DZ BANK Research forecast

Favourable market conditions and tight supply not leading to any spike in prime rents

High demand for space and tight supply have led to an increase in prime rents in the last ten years. However, bearing in mind a humming economy and strong job growth, the increase in rents has not been that high. On average, prime rents for the top seven locations rose by 21 per cent to around EUR 30 per sqm in the period from 2007 to 2017 − admittedly quite a significant increase, but not a dramatic one. The increase in prime rents in Cologne, Frankfurt and Dusseldorf was in fact rather modest at 5, 10 and 11 per cent respectively. The trend in Hamburg and Munich was largely in line with the average. Only Berlin and Stuttgart outperformed with an increase of 30 and 40 per cent respectively. At the half-way stage in 2018, prime rents per sqm fluctuated within a range of EUR 21.50 in Cologne to EUR 39 in Frankfurt.

Trend in the office market likely to continue to be influenced by shortage of available space

What next for the office market? If the current upward cycle remains intact in 2019 as well, in line with forecasts, which would mean a ten-year cycle, the situation in the office market is likely to remain largely unchanged this year and next, with lively demand, resulting from further job growth met by a shortage of office space. This means that further rising prime rents are likely. However, we do not expect any sharp increases in the market as a whole. The reason for this is that, given imponderables surrounding many international flashpoints, and the fact that the economic cycle is already at an advanced stage, companies are likely to think long and hard before entering into any expensive long-term tenancy agreements. The level of take-up is rather unlikely to hit new records in view of a growing shortage of available space.

Top locations by European comparison

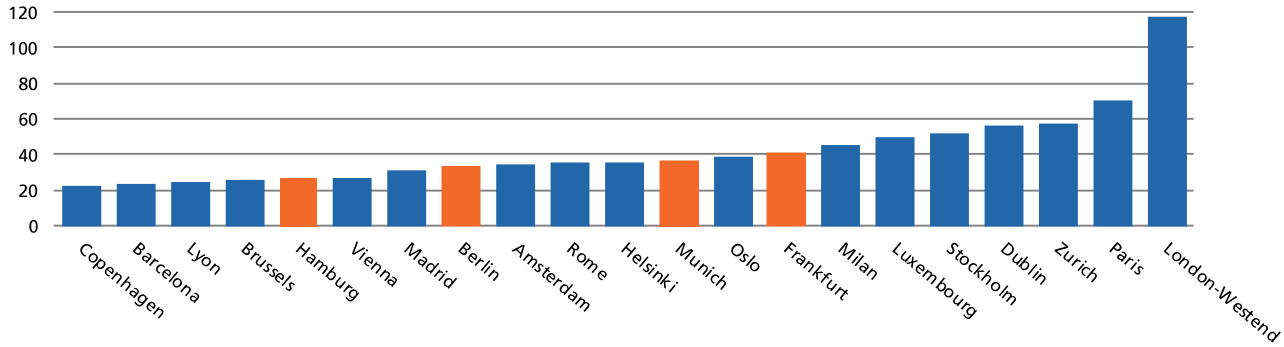
Jones Lang Lasalle's Office Property Clock for Q2 2018 shows at a glance the pleasing trend in the European office market. At present, the majority of European office locations are in quadrants representing slower rent rises. A number of European office markets even show an accelerated rise in rents. In contrast, the right-hand scale of the Office Property Clock which represents falling or stagnating rents is virtually swept clean with just one location. This picture of the situation in the office markets is in line with the trend in the European economy which is still growing although it has lost some of its momentum. The fall in unemployment in many European countries is likely to continue to drive solid demand for office space.

Like in the rest of Europe, office rents are rising, but no longer quite so fast

In relation to the rest of the European office market, German prime rents are middling. Even Frankfurt as the most expensive office market in Germany fails to make it into the top ranked European office locations with prime rents of above EUR 50 per sqm. However, the German office market is not concentrated in just one central location, unlike in many European countries where the marked tends to be based in and around the capital.

German prime office rents average in relation to the rest of Europe

PRIME OFFICE RENTS IN EUROPE – GERMAN OFFICE LOCATIONS MIDDLING
EURO PER MONTH PER SQM

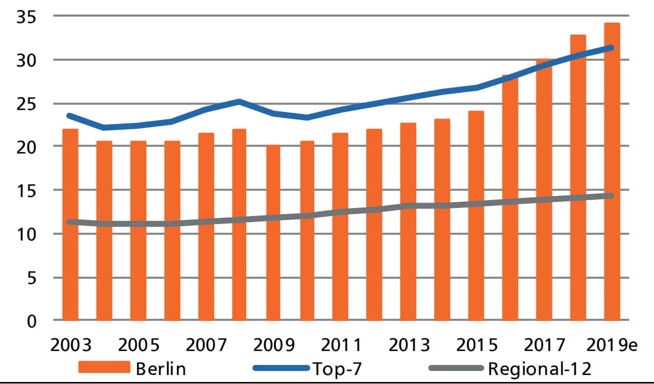


Source: BNP Real Estate

As per Q4 2017

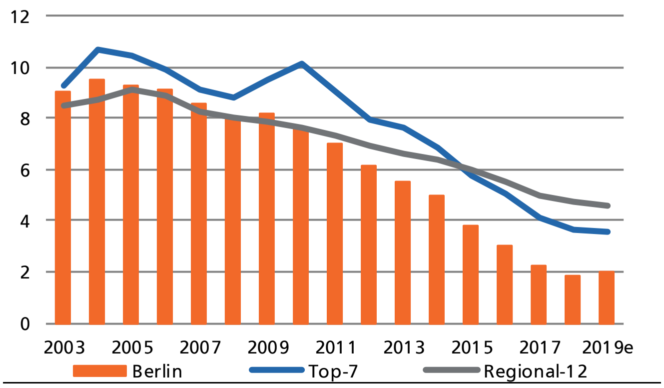
Office space in Berlin

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

Ongoing upturn means that Berlin is running out of office space

There has been a lasting economic improvement in Berlin. This is evident from a steady decline in unemployment which has fallen from over 19 per cent in 2005 to 8 per cent at present. Germany's capital is now a sought-after location for e-commerce businesses and fintechs, as well as for established companies. This has led to the creation of around 150,000 office jobs within the space of ten years. Meanwhile, the office stock has increased by less than 1 million sqm, whereas many times that amount would have been needed. Ongoing demand for space has led to a growing shortage of office space and to a fall in the vacancy rate to around 2 per cent. Prime rents have risen from EUR 20 in 2010 to EUR 32.50 per sqm most recently. A high level of market activity means that Berlin was the first top location to generate a take-up of over 1 million sqm. Zalando accounts for almost one tenth of this, showing just what fertile ground the capital is for digital business models. H1 2018 was close to the previous-year period with a take-up of almost 400,000 sqm, although the number of major completions was more modest. As such, the signs are that 2018 will be another strong year for the Berlin office market, which is fairly amazing, bearing in mind the fact that there is virtually no vacant office space left. As in the other top locations, coworking providers were also well represented in Berlin among the top 10 biggest tenancy transactions. The supply shortage should ease slightly by the end of next year on the back of a fairly high amount of new space coming onto the market, and help slow down the momentum in the rise in prime rents, which should then reach around EUR 34 per sqm.

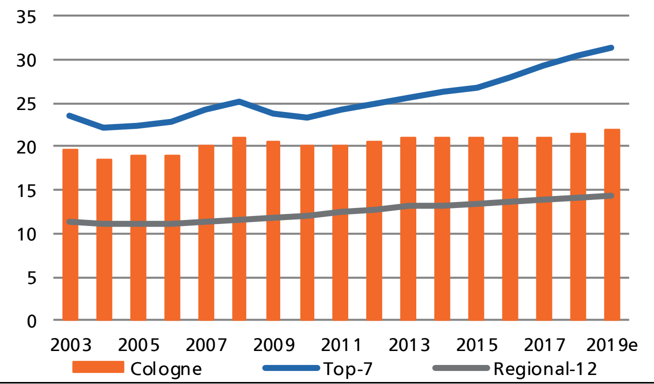
OFFICE SPACE IN BERLIN

		2016			2017			2018e			2019e		
Demand													
GDP	% yoy	4.1			4.0			3.2			3.4		
Per capita GDP	in EUR	32,072			32,976			33,794			34,744		
Per capita GDP	% yoy	568.8			576.5			584.7			592.8		
No. of office workers	% yoy	4.9			1.4			1.4			1.4		
Supply													
Total office space	in sqm '000	18,932			18,949			19,173			19,534		
Total office space	% yoy	0.0			0.1			1.2			1.9		
Vacancy rate	%	3.0			2.2			1.8			2.0		
Office rents													
Prime/secondary location	EUR/sqm	28.0	/	11.0	30.0	/	12.0	32.7	/	12.5	34.0	/	12.5
Prime/secondary location	% yoy	16.7	/	15.8	7.1	/	9.1	9.0	/	4.2	4.0	/	0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

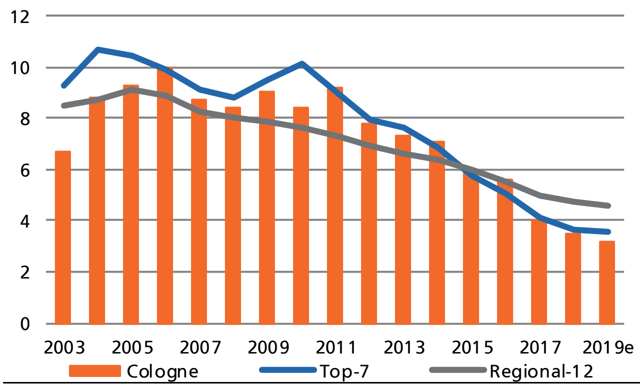
Office space in Cologne

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

Shortage of attractive office space in the city slowing down increase in prime rents

The 20 per cent decline in office space take-up to 307,000 in 2017 reflects one of the best ever results in the Cologne office market the previous year when take-up was boosted by 60,000 of newly built office space with the new Zurich Versicherung building. There were two big transactions in 2017: the Bundesamt für Familie und zivilgesellschaftliche Aufgaben rented 19,000 sqm and Strabag Real Estate 15,000 sqm. This was followed in third place with a deal of over 9,000 sqm by Design Offices which offers coworking space. In spite of lively demand and a shortage of space – the vacancy rate fell to 4 per cent – prime rents are still at the level of 2013 of EUR 21 per sqm. Since there is hardly any high-quality vacant space left in the city, it is difficult to pull off any high-price deals. The shortage of space also seems to be preventing larger transactions: the biggest deal registered in H1 was for 6,000 sqm. Coworking is still prominent with Design Offices once again in third place with an agreement for 5,600 sqm. In light of this, take-up in H1 was by no means low, but the full-year figure in unlikely to match last year's strong level. The fact that prime rents have reached EUR 21.50 sqm points to lively demand and this is likely to remain the case until the end of the year. There is definitely the kind of demand which would lead to a similar increase next year. However, it remains to be seen whether the necessary space will be available. There is no improvement in sight since the vacancy rate is likely to be moving towards 3 per cent by the end of 2019.

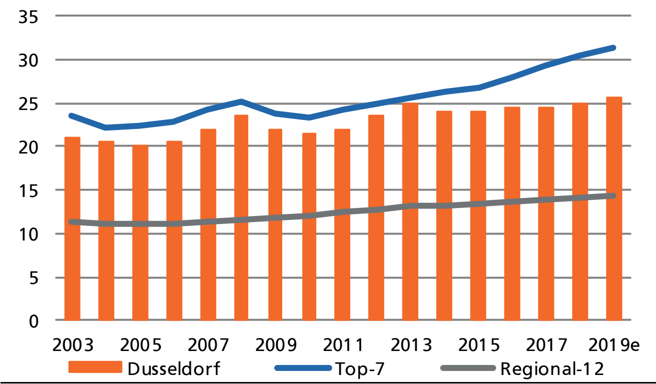
OFFICE SPACE IN COLOGNE

		2016	2017	2018e	2019e
Demand					
GDP	% yoy	3.0	3.4	3.0	3.2
Per capita GDP	in EUR	53,525	54,581	55,726	57,100
Per capita GDP	% yoy	241.0	243.8	246.6	249.6
No. of office workers	% yoy	2.6	1.2	1.2	1.2
Supply					
Total office space	in sqm '000	7,599	7,656	7,687	7,710
Total office space	% yoy	1.0	0.7	0.4	0.3
Vacancy rate	%	5.6	4.0	3.5	3.2
Office rents					
Prime/secondary location	EUR/sqm	21.0 / 8.3	21.0 / 8.3	21.5 / 8.3	21.9 / 8.3
Prime/secondary location	% yoy	0.0 / 3.8	0.0 / 0.0	2.4 / 0.0	2.0 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

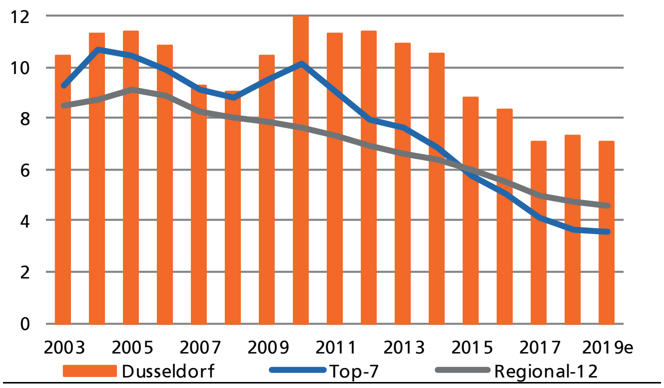
Office space in Dusseldorf

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

Signs of a solid, but not record-breaking take-up In Dusseldorf

Dusseldorf's economic strength and its function as the state capital has led to the development of a significant office market of 7.5 million sqm. Although it is the same size as the Cologne and Frankfurt markets, occupier activity is mostly higher as measured by office space take-up. In 2017, take-up of 325,000 sqm was also exactly in line with the ten-year average. Of the three biggest transactions of over 10,000 sqm, the financial sector accounted for two and the third was with the Berufsgenossenschaft Holz und Metall. In H1 2018, a 35,500 sqm transaction involving Deloitte helped bring office take-up to slightly over 170,000 sqm, which is largely in line with the level in the last three years. All the other transactions were for a maximum of 5,000 sqm. Two larger deals – of 4,100 sqm for Regus and 3,500 sqm for rent24 – were with providers of coworking space. After falling to just over 7 per cent in 2017, the vacancy rate has remained largely stable, but could rise slightly in H2 in view of space being freed up by the Uniper move. A further slight decline in the vacancy rate is likely in 2019 since, once again, there will not be all that much new space coming onto the market is (just under 90,000 sqm against 70,000 sqm in 2017 and 2018). Prime rents of EUR 24.50 per sqm have been stable since the beginning of 2017. In view of lively demand for office space, an increase of 2 per cent is possible by the end of the year. There could be a similar rise in 2019, if conditions in the German office market remain favourable.

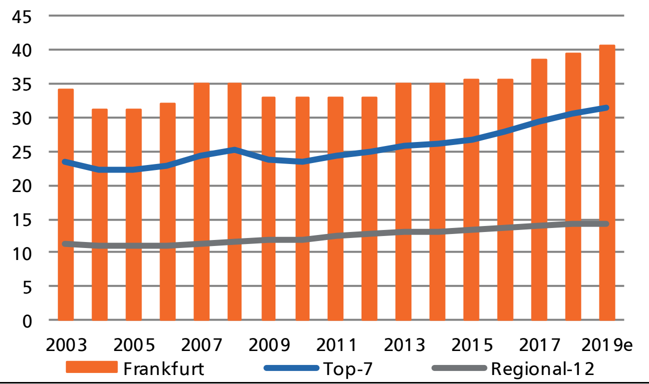
OFFICE SPACE IN DUSSELDORF

		2016			2017			2018e			2019e		
Demand													
GDP	% yoy	3.5			3.9			3.6			3.7		
Per capita GDP	in EUR	72,491			74,963			77,373			80,015		
Per capita GDP	% yoy	206.7			209.2			211.8			214.6		
No. of office workers	% yoy	2.0			1.2			1.3			1.3		
Supply													
Total office space	in sqm '000	7,554			7,560			7,600			7,650		
Total office space	% yoy	0.1			0.1			0.5			0.7		
Vacancy rate	%	8.3			7.1			7.3			7.1		
Office rents													
Prime/secondary location	EUR/sqm	24.5	/	10.3	24.5	/	10.3	25.0	/	10.3	25.5	/	10.5
Prime/secondary location	% yoy	2.1	/	3.0	0.0	/	0.0	2.0	/	0.0	2.0	/	1.9

Source: Feri, BulwienGesa, DZ BANK Research forecasts

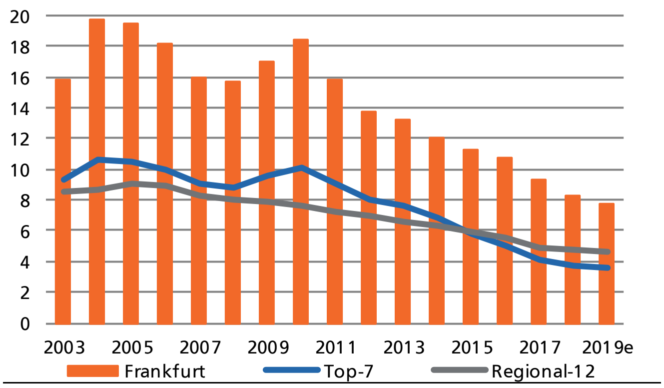
Office space in Frankfurt

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

After a period of weakness, Frankfurt's office market is now surging

After two rather poor years, Germany's most expensive office market picked up considerable speed in 2016. Take-up rose by over 30 per cent to around 460,000 sqm. Last year, things looked even better with the second best figure since the dotcom boom at 624,000 sqm. This was helped by major transactions from Deutsche Bahn for 70,000 sqm and the Bundesbank for 44,000 sqm. Germany's central bank is taking over the FBC Tower near the central station as temporary accommodation during a complete refurbishment of its headquarters in Frankfurt-Ginnheim. The market has been bolstered among other things by favourable economic conditions in the Rhine-Main area, by Brexit-led moves to the city and the creation of coworking offers, including the take-up of 10,000 sqm by WeWork. These factors are likely to help the market to another good result in 2018. The biggest deal in H1 involved a 24,000 sqm take-up by FAZ, which is planning to move its headquarters to the Europaviertel in 2021. There have also been fairly substantial deals involving coworking space. On balance take-up in H1 is one of the best ever for a half-year at over 240,000 sqm. High demand has pushed up prime rents to EUR 39 per sqm and they could rise further by the end of the year. The vacancy rate is likely to fall from over 9 per cent last year towards the 8 per cent mark. Next year, we are confident prime rents will jump over the EUR 40 per sqm mark on the back of a further reduction in vacant space.

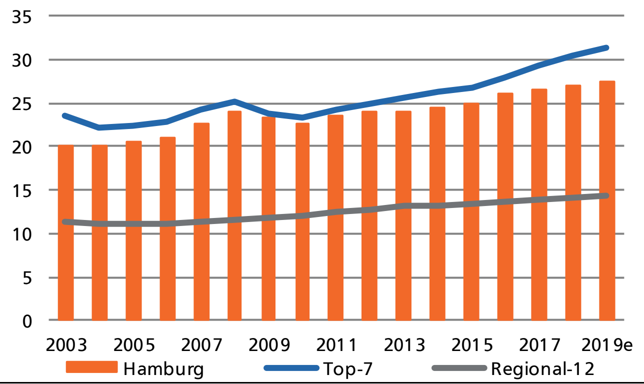
OFFICE SPACE IN FRANKFURT

		2016			2017			2018e			2019e		
Demand													
GDP	% yoy	3.2			3.5			3.2			3.3		
Per capita GDP	in EUR	83,823			85,861			87,961			90,268		
Per capita GDP	% yoy	289.0			292.1			295.4			298.8		
No. of office workers	% yoy	1.7			1.1			1.1			1.1		
Supply													
Total office space	in sqm '000	10,250			10,164			10,200			10,310		
Total office space	% yoy	-0.4			-0.8			0.4			1.1		
Vacancy rate	%	10.7			9.3			8.3			7.8		
Office rents													
Prime/secondary location	EUR/sqm	35.5	/	9.5	38.5	/	9.6	39.5	/	9.6	40.5	/	9.7
Prime/secondary location	% yoy	0.0	/	0.0	8.5	/	1.1	2.6	/	0.0	2.5	/	1.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

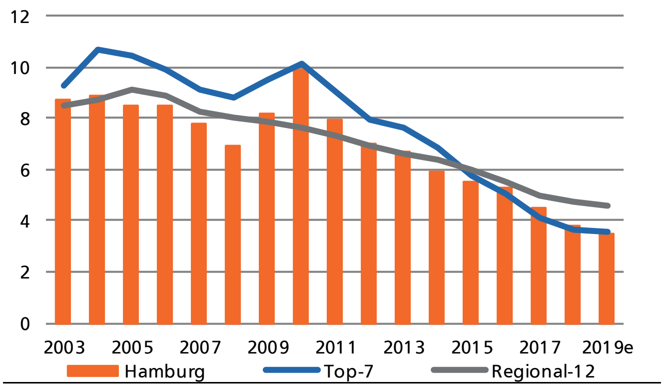
Office space in Hamburg

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

Upturn in Hamburg office market made 2017 a record year

The uptrend in the Hamburg office market has continued. High demand in 2017 with take-up of 635,000 sqm beat the previous record from 2007. Two major transactions of over 34,000 sqm each involving Olympus and Gruner + Jahr contributed. The favourable trend has gone hand-in-hand with a moderate though steady rise in prime rents, which reached EUR 26.50 in 2017. The increase would probably have been even more had it not been for a relatively high level of new building, e.g. in HafenCity. Even so, available space has become tighter, leading to a more than 50 per cent reduction in the vacancy rate since 2010. The market is being buoyed by further favourable economic conditions and Hamburg's broadly diversified economy. Examples of this are an important logistics sector in Europe's third largest sea port and the aircraft industry which is benefiting from growing aviation business worldwide. The success story of Hamburg's office market is likely to continue in 2018, albeit a new record is not on the cards since there have been no major transactions of over 10,000 sqm so far – apart from one tenancy agreement with Iduna -Versicherung for 10,000 sqm. Bearing this fact in mind, take-up of over 240,000 sqm in H1 was impressive. Although prime rents are unchanged so far against 2017, they could increase to EUR 27 per sqm by year end. The vacancy rate is likely to fall to under 4 per cent. A further increase in prime rent and further reduction in the vacancy rate is likely in 2019, as economic conditions are expected to remain favourable.

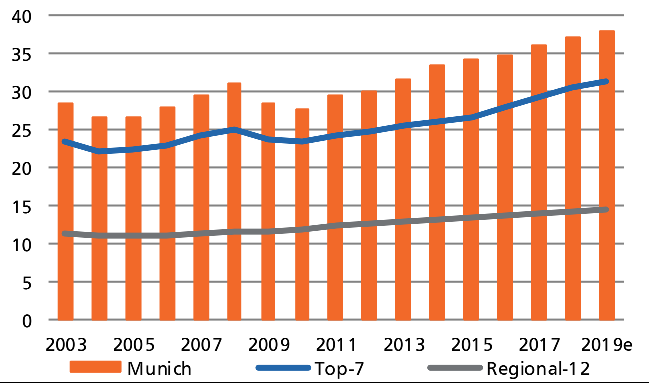
OFFICE SPACE IN HAMBURG

		2016	2017	2018e	2019e
Demand					
GDP	% yoy	2.6	4.2	3.2	3.4
Per capita GDP	in EUR	56,043	57,803	59,249	60,909
Per capita GDP	% yoy	426.2	431.7	437.4	443.2
No. of office workers	% yoy	1.8	1.3	1.3	1.3
Supply					
Total office space	in sqm '000	13,718	13,706	13,795	13,900
Total office space	% yoy	1.1	-0.1	0.6	0.8
Vacancy rate	%	5.3	4.5	3.8	3.5
Office rents					
Prime/secondary location	EUR/sqm	26.0 / 10.8	26.5 / 11.0	27.0 / 11.5	27.5 / 11.5
Prime/secondary location	% yoy	4.0 / 2.9	1.9 / 1.9	1.9 / 4.5	1.9 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

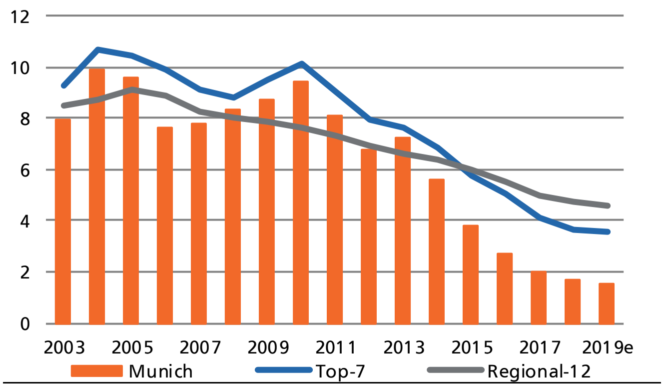
Office space in Munich

PRIME RENTS YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

High-quality space practically only to be found in new-build projects, so prospective occupiers have to be resigned to a long wait

Munich's broadly diversified economy is flourishing – it is home six DAX listed group headquarters – leading to the creation of many new jobs, with which a muted level of new office building has long since failed to keep pace. This has led to a vacancy rate which is now below 2 per cent, as a result of which it is becoming increasingly difficult to rent larger amounts of office space from the existing stock. For this reason, it is hardly surprising that almost all big transactions involve new-build projects. Even so, given the shortage of space, it is astonishing, that office space take-up last year still reached a new record of 750,000 sqm. BMW alone accounted for one fifth of this, while the public sector rented almost 70,000 sqm of space. Even the emerging coworking sector is well represented. Prime rents climbed by almost 4 per cent to EUR 36 per sqm, and 2018 is following on seamlessly from last year with many large transactions: the first six months of the year saw the biggest office take-up so far at 380,000 sqm. Once again, the public sector was strongly represented. Coworking providers Design Offices and WeWork also took up large amounts of space. Prime rents rose by a further EUR 0.50 per sqm as available office space continued to dwindle. Prime rents are likely to rise by a good 3 per cent this year and next, leading to an estimated EUR 38 per sqm by the end of 2019. Although a relatively high level of new space coming onto the market will slow down the decline in the vacancy rate, this is unlikely to be enough to overcome the widespread shortage of office space in Munich.

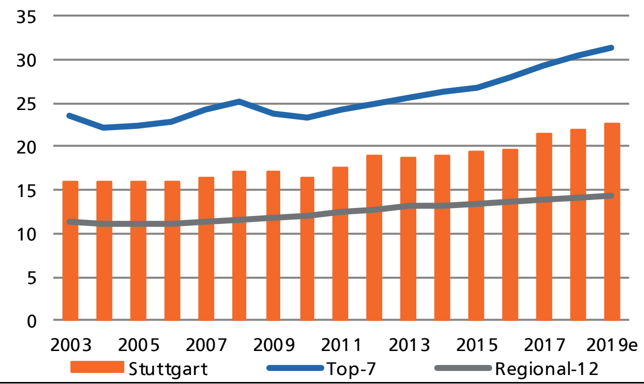
OFFICE SPACE IN MUNICH

		2016	2017	2018e	2019e
Demand					
GDP	% yoy	3.5	3.9	3.6	3.7
Per capita GDP	in EUR	67,397	69,428	71,341	73,434
Per capita GDP	% yoy	419.0	422.9	426.9	430.9
No. of office workers	% yoy	3.2	0.9	0.9	0.9
Supply					
Total office space	in sqm '000	13,705	13,747	13,870	14,040
Total office space	% yoy	0.0	0.3	0.9	1.2
Vacancy rate	%	2.7	2.0	1.7	1.5
Office rents					
Prime/secondary location	EUR/sqm	34.7 / 13.5	36.0 / 14.5	37.0 / 14.5	38.0 / 14.5
Prime/secondary location	% yoy	1.8 / 8.0	3.7 / 7.4	2.8 / 0.0	2.7 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

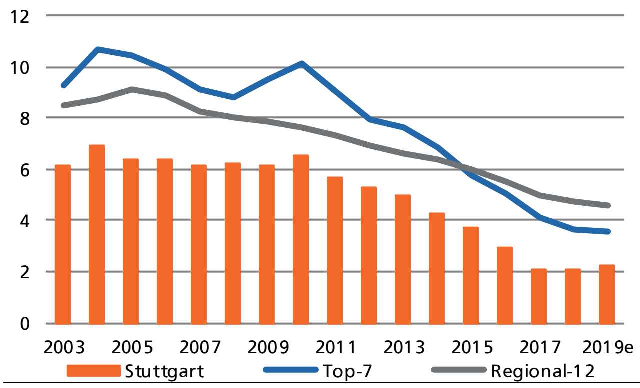
Office space in Stuttgart

PRIME RENTS FOR OFFICE SPACE YOY % CHANGE



Source: BulwienGesa, DZ BANK Research forecasts

VACANCY RATE (%)



Source: Feri, DZ BANK Research forecasts

Tight supply limiting office space take-up and driving prime rents up sharply

High time too: last year, rents for prime office space in Stuttgart passed the EUR 20 per sqm mark for the first time – and by quite a long way! A rise to EUR 21.40 per sqm means an increase in the top one-digit percentage bracket, as in Berlin and Frankfurt. The sharp rise is likely to reflect the almost complete lack of available office space and a greater willingness by tenants to pay more. A reduction in the vacancy rate to just above 2 per cent – equating to 170,000 sqm across the entire office market – means a limited choice for prospective occupiers. This is especially true of larger, interconnecting spaces. It is therefore hardly surprising that the two big transactions for over 10,000 sqm of office space – the tenants are Daimler and CMS Hasche Sigle – involve new developments. The sharp rise in rents in 2017 went hand-in-hand with take-up of 264,000 sqm − high by Stuttgart standards. Given the demand, a higher figure would have been possible if there been a more ample supply. It is a similar story this year: without the 50,000 sqm Bosch new office building, office take-up up to June 2018 would only have been half last year's level at around 120,000 sqm, and therefore very low. The figure still includes a deal of around 11,000 sqm involving Landesbetriebe Vermögen und Bau. In spite of slightly more new office space coming onto the market by the end of 2019, there is no sign of any radical improvement in the shortage of space. The vacancy rate should remain stable while prime rents could increase up to EUR 22.50.

OFFICE SPACE IN STUTTGART

		2016	2017	2018e	2019e
Demand					
GDP	% yoy	3.2	3.5	3.2	3.3
Per capita GDP	in EUR	76,010	77,817	79,674	81,847
Per capita GDP	% yoy	195.7	197.9	200.1	202.4
No. of office workers	% yoy	0.9	1.1	1.1	1.2
Supply					
Total office space	in sqm '000	7,682	7,787	7,860	7,970
Total office space	% yoy	1.0	1.4	0.9	1.4
Vacancy rate	%	2.9	2.1	2.1	2.2
Office rents					
Prime/secondary location	EUR/sqm	19.7 / 8.8	21.4 / 9.1	22.0 / 9.1	22.5 / 9.1
Prime/secondary location	% yoy	2.1 / 1.1	8.6 / 3.4	2.8 / 0.0	2.3 / 0.0

Source: Feri, BulwienGesa, DZ BANK Research forecasts

HOUSING MARKET

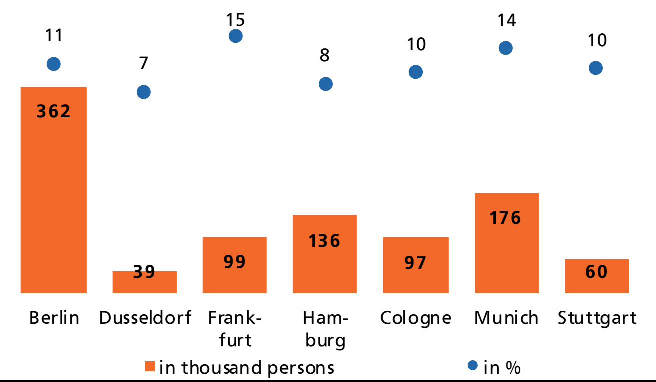
Even the increase in newly built housing stock is failing to keep pace with population growth

The housing market in top locations is still very tight. Even though new housing construction has now got into gear, there is still a shortage of accommodation, as illustrated by figures on population growth and completed housing units. In the past ten years, the population in the top seven locations has increased by between 7 per cent in Dusseldorf and 15 per cent in Frankfurt. Consequently, around 1 million more people leave in these cities than did back in 2007. This is equivalent to the city of Cologne which has one million inhabitants and 550,000 flats. In fact, however, only a total of 286,000 flats have been completed in the last ten years in the top locations. In addition, the gap between supply and demand in the housing market is not dwindling in any way; it just keeps on growing.

Number of households growing faster than supply of housing

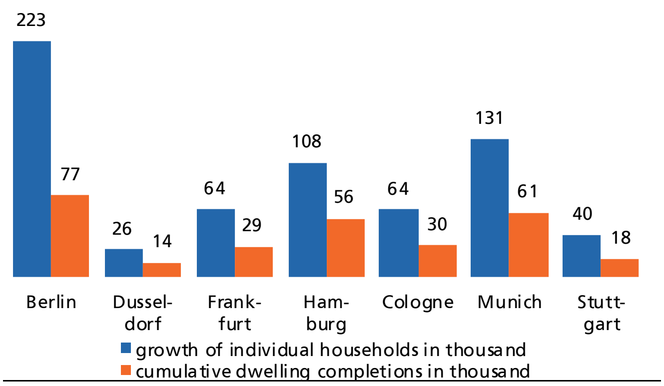
In 2017, 44,000 flats were built in the top locations − double the number ten years previously. However, this is nowhere near the 80,000 unit increase in the number of households as a measure of housing needs. On this basis, an aggregated housing shortage of around 300,000 homes has been building up since 2007. However, it is very difficult to say whether this is the true scale of the demand or not. After all, those living in top locations have come to terms with the shortage of living space and compromised, otherwise there would be thousands of homeless people in these cities.

POPULATION GROWING IN ALL TOP LOCATIONS, BUT PACE VARIES
POPULATION GROWTH FROM 2007 TO 2017



Source: Feri

NUMBER OF NEW HOUSEHOLDS IN TOP LOCATIONS TWO TO THREE TIMES GREATER THAN NUMBER OF NEW HOMES BUILT SINCE 2007
INCREASE IN HOUSEHOLDS VS. NEW HOMES FROM 2007 TO 2017



Source: Feri, Statistische Ämter von Städten und Bundesländern

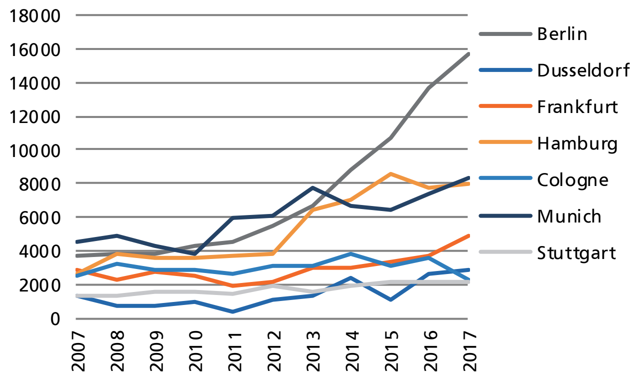
Not one of the top locations has reached an adequate level of housing completions to meet the demand

Not one of the top locations has managed to match the increase in households with a corresponding number of new homes with the exception of Dusseldorf where the gap is fairly small. The biggest gap by far is in Berlin where the number of households has increased almost three times as fast as new completions; in the other top locations, it has only increased twice as fast. However, housing construction in some of the cities under consideration, e.g. in Berlin and Hamburg, has picked up quite significantly.

New building in Berlin and Hamburg has picked up significantly from a low level

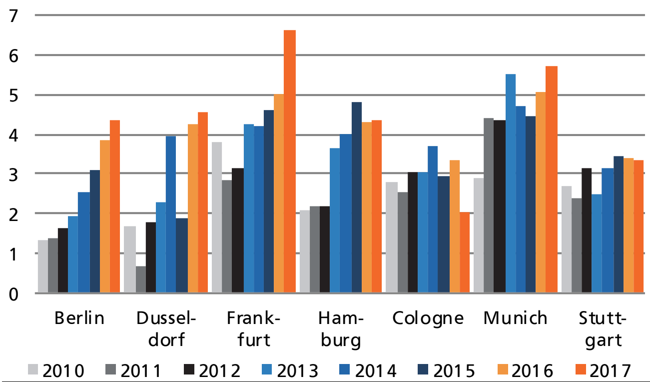
The number of housing completions in Berlin has almost quadrupled to 16,000; in Hamburg, housing construction has doubled to 8,000 units. Is this sufficient to bridge the gap gradually? Unfortunately not since the big increases mainly reflect a low starting point. In reality, housing construction in relation to the number of inhabitants in Berlin and Hamburg is fairly average at around 4 units per 1,000 inhabitants. Frankfurt and Munich have shown that a much higher level of new housing construction is possible. Around 6 new housing units per 1,000 inhabitants have been built since 2017 in each of these two cities. This is especially remarkable in Munich since building land in Germany's cities with the highest population density is in very short supply. The fact that there is still a housing shortage in Frankfurt and Munich in spite of relatively abundant new building reflects particularly strong population growth.

HOUSING CONSTRUCTION UP NOTICEABLY IN BERLIN, HAMBURG AND MUNICH…
HOUSING COMPLETIONS



Source: Feri, Statistical offices of cities and federal states

… BUT MORE BUILT IN FRANKFURT AHEAD OF MUNICH IN RELATION TO POPULATION SIZE
HOUSING COMPLETIONS PER 1,000 INHABITANTS



Source: Feri, Statistical offices of cities and federal states

Marked increase in house building over and above present level would be difficult

In view of the shortage of homes, the press is calling almost daily for an increase in housing construction. Although this would definitely be possible from a technical point of view, it is likely to be hampered by the current process involved in designating building land, the planning permission process and also carrying out the construction work. If everything remains as it is at present, the current average of around 4 to 5 housing units per 1,000 inhabitants which is being completed across the seven top locations could remain the best that can be done.

Construction firms building at close to capacity

At almost 60,000 units, the number of housing completions at the end of the 1990s was briefly well above the 44,000 units built last year. However, conditions back then were very different. One major difficulty now is the lack of manpower and the fact that the construction industry is now much more stretched. This is clear from the level of capacity utilisation calculated by the ifo Institute, which is now close to 80 per cent, i.e. 15 percentage points more than 20 years ago. At the time, there were still over 3 million people working in the labour-intensive construction industry. The figure is now down to only 2.5 million. In addition, the process of job growth is rather sluggish. People are no longer so keen to work on a building site, and consequently, other sectors do better when it comes to attracting skilled labour and apprentices.

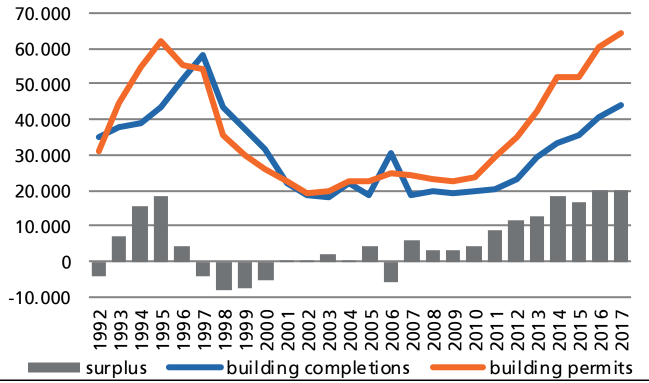
Far more planning permissions than what is actually being built

The fact that the housing construction sector still has headroom is clear from the growing overhang of planning permissions in relation to building completions. The gap has risen to 20,000 housing units p.a. in the top locations. On an aggregated basis, there have been planning permissions for 360,000 homes since 2010, but only 247,000 units have been built. If all the homes had been built for which there was a planning permission, the current housing shortage would be considerably less.

Lack of building land and protests hampering housing construction

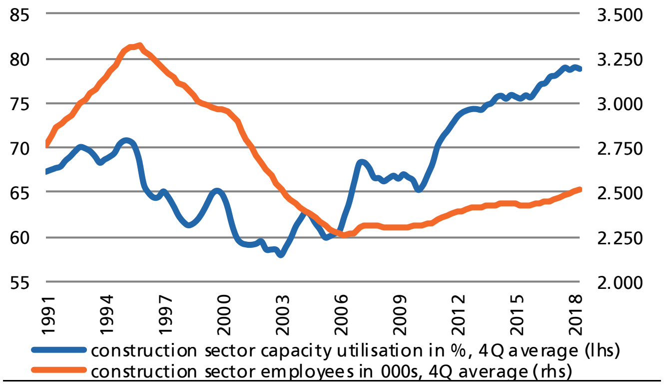
However, other factors are also hampering housing construction. There is now much less space in cities. In 1997, the population in the top locations was around 8.8 million; today, the figure is close to ten million. Consequently, building land is becoming increasingly scarce and opposition from residents to housing plans is mounting. Local residents resent the fact that development generally makes the housing market more expensive in a specific location if attractive new housing is built because of the gentry fication effect. In addition, public services are mostly already under heavy pressure with full buses and trains and a lack of parking along with places in schools and childcare facilities.

COMPLETIONS IN TOP LOCATIONS LAGGING INCREASINGLY BEHIND NUMBER OF PLANNING PERMISSIONS



Source: Feri, Statistical offices of cities and federal states

LACK OF SKILLED LABOUR IN CONSTRUCTION AND HIGH LEVEL OF UTILISATION OF THE CONSTRUCTION INDUSTRY

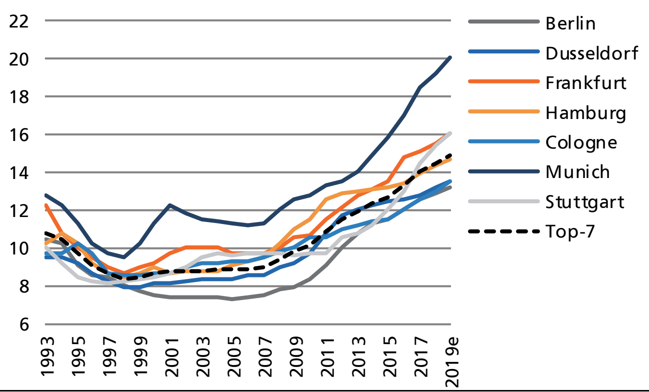


Source: ifo Institute, Federal Statistical Office

Many adjustments will have to be made to arrive at much higher new-build volume

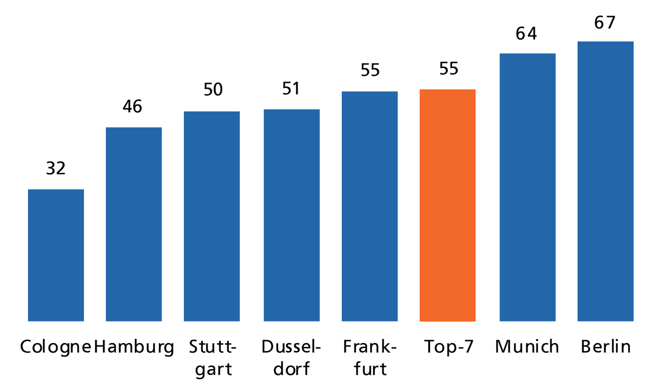
However, protests are not just directed at the in-filling of residential areas; they are also directed at new town planning. However, without the latter, it will be virtually impossible to achieve the number of new homes needed. Plans to build a new town in the north-west of Frankfurt for example have led to a storm of protests by residents in neighbouring communities in the Hochtaunus district. However, the construction of urgently needed new housing is not being slowed down only by growing protests; the fact that too little land is being designated as building land, the long-winded planning permission process, speculation involving building plots and the technical status in the construction sector are all hampering housing construction. Industrial production methods and a digitalisation of building projects have so far failed to become established across the sector.

RENTS IN MUNICH IN A CLASS OF THEIR OWN
AVERAGE INITIAL RENT IN EUR PER SQM



Source: BulwienGesa, DZ BANK Research forecasts

HOUSING COSTS 50% MORE EXPENSIVE IN SPACE OF TEN YEARS
AVERAGE INITIAL RENT FROM 2007 TO 2017 (%)



Source: BulwienGesa

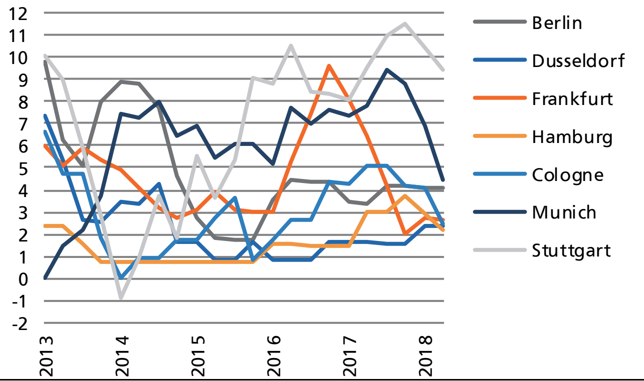
Tight housing markets pushing up initial rents

On balance, it is unlikely that there will be any marked improvement in the already tight housing market in top locations in the near future. In any case, there are no reserves of vacant properties left which might offer a buffer. Consequently, rents are likely to continue to rise, even though they have already increased considerably. Average rents for newly let or re-let properties ("initial rents") in the top locations rose by 55 per cent to EUR 12.50 per sqm from 2007 to 2017 with the exception of Cologne where the increase was much smaller at just over 30 per cent. Rents in Hamburg, Stuttgart, Dusseldorf and Frankfurt have risen by around 50 per cent. The strongest rises have been in Munich and Berlin at around 65 per cent. In Berlin, this also reflects a low starting point. What is more impressive is the performance in Munich since rents in the city were already well above average ten years ago. Munich residential rents have left rents in the other top locations well behind.

Average initial rents ranging from under EUR 13 to almost EUR 19 per sqm

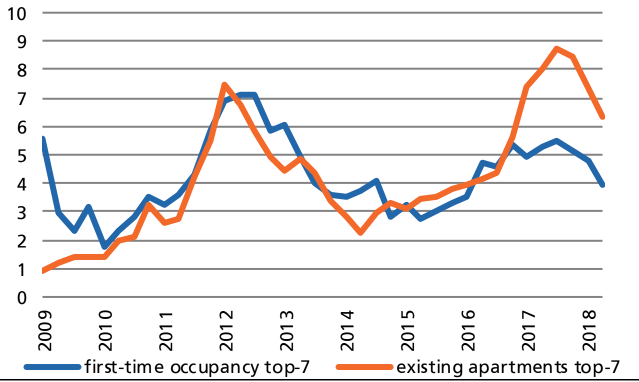
At the half-way stage in 2018, average initial rents per sqm ranged from not quite EUR 13 in Berlin, Dusseldorf and Cologne to almost EUR 19 in Munich. The figures in the other three top locations are EUR 14 in Hamburg and just under EUR 15 in Frankfurt and Stuttgart. The figure for the luxury end of new apartments is far higher. Prime properties can only be rented for under EUR 20 per sqm in Dusseldorf and Cologne. Prices in Berlin, Frankfurt, Hamburg and Stuttgart are just above EUR 20. Once again, Munich is in a class of its own in this respect, with rents for prime properties already nearing the EUR 30 per sqm mark.

MARKED SLOWDOWN IN INITIAL RENT RISE IN MOST TOP LOCATIONS
YOY % CHANGE IN AVERAGE INITIAL RENT



Source: BulwienGesa

GAP BETWEEN RENTS FOR NEW PROPERTY AND EXISTING HOUSING STOCK NOW WIDENING AT A SLOWER PACE
YOY % CHANGE IN RENTS



Source: BulwienGesa

Rents rising fastest in Stuttgart

Whereas the aggregate increase in average initial rents were fairly close together over the last ten years, year-on-year rates of change have varied much more. In Dusseldorf, Frankfurt, Hamburg and Cologne, rents are currently only rising at a moderate rate of 2 to 3 per cent p.a. The rate is slightly higher in Berlin and Munich at over 4 per cent. However, at present, only rents in Stuttgart are rising faster with an annual increase just in two digits.

Recently, rents for existing properties have risen faster than initial rents

It is also clear that the rise in rents in the majority of top locations has recently eased off. This applies not only to initial rents, but also to rents for existing housing stock, for which rents still rose by over 8 per cent year-on-year in 2017. It is also interesting to note that rents in both market segments were almost neck-and-neck from 2010 to 2016, but that a gap opened up last year. In 2017, rents for existing properties rose much faster. One possible reason for this is the high level of rents charged for new-build homes and an increase in completions which has increased supply at the more expensive end of the rental market. In contrast, supply at the cheaper end of the market, consisting of existing housing stock, is still tight.

Forecast up to 2019: more supply and high rents likely to dampen increase in rents

The rise in rents in the housing market is likely to continue in all seven top locations. However, the momentum in the rental market for new builds as a whole is likely to ease. We anticipate an annual increase in rents this year and next of slightly over 3 per cent. There are two reasons for this: firstly, the fact that rents have already shot up, and secondly, the fact that there has been an increase in supply. Our forecasts for initial rents up to the end of 2019 are shown in the following table.

HOUSING FORECASTS FOR THE TOP SEVEN LOCATIONS UP TO 2019

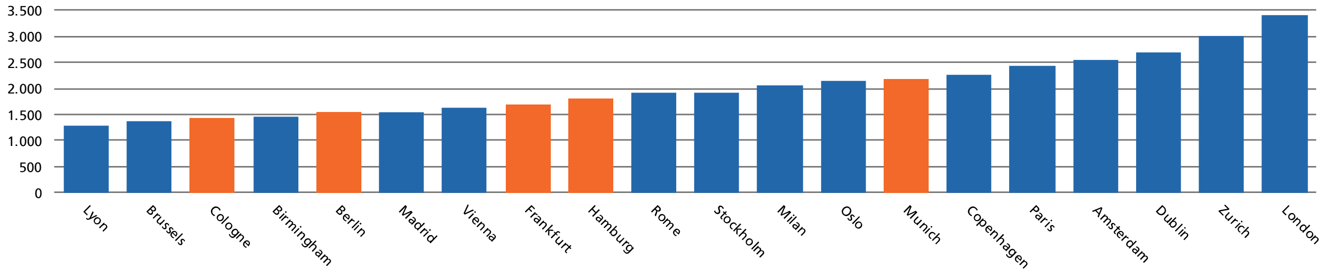
	Year	Berlin	Cologne	Düssel-dorf	Frank-furt	Ham-burg	Munich	Stutt-gart	Top-7
Demand									
Population in thoausand	2017	3.591	1.085	614	739	1.817	1.465	633	9.944
5-year change in %	2012-2017	7,3	6,5	4,0	8,2	5,4	6,6	6,6	6,6
Private households in thousand	2017	2.109	596	334	413	1.052	848	343	5.695
Unemployment rate in %	Juli 2018	8,1	7,8	6,7	5,4	6,3	3,6	4,1	6,5
Disposable income per capita in Euro	2017	20.195	22.328	26.292	22.799	25.012	28.995	25.784	23.530
Supply									
Dwelling units in thousand	2017	1.957	545	338	386	946	791	309	5.272
Completions p.a. (5-year average)	2011-2016	2,6	3,2	2,8	4,2	3,8	4,8	3,1	3,4
per 1000 inhabitants	2016	4,4	2,0	4,6	6,6	4,4	5,7	3,4	4,4
Rent									
First-time occupancy, average rent	2017	12,5	12,5	12,8	15,1	13,9	18,5	14,5	14,0
in Euro/sqm	2018e	12,9	13,0	13,2	15,5	14,3	19,2	15,4	14,4
	2019e	13,2	13,5	13,5	16,0	14,7	20,0	16,0	14,9
	2017	4,2	4,2	1,6	2,0	3,7	8,8	11,5	5,1
yoy change in %	2018e	2,8	4,0	3,1	2,6	2,9	3,8	6,2	3,4
	2019e	2,7	3,8	2,3	3,2	2,8	4,2	3,9	3,2
5-year change in %	2012-2017	25,0	13,6	9,4	24,8	7,8	37,0	38,1	22,0
First occupancy, maximum rent	2017	20,0	18,0	18,0	22,0	21,0	28,0	19,5	21,1
in Euro/sqm	2018e	20,8	18,0	18,5	22,5	21,7	28,8	20,5	21,8
	2019e	21,6	18,5	19,0	23,0	22,3	29,5	21,3	22,5
	2017	17,6	12,5	9,1	4,8	4,0	12,0	8,3	11,3
yoy change in %	2018e	4,0	0,0	2,8	2,3	3,3	2,9	5,1	3,2
	2019e	3,8	2,8	2,7	2,2	2,8	2,4	3,9	3,1
5-year change in %	2012-2017	30,7	24,1	18,4	23,6	13,5	47,4	39,3	28,5

Source: BA, BulwienGesa, Feri, DZ BANK Research forecasts

Rents in other European countries often much higher

It is likely to be difficult for people living in many European cities to understand the frequent complaint by Germans that rents for flats are unaffordable. Figures which can be downloaded from the Numbeo comparison website show that renting in German cities is not that expensive. This is especially true if we take into account the strength of Germany's economy.

IN SPITE OF SHARP RISE IN RENTS, RENTS IN GERMANY STILL NOT ABOVE AVERAGE IN RELATION TO OTHER EUROPEAN COUNTRIES
MONTHLY RENT, 4-ROOM FLAT, CITY LOCATION, IN EURO



Source: www.numbeo.com

Data from 23 August 2018

FORECASTS AT A GLANCE

Structural data 2017	Inhabitants in '000	Inhabitants 2007-2017 (%)	GDP EUR m	Per capita GDP EUR	Disposable income per capita in EUR p.a.	Unemployment rate (%; July 2018)
Berlin	3,591	11.2	118	32,976	20,195	8.1
Cologne	1,085	9.9	59	54,581	22,328	7.8
Dusseldorf	614	6.8	46	74,963	26,292	6.7
Frankfurt	739	15.4	63	85,861	22,799	5.4
Hamburg	1,817	8.1	105	57,803	25,012	6.3
Munich	1,465	13.6	102	69,428	28,995	3.6
Stuttgart	633	10.4	49	77,817	25,784	4.1
Top locations	**9,944**	**10.8**	**543**	**54,618**	**23,530**	**6.5**

Retail space	Retail space 2017			Prime rents EUR per sqm			Prime rents yoy % change			Retail sales yoy % change		
	in 1.000 sqm	2007-2017 in %	Per inhabitant in sqm	2017	2018e	2019e	2017	2018e	2019e	2017	2018e	2019e
Berlin	6,490	19.7	1.8	310	310	310	0.0	0.0	0.0	3.0	2.7	2.8
Cologne	1,409	5.8	1.3	255	255	255	2.0	0.0	0.0	3.3	3.1	3.3
Dusseldorf	1,255	37.9	2.0	280	280	280	1.8	0.0	0.0	3.4	3.3	3.5
Frankfurt	1,556	27.0	2.1	300	300	300	0.0	0.0	0.0	3.5	2.9	3.1
Hamburg	2,994	16.9	1.6	285	285	285	0.0	0.0	0.0	4.1	3.6	3.7
Munich	2,109	24.6	1.4	345	345	345	0.0	0.0	0.0	4.0	3.5	3.6
Stuttgart	1,069	14.7	1.7	250	250	250	0.0	0.0	0.0	3.1	2.8	2.9
Top locations	**16,881**	**20.0**	**1.7**	**298.4**	**298.4**	**298.4**	**0.3**	**0.0**	**0.0**	**3.5**	**3.1**	**3.3**

Office space	Stock of office space 2017			Prime rents EUR per sqm			Prime rents yoy % change			Vacancy rate %		
	in '000 sqm	Per capita in sqm	Per office worker in sqm	2017	2018e	2019e	2017	2018e	2019e	2017	2018e	2019e
Berlin	18,949	5.3	32.9	30.0	32.7	34.0	7.1	9.0	4.0	2.2	1.8	2.0
Cologne	7,656	7.1	31.4	21.0	21.5	21.9	0.0	2.4	2.0	4.0	3.5	3.2
Dusseldorf	7,560	12.3	36.1	24.5	25.0	25.5	0.0	2.0	2.0	7.1	7.3	7.1
Frankfurt	10,164	13.8	34.8	38.5	39.5	40.5	8.5	2.6	2.5	9.3	8.3	7.8
Hamburg	13,706	7.5	31.7	26.5	27.0	27.5	1.9	1.9	1.9	4.5	3.8	3.5
Munich	13,747	9.4	32.5	36.0	37.0	38.0	3.7	2.8	2.7	2.0	1.7	1.5
Stuttgart	7,787	12.3	39.4	21.4	22.0	22.5	8.6	2.8	2.3	2.1	2.1	2.2
Top locations	**79,569**	**8.0**	**33.5**	**29.3**	**30.5**	**31.3**	**4.7**	**4.1**	**2.8**	**4.1**	**3.7**	**3.5**

Housing market	Growth from 2012 to 2017 (%)			Average initial rent EUR per sqm			Average initial rent yoy % change			Initial rent top location EUR per sqm		
	Inhabitants	Households	Housing stock	2017	2018e	2019e	2017	2018e	2019e	2017	2018e	2019e
Berlin	7.3	7.5	4.3	12.5	12.9	13.2	4.2	2.8	2.7	20.0	20.8	21.6
Cologne	6.5	7.5	0.2	12.5	13.0	13.5	4.2	4.0	3.8	18.0	18.0	18.5
Dusseldorf	4.0	4.5	1.0	12.8	13.2	13.5	1.6	3.1	2.3	18.0	18.5	19.0
Frankfurt	8.2	8.5	4.7	15.1	15.5	16.0	2.0	2.6	3.2	22.0	22.5	23.0
Hamburg	5.4	7.0	2.6	13.9	14.3	14.7	3.7	2.9	2.8	21.0	21.7	22.3
Munich	6.6	7.3	4.0	18.5	19.2	20.0	8.8	3.8	4.2	28.0	28.8	29.5
Stuttgart	6.6	6.9	1.6	14.5	15.4	16.0	11.5	6.2	3.9	19.5	20.5	21.3
Top locations	**6.6**	**7.2**	**3.2**	**14.0**	**14.4**	**14.9**	**5.1**	**3.4**	**3.2**	**21.1**	**21.8**	**22.5**

Source: Feri, BulwienGesa, DZ BANK Research forecasts

Note on the prime rents used for retail and office space: The prime rents adopted by BulwienGesa represent the mean of the three top three to five per cent of the rentals in the market, which means that the prime rents given are not the same as the absolute top prime rent. For this reason, the higher rent figures shown for individual locations, some of which are quoted in alternative market reports, are fundamentally not contradictory.

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