



# Crumbs or pie?

## How much will Frankfurt's property market benefit from BREXIT? <sup>1</sup>

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In view of the high level of political uncertainty surrounding the United Kingdom's decision to leave the European Union, it will be some years until the size of the Brexit pie, i.e. the relocation of companies and employees, can be determined fully. **Regardless of the final outcome of the negotiations between the UK and the EU, the city of Frankfurt is likely to benefit.**

Frankfurt is already continental Europe's main financial hub, and compared to other European cities, it can boast a range of additional advantages such as low rents and residential property prices, good infrastructure and a highly dynamic economy. **However, considering the strengths of its European and also non-European competitors, Frankfurt will end up with only a piece of the Brexit pie.**

**Frankfurt's property market would gain considerable momentum even if only a relatively small number of British companies and employees moved here.** Growth in employment in the wake of Brexit should stimulate demand for office space, thus contributing to a reduction in vacancies and rising rents in the office market close to the city centre. Following the referendum on Brexit, **we have raised our average rent increase expectations in the top segment to over 2% per year by 2020** (double what had previously been anticipated for the 2018-2020 period).

**Bottlenecks have existed in the housing market for some years.** A large demand overhang – the shortage of housing runs to several tens of thousands of homes – and a lack of undeveloped land are the main reasons why prices have risen by around 25% since 2009. **An additional Brexit effect could drive prices up significantly. The rule of thumb in this context is the price per square metre increases by EUR 25 for every 1,000 missing homes.** Assuming additional demand for 5,000 homes, residential property prices will increase by EUR 125 or around 4% compared to current levels.

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<sup>1</sup> We would like to thank Thomas Horn (Regionalverband FrankfurtRheinMain), Luisa Quirin (IHK Frankfurt am Main), Oliver Schwebel (Wirtschaftsförderung Frankfurt GmbH), Sebastian Trippen (IHK Frankfurt am Main) and Hubertus Väth (Frankfurt Main Finance) for information and comments on our study. All charts show the latest available data, except for charts which explicitly mention an earlier date.

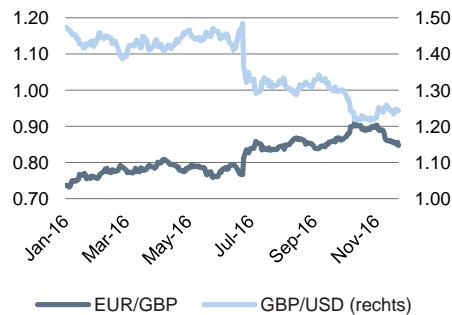


## How much will Frankfurt's property market benefit from BREXIT?

### Pound sterling

1

left y-axis: EUR/GBP  
right y-axis: GBP/USD



Sources: Bloomberg Finance LP, Deutsche Bank Research

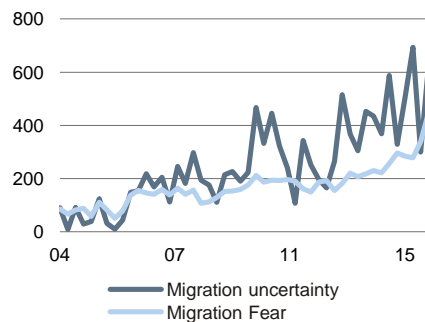
### Results of Brexit remain uncertain

For the foreseeable future, the question as to what will happen in the wake of Brexit cannot be answered with any degree of reliability. Possible scenarios range from a contentious separation to a second, "Brexit" referendum. Exit negotiations can only begin after the UK has invoked Article 50 of the Treaty of Lisbon. At the most recent Tory party conference, the UK Prime Minister Theresa May announced that the UK would issue official notification of its intention to withdraw its membership by the end of March 2017. This could be delayed by the High Court ruling on the requirement for parliamentary consent, a further ruling by the Supreme Court and possibly the drafting of a parliamentary bill which can then be put to a vote. The Treaty of Lisbon provides for a two-year period for negotiations on the withdrawal of membership. However, Greenland, until now the only member state to leave the EU, needed more than two years when it left in the 1980s, although it only had to reach an agreement on fishing rights. Negotiations with the UK are more wide-ranging because all areas of the Single Market are being re-regulated. The UK's top priority is likely to be limiting freedom of movement given that so many people voted to leave the EU because of migration. At the same time, the issue of passporting, in other words, the right to continue to provide financial services in the EU from the UK, is also likely to be important. Anything else means the British financial industry would risk substantial losses if it no longer had access to the EU market. For this reason, complex and protracted negotiations could also extend beyond June 2019. In this case, it would also need to be clarified whether and under what conditions British MEPs could stand for elections to the European Parliament in 2019. The negotiations or a provisional agreement could also be a key topic of the next UK general election in 2020, whereby feedback effects on the outcome of the negotiations are to be expected. It will be a number of years before we know what direction things are taking. Until then, political uncertainty will remain particularly high.

### UK: Migration Index

2

Average = 100



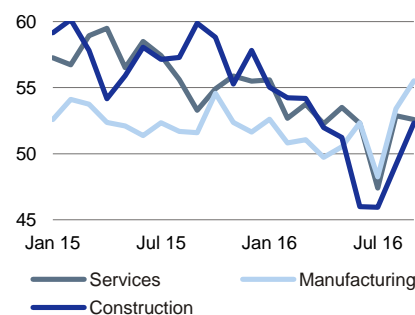
Data shown until end-2015

Sources: Haver, Deutsche Bank Research

### UK: Purchasing managers' indices

3

above 50 = economic expansion



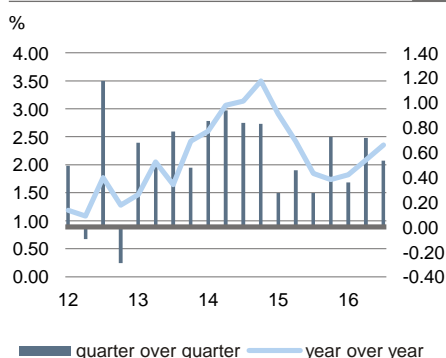
Source: Markit

### British economy remains robust despite currency depreciation

The frequently repeated statement that "Brexit means Brexit" and demands posited by Theresa May are mostly interpreted as an indication of a "hard Brexit". Although these assessments led to a huge depreciation of around 20% in the value of the pound on the foreign exchange markets, the British economy has nevertheless performed surprisingly well over the past few months. Leading indicators dropped only temporarily. In Q3, GDP expanded by 0.5% on the preceding quarter. The number of job vacancies remained high, although it fell in particularly Brexit-sensitive sectors. The unemployment rate has remained consistently low and, according to the latest figures available, the rate of employment even managed to grow slightly in the June to September period. Property prices fell across the country before the referendum, but have remained more or less unchanged since. Only London has seen a slight decline in recent months. However, house prices both in London and nationwide are substantially higher than last year. Nevertheless, we continue to expect that burdens on the economy will gradually begin to be felt. Once the first signs of a slowdown are registered, hiring freezes and investment cuts could quickly trigger a domino effect. In this negative scenario, the UK's and, in particular, London's international character could rapidly have a boomerang effect, especially as many expats already have to endure major losses in purchasing power due to the depreciation of the pound. What is more, a number of recent press reports indicate a deterioration in social attitudes towards non-British citizens. If this continues, highly qualified Europeans are especially likely to welcome a change. More than 400,000 EU residents of employment age and

### UK: Real GDP

4

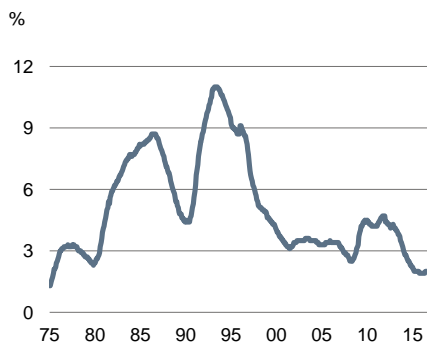


Source: ONS, Deutsche Bank Research



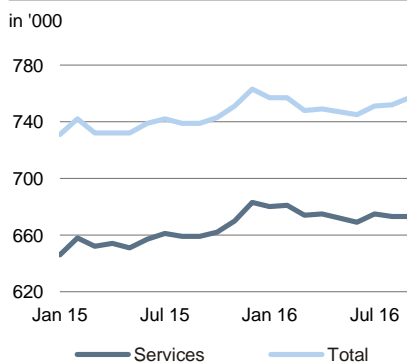
## How much will Frankfurt's property market benefit from BREXIT?

London: Claimant count 5



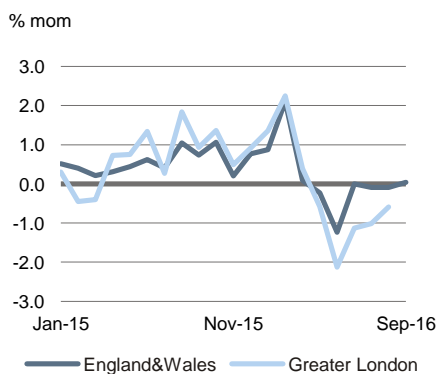
Sources: ONS, Deutsche Bank Research

UK labour market: Vacancies 6



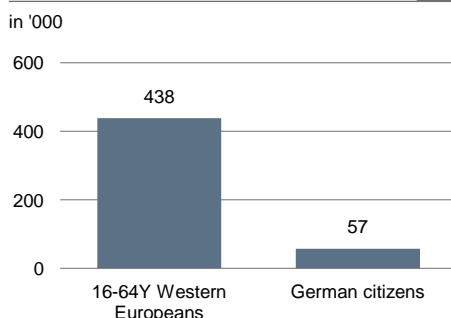
Sources: ONS, Haver, Deutsche Bank Research

United Kingdom: House prices 7



Quellen: Acadata, Deutsche Bank Research

2015 London's Expats 8



Definition West ern Europe: AT, BE, DK, FI, FK, DE GR, IT, LU, NL, PT, IE, ES, SE

Source: ONS

over 50,000 Germans were living in London in 2015. After the referendum, Frankfurt welcomed potential new residents with a website ([www.welcometofrm.com](http://www.welcometofrm.com)), set up to provide expats with information about living and working in the city. How expats react will, in effect, be a seismograph for UK politicians, measuring both the intensity and also the after-effects of the Brexit shock. The harder Brexit is, the more immigrants and employees will leave the island, a number of whom will come to Frankfurt. This would be a further factor driving up prices in the Frankfurt property market, already beset by a number of existing bottlenecks. However, before we address details concerning the commercial and residential property market, we will analyse the foreseeable consequences of Brexit and compare Frankfurt's chances with those of other European cities in the competition for a slice of the Brexit pie.

### New home needed for European institutions

In spite of the extent of the uncertainty surrounding the UK's final status, it is quite likely that the European institutions headquartered in London will move. These include major institutions such as the European Bank for Reconstruction and Development (EBRD) with 1,400 staff and the European Medicines Agency (EMA) with 890 employees. The EBRD could possibly relocate to join one of its stakeholders in Luxembourg – the European Investment Bank (EIB). Both banks have similar tasks and employees with similar training profiles. However, owing to the regular balancing of political and economic interests between the EU member states, the EBRD and the EMA may have to move their headquarters to southern or eastern Europe. Given current political divergences, the chances that Warsaw and Budapest could be selected as locations are slight, however. Another European institution on the look-out for new headquarters is the European Banking Authority (EBA) with 150 employees. Together with the ECB, and consequently also the European Systemic Risk Board (ESRB) and the European Insurance and Occupational Pensions Authority (EIOPA), Frankfurt is already home to some of Europe's key financial regulatory entities. Combining Europe's supervisory structure in Frankfurt would make sense both from an economic and a political viewpoint. However, the bulk of potential job relocations is not likely to take place in the public but rather in the private sector, chiefly in the financial industry. In this context, Frankfurt is not only competing with European, but also non-European cities.

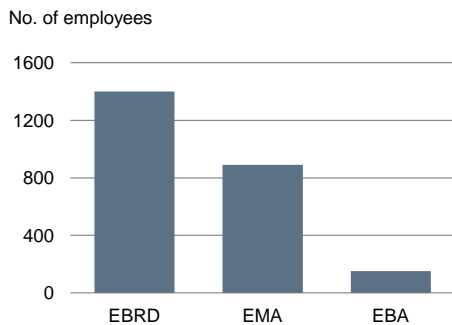
### Global financial hubs are strong competitors

London is the world's financial capital for currency and bond trading. Large investment banks employ over 50,000 people in the City to advise global investors. Financial centres outside of Europe could benefit if clients reduce the amount of business they allocate to London because of high levels of political and legal uncertainty. This applies even more so as Europe's financial centres suffer from a number of disadvantages in terms of global competition. First, Wall Street and Asian financial centres have significantly higher economies of scale compared to their European counterparts. Daily OTC FX turnover shows the small global market share held by financial centres in Europe (Chart 11). Second, many European countries are in favour of restrictive financial market regulations and introducing a financial transaction tax, and also have corresponding disadvantages. Third, the inflexible labour markets, high tax rates and social security charges in many eurozone countries serve as deterrent for global investors. Fourth, macroeconomic imbalances in the eurozone remain essentially unchanged and political divisions now appear greater than ever before. Fifth, due to their high level of economic and asset growth, Asian financial centres are, in any event, likely to become more important this century.



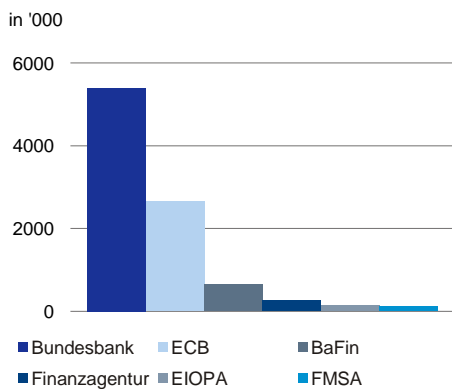
## How much will Frankfurt's property market benefit from BREXIT?

European institutions with head office in London **9**



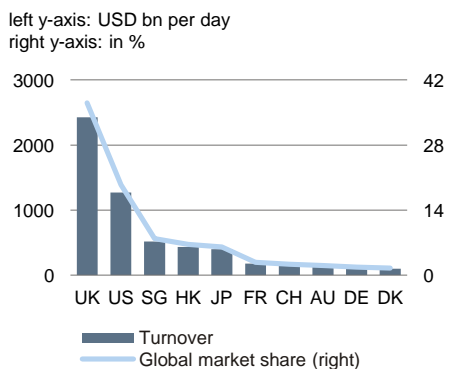
Sources: Deutsche Bank Research

2015 Employees of regulatory entities in Frankfurt **10**



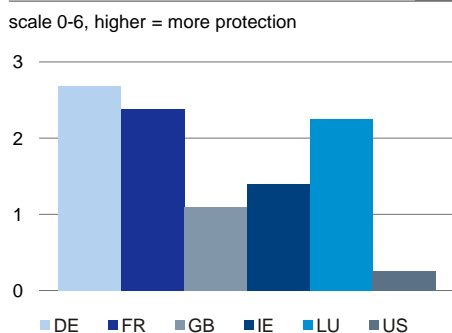
Sources: Bundesbank, Deutsche Bank Research

2016 OTC FX turnover **11**



Sources: BIZ, Deutsche Bank Research

Employment protection index **12**



Last survey done in 2013

Sources: OECD, Deutsche Bank Research

For this reason, Europe is at risk of only getting the crumbs from Brexit, while the main beneficiaries are on other continents.

### Frankfurt is continental Europe's main financial hub

Frankfurt has a really good hand compared to its competitors in Europe – Amsterdam, Dublin, Luxembourg and Paris<sup>2</sup> are mostly mentioned in this context, sometimes Warsaw as well. Firstly, Frankfurt is already continental Europe's main financial hub. In addition to national (Federal Financial Supervisory Authority – BaFin) and European financial regulators, the Deutsche Bundesbank and the European Central Bank, all major global universal and investment banks have a relatively strong presence in the city. Secondly, Frankfurt is located close to the many internationally successful German companies and consequently to a client base for global financial solutions. Just days after the Brexit referendum, media reports stated that a Swiss bank intended to bundle essential parts of its European wealth management operations in Frankfurt. This decision was possibly taken in the light of falling British share prices directly after the referendum and therefore, does not reflect Frankfurt's structural advantages as a location. Alternative locations are said to have been London and Luxembourg. This is interesting because Luxembourg, in a similar way to Amsterdam and Dublin, has regulatory and/or tax advantages over Frankfurt. In addition to tax concessions, Dublin has the added advantage of an English-speaking workforce and a flexible labour market. For British fintechs especially, Dublin offers an innovative working environment as it is the home to the European headquarters of companies such as Google and Facebook. Frankfurt's fintech scene is small by comparison, nevertheless, it has been growing noticeably in recent years. In addition, measured in terms of data throughput, Frankfurt is the largest internet hub, which gives it an advantage as a location. However, the fintech scene is still not significant enough to have an impact on current property market developments. The relocation of clearing houses could have a direct impact, however. The ECB planned for these to be located in the eurozone as early as 2011, and to this end, amended regulatory requirements. The British government appealed to the European General Court of Justice, which ruled against the ECB's policy in 2015, thus preventing the relocation of the clearing houses to the eurozone. Following Brexit, the ECB is likely to take steps to achieve its goal again. As a result of the application of other regulatory requirements, additional areas may also be forced to relocate to the eurozone, for example, back office, sales and trading positions. Ultimately, it would be possible to break up large sections of the investment banking value chain. However, this threatening scenario for the City appears to be relatively unlikely because both the stability of the financial system and geopolitical considerations are likely to exclude such a drastic step. A sign as to how successful this will be in strengthening the eurozone's clearing houses could come in the coming months in the planned merger between the London Stock Exchange and Deutsche Börse. One goal of the merger is to generate synergies by linking London's largest clearing house, LCH, with Deutsche Börse's Eurex. This could indicate whether Brexit will bring about in a shift of power in Frankfurt's favour. However, Frankfurt could also be used as a location for regulatory arbitrage – i.e., formal compliance with regulations – while, in effect, essential parts of the clearing business remain in London. In this case, the positive stimulus for Frankfurt would be quite small.

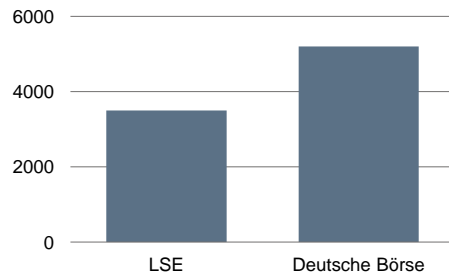
<sup>2</sup> <http://www.ey.com/DE/de/Newsroom/News-releases/EY-20160711-Brexit>,  
<http://www.bcg.de/media/PressReleaseDetails.aspx?id=tcm:89-211080>



## How much will Frankfurt's property market benefit from BREXIT?

2015 Number of employees

13

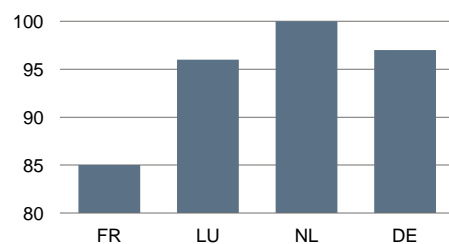


Sources: LSE, Deutsche Börse AG

2015 TOEFL score

14

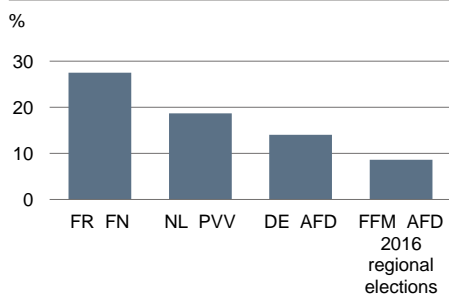
Overall score (Min 0, Max 120)



Sources: TOEFL, Deutsche Bank Research

DE, NL, FR: Current survey results of right-wing parties

15

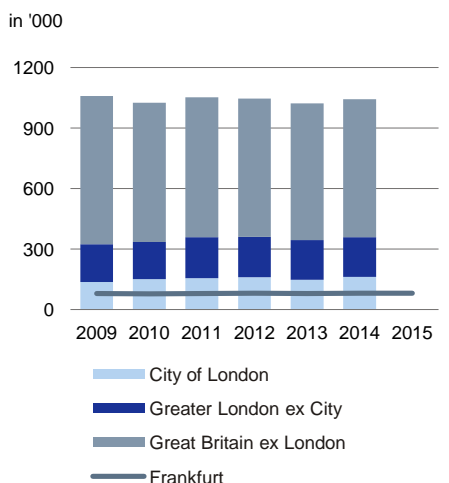


FN=Front National, PVV=Partij voor de Vrijheid, AfD=Alternative für Deutschland

Sources: Elabe, Peil, Regional statistics, Deutsche Bank Research

London vs. Frankfurt: Employees in the financial industry

16



Sources: ONS, BRES, Bundesbank, Deutsche Bank Research

### EU-Competitors: euro-scepticism, taxes and the labour market

Apart from specific developments in the financial industry, the macroeconomic and political environment will also determine who wins the Brexit race. Thanks to the Eurostar rail service, Paris is very well connected to London. In addition, following the UK's exit, Paris will be the EU's only global metropolis with a very high quality of life. By contrast, France's high income tax rates of up to 75% are a deterrent, and according to TOEFL test scores, English language skills are not as strong as in other continental European countries. The decisive argument against Paris could also be investors' fears of jumping out of a Brexit pan and into a Frexit fire. The euro-sceptical Front National has become a serious competitor for the socialist and conservative parties in the presidential elections that will take place in May 2017. The party leader Marine Le Pen is happy to be referred to as "Madame Frexit". Amsterdam's chances are also reduced by the possibility of a referendum on whether the Netherlands should leave the EU (Nexit). The nationalist Partij voor de Vrijheid (PVV) is not only striving to achieve a Nexit, but also regularly tops the polls for the parliamentary elections that will take place in March 2017. The many election gains made by the Alternative für Deutschland (AfD) party in Germany will also have a negative impact on Frankfurt's chances. However, in nationwide polls, the AfD currently accounts for less than 15% and, unlike similar parties in the Netherlands and France, it is far removed from assuming political responsibility. In addition, the AfD received less than 10% of the vote in Frankfurt's local elections in 2016. Therefore, the political uncertainties of its competitors give Frankfurt a competitive edge. On the other hand, Germany's restrictive employment protection laws could be a major competitive disadvantage. In this connection, one can be sceptical as to whether the proposal made by Hesse's finance minister to ease employment protection restrictions for top earners with annual salaries of over EUR 300,000 will be implemented. In any event, this initiative highlights how active politicians have become in plugging Frankfurt in the hope of strengthening it as a financial hub.

### London's crumbs could become Frankfurt's pie

While Frankfurt has a range of advantages over its European competitors, a number of other cities in Europe are set to benefit from jobs relocating away from London. How substantial this migration will actually be in the coming years remains unknown. The analysis by Oliver Wyman commissioned by the lobby group TheCityUK<sup>3</sup> concludes that the extent of the migration flows from London will vary depending on the outcome of the Brexit negotiations. The recent sharper tone emerging from London has increased the probability of a "hard Brexit" with the result that access to the EU Single Market could be lost. According to Oliver Wyman, this puts up to 75,000 jobs at risk. If there is an orderly withdrawal from the EU and access to the Single Market is retained, migration is likely to be comparatively low. In this case, Oliver Wyman predicts a loss of only 4,000 jobs in the financial sector, including downstream services. We consider the latter scenario to be overly optimistic even if London is likely to remain a global financial hub. After all, the British financial industry employs more than one million people, of whom more than 350,000 are particularly flexible and over 150,000 work in the City. In addition, a hitherto well-functioning British business model has had the effect of increasing the number of employees in the City, and in the greater London area, by more than 10% since 2009. By contrast, the number of people employed in Frankfurt's financial industry has been stagnating around the 80,000 mark in recent years. A slight

<sup>3</sup> Oliver Wyman, "The impact of the UK's exit", October 2016.

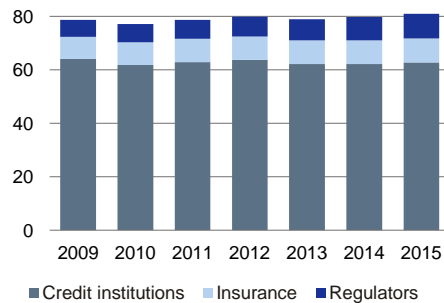


## How much will Frankfurt's property market benefit from BREXIT?

Employees in the financial industry in Frankfurt

17

in '000

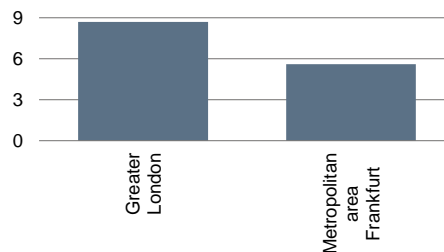


Sources: Bundesbank, Deutsche Bank Research

2015 Population

18

in m

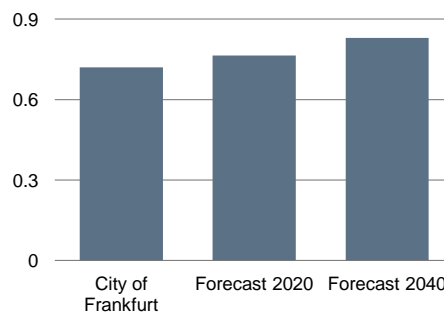


Sources: ONS, Statistisches Landesamt Hessen, Deutsche Bank Research

Population in Frankfurt

19

in m

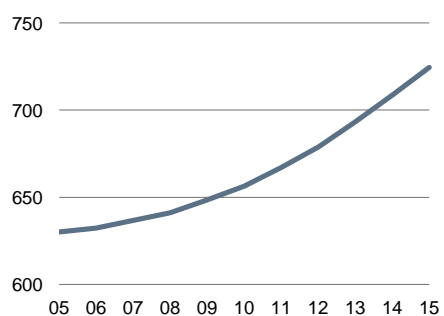


Sources: ONS, Statistisches Landesamt Hessen, Deutsche Bank Research

Frankfurt: Population

20

in '000



Sources: Stadt Frankfurt, Deutsche Bank Research

drop in the number of employees in banking has been counterbalanced by increases in the insurance sector and at financial regulators. The difference in size between the two cities is such that even minor outflows from London could be of major importance for Frankfurt. Based on these considerations, we have produced the following, rather cautious baseline scenario: if Frankfurt succeeds in attracting 1% or 3,500 of London's financial sector employees, plus potentially 150 EBA employees, one or more other companies outside of the financial industry and a number of expats from London to Frankfurt, it can expect its working population to increase by 5,000. In line with these considerations, we expect the number of office workers to increase by 5,000, together with an additional housing requirement of 5,000 homes in Frankfurt by 2020.

### Frankfurt's economic strength is the basis for property demand

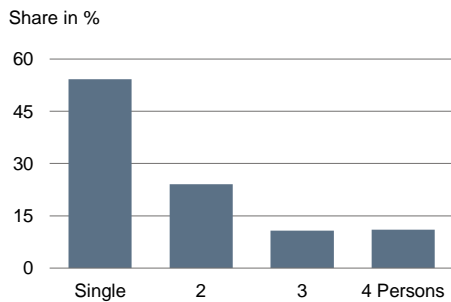
Frankfurt is not only a European financial hub, it also one of the most well known exhibition cities. The Frankfurt Book Fair and the International Automobile Fair (IAA), the world's largest automobile exhibition, generate a lot of attention. In addition, the Frankfurt metropolitan area – “Greater Frankfurt” as some like to call it since the Brexit decision – is one of Germany's most dynamic economic regions. With a population of 5.6 million, the Frankfurt metropolitan area comes closest to the 8.7 million inhabitants of Greater London. However, it extends across an area almost ten times that of Greater London. Compared to London, low housing density in and around Frankfurt is reflected in much lower property prices. Although they are rising, Frankfurt house prices are still low in comparison to other cities in Europe, and give it a potential geographical advantage. The same can be said of Frankfurt's highly developed infrastructure. In addition to the nearby international airport, rail connections to Amsterdam, Berlin, Luxembourg, Munich, Paris and Zurich take less than five hours.

The resulting high quality of life in Frankfurt has led to a continual rise in the number of residents in recent years. At the end of 2015, 724,500 people had registered Frankfurt as their main place of residence, an increase of 76,000 (12%) on a decade earlier. A further 30,000 people had registered Frankfurt as their secondary residence. People moving to Frankfurt come primarily from other parts of Germany and other European countries outside Germany, whereby compared to the metropolitan area, the city of Frankfurt typically registers negative net migration. Popular places to live within the metropolitan area predominantly include the well connected villages and towns of the Hochtaunus and Main-Taunus districts. The increase in the number of residents means the number of households in Frankfurt has also risen to over 400,000, slightly over half of which are single-person households. The number of residents and households is likely to rise further in the coming years. With the existing macroeconomic imbalances in Europe, migration flows from southern and eastern Europe to Germany are likely to continue. Major cities and metropolitan areas should also benefit from internal migration to dynamic labour markets. At present, the City of Frankfurt's official population projections for the period until 2020 expect the number of residents to increase by 40,000 to 764,000 – with current projections of a long-term increase to as much as 830,000 by 2040. Together with the growing number of residents and a dynamic economic environment, the number of people working in Frankfurt has also risen by almost 12% since 2009. In 2014 almost 600,000 people were employed in Frankfurt, more than half of whom were commuters. Almost 90% are employed in the services sector, of which more than 10% in the financial sector and just under 10% in manufacturing. In recent years employment growth has been strongest in manufacturing and weakest in the financial sector. Compared to other major German cities, Frankfurt has particularly low unemployment rates (total unemployment, youth unemployment and unemployment among foreign nationals), whereby – unusually for a major city – the youth and foreign national



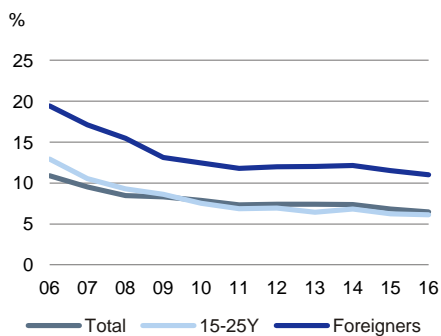
## How much will Frankfurt's property market benefit from BREXIT?

2015 Households by number of persons **21**



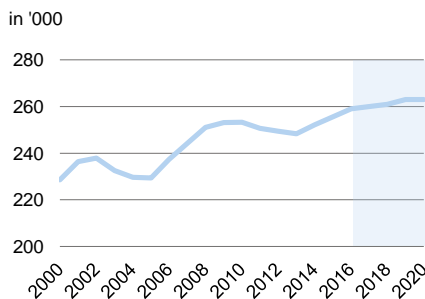
Sources: Stadt Frankfurt, Deutsche Bank Research

Frankfurt: Unemployment rate **22**



Quellen: Arbeitsagentur, Deutsche Bank Research

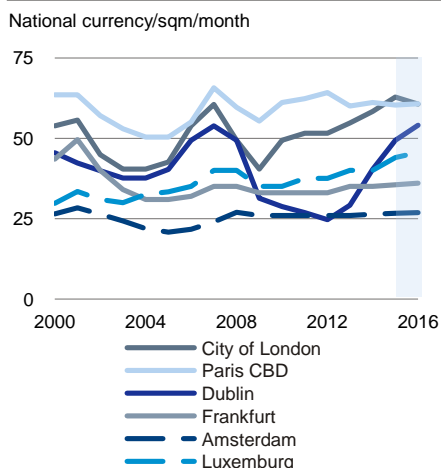
Office workers in Frankfurt **23**



as of Juli 2016

Sources: Oxford Economics, Deutsche AM Research

Top rents for office properties in central locations **24**



as of: July 2016

Sources: PMA, Deutsche AM Research

employment rate is below the national average. Frankfurt's migrants possibly have an above-average education, which would also explain the relatively high and increasing proportion of people with academic qualifications working in the city.

### Office market: modest growth following the financial crisis

The share of office employment in overall employment is relatively constant at around 40%. The number of office employees in Frankfurt currently amounts to approximately 258,000 people. This corresponds to an increase of over 12% since 2000, whereby, having grown by only 2%, the figure has been practically stagnating since 2009. The financial and insurance sector has cut jobs by 10% since the peak in 2002. Nevertheless, with 80,000 employees, it still accounts for the largest share of office employees. Growth in a number of other economic sectors has made up for the reduced momentum in the financial sector. Apart from public sector employers, these include, in particular, finance-related service providers such as consultancy firms, auditors and law firms, as well as IT companies. In our Brexit baseline scenario outlined above, a relocation of 5,000 employees corresponds to a 2% increase in office jobs. Demand for office space would increase accordingly. At the moment, the average office space per capita is around 30 m<sup>2</sup>. However, this statistic may be distorted by older, inefficient buildings and the average space per capita in the open-plan offices that are customary in Frankfurt's financial industry is more likely to be between 20-25 m<sup>2</sup>. The relocation of 5,000 jobs could generate additional demand for office space of 100,000 to 125,000 m<sup>2</sup>, which is equivalent to the space available in two to three office towers in the financial district.

### Vacancy rate at its lowest for 15 years despite moderate demand

Frankfurt currently has slightly more than 10 million m<sup>2</sup> of office space, almost half of which is located in the city centre and peripheral areas (e.g. the area surrounding the exhibition centre known as Messe). Consequently, Frankfurt's inner city office market is equivalent to just 30-35% of office space in central London. However, the office stock is comparatively large relative to the number of city centre inhabitants, which is reflected in the elevated number of commuters. In the past 15 years the market featured large overcapacities, which came about as a result of a substantial rise in the number of speculative development projects in the late 1990s and early 2000s. However, these overcapacities have been reduced since 2010. This has only resulted in parts from tenant demand because take-up has been subdued between 2012 and 2015. Rather, it is more likely to be the result of a positive trend in special effects related to conversion – i.e. change of use from office to residential or hotel – and to comparatively weak construction activity following the financial crisis. At present, Frankfurt's vacancy rate of more than 11% (almost 20% in 2005) is still the highest of the German Top 7 office markets; simultaneously, however, it is at its lowest level since 2002, and the trend is on the decline. At 40%, the share of high-quality space in the total number of vacant properties is comparatively high. However, as a result of a number of development projects, particularly in central Frankfurt, the city now has an above-average project development rate compared to the rest of the country. However, overcapacities are not anticipated in the short term. Increasing numbers of completions can be expected in 2018/19 at the earliest. On the whole, Frankfurt's stock of office space is expected to grow significantly by more than 1% per year, of which approximately 100,000 m<sup>2</sup> will be built on a speculative basis. However, in light of potential job relocations, the availability of high-quality office space could be another geographical advantage for Frankfurt.

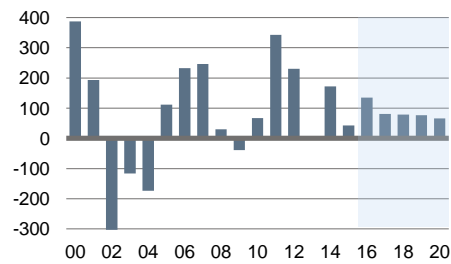


## How much will Frankfurt's property market benefit from BREXIT?

### Net absorption of office space

25

in '000 sqm



as of: Juli 2016

Sources: PMA, Deutsche AM Research

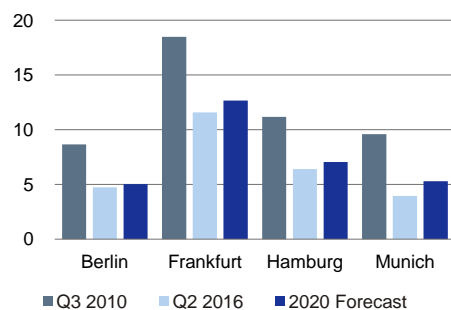
### Brexit could reduce vacancies and increase office rents

We expect a slight overall increase in office employment and demand for space by 2020. In our current rather conservative projections for rental growth, which have already factored in a Brexit, we expect average rental growth of 2% for prime office space per year by 2020. However, compared to our previous projections, rents for the period 2018-2020 are still growing by twice as much. As a result of qualitative requirements, but also because of Frankfurt's relatively low rental level in an international comparison – which is significantly lower than in Paris, Luxembourg and even Dublin – high-quality properties close to the city centre especially should benefit from relocations to Frankfurt. However, both demand and new construction activities are expected to focus on sub-markets close to the city centre, such as the financial district, downtown, Westend or Messe/Europaviertel. Ultimately, the differences between the individual sub-markets should intensify as a result and locations close to the city centre will register higher rental and occupancy levels than those of non-central locations. Assuming that the demand for office space focuses solely on Frankfurt's banking district and leaving out possible side-effects such as relocations within the existing stock, expansions or a division of take-up over several years, the current vacancy rate in the sub-market would be halved to under 6%. However, for logistical reasons alone, large job relocations from London to Frankfurt are likely to be carried out in stages, especially since certain shortages already exist, depending on location, size and quality. Accordingly, it is expected that not all companies' requests for office space queries can be met in the short term. Consequently, some market participants may be required to sign pre-letting agreements with developers. A major Brexit effect involving job relocations to Frankfurt, for example, of more than 10,000 office employees would increase rents substantially, while also reducing vacancies considerably. However, a development like this would also stimulate growth in new construction. At the turn of the millennium imagination running wild about growth resulting from the dot.com boom initially led to an extreme shortage in office space, which then triggered a huge overreaction in building activity. More than 1 million m<sup>2</sup> came on to the market in a short space of time. The after-effects can still be felt today in prime locations. Rents, having risen to up to EUR 50 per m<sup>2</sup> in 2001, were corrected downwards by almost 40% in the years that followed. Even today, top rents of EUR 38 per m<sup>2</sup> are still below the 1990s' average. Therefore, one of the medium-term Brexit effects could be a rise in volatility in rent levels and available space.

### Vacancy rates in German office markets

26

in %



as of July 2016

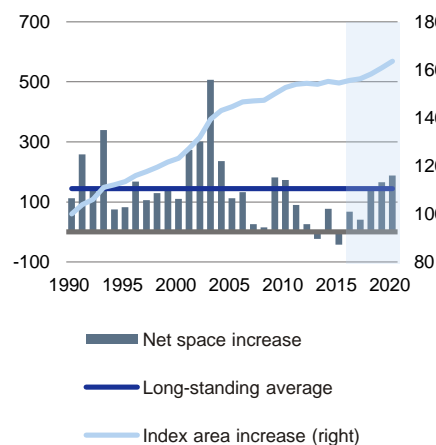
Sources: PMA, Deutsche AM Research

### Office rental market in Frankfurt

27

left y-axis: in '000 sqm

right y-axis: base year 1990=100



as of July 2016

Sources: PMA, Deutsche AM Research

### What are the reasons for Frankfurt's housing shortage?

The growth in population and employment described above has also meant a rise in the demand for housing. Demand was already fuelled by low interest rates, positive income developments and, at least at the beginning of the current cycle, relatively cheap prices per square metre. Accordingly, annual building permits have almost doubled in the period since 2009 to 5,000 homes in 2013 and to around 4,600 in 2014. However, completions are growing at much slower pace and in recent years, have never amounted to more than 3,000 homes (substantially less than 1% of the existing housing stock). Furthermore, in recent years, many thousands of homes have been created from the conversion of public sector and commercial properties. New urban districts have also been created, for example, the Europaviertel, which will accommodate up to 10,000 people. Although all of these efforts are keeping the housing shortage in check, they will not remedy it. Several reasons explain the low price elasticity of Frankfurt's housing supply, the main one being a shortage of land for development. In many districts, the City of Frankfurt is building right up to its municipal boundaries. In addition, there are numerous potential obstacles to

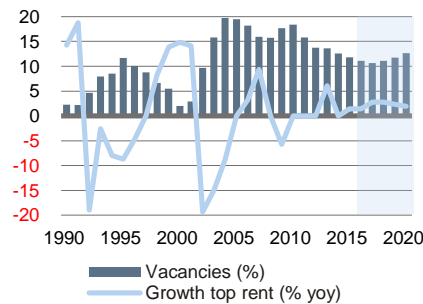




## How much will Frankfurt's property market benefit from BREXIT?

Growth top rent and vacancy in Frankfurt

28



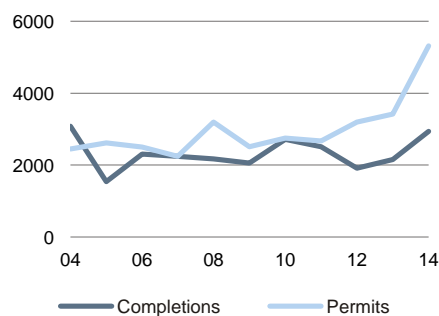
as of July 2016

Sources: PMA, Deutsche AM Research

Frankfurt: Permits and Completions

29

No. of flats per year



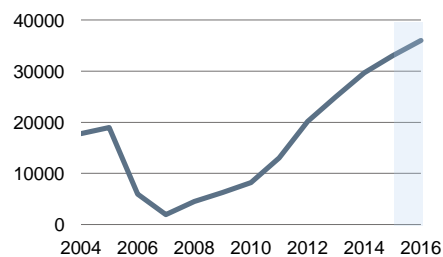
as of 2014 (latest data)

Sources: Frankfurter Wohnungsmarktberichte, Deutsche Bank Research

Frankfurt: Flat deficit

30

No. of flats

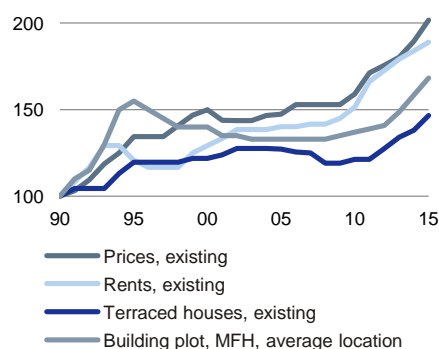


Sources: Frankfurter Wohnungsmarktberichte, Deutsche Bank Research

Frankfurt: Housing market

31

1990=100



Sources: Riwis, Deutsche Bank Research

building, such as the approach path for the airport, a lack of local public transport capacities or low capacities for nurseries and schools. In addition, large-scale construction projects in Frankfurt, as in other places, often involve lengthy contentious disputes at the local political level. Civic movements are regularly formed to protest against building projects. Sometimes single-topic political parties are also formed, thus endangering the re-election chances of the politicians responsible. This also applies to the surrounding communities, where residents welcome rising property prices and therefore a selective zoning of new land for development. Regionally, as well as across Germany, construction activity is being held back by a lack of skilled workers in a number of trades, increasingly complex building regulations and rising construction costs, due primarily to stricter environmental restrictions and the renewable energy reform.

## What is the extent of Frankfurt's housing shortage?

These reasons have played a decisive role in the shortage of housing in and around Frankfurt. Consequently, in the current property cycle, the housing shortage, defined as the ratio of households to the number of homes available, has increased every year. The most recent figures available from the City of Frankfurt show a housing shortage of around 30,000 homes in 2014. We expect that this figure will have probably continued to increase in 2015 and 2016; our rather conservative projections here are a shortage of 33,000 homes for 2015 and 36,000 for 2016. As the shortage of housing has increased steadily since 2009, reducing the demand overhang will take a number of years, possibly even beyond the end of this decade. This assessment is also based on the assumption that the housing shortage in Frankfurt, as in other German cities, is of a structural, as opposed to an economic nature. Owing to the high competitiveness of German companies and structural problems in many European countries, a period of weak economic activity is not likely to lead to a slowdown in labour migration to Germany. On the contrary, a slowdown in economic growth could have a much lesser impact on the German labour market than on countries that already have a double-digit unemployment rate. Germany's broader fiscal latitude could help to quickly re-ignite economic growth. Therefore, migration to the German labour market could endure just as much as the extensive housing shortage in Frankfurt and other major German cities for many years.

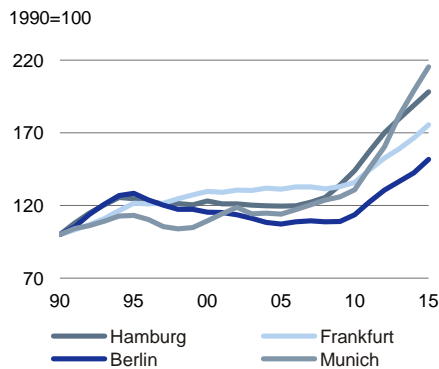
## Growth in residential property prices remains high

The housing shortage is the main reason for the increase in prices since the start of the current property cycle in 2009. House prices, as well as the cost of undeveloped land have risen by around 25% in Frankfurt, while prices in other major German cities have undergone even more dynamic growth of 40-80%. This is due on the one hand to Frankfurt prices and rents already being relatively high in comparison to the rest of Germany at the start of the cycle. On the other hand, it is also due to new challenges faced by the financial industry, meaning that hiring is only taking place in selective areas. Given that it accounts for 10% of employment, the financial industry is an important economic sector for Frankfurt. Therefore, compared to other major cities, Frankfurt has also registered correspondingly lower growth in income and employment in recent years. Owing to similar increases in rents and property prices, basic rental yields (excluding transaction costs and borrowing) have remained virtually stable at 4% in recent years. However, in view of low interest rates, market-based yields are likely to be substantially lower, partly under 3%. The dynamic price growth continued in 2016. Our price projection at the beginning of the year of 7.6% on the previous year appears to be happening. House prices across Germany



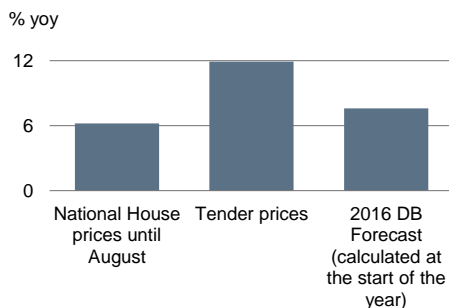
## How much will Frankfurt's property market benefit from BREXIT?

### House prices 32



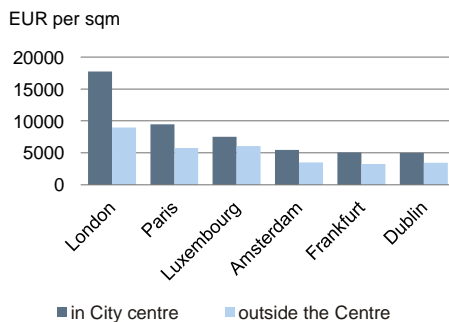
Sources: BulwienGesa, Deutsche Bank Research

### 2016 Houe prices 33



Sources: Hypoport, Immobilienscout24, Deutsche Bank Research

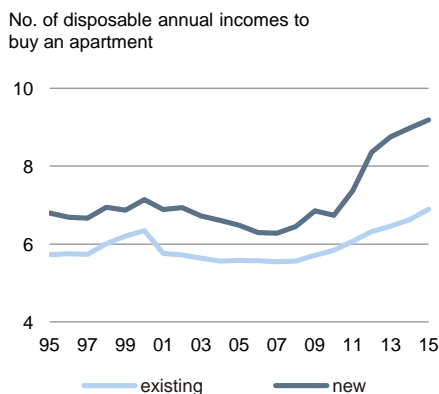
### Housing prices 34



Download on October 6, 2016

Sources: Numbeo.com, Deutsche Bank Research

### Frankfurt: Affordability of apartment prices, 80 sqm 35



Sources: Riwis, Statistisches Bundesamt, Deutsche Bank Research

increased by more than 6% by the start of the autumn and list prices in Frankfurt rose by more than 10% (Immobilienscout24). However, in spite of this marked increase, these prices are still quite low when viewed in an international context. Consequently, according to Numbeo, Frankfurt house prices are more than 30% below current market levels in London, Paris and Luxembourg.

### Affordability: low interest expense

An international comparison of house prices in absolute terms demonstrates relatively clearly that residential property in Frankfurt still remains affordable. Affordability indices, i.e. relative prices, such as price-to-income and price-to-interest and repayments complete the analysis. The average annual disposable income of a Frankfurt household is generated by 1.8 people. In 2009 it stood at EUR 35,000 and rose by around 10% by 2015. In spite of this increase, affordability, measured in terms of disposable income, has been falling steadily in recent years. If at the beginning of the current house price cycle an existing home cost the equivalent of six years' annual income and a new home required seven, this now stands at around seven and nine years respectively. Both figures represent new all-time highs. Therefore, relative to its own history, residential property in Frankfurt has become very expensive. Measured in terms of interest expense, the affordability of house prices has increased, however. Taking the purchase of a 80 square metre non-new build apartment as an example, with a loan to cover 80% of the purchase excluding transaction costs and an average market interest rate, the monthly interest expense has dropped from over EUR 700 in 2009 to currently under EUR 400. However, given that households have increased their rate of repayment from 1.6% to over 3%, the monthly interest and repayment expense has remained relatively stable at around EUR 1,000. The performance of the affordability index underscores how strongly the current increase in house prices is driven by the low interest rate environment and how high interest rate sensitivity is accordingly. In light of the core inflation rate which has been fluctuating around the 1% mark – significantly below the ECB's inflation target of close to but under 2% – low growth momentum and persistent structural problems in the eurozone, the ECB is likely to maintain its expansive monetary policy and interest rate increases should be quite moderate. Accordingly, the disparity between the two affordability indices should persist for some time and Frankfurt house prices will only begin to fall when, possibly in several years' time, interest rates again begin to rise significantly.

### Brexit effect would be another price driver

Similar to the 5,000 additional office workers, we assume that the Brexit effect would create the need for an additional 5,000 homes on the residential property market. Owing to low price elasticity and the difficulties described in expanding the supply of housing, there is very little prospect of additional housing being made available. In this scenario, the housing shortage consequently also increases by around 5,000 homes. Price momentum could increase, although the effects of purchases being brought forward may already be reflected in the marked increase in list prices in 2016. The Frankfurt rule of thumb has applied since the house price cycle began: an increase in the housing shortage by 1,000 homes means a rise in residential property prices of EUR 25 per m<sup>2</sup>. This admittedly inexact rule implies an increase of EUR 125 per m<sup>2</sup> in Frankfurt residential property prices resulting from an additional shortage of 5,000 homes. Based on current house prices, this would be an increase of approximately 4%. However, in light of the extensive shortage, this rule of thumb may well underestimate actual price developments. This is because, in the current

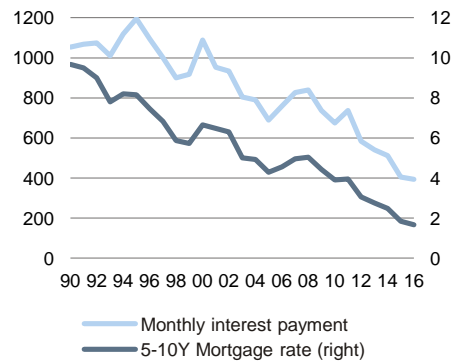


## How much will Frankfurt's property market benefit from BREXIT?

Financing a Frankfurt flat: Standard mortgage rate and interest payment

36

left y-axis: EUR/month  
right y-axis: in %

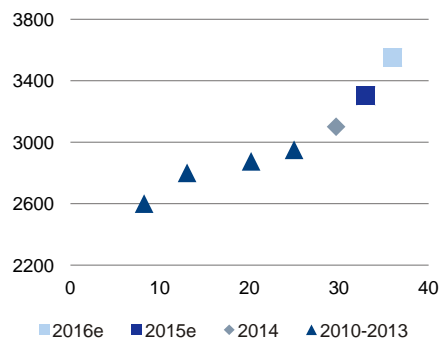


Sources: Riwis, Bundesbank, Deutsche Bank Research

Apartment prices vs. flat deficit

37

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

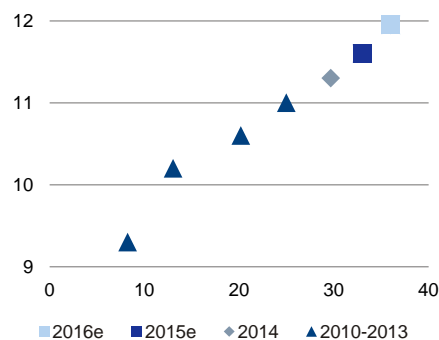


Sources: Wohnungsmarktberichte, Riwis, Deutsche Bank Research

Rent vs. flat deficit

38

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



Sources: Wohnungsmarktberichte, Riwis, Deutsche Bank Research

property cycle, the housing shortage has risen continuously and together with the length of time spent on searching for a home, potential buyers may have tended to ultimately accept even elevated list prices. The property cycle in Frankfurt is likely to be prolonged significantly by low price elasticity resulting from the construction of an additional 5,000 homes. Therefore, the price potential of the Brexit effect on the overall property cycle could be much more pronounced. Price developments are likely to be quite progressive should 10,000 or even 20,000 additional employees relocate to Frankfurt. House prices could subsequently grow by significantly more than EUR 500 per m<sup>2</sup>.

### How is Frankfurt's housing policy reacting?

Rents in Frankfurt are rising as dynamically as prices and are similar to the housing shortage in terms of elasticity. The creation of new housing is barely keeping pace with demand even today as the trend in the housing shortage demonstrates. The greater the Brexit effect, and the more successful Frankfurt is in attracting British companies, employees and expats, the less equipped tradition housing policy will be to master these additional challenges. Following several years of planning, it took more than a decade to develop the Europaviertel. Frankfurt's politicians and decision-makers would thus be well advised to come up with a concept in the coming months on how they intend to reduce the existing housing shortage. In particular, it should show how, by successfully attracting companies, and therefore new residents to Frankfurt, its self-generated additional demand for housing will be addressed.

### Summary

The question regarding the consequences of a Brexit for the EU, the United Kingdom and Germany is expected to remain unanswered for some time. The political uncertainties and exit scenarios range from a contentious separation to a second referendum. At present, however, we can expect that Frankfurt will be one of places to benefit most from a Brexit. In light of the differences between the size of London and Frankfurt, London's crumbs could become Frankfurt's pie. The relocation of jobs to Frankfurt is also likely to boost property demand. The additional demand potential is welcome on the Frankfurt office market because it will equalise structurally induced reductions in the financial sector and will tend to lead to further reductions in vacancies and increase rents. The assumed 5,000 office workers are likely to relocate to the highly priced sub-markets close to the city centre. However, as new building projects also focus on these sub-markets, positive demand effects will be diluted. Because of existing demand overhangs, disadvantages are emerging on the Frankfurt residential property market from a potential relocation of employees. Price growth and the shortage of housing will remain elevated for the foreseeable future. An additional 5,000 homes and a correspondingly elevated housing shortage are likely to drive prices up by more than EUR 100 per m<sup>2</sup>. While purchase prices remain affordable thanks to low interest rates, they are strongly dependent on future interest rate developments.

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