Current Issues

International topics

Deutsche Bank Research

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German office markets

Cyclical upswing, structural differences

Vacancy rates are falling and office rents rising. Up to 2010 we expect German GDP to grow by around 1 ¾% p.a. This will stimulate demand for office space, while supply expands only moderately. In the seven biggest German office markets vacancy rates will drop by a total of two percentage points through 2010 and prime rents will climb by a total of 12%. The office markets in Hamburg and Munich – as globalisation winners – are likely to benefit most from this.

Rental yields attractive on a European comparison. Initial yields on offices in prime locations are still well above long-term government bond yields. Although we expect rental yields to fall in response to sustained investor interest, they will not fall to the low levels of London or Paris.

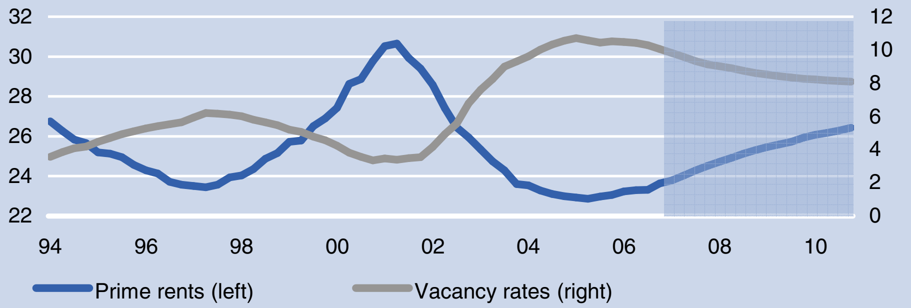
Smaller office markets not to be overlooked. Given that the major office market normally perform particularly well in upswing years, we expect interest to centre on them during this recovery period. However, smaller cities and towns should not be neglected because in many of them initial yields have risen strongly and are still climbing, particularly among east German office markets.

Portfolio diversification calls for close scrutiny. Rental trends on many German office markets are closely correlated. So composing a well diversified portfolio of office property often requires more than simply integrating properties from markets of different sizes. It is vital to analyse the location very carefully.

Caution against excessive optimism. The outlook for German economic growth may have brightened considerably, but important structural problems have still not been solved. The biggest risk to the German office investment markets does not lie in a possible downswing but in an over-reaction on the part of investors and project developers.

Vacancy rates falling

Prime rents (EUR/m²) and vacancy rates (%) for seven primary cities



Sources: CBRE, DB Real Estate, DB Research

www.dbresearch.com

Authors
Tobias Just
Deutsche Bank Research
+49 69 910-31876
tobias.just@db.com

Maren Väth
DB Real Estate Research
+49 69 71704-204
maren.vaeth@db.com

Editor
Hans-Joachim Frank

Technical Assistant
Martina Ebling

Deutsche Bank Research
Frankfurt am Main
Germany
Internet: www.dbresearch.com
E-mail: marketing.dbr@db.com
Fax: +49 69 910-31877

Managing Director
Norbert Walter

1. Investors eying Germany

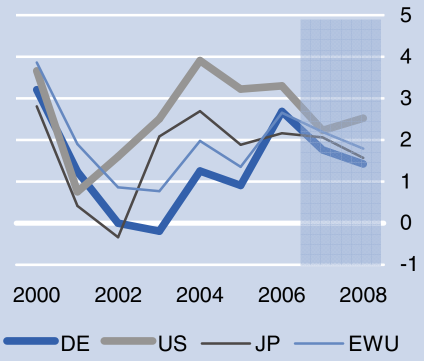
Foreign investors very active in Germany

2006 was a time for Germany to make new friends. The FIFA World Cup drew countless football fans to Germany from all over the globe. Statistics could seem to suggest that many of them took advantage of their visit to acquire a property – or, indeed, an entire portfolio. It is a fact that in 2006 international investment in German property soared to a new record level. Around EUR 51 bn flowed into the country last year from abroad, about 30% more than in 2005, itself a very good year.[1]

Although residential portfolios remained on a high in 2006, the volume of investment was down on the previous year. What investors were really interested in was commercial property. Both retail and office property saw almost unprecedented demand. Altogether in 2006 office and retail properties worth around EUR 39 bn were sold to German and international investors. So are they anticipating the long-awaited upswing on German office markets? Can we expect rental growth rates on the German office market to gather pace in the coming years, and where should investors place their focus? To answer these questions we first identify structural differences between the major German office markets and then present market forecasts and an outlook for the German property investment market.

2. Economic environment in Germany

Upswing slowing a little
Gross domestic product, % yoy



Source: DB Research
1

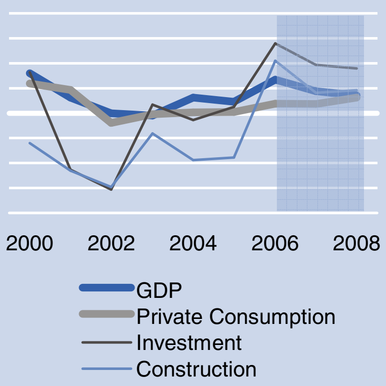
The global economy continued to grow dynamically in 2006. Based on purchasing power parities, world GDP expanded by about 5% last year, roughly on a par with the two previous years. The United States is still the key driver of world economic activity, boosting its economic output in 2006 by 3.3% in real terms despite the dramatic slump in US housing construction and the end of the house price boom. Although it is very likely that the US economy will slow somewhat in 2007, a recession is still not very likely. We expect US gross domestic product to increase by around 2 ¼% this year, bringing it roughly level with GDP growth in the euro area. China and India have also cemented their stellar positions with economic expansion of 10.7% and 8.9% respectively in 2006, momentum that is unlikely to cool much this year.

As the world's leading exporter, Germany also felt the benefit of effervescent world markets last year, with shipments escalating at double-digit rates even after adjustment for prices. But the powerful stimulus of international demand was not the only factor to lift the German economy out of the doldrums. Another three factors kicked in. First, depreciation regulations with a time limit offered strong investment incentives in 2006. Second, the German construction sector posted marked gains for the first time in many years. After a decade of recession the building industry finally turned the corner with particularly strong growth in investment in commercial projects. Finally, for the first time since 2001 private consumption made a notable contribution to growth, even if the real 0.8% increase in consumer spending was moderate in spite of shoppers bringing purchases forward as the 2007 value added tax increase loomed.

[1] Atisreal (2007). Investment Market Report Germany 2007, http://www.atisreal.de/ueberregional/docs/IMR-Report-2007.pdf.

Investment driving GDP

Germany, real % yoy



Source: DB Research 2

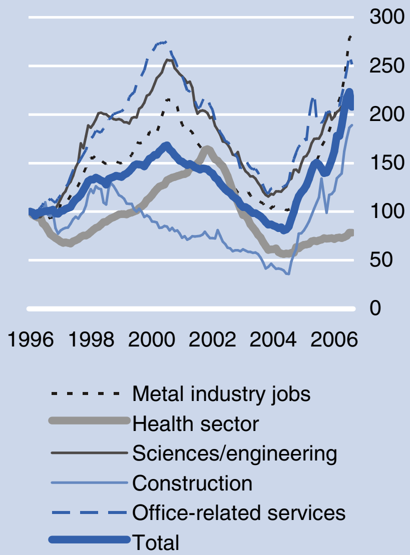
Labour market brighter

People in work in m and unemployment rate in %, seasonally adjusted

Sources: Federal Labour Agency, Bundesbank 3

Very many job offers

seasonally adjusted, June 1996 = 100



Sources: Federal Labour Agency, DB Research 4

This year, too, the German economy will be sustained by high demand from abroad and by domestic investment. Although economic growth is not expected to match 2006, the economy will still accelerate by around 1 ¾% – its approximate trend growth rate – given that so far this year no serious upheavals have occurred in its most important trade partners or in private consumer spending. We expect economic expansion to average around 1.7% p.a. up to the end of this decade (baseline scenario).

Tension easing on the German labour markets

It would certainly be an exaggeration to describe developments in Germany as a new economic miracle, yet it is correct that never before has unemployment fallen so sharply as in the last year. The seasonally adjusted jobless rate of 9.3% in February 2007 was down more than two percentage points on the previous year. In winter 2006/2007 the number of people in work was almost half a million higher year on year, roughly approaching the level of the boom year 2000.[2]

The trend is unlikely to come to an abrupt halt this year. The Federal Labour Agency had some 600,000 vacancies on its books in the winter period 2006/2007, about 50% more than in the previous winter and twice as many as in the winter of 2004/2005. Particularly in construction-related work there are appreciably more vacancies to fill. And demand for typical office jobs, such as clerical and administrative workers and engineers, is also picking up significantly. We are therefore reckoning on a strong surge in office employment, particularly in 2007, with a slightly less steep rise next year.

Some risks remain

However, this positive overall macroenvironment must not cloud the view for the considerable risks that remain in 2007. It is by no means certain, for example, that adjustments to the US subprime mortgage and housing markets are at an end – and with them the repercussions on consumer spending. And many European housing markets (notably Spain, Ireland and the UK) are likewise considered overvalued. As long as the macroeconomic environment remains stable, much lower house price inflation is all that is likely; but a severe slump in prices cannot be ruled out in these countries. This would hit the construction industry first and then, with a slight time lag, private consumption in those countries.

The geopolitical risks also remain high. A good gauge of this is oil prices, which have shot up again by 20% in recent weeks, hitting roughly USD 60 a barrel for Brent grade at the beginning of March. Although economies no longer react so sensitively to changes in the price of crude oil, a common rule of thumb says that a USD 10 increase in the price of a barrel of crude oil still drives down GDP growth by between 0.3 and 0.5 percentage points in the US and the

[2] This will, of course, arguably have been helped by the mild 2006/2007 winter.

euro area.[3] In view of these risks, alongside our basic scenario of continued upswing in Germany it makes sense to set a weak scenario in which the German economy sheds momentum and is able to expand by only a scant 1% p.a. up to 2010.

3. Structure of the German office markets

City classification in this study

Primary	Secondary	Tertiary
Berlin	Aachen	Brunswick
Düsseldorf	Augsburg	Chemnitz
Frankfurt	Bielefeld	Erfurt
Hamburg	Bochum	Freiburg
Cologne	Bonn	Hagen
Munich	Bremen	Halle
Stuttgart	Dortmund	Hamm
	Dresden	Herne
	Duisburg	Kassel
	Essen	Kiel
	Gelsenkirchen	Krefeld
	Hanover	Leverkusen
	Karlsruhe	Lübeck
	Leipzig	Ludwigshafen
	Mannheim	Magdeburg
	Mönchengladbach	Mainz
	Münster	Mülheim
	Nuremberg	Neuss
	Wiesbaden	Oberhausen
	Wuppertal	Oldenburg
		Osnabrück
		Rostock
		Saarbrücken
		Solingen

Sources: DB Real Estate, DB Research 5

Office property markets are by nature regional, so the term 'the German office market' is always imprecise. However, classifying similar structures into sub-markets is always a good idea because investment strategies can then be inferred from this. Our tabulation of the German office markets is based on three criteria: the size of the respective office market; the distinction between downtown and peripheral locations; and the geographic distinction between the east and west of Germany. In all, 51 German cities with at least 150,000 inhabitants are included in our analysis, 44 of them in the former West Germany and seven in the New German States.[4]

Based on city or office market size, we have formed three groups. What we call the primary markets are the seven major German office locations Berlin, Frankfurt/Main, Munich, Hamburg, Düsseldorf, Cologne and Stuttgart. The biggest city is Berlin with 3.4 million residents and a stock of office property in excess of 18 million m^2. Düsseldorf is the smallest city in the group with over 570,000 inhabitants and roughly seven million m^2 of office property. There is a clear distinction in primary markets between the Central Business District (CBD), that is to say the best office location in town, and locations on the outskirts of the city centre and the periphery. Rents in the CBD and on the periphery differ considerably. Even if one or two sectors are predominant in most primary cities, the tenant structure is relatively diversified. But this does not cushion primary markets against what can be very sharp swings in office rents.

The next group, secondary markets, comprises all cities with at least 250,000 residents that do not belong in the primary category. Although there are two cities here (Essen and Dortmund) with larger populations than the smallest primary city (Düsseldorf), the stock of office property in Essen und Dortmund is not even half the size of Düsseldorf's, so that the categorisation still makes sense. With the exception of Dresden and Leipzig, all secondary markets are in west Germany. Industry consists mainly of small and medium-sized businesses and is often confined to just a few sectors. The greater geographical proximity between the CBD and peripheral locations, and the absence in many cases of service groups and international tenants with deep pockets, means that rents fluctuate far less than in primary cities. The gap between rents in prime locations and the perimeters is also much narrower than on the primary markets. Trends in east and west German secondary locations have converged noticeably in recent years.

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3 See International Energy Agency (2004). Analysis of the impact of high oil prices on the global economy. http://library.iea.org/textbase/papers/2004/high_oil_prices.pdf. Jiménez-Rodriguez and Sánchez (2004) rate the impact even higher. They calculate that a 10% increase in crude oil prices leads to a drop in real GDP in the order of 0.3 to 0.5% (see Jiménez-Rodriguez, R. and M. Sánchez (2004). Oil price shocks and real GDP growth. Empirical evidence for some OECD countries. In ECB Working Paper Series 362. May 2004. Frankfurt am Main).

4 All in all we examine ten market categories. There should actually be twelve (3x2x2 categories), but because there are no east German cities in the group of primaries, there are two fewer possibilities of distinction.

Little difference in secondary and tertiary market rents

We classify as tertiary markets all cities with between 150,000 and 250,000 residents. There are 24 in all, five in the New German States. In a typical tertiary market city there are very few office locations, usually in the city centres and along arterial roads. Occasionally office centres are located on the periphery. On average the stock of office property in a tertiary market does not exceed much more than 1 million m². Fluctuations in rent and the gap between downtown and peripheral rents are even less than on secondary markets. As with the secondaries, the differences in east and west German office rents on the tertiary markets have broadly levelled.

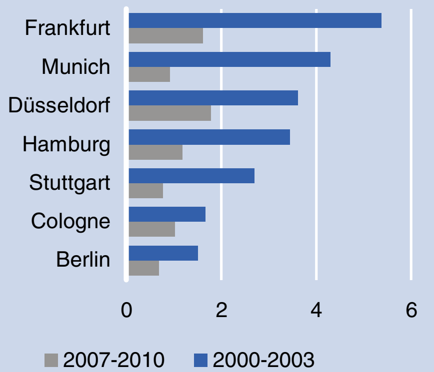
Structure of the German office markets

	Primary	Secondary	Tertiary
Resident population (2005)			
Average	1,300,000	390,400	197,200
Max	3,400,000	589,660	248,000
Min	572,000	257,000	151,900
Office stock in m² (2006)			
Average	11.9 m	2.5 m	1.1 m
Max	18.2 m	4.0 m	1.9 m
Min	7.0 m	0.7 m	0.4 m
Completions (1990 - 2006)			
m² per city and year	224,000	36,900	15,000
p.a. as % of stock	2.2	1.7	1.5
Vacancy rate, 1990 - 2006			
Average, %	5.4	4.2	4.3
Fluctuation interval, % points	9.7	5.1	4.7
Prime rent in EUR/m² (2006)			
Average	23.3	10.8	9.0
Max	32.0	12.5	11.3
Min	16.5	8.0	7.1
Top rents on the periphery in EUR/m² (2006)			
Average	11.4	7.4	6.1
Max	16.0	10.6	8.5
Min	8.7	5.4	4.5

Sources: BulwienGesa, DB Real Estate, DB Research 6

Where dotcom euphoria solidified

Change in office stock in seven primary cities, % p.a.



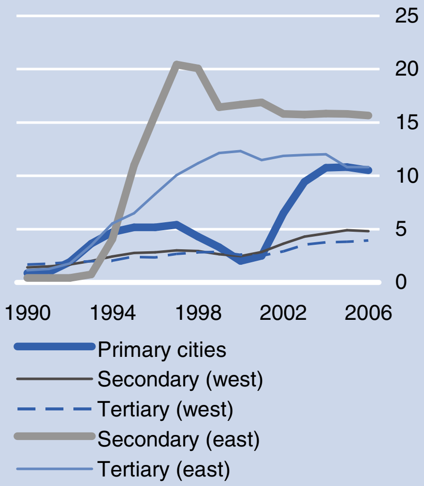
Sources: DB Real Estate, DB Research 7

Development in office stock

Not only do primary markets have the biggest stocks of office space, their office markets have also been the fastest growing in the past 15 years. On average more than 200,000 m² of office space was completed each year at each primary location. This compares with only around 37,000 m² in the secondary locations and a scant 15,000 m² in the tertiary cities. These differences are obviously due mainly to the different size of the markets. The only noteworthy feature is therefore that completions as a percentage of the stock in the major office locations also tend to be higher than in the smaller cities. In the primary locations office supply in the past 15 years has risen by an average of 2.2% p.a., in secondary cities by only 1.7% and in tertiary cities by a mere 1.5% p.a.

It is also striking that completion cycles in the primary cities are particularly pronounced. Speculative builds evidently play a much

Vacancy rates did not skyrocket everywhere
Vacancy rates, in %



Sources: BulwienGesa, DB Real Estate, DB Research
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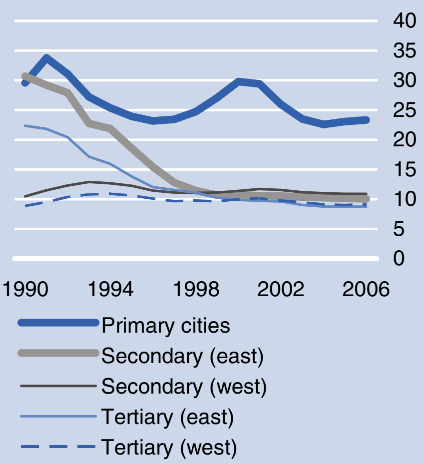
Offices are expensive in primary cities
Prime office rents in EUR/m²



Sources: BulwienGesa, DB Real Estate, DB Research
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more prominent part there than in the smaller cities. Particularly in the years between 1999 and 2004, the dotcom hype caused the volume of new construction in the main German office locations to surge. It might be assumed that the growth rate of 2.2% reported for the primary locations is overstated by this construction boom, but in fact the rates of growth in this stock of office space (upwards of 2% a year) are similarly high for all three office market groups in the period 1990 to 1999. However, the early 1990s was also the period of frenetic construction activity in east Germany. If we compare only the west German cities, the supply of office space on the primary markets still grew significantly faster in the 1990s than on the secondary or tertiary markets.

But this cannot be taken to imply stronger clustering of office activities in primary cities. That would be true only if the more rapid increase in the supply of office property had actually been absorbed at a similar rate. This was not the case, however. It is correct that there has been a secular trend towards higher vacancy rates in all three (west German) market groups over the past 15 years, but far more so in the primary locations than in the smaller cities. Since 1990 the vacancy rate in the west German primary cities has increased tenfold. In the west German secondary cities it has trebled, and in the west German tertiary cities roughly doubled. A large part of the area growth on the primary markets therefore went into vacant property. Vacancy rates in the east German cities peaked around the turn of the millennium. Since then they have even begun to ease gradually, bucking the national trend.

Rental structures and trends on German office markets

On the basis of our classification into primary, secondary and tertiary office markets four simple core statements can be made:

— Office premises in primary cities are considerably more expensive than in other cities. At present average headline rents in a primary city are almost EUR 25 per m^2. In the other cities prime rents are close to EUR 10 per m^2.

— Office rents at secondary and tertiary city level do not differ much. In east Germany the difference works out at EUR 1.30, in west Germany at EUR 1.80.

— West German cities are slightly pricier than their east German counterparts, although on secondary markets the difference is not even EUR 1 and in tertiary cities a mere EUR 0.40 psm.

It is only in the past few years that rents in similarly sized east and west German cities have moved into line. In the early 1990s offices in secondary and tertiary east German cities were considerably more expensive than in cities of a similar size in the west. Downward adjustment was simply a matter of time. So instead of following cyclical movements, up to the late 1990s east German office rents steadily softened. At least the price adjustments on east German office markets are now presumably more or less complete.

Coincidence of fluctuations and losses in value

Prime downtown rents

	1991-2006		1998-2006	
	Volatility in rent changes	Average rent change p.a.	Volatility in rent changes	Average rent change p.a.
	in %			
Primary	8.0	-1.5	7.7	0.0
Primary (excl. Berlin)	8.0	-0.4	7.4	0.4
Secondary (east)	6.8	-6.7	3.5	-2.6
Secondary (west)	4.2	0.3	2.0	-0.2
Tertiary (east)	4.9	-5.7	2.8	-3.0
Tertiary (west)	4.1	0.2	2.6	-0.7

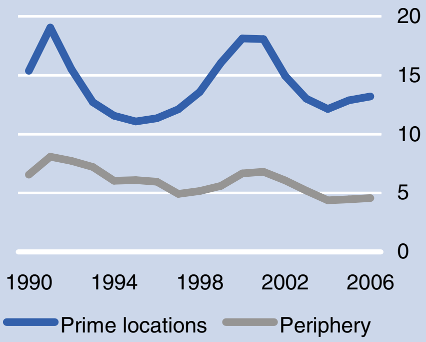
Prime rents on the periphery

	1991-2006		1998-2006	
	Volatility in rent changes	Average rent change p.a.	Volatility in rent changes	Average rent change p.a.
	in %			
Primary	7.5	-1.1	4.9	-1.1
Primary (excl. Berlin	7.1	-0.5	5.7	-0.5
Secondary (east)	5.6	-5.3	2.3	-2.8
Secondary (west)	5.2	0.8	1.8	-0.4
Tertiary (east)	4.1	-3.5	2.4	-4.3
Tertiary (west)	3.4	1.0	2.2	0.5

Sources: BulwienGesa, DB Real Estate, DB Research 10

Reduced premium for primary locations

Difference in rents in primary and secondary cities, EUR/m²



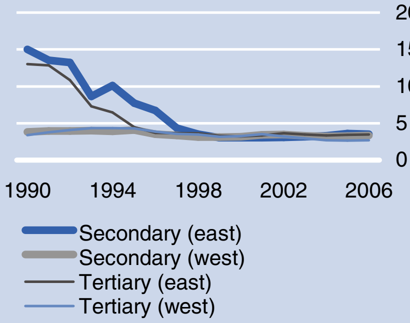
Sources: BulwienGesa, DB Real Estate, DB Research 11

On closer inspection we find further interesting features. Rents in primary markets fluctuate far more than in the other cities, and rents in prime locations are (naturally) appreciably more volatile than those for office property on the periphery. Common fluctuation measures such as standard variance also indicate that east German office markets are more volatile than west German markets of a similar size. But we must be careful with our interpretation of this, since it is ultimately nothing more than a reflection of the price adjustment following reunification. In the past few years the difference in volatility between east and west German cities has narrowed considerably, a process we expect to continue in the coming years. Of course, this also means that traditional volatility measures based on a long time series probably overstate the risk of an investment in the east of Germany.

There have been adjustments not only between east and west German cities, but also within the east German cities themselves. In the early 1990s the difference between downtown rents and those in peripheral locations in east German cities was more than three times as high as in west German cities, meaning that downtown office property in east Germany was also very expensive relative to premises outside prime locations. This situation has changed too. These days the difference between downtown and peripheral rents

Convergence of office rents in east and west

Difference in prime rents in downtown and peripheral locations, EUR/m²



Sources: BulwienGesa, DB Real Estate, DB Research

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in the east and west is about the same, roughly EUR 4, and has changed very little in the past eight years.

Which markets are moving in step?

It is interesting to consider whether risk can be reduced with a diversified investment strategy in three location categories and which markets are correlated. Analysing the correlation coefficients[5] is helpful. Correlation analysis of all the sub-markets considered here for the period from 1991 to 2006 suggests that there are only very few close correlations. In particular, the top locations in the primary cities only correlate positively with the peripheral primary city locations, implying considerable diversification potential in a mixed strategy of primary and secondary and/or tertiary cities.

Not all office markets moved in the same rental cycle

Correlation coefficients for prime rents, 1991 to 2006

	Primary (city)	Sec. east (city)	Sec. west (city)	Tertiary east (city)	Tertiary west (city)	Primary (periph.)	Sec. east (periph.)	Sec. west (periph.)	Tertiary east (periph.)	Tertiary west (periph.)
Primary (city)	**1**									
Secondary east (city)	0.16	1								
Secondary west (city)	0.29	0.21	1							
Tertiary east (city)	0.38	**0.76**	0.15	1						
Tertiary west (city)	0.22	0.17	**0.91**	0.02	1					
Primary (periphery)	**0.70**	0.32	**0.79**	0.33	**0.74**	1				
Secondary east (periphery)	0.30	0.42	**0.51**	**0.52**	0.26	0.38	1			
Secondary west (periphery)	0.30	0.05	**0.93**	0.04	**0.88**	**0.82**	0.32	1		
Tertiary east (periphery)	-0.26	0.03	**0.60**	-0.07	**0.67**	0.16	0.23	0.48	1	
Tertiary west (periphery)	0.19	0.17	**0.74**	0.00	**0.86**	**0.66**	0.16	**0.80**	**0.56**	1

NB: Statisically significant correlations with max. 5% error probability appear in bold type. The rates of change were correlated.

Source: DB Research

But if we shorten the analysis period to consider only the last ten years, the number of statistically authenticated correlations rises by more than 40%. In other words, the diversification potential is reduced. Given that the process of adjustment in east Germany has come to an end, as discussed above, further shortening of the analysis period and analysis in later years would presumably reveal even closer relationships.[6]

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5 Correlation coefficients are a measure of co-movement between two variables and can assume values between -1 and +1. A high positive value indicates that a positive linear connection exists between the two variables. However, only coefficients for which a statistically significant correlation can be calculated are meaningful.

6 However, we have not carried out a correlation analysis on the basis of only four or five years as the likelihood of coincidental co-movement is too great with just a few data points.

Strong convergence in rent cycles since 1999

Correlation coefficients of prime rents, 1996 to 2006

	Primary (city)	Sec. east (city)	Sec. west (city)	Tertiary east (city)	Tertiary west (city)	Primary (periph.)	Sec. east (periph.)	Sec. west (periph.)	Tertiary east (periph.)	Tertiary west (periph.)
Primary (city)	1									
Secondary east (city)	-0.13	1								
Secondary west (city)	0.48	**0.61**	1							
Tertiary east (city)	-0.04	**0.63**	**0.62**	1						
Tertiary west (city)	**0.64**	0.47	**0.85**	0.41	1					
Primary (periphery)	**0.78**	0.31	**0.70**	0.12	**0.88**	1				
Secondary east (periph.)	0.10	**0.66**	**0.75**	**0.74**	0.49	0.22	1			
Secondary west (periph.)	**0.76**	0.22	**0.81**	0.18	**0.86**	**0.84**	0.43	1		
Tertiary east (periphery)	0.21	**0.58**	**0.56**	**0.89**	0.47	0.23	**0.62**	0.19	1	
Tertiary west (periphery)	**0.70**	0.21	**0.53**	0.03	**0.69**	**0.77**	0.35	**0.76**	0.14	1

NB: Statistically significant correlations with max. 5% error probability appear in bold type. The rates of change were correlated.

Source: DB Research

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Primary markets often ahead of trend

Another important consideration is that key developments often take place in the primary markets first. These markets are therefore ahead of trend, which is not initially reflected in the correlation analysis. Taking possible time lags into account, the number of correlations increases further. A lag allowance like this raises the correlation coefficient between downtown rents in primary and secondary cities in west Germany, for example, from 0.48 to 0.8. So a very close relationship evidently exists. From this we can deduce the following three conclusions:

— Diversification potential at aggregate level is presumably not so great as often hoped for.

— There is considerably more diversification scope for a very short-term strategy (one to two years). However, precisely these types of trading strategy do not focus on the diversification aspect. This tends to be more important with long-term strategies.

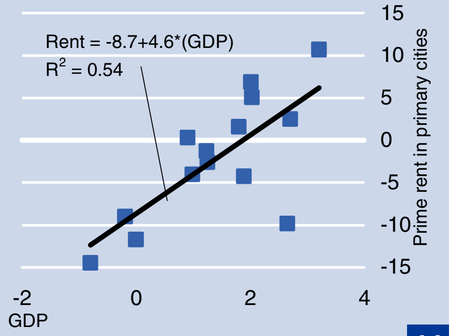
Exploiting diversification potential

— Even so, diversification potential exists in two respects. First, many – but by no means all – market movements can be depicted as a function of prime rents in the primary cities. Second, in this analysis the differences between locations in the same market group are levelled. In some west German secondary cities, for example, headline rents have ticked up since the early 1990s by more than 2% a year on average, while in others they have sagged over the same period by more than 3% p.a. The standard divergence in rents in west German secondary cities varies between 3.8 and more than 8%. So when in search of diversification the most important thing is to pick the right city. Not every secondary location can reduce risk in an existing portfolio of primary locations.

Precisely because correlations between the primary markets and smaller secondary and tertiary markets have become fairly close, office market forecasts for the big cities have the added benefit of giving an indication of developments on the smaller correlated markets.

4. Primary office market forecasts

Rent trend closely follows GDP
1992 to 2006, % yoy



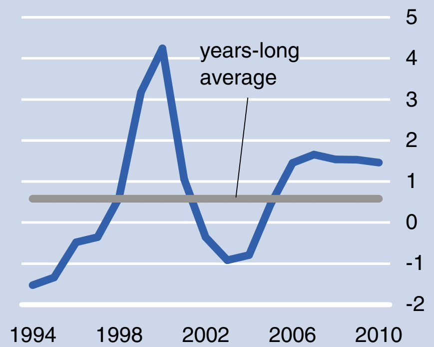
Sources: CBRE, DB Real Estate, DB Research **14**

Rental markets react swiftly to macroeconomic changes. Given Germany's rigid labour laws, we might reasonably expect office rents in the upswing years of a business cycle to respond faster to macroeconomic shifts in demand than in downswing years. However, this is not borne out by German data, at least for the past 15 years. The prime rents in our seven primary office locations reacted with similar speed over the entire cycle to falling and rising demand.

On average, rents are not likely to start rising until real economic growth hits around 1.5%; then a further one percentage point increase in economic expansion causes prime rents in the seven primary locations to move up by an average of roughly five percentage points. Of course this rule of thumb is too imprecise for rent predictions, because the average of all locations evens out the differences in local markets. Even if no location is entirely immune to the macroeconomic environment, local business structures still vary considerably, so that there are always (relative) winner and loser regions. Moreover, the development in demand is only one factor influencing office market dynamics. Supply is also crucial, and here too there are big regional differences. In the following we begin by describing the outlook for the primary markets in our basic scenario. Then we compare these results with the estimated results for our muted scenario and infer developments for the smaller markets.

Significantly more office jobs in basic scenario

More office workers in the big conurbations
Growth in office employment in the seven primary cities, % yoy



Sources: DB Real Estate, DB Research **15**

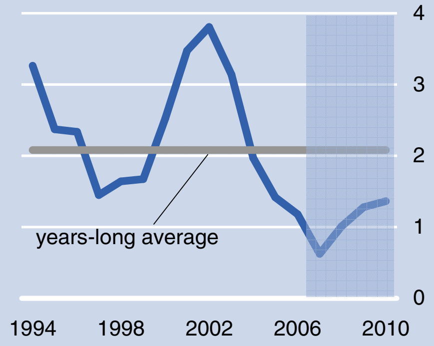
Ultimately, to forecast office markets we need to have an idea of two key control variables in particular: the change in office employment and future completion volumes on the respective markets. While completion volumes for the coming years can be estimated from surveys of consultancies and possible alterations in demand, growth in office employment is determined chiefly by a region's economic momentum and business structure. Given that the size of the labour force as a whole is closely correlated with the development in gross domestic product, predictions of the number of office workers can be inferred from regional GDP forecasts.

In our baseline forecast we expect real GDP to expand by an average of roughly 1 ¾% up to 2010. Employment growth is therefore likely. In 2006 the number of office workers is already estimated to have risen by more than 1%, and for the years to 2010 we are reckoning on an average growth rate close to 1.5% in the seven primary locations. This would put the increase in office employment well above its years-long average of over 0.5% but still well below the level during the years of buoyant economic growth around the turn of the millennium. Between 1998 and 2001 the number of office jobs in these locations climbed by around 2 ¼% p.a.

Strongest impetus to employment in Munich and Hamburg

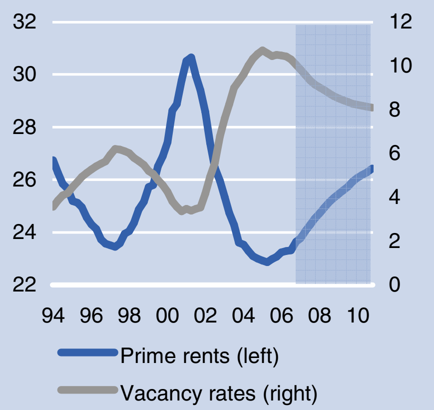
We expect the most powerful impetus to employment growth in Hamburg and Munich, at not quite 2% a year each. Frankfurt, Düsseldorf, Cologne and Stuttgart hold the middle ground with annual growth rates of 1.4 to 1.7%, while in Berlin expansion in the number of office workers is expected to be below par, with increments of a mere 1% p.a. But since the pressure of structural adjustment in Berlin is now less onerous than six years ago, employment growth could be a little higher than during the last upswing. In this respect the German capital differs from all other primary cities, as those are expected to post employment growth in

Completions still below years-long average
% p.a. of office stock in seven primary cities



Sources: DB Real Estate, DB Research **16**

Vacancy rates falling
Prime rents (EUR/m²) and vacancy rates (%) for seven primary cities



Sources: CBRE, DB Real Estate, DB Research **17**

the coming years well below the rates of increase at the turn of the millennium.

Low volume of completions

Looking at completions on the seven most important office markets in Germany, we can identify a clear pattern. The completion cycle shows a clear phase shift of two to three years relative to the rent cycle. In the past, office inventories regularly expanded fastest when market demand for new space had been exhausted, as the last upswing and downswing perfectly illustrates. On a long-term average office space in the seven primary locations was ratcheted up by more than 2% a year.[7] As the bubble burst on the Neuer Markt and office demand went into a tailspin in the course of 2001, the volume of completions in 2002 soared to almost 4%. Owing to the long completion periods for office projects the new space came onto the market at precisely the wrong time. With vacancies spiralling, completions were logically cut back sharply. In 2006 the supply of office space ticked up by just 1.2%, and in 2007 growth is likely to fall below 1%.

The differences in completion volumes in the various cities are even more pronounced than in employment trend forecasts. Office supply in Berlin is likely to climb in the coming years by a scant 0.7% p.a., against 1.6 to 1.8% a year in Düsseldorf und Frankfurt. In all cities, though, the completion figures are much lower than during the last construction boom. It is striking that the most extensive construction work is projected in precisely the cities with the highest vacancy rates at present (Frankfurt at almost 18% and Düsseldorf at roughly 11.5%).

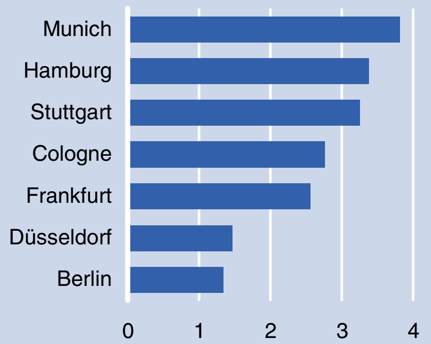
Rents continue to pick up on all primary markets

The propitious constellation of marked employment growth and low construction activity signals clearly positive net absorption on all seven primary markets in the years ahead, with vacancy rates decreasing and prime rents increasing. Vacancy rates on all seven primary markets eased last year already, and in five of the seven cities higher headline rents were agreed at the end of 2006 than the end of 2005. We expect the weighted vacancy rate in the seven primary markets to fall altogether two percentage points by 2010. But even then vacancies will still be far removed from their lows at the turn of the millennium. So office space will not be in short supply by 2010 either, although prime rents in particular should continue to head north – accelerating a little to begin with until checked slightly towards the end of the forecast horizon by a return to brisker construction activity. End-2010 prime rents should be 12% above their current level. Although quite an appreciable figure, it does not even match London or Madrid's rental growth in 2006 alone. So while clearly bouncing back, rental growth on the German markets will be only moderate under the burden of some very high vacancy levels.

What is more, rents in the seven markets will certainly not develop at the same speed. Whereas office rents in Munich will escalate by almost 4% a year through 2010 and rents in Hamburg by around 3.5%, office space in Berlin will probably command only about 1.5% more a year. That would make premium office space in Hamburg

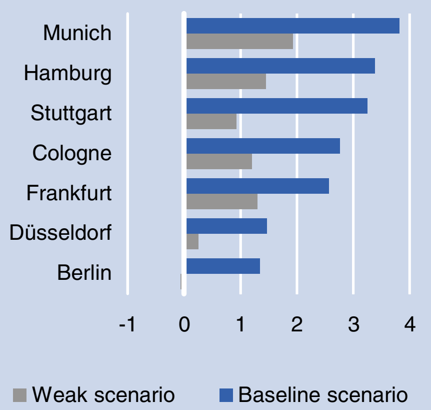
[7] The average has been formed for the period from 1993 to 2010. The forecast horizon was included so that two almost complete cycles could be entered into the equation.

Rental growth will vary
Rental growth in seven primary markets, 2007 to 2010, % p.a.



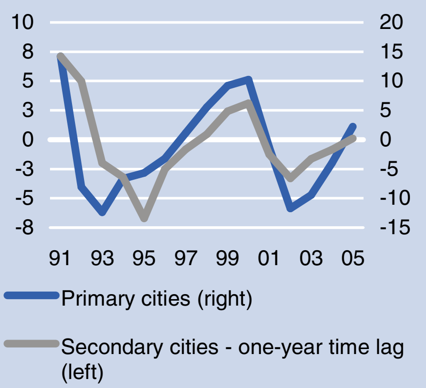
Sources: CBRE, DB Real Estate, DB Research **18**

Rental growth low in a flat economy
Prime rents, % p.a.



Source: DB Research **19**

Very close correlation
Change in prime rents, %



Sources: BulwienGesa, DB Real Estate, DB Research **20**

considerably more expensive at the end of the decade than in Düsseldorf or Berlin, although at present the differences are marginal. Moreover, prime rents in Munich are catching up fast with top prices in Frankfurt. By 2010 Frankfurt's headline rents will probably be a "mere" EUR 3 per m^2 higher than Munich's. At present they are still almost EUR 5 ahead, and in the heyday of the New Economy the prices paid in Frankfurt were almost EUR 20 above those in Munich.

Of course a positive scenario can be construed for Frankfurt from the fact that its office market has always been by far the most volatile. But we should not make too much of this. For one thing, the office market in Frankfurt is suffering particularly severely from dramatic supply overhangs. And for another, the financial sector has not yet leveraged its outsourcing and industrialisation potential.[8]

And if the economy does take a turn for the worse?

The forecasts sketched out in the above are drawn from our baseline scenario, i.e. the one most likely to occur (roughly 60% probability). Precisely because of the continued macroeconomic risks moving forward, and because we are not yet convinced of the German government's commitment to reform, it is worth setting a weak scenario alongside the upbeat baseline version. The downbeat option is far less likely to occur (roughly 20% probability) than the baseline scenario.

In the weak scenario global economic activity slows considerably in 2007, also hitting German export business. The domestic economy reacts with a slight time lag. On average for the next four years the German economy manages no more than 1% real growth, as a result of which the number of office workers edges up very slowly – slightly faster in 2007 owing to the very substantial statistical overhang, but hardly at all in the following years. In this scenario not a single primary city achieves rental growth of more than 2% a year; in Düsseldorf and Berlin rents are immobilised at their present level over the entire period.

Rent increases in all cities underperform the baseline scenario on a similar scale – with the important exception of Stuttgart. There the almost 2 ½ percentage point drop in rental growth is far more severe than in the other primaries, presumably because Stuttgart depends more on industrial activity. Poorer export business will then dent its office market far more deeply.

Secondary and tertiary market developments

In our structural analysis of the German sub-markets we have shown that there are some close correlations between the development in rents in prime locations in primary cities and other, above all west German, sub-markets. On the assumption that past correlations will hold good for the next four years, prognoses can also be inferred from our forecast of prime rents for these other sub-markets. They are the city-centre locations in secondary and tertiary west German cities and the peripheries of tertiary west German cities. Admittedly, no correlations could be found between primary and secondary downtown locations with a maximum error probability of 5%. But because this target level, although commonly used, is ultimately arbitrary and was, moreover, only barely missed, we

[8] Meyer, T. (2007). Industrialisation of financial services. To boldly go where automotives have gone before. In Deutsche Bank Research E-Banking Snapshot 20. Frankfurt am Main.

venture to infer a forecast for the west German city-centre locations in secondary cities as well.

Major differences do, however, exist between individual cities in the same market group; consequently a forecast of this kind can only be indicative of the aggregate and not of each individual office market. This still requires a precise analysis of the supply and demand factors in each case. The same obviously also applies to the market groups that do not correlate with the primary markets.

Slight rental growth also in secondary locations

In our baseline scenario we estimate (as detailed above) that prime rents in the primary locations will increase over the next four years by an average of not quite 3% p.a. But in peripheral primary city locations we expect rent increases of only 0.6%. In the top secondary market locations rents are likely to edge up only marginally by 0.3% a year, while in the other sub-markets (tertiary cities and peripheral secondary city locations) we expect them to be flat. But that would at least mean that for sub-prime locations, too, the period of declining (nominal) rents was over.

5. The German investment market

Strong interest in German property

Investment market at record level

The German property investment market in 2006 was in very good shape. Including transactions in non-performing loans (credit portfolios) the volume of property transactions reached a new record level of around EUR 70 bn, up almost 35% on the previous year.[9] Two major changes on earlier years produced this result.

Shift from residential transactions to commercial portfolios

First, far more foreign capital is now being channelled into German property. Since 2004 foreign institutional investors have been waking up to a German investment market dominated for decades by domestic institutionals. Attracted by still relatively low interest rates, high initial yields in comparison to other European markets meanwhile, and the brightening outlook for rental markets in the coming years that we have described, they have invested more than EUR 80 bn in German property since 2004. Abundant liquidity on the international investment markets is another important factor. In 2004 and 2005 interest focused on housing portfolios, but as portfolio prices picked up and, most importantly, local authorities offered less for sale, this market segment contracted in 2006. Reselling was to the fore. It is striking that not only are foreign financial investors now in search of bargains, but also a growing number of core or core-plus property investors from Germany and abroad focusing on long term, lower risk investments. Given further declines in rental yields, some risk-averse investors are likely to invest more aggressively, i.e. in higher-risk properties, in a bid to realise the yields they have in mind.

More long-term investors in search of property

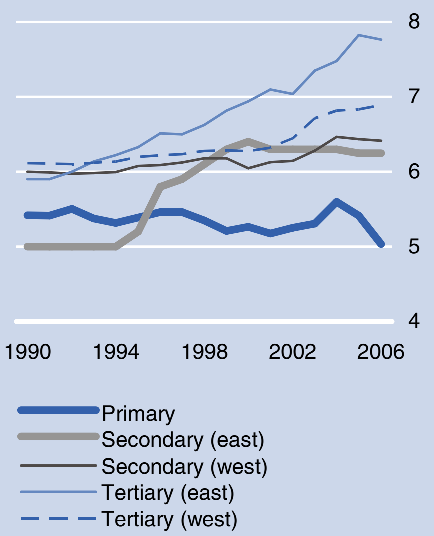
Second, intense debate on a stronger alignment of the German real estate sector to the capital market has stimulated the listed property company segment. The possibility of Germany-specific REIT legislation has undoubtedly provided a further boost. More than 20 companies worth more than EUR 2 bn in all went public in 2006. Property companies already listed generated a similar volume

[9] Atisreal (2007). Investment market report Germany, 2007.

through capital increases. This important segment is not expected to flag in 2007.[10]

Yields drift apart

Rental yield, in %



Sources: BulwienGesa, DB Real Estate, DB Research

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The further increase in the volume of foreign property investment despite the lack of inclination to put new housing portfolios onto the market stemmed partly from a reduction in domestic commitments by many German investors, such as open-ended real estate funds or insurance companies, in favour of investments abroad. Consultancy PMA says that in 2006 open-ended funds alone sold mainly large German office portfolios worth almost EUR 8 bn. At the same time companies parted with sizeable holdings, mainly in downtown and peripheral locations in primary and secondary cities.

Development in rental yields

Buoyant demand lifted the price of office property, particularly in the primary cities. During the recession on the rental markets demand from German investors as well had collapsed between 2002 and 2005. This caused purchase prices to plummet so dramatically as to initially more than make up for the downturn in rents, nudging up rental yields in 2004 and early 2005. In good office locations on the primary markets growing interest in office property drove yields down again slightly in the course of 2005. Yields on premium property softened up to 60 basis points at the primary locations, less in peripheral locations, while in many secondary and tertiary markets they actually firmed slightly. In east German tertiary cities growth was stronger than on west German tertiary markets, even though rental trends were often very similar. There is still evidently an “east German discount”.

Mixed development in office yields

Correlation coefficients of rental yields, 1991 to 2006

	Primary (city)	Sec. east (city)	Sec. west (city)	Tertiary east (city)	Tertiary west (city)	Primary (periph.)	Sec. east (periph.)	Sec. west (periph.)	Tertiary east (periph.)	Tertiary west (periph.)
Primary (city)	1									
Secondary east (city)	0.16	1								
Secondary west (city)	0.42	-0.08	1							
Tertiary east (city)	0.05	0.10	0.17	1						
Tertiary west (city)	0.24	-0.16	**0.66**	0.23	1					
Primary (periphery)	0.41	-0.33	0.40	0.22	0.18	1				
Secondary east (periph.)	0.08	**0.70**	-0.31	0.16	-0.22	-0.13	1			
Secondary west (periph.)	0.37	0.08	**0.71**	0.43	0.45	0.34	-0.32	1		
Tertiary east (periphery)	-0.02	0.00	-0.05	**0.82**	-0.08	0.15	0.12	0.37	1	
Tertiary west (periphery)	0.16	-0.02	**0.63**	0.20	**0.82**	0.05	-0.19	**0.53**	-0.18	1

NB. Statistically significant correlations with max. 5% error probability appear in bold type. The first differences in rental yields were correlated.

Source: DB Research

22

This disparate development in yields on the primary markets and in smaller cities is not a new phenomenon, also appearing in correlation analyses over the past 15 years, which show an even more mixed development in yields than in rents. Investment markets evidently live a different life than rental markets. In upswing periods many investors seek to profit from the greater momentum in urban

[10] Praum, M. (2007). Seinen Kinderschuhen noch nicht entwachsen. In Going Public Sonderausgabe G-REITs 2007. pp. 96-98.

agglomerations, whereas in downswings they do not seek salvation in the comparatively safe havens of secondary and tertiary cities on the same scale. Instead, they exit the property market altogether. Moving forward, we would like to see more possibilities for arbitrage. This would cause the yield spread between east and west German cities of a similar size to narrow and market correlation to increase. However, we are assuming that investors will focus on primary cities and that, if anything, yield spreads between primary and tertiary cities will increase rather than decrease.

Knock-on effect from Europe

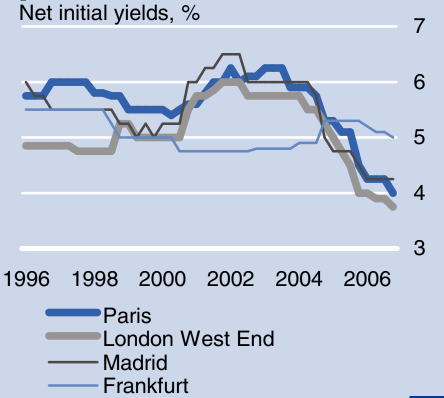
We take the view that it is impossible to understand trends on the German property investment markets without the European context. Two aspects are important here. First, European markets have benefited in recent years from the benign interest rate environment, from increased sale-and-lease-back activity and from recuperating rental markets. As a result the volume of property investment in Europe as a whole has risen. Second, internationalisation does not stop at the property markets. For the past four years cross-border property investments have expanded faster than domestic commitments.

These two trends naturally favour cities with particularly liquid investment markets, that is to say the global cities Paris and London, but also property markets in dynamic economies such as Madrid, Dublin or the central European markets. Brisk interest has pushed prices up significantly, causing yields to fall. In the space of three years rental yields in London, Paris and Madrid have shed around two percentage points, so that in London (West End) they are now well below ten-year government bond yields. The spread between rental and bond yields in Paris and Madrid has been almost entirely wiped out in three years. Since this cannot be taken to mean that investors suddenly perceive property as less of a risk than European government bonds, it implies strong hopes of sustained capital growth – or indeed overvaluation.

Now, office investments in London, Paris or Madrid in recent years have yielded falling rental returns because prices have accelerated even faster than rents. Although data on the total returns in many European office markets is only available so far up to 2005, it is probable that total returns in Germany fell short of Britain, Spain or France's performance in 2006 as well. Particularly in the UK and Spain, total returns are expected to be appreciably lower in the coming years. We therefore predict a shift in emphasis away from the locations that have taken preference so far, with investment in German property accounting for at least part of this refocus. It is true that international arbitrage does not work perfectly on rental markets – otherwise there would not be such huge differences between prime rents in London's West End and, say Frankfurt/Main. However, international arbitrage is on the advance in investment markets. Of course London and Paris will remain very important as investment locations in the coming years; but 2007 should bring a return to normal, allowing for stable prices triggering renewed slight gains in rental yields. With most property analysts forecasting at least slower growth in rents in Madrid and London for the next few years, investors can be expected to adjust their investment behaviour downward, causing rental yields to bounce back.

Office yields under pressure

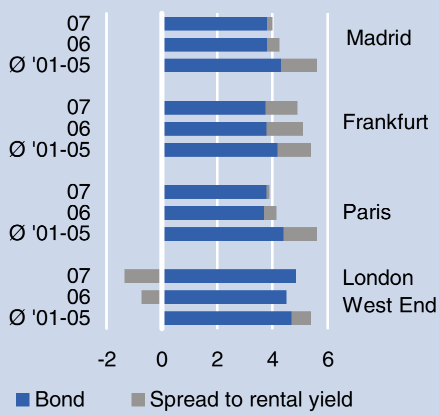
Net initial yields, %



Sources: CBRE, RREEF Research **23**

Clearly positive spread to bond yields in Frankfurt

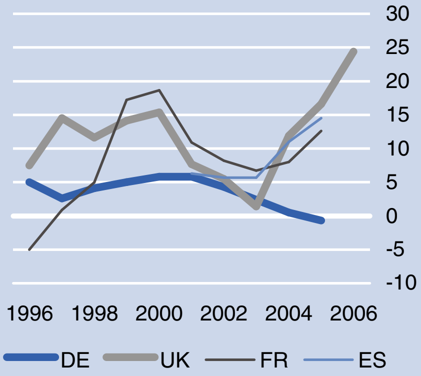
Difference between initial yield and yield of a 10-year government bond



Sources: CBRE, RREEF Research, DB Research **24**

Total return in Germany still under par

Total return in %



Source: IPD **25**

Outlook for investment in German office property

So what does the future hold on the German office investment markets? Given the strong improvement in the German office market environment last year and positive assessments of the future, it is plausible that institutional investors will hold on to the larger share of property in their portfolios. Some investment funds and initiators will probably also catch up on the investments they failed to make in 2006. Although foreign financial investors will play a less prominent role in Germany than in the past, investors geared to the long term will become more active. Besides foreign investors, these also include German real estate funds, particularly open-ended property funds.

Impetus from REIT introduction

Further impetus could come from the introduction of REITs. The IPOs and capital increases already implemented, and the chance implicit in exit tax relief of opening up corporate property portfolios to the investment market, point in this direction. That companies are considering capitalising more on their property irrespective of the exit tax, is evident in the higher number of corporate sell-offs, to which transactions by big trading corporations bear witness. Exit tax relief is expected to leverage fresh potential for sale-and-lease-back deals. This additional supply could also help ease the possible pressure on yields resulting from strong demand.

Only marginal declines in rental yields expected

Aside from potential increases in supply, the improved outlook for the rental markets also suggests that while initial yields will soften slightly, yields will reach nothing like the levels registered in London or Madrid. The drop in yields will presumably be confined to good office locations in the primary cities; in peripheral locations and on most secondary and tertiary markets the situation is more likely to stabilise. This means that we will also see positive spreads between initial office yields and bond yields on the German office investment markets in 2007 and 2008. 2008 is expected to bring broadly stable rental yields on German office markets. Only if our weak scenario occurred and investors were slow in responding to the new circumstances could yields briefly fall more sharply. This should be confined chiefly to 2007, however, as investors react quickly to the altered environment and scrap purchases planned for 2008.

6. Conclusions

Investment pressure will remain high

The volume of German commercial property is currently estimated at around EUR 1,300 bn. Almost half of this is in the form of institutional investments. But it is not simply its size that makes Germany an attractive property investment market at present. Essentially there are another three reasons. First, Germany found its way back to stronger economic growth in 2006, carrying this momentum over into the New Year. Given the persistently favourable outlook on world markets and with domestic economic activity still contributing to growth, it will be possible to ratchet employment up further in the coming years. Second, many European office markets outside Germany have found favour with investors in recent years, driving down initial yields dramatically in London, Paris and Madrid – and on many east European markets too. At the same time German investors scaled back their commitments in Germany. This resulted in comparatively stable initial yields in the German office strongholds. Today returns are around one percentage point above rental yields in London, Paris or Madrid. Third, international investment capital is unlikely to dry up, at least in the short term. So investment pressure will remain high – lending even greater weight to the other arguments.

2007 and 2008 good investment years

All in all, we expect 2007 and 2008 to be good investment years on the German office market. Commitments in German office property should be roughly on a par with 2006. This means that rental yields will still soften a little in 2007, although they are unlikely to drop to the current levels in Madrid or Paris. Admittedly, we must expect the general shift in emphasis from short-term investors to asset managers with a longer investment horizon to continue on the office investment markets as well. Since it is generally the primary markets that benefit in upswing periods, it is moreover plausible that many investors will concentrate their activities on the "usual suspects". Conservative investors in particular, and not just opportunistic players, should therefore keep their eye on the diversification ball and seek additional opportunities on secondary and tertiary markets in east and west Germany.

Exorbitant expectations the greatest risk

Finally, for all this enthusiasm over the resurgent domestic giant, it must be remembered that although the growth outlook has improved for the German economy, many important structural problems have still not been solved. The greatest risk in the years ahead therefore lies not in a downswing on the property markets, but in exorbitant expections on the part of investors and project developers.

Tobias Just (+49 69 910-31876, tobias.just@db.com)
Maren Väth (+49 69 71704-204, maren.vaeth@db.com)

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