Contents

Definitions

Gross yield

Rental income plus management costs, excl. incidental acquisition costs

Rent

Average rent per month for apartments regardless of year of construction, located in the city centre.
Size of apartments varies between 75 sqm and 90 sqm.

Average of examined countries

The average house price of the country in relation to all 18 examined countries in this report

European residential property in a supercycle

DEAR READERS,

If you take a purely analytical approach to the European residential sector and are of a pessimistic frame of mind, you could well think that the events of 2004–2008 are repeating themselves. Wasn't it the use of residential real estate as collateral for financial securities that caused the collapse of Lehman Brothers and scores of other banks? Didn't the US housing market trigger the worst financial crisis in memory? That expression "subprime" – does it ring any bells? Weren't lending rates an incredible "bargain" at the time, just like today? Didn't house prices rise like there was no tomorrow? "Double-digit rental growth from leases" was the magic formula for many investors. The dramatic structural realignment that followed wasn't just restricted to Spain and Ireland: the bloodletting was general and protracted.

The world has seen two simultaneous developments that have set the stage for what is known as a "supercycle": rising liquidity coupled with a rate of urbanisation that can almost be described as dramatic. Together, they have produced the current situation in which high demand contrasts with comparatively slow-growing supply. At the same time, there is severe pressure on international intermediaries to provide investors with something more than ten-year German federal bonds. The results of this combination of factors can be seen everywhere: Helsinki, Oslo, Stockholm, Copenhagen, Berlin, Frankfurt, Munich, Paris, Lyon, Madrid and Barcelona.

There are few indicators suggesting we are about to witness the same excesses as we did in the first decade of the century. Market participants are basing their decisions on factors that are entirely realistic. No matter what country or city you look at, it is obvious that investments in residential property are subject to increased levels of demand, which leads to constantly rising prices. However, new market segments are another consequence. These include micro homes and changing consumer behaviour. A key phrase here: "renting instead of buying". The European market also provides evidence of this new paradigm. Furthermore, residential property leads the field when it comes to performance.

It is precisely the situation described above that reveals that investors are extremely active in the residential market due to its nature as a safe haven for money. The real estate sector stands out as the decade's best performer despite the existence of substantial differences in yields and drivers between different regional markets and cities. Demand has rocketed in the last 24 months, and at present, there is no discernible end in sight. Residential investment came to a total of EUR 37.5 billion in 2015.

Our survey Catella Market Indicator Residential - Spring/Summer 2016 takes a closer look at individual countries and explores their role within the overall context of investments. While it may be true that the term "supercycle" seems, at first glance, to be lifted from a marketing unit's handbook, we are nevertheless certain that further appreciation is more likely than falling prices for Europe's residential property in the years ahead.

Thomas Beyerle
Catella Head of Group Research

Portfolio selection

CORRELATION MATRIX EUROPEAN RESIDENTIAL MARKETS 2016

	Germany	France	Netherlands	Poland	United Kingdom	Ireland	Italy	Spain	Finland	Sweden	Norway	Denmark	Market
Germany	1,00	-0,39	-0,24	-0,37	-0,20	0,02	-0,60	-0,43	-0,31	-0,03	-0,19	0,09	-0,37
France	-0,39	1,00	0,61	0,27	0,56	0,58	0,83	0,81	0,77	0,39	0,44	0,74	0,85
Netherlands	-0,24	0,61	1,00	0,45	0,55	0,59	0,69	0,70	0,23	0,43	0,27	0,45	0,76
Poland	-0,37	0,27	0,45	1,00	0,36	0,33	0,35	0,36	0,32	0,31	0,19	0,14	0,54
United Kingdom	-0,20	0,56	0,55	0,36	1,00	0,71	0,57	0,72	0,51	0,59	0,29	0,41	0,83
Ireland	0,02	0,58	0,59	0,33	0,71	1,00	0,48	0,81	0,49	0,59	0,14	0,69	0,79
Italy	-0,60	0,83	0,69	0,35	0,57	0,48	1,00	0,87	0,59	0,30	0,26	0,47	0,84
Spain	-0,43	0,81	0,70	0,36	0,72	0,81	0,87	1,00	0,62	0,53	0,27	0,64	0,93
Finland	-0,31	0,77	0,23	0,32	0,51	0,49	0,59	0,62	1,00	0,42	0,33	0,59	0,69
Sweden	-0,03	0,39	0,43	0,31	0,59	0,59	0,30	0,53	0,42	1,00	0,63	0,65	0,61
Norway	-0,19	0,44	0,27	0,19	0,29	0,14	0,26	0,27	0,33	0,63	1,00	0,53	0,39
Denmark	0,09	0,74	0,45	0,14	0,41	0,69	0,47	0,64	0,59	0,65	0,53	1,00	1,00
Market	-0,37	0,85	0,76	0,54	0,83	0,79	0,84	0,93	0,69	0,61	0,39	0,66	1,00

Source: Catella Research 2016

Naive diversification was not used for our office market report; instead, an attempt was made to quantitatively prove this potential between the markets using a correlation matrix. This matrix often displays slightly positive and even negative correlations between the markets. This applies in particular to the German market, which enables a major reduction in the portfolio's non-systematic risk. We have also begun to measure the diversification effect for the market (European residential property market index) as an addition to our previous property market report.

Specifically in aggregate comparisons, the unusual nature of the German residential property market becomes particularly clear – while other countries show a slight or considerable correlation with the market, Germany displays negative correlation with the market. The result is a negative beta risk factor for Germany. The beta risk factor includes a relative risk comparison and is calculated from the covariance of the individual market relative to the whole market and the variance of the market. The central reference value is the collective market's beta risk of one. If a country's risk factor exceeds that of the collective market's, then the beta factor is greater than one. A lower risk is valued at less than one. The beta risk factor is vital for analysing the stock markets. This is not yet true for the real estate market yet, as the availability of data is often severely limited.

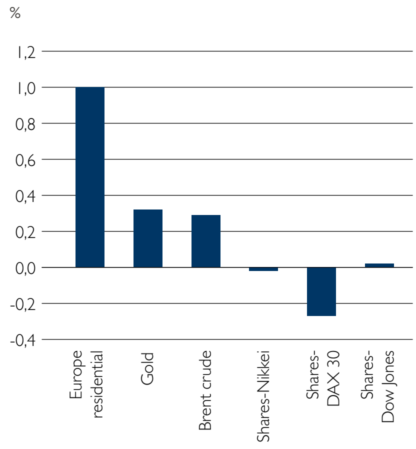
In practice, yield risk modelling tends to be of particular interest to major institutional investors as they can use it to determine certain equity, bond, commodity and real estate exposure rates. Investors in the German stock market in particular can tap into great diversification potential by investing in the European residential property market.

COMPARISON OF BETAS

	Beta risk factor
Germany	-0,14
France	1,40
Netherlands	1,02
Poland	0,50
United Kingdom	1,47
Ireland	2,26
Italy	1,01
Spain	2,39
Finland	0,47
Sweden	0,66
Norway	0,42
Denmark	1,42
Europe	1,00

Source: BIS / Calculation & Construction: Catella Research 2016

DIVERSIFICATION POTENTIAL OF DIFFERENT ASSET CLASSES (2000-2014)



Source: BIS; Construction: Catella Research 2016

Residential investments in Europe

There are certainly considerable differences in residential property price developments in the various countries. Price developments should always be viewed in the context of national economic developments and the domestic approaches to regulation. Looking at European housing market indices leads us to conclude that cycles are becoming ever shorter and volatility is higher. This makes in-depth, country-specific research more important than ever in European investment strategies in order to get the market timing right.

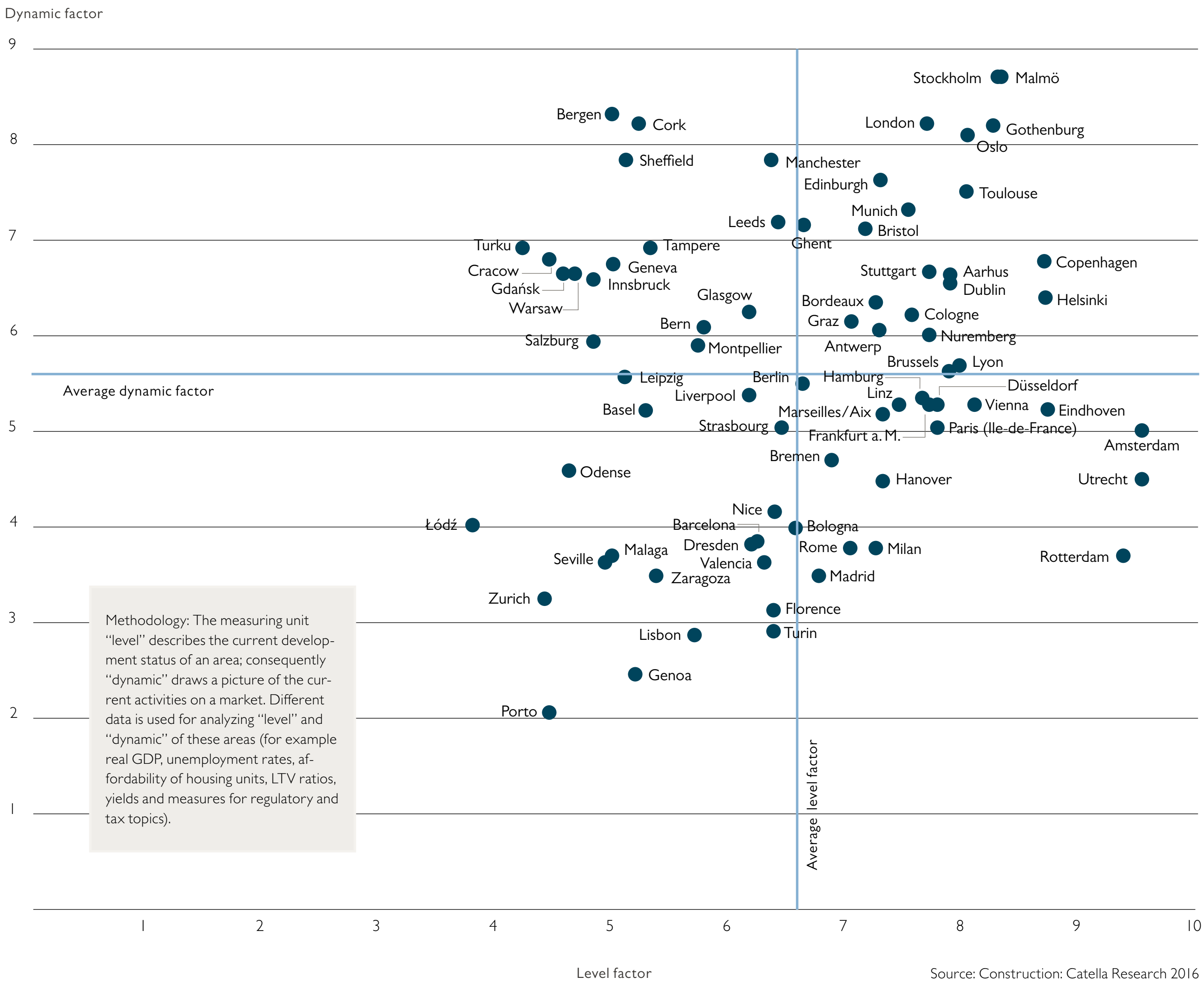
Ultimately, however, property investors do not buy countries, they buy properties in regions. But the various regions within a single country can exhibit characteristics that vary so greatly that there is no way around analysing the major metropolitan regions.

Catella Research employs two ratings to evaluate the quality of an investment location: level and dynamic.

Cities like London, Paris, the Swiss metropolitan regions and German cities such as Munich, Hamburg and Stuttgart are very popular, which results in high rental prices. But the growth in rental prices is struggling to compensate for the increase in purchase prices, resulting in yield compression and confining rental yields to between 3% and 4%. This is pushing some of Germany's category B and C towns, with rental yields of up to 6%, into the limelight.

Similar results have also been achieved in Polish cities such as Warsaw, Gdańsk and Łódź. This trend will be carried by stable Polish economic growth over the medium and long term. Transaction activities have recently increased in Spain, although it remains to be seen whether this development is sustainable.

MARKET ANALYSIS / RATING OF EUROPEAN METROPOLITAN AREAS



Methodology: The measuring unit "level" describes the current development status of an area; consequently "dynamic" draws a picture of the current activities on a market. Different data is used for analyzing "level" and "dynamic" of these areas (for example real GDP, unemployment rates, affordability of housing units, LTV ratios, yields and measures for regulatory and tax topics).

Source: Construction: Catella Research 2016

CEE/Czech Republic

Recovering rental market, moderate rental yields

Sales were particularly strong, partly due to increased interest from foreign homebuyers, low interest rates and increasing confidence in the economy. Residential construction activity recovers from the global financial crisis.

AT A GLANCE

Population	10,6 mn
Housing stock	4.61
Stamp duty	4.0%
Notary costs	-
Brokerages	0.5%-1.0%
Value added tax	21.0%

2016 forecast	
Unemployment rate	4.8%
Inflation rate	1.8%
GDP growth	2.4%

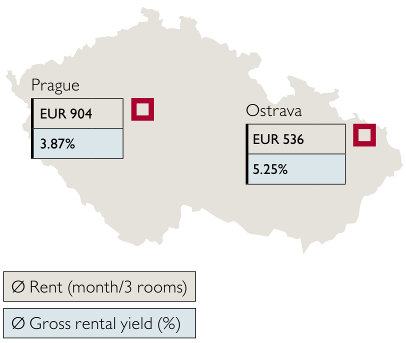
Top Cities	**Population**
Prague	1,3 mn
Brno	405,000
Ostrava	312,000
Pilsen	171,000
Liberec	105,000

Source: Eurostat, IMF, PMA

The Czech economy expanded by a robust 4.1% in 2015, up from 2.0% in 2014. Although the change in methodology was a factor behind this robust data, underlying conditions were indeed very positive. Domestic demand has gone from strength to strength, with fixed investment at the fore but private consumption also gaining significant momentum and government spending remaining supportive. Meanwhile, net exports weighed on growth modestly due to imports outpacing exports. Consumer spending accelerated to 3.1% y-o-y in Q2, up from 2.8% in Q1. A slight moderation is likely going forward, as indicated by a modest slowdown in retail sales in August, to a nevertheless decent 3.3% y-o-y, and a fall in consumer confidence in September. The consumer sector is unlikely to lose too much steam, however, given subdued inflation and a possibility of renewed deflationary pressures on the back of the renewed decline in oil prices. In addition, the unemployment rate is among the lowest in CEE and real wages are growing robustly. The growth forecast for 2016 is 2.4%. The economy is in for a domestically-driven expansion, with investment particularly strong but consumer spending also set to expand robustly. Downside risks include a slowdown in China and lower demand for subcomponents from Germany.

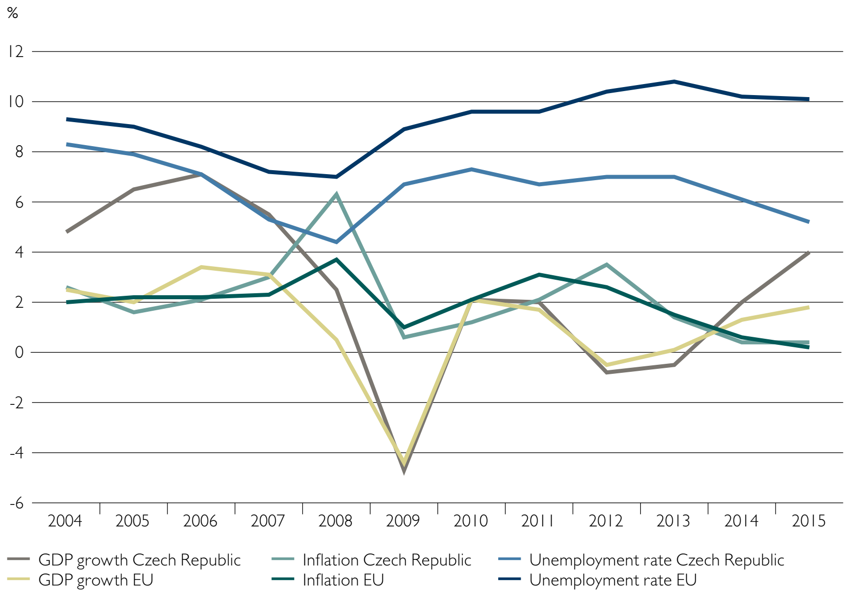
Economic growth is back, mortgage demand is exploding, housing completions remain low, and mortgage interest rates are as low as they've ever been. The average residential property prices in the Czech Republic rose by 2.6% in 2014 (2.2% in real terms), the sixth consecutive quarter of moderate price increases. In the first half of 2015 alone, house prices increased by 3.3% (2.9% inflation-adjusted). The housing market stagnated from 2004 to 2005, with measures to cut the budget deficit probably the key factor. The average price of apartments dropped

RENTS AND YIELDS IN CITY CENTRES



Source: Numbeo

ECONOMIC DATA



Source: IMF, PMA

by 2.7% in 2004, a 5.2% fall in real terms. This was followed by a 2.7% increase in 2005, a 0.5% fall in real terms. Thanks to lower interest rates in 2006, the house price index rose by 8.4% (5.7% in real terms). Housing completions shot up in 2007 by almost 38% and the house price index grew by 31.2% (27.1% in real terms) in 2007. In 2009, apartment prices fell by 12.3% (-13.3% in real terms), after 17.1% (10.5% real) y-o-y growth in 2008, due to the global financial crisis. Housing competions fell by 14.3% y-o-y. Nevertheless, there was a substantial completions overhang. Completions in 2009 and in 2008 were still higher than in the years prior to 2007. Finally, the property market returned to growth in 2012, with the house price index rising by 3.1% (0.26% in real terms), despite the depressed economy. The property market has recorded modest house price rises since then.

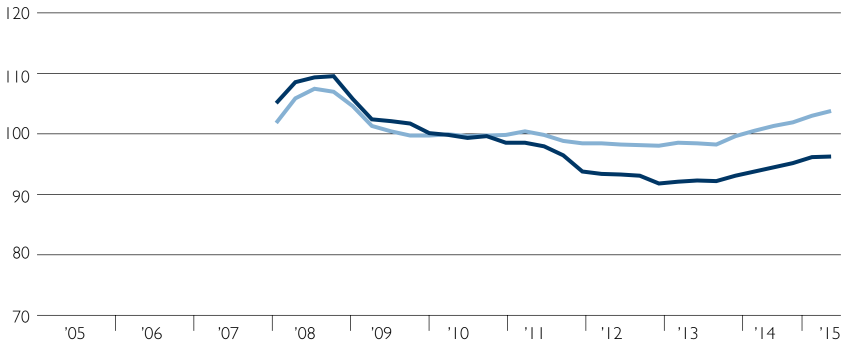
The residential rental market is now gradually recovering. Foreign buyers are returning to the market to purchase properties for investment purposes. A higher proportion of luxury buyers recently were either Czechs or Russians.

Gross rental yields in Prague remain less than attractive. A 200 sqm apartment has an average yield of 3.80%, while a 120 sqm apartment has a rental yield of 4.2%. Smaller apartments at around 50 sqm to 85 sqm have an average yield ranging from 4.05% to 4.30% – still not great for investment. Current yields are lower than the yields during 2000–2005, when the average rental yield in Prague was 6.8%, around 10.8% in Ostrava and Ústí nad Labem and 7.8% in the rest of Czech Republic.

The Czech Republic's rental market has been regulated since the 1980s, causing a significant difference between the rent prices of regulated and non-regulated units. Regulated rents used to cover around 80% of all rented apartments (around 750,000 apartments). Around 300,000 affected units were privately owned, while the rest were owned by municipalities. Most cities and municipalities ended their deregulation process on 31 December 2011, while the Central Bohemian region (which includes Prague) and cities with over 100,000 inhabitants were deregulated on 31 December 2012. While the end of rent regulation had been expected to boost rental market returns, this process has taken a long time, due to weak economic growth.

RESIDENTIAL PROPERTY PRICES

Real vs. nominal, 2010 = 100

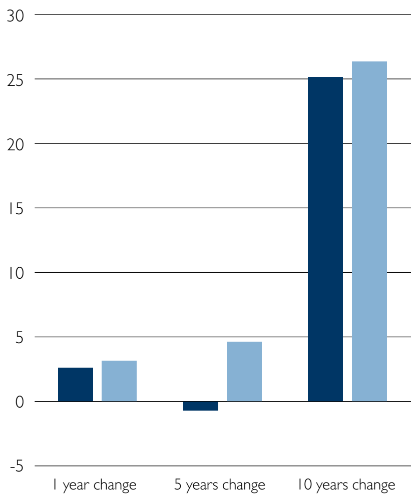


Real
Nominal

Source: Bank for International Settlements

PERCENTAGE PRICE CHANGE OF NOMINAL INDEX

%

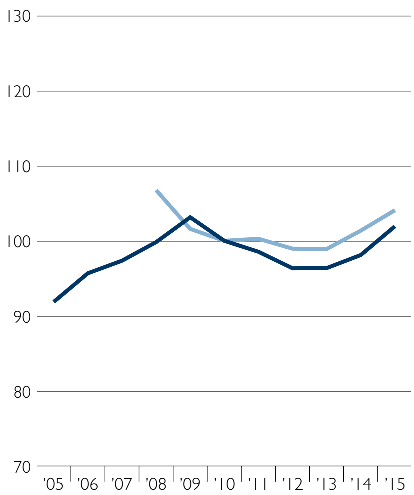


Czech Republic
Average of examined countries

Source: Bank for International Settlements

RESIDENTIAL PROPERTY PRICES

New vs. existing property, 2010 = 100



New property
Existing property

Source: Eurostat

Norwegian housing market going upward

Rents have increased in line with house prices. Nevertheless, there is a divergence between larger towns and cities and the countryside. Transaction activity increased further due to lower interest rates.

AT A GLANCE

Population	5.2 mn
Housing stock	2.47
Stamp duty	2,5%
Notary costs	-
Brokerages	0.75%-1.25%
Value added tax	25.0%

2016 forecast	
Unemployment rate	4.8%
Inflation rate	2.2%
GDP growth	1.6%

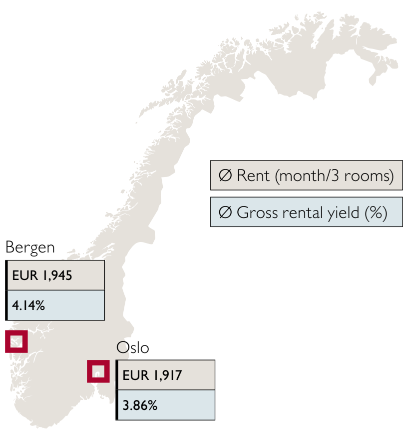
Top Cities	**Population**
Oslo	995,000
Bergen	268,000
Stavanger	240,000
Trondheim	183,000

Source: Eurostat, IMF, PMA

An oil-led slowdown within Norway continues, with GDP contracting by 0.1% q-o-q in Q2. While the economy of mainland Norway continued to grow, it has been clearly affected by knock-on effects of the plunge in global oil prices and resulting reductions in investment and employment in the petroleum sector, which have spread to related industries and other parts of the economy. The unemployment rate recently rose to the highest level in 9.5 years and is likely to edge up further, while wage growth slowed. Relatively high inflation and slower wage growth as well as a sharp drop in consumer confidence to the lowest level since 2009 suggest that households are unlikely to provide the same impetus to growth as they did in recent quarters. Despite the knock-on effects from the faltering petroleum sector, GDP growth in mainland Norway is expected to stay positive in 2016 with 1.6% growth, supported by improving external demand for non-petroleum products, a weaker krone (which boosts exports), positive, albeit slowing, wage growth and loose monetary conditions. A further decline in oil prices is the main risk to growth with lower demand from China.

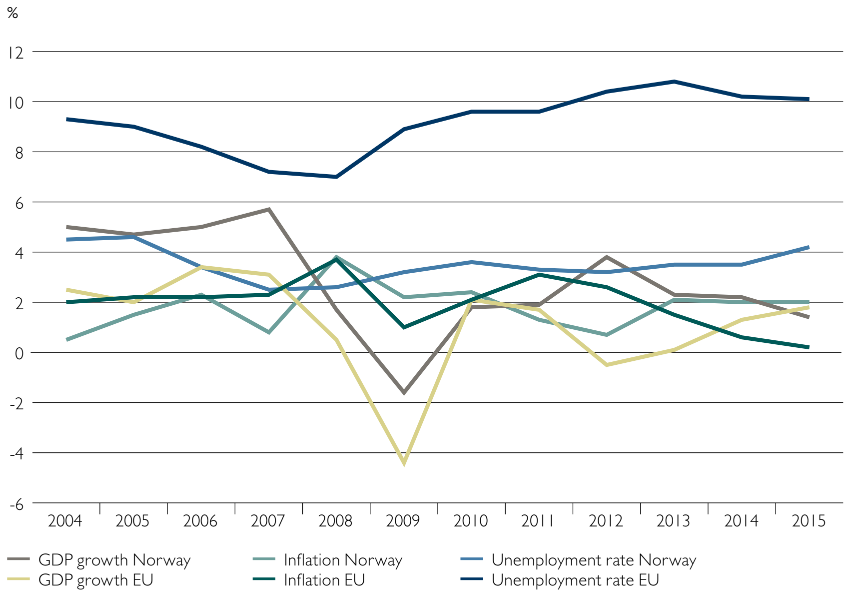
Despite troubling times for the Norwegian economy, the residential market is continuing at all-time high levels for each passing quarter. During the year to end-Q1 2014, the nationwide house price index rose by 0.4%, the slowest y-o-y increase since Q3 2009. In inflation-adjusted terms, house prices actually dropped by 1.7% over the same period. House prices increased in the first half of 2015 by 6.9% (4.7% inflation-adjusted) compared to the same period of the previous year. The first quarter of 2015, in particular, showed strong growth with a rate of 7.2% (5.1% inflation-adjusted), the highest value since Q4 2011. However, it is important to note that there are currently considerable differences in the

RENTS AND YIELDS IN CITY CENTRES



Source: Numbeo

ECONOMIC DATA



Source: IMF, PMA

larger cities, where a city and region such as Stavanger is likely to see a decline in residential prices during these troubling times. On the other hand we have cities such as Bergen and especially Oslo where the market is very strong and where we see the most growth. In Oslo, the growth has been close to 12% on a y-o-y basis with other large cities such as Bergen not far behind. Going forward, Oslo and Tromsø are likely to continue to see the strongest growth in prices, while we are more uncertain regarding the developments in Bergen as the area might very well become increasingly affected by the sluggish oil sector. There are arguably several reasons for the increase in residential prices despite a concerning climate for the economy. The dominant reason, however, is the record low interest rates in Norway. A consequence of this is that, despite rising housing prices and stable rental prices, it has been no cheaper to purchase a residential unit than to rent for several decades now, as the cost of finance is so low.

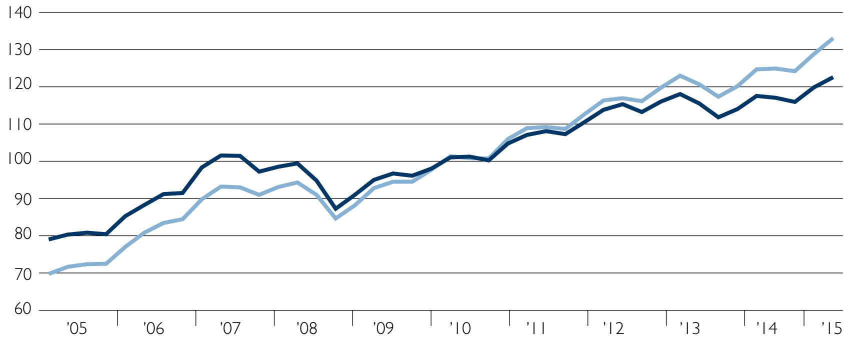
Residential construction activity has slightly declined. In 2013, the total number of housing completions fell by 1.2% from the same period last year. There are no sharp decreases in house prices expected but there may in fact be a very limited price increase and potential upside in the short to medium term. Norway will avoid a housing slump thanks to its low level of unemployment, low interest rates and population growth. Norway's key interest rates have gone through several cuts and hikes since the global credit crunch. From 5.78% in Q3 2008, sight deposit rates were slashed to a record low of 1.25% in Q3 2009. The rate hikes were more likely targeted at avoiding a housing bubble, since the housing market is extremely sensitive to interest rate changes.

Rents have only been rising in line with prices, which suggests that fears of over-valuation are exaggerated. Normally there is a clear pattern to housing bubbles, with house price rises greatly outpacing rent rises during the boom. This has not happened in Norway.

Owner-occupancy has been increasingly popular in Norway and state policy has had a strong impact. In 2011, approximately 23% Norwegians were renters, around 63% were freeholders and 14% cooperative owners. Oslo had the lowest portion of homeowners at around 69% and its portion of renters was slightly higher at 31% of households. At the same time, there is a consensus that the free market does not provide sufficient housing for the poor. In 1998, the Government agreed that the state should finance a new non-commercial rental housing sector, with the aim of building 50,000 new non-commercial rental dwellings over the next ten to fifteen years, located in the biggest towns, with low and regulated rents. Social rental housing made up around 15% of the 800,785 rental stock in 2001. In 2013, social rental housing covered 7% of total stock and 25% of total population live at risk of poverty (population below 60% of median equivalised income).

RESIDENTIAL PROPERTY PRICES

Real vs. nominal, 2010 = 100

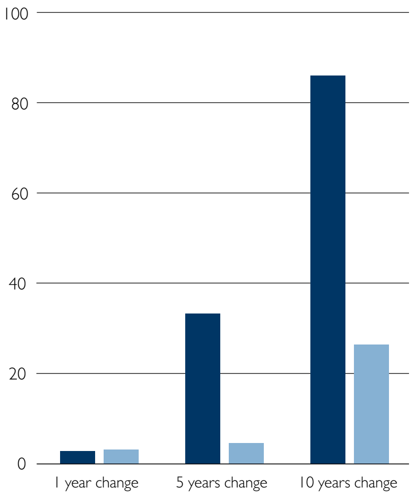


Real
Nominal

Source: Bank for International Settlements

PERCENTAGE PRICE CHANGE OF NOMINAL INDEX

%

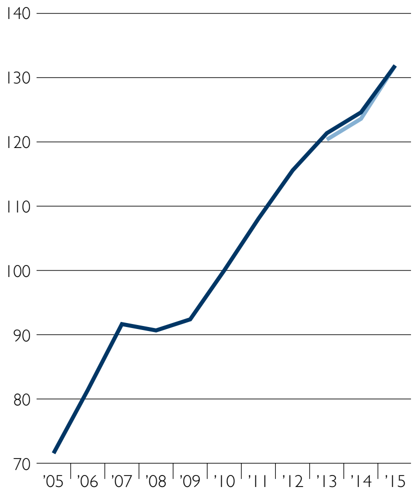


Norway
Average of examined countries

Source: Bank for International Settlements

RESIDENTIAL PROPERTY PRICES

New vs. existing property, 2010 = 100



New property
Existing property

Source: Eurostat