

### Box 3

#### Residential real estate prices in capital cities: a review of trends

#### Heterogeneous regional developments in housing markets may be a cause for concern from a financial stability perspective.

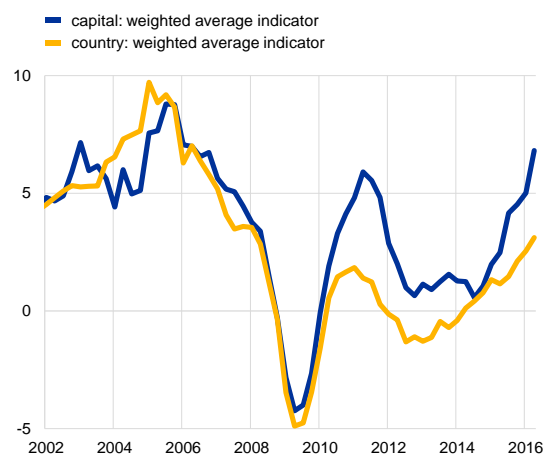
Although diverging developments at the regional level could be justified by fundamentals, such as differences in regional income, employment, population dynamics and amenities, they could also signal excessive exuberance of house prices in certain areas, for example due to the strong presence of foreign buyers. In this case, regional developments may spill over to adjacent locations or the entire country via “ripple effects”, with regional price developments potentially ending up leading the housing cycle at the country level. Thus, a close monitoring of regional residential real estate price trends seems warranted, as they may provide an early indication of a potential build-up of vulnerabilities in housing markets at the national level. Moreover, exuberant house price developments in certain regions could, in principle, threaten the stability of financial institutions with mortgage exposures concentrated in those regions. This is especially the case in the context of a low interest rate environment spurring a potential search for yield.

#### Chart A

Stronger house price increases in capital cities have been observed since 2010...

#### House price changes in euro area capital cities and at euro area aggregate level

(Q1 2002 – Q2 2016; annual percentage changes)



Sources: ECB calculations based on BIS and national data.

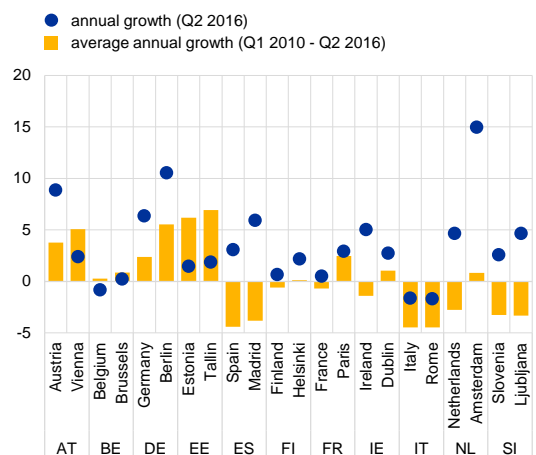
Notes: The composition of the sample changes over time and includes Germany, France, Italy, Spain, the Netherlands, Belgium, Austria, Ireland (from 2005), Estonia (from 2003), Slovenia (from 2010) and Finland (from 2010). The euro area series are a weighted average based on 2014 GDP weights.

#### Chart B

...amid a considerable degree of cross-country heterogeneity

#### Real residential property price changes across selected euro area countries and capital cities

(Q1 2010 – Q2 2016; annual percentage changes)



Sources: ECB calculations based on BIS and national data.

Note: Country-level data include capital cities.

Since 2010, residential property prices in capital cities have grown more strongly than the respective country averages across the euro area<sup>24</sup> (see Chart A). The aggregate euro area picture masks not only diverging developments at the country level, but also heterogeneous trends at the regional level. In fact, in recent years, real house prices have tended to grow faster or decline

<sup>24</sup> Data on house prices in capital cities were collected for 11 euro area countries (Austria, Belgium, Estonia, Finland, France, Germany, Ireland, Italy, Spain, Slovenia and the Netherlands) and aggregated at the euro area level.

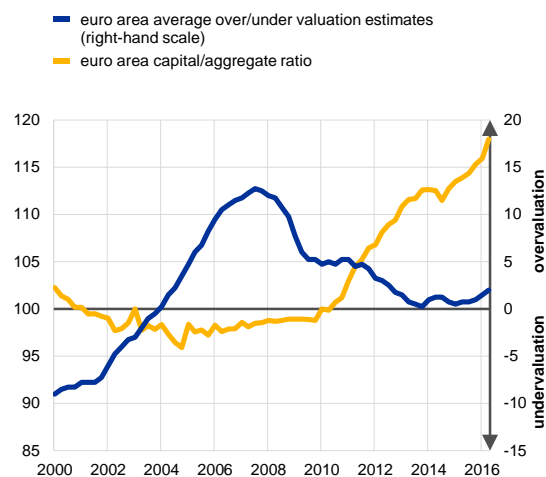
less in capital cities than at the national level – a development observed, in particular, in Austria, Germany, France, the Netherlands and, to a lesser extent, in Estonia and Ireland (see **Chart B**). This divergence was not apparent during the upturn in the early 2000s, when prices in capital cities moved broadly in line with the national aggregates.

### Chart C

Higher prices in capital cities are not associated with overvaluation in the euro area

**Ratio of house prices in capital cities to national aggregate and euro area over/undervaluation estimates**

(Q1 2000 – Q2 2016; left-hand scale: index: Q1 2010 = 100; right-hand scale: percentage points)



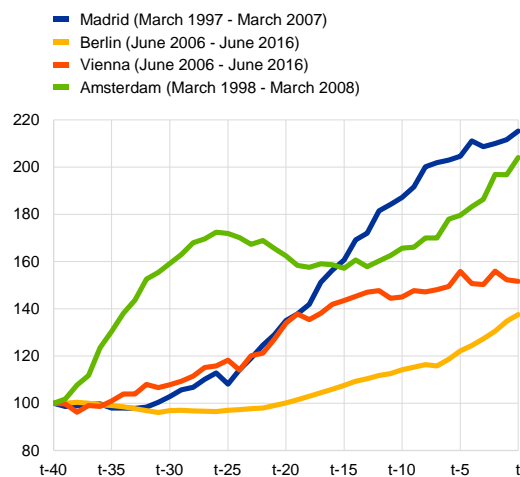
Sources: ECB calculations based on BIS and national data.  
Notes: Over/undervaluation estimates are deviations from valuation estimates for aggregate developments, which are an average of four indicators: house price-to-income and house price-to-rent ratios, an inverted demand model and an asset pricing model. For further details, see Box 3, *Financial Stability Review*, ECB, June 2011, and Box 3, *Financial Stability Review*, ECB, November 2015.

### Chart D

Current price increases in selected cities appear more moderate than seen in previous episodes of house price exuberance

**Real house prices in selected capitals in the 10 years preceding a house price correction (Amsterdam and Madrid) and in the last 10 years (Berlin and Vienna)**

(index: t-40 quarters = 100)



Sources: ECB calculations based on BIS and national data.

**For the euro area as a whole, stronger price increases in capital cities do not generally indicate a potential build-up of vulnerabilities.**<sup>25</sup> Higher house price increases at the regional level could, however, spill over to an entire country and thus possibly fuel overvaluation pressures.

However, for the euro area as a whole, stronger price increases in capital cities observed since the beginning of 2010 have not translated into sizeable overvaluations (see **Chart C**). Still, developments are rather heterogeneous across countries and caution is warranted when interpreting results, given the uncertainties surrounding such estimates and prevalent data limitations.<sup>26</sup> Moreover, in the context of recent strong price increases in large cities, an analysis of co-movements in house prices across and within countries might shed light on whether prices in capital cities are becoming more closely linked than in the past across the euro area. While such a

<sup>25</sup> This finding is confirmed by Granger-causality tests showing that in most countries there is no systematic pattern of the capital city price to aggregate country price ratio leading valuation estimates.

<sup>26</sup> In particular, partial data coverage – dictating the choice of the sample and the length of the time series – and limited data comparability across countries are important caveats. In addition, house price developments in the capital city of a country may not always be representative of those in other big cities in the same country.

link might be consistent with stronger integration within the euro area, it could also indicate that prices in capital cities are increasingly being driven by common euro area factors rather than domestic factors, which would be consistent with a stronger influence of international investors. In this context, prices in large cities might decouple from local fundamentals. Preliminary results from this investigation – applying a time-varying loading factor model – provide no clear evidence of convergence across or within countries. It may also be noted that, at present, price increases in selected capital cities with estimated overvaluations, including Berlin and Vienna,<sup>27</sup> appear more moderate than developments previously experienced in capitals where house price exuberance was followed by a correction, such as Madrid and Amsterdam (see **Chart D**).

**All in all, a close monitoring of regional house price developments is important from a financial stability perspective.** Recent price trends in selected euro area capital cities indicate stronger price dynamics than for the national aggregate, while being more moderate than those seen in earlier episodes of regional house price exuberance. Still, regional house price developments could pose challenges in the medium term when accompanied by a strong growth of mortgage loan financing amid weaker lending standards. Thus, developments should be carefully monitored. That said, macroprudential instruments (in particular those under national competence) geared towards mitigating potential financial stability risks from banks' real estate exposures can, in principle, also be used at the regional level, thus helping to mitigate possible risks to financial stability. In addition, by construction, borrower-based instruments like DSTI and DTI when activated at the national level are likely to be more binding in regions where housing price and credit developments strongly outpace household income growth than in regions where such developments stay more in line with each other.

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<sup>27</sup> See *Monthly Report*, Deutsche Bundesbank, February 2017, which suggests overvaluation in German towns and cities (in particular the seven biggest ones), and Schneider, M., Wagner, K. and Waschiczek, W., "OeNB property market monitor", Oesterreichische Nationalbank, October 2016.