

Box I.4: Assessment of the housing markets outlook: new insights from house prices in levels

This box provides an assessment of housing markets in EU Member States. It first presents traditional housing valuation indicators, based on house price indexes and used by Commission staff to assess house price developments and risks. This is complemented with findings from new data of house prices in levels, more suited for cross-country comparisons. The current outlook for house prices, lending and construction activity are then discussed, before concluding with the expected macroeconomic implications over the forecast horizon.

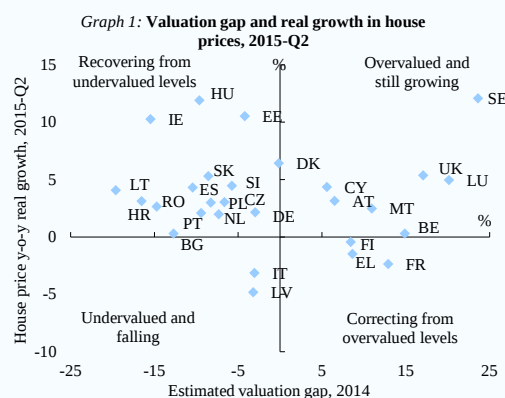
Signals from standard valuation indicators

Excessive valuations are an important risk factor for adverse house price adjustments. These, in turn, may affect economic activity through direct channels (construction activity) or indirect ones (household wealth effects, financial accelerator).⁽¹⁾

House price valuations are usually monitored through various indicators in order to identify possible misalignments. These indicators include the price-to-income and the price-to-rent ratios. Likewise, residuals from a fundamental model of house prices, based on variables such as the population, incomes or interest rates, can be used as estimates of price misalignment.⁽²⁾ Valuation ratios usually use indexes of house prices. To obtain an assessment of valuation misalignments, for individual country analysis or cross-country comparison, a reference value has to be estimated for the ratio. It is usually done by using the long-term average value of the ratio.⁽³⁾

All the above mentioned valuation indicators have some methodological limitations.⁽⁴⁾ It is thus useful to aggregate information contained in each of them to see whether signals from alternative indicators concur or diverge. The aggregate price misalignment indicator is obtained as the simple average of (i) the price-to-income gap (deviation from its long-term average), (ii) the price-to-rent gap and (iii) valuation gaps from the housing fundamental model.

The resulting aggregate valuation gap is plotted against the most recent house price developments in Graph 1, which suggests that house prices are increasing from very high valuation levels in several countries (e.g. Sweden, the United Kingdom and Luxembourg). On the other hand, strong price increases in Ireland, Hungary and Estonia occur from below-equilibrium levels. Although prices in these countries are assessed to be undervalued, the recovery pace should be carefully monitored.



Insights from a new dataset of house prices in levels

Most valuation analyses are based on price indexes and use estimated long-term reference values for valuation ratios to assess price misalignments, due to the absence of historical house price and rent data in levels (values per m²). A price index approach is most useful to assess developments over time in a given country. When it comes to judgments about the absolute level of valuations and to cross-country comparisons, the estimate of long-term reference values becomes crucial. Moreover, differences in available data length

⁽¹⁾ See also Box I.3 "Housing market adjustment in the European Union", in European Commission (DG ECFIN), *European Economic Forecast - Spring 2014*, European Economy 3/2014, pp. 34-36. A study of wealth effects is performed by Balta, N. and E. Ruscher (2011). "Household savings and mortgage decisions: the role of the "down-payment channel" in the euro area". European Commission (DG ECFIN), *European Economy Economic Papers* 445.

⁽²⁾ For more details on the methodology of valuation ratios and of the fundamental model of house prices, see Cuerpo Caballero, C., M. Demertzis, L. Fernández Vilaseca and P. Pontuch (2012). "Focus: Assessing the dynamics of house prices in the euro area". *Quarterly Report on the Euro Area*, 11(4), pp. 7-18.

⁽³⁾ The valuation gap obtained from a fundamental model also implicitly assumes a long-term equilibrium level, which by construction is on average zero over the whole sample period.

⁽⁴⁾ See European Commission (DG ECFIN) (2012) for a detailed discussion for each indicator.

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Box (continued)

reduce the comparability of valuation gaps across countries.

To complement the previous analysis based on standard valuation indicators, this section uses a unique, newly constructed database for residential real estate prices per m² for 19 European Union countries selected based on data availability.^{(5) (6)}

House prices in levels can be used to construct valuation ratios similar to those mentioned above. A price-to-income ratio can, for instance, be obtained by multiplying the price per m² by an assumed size of a dwelling and dividing it by households' disposable income per capita. It reflects households' house-purchasing capacity, though it disregards other factors, such as interest rates or loan maturities.

Table 1 presents the evolution of price-to-income ratios for an assumed 100 m² dwelling. Firstly, it confirms the previous findings that current valuation levels are rather moderate compared to latest peaks. Yet, valuations in Poland, Luxembourg, and Slovakia appear rather elevated in 2014 relative to other countries. Germany and Denmark have the lowest 2014 price-to-income ratios in levels in the sample.

A comparison of these levels-based ratios with the usual index-based valuation gaps presented above reveals a positive relationship between the two indicators, as expected. However, there are many "outliers" from this positive relationship. In particular, many new Member States (Poland, Slovakia, Estonia and Slovenia) appear to have higher level-based valuations than what their index-based counterpart would suggest. Similarly,

levels-based valuations in Ireland and Spain seem to be much closer to those in France and the United Kingdom than what the index-based valuation gaps would suggest.

Table 1:

Country	PTI in 2000 (or first available) ⁽¹⁾	PTI in 2014	Peak of PTI in the period	Year of the peak of PTI
AT	10.2	11.5	11.5	2014
BE	6.9	10.2	10.3	2013
CZ	8.2	9.5	10.6	2008
DE	8.6	7.2	8.6	2000
DK	7.0	7.6	10.0	2007
EE	12.5	12.2	18.3	2007
ES	8.6	10.1	15.6	2007
FI	7.3	7.7	8.1	2007
FR	7.7	11.8	12.6	2007
HU	11.8	8.4	11.8	2007
IE	13.0	11.0	16.8	2007
IT	9.2	10.8	12.1	2009
LU	12.2	14.0	14.0	2014
NL	9.6	8.8	11.2	2008
PL	16.3	14.6	18.6	2010
PT	11.2	9.0	11.3	2001
SI	10.2	10.8	14.2	2007
SK	14.9	14.2	19.9	2008
UK	7.3	10.8	11.3	2007

(1) First available year is 2000, except for SI (2003), EE (2004), SK (2005), and HU (2007). Source: national statistical institutes, central banks, censuses, own calculations.

An important caveat applies to this analysis, related to the distributions of dwelling prices and incomes within a country. While average national prices take into account all dwellings in the country, just as income per capita reflects the average income generation of the country, the distribution of the two over the territory may not be matching, leading to possible regional vulnerabilities.

Housing market outlook

The latest house price projection consistent with the Commission economic forecast points to increases in house prices in real terms over the forecast horizon in a majority of EU Member States (see Graph 2). The compound annual growth rate in the 2015-17 period exceeds 4% in seven countries, including Ireland, Hungary or Sweden. This development is related to different combinations of i. improving fundamentals (recovering disposable incomes, reducing real interest rates), ii. an upward push from low valuations, and iii. the positive house price momentum from early 2015 (see above). Still, four countries show a negative average growth rate over this period. Among them, Greece pursues its fundamentals-driven house price correction, while French and Belgian house prices are slowly adjusting their positive valuation gaps.

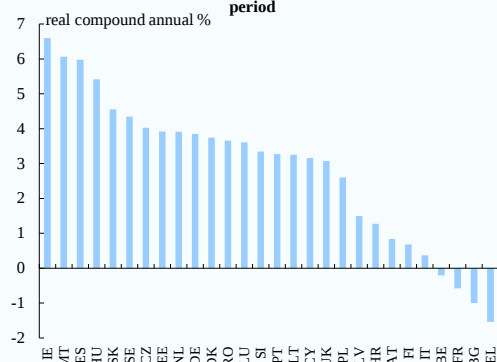
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⁽⁵⁾ This work was directly inspired by Dujardin, M., A. Kelber and A. Lalliard, (2015). "Overvaluation in the housing market and returns on residential real estate in the euro area: insights from data in euro per square metre". Banque de France, Quarterly Selection of Articles 37, Spring.

⁽⁶⁾ House prices per m² were estimated as the ratio of aggregate dwelling assets (including land) held by households, divided by the estimated total surface of dwellings. The findings were cross-checked, when possible, with other sources, namely the aggregated price offers per m² by housing dealers (including data provided by Dujardin et al., 2015). Alternative sources were also used, when available, such as surveys performed by the central bank, the national statistical institute or private banks. The estimate of the average price of houses per m² was then extended over time using the Eurostat house price index, backward-extended by Commission staff using other data sources (ECB, BIS and OECD).

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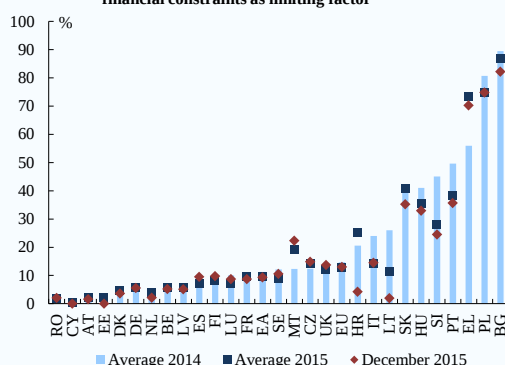
Graph 2: House price projections for the 2015-17 period



Source: own calculations

House price developments may further reinforce the recent trends in financing conditions for the housing sector. This may occur through the collateral effect: if asset prices rise, existing loans and related housing assets appear as more secure and banks may be more willing to lend. Throughout 2014 and early 2015, surveys among construction companies suggested financing constraints in a number of countries, including Bulgaria, Poland, Greece, and Portugal (see Graph 3). In most of them, the situation tended to improve over the course of 2015 (except in Greece), and this trend could be supported by a positive house price momentum. Among other countries, Croatian, Lithuanian and Italian financing conditions noticeably improved towards the end of 2015.

Graph 3: Share of construction firms signalling financial constraints as limiting factor

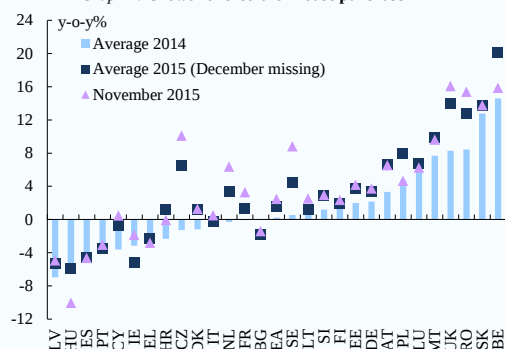


Source: European Commission

Dynamic housing credit usually goes hand in hand with prices evolutions and is thus an important variable to be followed. Although the euro area as a whole registered limited growth of loans for house purchase over 2014 and 2015, several EU countries display quite strong growth rates, including Belgium, Slovakia and Romania (see Graph 4). Some other countries where loan growth for house purchases was flat in 2014 have experienced an

acceleration in 2015, such as in the Czech Republic, Sweden and the Netherlands. By contrast, credit has been falling in Latvia, Hungary, Spain, Portugal, Ireland and Greece.

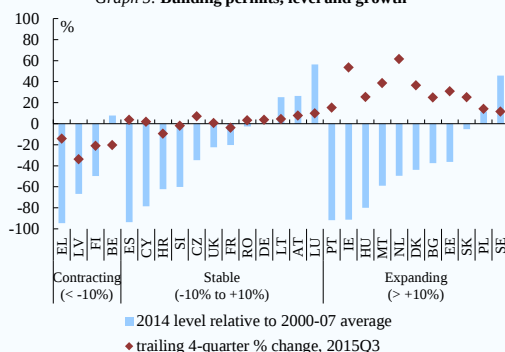
Graph 4: Growth of credit for house purchase



Note: The growth rate of the stock of loans for house purchase is presented. Source: ECB, own calculations.

Upward price developments are also generally accompanied by a rise in residential investment. Construction activity, via its effect on the business cycle, affects expectations and may feed back into house price dynamics. Looking at building permits, current developments confirm to some extent this pro-cyclicality of housing supply (see Graph 5, with the bars representing the pace of construction permit issuance in 2014, compared to the pre-crisis average over 2000-2007, whereas the diamonds represent the most recent changes of the pace). Latest growth rates can be used to distinguish three categories. Most correcting countries are already strongly below the average levels of the period 2000-2007, and may be close to bottoming out. By contrast, in Belgium building starts are correcting from above this average level. Among expanding countries, Ireland and the Netherlands are enjoying strong recoveries from depressed levels, while buoyant house prices in Sweden seem to have triggered also some supply response.

Graph 5: Building permits, level and growth



Note: Latest available y-o-y% growth is 2015-Q3, except for FI (2015-Q2) and IT (2014 annual). Source: Eurostat.

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*Box (continued)***Conclusions and implications for the economic forecast**

The analysis based on standard valuation indicators revealed a continuing mixed picture in EU housing markets. On one side, several countries are currently recovering from negative valuation gaps (e.g. Ireland, Estonia, Hungary), and in some cases, the pace of this recovery seems to be rather high. On the other side, some countries (mostly Sweden, the United Kingdom and Luxembourg) show rather strong house price dynamics despite possible overvaluation signalled by several indicators. Preliminary results using valuation indicators based on house price data in levels refine this analysis. They show in particular that some countries with currently signalled negative valuation gaps may be in absolute terms not that undervalued.

The recovery in house prices in most EU countries that previously underwent sharp corrections is consistent with historical experience.⁽⁷⁾ Recovering asset prices are *per se* good news for economic activity and for the general economic outlook. They will likely have positive direct and indirect effects (mostly through construction and lending). Nevertheless, these developments deserve close monitoring as regards the sustainability of current trends. In particular, some new Member States' house price levels are unlikely to return to pre-crisis valuations in the coming years, given that house price data in levels suggest already quite high absolute valuations.

⁽⁷⁾ An interesting comparison of the current housing market recovery with historical episodes is provided by ECB (2015). "The state of the house price cycle in the euro area", *ECB Economic Bulletin*, Issue 6 / 2015. It actually suggests that the current recovery in house prices and lending has been more muted than in previous episodes.