

## HM1.2 HOUSE PRICES

### Definitions and methodology

House prices capture the financial burden of purchasing a dwelling and their development over time is measured by a (real) house price index. Alternatively house prices are compared to income (price-to-income ratio) to measure the affordability of owning a dwelling. If the price-to-income ratio is above (below) their long-term average, house prices are considered to be overvalued (undervalued).

House prices also vary within countries, regions and cities and regional house price indices presented here give an indication of the heterogeneity of house prices.

### Key findings

Considering developments since 2010 the real house price index on average across the OECD area as a whole was at its lowest level in 2012 and has risen since then to 109 index points in the second quarter of 2016 (Figure HM1.2.1, also see OECD, 2016a; OECD, 2016b). GDP per capita remained flat over the 2009-12 period while house prices dropped and from 2013 onwards both house prices and GDP per capita increased. The price-to-income ratio brings together the developments of house prices and income. This ratio has stayed within 10 index points above or below the base value since 2010 across the OECD on average. While it decreased between 2010 and 2012, it recovered to 100 points in the first quarter of 2015 and has been increasing since.

The OECD area average hides wide disparities across countries, however. Based on the evolution since 2010 of the price-to-income ratio as the main indicator for affordability OECD countries can be roughly placed into five categories (for countries where data available; see the online appendices HM1.2.1 for country-specific results):

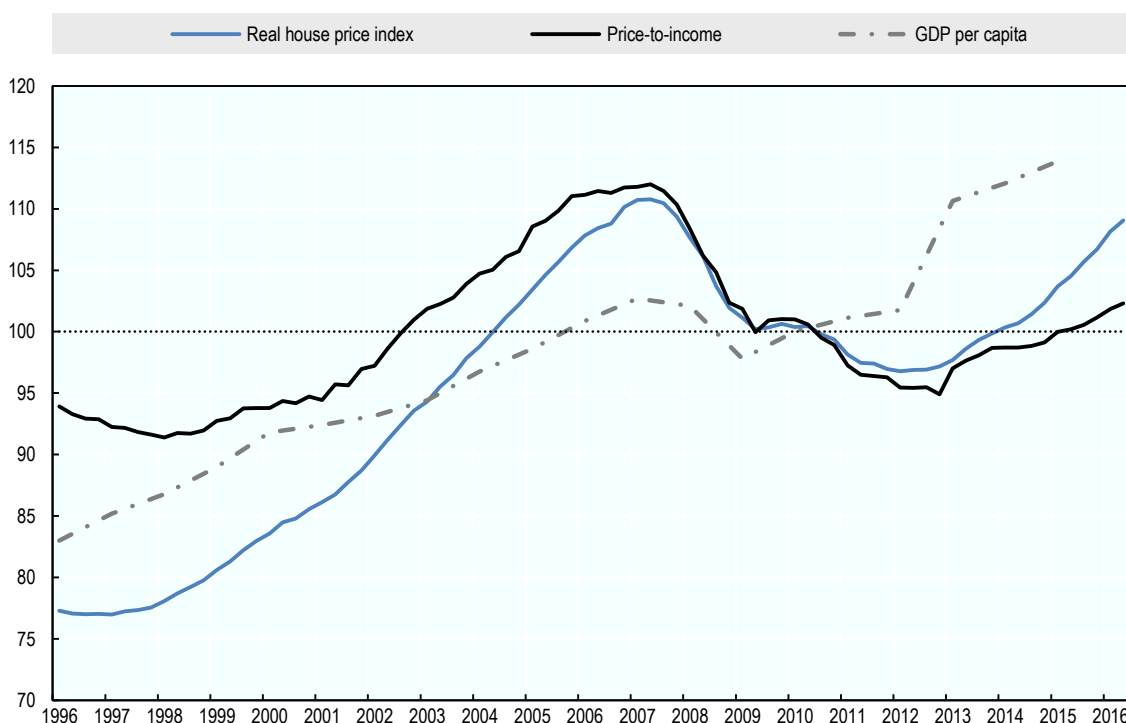
1. Price-to-income ratio within +/- 10 index point of the base value (100): House prices, incomes and price-to-income ratio have remained broadly stable since 2010 in Belgium, the Czech Republic, Estonia, Denmark, Finland, France, Japan, Latvia, Lithuania, Norway, Portugal and the Slovak Republic.
2. A more or less steady decrease of the price-to-income ratio to a value of 90 index points or below: In Poland and Korea GDP per capita increased steadily as the real house price index decreased. In Italy and Greece, by contrast, both real house prices and GDP per capita fell but house prices fell even more than income.
3. Price-to-income ratio initially falling by more than 10 index points but stabilizing or recovering thereafter: The fall in price-to-income ratios in the Netherlands and Spain

stopped at around 80 in 2013. Since then the index has stabilized, picking up again slightly since mid-2015.

4. Steady increase in price-to-income ratios: In Austria, Germany, Luxembourg, Switzerland and to a lesser extent in Canada, increases in GDP-per-capita have not kept up with increases in real house price indices.
5. A rapid recovery in price-to-income ratio and house prices since 2012/13 to price-to-income ratios of around or above 110 index points: Price-to-income ratios in the United Kingdom, the United States and Sweden recovered from a trough in 2012/2013 to levels around 110 to 120 in 2016. In New Zealand increasing house prices pushed up price-to-income ratio close to 140 up from from 94 index points in 2012.

**Figure HM1.2.1: Development of house prices, OECD average, 1996-2016**

Real house prices, price-to-income ratio and GDP per capita indexed to 2010



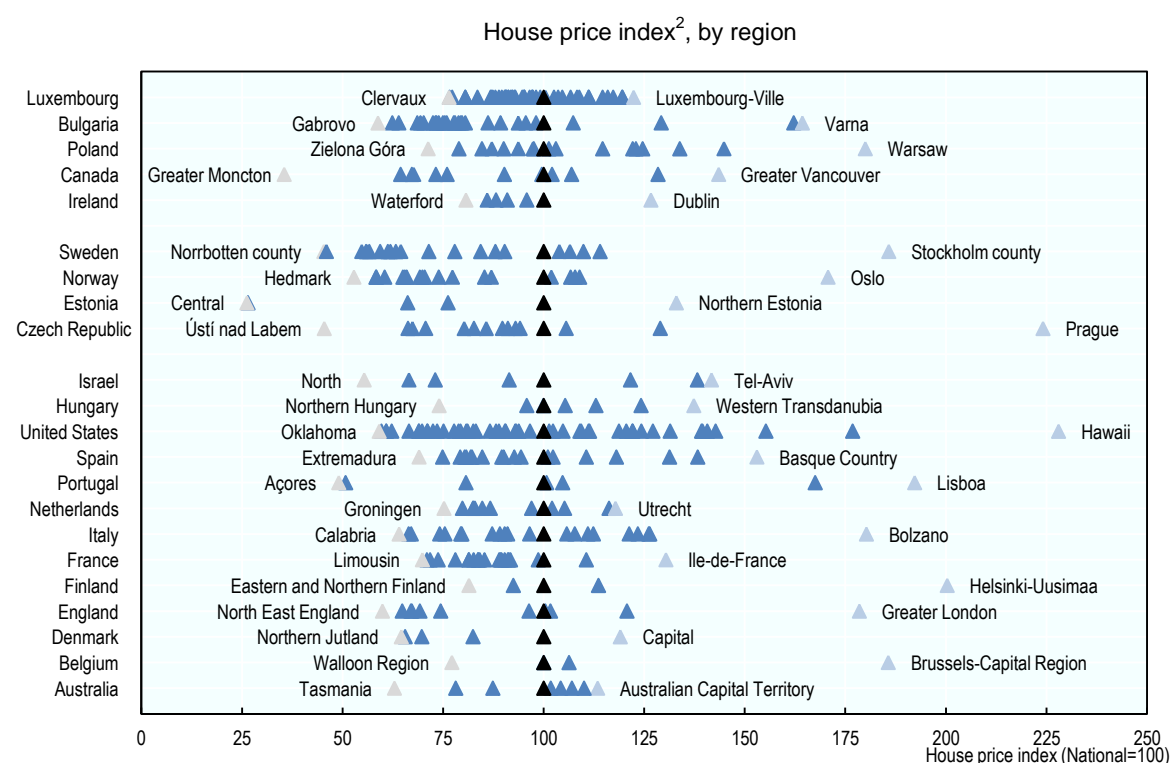
Source: OECD Analytical House Price Database.

National house price indices are based on house prices from across the entire country. However, national house price indices may mask considerable variation in regional house price levels. Figure HM1.2.2 shows the regional variation of house prices for selected countries (see Lembcke et al. (2016) for developments over time). In the top group of countries price levels are shown at the city level, in the second group of countries at the NUTS3 level and in the third group at the NUTS2 level, where NUTS3 (Nomenclature of Units for Territorial Statistics level 3 refers to a smaller geographical area than level 2; in France, for example, the "departments" are level 3 whereas "regions" are level 2; refer to Eurostat (2016) for more details).

In the majority of countries house prices are highest in capital city areas. Prices are, by contrast, low in rural areas. The difference between the highest priced region and the national house price index (of 100) is more than double in the United States (Hawaii at 228, a tourism destination), the Czech Republic (Prague at 224) and Finland (Helsinki area at 200). The distance between the highest priced region and the national average is smallest in Australia, Denmark, Luxembourg and the Netherlands (Utrecht with a large university) with the most expensive regions' index still above 100 but below 125.

On the other end of the spectrum, prices in the least expensive regions are in many countries half or less than half of the national average (Central Estonia at 26, Greater Moncton in Canada at 36, Usti nad Labem in the Czech Republic at 45, Västernorrland county in Sweden at 46 and Acores in Portugal at 49).

**Figure HM1.2.2: Regional variation of house prices, 2011 or latest year available<sup>1</sup>**



1. Data are used from the latest year available but not all from 2011 due to data limitations: Australia, Bulgaria, Canada, Estonia, France, Ireland, Israel, Luxembourg, the Netherlands, Norway, Sweden (2011), Belgium (2012), Hungary (2006), Italy (2015), the United States (2000) and the Czech Republic (2011 through 2013).

2. National values are taken from the same source as regional values, except for Poland where it is a population weighted average of average prices of Warsaw, average price for the 6 biggest cities and 10 more cities.

Source: Lembcke, A.C., P. Veneri and C. Wolf (2016) "What can we learn from regional housing cost and housing expenditure? A comparison of trends in OECD countries", mimeo.

### Data and comparability issues

The indicators are based on national and sub-national house price indices. Indices based on nominal house price levels are suited for comparison of time trends or regional house price dispersion across countries. Comparison of nominal house prices levels across countries is impossible due to definitions

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differing across countries because of differences in national definitions. More specifically, the level of house prices may refer to different entities (dwellings as opposed to square meters, for example), to different types of dwellings (vacant as opposed to all dwellings, for example) and different periodicity (monthly, quarterly, semi-annual, annual).

**Sources and further reading:**

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.

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