



Measuring property prices: the BIS contribution

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Abstract

Residential property prices (RPP) play a key role in complementing financial stability analysis. The Bank for International Settlements (BIS) has monitored their evolution for more than two decades and has started their collection as early as 1989. In line with G20-endorsed recommendations, in July 2010 the BIS started the regular monthly publication of a detailed data set of residential property prices. The coverage of these statistics has increased from 37 countries at that time to 57 to date.

International organisations usually focus on cross-country RPP comparisons. Despite of the heterogeneity of RPP indicators in terms of type of property, covered area, property vintage, priced unit, compilation method and seasonal adjustment, turning points in their developments can easily be spotted. The publication of the Handbook on Residential Property Price Indices (HRPP) should very likely generate significant improvements regarding the cross-country homogeneity of property prices.

At the BIS, analyses embracing a longer term perspective are favoured. Property prices are used to monitor the financial cycles, which are key to gauge financial stability. These financial cycles have much larger amplitude than business cycles, and they develop over a longer time frame. In this context, the heterogeneity of property prices across countries is a secondary issue compared to their usefulness to assess the building up of financial vulnerabilities in the long run. To help support such financial stability analyses, a set of long-term RPP series is now being updated on a regular basis on the BIS website.

1. Introduction

Housing prices have attracted a lot of attention from policy makers and analysts because of their key influence on activity levels in the economy as well as on the stability of the financial system.

Fluctuations in house prices have a large impact on households' net wealth and their propensity to spend. This influence is twofold: directly with the capital gains realised with house sales or indirectly when households take out equity gains without selling their houses (i.e. by borrowing more against the higher value of their houses). The latter indirect channel has recently been strengthened in many countries by the development of the mortgage industry and the liberalisation of financial services.

In addition to the wealth effect, higher housing prices are usually associated with an increase in debt, either to buy a house or to borrow against the higher value of a current house. This increase in debt will in turn support household demand, often in an unsustainable way.

While house price fluctuations can have a destabilising effect on the real economy, BIS work suggests that the impact on the financial system may be even more debilitating. In advanced economies, residential property values underpin much of the mortgage market. Property prices are key in determining the value of collateral which can be mobilised by economic agents to access finance. This can have a self-reinforcing effect: rapid increases in credit, particularly mortgage credit, drive up property prices, which in turn increase collateral values and thus the amount of credit available to the private sector. This mutually reinforcing interaction between the availability of financing and perceptions of value and risk has typically been an important driver of financial bubbles¹. For many years the BIS has worked on these issues, highlighting the importance of asset price developments – especially property prices – in driving so-called financial cycles.²

¹ For a short introduction on the financial cycle, see BIS (2014a; Chapter IV: Debt and the financial cycle: domestic and global).

² See the review by Borio and M Drehmann (2009) of the leading indicators of banking system distress, extended to incorporate explicitly property prices.

2. Section 2 Property prices in BIS statistics

Early BIS collection

The BIS work on cross-country house prices dates back to the late 1980s (BIS (1989)). With the support of its member central banks, the BIS collected a large set of residential and commercial real estate price indicators from various national sources (public and private).

Housing price data have been reported in BIS publications, and have supported the BIS analysis³ on the determinants of property prices (Tsatsaronis and Zhu (2004), Égert and Mihaljek (2007), Glindro et al (2010), Takáts (2012)) as well as the information content of real estate prices for financial stability (Borio and Drehmann (2009)). Borio et al (1994) constructed an indicator of aggregate asset prices combining equity and property prices, and explored its link with money, credit, interest rates, output and inflation. The BIS data collection has also been useful to a number of international institutions for setting up their own databases, in particular the ECB's Statistical Data Warehouse,⁴ the OECD research data base,⁵ and the IMF's Global House Price Index.⁶

International momentum

The need for sufficient statistical information to address financial stability issues was clearly highlighted by the 2007/08 financial crisis (Borio, 2013). Upon request from the G-20, the IMF and the Financial Stability Board (FSB) identified the related main data gaps and provided proposals to address them. These proposals were part of the 20 recommendations of the Data Gaps Initiative (DGI), endorsed by the G-20 Ministers of Finance and Central Bank Governors in 2009.⁷ Annual DGI progress reports are regularly sent to the G-20.⁸

Property prices were identified as a key data gap. It was emphasised that “data on the stock of dwellings, the associated price levels and their changes over time are critical ingredients for understanding household wealth, its evolution over time, and for the vulnerability of households’ financial position.” Moreover it was recognised that “where data exist, their international comparability is limited.”

Two workstreams were set up to address the 19th DGI recommendation. The objective of the first workstream was to enhance the methodological framework of house price statistics, by developing a Handbook on real estate price indices;⁹ this work was led by Eurostat under the auspices of the Inter-Secretariat Working Group on Price Statistics representing various international organisations. A second workstream aimed to improve the availability of country data on property prices. The BIS and its member central banks were explicitly requested to investigate dissemination on the BIS website of property price statistics. The IAG¹⁰ was asked to include a link to the relevant BIS webpage in the Principal Global Indicators (PGI) website maintained by the IMF.

Recent BIS dissemination work

After endorsement of the DGI recommendations in November 2009, the BIS has obtained approval from various national data providers to publicly disseminate residential property price data. In July

3 See Borio et al. (1994).

4 See the ECB Statistical Data Warehouse on <http://sdw.ecb.europa.eu/> (selection Economic Concepts / Prices, output, demand and labour market / Prices).

5 See <http://www.oecd.org/eco/outlook/focusonhouseprices.htm>.

6 IMF (2014).

7 IMF and FSB (2009). For an analysis of the DGI initiative, see also Heath (2013).

8 See for instance IMF and FSB (2014) for the last progress report.

9 See Eurostat (2013).

10 The Inter-Agency Group on Economic and Financial Statistics (IAG), comprises the Bank for International Settlements (BIS), the European Central Bank (ECB), Eurostat, the International Monetary Fund (IMF, Chair), the Organisation for Economic Co-operation and Development (OECD), the United Nations (UN) and the World Bank (WB). It was established in 2008 to coordinate statistical issues and data gaps highlighted by the global crisis and to strengthen data collection.

2010 the BIS started a regular monthly publication of property price statistics on its website. The coverage of these statistics has expanded from 37 countries at that time to 57 to date, among which 18 of the G20 countries. The number of series currently published by the BIS exceeds 300 because a country can count multiple series covering different types of dwellings and/or areas.¹¹ Furthermore, for a number of residential property price series are compiled by several sources, such as transaction, appraisal, or offer based data.

The BIS property price statistics are organised in three data sets. The first is a **Detailed data set** that includes all the original series on nominal residential property prices collected for 57 countries. The data can differ significantly from country to country, for instance in terms of type of property, covered area, property vintage, priced unit (whole dwelling or square meter), compilation method, and quality and/or seasonal adjustment.¹² This first data set is updated on a monthly basis.

The indicators listed in the second dataset have been selected from the series pertaining to the first detailed data set. The goal of this **Selected data set** is twofold: to facilitate data use by identifying one single “reference” indicator for each country and to enhance comparability by flagging series which are as homogeneous as possible. The BIS has based its selection on the Handbook on Residential Property Prices, its own experience and the expertise of the various reporting central banks. Each “reference” indicator covers in most case all types of dwellings, located in the whole country, in both new and existing dwelling markets. Both nominal and real residential property prices (real series being the nominal price series deflated by the consumer price index) are available for 57 countries at a quarterly frequency, both in levels and in growth rates - ie four series per country. The BIS also publishes a quarterly short analytical note based on the selected indicators.¹³

The third data set comprises the **Long series** on nominal residential property prices compiled at quarterly frequency for 23 economies (18 advanced and 5 emerging market countries). For each country, a single long series was constructed using existing sources and standard statistical techniques. The number of historical values available is critical, as series have to be long enough to cover the long-term developments and help the BIS identify “turning points” of the financial cycles. The lower quality and comparability across countries of the housing price data compared to that of other financial statistics do not hamper the analysis on how assets prices can influence financial stability conditions.

3. Section 3 House prices as input to economic analyses

Long-term developments in housing prices

As dwellings are rarely exchanged, price adjustments¹⁴ tend to be stickier than other economic variables. A longer-term view is therefore required when assessing the evolution of house prices. Indeed the long-term series compiled by the BIS show some quite interesting patterns. Based on real¹⁵ residential property price developments, three groups of countries can be identified from this perspective (see Graph 1).

In a majority of industrial countries, a sharp downward correction of the residential property prices has been observed after the 2007/08 crisis. This first group of countries was divided into three sub-groups: the countries with “severe downturn”, where the price fall exceeded 20%, the countries with “limited downturn”, with a real price decrease of less than 20% (both of them showing recovery signs since then) and the countries with “ongoing downturn”, where the bubble is still deflating. Similar sudden adjustments were observed in the late 1970s and again at the end of the 1980s, but what makes the 2007/08 episode different is (i) the amplitude of the downturns, (ii) their synchronicity across

¹¹ See BIS’s page on property prices statistics on <http://www.bis.org/statistics/pp.htm>.

¹² See Scatigna et al. (2014) for a presentation of the BIS work, as well as Scatigna and Szemere (2014) for a review of the main cross-country differences and also of the difficulty to focus on a single indicator even within a single country like Germany.

¹³ See for instance BIS (2014b).

¹⁴ There are multiple factors driving house prices (impact of macro factors in particular interest rates as well as of national policies such as homeownership subsidies, tax deductibility etc). For a very recent analysis of the influence of fundamental factors on house prices, see Goldman Sachs Global Macro Research (2014).

¹⁵ The Consumer Price index is used as deflator of the residential property prices.

countries, and (iii) the relatively high levels of house prices after the crisis despite the size of the downturns.

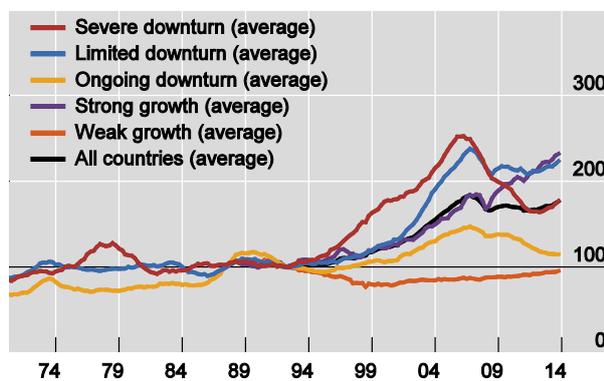
A second group, the countries with “strong growth”, includes countries where housing prices have been barely affected by the 2007/08 crisis. The rhythm of real housing price increases appears to have slowed shortly after 2007, but prices have generally continued to trend upwards. Although the prices level seem relatively high from an historical perspective, they have not experienced a bubble episode that characterised the first group of countries in the run up to the 2007/08 crisis.

Real residential property prices in 23 economies – long-term series

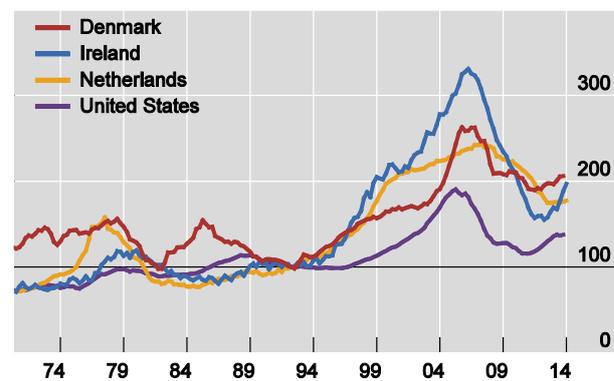
Q1 1993 = 100; deflated by CPI

Graph 1

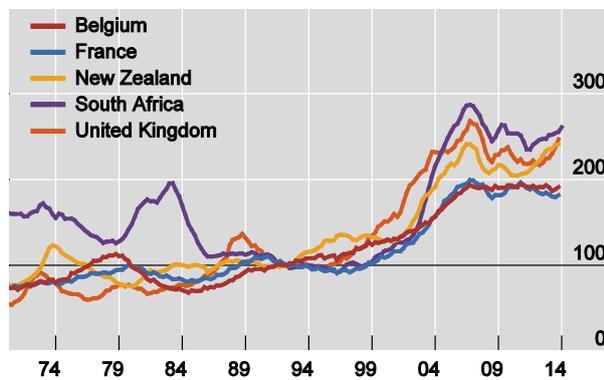
23 economies



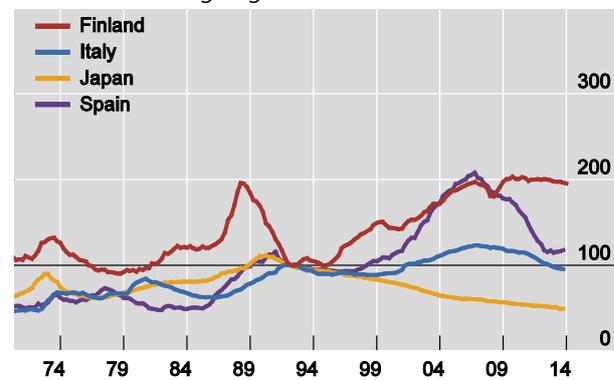
Countries with severe downturn



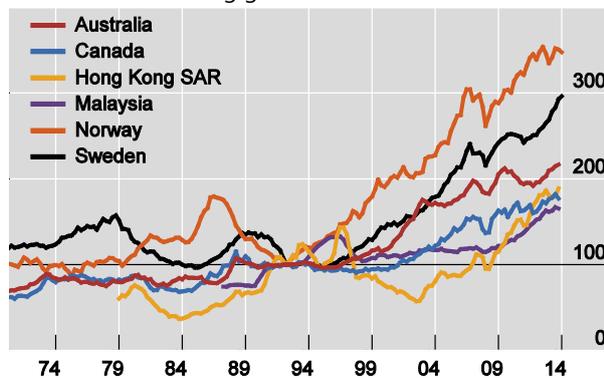
Countries with limited downturn



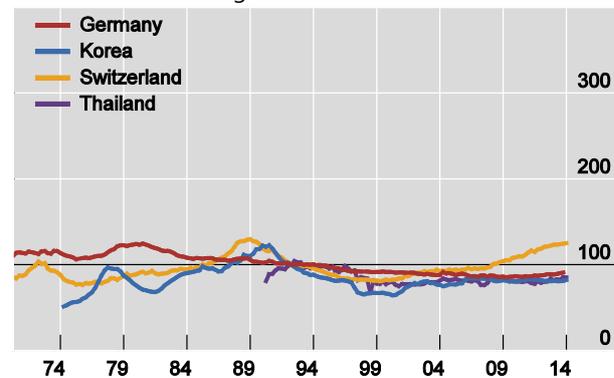
Countries with ongoing downturn



Countries with strong growth



Countries with weak growth



Sources: National data; BIS.

In the third group of countries covering Germany, Korea, Switzerland and Thailand (the countries with “weak growth”), real house prices have been relatively subdued over the past few decades. A subdued increase in real housing prices appears to be under way in Switzerland, but this upturn looks relatively

limited both from an historical perspective (for instance, it compares to the previous expansion observed in the 1980s) as well as from a cross-country perspective.

Property prices and the credit cycle

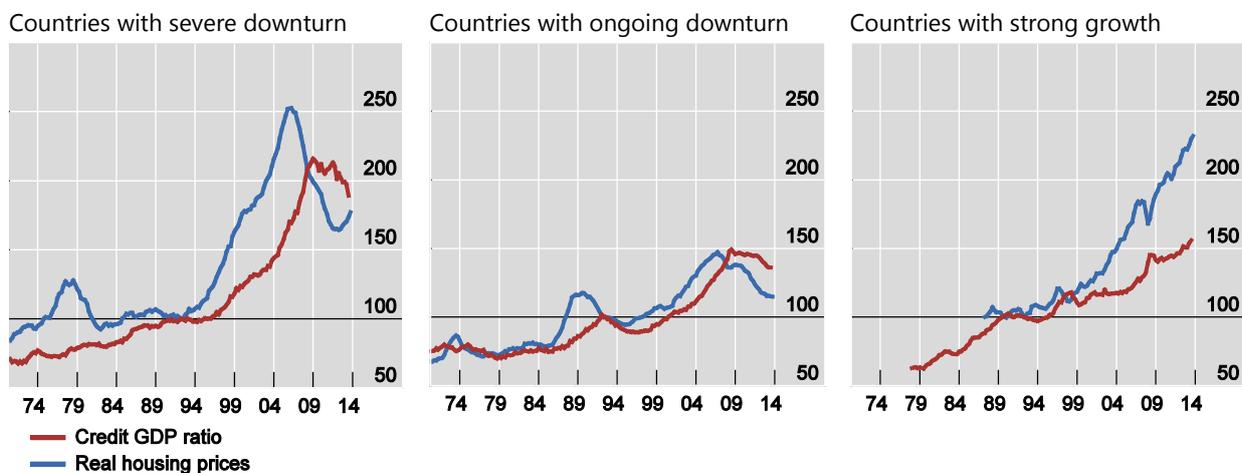
Housing prices can also provide useful information from a long-term perspective regarding their interaction with other asset prices and with the development of financial cycles.¹⁶ Historical experience has demonstrated that the interactions between rapidly growing housing prices and excessive credit expansion are the sign of the build-up of vulnerabilities in the household sector. The long-term data base of credit to the non-financial private sector that the BIS has set up¹⁷ is therefore very useful. Combined with the long-term property price data set, it can highlight the long-run interaction between asset prices, among which the property prices, and credit-to-GDP ratio.¹⁸

The charts presented in Graph 2 for countries with downturn or strong growth, seem to confirm the BIS analyses. In the countries with downturn, severe or ongoing, the evolutions of housing prices both before and after the 2007/08 crisis have been mirrored by similar developments in the credit-to-GDP ratio, although this was less the case in the preceding decades. It is worthwhile to point to the early warning indicator properties of real estate prices: in countries with severe or ongoing downturns, the fall of the housing prices precedes clearly that of the credit-to-GDP ratio. Lastly, the countries with strong property price growth have experienced an almost continuous growth of their credit-to-GDP ratio which has supports the continuous expansion of the property prices.

Real residential property prices and credit to GDP

Q1 1993 = 100; deflated by CPI

Graph 2



Sources: National data; BIS.

4. Conclusions

The research on the potential interactions between the real and financial sectors presented above is ongoing at the BIS. The data set on property prices published by the BIS should provide housing market analysts with easily accessible statistics, which are as standardised as currently possible. In addition, the availability of long series should stimulate the research on the contribution of the property price to the formation of financial cycles and their interactions with other macroeconomic and financial variables.

16 See Goodhart and Hofmann (2008) for an assessment of the linkages between house prices, monetary variables and the macroeconomy.

17 In addition to the research work on house prices mentioned above, see Dembiermont et al. (2013) for a presentation of BIS work on long-term credit series.

18 See Drehmann (2013) for an analysis of credit-to-GDP gaps as early warning indicators for systemic banking crises and for identifying emerging vulnerabilities.

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