BANK FOR INTERNATIONAL SETTLEMENTS

BIS Collection and publication of residential property prices

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Background

In 1989 the BIS started to collect residential property price for research purposes. The first research paper based on residential property prices was published by Borio, Kennedy, Prowse in 1994.

Later, in 2009 the BIS got an explicit mandate to collect and publish residential property prices in the context of the G20 Data Gaps Initiative. In particular, the financial crisis and information gaps report to the G-20 finance ministers and central bank governors published in 2009 stated in its recommendation 19 that the BIS and member central banks investigate the dissemination through the BIS website of publicly available data on real estate prices.

In July 2010, after approval of central banks the BIS started the regular monthly publication of residential property prices. The coverage of these statistics has increased from 37 countries at that time to 55 to date, among which 18 of the G20 countries, and a full coverage of the EU 28 countries. The number of series published today is above to 300, as some central banks report series referring to different types of dwellings and/or areas.

Number of reporting countries   Graph 1
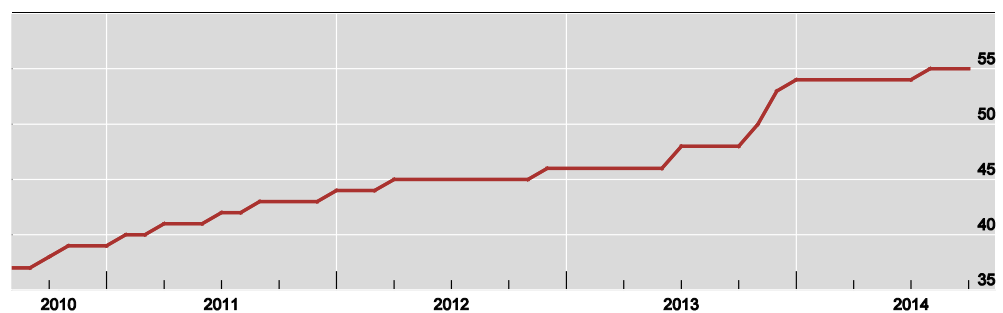
Source: BIS.

Main usage of residential property price statistics

The country coverage of the BIS residential property price database is the largest among institutional organisations. It is extensively used both outside the BIS and within the institution.

External usage

International organisations rely on the residential property price published by the BIS for constructing their own databases. Namely, the European Central Bank uses the BIS Data Bank to collect data for EU countries, while the OECD used the BIS series to build its own research database. The BIS data set is widely used by central banks, by academics, and by private sector participants (investment banks, analysts, and journalists). The data published by the BIS are also disseminated by commercial data vendors. The number of downloads of the BIS residential property price by external users is above 10 000 per month (including the access through the ECB's database).

Internal usage

The RPP data set is used in notes and research papers. The BIS has recently started publish a Quarterly note on real residential property price developments. The data is also frequently analysed in the BIS Annual Reports and in background notes for the Governors' meetings. The additionally published long series are used for the identification and monitoring of asset price gaps and financial cycles.

General characteristics of the RPP statistics published on the BIS website

All series of the RPP data set are reported by central banks. They somehow differ from country to country in terms of type of property, area covered, property vintage, priced unit, compilation method and seasonal adjustment.

This diversity reflects two facts: first, the process associated with buying and selling a property, and hence the data coverage and compilation methods vary between countries, and second, the international methodological standards for property price statistics are guidelines with little binding character.

In particular, the Handbook on Residential Property Price Indices (HRPP) published by Eurostat in 2013 gathers recommendations on best practices for compiling residential property price indices, and presents these in the context of the different user needs. The HRPP builds on work undertaken by a number of international organisations (including the BIS) over recent years to identify the user requirements for improved RPP data from an economic, monetary and financial stability perspective.

While the compilation of many of the series included in the BIS database are based on the HRPP recommendations, in some countries further efforts would be needed in this field.

Main cross-country differences[1]

Coverage

The data coverage differs across countries. For some of them there is a single series covering the whole market. Such series include all types of dwellings in the whole country both in the new and existing dwelling markets. Conversely, for other countries the coverage of the reported series is more limited, either in terms of types of dwellings, markets or from a geographical perspective (ie some series are limited to the capital city).

Number of series, and breakdowns

The number of series reported by countries also varies. This reflects two aspects: first, the number of available breakdowns (for example new and existing dwellings, or dwelling types) and second, the existence of a single or many distinct compilers.

Compiling organisation and source of data

The compiling organisation varies from statistical offices, central banks, land registries, mortgage banks or real estate agents reflecting the diversity in the source of data. Transaction prices are recorded by notaries or land registries, data appraisals are made and registered by mortgage banks, while advertised prices are collected by real estate agents.

Unit

Series are either indices with a fixed reference period or nominal amounts in national currencies.

Quality adjustment

Quality adjustment refers to taking into account specific characteristics of each transaction (i.e. age and size of dwelling) in the construction of the indicators. Such a quality adjustment is not implemented in all countries. Where the data are not quality-adjusted, data are expressed as price per dwelling or as price per square meter.

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[1] For more details see: Residential property prices across the globe (article from the BIS Quarterly Review, September 2014)

Where data are adjusted for quality, one of the following methods is typically applied: hedonic regression, stratification or mixed adjustments, repeated sales, appraisals method. [2]

Recent developments

Streamlining the presentation of the property price data set

As the detailed dataset has been growing significantly overtime and up to around 300 series, users demanded guidance about which series would be more representative for each country. Therefore, the BIS has selected a single residential property price indicator per country, and included them in a specific subset. In most cases, this series covers all types of dwellings in the whole country, in both new and existing dwelling markets.

The selection has been based on the criteria listed in the HRPP as well as on the metadata provided by central banks. The applied selection process resulted in a subset as homogenous as possible, which is very suitable for cross-country comparison.

Nevertheless, significant discrepancies remain in sources and compilation methods as the recommendations of the HRPP have not yet been implemented in all countries. These selected series are presented at a quarterly frequency and updated once in each quarter. Where the frequency of the collected series is monthly, the quarterly data is calculated as the average of the monthly observations. Series have been rebased, deflated, and growth rates were calculated. The following four series are published for each country:

- Nominal value; average of 2010 = 100

- Real value, deflated by the consumer price index; average of 2010 = 100

- Nominal value; year-on-year percentage changes

- Real value, deflated by the consumer price index; year-on-year percentage changes

A Quarterly note on real residential property price developments[3] accompanies the quarterly publication, analysing the recent evolutions of these indicators.

The BIS will keep publishing the detailed data set, as sophisticated users are interested in the all available breakdowns. Furthermore the detailed data set provides all series with their original frequency and unit. This can be especially valuable for those countries where monthly series are available.

[2] For more details see Chapter 12 of the HRPPI.

[3] For extracts see Appendix

Long series on residential property prices

For many years the BIS has promoted the analysis of long-term movements in residential property prices, which are particularly key for financial stability purposes. Borio et al presented for the first time in 1994 a dataset of long historical time series of nominal residential property prices in 13 advanced economies. Since then, interest in this dataset has steadily increased among researchers as well as policy makers and private sector practitioners.

The recently published research data set on long series on residential property prices includes quarterly time series for 18 advanced economies for which long historical data could be obtained going back as far as 1970 Q1 or 1971.

This work has been driven by the BIS in close coordination with national authorities, based on existing data. While for the most recent period the long series coincide with the selected indictors, for older periods standard statistical techniques were applied in estimations.

The existing data originate from various sources such as central banks, national statistical offices, research institutes, private companies and academic studies. They rely on different methodologies and can cover heterogeneous types of geographical areas and types of dwellings.

The way forward

The BIS in cooperation with the central banks will continue to expand the coverage of its residential property price data sets both in term of the number of countries both by collecting series with better coverage. Furthermore the BIS aims at constructing long series for additional countries in the coming years.

Country coverage

While generally speaking the country coverage is rather large, there are still important missing countries. In order to meet the recommendation 19 of the IMF-FSB Data Gap Initiative, the BIS aims to collect data from the two missing G20 countries.

Dwelling coverage

The targeted coverage is the entire residential property market: whole country, both new and existing dwellings, all types of dwellings. Where this coverage is not available data on existing dwellings in the whole country or metropolitan area can be used as proxy indicator.

Quality adjusted data

Based on the HRPP one of the following methods is recommended: stratification or mix-adjustment, hedonic regression methods, repeat sales, and appraisal-based methods (ie, the SPAR method)[4]. Where no quality adjustment is implemented, price per square meter is preferred over price per dwelling.

Start date

The start date of the reported series should be as early as possible, but ideally at least as from 2007. To allow the BIS to further expand the country coverage of its long series database, additional series with a starting date of 1970 are welcomed for countries where they are not yet available. These additional series used in the initial parts of the long series may have a limited coverage, or may measure construction costs, which can be a proxy for residential property price developments. In case the additional series cannot be published for confidentiality reasons, the BIS could only use their growth rates to complement publicly available series with a later start date.

Source

The BIS has no preference in the type of compiler (public or private). Where good quality data is available from several sources, the transmission of all available series with their respective metadata is preferred.

References

M Scatigna, R Szemere and K Tsatsaronis (2014): "Residential property prices across the globe", *BIS Quarterly Review*, September, pp 62–70, http://www.bis.org/publ/qtrpdf/r_qt1409h.pdf.

Handbook on Residential Property Price Indices (2013), Eurostat

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[4] For more details see Chapter 12 of the HRPPI.

Appendix: Residential property price developments between the end of 2007 and 2013[5]

Residential property prices generally peaked in real terms in 2006–07 in most advanced economies. Since then, they have decreased by 14% in the euro area, with a fall of around 40% or more in a number of countries such as Greece, Ireland and Spain. The cumulated fall in real prices has been more moderate in the United Kingdom and the United States (around 15%). Some other advanced economies, such as Austria, Canada, Norway, Sweden and Switzerland, have continued to register property price growth. Among the major emerging economies, real residential property prices have almost doubled in Brazil since 2007, risen by more than half in China and declined substantially in Russia (by one quarter).

Real residential property prices in major advanced economies were still well below the levels reached at the end of 2007, by 17% in the United States, 15% in Japan, 15% in the United Kingdom and 14% in the euro area. In contrast, real prices remained higher than their 2007 levels in a number of countries, such as Canada (+13%), Switzerland (+30%) and Sweden (+16 %). Real prices were close to the levels observed six years previously in Australia.

Within the euro area, the 14% decline in real prices observed since 2007 masks some important disparities. Significant declines were observed in Ireland (–47%), Spain (–43%), Greece (–40%), the Netherlands (–28%) and Italy (–20%). A smaller decline was observed in France (–8%) and real prices went up slightly in Germany over the period (+3%).

In contrast to the situation in advanced economies, real residential property prices were well above their end-2007 levels in a large number of emerging market economies. This was particularly the case in Asia, especially in Hong Kong SAR (+77%), Malaysia (+35%) and China (estimated at well over 50%). Real prices were also higher in a number of Latin American countries, having doubled since 2007 in Brazil and Peru (but they barely moved in Mexico).

The main exceptions to this situation in emerging markets were Russia, where real prices have fallen by 26% from 2007, and some major central European countries: prices are estimated to have decreased by around 40% in Romania and around 10% in the Czech Republic (Graph B).

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[5] Extracts of the note on residential property price development -fourth quarter of 2013

Real residential property prices in selected G20 countries[1]

Cumulative changes from end-2007 to end-2013, in per cent
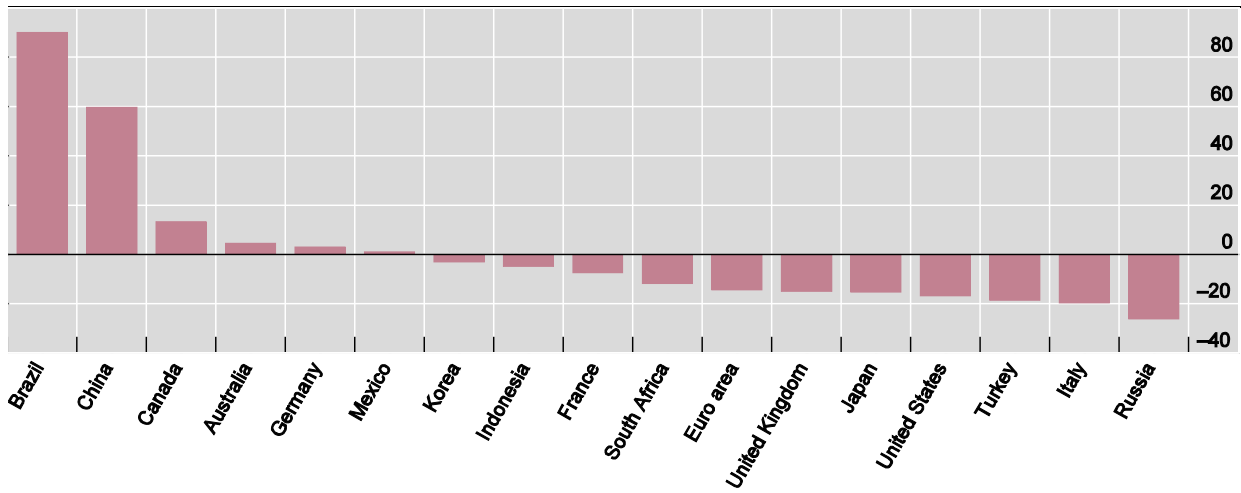
[1] For China and Turkey, BIS estimates based on market data.

Sources: See documentation on selected representative property price series.