1. IMF'S LATEST HOUSING MARKET ASSESSMENTS

Croatia (Article IV): "Housing prices have begun to accelerate, mainly in the capital and coastal areas. Average housing prices grew 8.0 percent, but 12.2 percent in Zagreb (yoy, September 2019). This increase should be seen in context of higher real wages, better employment prospects, growing consumer confidence, as well as declining interest rates. Tourism is the main driver of real estate price developments in Zagreb and the coast. Investment properties for short-term rentals have grown rapidly. This is facilitated by a favorable flat-tax on short-term rentals compared to higher taxation on long-term rentals. Market observers note that some of these purchases are not loan-financed, but they still assume that the majority is financed by bank loans. The market has also been supported by the government's housing loan subsidy program for young first-time house buyers introduced in 2017 and the reduction of the real estate transfer tax since 2019. According to the CNB's housing price index, real estate prices are now beginning to reach pre-crisis levels", says IMF's report.

Estonia (Article IV): "Real estate market activity has moderated, and prices remained anchored to incomes. Transactions in the housing market slowed by 1.6 percent (y/y) in 2018, compared to an increase of 8.2 percent the previous year. House prices increased by 5.7 percent in 2018, driven by the rising share of new houses (…). Furthermore, the ratio of total liabilities to gross wages and salaries declined further from 114 percent in 2017 to 109 percent last year, suggesting a continued reduction in household leverage. Overall price trends remain strong, but aligned to income growth. During 2019H1, there were similar transactions overall compared to 2018H1, but fewer transactions for new apartments. The average price increased by 5.9 percent as new dwellings are being added at a slower pace", says IMF's report.

Finland (Article IV): "Finnish banks are highly exposed to real estate, but residential and commercial real estate markets are not obviously overvalued. The exposure of domestic banks to real estate market has grown significantly over the last 20 years. The total volume of credit issued by domestic banks to the real-estate and construction sectors stood at 48.5 billion euros in 2018 (above 20 percent of GDP and 50 percent of banks' receivables from firms and housing

corporations), but rates of non-performing real estate loans remain low. In addition, real estate markets do not seem overheated overall, although there are differences across regions and market segments", says IMF's report.

Guyana (Working Paper): "Guyana's residential real estate prices have been rising, particularly in the capital city Georgetown, following the discovery of oil in 2015. In line with the growing demand for housing, commercial banks' housing loans have increased, prompting higher household debt. This paper presents two analyses which suggest that housing prices in Georgetown and banks' lending to the housing sector appear to be in their early stages of growth. However, given the data limitations and caveats that underpin the analyses, the findings could also indicate early signals of possible risks. Further data collection would support surveillance and deeper studies. At the same time, enhancing prudential measures would help safeguard financial and macroeconomic stability. These include strengthening the monitoring of the housing market, bank lending practices and household debt, as well as fortifying the macroprudential framework, including with more effective toolkits for early intervention", says IMF's report.

Japan (Selected Issues): "Japan's population is rapidly aging and shrinking, and doing so unevenly across regions. Large cities, notably the Greater Tokyo area, are experiencing net migration inflows, while other regions are experiencing net migration outflows. In this chapter, we assess the regional differences in population dynamics and their implications for house price developments in Japan. Due to the durability of housing compared to other forms of investment, the magnitude of house price declines associated with population losses is larger than that of house price increases associated with population gains. These model-based predictions are likely to underestimate the actual fall in house prices associated with future population losses, as expectations of lower housing prices in the future could trigger more population outflows and disposal of houses, especially in rural areas. We suggest policy measures to help close regional disparities and avoid potential over-investment by taking account of demographic trends for housing supply", says IMF's report.

Philippines (Selected Issues): "The near-boom credit episodes detected between 2014 and early 2018 coincided with strong lending growth in the real estate sector. The latter contributed importantly to the strong overall lending growth of close to 20 percent during this period. Notwithstanding some moderation recently, credit to real estate has continued to outpace that in manufacturing and other sectors. It now accounts for the largest share in total loans outstanding (18 percent)", says IMF's report.

Predicting Downside Risks to House Prices and Macro-Financial Stability (Working Paper): "This paper predicts downside risks to future real house price growth (house-prices-at-risk or HaR) in 32 advanced and emerging market economies. Through a macro-model and predictive

quantile regressions, we show that current house price overvaluation, excessive credit growth, and tighter financial conditions jointly forecast higher house-prices-at-risk up to three years ahead. House-prices-at-risk help predict future growth at-risk and financial crises. We also investigate and propose policy solutions for preventing the identified risks. We find that overall, a tightening of macroprudential policy is the most effective at curbing downside risks to house prices, whereas a loosening of conventional monetary policy reduces downside risks only in advanced economies and only in the short-term", according an IMF working paper.

Discerning Good from Bad Credit Booms : The Role of Construction (Staff Discussion Note): "Credit booms are a focal point for policymakers and scholars of financial crises. Yet our understanding of how the real sector behaves during booms, and why some booms may go bad, is limited. Despite a large and growing body of literature, most of the work has focused on aggregate economic activity, and relatively little is known about which industries benefit and which suffer during these episodes. This note aims to fill this gap by analyzing disaggregated output and employment data in a large sample of advanced and emerging market economies between 1970 and 2014", according a new IMF paper.

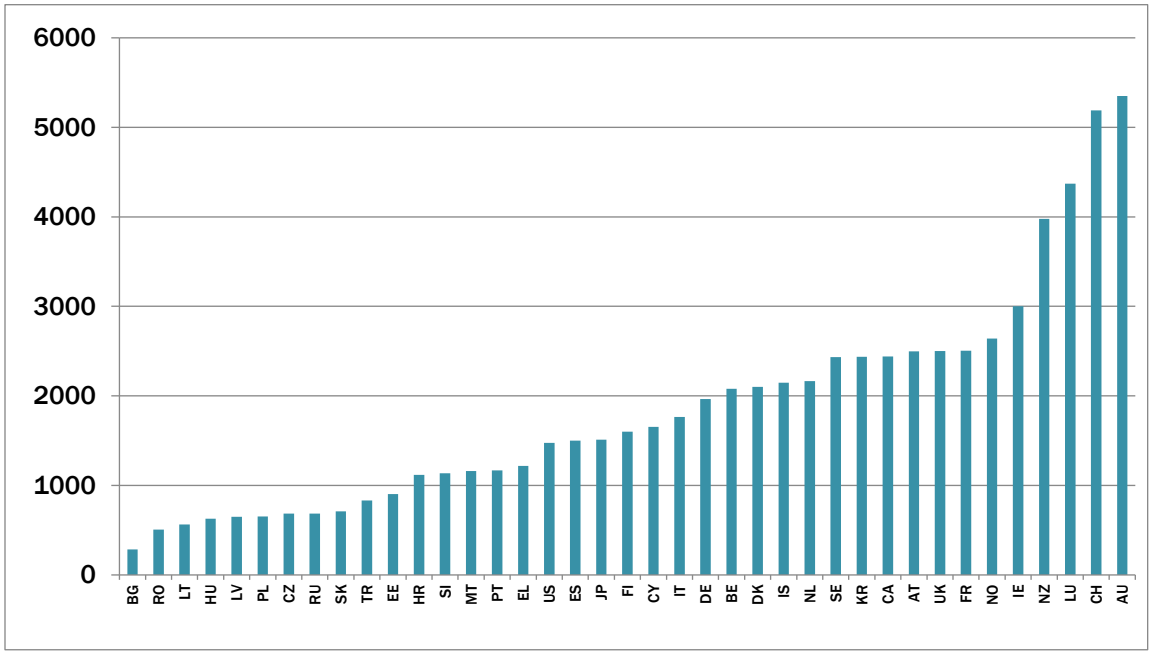
2. How Affordable is Housing? Insights from a New Data Set

A remarkable new data set constructed by Jean-Charles Bricongne, Alessandro Turrini and Peter Pontuch allows direct comparison of house prices across countries—illustrating big differences in how many years of income it takes to buy a house—and provides suggestive evidence of when house prices may be at risk of correction. Prakash Loungani summarizes the data set and poses a few queries to its creators.

How expensive on average are houses in the United States relative to Australia? And how many years of income would it take the average person to buy the average house in each country?

It would seem that the answers to these questions should not be too difficult to provide. After all there are a number of data sets that give cross-country data on house prices in various countries. But most of the data sets provide price indices, not the actual price of houses. They can be used to compare appreciation in house prices across countries over some time period, but don't necessarily tell us whether houses in the United States are more affordable than in Australia and how the relative affordability has changed over time.

Figure 1: House price per square meter in 2016 (in euros)



A new data set called HouseLev put together by Jean-Charles Bricongne, Alessandro Turrini and Peter Pontuch fills the gap. It provides the average price per square meter of housing in 40 countries, from as far back in 1970 for most countries to the most recent available, generally 2017 or 2018.

The authors use two methods, top-down and bottom-up, with the latter intended to provide a check on the former or a back-up estimate when the top down method is not feasible due to missing data.

The top-down method computes the average price as the ratio of the total value of dwellings and associated land to the total floor area of dwellings. The total value of dwellings and land ('the numerator') is generally taken from the national income accounts of countries; the total floor area ('the denominator') is from the census data of countries. Divide one by the other and, presto, you have the average price of a house.

So now we have an answer to the first question posed earlier. As shown in Figure 1, it turns out that the cost of the average house price in the United States is under 1500 euros per square meter and over 5000 euros per square meter in Australia. (For metrically-challenged U.S.-centric readers, that's about $150 per square foot in the United States.)

Of the countries in the data set, houses in Bulgaria are the cheapest at under 300 euros per square meter and the most expensive houses are in Hong Kong (SAR)—prices there are literally off the charts—nearly 30,000 euros per square meter!—and hence not shown in Figure 1.

How reliable are these estimates? Here's where the bottom-up approach comes in. The authors have painstakingly gone through the websites of real estate agents and collected the data on sales offers in different locations. These data are then aggregated up to give a country-level average. Reassuringly, for most countries, the top-down approach and the bottom-up approach give similar estimates of house prices—the median difference in only 7 percent and the biggest difference is 12 percent.

Figure 2: Years of income required to purchase a house in 2016

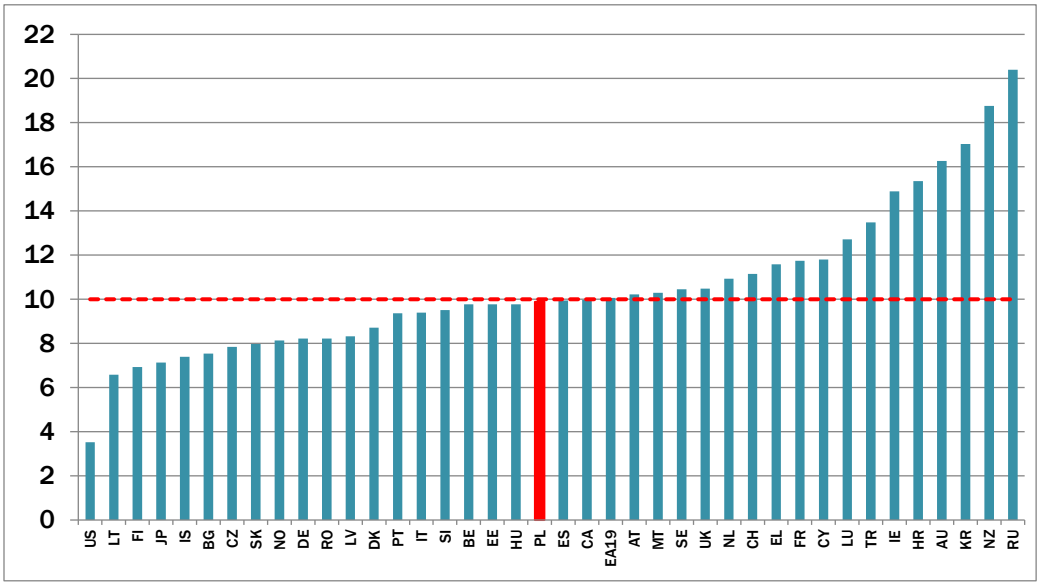


Figure 2 shows that it takes under 4 years of average income to buy a house of average size in the United States and over 16 years in Australia. The median across countries is 10 years.

The creators of the data set also looked into whether high ratios of house prices to incomes can signal a correction in house prices. They find that if the ratio is greater than 10, there is concrete risk of a significant downward correction of house prices in the following three years (see their paper, Bricongne et al. (2019), for the details).

Q&A with the creators:

Q. Is the data set publicly available?

A. The data set that covers forty countries is publicly available with detailed annexes of prices in levels in national currencies, in euros, in PPP (purchasing power parity) and with price to income ratios, in the annex of the European Commission Discussion Paper available at the following link:

https://ec.europa.eu/info/sites/info/files/economy-finance/dp101_en_houselev.pdf

Q. You mentioned plans to extend the dataset to the regional level? What is the status of this work?

A. Work is ongoing in the Commission, with first results covering all EU countries expected for Autumn 2020. The Commission, Banque de France and the OECD are cooperating and interacting on these efforts. Initial raw results are available already at a basic regional level for the EU27 countries (the so-called NUTS2 level), with time series broadly spanning the 2010s.

Since national accountants quite rarely publish data at a local (NUTS3) level, the principal source to produce regional house prices in levels is the one based on web scraping, as well as aggregates from administrative data. The main issues that we encountered with the construction of sub-national price levels is comparability, which is why we focus mainly on improving stratification algorithms and refining our data on housing stocks, incorporating also satellite data.

Q. Will the data set be kept updated on a regular basis? By whom?

A. The dataset will be updated at least annually by the European Commission with Banque de France also contributing to possibly expanding the country coverage. The intent is to give access to the dataset to all potential users. The dataset will initially be accessible at the 'browsable' website of the REFINE network (real estate finance and economics network: https://www.institutlouisbachelier.org/en/programme/refine-real-estate-finance-and-economics-network-2/) but other solutions are also being considered.

Q. Has there been any reaction to your estimates (e.g. some validation from country authorities or realtors; anyone challenging your estimates)?

A. *HouseLev* is a database of estimates: these are not official statistics and they have not been validated neither by national statistical authorities or Eurostat nor by realtors. The estimates have been constructed with the objective of reliability, transparency and comparability, keeping in mind that full comparability is a tremendous challenge for non-homogenous objects such as dwellings. To get estimates as comparable as possible, a common concept of floor area is adopted ("useful floor area"). When possible, comparisons are made on the basis of more than one methodology for computing average prices per square meter.

The data have been shared with EU Member States and used by different institutions: central banks, ministries of finance, academics. A number of comments have been received by experts in the fora where preliminary versions of the dataset have been presented (European Commission, ECB, Banque de France, Paris Dauphine, OECD ACPR—the French Supervisor for banks and insurance companies). On a few occasions, the feedback has helped improving the estimates for some countries or to better qualify the results. Such feedback is being continuously used to incrementally improve the data methodology country by country.

ABOUT GLOBAL HOUSING WATCH NEWSLETTER

The Global Housing Watch Newsletter aims to present a snapshot of the month's news and research on global housing markets. If you have suggestions on new material that could be included or ideas to improve this newsletter, you can send it to Hites Ahir (hahir@imf.org).

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