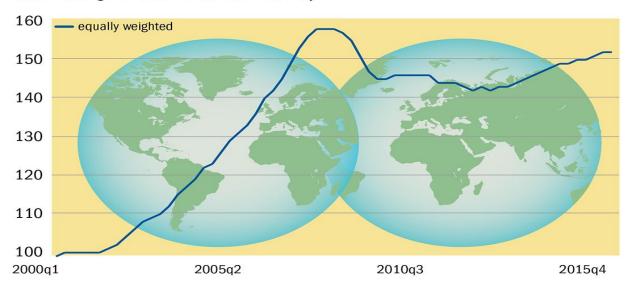


This edition includes: (1) our quarterly update of the Global House Price Index; (2) a discussion of some of the factors associated with the cross-country variation in house prices in recent years; and (3) housing sector developments described in IMF country documents over the past quarter.

### The Global House Price Index

Our global house price index shows that, on average, prices are almost back up to where they were at the start of 2007 (Figure 1).

Figure 1
Global House Price Index
Global housing markets continue a slow recovery.



Sources: Bank of International Settlements, European Central Bank, Federal Reserve Bank of Dallas, Savills, and national sources.

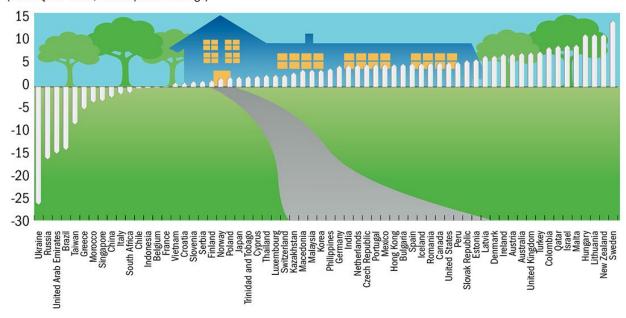
There is a fair bit of cross-country variation, as shown in Figure 2. While house prices have increased over the past year in most countries in our sample, the pace of increase varies quite a bit. And there are still a dozen or so countries where house prices have fallen over the past year, including Brazil, China and Russia.

Figure 2

#### Real House Prices over the Past Year

Real house prices increased over the past year in most countries.

(2016:Q1 or latest, annual percent change)



Sources: Bank of International Settlements, European Central Bank, Federal Reserve Bank of Dallas, Savills, Sinyi Real Estate Planning and Research, and national sources.

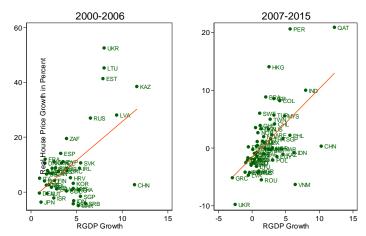


The underlying data for these charts, as well as charts on credit growth and ratios of house prices to rents and incomes, are available from the IMF's Global Housing Watch page: <a href="http://www.imf.org/external/research/housing/">http://www.imf.org/external/research/housing/</a>

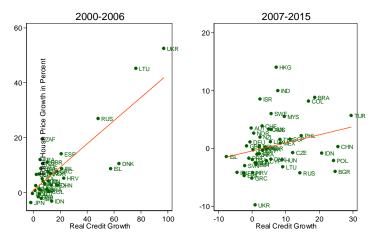
### Probing the Cross-Country Variation in House Prices

Both real house prices and real GDP growth in the 2007-2015 period were well below the boom experienced during 2000-2006. In the earlier period, global real GDP grew by over 4% per year while real house prices surged by about 9% on average. In the more recent period, these grew by just 2% and 1% per year, respectively. The simple correlation between real growth in house prices and GDP growth was very similar in the two periods at about 0.6 (Figure 3, panel A).

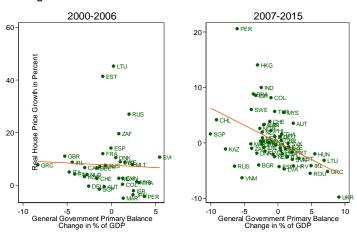
 $\label{eq:Figure 3} \textbf{Panel A} \\ \textbf{Real GDP Growth and Real House Prices Growth} \\$ 



Panel B Real Credit Growth and Real House Prices Growth



Panel C Change in Fiscal Stance and Real House Prices Growth



The pace of credit creation also fell sharply between the pre- and post-crisis periods from 17% to 6%. The correlation between growth in house prices and credit expansion fell substantially from 0.8 to 0.3. (Figure 3, panel B). Given that many countries sharply eased monetary policy during the post-crisis period, it seems reasonable to posit that slow credit growth was a result of diminished investment opportunities, reduced risk appetites on the part of lenders, and the adoption of macroprudential policies designed to reduce the probability of boom/bust cycles in the future. Moreover, the decline in the correlation between house prices and credit expansion suggests that other country-specific factors may have played a role in determining house prices.

One such factor is fiscal policy. We use as our indicator the change in the cyclically-adjusted primary fiscal balance as a percentage of GDP during each sub-period. The correlation between the change in the policy stance and home prices went from nearly zero to almost -0.5, suggesting that country-specific policy developments have played a role in determining the development of real estate prices (Figure 3, panel C).

## IMF Assessments of Housing Sector Developments

Over the last quarter, there have been discussions of housing sector developments in IMF staff reports in over a dozen cases (see Table). One feature of the discussions has been a growing emphasis on the role of supply constraints in driving house price increases—this was flagged for instance in the case of Denmark and Germany. Another is the continued active use of macroprudential policies in several countries, among them Canada and the United Arab Emirates. Concerns about the extent of house price growth were flagged in the cases of the Czech Republic ("a strong housing market is becoming a potential source of risk"), Denmark ("rapid house price increases call for early policy action") and Norway ("high and rising house prices and household debt in Norway pose important macro-financial stability risks").

The table below provides summary statements taken directly from the IMF documents and provides links to the documents. Readers are encouraged to consult the document for details. It should also be noted that country authorities may have taken policy steps since the publication of the IMF country document.

Country	Assessment
(date of assessment) Canada (June 2016)	"Macroprudential policy has been broadly effective in alleviating financial stability risks and reducing tax payer exposure to mortgage finance. Additional macroprudential measures may be needed if housing market vulnerabilities intensify."
Colombia (May 2016)	"() risks from weaker household balance sheets have risen marginally and remain contained. Risks from rising house prices are mitigated by low loan-to-value ratios (51.4 percent) and small mortgage portfolios of banks (12.3 percent of total loans)."
Czech Republic (July 2016)	"A strong housing market is becoming a potential source of risk.  Mortgage rates are at historic lows and have boosted new mortgage lending to a 10-year high, thus putting upward pressure on prices."
Denmark (July 2016)	"Rapid house price increases call for early policy action—including loosening housing supply restrictions, eliminating adverse tax incentives, and developing and timely implementing well-targeted macro prudential tools."
Germany (July 2016)	"Housing prices in the most dynamic cities deserve close monitoring, but concerns about across-the-board excesses in the mortgage market look premature. () Housing price inflation also reflects a tepid response of housing supply to a swell in demand."
Ireland (July 2016)	"Residential real estate prices and rents continued to increase.  Nevertheless, following the abolishment of tax exemptions on capital gains in December 2014 and the introduction of new macroprudential loan-to-value and loan-to-income limits in February 2015, the market somewhat cooled offCommercial real estate (CRE) prices rose even more rapidly reflecting the confluence of strong equity investment largely financed by foreigners in search for high yield, and still limited new construction."
Lithuania (May 2016)	"With credit growth moderate, real housing prices some 30 percent below their 2008 peak, and low financial depth, there is no evidence of imminent financial risks emerging."
Luxembourg (May 2016)	"On the housing market and in light of ever rising housing prices, the authorities should explore the effectiveness of recent measures in containing risk and whether further macro-prudential measures such as limits to loan-to-value ratios in addition to those already taken in 2013 would be appropriate."

Malaysia	"House prices are still growing but prices of high-end properties in
( <u>May 2016</u> )	Kuala Lumpur have declined slightly. Given the slowdown in loan
	growth and in housing, no further measures are recommended. LTV
	caps on second and first mortgages should be considered if rapid
	house price and credit growth were to reignite."
Norway	"High and rising house prices and household debt in Norway pose
( <u>July 2016</u> )	important macro-financial stability risks. Real house prices have risen
	more than 80 percent in Norway since 2000. Currently, house prices
	are estimated to be 40 percent overvalued."
Peru	"Housing prices, as reflected by the median apartment prices in Lima,
( <u>July 2016</u> )	appear high although the price increases since the second half of 2014
	have been more subdued than in the previous four years (). This
	may not accurately reflect the segmentation in the market, where there
	is an oversupply of high-end condominiums in certain residential areas
	in Lima while low-income housing is in short supply."
Poland	"Credit standards on loans have remained broadly unchanged in recent
( <u>July 2016</u> )	quarters, with the exception of housing loans, where standards
	tightened on the back of new prudential recommendations and reduced
	appetite among some banks for expanding the housing loan portfolio."
Slovenia	"while house prices increased for the first time in about 3 years."
( <u>May 2016</u> )	
United Arab Emirates	"Real estate prices have continued to decline, but the quality of the
(July 2016)	real estate loan portfolio has remained resilient. Structural measures
( <u>sury 2010</u> )	taken in 2014, such as the tightening of industry self-regulation, higher
	real estate fees, and tighter macroprudential regulation for mortgage
	lending, have helped contain speculative demand for real estate and
	led to declining prices."
United Kingdom	"Housing and mortgage markets have re-accelerated since mid-2015
( <u>June 2016</u> )	() However, the recent acceleration in housing markets could partly
	be a temporary response to tax changes () Macroprudential policies
	will need to be tightened later this year if the acceleration does not
	prove temporary."

# Acknowledgements and disclaimer

This update was produced by Hites Ahir, Nathalie Gonzalez Prieto, Richard Koss and Grace Li (all at the IMF), with comments from Prakash Loungani (IMF) and Alessandro Rebucci (Johns Hopkins University, Carey Business School, Edward St. John Real Estate Program). We are grateful to colleagues in the IMF Housing Markets Group for their comments and review.

Views expressed are those of the authors and should not be ascribed to any of the institutions with which they are affiliated.