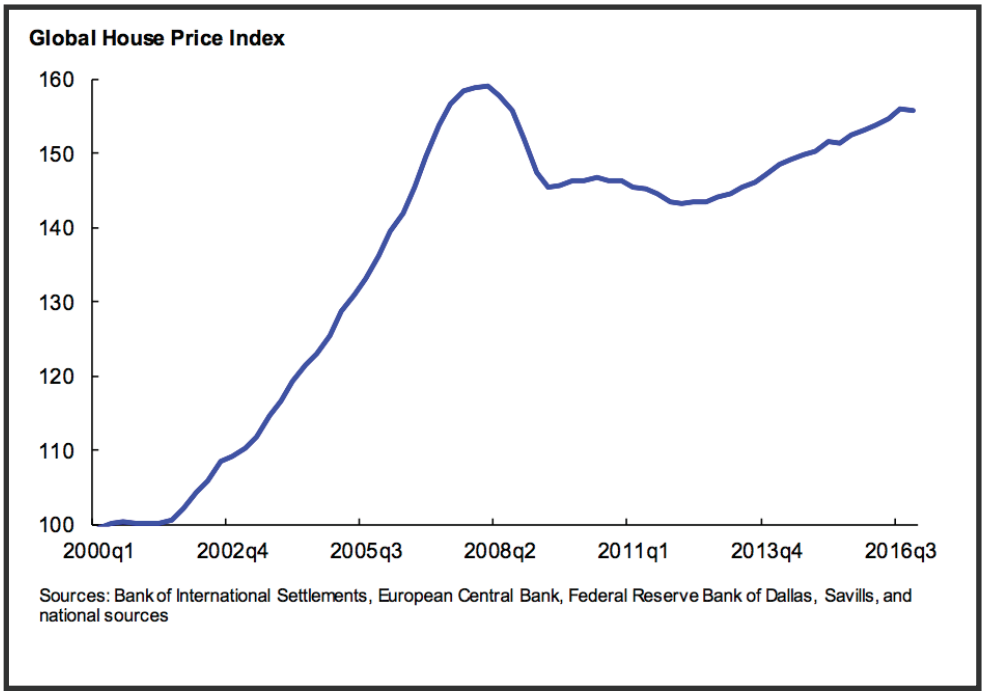
# Global Housing Watch

Q2 2017

The IMF Global House Price Index is nearly back to its prior peak (see Figure 1). We have previously addressed the question of whether conditions at present are sufficiently similar to those in place during the bubble period of 2005-2008 and answered with a somewhat tentative “no” (see Global House Prices: Time to Worry Again?).

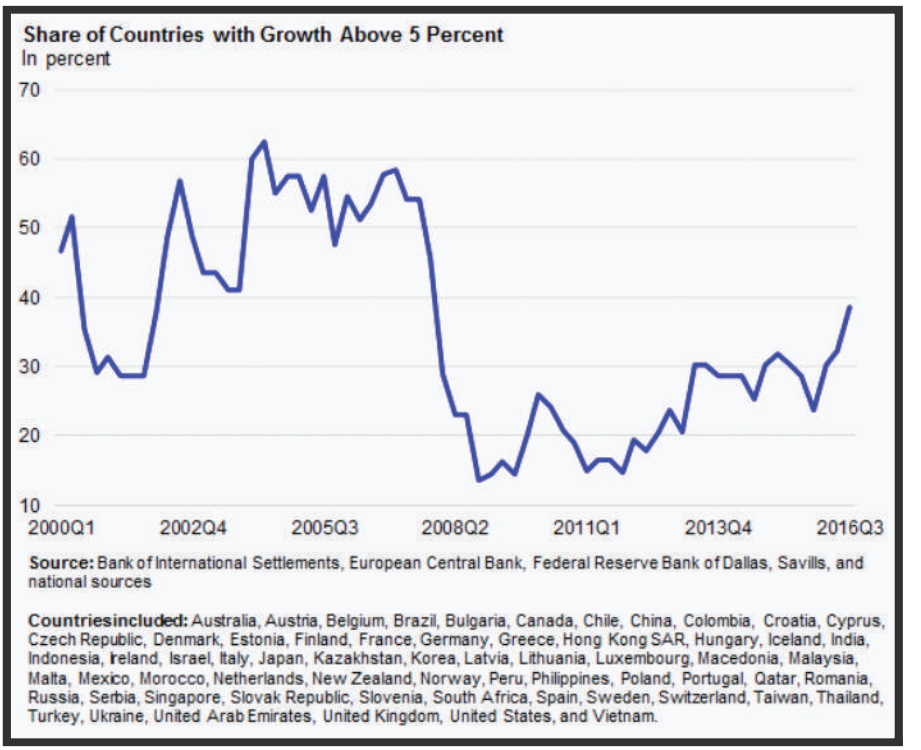
**Figure 1 -**
**Global House Price Index**



The somewhat sanguine view is partly explained by a lack of synchronicity at present that distinguishes the current state from that experienced a decade ago (see Figure 2). The answer is tentative, because over the last four years the number of countries experiencing rapid growth has approximately doubled, while remaining significantly below the prior peak.

**"The somewhat sanguine view is partly explained by a lack of synchronicity at present"**

**Figure 2 -**
**Share of Countries with Growth Above 5 Percent**





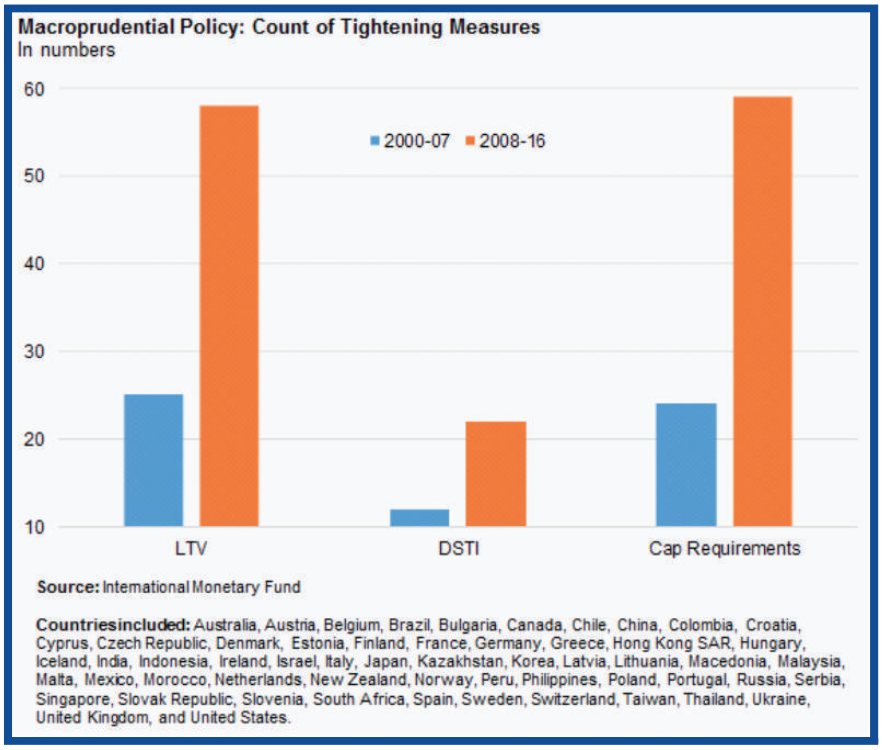
Santiago, Chile

Vienna, Austria

**"there has been a notable step-up in the implementation of macroprudential policies"**

One possible explanation for the more stable and perhaps sustainable pace of price increases in the index is that there has been a notable step-up in the implementation of macroprudential policies designed to curb excesses in the provision of mortgage credit (See Figure 3).

## Figure 3 - Macroprudential Policy: Count of Tightening Measures



Recent IMF assessments provide a nuanced view of within country house price developments and the role played by macroprudential policies (see Table 1 for full set of recent assessments).

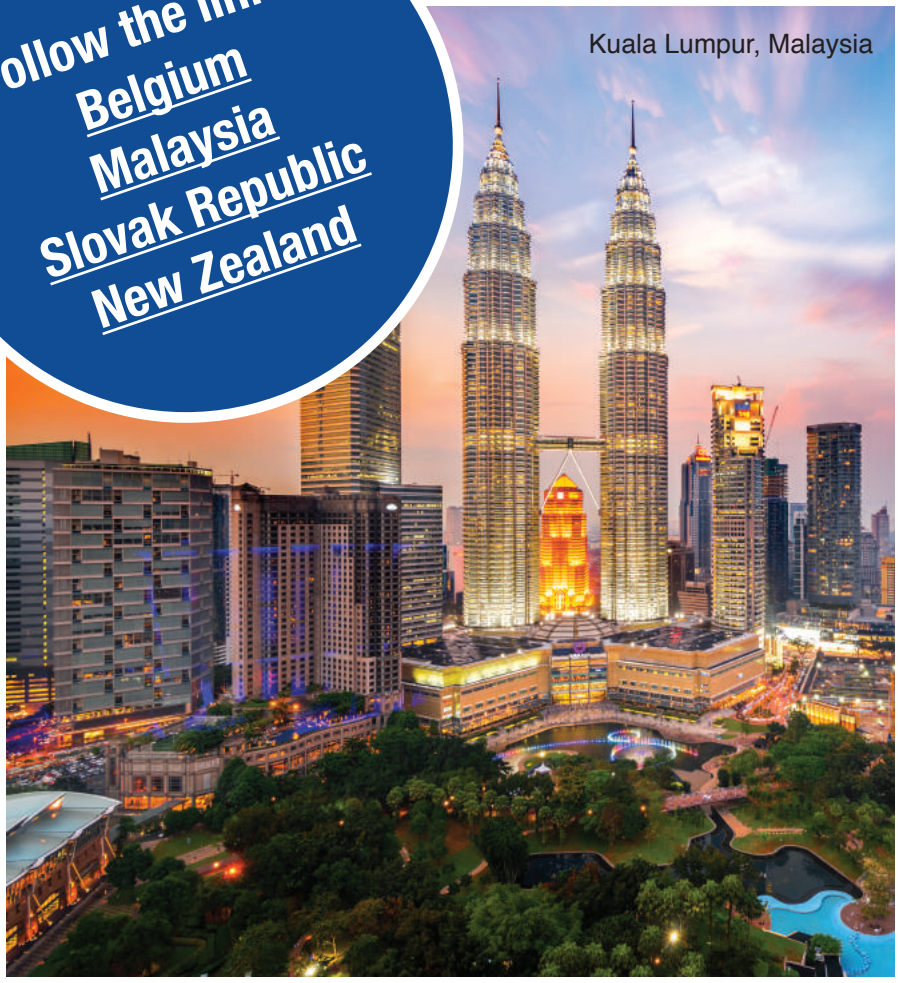
On **Belgium**, the latest IMF assessment says that further macroprudential actions may be needed to address pockets of vulnerability in the housing market. Concerns relate to the continued growth in house prices, combined with rising household indebtedness and significant shares of risky mortgage lending practices, as well as strong expansion in mortgage credit.

On **Malaysia**, IMF's assessment notes that the risk of a sharp decline in house prices should nevertheless be carefully monitored. If rapid house price growth resumes, LTV caps on second and first mortgages could be considered.

On **Slovak Republic**, the IMF points out that the authorities have stepped up macroprudential measures since 2014 to preserve lending standards and increase buffers.

On **New Zealand**, the IMF says that New Zealand's mainly LVR-related housing market-specific macroprudential measures would appear to have had some moderating influence on mortgage lending, expected and actual house price growth, and the quality of loan composition. In addition, they have also helped to

**Follow the links:**
**Belgium**
**Malaysia**
**Slovak Republic**
**New Zealand**



Kuala Lumpur, Malaysia

contain household leverage. However, they do not seem to have prevented a continuous deterioration of borrower households' vulnerability against debt servicing capacity risks, such as higher interest rates or income shocks.


Queenstown, New Zealand

Some of these charts and the underlying data are available from the IMF's Housing Watch page:

http://www.imf.org/housing

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Acknowledgements and disclaimer

This update was produced by Hites Ahir, Michelle Chen, and Richard Koss (all at the IMF), with data on macroprudential policies from Erlend Nier (IMF) and with comments from Prakash Loungani (IMF) and Alessandro Rebucci (Johns Hopkins University, Carey Business School, Edward St. John Real Estate Program). Leslie Grill was the designer. 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.

# Table 1. Latest IMF Assessments of Housing Market Developments

| Country (date of assessment) | Assessment |
|---|---|
| **Belgium (March 2017)** | "Further macroprudential actions may be needed to address pockets of vulnerability in the housing market. Concerns relate to the continued growth in house prices, combined with rising household indebtedness and significant shares of risky mortgage lending practices, as well as strong expansion in mortgage credit. Various overvaluation estimates are in the range of 0–20 percent." |
| **Israel (March 2017)** | "Supply-side bottlenecks need to be addressed to improve housing affordability and contain macrofinancial risks. Housing prices are very high, posing a vulnerability while disproportionately affecting low-income households. Reforms should improve municipal incentives for development, ensure adequate land privatization and urban renewal, shorten approval times and reduce construction costs. Macroprudential policies are appropriately tight and the Bank of Israel should monitor developments closely." |
| **Luxembourg (May 2017)** | "Against the backdrop of an expanding population, low interest rates and binding supply side constraints, residential real estate price-to-income ratios in Luxembourg have become elevated by historical and global standards […]. After a marginal decline in 2009, nominal home prices have since increased 30 percent (or 22 percent in real terms), a period over which real disposable income of the local population has been flat, though GDP and employment growth continued. Supply bottlenecks make housing less affordable to residents." |

# Table 1. Latest IMF Assessments of Housing Market Developments Continued...

| | |
|---|---|
| **Malaysia (May 2017)** | "Risks associated with the housing market appear to be receding. House price growth has moderated, following several years of elevated growth, and risks are circumscribed by ongoing supply constraints, increases in public sector wages, and, from a more structural perspective, Malaysia's relatively young labor force and urbanizing population. The risk of a sharp decline in house prices should nevertheless be carefully monitored. If rapid house price growth resumes, LTV caps on second and first mortgages could be considered." |
| **Netherlands (April 2017)** | "House prices have been accelerating and close monitoring may be warranted in the country's main cities. After turning a corner in 2014, house prices have been steadily accelerating and transaction volumes have doubled in 2016. At the aggregate level, real house prices are broadly consistent with long-term equilibrium (price-to-income, price-to-rent ratios, […] but developments have been uneven across regions, with prices for apartments in Amsterdam 15 percent higher than a year ago. After plummeting by 20 percent during the crisis, commercial real estate has only started to recover recently." |
| **New Zealand (May 2017)** | "New Zealand's mainly LVR-related housing market-specific macroprudential measures would appear to have had some moderating influence on mortgage lending, expected and actual house price growth, and the quality of loan composition. In addition, they have also helped to contain household leverage. However, they do not seem to have prevented a continuous deterioration of borrower households' vulnerability against debt servicing capacity risks, such as higher interest rates or income shocks." |

# Table 1. Latest IMF Assessments of Housing Market Developments Continued...

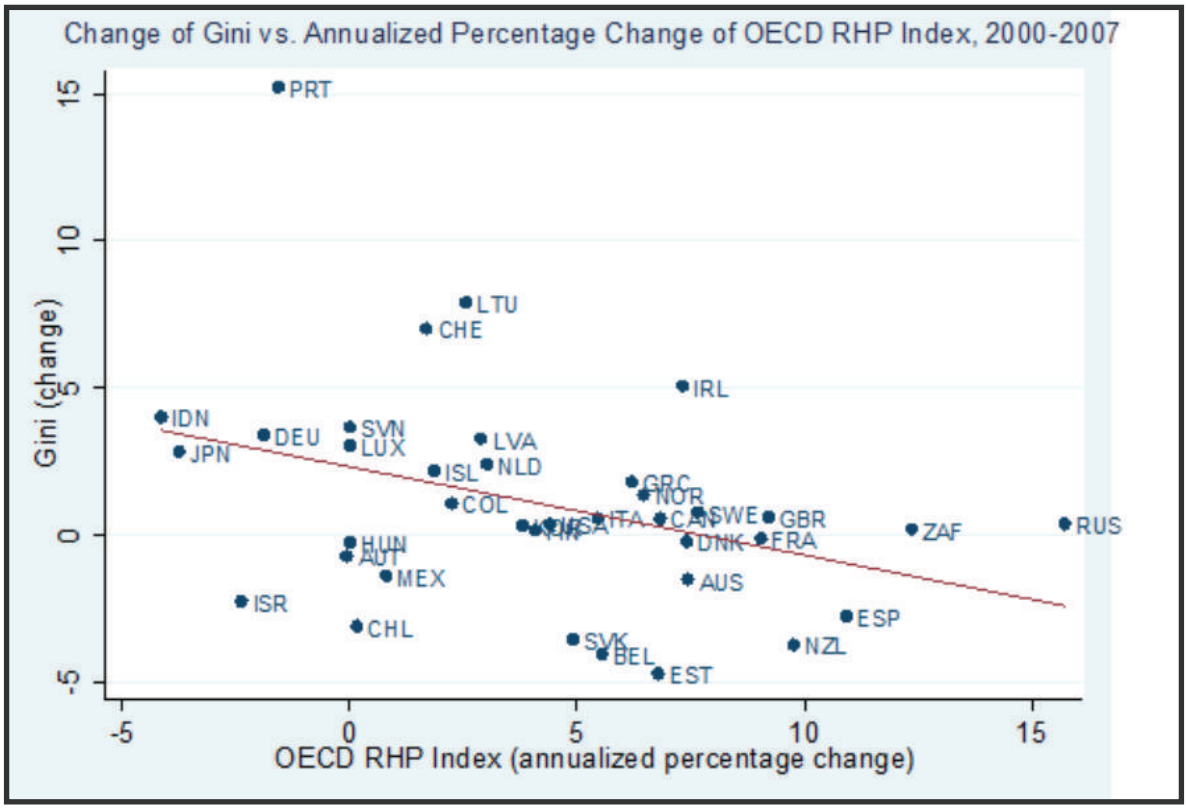
| | |
|---|---|
| **San Marino (April 2017)** | "Credit growth continues to be subdued, and activity in the housing market remains at the low level. […] In the housing market, the number of real estate sales remains low, but the average tax per transaction for non-leasing properties, which is likely correlated with real estate prices, has stabilized." |
| **Slovak Republic (March 2017)** | "House prices have increased in some regions, but remain below their pre-crisis levels […] The authorities have stepped up macroprudential measures since 2014 to preserve lending standards and increase buffers. Following the implementation of the Housing Loan Act (HLA) in March 2016, the NBS has a mandate to issue binding decrees imposing limits on debt service to income (DSTI) and LTV ratios, which are set to further tighten in 2017." |

San Marino, Republic of San Marino

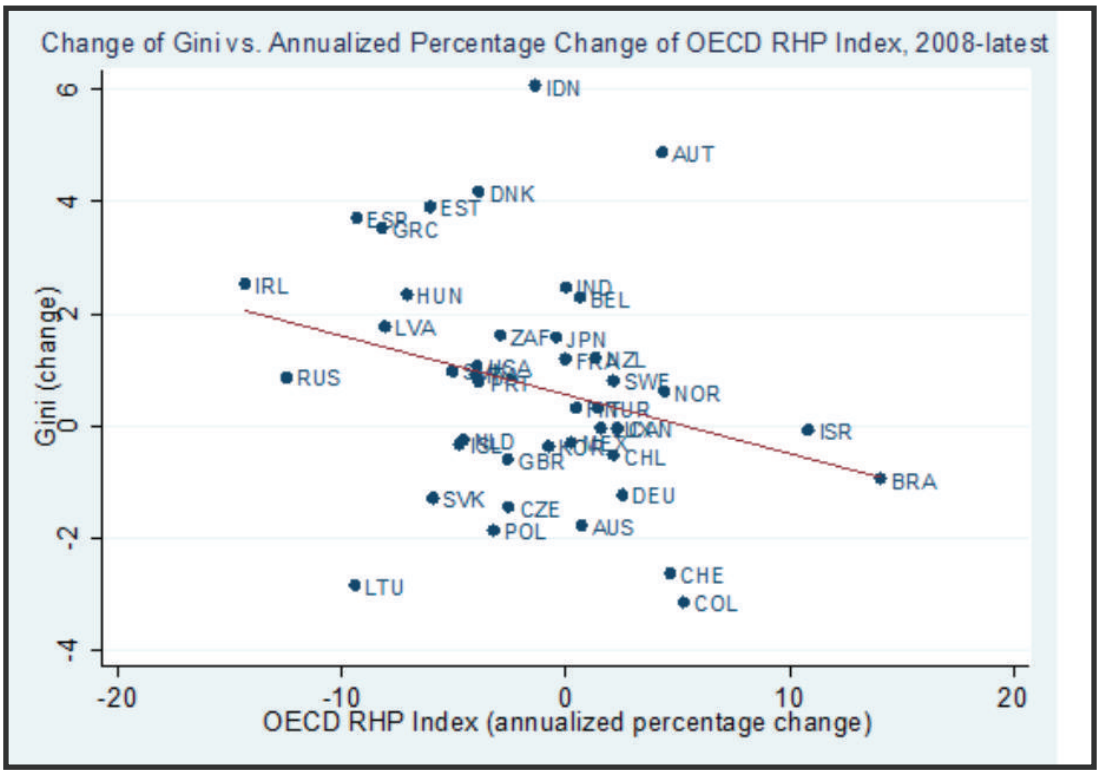
# Box 1
# Housing and Inequality

Of course, there is more to the impact of rising house prices than the possibility of bursting bubbles and financial distress. For most households, the primary store of wealth is their home[1].

**Figure 1a -**
**Change of Gini vs. Annualized Percentage Change of OECD RHP Index, 2000-2007**



## Figure 1b -
## Change of Gini vs. Annualized Percentage Change of OECD RHP Index, 2008-latest



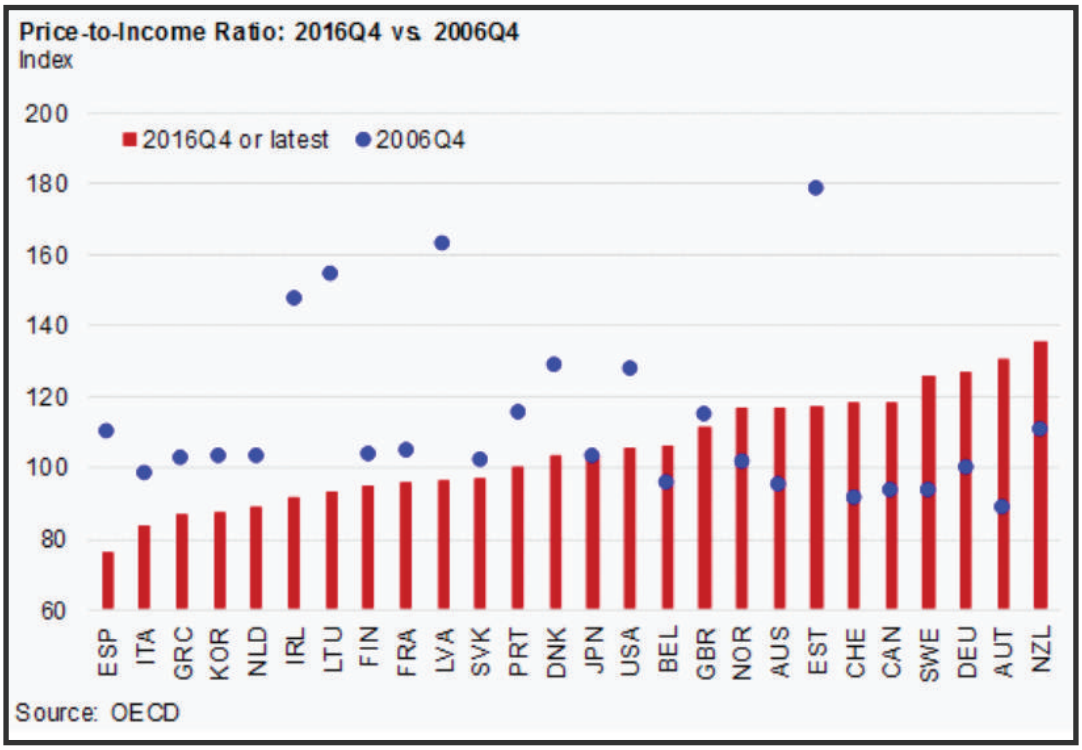

An outcome of positively correlated house price increases and declining inequality (as seen in Figures 1a and 1b) can appear on the surface to contradict the narrative one often hears about how rising house prices create affordability problems for those households who do not own their primary residence[2]. The discrepancy can be explained as a Gini coefficient captures overall inequality among all categories of households, while the focus of the press and affordability advocates is on the negative impact on lower income households of rising home prices that take the wealth-generating benefits of rising home prices out of reach.

On a cross-country basis, we can see distinct signs of worsening trends in affordability in many countries compared to the bubble period ten years ago (see Figures 2a and 2b). The lack of a consistent pattern of changes in affordability across countries and cycles point to a fruitful line of research that looks at the effect of rising house prices across each slice of the income distribution. For example, does the change ratio of the top 10% of incomes to the bottom 10% behave similarly across countries for a given change in house prices?

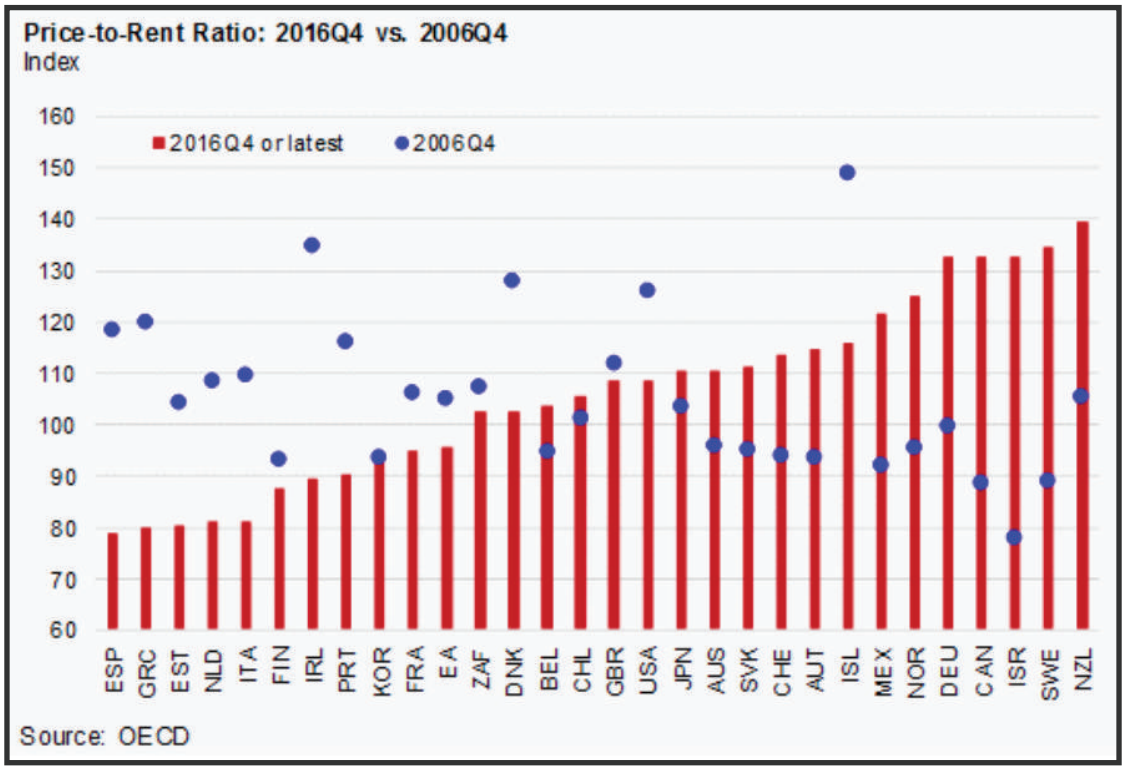
1 See https://www.federalreserve.gov/econres/scfindex.html

2 See https://www.nytimes.com/2017/05/09/magazine/how-homeownership-became-the-engine-of-american-inequality.html

## Figure 2a -
## Price-to-Income Ratio: 2016 Q4 vs. 2006 Q4




## Figure 2b -
## Price-to-Rent Ratio: 2016 Q4 vs. 2006 Q4



# Box 2
# Taming the Global Financial Cycle: Evidence on Loan-to-Value Ratios and Foreign Currency Borrowing Limits

## By A. Rebucci, Johns Hopkins Carey Business School, NBER and Global Housing Watch

There is a growing consensus that domestic macroprudential and capital flow management tools should be part of the policy arsenal to deal with the excessive volatility impinged on small open economies by the global financial cycle. Empirical evidence on the effectiveness of these policy instruments, however, is scarce. This is both because of the difficulty to find suitable data and the challenges posed by policy evaluation exercises.

A forthcoming working paper (authored by Ambrogio Cesa-Bianchi, Andrea Ferrero, and Alessandro Rebucci) on the origins and the transmission of shocks to the international supply of credit provides indirect evidence that limits on the loan-to-value ratio (LTV) and the share of foreign exchange liabilities (FXL) could be effective in taming the global financial cycle.

Figure 1 from their paper shows that countries with higher maximum LTV and FXL are significantly more sensitive to capital flow shocks. The figure plots the peak response of real private consumption, real house prices and the real exchange rate vis-à-vis the US dollar to an international credit supply shock against the max LTV and the average FXL in a cross section of 48 advanced and emerging economies (Panels A and B, respectively—correlation coefficient and t-statistics in parenthesis). This shock is identified with a change in the leverage of US broker-dealers in a small open economy VAR that also includes BIS cross-border credit and the current account balance as a share of GDP. To ensure that domestic shocks common across many small open economies do not affect leverage of US broker-dealers, these VARs also include world GDP. The country sample excludes the United States.

The authors also develop a model of collateralized

borrowing with international financial intermediation to underpin the identification and the transmission of the shock in the VAR model. In the model proposed by the authors, when leverage increases, possibly because of changes in the regulation of global banks, financial innovation or monetary policy changes in the United States, global financial intermediaries have more capital to deploy and extend more and cheaper loans internationally. But the sensitivity of individual countries to the increased international supply of credit depends on domestic conditions.

If the economy is financially constrained before the shock, or if the shock is large enough to push credit demand against lenders' borrowing limits (even if the borrower was unconstrained before the shock), house price inflation magnifies the initial impact of the international credit supply expansion by inflating the value of housing collateral; the more so, the higher the maximum LTV and the average FXL.

At a higher LTV, there is more domestic leverage. If the leverage constraint is binding before the shock, a given increase in house prices will have a larger impact on the economy's borrowing capacity, hence housing and non-housing consumption.

Exchange rate changes affect the transmission of the shock through three channels in this model, both when the economy is financially constrained and when it is not. But not all channels work in the same direction. An appreciation always strengthens the purchasing power of a given quantity of domestic output but reduces the domestic currency value of a given amount of loans contracted in foreign currency. In addition, when the domestic borrowing constraint binds, an appreciation will inflate the foreign currency value of the collateral, and hence boosts the borrowing capacity in foreign currency. The net effect of these three channels is a quantitative and empirical matter.

The VAR results show that, in the data, the identified international credit supply shock pushes up cross-border credit and consumption (see Figure 2). The typical economy (as represented by the average response) also displays a current account deterioration, a real exchange rate appreciation and house price boom. House price increases, in particular, are hump-shaped and consistent with real yields declining over time in line with the predicted drop in borrowing costs and yields on risky assets. Importantly, the data also show that the shock identified explains a sizable portion of consumption variance in the typical small open economy, in the order of 20 percent of total variance (see Figure 3). Both the impulse responses and the variance decomposition of consumption display significant heterogeneity across countries represented by the error bands

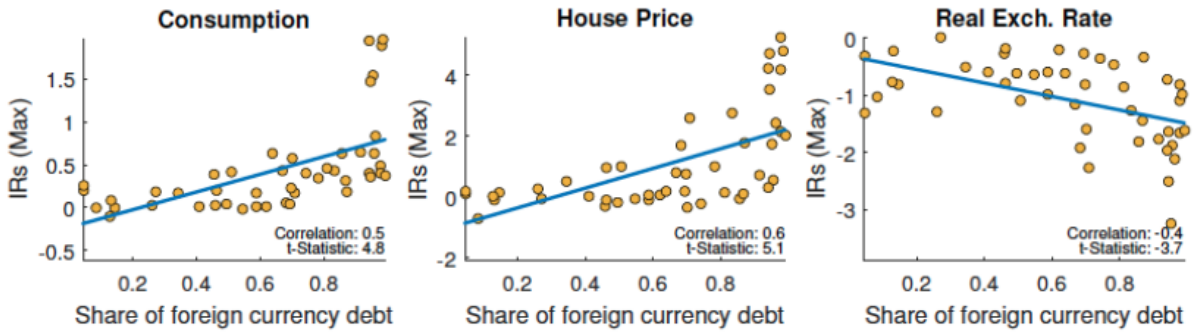
around the mean estimate, which underpin the dispersion associated with LTV and FXL and reported in Figure 1. LTV ratio and FXL share are variables chosen by borrowers and lenders within the context of a given regulatory framework. Although many national housing finance systems impose such limits, borrowers can always self-insure by choosing lower levels. Nonetheless, regulation can affect market outcomes. The evidence reported as well as the economic mechanisms summarized suggest that policy can have two effective levers to stabilize the global financial cycle without entering the quagmire of imposing capital controls on capital flows.

Mexico City, Mexico

# Sensitivity to international credit supply shocks and domestic borrowing limits

**Figure 1: Sensitivity to international credit supply shocks and domestic borrowing limits**

Panel A. Peak impulse response and average share of foreign currency liability (FXL)




Panel B. Peak impulse response and maximum loan to value ratio (LTV)

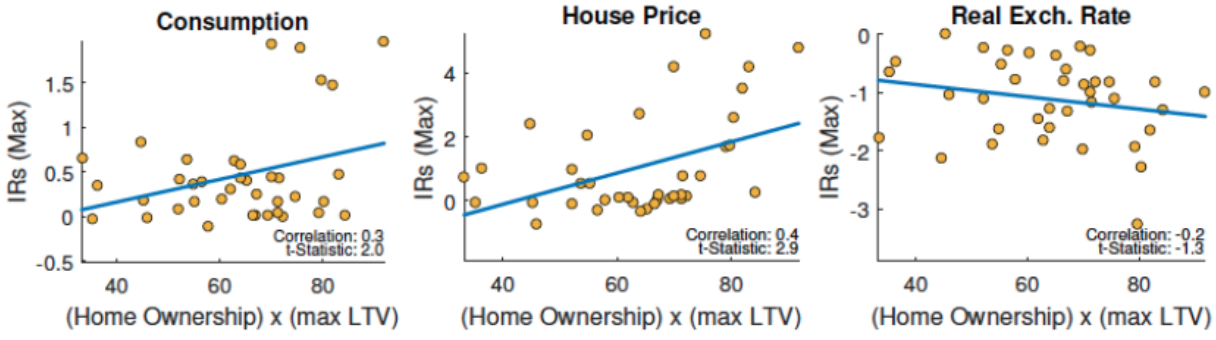
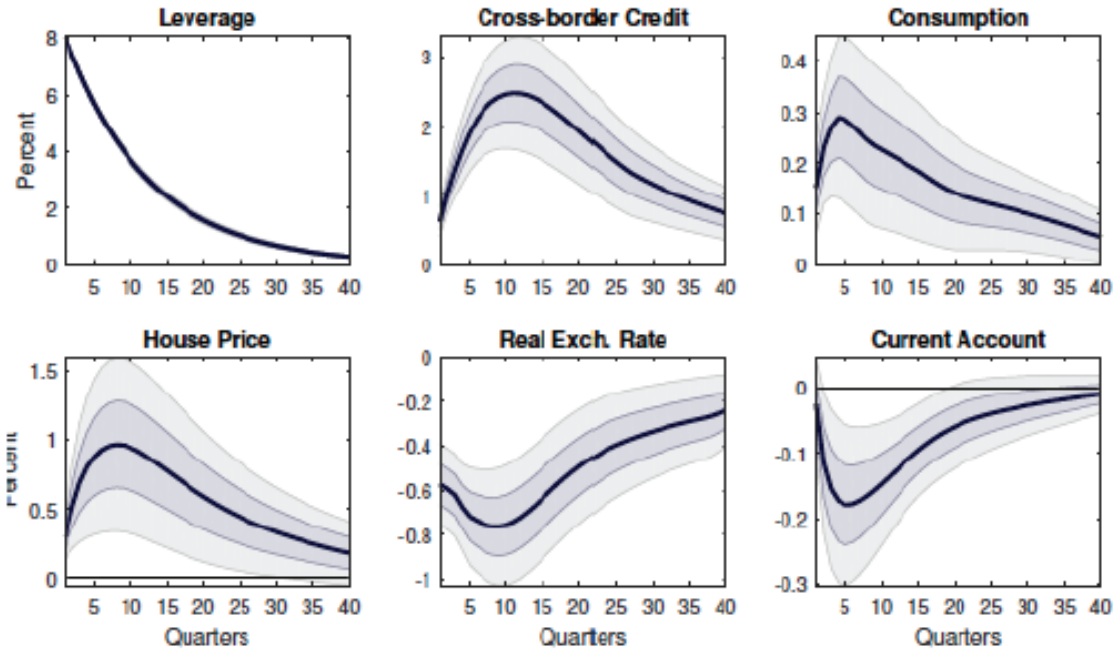
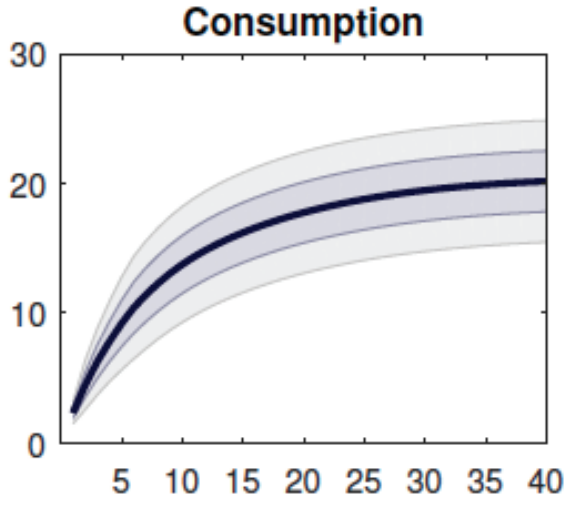



**Figure 2: Impulse response to a one-standard deviation US broker-dealer leverage** (International credit supply shock)




**Notes:** Average US broker-dealer leverage over the sample period about 20. Trimmed simple average of country specific impulse responses, excluding the United States. 90 and 95 percent error bands based on dispersion of country estimates.

**Figure 3: Share of total consumption variance explained by the international credit supply shock at different time horizons** (In percent)




**Notes:** Trimmed simple average of country specific impulse responses, excluding the United States. 90 and 95 percent error bands based on dispersion of country estimates.

Washington, D.C.

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