

# Global Liquidity, House Prices, and the Macroeconomy: Evidence from Advanced and Emerging Economies

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The views expressed in this paper are solely those of the authors and should not be taken to represent those of the Bank of England.

# Motivation

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- ▶ Surges and sudden reversals in cross-border capital flows

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- ▶ Surges and sudden reversals in cross-border capital flows
- ▶ Housing and global liquidity
  - **Housing**: quintessential non-tradable asset/durable good
  - **Global liquidity**: important determinant of international capital flows

# Contribution

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- ▶ New quarterly house price data set for 33 emerging markets from 1990 to 2012
- ▶ New set of house price stylized facts
- ▶ Identify a “global liquidity shock” on house prices, and trace its impact on the macro-economy in both AEs and EMs using a panel VAR

# Main results

- ▶ House price inflation tends to behave like consumption growth,
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# Main results

- ▶ House price inflation tends to behave like consumption growth,
  - equity prices behave more like GDP
- ▶ Relative to AEs, house price inflation in EMs is higher, more volatile, less persistent, less synchronized across countries; and more associated with external variables
- ▶ The impact of a global liquidity shock on consumption, house prices and the current account is much larger in EMs than in AEs

# Literature review

- ▶ Global house price cycle
  - [Andre (2010); Hirata et al. (2012); Igan and Loungani (2012); Claessens et al. (2012); Cesa-Bianchi (2013)]
- ▶ House prices and capital flows
  - [Laibson and Mollerstrom (2010); Favilukis et al. (2012); Adamet al. (2012); Ferrero (2012); Aizenman and Jinjara (2009); Gete (2009); Sa et al. (2014)]
- ▶ Global liquidity
  - [Landau (2013), Rey (2013); Bruno and Shin (2014); Cerutti et al. (2014)]

# Outline

- ▶ Data
- ▶ Stylized facts
- ▶ Global Liquidity
- ▶ Model
- ▶ Interpreting results
- ▶ Conclusions

# Data

- ▶ Unbalanced panel of 57 time series with varying coverage from 1990:Q1–2012:Q4
- ▶ Source: OECD, BIS, Dallas FED international house price databases  
National central banks, national statistical offices, and academic publications on housing markets

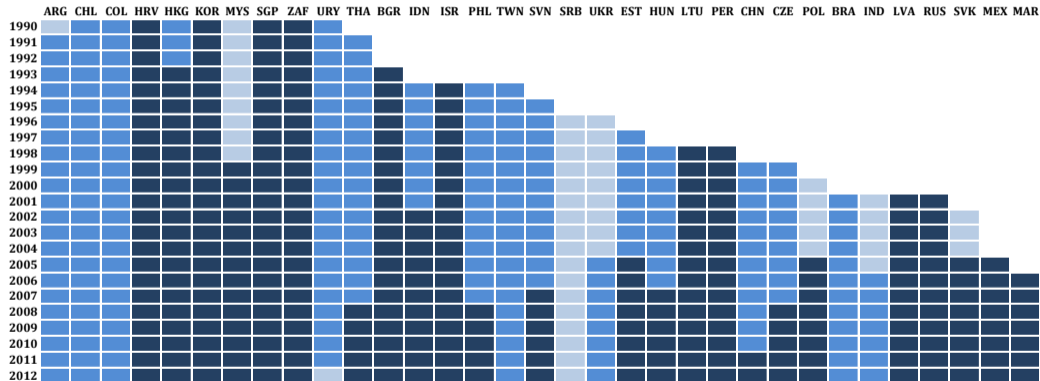
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- ▶ Value added
  - **Additional countries:** Argentina, Brazil, Chile, Colombia, Czech Republic, India, Serbia, Taiwan, and Uruguay
  - **Historical data:** China, Estonia, Hong Kong, Hungary, Indonesia, Lithuania, Malaysia, Philippines, Poland, Slovakia, Slovenia, and Thailand



# Data Map: Emerging Economies

(b) Emerging Economies



# EMs grow faster than AEs

## (a) Advanced Economies

	House Prices	Equity Prices	Consumption	GDP
Mean	0.4%	0.1%	0.5%	0.5%
Median	0.5%	1.3%	0.6%	0.6%
St. Dev.	1.9%	10.1%	1.1%	1.1%
Auto Corr.	0.6	0.4	0.2	0.3
Pairwise Corr.	0.2	0.7	0.2	0.3

## (b) Emerging Markets

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# EMs are much more volatile than AEs

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# House price inflation in EMs is less persistent than in AEs

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# House price inflation largely country-specific (non tradability)

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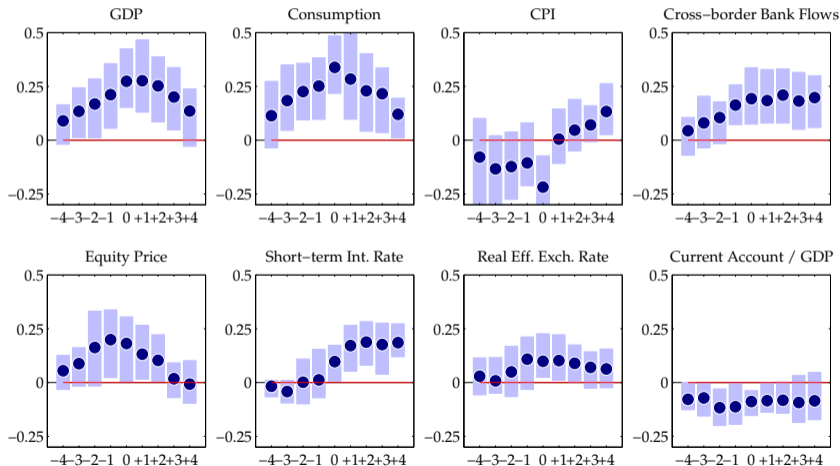
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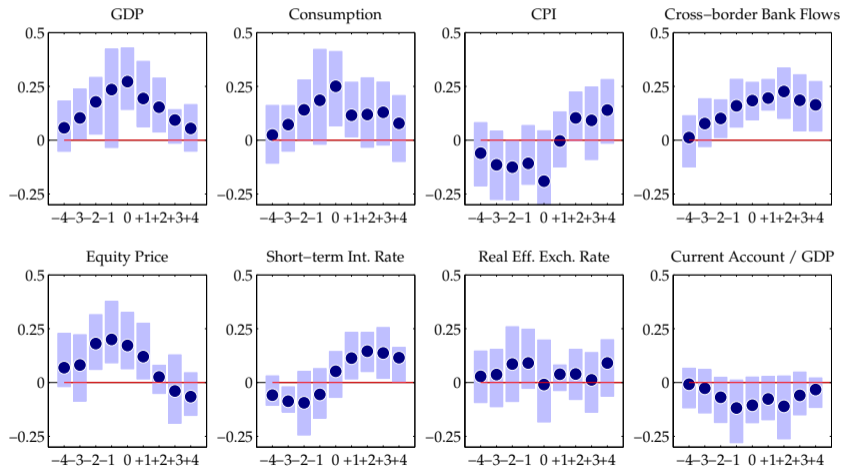
# House price inflation strongly pro-cyclical, leads the monetary policy cycle, some (weak) association with CA and RER in AEs

(a) Advanced Economies

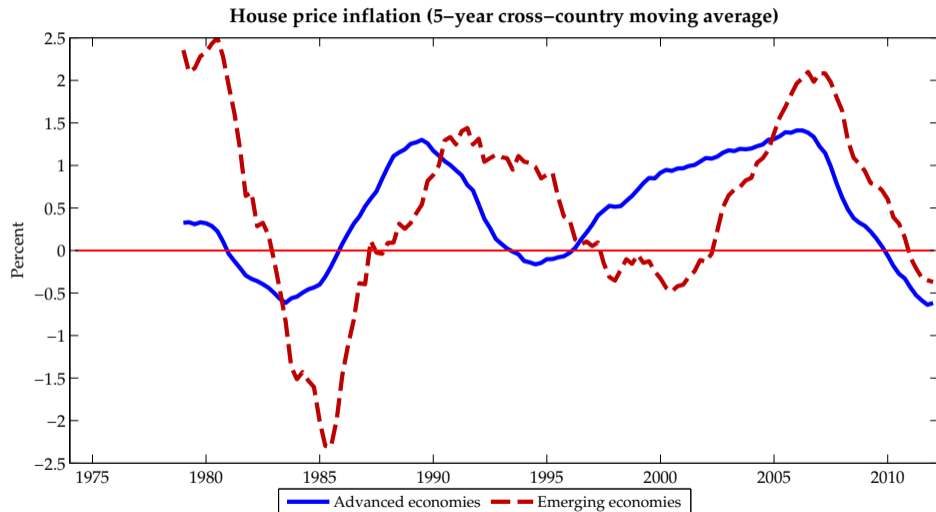


# Similar patterns in EMs: weaker association with monetary cycle and RER; stronger association with CA

(b) Emerging Economies



# A bird-eye view of the cycle in AEs and EMs

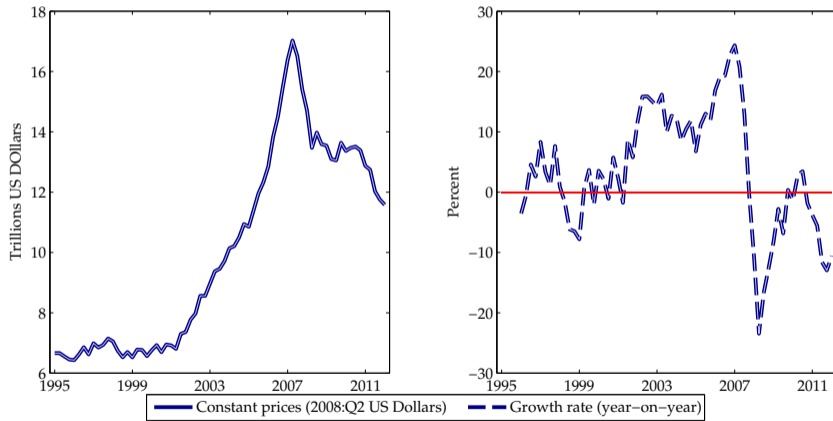


# Global Liquidity: Definition

- ▶ Global liquidity (GL) defined as “ease of funding in global financial markets” by BIS
- ▶ Credit supply factors that affect the provision of **cross-border credit by global banks**

# Global Liquidity: Data

International cross-border claims of BIS reporting banks vis-a-vis the banking sector



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- ▶ We think of GL as a vector of “push” global credit supply shifters
  - US monetary policy  $\implies$  US Interest rates, US M2
  - Global banks funding conditions  $\implies$  TED spread, Leverage, Yield curve slope
  - Risk appetite and uncertainty  $\implies$  VIX

# Global Liquidity: Linkages with the macroeconomy

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- ▶ GL shifts the international supply of credit  $\implies$  Increased cross-border bank credit
- ▶ In a domestic (open) economy:
  - Current account deteriorates
  - Exchange rate appreciates
  - House prices appreciate
  - Consumption increases
  - Interest rates response is theoretically ambiguous
- ▶ House prices and exchange rate appreciation can amplify the initial shock *via* the relaxation of (domestic or foreign) credit constraints

## Model: Panel VAR for all countries (excluding the US)

- ▶ VAR model for country  $i$  includes
  - GLOBAL LIQUIDITY
  - REAL CONSUMPTION
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- ▶ System in log-levels, two lags, deterministic trends
- ▶ Mean group estimator  $\implies$  Dynamic panel data models with heterogenous slope coefficients

# Identification: Global Liquidity Shock

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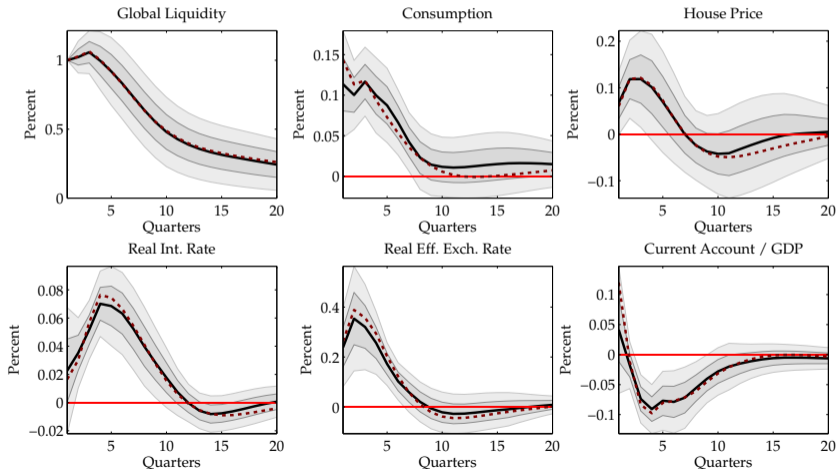
- ▶ Challenge: disentangling push versus pull. Identification is achieved in two steps
- ▶ **Aggregation:** no individual country is large enough to affect total cross-border banking credit significantly within a given quarter
  - Cholesky decomposition with GL ordered first

# Identification: Global Liquidity Shock

- ▶ Challenge: disentangling push versus pull. Identification is achieved in two steps
- ▶ **Aggregation**: no individual country is large enough to affect total cross-border banking credit significantly within a given quarter
  - Cholesky decomposition with GL ordered first
- ▶ **External instruments approach** [Stock and Watson (2012) and Mertens and Ravn (2013)]: no global common factor “pulls in” capital
  - Use the drivers of GL as instruments
  - Isolate the variation of the GL reduced-form residuals that are due only to supply “push” factors

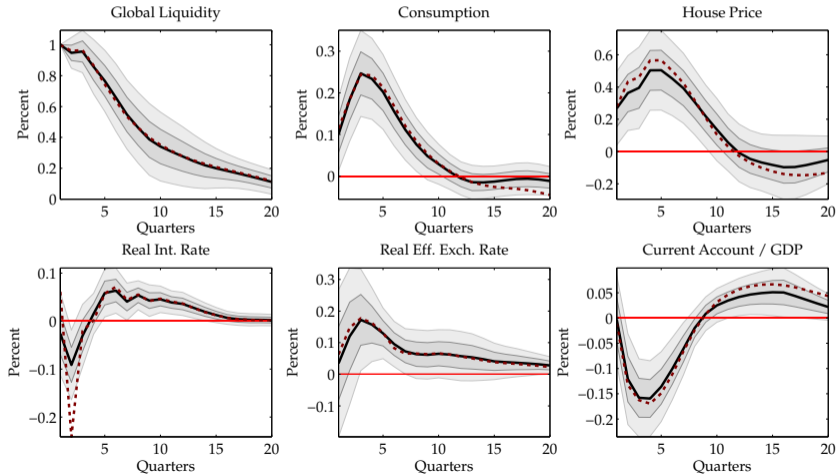
# In AEs, GL shock increases house prices, consumption, and affects external sector. Monetary policy tightened as a response

(a) Advanced Economies



# In EMs, effects much larger. Transmission mechanism also possibly different

(b) Emerging Economies



## Multipliers are sizable

- ▶ GL falls by 1 percent of world GDP (US\$ 1 trillion, or about 10 percent from its current level of US\$10-15 trillions)
- ▶ House price falls by 2/3 of a percentage point in AEs and more than 3% in EMs
- ▶ Consumption falls about 0.7% in AEs and more than 1.5% in EMs

# Inspecting the transmission mechanism

- ▶ How can we explain the different response of AEs and EMs?

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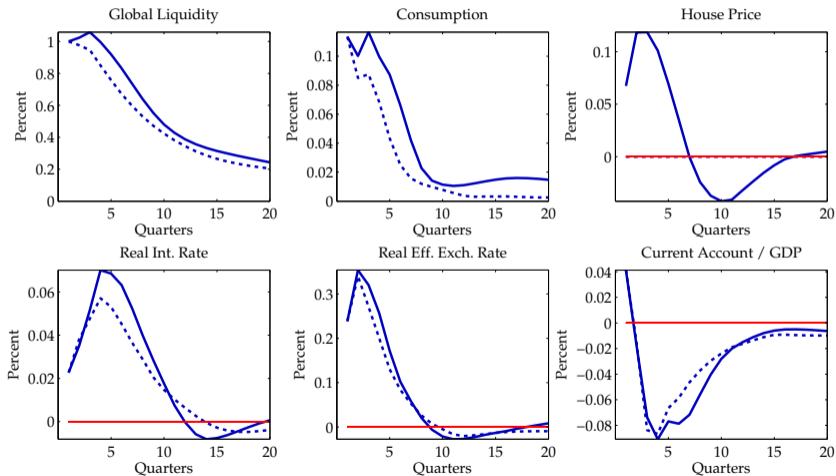
- ▶ How can we explain the different response of AEs and EMs?
- ▶ Conjecture: global liquidity shock relaxes borrowing constraints through increased value of collateral (more so in EMs)
  - House prices and exchange rates  $\implies$  frictions in domestic and international financial contracting

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  - House prices and exchange rates  $\implies$  frictions in domestic and international financial contracting
- ▶ A (crude) counterfactual exercise: “close the channels” associated with financial frictions and look at the counterfactual estimated impulse

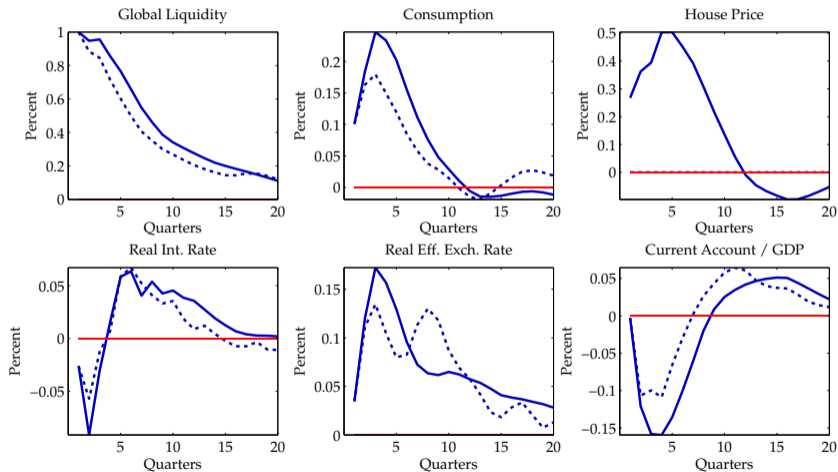
# HP channel affects consumption in AEs

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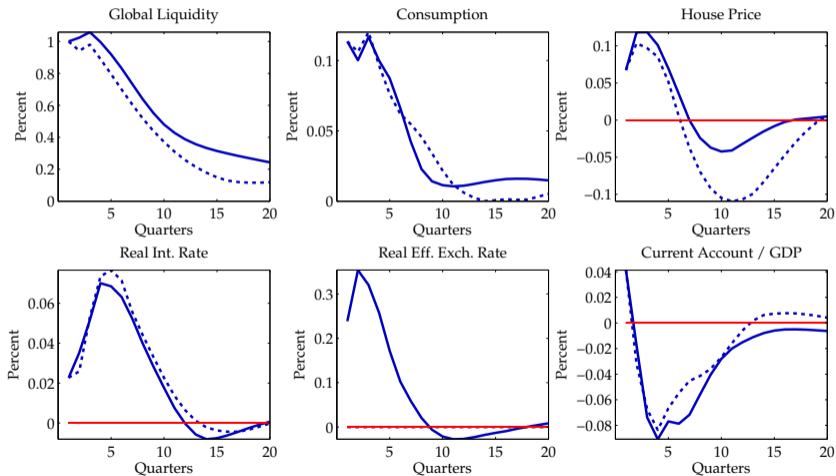
# HP channel affects consumption in EMs, but also CA and RER

(b) Emerging Economies



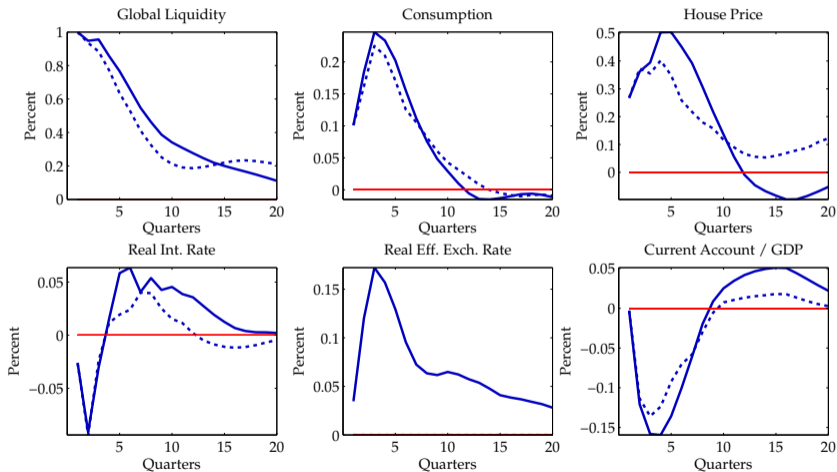
# Closing RER channel in AEs **destabilizes** consumption and HP

(a) Advanced Economies



# Closing RER channel in EMs stabilizes consumption and HP

(b) Emerging Economies



# Conclusions

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- ▶ The channel of transmission might be quite distinct, important role of the exchange rate for EMs
- ▶ The Fed is about to turn its stance . . .
  - but there is plenty of scope for using domestic policies