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

By

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Motivation

- Booms and busts in the non-tradable sector, often fuelled by excessive credit expansion and overvalued exchange rates
- 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

- 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,
  - 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 Jinjarak (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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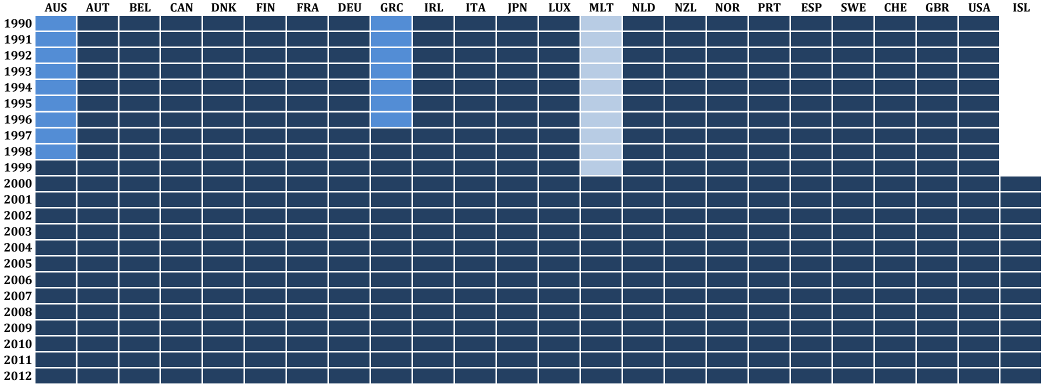
  National central banks, national statistical offices, and academic publications on housing markets
- Value added
  - **Additional countries**: Argentina, Brazil, Chile, Colombia, Czech Republic, India, Serbia, Taiwan, and Uruguay
  - **Historical data**: China, Estonia, Hong Kong, Hungary, Indonesia, Lithuania, Malaysia, Philippines, Poland, Slovakia, Slovenia, and Thailand

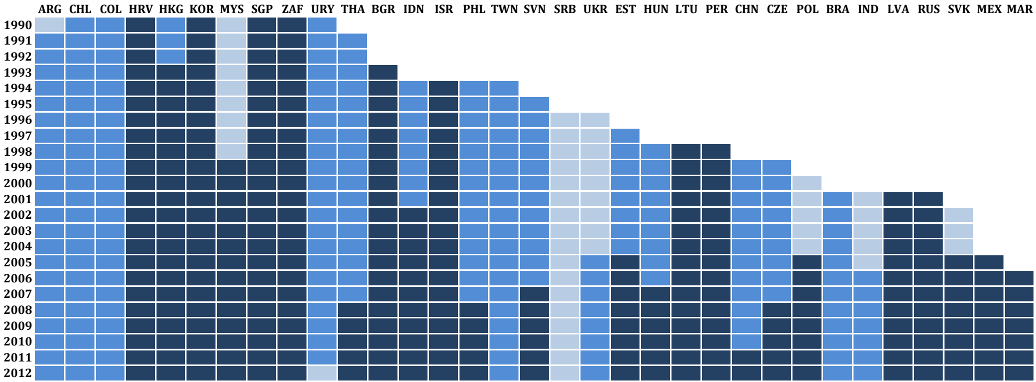
Data Map: Advanced Economies

(a) Advanced Economies



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

	House Prices	Equity Prices	Consumption	GDP
Mean	0.7%	0.5%	1.1%	0.9%
Median	0.6%	1.4%	1.2%	1.2%
St. Dev.	4.8%	15.0%	2.4%	2.1%
Auto Corr.	0.3	0.3	0.1	0.3
Pairwise Corr.	0.1	0.5	0.1	0.2

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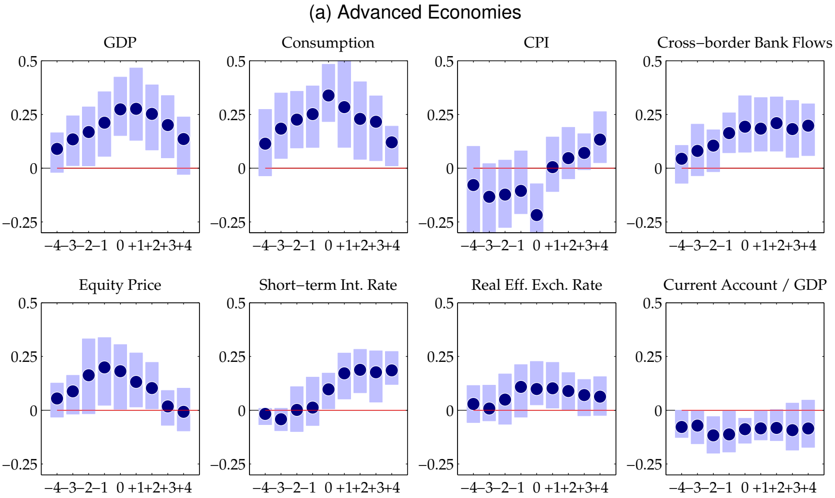
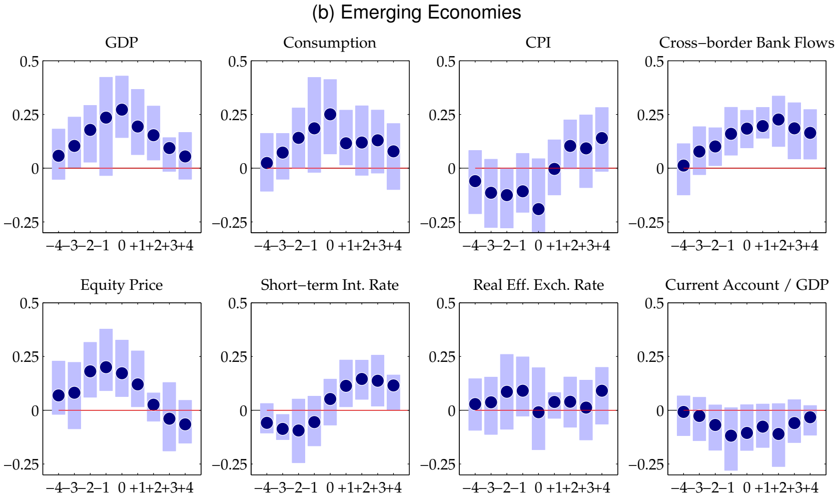
House price inflation strongly pro-cyclical, leads the monetary policy cycle, some (weak) association with CA and RER in AEs



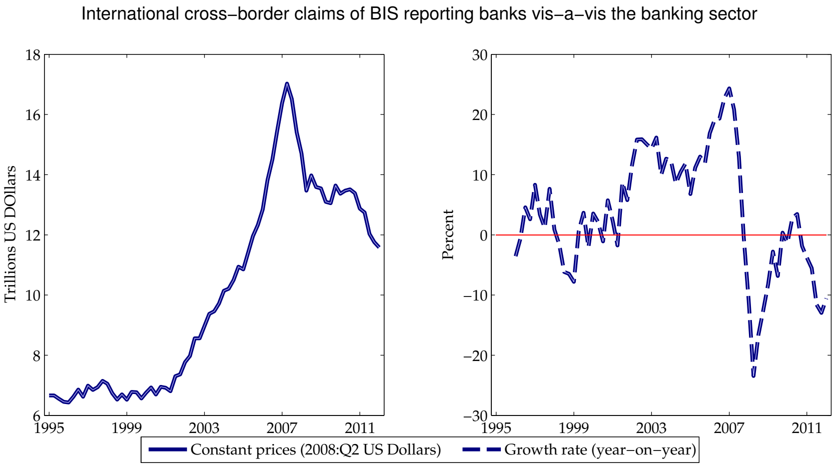
Similar patterns in EMs: weaker association with monetary cycle and RER; stronger association with CA



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



Global Liquidity: Interpretation

- Literature typically distinguishes between global (“push”) factors for capital flows from country-specific (“pull”) factors
- We think of GL as a vector of “push” global credit supply shifters
  - US monetary policy $\Longrightarrow$ US Interest rates, US M2
  - Global banks funding conditions $\Longrightarrow$ TED spread, Leverage, Yield curve slope
  - Risk appetite and uncertainty $\Longrightarrow$ VIX

Global Liquidity: Linkages with the macroeconomy

- GL shifts the international supply of credit $\Longrightarrow$ 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

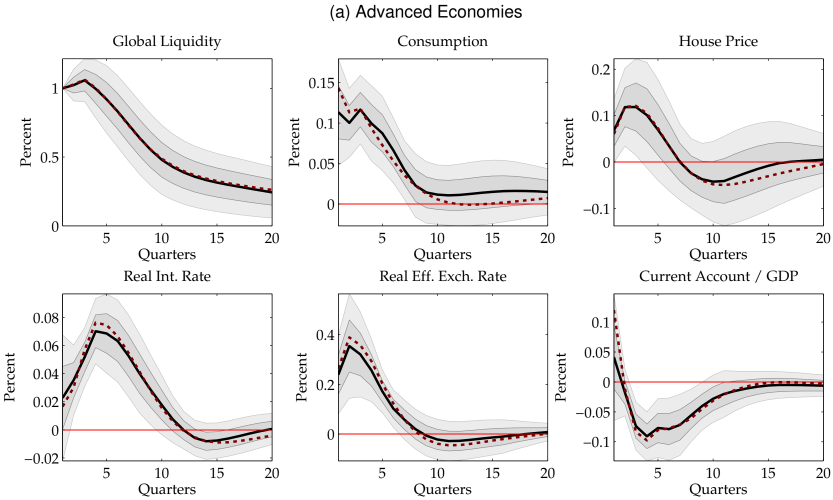
Model: Panel VAR for all countries (excluding the US)

- VAR model for country i includes
  - GLOBAL LIQUIDITY
  - REAL CONSUMPTION
  - REAL HOUSE PRICE
  - REAL SHORT-TERM INT. RATE
  - REAL EFF. EXCH. RATE
  - CURRENT ACC. / GDP
- System in log-levels, two lags, deterministic trends
- Mean group estimator $\Longrightarrow$ Dynamic panel data models with heterogenous slope coefficients

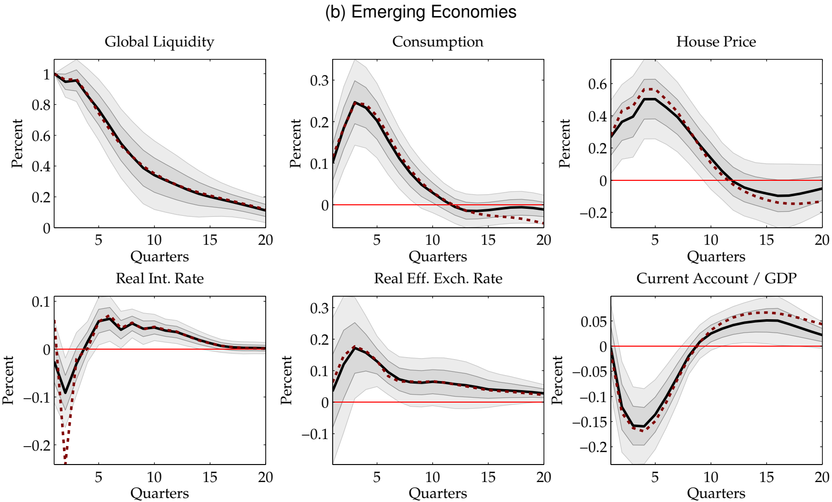
Identification: Global Liquidity Shock

- 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



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



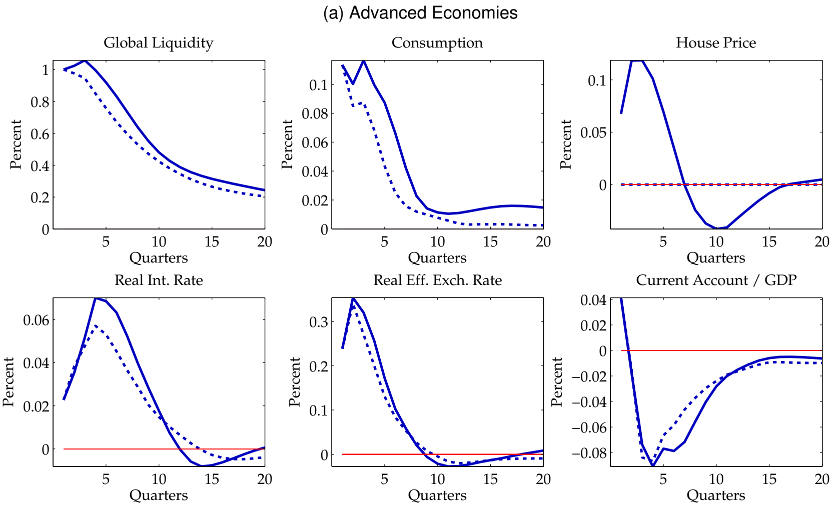
Multipliers are sizable

- 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

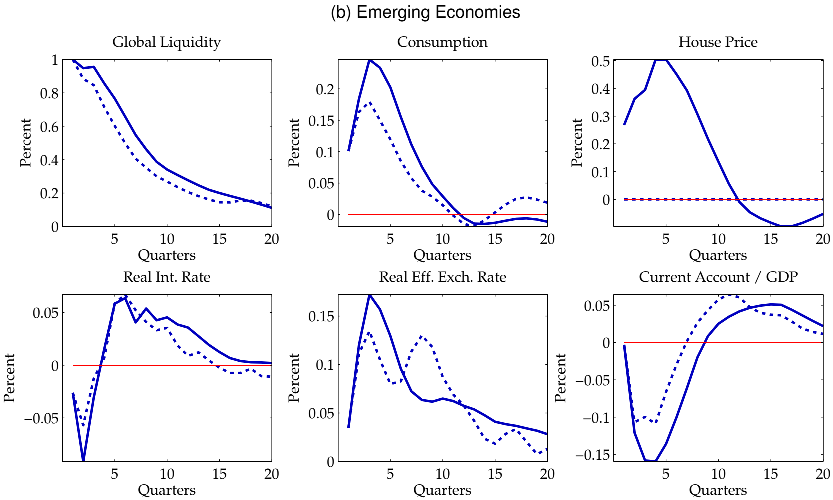
Inspecting the transmission mechanism

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

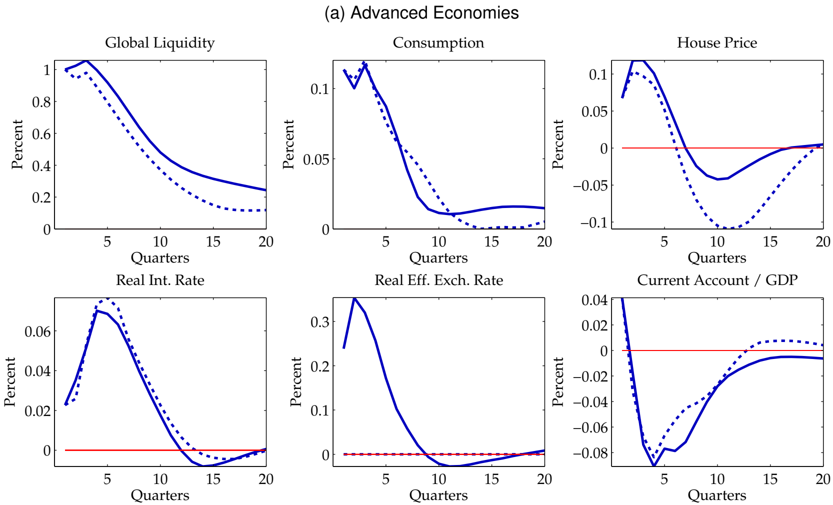
HP channel affects consumption in AEs



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



Closing RER channel in AEs destabilizes consumption and HP



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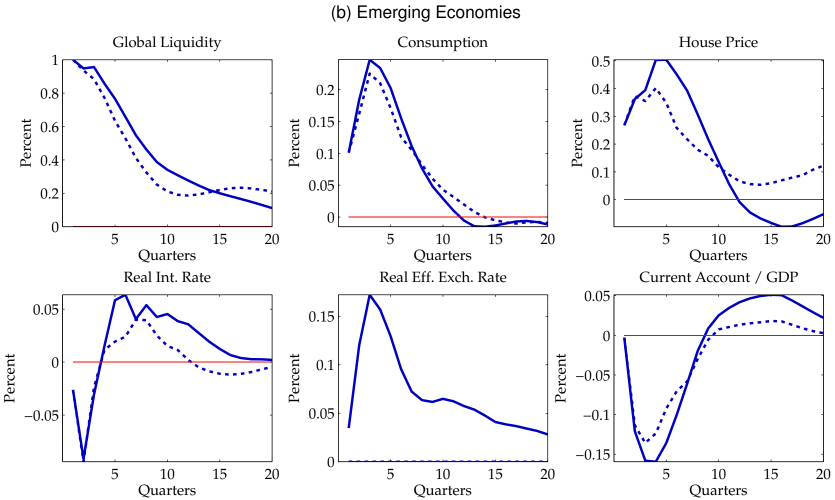
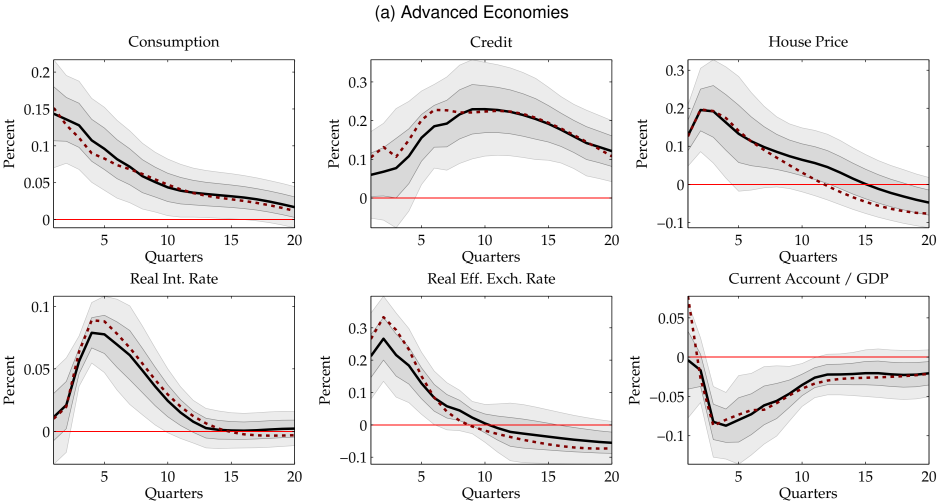
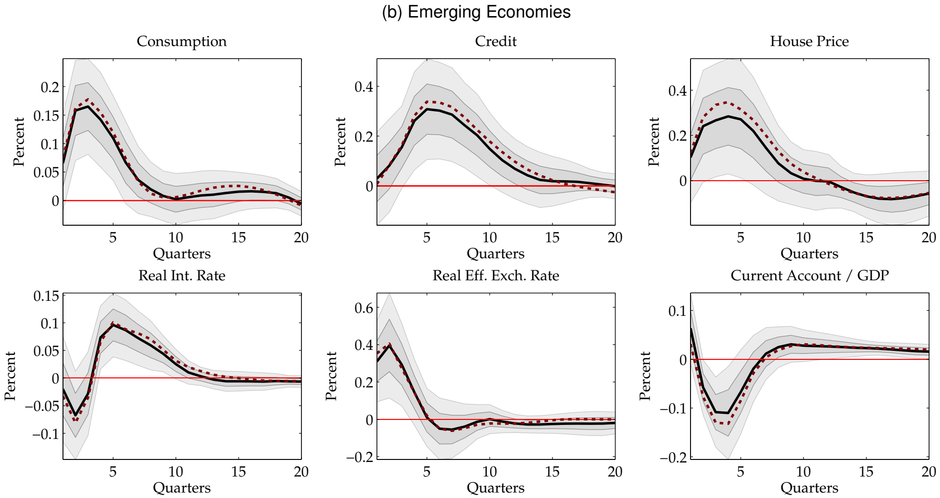


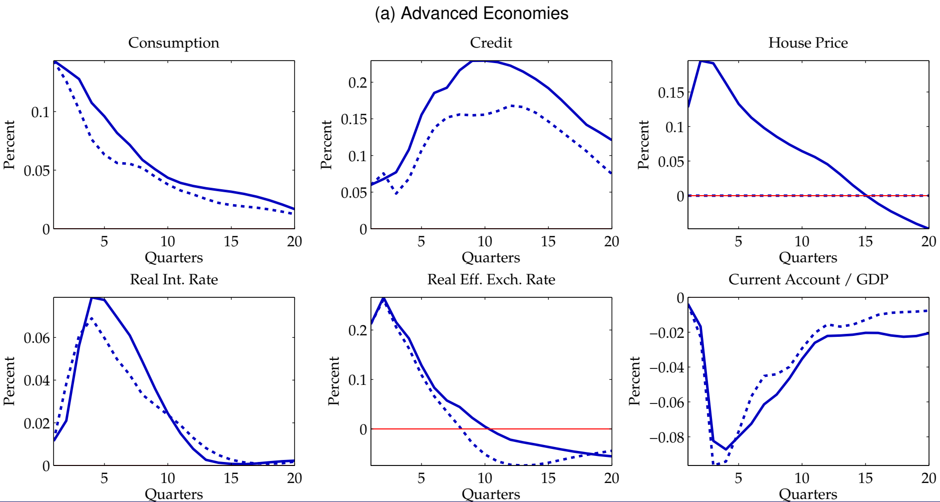
Adding credit reduces the differences between AEs and EMs



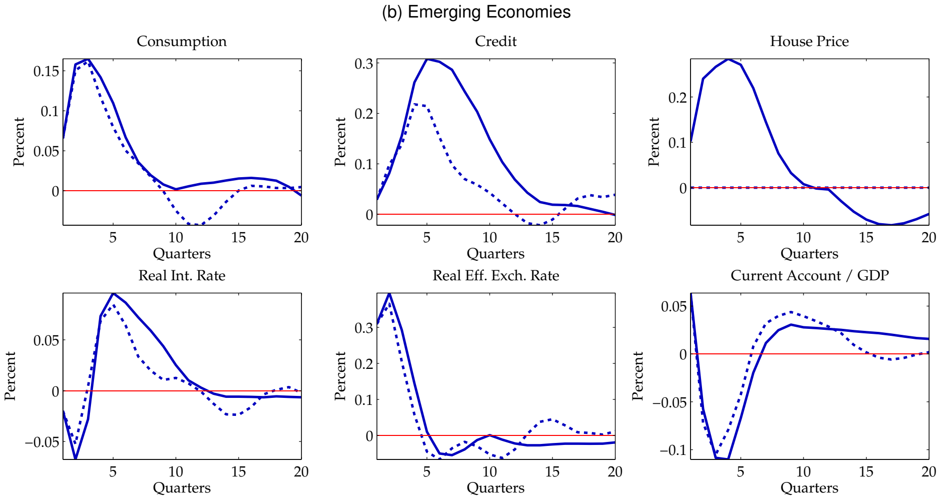
Credit response less persistent in EMs



Closing house prices channel contains credit in both AEs and EMs

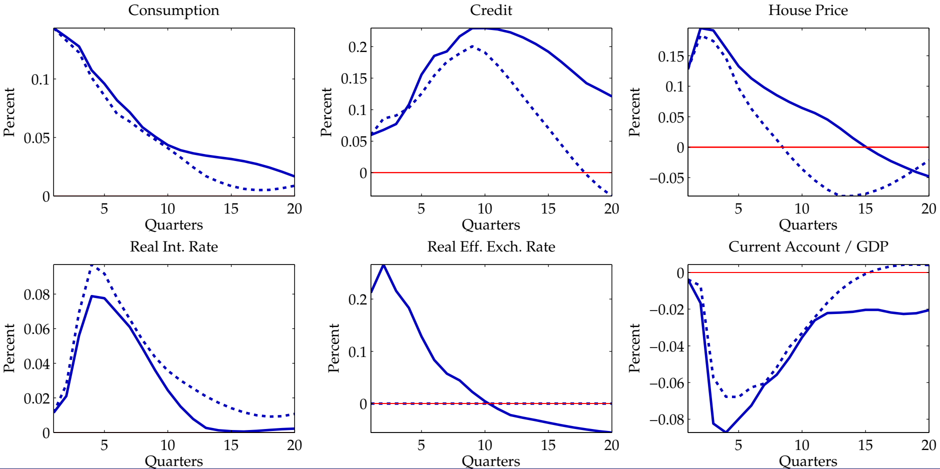


Similar impact also on external sector

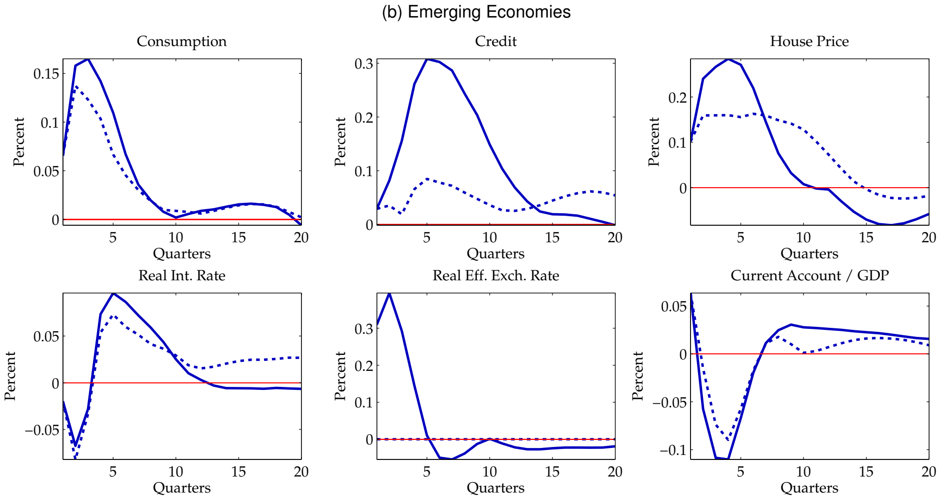


Closing exchange rate channel contains credit in both AEs and EMs

(a) Advanced Economies



Closing the exchange rate impact much more in EMs



Conclusions

- Consumption and house prices in EMs respond strongly to liquidity conditions at the center (more than AEs)

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- The channel of transmission might be quite distinct, important role of the exchange rate for EMs

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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

What happened in 1994?