

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

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## Contribution of the paper

- Builds a comprehensive dataset of quarterly house prices for 33 EMs from the early 2000s to 2012:Q4
- Estimates a PVAR model and uses the **external instruments identification approach** to study the effect of a global liquidity shock on consumption, house prices, interest rates, exchange rates and the current account in AEs and EMs

## Results

- A global liquidity shock has a much stronger impact on house prices and consumption in EMs than in AEs
- House prices amplify the transmission of global liquidity shocks in both AEs and EMs, but:
  - In AEs, there is more amplification of the response of consumption, consistent with the collateral channel
  - In EMs, there is more amplification of the response of exchange rates and the current account: an increase in global liquidity appreciates the exchange rate by less and leads to a smaller CA deficit when house prices are held constant

## My comments

- Identification
- Interpretation of the global liquidity shock

# Identification

- **External instrument identification approach**
  - Introduced by Stock and Watson (2012) and Mertens and Ravn (2013)
  - Recent application: Gertler and Karadi (2015)
  - A very good idea → bring instrumental variable techniques into VARs
  - *Why hadn't anyone thought about it before?*

# Identification

- Reduced-form VAR

$$x_t = Fx_{t-1} + u_t$$

- The objective is to recover the structural-form VAR

$$Ax_t = Bx_{t-1} + \varepsilon_t$$

- The reduced-form residuals are linear combinations of the structural residuals:  $u_t = \tilde{A}\varepsilon_t$ , where  $\tilde{A} = A^{-1}$

## Identification

- Partition the vector of endogenous variables into global liquidity ( $GL_t$ ) and the remaining endogenous variables ( $x_{p,t}$ )

$$\begin{bmatrix} GL_t \\ x_{p,t} \end{bmatrix} = \begin{bmatrix} f_{11} & f_{12} \\ f_{21} & f_{22} \end{bmatrix} \begin{bmatrix} GL_{t-1} \\ x_{p,t-1} \end{bmatrix} + \begin{bmatrix} \tilde{a}_{11} & \tilde{a}_{12} \\ \tilde{a}_{21} & \tilde{a}_{22} \end{bmatrix} \begin{bmatrix} \varepsilon_t^{GL} \\ \varepsilon_t^{x_p} \end{bmatrix}$$

- How to achieve identification when  $\tilde{A}$  is unknown?
  - Timing restrictions (Cholesky): within a period, global liquidity responds to all the other variables in the VAR but not vice-versa
  - Sign restrictions on the impulse responses
  - In this paper: external instruments

## Identification

- $Z_t$  is a vector of instrumental variables that satisfy two conditions:
  - **Relevance:**  $E[\varepsilon^{GL} Z_t'] = \phi \neq 0$
  - **Exogeneity:**  $E[\varepsilon^{Xp} Z_t'] = 0$
- After estimating the reduced form, a consistent estimate of  $\frac{\tilde{a}_{21}}{\tilde{a}_{11}}$  can be obtained from a two-stage least squares regression of  $u_t^{Xp}$  on  $u_t^{GL}$  using  $Z_t$  as instruments



# Identification

- In the paper:
  - Global liquidity: cross-border bank lending (deflated by US CPI)
  - Other endogenous variables:
    - External: REER, CA/GDP
    - Domestic: real short-term interest rate, real private consumption, real house prices
  - Instruments — possible drivers of global liquidity
    - Monetary policy: US effective federal funds rate, slope of the US yield curve
    - Funding conditions: US M2, TED spread (the difference between short-term interbank lending and government bond rates at same maturities)
    - Banks' willingness and ability to take on risk: US VIX index of stock option price volatility, US broker-dealers' leverage
  - Choose the combination of variables that gives the highest F-statistic in the first-stage regression

## Identification - relevance

- Two key questions:
  - Are these instruments relevant?
  - Are they exogenous?
- Relevance: very low F-statistics suggest weak instruments problem
  - Stock, Wright and Yogo (2002) suggest that F-stats should be above 10 for instruments to be valid
  - F-stats are well below 10 for all countries (except Norway)
  - Stock and Watson (2012) also have small F-stats, while in Gertler and Karadi (2015) F-stat = 17.5

## Identification - exogeneity

- Some instruments seem likely to be exogenous (e.g. TED spread)
- Others are almost certainly not exogenous (e.g. US federal funds rate, VIX)
  - Interest rates abroad are likely to respond to movements in the US federal funds rate, particularly in EMs that prevent exchange rate appreciation → US and ROW interest rates and exchange rates are jointly determined
  - The VIX may reflect instability in EMs
- Possible solutions:
  - Stock and Watson (2012) use a measure of surprise changes in the target federal funds rate and use innovations in the VIX (modelled as the residual from an AR(2))
  - Gertler and Karadi (2015) use surprise in the 3-month ahead federal funds future rate

# What is the global liquidity shock?

- It captures the international supply of credit
- But what is the root cause of the shock?
  - Saving glut
  - Monetary policy
  - Financial innovation
  - ...

## Conclusion

- Interesting and well-executed paper
- Makes use of a novel and very promising identification technique
- Should pay more attention to the validity of the instruments
  - Would results be robust to the use of other instruments more likely to be exogenous?
- It would be useful to understand better what is driving the global liquidity shock, especially when thinking about policy responses