

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

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BoC/ECB Conference

June 2015

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