Relationship between Central Banking and Interbank Market liquidity. By Massimiliano Affinito

Discussant: Ruslán Gómez Nesterkín(*)
September 27, 2017
1. Overview of main results in the paper

1. LIQUIDITY INTERDEPENDENCIES EMPIRICALLY IDENTIFIED FOR ITALY
   - Interbank Markets (IM) is influenced by Central Bank (CB) liquidity policies.
   - CB Liquidity Policies influences IM connections.

2. PERIODS OF FINANCIAL DISTRESS
   - IM and CB liquidity have a complementary role.
   - CB liquidity spreads throughout the network to other Banks in the IM.
   - CB liquidity provisions to single banks amplifies the IM’s main liquidity role.
   - CB liquidity provisions increases both interbank and retail lending.

(*) DISCLAIMER: The views expressed here are solely those of the author and do not necessarily reflect those of Banco de México.
II. Review of the model

1. INFORMATION USED

- Variables used for each financial institution $i$ in the system using information with 1 month of delay.

a) Banks Characteristics or Regressors ($M_{t-1}^R$):
   Total Assets, Retail Loans, Retail Fundraising Non-performing loans, ROE, Tier 1 Capital, Government Debt Securities (domestic), Government Debt Securities (EU), Bonds.

b) Instruments to explain CB liquidity ($M_{1,t-1}^I$):
   Lagged CB liquidity (to each bank), Eurosystem total assets, ECB Interest Rates, Euro-area GDP, Euro-area Inflation Rates.

c) Instruments to estimate IM Positions ($M_{2,t-1}^I$):
   Lagged IM positions, Credit Ratings (Fitch), Banks without ratings (0 or 1)

**THE EXPLANATORY VARIABLES ARE ONE MONTH DELAYED ($t-1$).**

**IS THERE ANY GRANGER CAUSALITY !?**

**IMPORTANT MONETARY POLICY VARIABLES CONSIDERED: IR, GROWTH AND INFLATION.**

**QUESTION: EXCHANGE RATE IS MISSING !?**
II. Review of the model

2. THE MODEL

- **Two systems with two linear equations each:** bank characteristics ($M_{1,t-1}^R$ and $M_{2,t-1}^R$), matrices of instruments ($M_{1,t-1}^I$ and $M_{2,t-1}^I$), banks and time periods fixed effects ($E_t$), idiosyncratic normally distributed errors ($\varepsilon_{1,t}, \xi_{1,t}, \varepsilon_{2,t}$ and $\xi_{2,t}$) and $\text{CB}_t$ as Central Bank liquidity.

- **CB liquidity auctions equate IM borrowing liquidity:** Depends on $M_{t-1}^I$, represented mainly by macroeconomic variables (IR, GDP, Inflation)

\[
\begin{align*}
\text{CB}_t &= a_1 \text{IM}_t + a_2 M_{1,t-1}^R + a_3 E_t^a + \varepsilon_{1,t}, \\
\text{IM}_t &= a_4 M_{1,t-1}^I + a_5 M_{1,t-1}^R + a_6 E_t^a + \xi_{1,t}^a
\end{align*}
\]

- **CB’s liquidity complements IM liquidity:** Depends on $M_{t-1}^I$, represented mainly by previous IM positions and Credit Ratings.

\[
\begin{align*}
\text{IM}_t &= a_1 \text{CB}_t + a_2 M_{2,t-1}^R + a_3 E_t^a + \varepsilon_{2,t}, \\
\text{CB}_t &= a_4 M_{2,t-1}^I + a_5 M_{2,t-1}^R + a_6 E_t^a + \xi_{2,t}^a
\end{align*}
\]
II. Review of the model

3. PARAMETERS ESTIMATION WITH IV (2SLS)

- Estimation with Instrumental Variables in Two-Stage regression with Least-Squares.
- The estimation results were exhaustively verified with several robustness tests, comprising most technical questions mainly by empirical means.
- It was reassuring that the idiosyncratic errors assumptions were reported:
  \[ \mathbb{E}[\xi_{1,i}], \mathbb{E}[\xi_{2,i}], \mathbb{E}[\varepsilon_{1,i}], \mathbb{E}[\varepsilon_{2,i}] \approx 0 \]

THE PAPER PROPOSES TO INCLUDE ADDITIONAL SYSTEMS OF LINEAR EQUATIONS (COUNTERPARTIES), HOWEVER IT MIGHT BE NECESSARY TO CHECK FOR CONSISTENCY BETWEEN EQUATIONS AND STATISTICAL SIGNIFICANCE...
III. Paper and the BIS-International Banking Statistics (IBS)

- **INTERNATIONAL LIQUIDITY DISTRESS CONTAGION:**
  - **Paper** local contagious effects at institutions level (Italy / EU)
  - **IBS** contagious effects across different countries (Branches or Subsidiaries abroad) at countries level. [1]

- **ISSUES IDENTIFIED AFTER THE 2007 CRISIS:**
  - **Paper** includes many explanatory variables and identifies crisis periods.
  - **BIS** has recognised “critical gaps in the [IBS] information available to monitor and respond to financial stability risks.” [2,3]

- **LIQUIDITY RISKS SIGNALS AND CAPACITY TO RECOVER.**
  - **Paper** focus mainly in liquidity network interrelations and crisis periods identification.
  - **IBS** incorporates ultimate risk basis as a measure to monitor the capacity of the bank parent to overcome distresses. [1,2]

---

III. Paper and the BIS-International Banking Statistics (IBS)

❖ LIQUIDITY LIFETIME FEEDBACKS AND SIDE EFFECTS:

- **Paper** explores short term liquidity (monthly basis) and up to 5 months for different robust tests.
- **IBS** splits the information of foreign and local balance positions in different time buckets (< 1 yr, up to 2 yrs, > 2 yrs) [2]
- **Going further:** After the 2007 crisis, there was concern of long term side effects and feedbacks (e.g. low interest rates, balance risk, etc.) [4,5]. How does the model cope with it?
- **Going further:** When microdata is available (say on a daily basis), might it provide additional insights into liquidity risks?

❖ IN CONCLUSION:

- The **Paper** introduces a model using empirical information to analyse liquidity risk, identification of crisis periods and liquidity transmission mechanisms.
- It has common ground with the **IBS** initiative, using massive information available.
- The **Paper** might complement well with other initiatives like the **IBS** in its quest to “monitor and respond to financial stability risks”

---


