Discussion on

“Which network measures explain the interest rate spread in the Mexican secured and unsecured interbank markets?”

by: Isela-Elizabeth Tellez-Leon, Luis Escobar-Farfan, Serafín Martínez-Jaramillo, Ronald Hochreiter

Discussant: Thiago Christiano Silva
The paper

• Very interesting paper with fantastic data
• Connects the financial network literature with microeconometric and machine learning techniques

• The authors find that the bank’s network position strongly associates with the interest rate spread
• They find that centrality plays a major role in this relationship, supporting the “too-interconnected-to-fail” and “too-big-to-fail” hypotheses
1. **Network structure descriptors and balance-sheet information**
   - Extensive extraction of network features using many complex network and financial contagion metrics
   - The same bank can have many network descriptors **IDENTICAL**, but with direct (and indirect) neighbors in completely different financial conditions
     - Imagine neighbors approaching illiquidity: interest rate spreads should be higher in this case
   - **SUGGESTION**: mix network topology with balance-sheet information of neighbors in the specification
     - For instance, average (direct/indirect) neighbors’ liquidity, size, leverage, etc
Comments & suggestions #2

2. Room for more complex machine learning methods

- **SUGGESTION**: Regularization is very low, suggesting there is room for more complex models → fitted models approach usual OLS as regularization is very small

- Tradeoff between more complex (black-box) methods and traditional white-box methods: “*interpretable machine learning*” to uncover partial effects
3. Dive into the transaction-level data

- The authors collapse transaction-to bank-level data in their analysis.
- Establishing a financial connection only occurs when both parties agree.
- Cannot control for demand or supply in the interbank market.
- **Suggestion:** Use transaction-level data and make within-bank estimations via borrower/lender fixed effects.
  - Enables to control either the demand or supply, depending on the analyzed perspective.

"...compare network descriptors of B and C for the same lender/borrower A"
Minor comments

- **Model selection**: tune $\alpha$ (regularization mixture between $L_1$ and $L_2$) and $\lambda$ (regularization term) together via $k$-fold cross-validation over the training set.
- **More controls**: add bank size and its foreign exposure
  - Bank size should correlate with network centrality measures.
- **Ratio AM/PM**: name is misleading $\rightarrow$ maybe rename to “morning share of ops” and use morning / all transactions expression.
- **Literature review is long-winded**: streamline it with the most related literature only.
- **Paper deals with associations and not causal effect**: review used verbs.
Thank you!

Thiago Christiano Silva