Bank diversity and financial contagion

E. Caiazzo and A. Zazzaro

Diego Bohorquez

Universitat Pompeu Fabra

1st Naples School of Economics and
Finance PhD and Post-Doctoral Workshop

This Paper

- **Question:** How do common asset holdings affect the resiliency of interbank networks?
- **Relevant** to understand the forces that drive financial contagion and banking crises.
- **This paper**
  - Interbank networks with varying homogeneity of portfolios
    $\hookrightarrow$ exposed to liquidity shocks and fire sales
  - Resilience requires interbank claims: neither too concentrated nor too homogeneous
  - Diversity in banks' portfolios plays a key role in determining those thresholds

Main takeaway

- **Direct** (LL) and **indirect** (ML) losses when a bank defaults.
- Low interconnection [pins down $\underline{\pi}$]
  - Pros: fewer banks affected
  - Cons: resilience of bank $i+1$ is tested
- High interconnection [pins down $\overline{\pi}$]
  - Pros: losses diluted among many banks
  - Cons: shock spread across the network
- ML also affects $S_i = [\underline{\pi}_i, \overline{\pi}_i]$
  - If ML high for $i+1 \rightarrow$ high π_i
  - If ML high for $j^*(i) \rightarrow$ low π_i

Figure: Complete Network

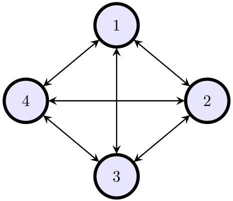
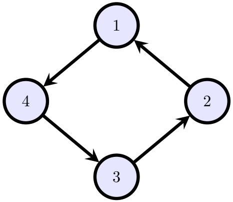


Figure: Ring Network



#1: Literature / exploring endogeneity

- Small theoretical literature linking asset holdings to the interbank market. Rogers and Veraart (2013), Acharya et al. (2012), Caballero and Simsek (2013), Leitner (2005).
  $\hookrightarrow$ where does the paper fit in the literature?

- Focus on **endogenous relationship**.
  $\hookrightarrow$ perhaps worth exploring with the model

- Closest would be Caillé and Raffestin (2019):
  - Banks with similar portfolios provide each other with favorable lending conditions (protection against fire sales).
  - Subsidy $\rightarrow$ rates down $\rightarrow$ clustered interbank network, particularly during crises.

#2: The model to the data

- Tractable framework that can be **calibrated** from banks' balance sheets, portfolios, and interbank exposures
  - Potential for stress testing?
  - Estimate $\underline{\pi}$, $\overline{\pi}$, $\Theta_{i,j}$, $\vec{w}_i$, ...
  - "Maximum idiosyncratic shock to bank i that the **network withstands**?"
- Roncoroni et al. (2021): data covering 26 large banks in the EU.
  - Similar conclusions from a generalized model of contagion.

#3: Policy implications

- Interesting to think about costs and benefits of **liquidity ratios**.
- But also Higher loss absorbency for SIBs, limits to large exposures (LEX), etc.
- Bail-outs
  - Lender of Last Resort (regulator, central bank)
  - Internal bail-outs (other banks in the network)

In sum

- Great paper! Very analytically rigorous.
- Endogeneity between common asset holdings and interbank networks?
- Data can help strengthening the results/mechanism.
- Opens the door to potential benefits from policy