

“Bank Networks: Contagion, Systemic Risk and Prudential Policy”

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Discussion by Michael Gofman, UW-Madison

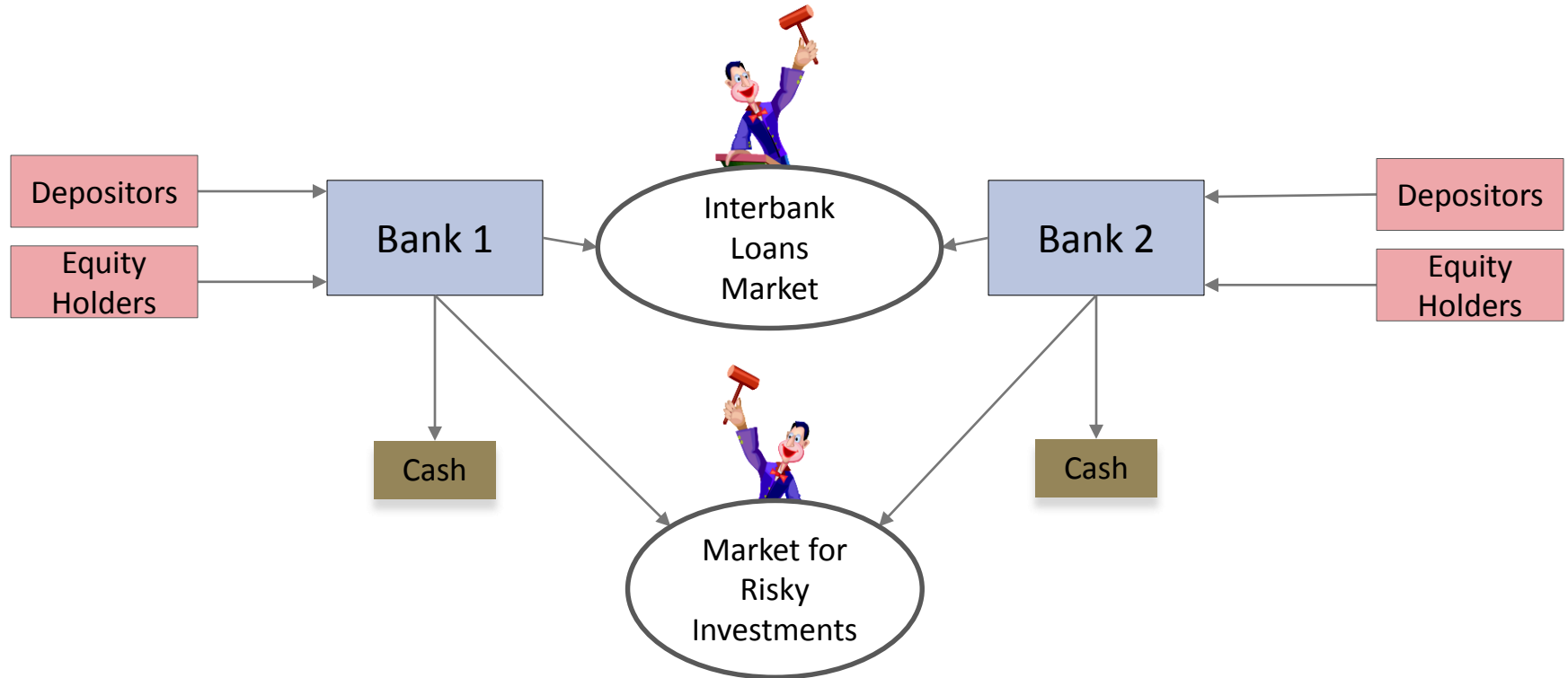
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Brief Overview of the Paper

1. **Ex-ante regulation:** liquidity constraints, capital requirements
2. Resource allocation process (*Efficiency consideration*)
 - a. Banks trade with counterparties: liquidity sharing, risk-sharing
 - b. Banks invest in risky assets
3. Interbank exposures are formed
4. Shocks are realized: one or several banks fail simultaneously
5. Contagion Risk (*Stability consideration*)
 - a. Balance-sheet contagion based on exposures
 - b. Fire-sales
 - c. Liquidity hoarding

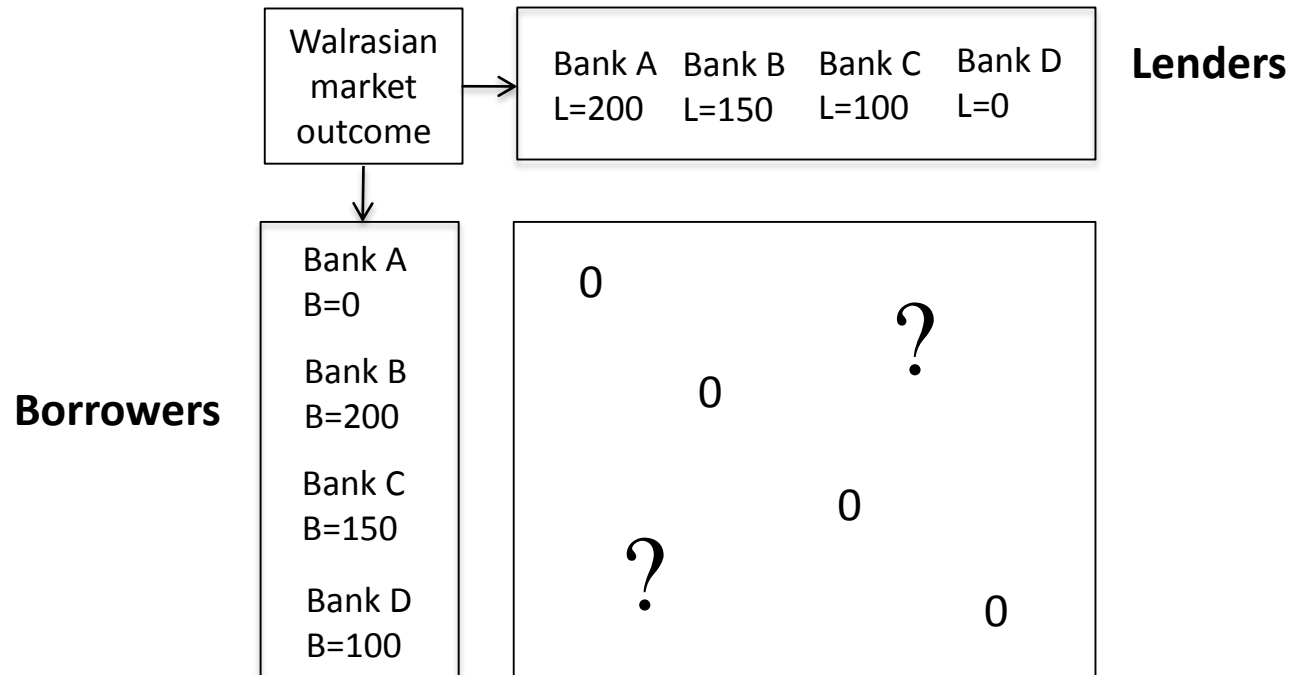
Model Mechanics



Comment 1: In real interbank markets prices are set bilaterally, the law of one price does not hold. Using a Walrasian auctioneer to price loans in OTC market is not consistent with the network approach.

Comment 2: The model assumes that rate of return on non-liquid assets is exogenous and heterogeneous across banks because banks have access to different investment opportunities with different degree of profitability. It would be good to clarify assumptions that allow these heterogeneous assets to be traded at a common price.

Network of Exposures



- This paper uses minimum distance matching algorithm that matches counterparties with similar aggregate borrowing/lending levels.
- Alternative approaches the authors tried: maximum entropy, random matching. These algorithms deliver networks with a significantly different topology, but **“the structure of the network does not matter much for systemic risk assessment”**.

Comment 3: It would be good to explain this result. Usually, density of the network (Allen and Gale 2000, Acemoglu et al 2014) and presence of too-interconnected-to-fail banks (Gofman 2014) do matter for contagion risk.

Comment 4: If network structure does not matter why is it important to calibrate it?

Efficiency and Stability Analyses

➤ **Efficiency measure: aggregate investment in non-liquid assets**

Comment 5: Is there any inefficiency relative to the social planner's solution? Need to verify that decentralized allocations are constrained efficient.

➤ **Stability measure: probability of banks' default**

Comment 6: What are the welfare losses from bank failure? Report the probability that all banks fail.

Comment 7: Probability of default of any particular bank is exogenous (0.5%), but the joint probability is endogenous. Ideally, counterparty risk should be endogenous to the systemic risk scenario (a hard problem to solve).

Comment 8: The paper implicitly assumes that banks can completely diversify away idiosyncratic counterparty risk, but with 1.4 counterparties and with correlated shocks it seems unreasonable.

Concluding Thoughts

- In the paper, regulatory constraints (liquidity and equity ratios) are fixed. The paper shows that these constraints play an important role in making the crisis more severe. Important policy implication for designing financial regulation.
- Basel III allows for exemptions in violations of some constraints during stressed circumstances:
 - “During periods of stress it would be entirely appropriate for banks to use their stock of High-Quality Liquid Assets (HQLA), thereby falling below the minimum requirement, as maintaining the Liquidity Coverage Ratio (LCR) at 100% under such circumstances could produce undue negative effects on the bank and other market participants” (Liquidity coverage ratio disclosure standards, 03/2014)
 - “In stressed circumstances, supervisors may have to accept a breach of an interbank limit exposure, in order to help ensure stability in the interbank market. (Supervisory framework for measuring and controlling large exposures, 04/2014)
- However, Basel standards for capital requirements does not have exemptions for bad times. The analysis in the paper suggests that it can be an issue if banks cannot raise new capital.
- Would be interesting to evaluate CDO debt financing in the model and see how it affects systemic risk.