Trading and Information Diffusion in Over-the-Counter Markets

Ana Babus and Peter Kondor (2013)

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Carlos Ramírez

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Research Question and Main Results

- How do trading and information evolve in OTC markets when dealers can engage in several bilateral transactions at the same time?

Main Results:
- Information diffusion is effective but not efficient.
  - While each bilateral price partially conveys all dealers’ information after a single round of trading, dealers could learn more.
  - This distortion in information diffusion arises from the interaction between decentralization and differences in dealers’ valuation of the asset.
- Model generates a joint distribution of prices and quantities for every bilateral transaction
Model

- n risk-neutral dealers organized in a dealer network
- Single risky asset in zero net supply
- Final value of the asset is uncertain and interdependent across dealers
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- Each dealer observes a private signal about her value, and all dealers have the same quality of information
- Dealers simultaneously choose their trading strategy, understanding her price effect given other dealers’ strategies
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- Each dealer, in addition to trading with other dealers, also trades with price sensitive costumers
Equilibrium

- In equilibrium prices and quantities have to be consistent with the set of generalized demand functions and the market clearing conditions for each link.

- Each dealer’s equilibrium guess depends on her neighbors’ guesses, and through those, depends on her neighbors’ neighbors’ guesses, etc., each equilibrium guess must partially incorporate the private information of all the dealers in a connected network.

- Price and quantities in any bilateral trade are determined as weighted sums of the expectations of the respective counterparties:
  - price is close to the weighted average of the two expectations of the counterparties, while the position of each dealer is proportional to the difference between her expectation and the price.
Empirical Implications

- model implies a negative relationship between the size of a transaction and its cost (the effective spread) in the cross-section of transactions.

- price-variability across a given pair of traders should be larger for pairs whose average transaction size is large, while price dispersion across the transactions of a given trader with different counterparties is negatively related to average size of this dealer's transactions.