“Interbank Trading, Collusion, and Financial Regulation” by Dean Corbae and Michael Gofman

Discussant: Vania Stavrakeva

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Big Picture

- This paper tackles a novel research question, which is of first order importance for regulators
- If regulators attempt to terminate direct collusion in one market, collusion might still take place in another market which is unregulated
- The lessons from this paper are also very relevant for the Asset Management industry — common ownership of stocks of competitors has been shown to lead to collusion (see Azar, Schmalz and Tecu, JOF, 2018 – airline industry – and Azar, Raina and Scmalz (2019) for the banking industry)
- Somewhat related to the debate on how can we regulate sub-optimal financial innovation
  - If we regulate derivatives and SIVs, what would be the next off-balance sheet financial instrument/legal structure that banks will come up with to engage in risk shifting behavior?

Road Map

- Empirics – Key contribution of this paper
  - The lenience program
  - Understand better which banks are more likely to collude and when
  - Additional comments
- Theory
  - De-emphasize some results that might not be robust to realistic extensions
  - De-emphasize the welfare and normative analysis
  - Additional comments

Leniency Program

- I didn't see anything in the description of the National Leniency Programs that would disqualify the type of collusion that you study from being considered a "cartel"-like behavior
- Definition of cartel –"An association of manufacturers or suppliers with the purpose of maintaining prices at a high level and restricting competition."
- Maybe it's harder to detect?
  - However, from the perspective of regulators observing inter-bank loans at a higher rate than the market rate (controlling for same maturity) AND/OR in the presence of "ample"/excess reserves (post crisis period when collusion behaviour seems stronger) should raise red flags for illegal activities.
- Maybe regulators were not looking for it as it is an "unusual" way to collude?
  - At least some anecdotal evidence or quotes from conversations with the enforcement authorities of antitrust laws are needed.
- Effectiveness of the leniency program should be stronger "where cartel enforcement is subject to criminal sanctions, and where the level of corruption is low" (evidence of that in Heim and Huschelrath (2020))

Understand better which banks are more likely to collude and when

- Does size matter – small versus large banks? Is there heterogeneity in the size of the lender and borrower in the colluding relationship?
- Are undercapitalized banks more likely to engage in colluding (limited liability story)
- Are banks more likely to engage in collusion when other sources or revenue are low (might explain why the collusion coefficient doubles in the post crisis period when safe interest rates are at the ZLB)
- In line with the asset management literature, do we see that two banks are more likely to collude according to your metric if they have common equity ownership?

Additional Comments on Empirics

- Why do large firms get charged a higher spread than small firms – very robust and unusual result which goes against other empirical evidence in the literature. You need to say something about it.
- Alternative explanation which should be taken care of by “year X bank fixed effects” but might be still worth discussing
  - Why isn’t the story consistent with a **heterogeneity in market power in the interbank market**, **captured by geographical proximity**?
  - Direct competitor proxies locational proximity between the two banks which proxies market power of the large bank over the smaller bank (if large banks tend to be the lenders and the smaller regional banks the borrowers)
  - Then the smaller bank passes on the higher markups charged by the larger bank as higher interest rates paid by the borrowing firms
  - However, this story would imply that the lending bank should charge higher spreads to all its clients – seems not to be the case given that year X bank fixed effects imply that the identification comes from comparing the spreads on loans of two firms borrowing from the same bank

Theory: De-emphasize some results that might not be robust to realistic extensions

- You emphasize too much the commitment coming from the fact that once a bank lends to its competitor in the inter-bank market, according to your model, if effectively commits to the collusion as it will not have the funding ex-post to deviate and lend directly to the firm
- Extending the model in a realistic way where the banks have other sources of funding in the period before lending takes place (including excess/ample reserves as is the case post 2008) would make this result go away

Theory: De-emphasize the welfare and normative analysis

- The only cost to eliminating the interbank market in your model is the lack of liquidity sharing.
- In reality, the lack of interbank markets can lead to liquidity crisis, which would increase the probability of both bank and firm default, and can be very costly
- Bank liquidity was a big problem during the last financial crisis
- Central Banks can provide liquidity but safe collateral is still considered a requirement for that and might be not as fast to act
- I would definitely not go as far as calibrate the model and recommend closing interbank markets – way too reduced form for welfare analysis

Theory: Additional Comments

- Model is quite cumbersome with 16 cases!! – collusion relevant only in 1 out of 16 cases – does this mean it should be rare to see in the data?
  - The empirical exercise doesn't condition on variables that capture the various cases – liquidity of both banks and likelihood to enter the market
- Strip down the model to the bare essentials needed to generate the key testable implications considered
  - For example, depositors problem unnecessary – all that you need is a liquidity shock
  - Bertrand with capacity constraints and entry is very cumbersome – any alternative ways to make the model more continuous?

Conclusion

- Very nice paper on a very important topic for regulators!
- My questions: What did the anti trust authority say upon seeing the results in your paper? The best litmus test how relevant the findings might be!