Peer Information in the Cost of Debt

Yangming Bao
Goethe University Frankfurt, Germany
yangming.bao@stud.uni-frankfurt.de

Introduction

This paper studies the role of information in bank lending behavior and finds an unexplored spillover effect to similar firms financing condition, because banks value peer information from prior lending relationships.

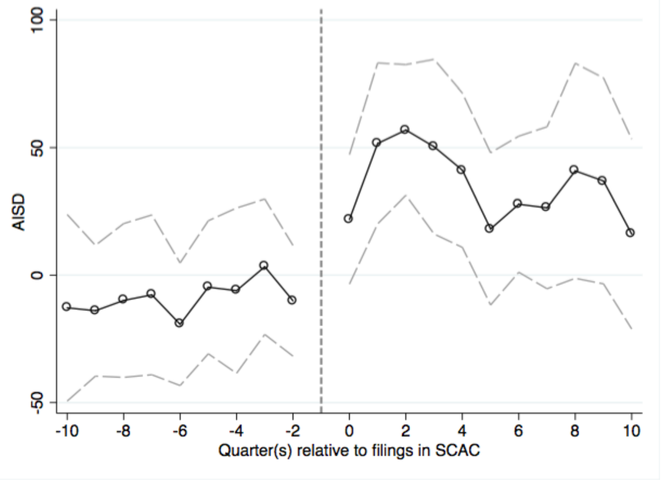
- Using syndicated loan data, I find that firms obtain lower loan rates when borrowing from banks with prior relationship with similar firms, or peers, and the benefit increases with firm and peer group similarity.
- The previous benefit vanishes when peers in bank portfolio committed fraud, which is consistent with the idea that peer information plays a role in bank lending decisions.

Mixed Theories

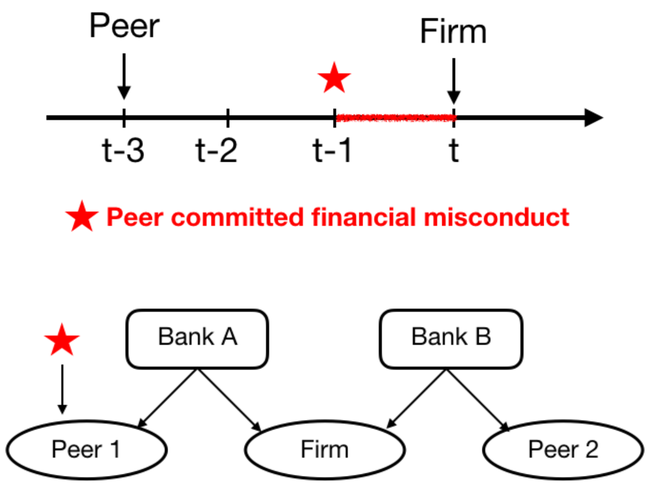
- Different with other investors, banks have private peer information collected from previous lending and have better understanding about peer projects.
- The informational advantage reduces lending costs, however, it does not necessarily result in lower loan rates, as it depends on the bargaining power of banks and firms.
- In addition, lending to many similar firms is undesirable from the standpoint of diversification and banks may demand a premium for that.

Empirical Framework

- I construct peer information measure
  - at bank-firm level
  - by considering the similarity between current borrower and previous peers in terms of their product market
- Empirical identification is challenging:
  - Unobserved omitted variables, such as bank expertise.
  - Endogenous matching between banks and firms.
- To establish a causal interpretation from peers, I use peer financial misconduct events as negative shocks to peers at bank-firm level and examine the change in loan rates.
  - Financial misconduct behavior raises the costs of credit:



  - Banks should react to adverse peer information and adjust loan rates, if peers play a role in loan pricing.



Data and Sample

- Bank-firm-peer network:
  - Syndicated loan data: Loan Pricing Corporations (LPC) DealScan
  - Firm-pair similarities: Text-based Network Industry Classifications (TNIC) (Hoberg and Phillips, 2016)
- Firm information: CRSP-Compustat
- Firm misconduct: Securities Class Action Clearinghouse (SCAC)
- The final sample contains 24,832 bank-firm-loan observations and 19,253 unique loans from 1996 to 2012.

Empirical Specification

I divide $PeerLoans$ into two groups based on whether peers committed fraud prior to the current loan and test whether loan rates are different in the two groups, specifically,

$$AISD_{l,t} = \rho_1 PeerFraud\ (b) \times PeerLoan_{l,t} + \rho_2 PeerLoan_{l,t} + \mathbf{X}'\boldsymbol{\gamma} + \delta_{b,t} + \epsilon_{l,t}, \qquad (1)$$

where

- $AISD_{l,t}$ is the all-in-spread-drawn for each loan l, the most comprehensive borrowing costs
- $PeerLoan$ is a dummy taking on the value of 1 if bank b lent to firm f's TNIC peers in previous three years
- $PeerFraud\ (b)$ is a dummy variable indicating whether any peer firms (banks lent) committed fraud prior to the current $PeerLoan$.
- $\mathbf{X}$ is a vector of firm and loan characteristics. Specifically,
  - $OwnFraud$: a dummy equals 1 if firm i filed in SCAC in the previous year.
  - TNIC Fraud: a dummy equals 1 if any peers in firm TNIC group committed fraud and filed in SCAC in the previous year.
  - other firm characteristics, such as size, distance-to-default, profitability, etc.
- Standard errors are clustered at industry (SIC3) level.

ρ_1 measures the average differences in loan rates between the two groups.

Empirical Results

Main Results

	(1)	(2)	(3)	(4)
$PeerFraud\ (b)$	8.714**	6.588*	6.304**	8.981*
	(3.934)	(3.848)	(3.038)	(4.590)
$PeerLoan$	-6.124*	-7.406***	-8.507***	-11.216***
	(3.255)	(2.733)	(2.806)	(3.511)
$OwnFraud$	39.269***	35.265***	34.801***	
	(9.063)	(9.785)	(10.396)	
TNIC Fraud	9.628***	0.641	-2.306	-2.174
	(2.681)	(2.071)	(2.303)	(2.651)
Firm and peer credit riskiness		✓	✓	✓
Other controls	✓	✓	✓	✓
Year and Industry FE	✓	✓	✓	✓
Borrower FE			✓	✓
Bank × Year FE			✓	✓
Observations	21,516	17,549	16,796	12,079
R-squared	0.579	0.665	0.805	0.812

- Firms obtain lower loan rates when borrowing from banks that lent to their peers in previous years.
- However, the benefit in $PeerLoan$ vanishes if peers **banks lent** to committed fraud, conditional on other factors.
- Bank-year fixed effect washes out time-varying bank specific concerns:
  - banks raise loan rates to all borrowers after potential default (Murfin, 2012)
  - reputation effect (Lindahl and Paravisini, 2011).
- Robust results for firms never committed fraud.

Within-firm analysis: Propensity score matching:

- Ideally, one should compare loan rates offered to the same firm-year from (at least) two banks that differ in whether they lent to fraudulent peers.
- Due to the limited number of firms that satisfy the conditions, I use propensity score matching to find loan-pairs that are alike in all aspects except whether there are fraudulent peers (bank lent).
- The exercise shows a robust estimate of higher borrowing costs, around 12-15 bps, when firms borrow from banks that have fraudulent peer loans in their portfolio.

Discussions

- Why do banks react to peer fraud by charging a higher loan rates?
  1. Belief/trust deterioration: Peer financial fraud deteriorates banks' information precision gained from peers
  2. Rent extraction: Banks take the advantage of private information and hold-up the borrower, when public peer information deteriorates and other banks are uncertain.
     - I find evidence supporting the view as the increase in loan rates are concentrated in relationship loans and firms without public debt issuance, which are more likely to be held up.
- Why would firms borrow from banks that offer higher loan rates?
  - matching frictions
  - concentrated on relationship loans: less able to switch banks.
  - weaker firms

Negative Spillover in Lending: Quantities

Finally, I provide evidence that banks would reduce lending to firms when their peers committed fraud, conditional on the supply and demand side factors.

Contributions

- The paper provides novel evidence that peer firms can have an impact on costs of debt based on syndicated loans.
- The findings support that whether information advantage can result in lower loan rates depends on the relative bargaining power of banks and firms:
  - in normal conditions, firms may have larger bargaining power due to the competitiveness of syndicated loan market,
  - while banks take the charge of power when information environment is unfavorable to firms.
- Fraud behavior not only results in substantially higher loan rates, but may also raise the cost and availability of credit for similar firms.