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When in Rome...: Lending to SMEs by foreign and domestic banks

Carlos Carvalho (PUC-Rio), Bruno Perdigao (BCB) and Ricardo Schechtman (BCB)

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This paper

- Foreign-owned banks usually shy away from extending loans to small and medium enterprises (SMEs)
  - Disadvantages of foreign banks in processing soft information
    - Problem may be more severe in emerging markets.
- We unveil a novel mechanism used by foreign banks to mitigate their information disadvantages
  - Recent loans granted by other banks to a potential borrower may signal its good creditworthiness.
  - This may help a foreign bank decide whether to grant a loan.
- Brazil is a good setting
  - Banking internationalization has contracted in the 2000's in Brazil (Fachada, 2008): it helps unveil succeeding informational strategies of foreign banks that survived

Literature on foreign banks' aversion and behavior to SMEs

- Geographical and hierarchical distances between the headquarters (high management) and the subsidiaries (loan officer) increase agency problems related to soft information
- How do foreign banks respond?
  - Loan portfolios more concentrated in large firms
  - Change the loan contract design
  - This paper's novel mechanism: reliance on recent loans by other banks to a new potential borrower
- Related literature on bank competition discusses the informational lock-in of borrowers by incumbent lenders.
  - Locked-in borrower has a smaller chance of getting a relatively better offer from a new lender.

Data

- Period: 2012 to 2016
- Transactional database: information requests to the Brazilian Credit Register (BCR) filed by private banks about potential non-current borrowers located in city of SP
  - Non-current borrowers: proxies for loan applications (similar to Jimenez et al. (2012) and Jimenez et al. (2014))
  - Firms in São Paulo: eliminates concerns that foreign banks are at informational disadvantages because they are more distant from potential borrowers in Brazil.
- BCR database: months in which new loans are granted by every bank to every firm
  - Loan applications matched to the occurrence or not of new loans
- Bank balance sheet data: COSIF accounting database

Methodology

- Panel linear probability regression

$$LoanGranted_{f,b,t} = \beta_0 \cdot SME_f + \beta_1 \cdot F_b + \gamma_1 \cdot F_b \cdot SME_f + \beta_2 \cdot PreviousLoan_{f,t} + \gamma_2 \cdot F_b \cdot PreviousLoan_{f,t} + \gamma_3 \cdot PreviousLoan_{f,t} \cdot SME_f + \lambda \cdot F_b \cdot PreviousLoan_{f,t} \cdot SME_f + \theta_b \cdot Bank_{b,t-1} + \theta_{f,t} + \theta_t + \varepsilon_{f,b,t}$$

- $LoanGranted_{f,b,t}$ =1 if conditional on a loan application at t, a loan is granted from t to t+3, =0 if a loan is not granted.
- $PreviousLoan_{f,t}$ =1 if the firm borrowed from another bank from t-3 to t-1, =0 otherwise
- F_b =1 if the loan application addresses a foreign bank, =0 a private domestic bank.
- SME_f =1 if the loan applicant is an SME firm, =0 if it is a large firm.
  - SME criteria encompasses 99% smallest firms

Methodology

$$LoanGranted_{f,b,t} = \ldots + \beta_2 \cdot PreviousLoan_{f,t} + \gamma_2 \cdot F_b \cdot PreviousLoan_{f,t} + \gamma_3 \cdot PreviousLoan_{f,t} \cdot SME_f + \lambda \cdot F_b \cdot PreviousLoan_{f,t} \cdot SME_f + \ldots$$

- Interactions involving PreviousLoan capture two opposite effects:
  - Positive signaling effect: recent loans of potential borrowers is positive information about their creditworthiness
  - Negative lock-in effect: previous lenders may already have a credit relationship with the firm making it harder for the current bank to win the bid for the new loan.
    - Secondary importance for large firms: β_2, γ_2 small or insignificant
    - SMEs: γ_3 is the net resulting impact of the two effects, negative if lock-in is stronger.
- **Triple interaction**: signaling channel about SMEs may have stronger utility to foreign banks than to private domestic ones: $\lambda > 0$
  - But if foreign banks are also less likely to overcome the lock-in effect: pressure towards $\lambda < 0$.

Results

Linear probability model estimates. Dependent variable: $LoanGranted_{fbt}$

Variable	(1)	(2)	(3)	(4)
$\mathcal{F}_b$	0.024***			
$\mathcal{F}_b \bullet SME_f$	-0.023***	0.001	0.004	0.003
$PreviousLoan_{ft}$	0.003	0.006**		
$\mathcal{F}_b \bullet PreviousLoan_{ft}$	-0.003	-0.014***	0.010*	0.009*
$PreviousLoan_{ft} \bullet SME_f$	-0.037***	-0.034***		
$\mathcal{F}_b \bullet PreviousLoan_{ft} \bullet SME_f$	0.012**	0.017***	0.016**	0.014*
Bank controls:	Yes	Yes	Yes	-
Fixed effects:				
Month	Yes	Yes	-	-
Bank	No	Yes	Yes	-
Firm	Yes	Yes	-	-
Firm-month	No	No	Yes	Yes
Bank-month	No	No	No	Yes
Observations	378,558	378,558	101,067	101,067

Methodology

- Does the signal about the potential borrower quality given by the existence of recent loans varies according to the past lender ownership?

$$LoanGranted_{f,b,t} = \beta_0 \cdot SME_f + \beta_1 \cdot F_b + \gamma_1 \cdot F_b \cdot SME_f + \beta_2 \cdot PreviousLoan_D_{f,t} + \beta_3 \cdot PreviousLoan_F_{f,t} + \gamma_2 \cdot F_b \cdot PreviousLoan_D_{f,t} + \gamma_3 \cdot F_b \cdot PreviousLoan_F_{f,t} + \gamma_4 \cdot PreviousLoan_D_{f,t} \cdot SME_f + \gamma_5 \cdot PreviousLoan_F_{f,t} \cdot SME_f + \boldsymbol{\lambda_1} \cdot F_b \cdot PreviousLoan_D_{f,t} \cdot SME_f + \boldsymbol{\lambda_2} \cdot F_b \cdot PreviousLoan_F_{f,t} \cdot SME_f + \theta_b \cdot Bank_{b,t-1} + \theta_{f,t} + \theta_t + \varepsilon_{f,b,t}$$

  - $PreviousLoan_D_{f,t}$ =1 if the firm borrowed from another private domestic bank from t-3 to t-1, =0 otherwise
  - $PreviousLoan_F_{f,t}$ =1 if the firm borrowed from another foreign bank from t-3 to t-1, =0 otherwise

Methodology

$$LoanGranted_{f,b,t} = \ldots + \boldsymbol{\lambda_1} \cdot F_b \cdot PreviousLoan_D_{f,t} \cdot SME_f + \boldsymbol{\lambda_2} \cdot F_b \cdot PreviousLoan_F_{f,t} \cdot SME_f + \ldots$$

- Recent loans of SMEs *with private domestic banks* should be of more value to current foreign banks at informational disadvantages (higher utility of signaling): $\lambda_1 > 0$.
- Recent loans of SMEs *with private domestic banks* should be more informative about the creditworthiness of such firms than recent loans *with foreign banks* (stronger signaling): $\lambda_1 > \lambda_2$
- Recent loans of SMEs *with foreign banks* may be materially discounted, given the informational disadvantages of the latter: $\lambda_2 \approx 0$

Linear probability model estimates. Dependent variable: $LoanGranted_{fbt}$

Variable	(1)	(2)	(3)	(4)
$\mathcal{F}_b$	0.024***			
$\mathcal{F}_b \bullet SME_f$	-0.023***	0.002	0.004	0.003
$PreviousLoan_D_{ft}$	0.005*	0.007***		
$\mathcal{F}_b \bullet PreviousLoan_D_{ft}$	-0.008	-0.013**	0.001	0.001
$PreviousLoan_F_{ft}$	-0.002	0.000		
$\mathcal{F}_b \bullet PreviousLoan_F_{ft}$	0.008	-0.002	0.017**	0.016**
$PreviousLoan_D_{ft} \bullet SME_f$	-0.037***	-0.032***		
$\mathcal{F}_b \bullet PreviousLoan_D_{ft} \bullet SME_f$	0.017***	0.017**	0.025***	0.024***
$PreviousLoan_F_{ft} \bullet SME_f$	-0.022***	-0.024***		
$\mathcal{F}_b \bullet PreviousLoan_F_{ft} \bullet SME_f$	0.001	0.004	-0.005	-0.007
Bank controls:	Yes	Yes	Yes	-
Fixed effects:				
Month	Yes	Yes	-	-
Bank	No	Yes	Yes	-
Firm	Yes	Yes	-	-
Firm-month	No	No	Yes	Yes
Bank-month	No	No	No	Yes
Observations	378,558	378,558	101,067	101,067

Materiality, Robustness and Placebos

- Materiality: existence of recent loans with domestic banks increase the probability that a new loan is granted by a foreign bank to a SME up to 2.5 p. p., or 21% of foreign bank unconditional probability.
- Robustness:

  (1) Incorporation of the potential signaling effect of recent loans with government-owned banks.

  (2) Change in the definition of SME firms.

  (3) Modification in PreviousLoan_D and PreviousLoan_F to account for the granting of recent loans in any of the last 6 months.

  (4) Others…

- Two placebo exercises: (1) randomly modifies bank ownership for each loan application; (2) restricts sample to two large Brazilian domestic banks of similar sizes. One of them plays the falsified role of a foreign bank

Conclusion

- Results suggest that foreign banks overcome informational disadvantages by relying on their private domestic peers' recent behavior.
  - Hardening soft information: recent loans is a piece of information easily communicated and verified across jurisdictions, so less prone to agency problems.
- Policy implications
  - More available information about the firm (e.g. disaggregated) could substantially affect foreign banks' loan supply and level the playing field
  - Mind the implicit fragility: a shock to the domestic banks' perception about the risk of a SME borrower is effectively transmitted to foreign banks.
- Thank you for your attention