Discussion

Bank Competition, Lending Technologies, and Credit Availability: Evidence Using Antitrust Regulatory Frictions

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Summary

- Important question
  - How does bank competition affect credit supply?
- Theory is quite inconclusive: no strong priors
- Empirics is mixed
- **This paper**
  - Explores impact of mergers on credit supply
  - Δ loan supply on Δ concentration
- Key innovations
  1. Construct measures of loan supply at the market level using *market-level* deposit data and *bank-level* loan/deposit ratios
  2. Exploits legal decision that scrutinizes mergers based on *deposit Herfindahl* (not loan Herfindahl)
- Interesting idea

Roadmap of my discussion

1. Summarize approach and results
2. Make some comments

Data

- Period: 1996-2015
- Annual data at market, bank level
- Key variables
  - New loan origination by bank in each local market: CRA (Community Reinvestment Act)
  - Deposit data: Call Reports, SoD
  - Merger Data

Data Construction

- Data limitation: Loan$\times$market data not observed
  - Single local market banks: loan-market balances are observed
  - Key measure for banks that operate in multiple markets is constructed as follows
    - $LD_{i,t} = Loan_{i,t}/Deposit_{i,t}$ (at the bank-level)
    - $Loan^{j}_{i,t} = Deposit^{j}_{i,t} \times LD_{i,t}$ (at the market-level)
- Relationship lending is imputed (small and large banks)
  - Small Bank: 1 if assets $< 10b$
  - Large Bank: 1 if assets $> 50b$
- Legal ruling uses deposits HHI, not loans HHI
  - Loan-to-deposit ratios vary
  - Loan composition varies too

Main Specifications

$$\Delta \ln(Loan)^{j}_{i,t+1} = \boldsymbol{\mu_1} \times \text{LenderTechnology}_{i,t-1} \times \Delta \ln(\text{LoanHHH})^{j,\text{ProForma}}_{t-1} + \Psi_{j,t} + \Phi_{i,t} + \varepsilon_{i,j,t+1}$$

- The variable $\Delta \ln(\text{LoanHHH})^{j,\text{ProForma}}_{t-1}$ takes value of zero whenever there are no mergers
- Focus on
  - Behavior of non-merged banks on LHS
  - Loan size $< \$100k$
  - Bank-year fixed effect $\Phi_{i,t}$ (differences over year averages)
  - Market-year fixed effect $\Psi_{j,t}$

$$\begin{aligned}\Delta \ln(Loan)^{j}_{i,t+1} = \lambda_1 \times \text{ LenderTechnolog } y_{i,t-1} \times \Delta \ln(LoanHHI)^{j,ProForma}_{t-1} + \\ \lambda_2 \times \text{LenderTechnology}_{i,t-1} \times \text{ DepositTrigger}^{j,ProForma}_{t-1} \\ \lambda_3 \times \text{LenderTechnology}_{i,t-1} \times \Delta \ln(\text{LoanHHI})^{j,\text{ ProForma}}_{t-1} \times \\ \text{DepositTrigger, freoforma } + \psi_{j,t} + \phi_{i,t} + \xi_{i,j,t+1}\end{aligned}$$

Main Tables

Dependent Variable:	(1) Δln(Loan)	(2) Δln(Loan)	(3) Δln(Loan)
SmallBank × Δln(LoanHHI)	0.109***		0.090***
	(0.031)		(0.034)
LargeBank × Δln(LoanHHI)		-0.094***	-0.061**
		(0.029)	(0.031)
Market × Year FEs	YES	YES	YES
Bank × Year FEs	YES	YES	YES

- Rival small banks expand their lending (relationship lenders)
- Rival large banks contract (transactional lenders)

Main Tables

Dependent Variable:	(1) Δln(Loan)	(2) Δln(Loan)	(3) Δln(Loan)
SmallBank × Δln(LoanHHI)	0.126***		0.094**
	(0.044)		(0.047)
SmallBank × DepositTrigger	0.013		0.016
	(0.018)		(0.019)
SmallBank × Δln(LoanHHI) × DepositTrigger	-0.063		-0.050
	(0.065)		(0.065)
LargeBank × Δln(LoanHHI)		-0.153***	-0.119**
		(0.050)	(0.054)
LargeBank × DepositTrigger		0.006	0.011
		(0.018)	(0.019)
LargeBank × Δln(LoanHHI) × DepositTrigger		0.077	0.060
		(0.078)	(0.078)
Market × Year FEs	YES	YES	YES
Bank × Year FEs	YES	YES	YES

- Effects only in cases where there is unlikely to be regulatory scrutiny

Comments

1. Equating small size with relational lending is questionable
   - I know the literature does it, but still
2. The paper should validate the imputation approach
   - Look at some other data source
   - Even better, not to use the imputation
3. More data on how the legal merger decisions work
   - How often is a merger denied?
   - How does this depend on the trigger being violated?
   - Some summary statistics

Comments

4. Describe better the actual mergers
   - More/better summary statistics
   - Random mergers? Simultaneity issues
5. Explore non-linearities
   - Effects of competition very nonlinear
   - Cases with only two banks left?
6. More detailed discussion of collinearity?
   - Cases with only one bank left who operates in a single market