Small Business Lending and Social Capital: Are Rural Relationships Different?

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Work in Progress!

Presented at St. Louis Fed
September 2013

Lending to small businesses

- ***Small businesses*** typically depend on bank credit.
- ***Small banks*** supply disproportionate amount of this credit.
  - The ***small business loan*** is the supposed *raison d'etre* for community banks.

<u>Our conjecture</u>: Rural banks should have an absolute advantage over urban banks at small business lending.

- Guiso, Sapienza and Zingales (2004 *AER*) find that "social capital" makes for well-informed financial transactions
  - Observe bounced checks and consumer loans in Italy.
  - Fewer bad outcomes in Italian provinces in which social capital is high.

Lending to small businesses

- **Examples of (measurable) social capital:**
  - High voting rates.
  - Existence of civic/social organizations (e.g., PTA).
  - Low crime rates.
- **Social capital is likely to be higher in U.S. rural towns:**
  - In rural places, personal relationships more important.
  - In rural places, “everyone knows each other’s business.”
- **This should translate into fewer loan defaults:**
  - Lower cost of collecting and verifying soft information
    - Bank has a “costless endowment” of soft information.
  - Lower cost of monitoring (default associated with shame).

This study

- We estimate the default probabilities for SBA loans originated by community banks (assets < $1 billion in 2000 dollars).
- Compare the default probabilities across rural and urban loans.

Data:

- A random sample of Small Business Administration 7(a) loans originated between 1984 and 2012.

Key to our analysis:

- We identify the location (rural or urban) of each borrower.
- We identify the location (rural or urban) of each lending bank office.

Organizing borrower-lender pairs

Four-way borrower-lender taxonomy:

RR ➔ rural firm borrows from rural bank (pure rural)

UU ➔ urban firm borrows from urban bank (pure urban)

RU ➔ rural firm borrows from urban bank

UR ➔ urban firm borrows from rural bank

Six-way borrower-lender taxonomy:

RR
- RRL ➔ rural firm borrows from local rural bank
- RRNL ➔ rural firm borrows from non-local rural bank

UU
- UUL ➔ urban firm borrows from local urban bank
- UUNL ➔ urban firm borrows from non-local urban bank

RU ➔ rural firm borrows from urban bank

UR ➔ urban firm borrows from rural bank

Econometric model of loan default

The basic idea:

- We estimate the relative default rates of different types of loans (UU vs. RR; UUL vs. UUNL; etc.) after controlling for other conditions that might influence loan default.

- For example: To test our "ruralness" hypothesis:
  - We compare the default rate for pure rural loans (RR) to the default rate for pure urban loans (UU)…
  - …after clearing away the variation in loan default rates caused by borrower, lender, loan, or market characteristics.

Econometric model of loan default

- Discrete-time hazard model of loan default (i=loan, t=quarter):

$$D^{*}_{it} = \mathbf{X}_i \beta + \mathbf{W}_{it} \gamma + \varepsilon_{it}$$

- Each loan is observed quarterly from origination.
  - $D_{it} = 0$ if loan i performs in quarter t.
  - $D_{it} = 1$ if loan i defaults in quarter t.
- $\mathbf{X}_i$ is vector of test variables:
  - Four-way: RR, UU, RU and UR dummies.
  - Six-way: RRL, RRNL, UUL, UUNL, RU and UR dummies
  - We exclude one of these dummies in each regression.
- $\mathbf{W}_{it}$ is a vector of controls:
  - Firm-lender distance; Loan size; Bank size; New firm; Low-doc loan; Market concentration; SBA guarantee; Organizational form; Loan aging, Year dummies, Region dummies.

Data

- **SBA loan program:** To qualify, borrowers must be unable to access credit at market rates through normal channels.
  - High-risk, information-opaque borrowers…a good place to test the effectiveness of the relationship banking model.
  - Loans carry partial guarantees…so banks are putting some capital at risk. (We control for size of guarantee.)

- **The parent sample:** A 20% random sample (stratified by year) of SBA 7(a) loans originated in 1984-2012.

- **Sample for this study:** Only those loans originated and held by U.S. commercial banks with assets < $1 billion (2000 dollars).
  - 34,232 different loans.
  - 726,980 quarterly observations of these loans.

Data

Urban borrowers are located in MSAs:

- 45% of loans are UUL
- 17% of loans are UUNL
- 6% of loans are UR

Rural borrowers are located outside MSAs (in rural counties):

- 16% of loans are RRL
- 5% of loans are RRNL
- 11% of loans are RU

Some sample averages:

- 18% of loans defaulted during sample period.
- Average loan size = $180,500
- Average loan guarantee = 78%
- Average borrower-lender distance = 62 miles

“Ruralness” Hypothesis

“Ruralness” exists if rural loans have different default rates than urban loans.

- If Default(RR) < Default(UU) ➔ then ruralness makes loan contracting, screening and monitoring more efficient.

- Default(RR) > Default(UU) ➔ then ruralness makes loan contracting, screening and monitoring less efficient.

“Ruralness” Hypothesis

Result: “Ruralness” does matter

- Pure rural loans (RR) are 10% to 23% less likely to default than pure urban loans (UU).
- This result tends to get stronger for small rural banks and during the financial crisis.

“Localness” Hypothesis

“Localness” exists if purely local loans default less often than inter-market rural loans.

- If Default (RRL) < Default(RRNL) ➔ then there are local lending efficiencies for <u>rural</u> lending.

- If Default (UUL) < Default(UUNL) ➔ then there are local lending efficiencies for <u>urban</u> lending.

Note: *We test for the existence of localness <u>after controlling for</u> the effects of borrower-lender distance.*

“Localness” Hypothesis

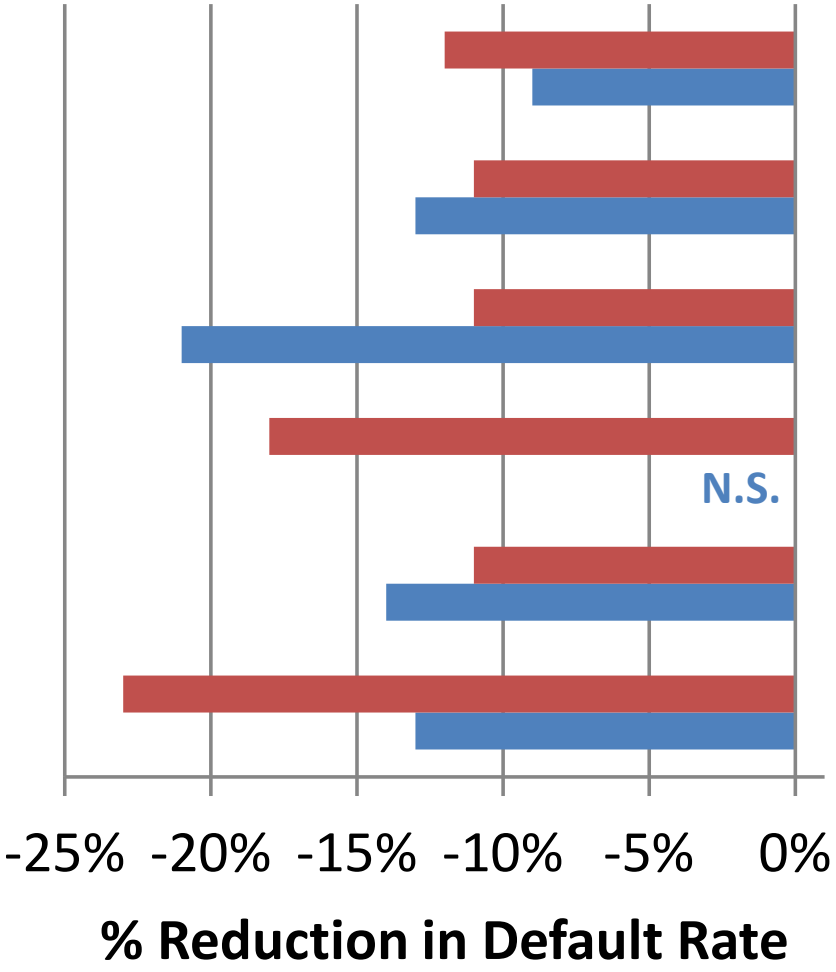
Result: “Localness” matters for urban lending.

- Local urban loans (UUL) are up to 21% less likely to default than non-local urban loans (UUNL).
- This result is strongest in the pre-2000 data.

Result: “Localness” does not matter for rural lending.

- Local rural loans (RRL) and non-local rural loans (RRNL) have similar default rates.
- This suggests that ruralness is portable.

Subsample tests



Full sample

Pre-crisis

1984-1999

2000-2012

No out-of-market loans with distance < 25 miles

Banks < $100 million

Ruralness (reduced RR default rates)

Localness (reduced UUL default rates)

We tested three other hypotheses

"Borrower-lender empathy" exists if pure rural (RR) or pure urban (UU) loans outperform loans with mixed partners (RU or UR).

"Credit analysis" efficiencies exist if rural (urban) banks are better at lending outside their local markets than are urban (rural) banks.

"Credit quality" differences exist if rural (urban) firms are better at borrowing outside their local markets than are urban (rural) firms.

- **In first draft (1984-2001 data)** we found some evidence**:**
  - "Borrower-lender empathy" exists in rural markets.
  - Rural firms have higher "credit quality."
- **In our current work (1984-2012 data):** No evidence in support of these hypotheses. *But our modeling is not yet complete.*

FYI: Effect of control variables on loan default
(Based on full sample regressions)

Increased the probability of loan default:

- Borrower-lender distance
- Start-up firm
- Size of SBA guarantee
- Typical loan aging patterns (defaults increase after first year)

Reduced the probability of loan default:

- Bank size
- Local lender concentration
- Firm organized as a partnership
- Bank is a “preferred” or “certified” SBA lender

No effect on loan default:

- Loan size
- Low-doc loan

Not yet included in model: Local macro conditions; Market size; State branching laws; Loan maturity.

To conclude

- **Some potential implications of our results:**
  - Helps explain existence of large numbers of rural banks, despite their small size.
  - Helps explain different lending approach used at rural banks (e.g., less likely than urban banks to rely on credit scores).
  - Rural places have more social capital than urban places?
  - Rural lending may fare better during recessions.
  - Loan subsidies to SMEs most efficient if they target (a) rural areas and (b) banks that use traditional lending processes.
- **Some questions remain:**
  - Are rural credit constraints driving results?
  - Will results continue to hold in future?
  - Are results applicable for non-SBA loans to SMEs?

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