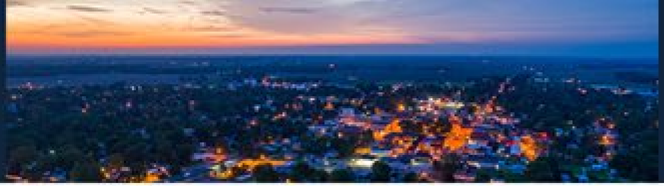


The Real Effects of Bank Supervision: Evidence from On-Site Bank Inspections

Andrea Passalacqua (Board of Governors)

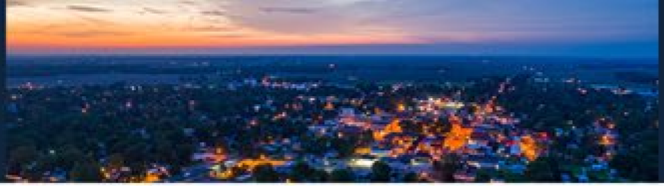
Paolo Angelini (Bank of Italy)

Francesca Lotti (Bank of Italy)

Giovanni Soggia (Bank of Italy)

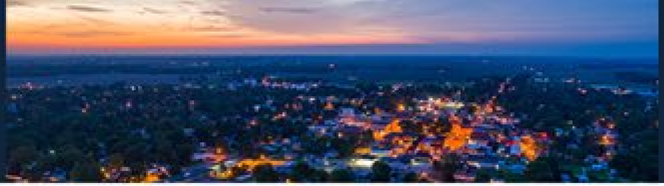
The views expressed in this paper are solely the responsibility of the authors and do not necessarily reflect those of the Federal Reserve or the Bank of Italy

- *System, the Bank of Italy, or anyone associated with these institutions.*



Motivation and Research Question

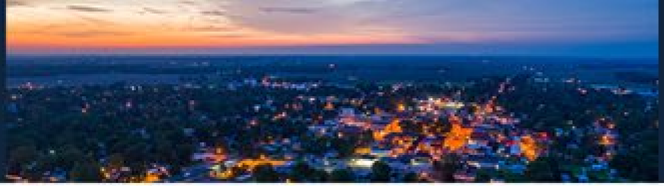
- A weak banking sector can prolong the stagnation of the economy by creating or failing to correct distortions in the credit market (Peek and Rosengren, 2005)
  - Misallocation of credit to underperforming firm
    - In the extreme case this may exacerbate the problem of **zombie lending** (Caballero et al., 2008) with negative impact on the real economy (Acharya et al., 2019)
- Even if there are bank regulations and policies in place, this is still a major problem (Adalet McGowan et al., 2018; Blattner et al., 2017)
- **<u>Research Questions:</u>**
  1. What is the impact of banking supervision in reducing distortions in the credit market?
  2. What are the spillover effects for the real economy?



A Primer of Bank Supervision in the Italian System

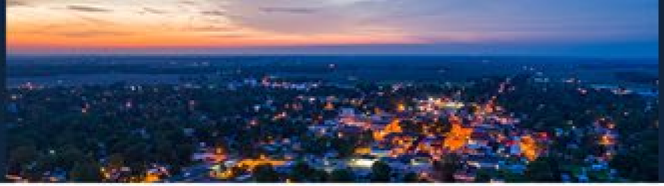
- **Off-site inspections:**
  - Periodic communication of balance sheet information to the Supervisor
  - All banks have to comply with it

- **On-site inspections:**
  - Unexpected audits at the bank’s headquarters
  - Can take on average 64 days with a maximum of 147 days (in my sample)
  - Inspectors have access to internal information at the bank (emails, loan application,…)
  - Goal: assess the quality of accounting reporting as well as the risk of loans



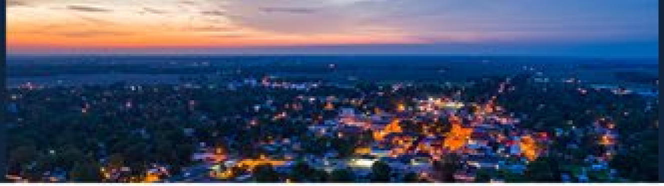
Contribution

- Effect of Banking supervision and monitoring on bank's performance and lending activity (Peek and Rosengren, 1995; Eisenbach et al., 2016; Agarwal et al., 2014; Ivanov and Wang, 2020; Ivanov et al., 2019; Kandrac and Schlusche, 2021; Granja and Leuz, 2020; Hirtle et al., 2017; Bonfim et al., 2020):
  - We provide evidence on the spillover effect to the firm and the local economy level
- Credit supply shock and the real economy (e.g. Peek et al., 2003; Khwaja and Mian, 2008; Ivashina and Scharfstein, 2010; Chodorow-Reich, 2013):
  - We use a supervisor-induced bank shock instead of a "natural shock" (e.g. Lehman Brothers failure) and uncover an important compositional effect in the credit supply shock
- Zombie lending (Peek and Rosengreen, 2005; Caballero et al., 2008; Giannetti and Simonov, 2013; Acharya et al., 2019; Blattner et al., 2017; Banerjee and Hofmann, 2018):
  - Previous works show that this problem exists, and financial regulations can make it worse. We estimate the relative effect of bank supervision in reducing this problem.



Data on Italian Banking System

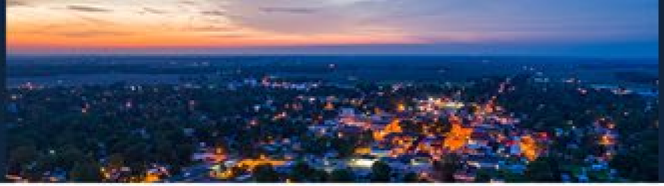
- Bank's balance sheets information
- Loan data from the Credit Registry
- Universe of corporations from CERVED
- Novel data on on-site banking inspections
  - Inspection plans for 2010-2017
  - For each inspection plan we have:
    - Banks not eligible to be inspected
      - average 148 Not eligible and 143 Eligible each year
    - Banks inspected:
      - average 77 each year
    - Banks eligible to be inspected but not chosen
      - average 66 each year
    - Start date and end date of inspection
  - <u>Limitation: only Mutual banks</u>



Empirical Strategy

- 3 main empirical strategies:

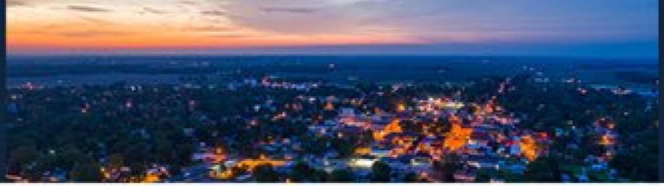
1. **Bank-level analysis:**
    - Compare inspected banks to a group of eligible but not inspected banks
        - Take advantage of their quasi-random assignment into treatment
2. **Loan-level analysis:**
    - Khwaja and Mian (2008) approach comparing firms borrowing from *both* (i) inspected and (ii) eligible but not inspected banks
        - Control for factors affecting the demand of credit and isolating credit supply
3. **Firm-level and local economy-level analysis:**
    - Bartik instrument
        - Take advantage of the exogeneity of the shift share to the outcome variable



Main Findings (1)

- **<u>Bank-level results:</u>**
  - Inspected banks are more likely to reveal losses in their balance sheet
  - Inspected banks are more likely to reduce lending in the short term
- **<u>Loan-level results:</u>**
  - Compositional effect:
    - The drop in lending is driven only by zombie/underperforming firms
    - Healthy firms don’t suffer the credit cut
    - Inspected banks are more likely to start new lending relationship with healthier firms

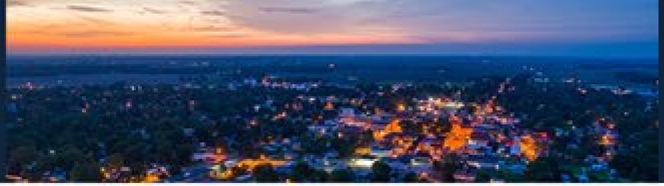
→ Overall, we find that inspected banks implement more conservative policies after they are inspected



Potential Mechanism

- Change in the governance of the bank
  - Inspected banks are more likely to replace board members and increase the number of internal supervisors as a result of these inspections

- Inspected banks are more likely to raise capital as a result of these inspections

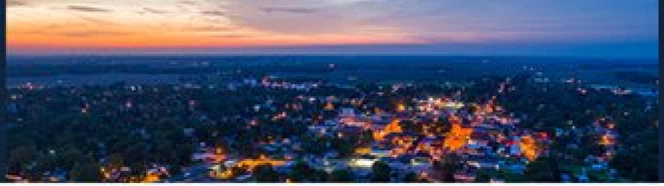


Main Findings (2)

Spillover effects to the real economy:

- Firm-level results:
  - Healthy firms have more credit available and as a result they invest more in labor, fixed assets, and their sales increase
  - Zombie firms are more likely to exit the market

- Local economy-level results:
  - Local economies more affected by bank inspections experience an increase in the growth rate of new firms, employment (in the medium term) and aggregate productivity



Conclusion

- We find that bank supervision has a positive direct and indirect effect on supervised banks and the real economy

- <u>**Policy implication:**</u> not necessarily true that more bank supervision is good or feasible
  - In the **short term** it could be potentially costly and politically unfeasible
    - Too much supervision → Stress on Bank's balance sheet → Disruption of local economy → Increase in Unemployment
  - In the **long term**: better selection of firms and higher productivity

  → It depends on the short vs. long term view