The Economics of Bank Supervision

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Economics of bank supervision

1. Economic model of bank supervision; supervision is:
   - Monitoring
   - Intervention

2. Theoretical trade-offs involved in optimal allocation

3. Allocation of supervisory resources in the data
Theory: Why Bank Regulation and Supervision?

- Different objectives of banks vs. society:
  1. Limited liability
  2. Externalities

- On its own, a bank would take excessive risks

- Role for regulation and supervision
Theory: Difference btw. Regulation & Supervision?

- Types of information:
  - “hard”
    - verifiable
  - “soft”
    - observable

- Supervision deals with imperfect signals

- Two types of potential errors:
  1. Observe good signal when bank is in trouble
  2. Observe bad signal when bank is fine
Features of Supervision

Monitoring:
- Improves quality of signal and incentives for bank action
- Chosen taking into account both effects
Features of Supervision

Bank action → Outcome

Regulation

Monitoring → Signal → Intervention

Supervision

Intervention:

- Reduces risk before final outcome realized
- Chosen after observing signal (time consistent)
- Choosing policy before bank action could improve incentives
Features of Supervision

Bank action → Monitoring → Signal → Intervention → Supervision → Outcome

Outcomes:

- Residual uncertainty even after bank & supervisory actions set
- Limited inference about actions from single good or bad outcome
Features of Supervision

Supervision is costly:

- More supervision may be better but resources are limited
- Marginal benefit has to equal marginal cost
- Reallocation between multiple banks in response to signals
Empirics: Allocation of Supervisory Resources

- Two sets of empirical results:
  - Supervisory attention, bank size and risk
  - Reallocation of supervisory resources between banks (substitution)

- Three data sources (BHCs with assets $\geq$ $1bn)$:
  - Recorded hours spent by Fed supervisors
  - Ratings assigned by Fed supervisors
  - Balance sheet information from regulatory filings
Supervisory Hours, Bank Size and Risk

\[
\log(\text{hours}) = \beta_1 \times \log(\text{assets}) + \beta_2 \times \text{rated} 2 + \beta_3 \times \text{rated} 3 + \beta_4 \times \text{rated} 4 + \beta_5 \times \text{rated} 5 + \cdots + \epsilon
\]

- Size elasticity \(\hat{\beta}_1 < 1\):
  - Double asset size, less than double hours
  - Consistent with scale economies in supervision
- Increasing response to risk:
  - Rating 3 equivalent to doubling asset size

\(\hat{\beta}_1 = 0.62^{***}\)
\(\hat{\beta}_2 = 0.13^{**}\)
\(\hat{\beta}_3 = 0.66^{***}\)
\(\hat{\beta}_4 = 1.03^{***}\)
\(\hat{\beta}_5 = 1.29^{***}\)
Reallocation: Enhanced Superv. for Large BHCs

Post-2008: indicator for post-2008 period

\[
\log(\text{hours}) = \ldots \\
+ \hat{\delta}_1 \times \text{post-2008} \times \text{large-BHC} \quad \hat{\delta}_1 = 0.65^{***} \\
+ \hat{\delta}_2 \times \text{post-2008} \times \text{small-BHC} \quad \hat{\delta}_2 = -0.19^{***} \\
+ \cdots + \varepsilon
\]

- Large banks (assets $\geq$ $10bn) receive more attention post-2008
- Reallocation: less resources at small banks (substitution)
Reallocation: Stress at Other BHCs

**Share distress**: % of other district bank assets with rating $\geq 3$

$$ \log(\text{hours}) = \ldots$$

$$ + \gamma_1 \times \text{share-distress} \times \text{large-BHC} \quad \hat{\gamma}_1 = 0.12$$

$$ + \gamma_2 \times \text{share-distress} \times \text{small-BHC} \quad \hat{\gamma}_2 = -0.31^{***}$$

$$ + \ldots + \varepsilon$$

- No statistically significant effect for large banks
- Reallocation only from small banks
Summary

- Regulation and supervision aim to lower risk taking
- Supervision incorporates soft information and is “flexible”
- Inference on actions from a single supervisory event is limited
- Larger & riskier banks receive more attention (size elasticity < 1)
- Resource are reallocated, mainly for small banks