The Economics of Bank Supervision

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Economics of bank supervision

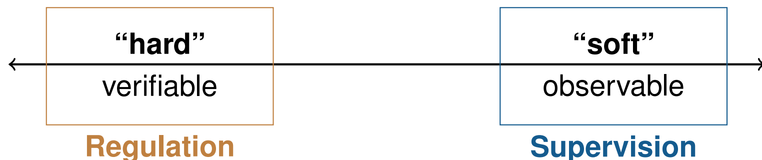
1. Economic model of bank supervision; supervision is:
   - Monitoring
   - Intervention
2. Theoretical trade-offs involved in optimal allocation
3. Allocation of supervisory resources in the data

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

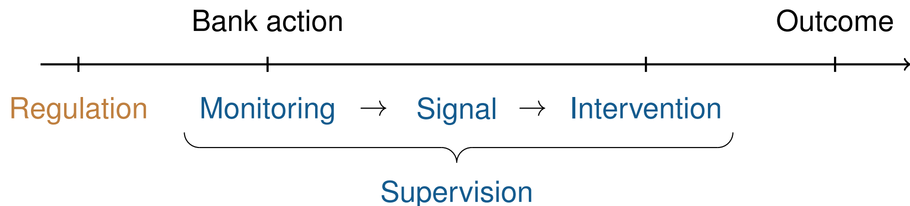
Theory: Difference btw. Regulation & Supervision?

- Types of information:



- 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

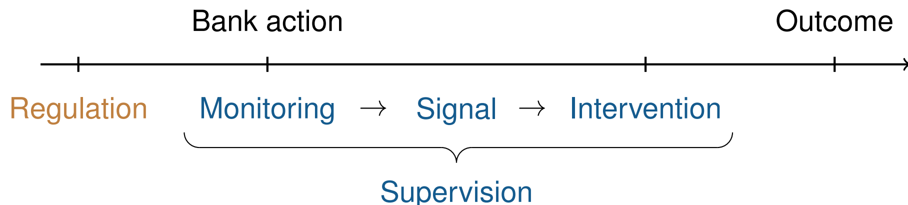
Features of Supervision



Monitoring:

- Improves quality of signal **and** incentives for bank action
- Chosen taking into account both effects

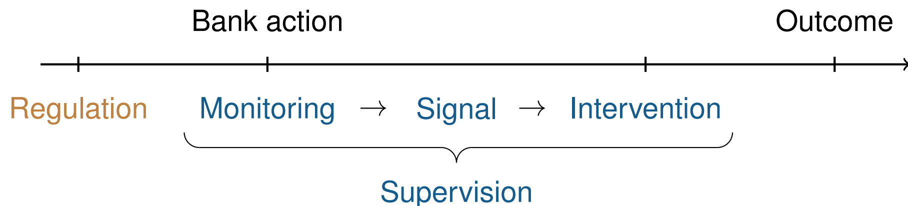
Features of Supervision



Intervention:

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

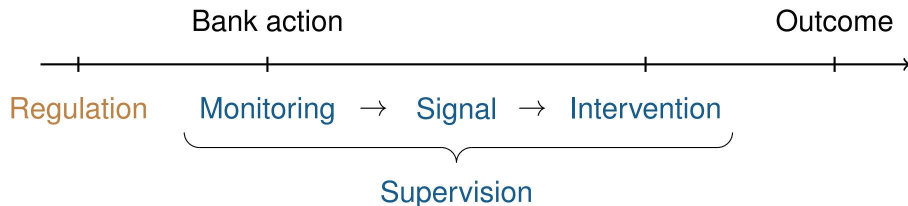
Features of Supervision



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

$$
\begin{aligned}
\log(\text{hours}) \quad = \quad & \beta_1 \times \log(\text{assets}) & \hat{\beta}_1 = 0.62^{***} \\
& + \beta_2 \times \text{rated}\,2 & \hat{\beta}_2 = 0.13^{**} \\
& + \beta_3 \times \text{rated}\,3 & \hat{\beta}_3 = 0.66^{***} \\
& + \beta_4 \times \text{rated}\,4 & \hat{\beta}_4 = 1.03^{***} \\
& + \beta_5 \times \text{rated}\,5 & \hat{\beta}_5 = 1.29^{***} \\
& + \cdots + \varepsilon &
\end{aligned}
$$

- 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

Reallocation: Enhanced Superv. for Large BHCs

Post-2008: indicator for post-2008 period

$$
\begin{aligned}
\text{log(hours)} &= \dots \\
&+ \delta_1 \times \text{post-2008} \times \text{large-BHC} \quad \hat{\delta}_1 = 0.65^{***} \\
&+ \delta_2 \times \text{post-2008} \times \text{small-BHC} \quad \hat{\delta}_2 = \text{-}0.19^{***} \\
&+ \cdots + \varepsilon
\end{aligned}
$$

- 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 ≥ 3

$$\begin{aligned} \text{log(hours)} &= \dots \\ &+ \gamma_1 \times \text{share-distress} \times \text{large-BHC} \qquad \hat{\gamma}_1 = 0.12 \\ &+ \gamma_2 \times \text{share-distress} \times \text{small-BHC} \qquad \hat{\gamma}_2 = \text{-0.31}^{***} \\ &+ \dots + \varepsilon \end{aligned}$$

- 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