

Stress Testing and Bank Lending (J. Shapiro & J. Zeng)

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- Disentangle the *feedback loop* between banks' lending decision and stress test design
 - Banks' lending decisions are endogenous to stress test design
 - Regulator takes this into account when choosing how to design stress tests
 - *Key element*: Regulator's reputation
- Analyzes banks' portfolio allocation and optimal supervisory action (stress test design)
- New and interesting perspective on stress test design and more generally on supervisory intervention:
 - Most of the literature focuses on information disclosure
 - Here, the focus is on banks' portfolio choice and regulator's reputation building incentives

The Model-Main Ingredients

- Repeated interactions between the regulator and the banks
 - Regulator can be either lenient or "strategic" (w.p. z_t)
- Banks invest either in a safe asset yielding $R_0 > 1$ or in a risky loan returning

$$\begin{cases} R > 1 & \text{w.p. } \alpha \\ R(1-d) & \text{w.p. } 1-\alpha \end{cases}$$

- The risky asset has a higher expected return than the safe asset and entails a social benefit B
 - Bank default entails a cost for society D
- Regulator observes the realization of banks' loan and decide whether to force recapitalization
- It trades-off the cost D associated with banks' default, the benefits from investing in the risky loan when taking the recapitalization decision
 - Anticipates that such decision conveys information about its toughness and so affects banks' investment choice

Stress test versus other supervisory/regulatory measures

- The regulator observes the **realized** quality of banks' loans. Then, it takes the recapitalization decision
 - How is this related to stress test in practice?
- Where does the "adverse scenario/shocks" feature of stress test enter into play?
 - Stress test in the model has little to do with tail risk
- Maybe, closer to other regulator/supervisor's assessment exercise (e.g., SREP)

Regulator's reputation

- Novel and important element
 - In a one-period game, banks anticipate regulator's behavior, but regulator would always recapitalize only banks with bad projects
 - In a two-period game, the regulator "deviates" from optimal behaviour (in the first period) to affect banks' lending decisions (in the second period)
 - Regulator's reputation affects firms expected financing costs and so their risky lending decision
- Thus, "reputation" here means firms's beliefs about regulator's type
- Would be the analysis analogous when considering regulator's reputation from the perspective of banks' financiers?

Recapitalization costs

- The recapitalization cost depends on equity investors' outside opportunity
 - This can be high or low: $\rho = \{\rho_H, \rho_L\}$ and no recapitalization occurs, when $\rho = \rho_H$
- From social perspective $\rho > 1$ implies that recapitalization is also costly, it affects net social benefits of risky lending X
 - Would the result still hold with $\rho = 1$?
 - Then, recapitalizing a bank does not entail costs besides the "reputational concerns", does it?

Social costs and benefits of investing in the risky loans

- Social costs and benefits of investing in the risky loans are reduced form- focus on net benefits X
 - Whether risky lending is excessive or not depends crucially on X
 - Size of X also determines whether the regulator's stress testing strategy and bank's belief updating process are strategic *substitutes* or *complements*
- Are both $D > 1$ and $B > 0$ needed for the result to hold?

- Very interesting paper disentangling the spillover between banks' lending decision and supervisory intervention
 - Close or in the "stress test" literature, but highlights the importance of reputation
- Results are novel
 - Delivers important policy implications about the design of supervisory intervention in the context with repeated interactions