Optimality of Prompt Corrective Action in a Continuous-Time Model with Recapitalization Possibility

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Summary of the paper

- **Interprets a set of regulatory measures as features of an optimal contract within a dynamic model of capital structure with moral hazard**
  - Regulators act on behalf of depositors=debtholders
  - Regulatory tools: capital requirement, risk-based deposit insurance premium, prompt corrective action and liquidation
  - In addition, banker's continuation utility, measured using book value of capital, should be made sufficiently sensitive to bank cash flow
- **Major innovation: allows regulators the option to force banks to recapitalize**
  - Related studies: Sannikov (2008), Shim (2006)
  - Assumes a proportional cost of recapitalization borne by banks, and a limit on the speed of recapitalization
  - So two thresholds: recapitalization vs. dividend payment

Model vs. reality (1)

- **Some model assumptions that can matter for optimal contract & policy implications**
  - Book value of capital as the bookkeeping variable for bankers' continuation utility
    - Constant risk-free rate and volatility of bank cash flow
  - Both bankers and regulator risk neutral
    - How would the optimal contract change if bankers are risk averse & imperfectly diversified?
    - Regulator acts on behalf of risk-averse consumers
  - Banker's effort affects only instantaneous drift of cash flow $dR_t = \mu A_t dt + \sigma dZ_t^A$
    - What if also affects volatility – hidden risk taking? How to induce truthful revelation? Interacts with bankers' and regulator's risk aversion.
    - What if persistent effect on drift and volatility? Claw-back?

Model vs. reality (2)

- **Feasible and/or credible implementation of policy prescriptions?**
  - Regulator's incentive problem – model interpreted as prescribing rule-based supervisory actions
  - Capital requirement & recapitalization – what kind of capital? Which value (e.g., book vs. market)?
    - Common stock, preferred stock, contingent capital?
  - Risk-based deposit insurance premium – how well can regulators measure risk?
    - Which component of risk, e.g. systematic vs. idiosyncratic?
  - Liquidation – is it a credible threat that regulators could take over and resolve large complex financial institutions in an orderly manner?

Endogenize risk

- **Apply methodology – dynamic optimal contracting – to important policy questions**
- **Time-varying risk premium & cyclical capital requirement**
  - Add jump risk to return process
  - Stochastic jump intensity influenced by banker action & correlated with systematic risk
- **Endogenous systemic risk – banks' hidden strategic choice of risk exposure**
  - Research shows banks have incentive to tilt exposure toward correlated risk
    - Herding (e.g., Chevalier & Ellison)
    - Enhances chance of being bailed out (Acharya et al.)
  - Need to model return correlation across banks that can be endogenous to banks' hidden action

Add liquidity

- **Liquidity of bank assets vs. liabilities – maturity mismatch**
  - In the model, initial capital held in cash and grows at risk-free rate
    - In reality, cash holding $\neq$ capital, e.g., in the U.S., holding of market securities >> capital
  - What constitutes cash? What market failures cause banks to hold too little cash absent liquidity requirement?
    - Reserves held at Central Bank & government securities only? Private market securities as well, which ones?
  - Need to distinguish between short-term and long-term borrowing by banks
  - What market failures cause banks to prefer short-term borrowing absent regulatory restrictions?