Systemic Risk and Optimal Regulatory Architecture

Marco Espinosa-Vega (IMF)
Charles Kahn (University of Illinois)
Rafael Matta (University of Illinois)
Juan Solé (FSB)

Motivation

- The financial crisis highlighted the need to take systemic externalities seriously
- Current financial reform legislation worldwide reflects this intent
  - New Systemic Risk Authorities
    - European Systemic Risk Board (EU)
    - Financial Stability Oversight Council (US)
- Increased Attention to Systemic Risk by Existing Authorities

Our Point

- Regulatory architecture should take into account the regulatory incentives
  - In particular, bias towards excessive forbearance
  - Incentives for information gathering and sharing among regulators

- Examine some consequences of alternative designs when these incentives are taken into account and systemic risk is a factor

Related Literature

- Most of the literature on bank regulation has not considered strategic interaction among regulators
- Repullo (2000) is one of the first papers to consider strategic interaction
  - Looks at the interaction between different institutions who might be taking on the role of lender of last resort
  - Assume regulatory bias against forbearance

Related Literature

- Kahn and Santos (2005) and Kahn and Santos (2006) look at this question in the presence of the dilemma of insolvency versus illiquidity

    - Regulatory bias towards forbearance (Kane (1992))
    - Examine incentives to gather and share private information
    - Just one bank and look at the case of a regulator and a lender of last resort and the relative merits of joint versus separate regulatory powers

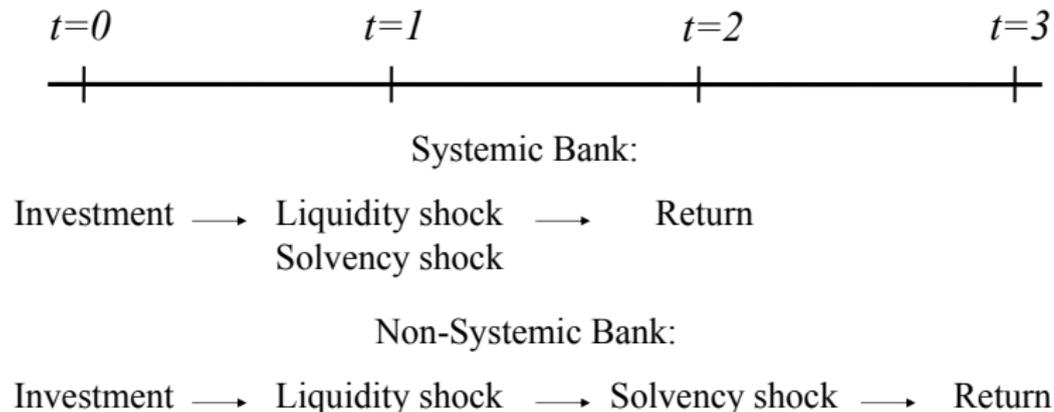- We consider the consequences of systemic risk linkages across multiple regulated banks

Elements of the Model

- Two banks, one of which is systemic
- The insolvency or closure of the systemic bank increases the probability that the non-systemic banks fails; the reverse is not true
- Both banks are subject to two sources of shocks
  - Liquidity shocks, represented by a sudden drop in deposits
  - Solvency shocks, represented by a signal about the probability of success of the bank's investment project

Elements of the Model

- Two regulators

    - A lender of last resort (LoLR), charged with the provision of emergency liquidity to banks
    - A deposit insurer (DI), responsible for guaranteeing bank deposits and that has early intervention powers

- All regulators have private objective functions; that is, regulators do not maximize social welfare

    - Instead, regulators care about their financial shortfall
    - Face a trade-off between the political cost of closing a bank in distress and the expected financial cost of forbearance

- Unified regulator

   - Holds powers and responsibilities associated with both LoLR and DI

Elements of the Model

$t=0$ $t=1$ $t=2$ $t=3$

Systemic Bank:

Investment $\longrightarrow$ Liquidity shock $\longrightarrow$ Return
Solvency shock

Non-Systemic Bank:

Investment $\longrightarrow$ Liquidity shock $\longrightarrow$ Solvency shock $\longrightarrow$ Return
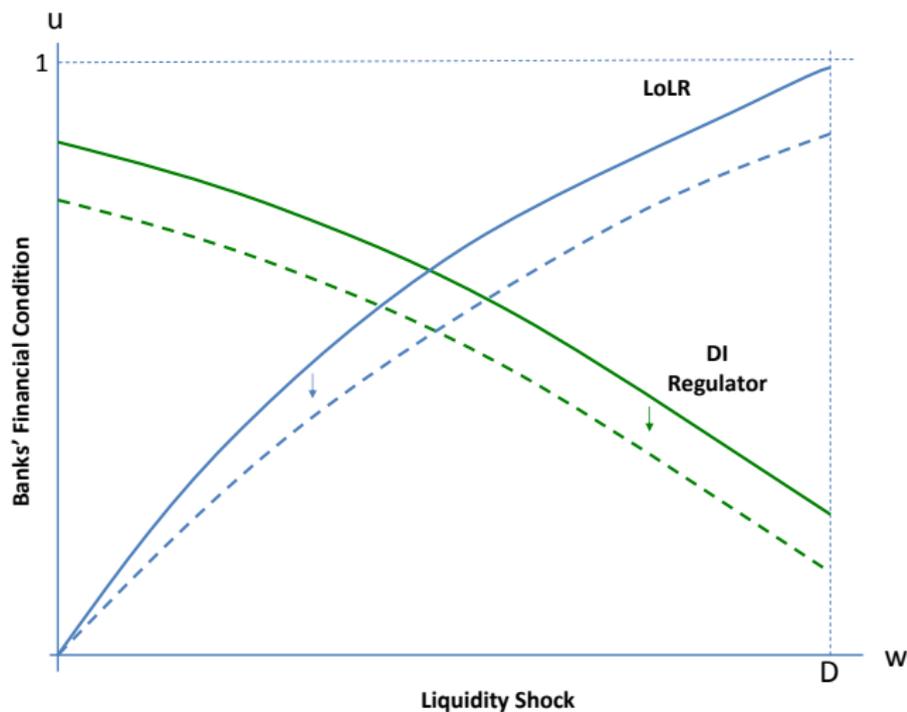
Results

- In the presence of systemic risk
  - Regulators become more forbearing towards systemic institutions
  - Regulators become less forbearing towards non-systemic institutions
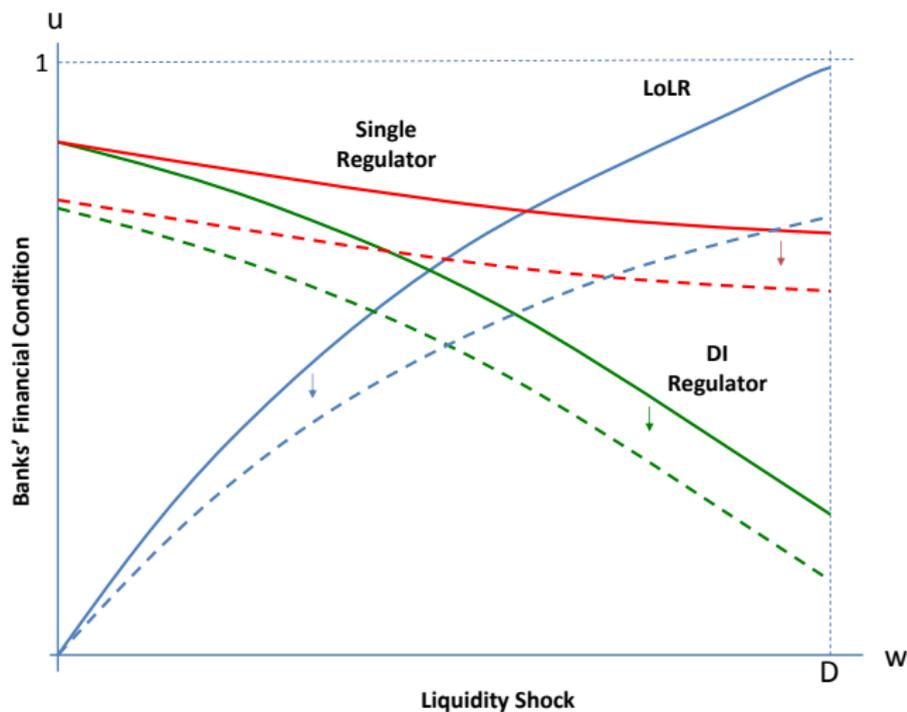
Results
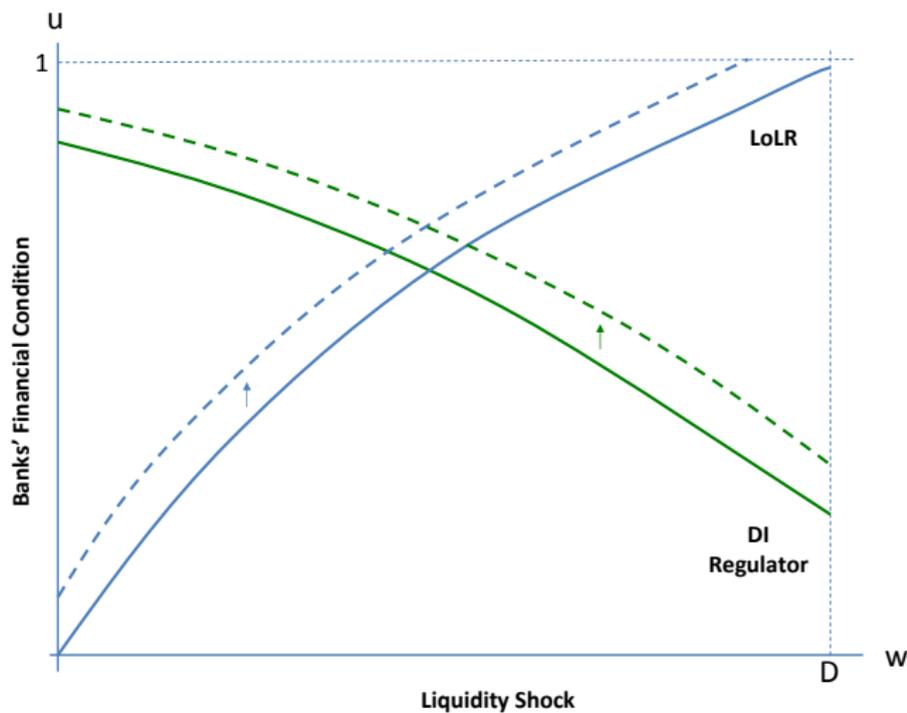
Results

Results

- Unified regulator is generally less forbearing than separate regulators

  - Exception: At high levels of liquidity shock, unified regulator is more forbearing than a separate lender of last resort

- At high levels of liquidity shock, unified regulator becomes relatively less forbearing with increases in

  - degree of systemic risk
  - bankruptcy costs
  - liquidation value

Results

Results

- Private information on degree of systemic importance
    - Generalizes result: informed regulator will not pass on useful information voluntarily
    - New result: if information once gathered must be passed on, separate institutions have less incentive to gather information than do unified institutions

Conclusion

- Current quest for improved regulatory architecture for bank supervision and regulation of systemic risk

- Important to understand and account for objectives of regulators in creating design

- Simply announcing responsibility for systemic risk is unlikely to be effective without providing instruments and incentives