

# Systemic Risk and Optimal Regulatory Architecture

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# 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

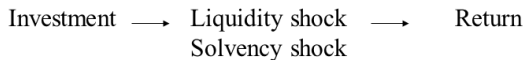
# Elements of the Model

- 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



Systemic Bank:

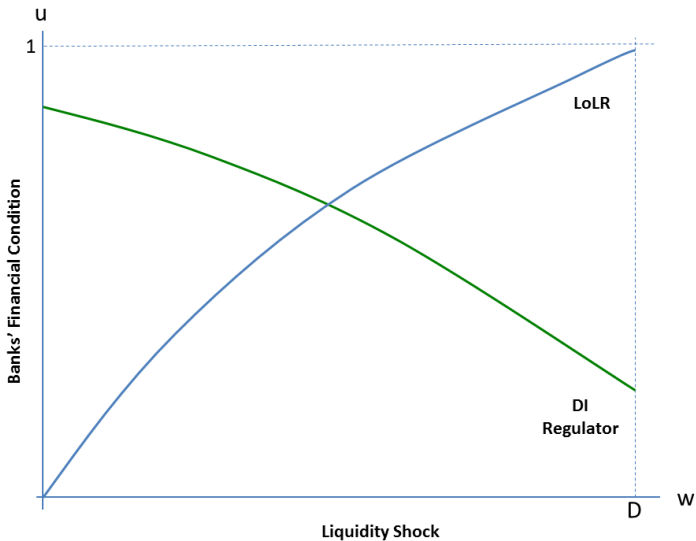


Non-Systemic Bank:

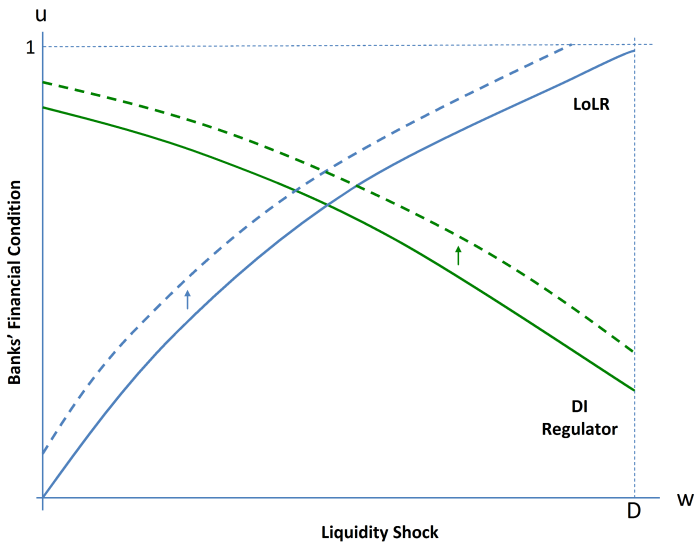




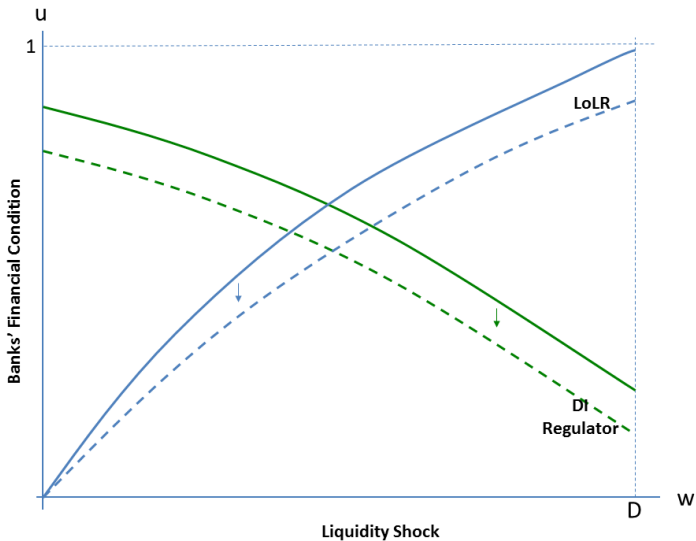
# Results



# Results



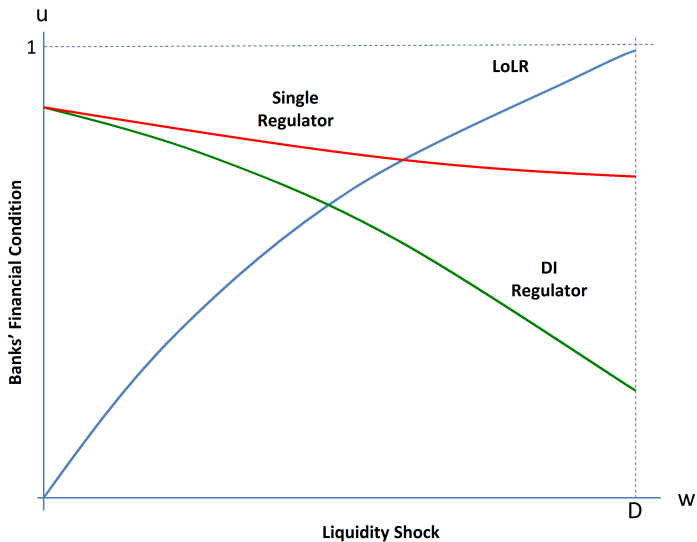
# Results



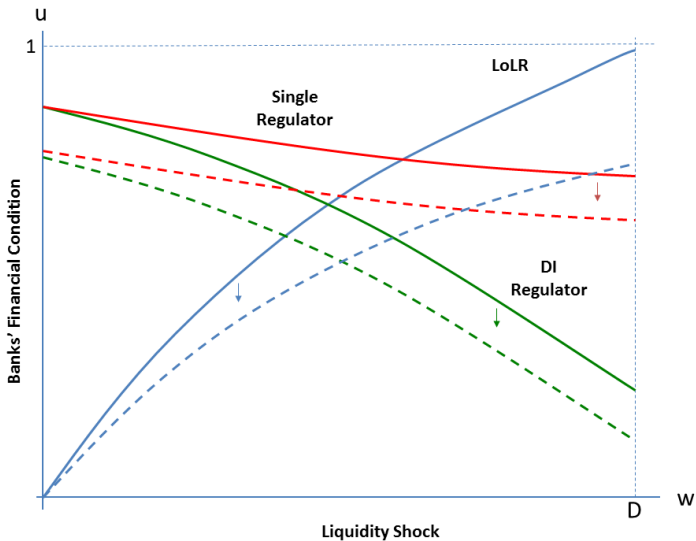
# Results

- 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

- 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