Discussion of "Bail-ins and Bail-outs: Incentives, Connectivity, and Systemic Stability" by Bernard, Capponi, and Stiglitz

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Financial Contagion & Government Intervention

- A model of financial contagion, in the spirit of Eisenberg and Noe (2001)
  - n banks with (short-term) interbank liabilities to one another.
  - negative shocks can result in socially costly default cascades

- Social cost of financial contagion
  - (i) costly liquidation of outside projects in case of lack of liquidity
  - (ii) deadweight losses in case of bankruptcy
  - (iii) spillovers over the interbank linkages

→ Room for government intervention

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$\rightarrow$ Room for government intervention

Main Questions

- What form does "optimal" government intervention takes?
  - bailout? subsidized bail-ins? no intervention?

- How does the presence of government intervention shape systemic stability?

- Key assumption: the government has limited commitment power, in the sense that it cannot credibly commit to an ex-post suboptimal intervention policy.

  $\rightarrow$ the nature of government intervention is endogenous to the architecture of the financial system.

Model: Main Ingredients

- Interbank network:
  - n banks with pairwise interbank liabilities L^{ij}
  - each bank i has access to an outside project e^i
  - bank i also has (senior) commitment c_f^i to outside creditors

- Cost of contagion:
  - liquidating the outside project is costly, with recovery rate $= \alpha \leq 1$
  - if i defaults, only a fraction $\beta \leq 1$ of its assets are recoverable.

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Model: Main Ingredients

- Government intervention:
  - The government can organize a rescue consortium (b_i, s_i)
  - $s_i \geq 0$: subsidy to bank i
  - $b_i \geq 0$: contribution of bank i to the rescue fund
  - any shortfall $\sum_i (s_i - b_i)$ is paid by the government

- Special cases:
  - public bailout: $b_i = 0$ for all i.
  - no intervention: $b_i = s_i = 0$ for all i
  - private bail-in: $\sum_i b_i = \sum_i s_i$.

Model: Organizing the Rescue Consortium

- The government makes the proposal (b_i, s_i) to all banks
- Any bank with $b_i > 0$ has the option to accept or reject the proposal

- If all banks accept ($a_i = 1$ for all i), the rescue is implemented
- If some bank i rejects the proposal, then the government has three options:
  (a) proceed, but make up for the contributions of rejecting banks
  (b) resort to public bailout
  (c) abandon the rescue

Rescue

- Liquidation and bankruptcy costs $\longrightarrow$ public incentive for a rescue if a transfers from the taxpayer to the banks is not too socially costly.

- Bankruptcy costs $\longrightarrow$ private incentive for a rescue

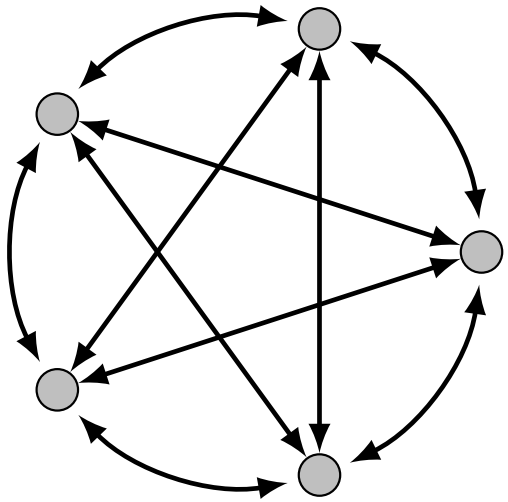
  - Suppose j is short z dollars.
  - Absent a rescue, $p_{ij} = \beta(L_{ji} - z)$.
  - But if i transfers z dollars to j, then it payoff will be $L_{ji} - z$.
    $\rightarrow$ multiplier $= 1/\beta$

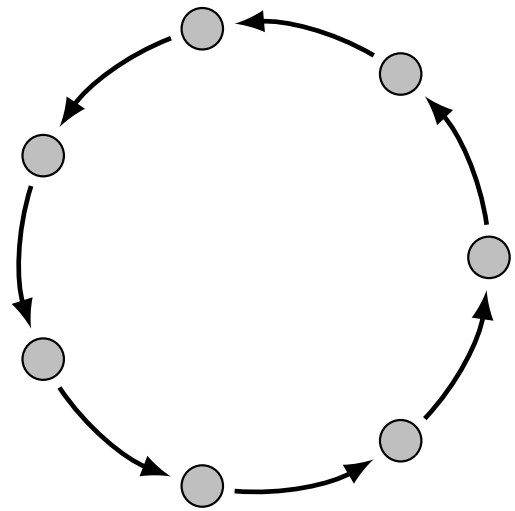
Private and Public Incentives

- Two key forces:
  (1) misalignment of public and private rescue incentives
  (2) lack of commitment power by the government

Network Structure

- Allen and Gale (2000) and Acemoglu et al. (2015): for small enough shocks, the complete network is more stable than the ring network.

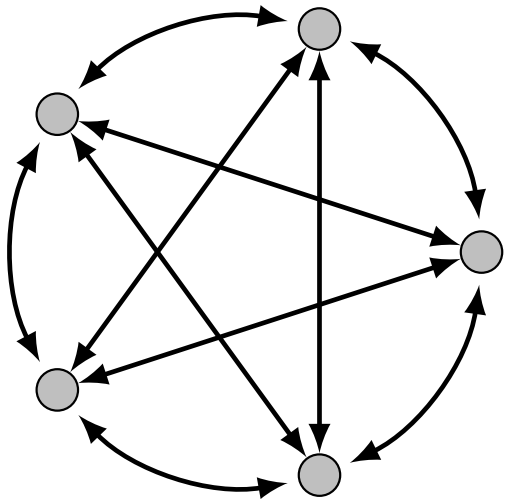


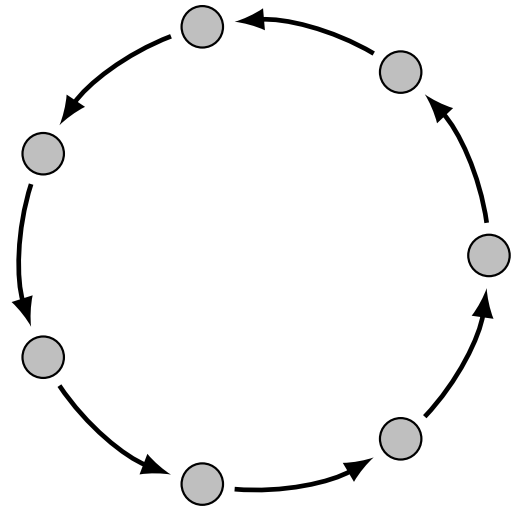


- Distress at each bank would be dispersed among more counterparties, resulting in a more stable architecture.

Network Structure & Equilibrium Rescue Outcomes

- What if we allow for government intervention? The result may change.





- For a bank to join the bail-in, it needs to be highly exposed to contagion and capture a large part of the social gains from its contribution.
- Complete: shock distributed among many banks, strong incentive to free-ride $\rightarrow$ small contributions.
- Ring: few banks with significant exposures in case of no intervention $\rightarrow$ large contributions.

Technical Comment 1: Equilibrium Existence?

- Static, simultaneous-move acceptance/rejection game $a = (a_1, \ldots, a_n)$
- Guaranteed that a pure-strategy Nash equilibrium exists for any proposal (s, b)?

- If not, then such proposals are not offered in equilibrium. But then can it be the model's predictions are driven by these non-existence results?

- Ideally: show that a pure strategy Nash equilibrium exists in all subgames (following any proposal).

Technical Comment 2: Equilibrium Selection?

- Static, simultaneous-move acceptance/rejection game $a = (a_1, \ldots, a_n)$
- The game can have multiple equilibria, many of which will be trivial.

- Paper refines the set of equilibria to those that are weakly renegotiation-proof: an SPE σ is WRP if after every history h_t, there exists no continuation SPE, which Pareto-dominates $\sigma|h_t$.
  - Justification: "it is implausible that the parties would have ever agreed on a bail-in plan that is Pareto-dominated."

- But this is a simultaneous-move game, whereas the original concept by Farrell and Maskin (1989) is defined for a repeated game. There is no history for the banks, as they have only a single decision.

- Is it meant to select the Pareto dominant equilibrium?
- Do you really have a dynamic framework in mind? If so, then this should be modeled explicitly.

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Comment: Bail-Ins and Government's Commitment Power

- The rescue consortium is a collection (b, s).
- If one party rejects, the government has the option to either abandon the rescue altogether (and choose the ex post optimal rescue) or put up the shortfall itself.

- But this means the government can proceed only if it puts up all the shortfall.
- What the government cannot do is implement partial bail-ins.

- By accepting the contribution of any bank, the government commits to the same (complex) allocation, but is unable to make various (but simpler) commitments to the banks.
  $\longrightarrow$ This can matter significantly for what threats are credible or not.

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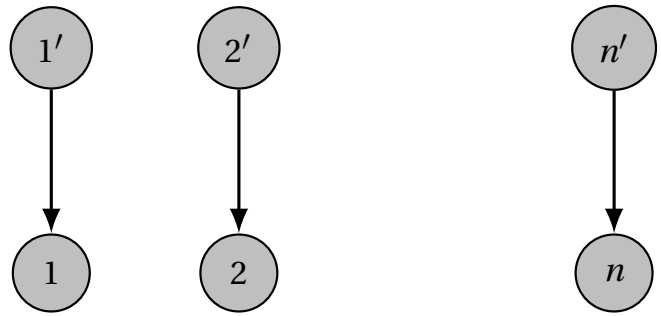
Commitment Power

- The government proposes that each bank i rescues bank i' by contributing \$1 to save $1/\beta$ per bank.



- Suppose taxpayer money is
  - too expensive to bailout the banks: $\lambda n \geq n/\beta$
  - cheap enough to save one bank if all others are contributing: $\lambda < n/\beta$

- If all other banks are accepting the proposal, then bank 1 knows government's threat is not credible $\rightarrow$ it free rides on others' contributions and rejects.

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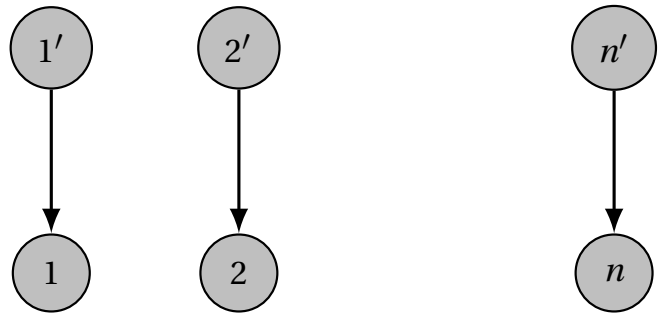

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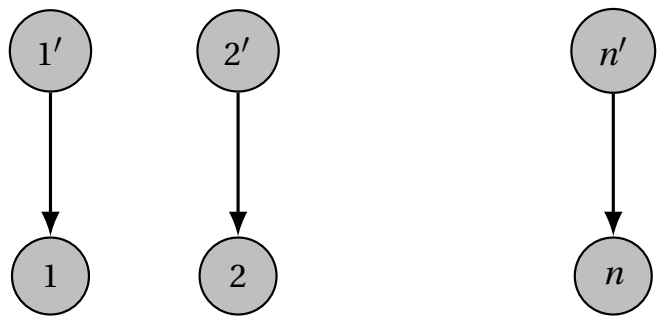
Commitment Power

- But now suppose the government could have implemented the policy partially: To use i's contribution to save i', the government is not forced to also save $1'$.



- If all other banks are accepting the proposal, then bank 1 knows the government's threat is credible because $\lambda > 1/\beta$.

Summary and a Wishlist?

- Summary:
  - Clean framework to model endogenous rescue policies
  - The credibility threshold depends on the financial system's architecture.
  - May change insights based on models without government interventions.

- Wishlist
  - A more thorough analysis of the acceptance/rejection game.
  - Contingencies of government's rescue offers?
  - Purely positive analysis. Any policy implications?
  - Comparative statics?