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
  1. costly liquidation of outside projects in case of lack of liquidity
  2. deadweight losses in case of bankruptcy
  3. spillovers over the interbank linkages

→ Room for government intervention
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Main Questions

- What form does “optimal” government intervention take?
  - 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.
  - 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 $c^i_j$ 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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- **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 $\rightarrow$ public incentive for a rescue if a transfers from the taxpayer to the banks is not too socially costly.

- Bankruptcy costs $\rightarrow$ 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
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 → small contributions.

- **Ring**: few banks with significant exposures in case of no intervention → 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 $\sigma$ 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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• 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. 
  \[\rightarrow\] This can matter significantly for what threats are credible or not.
Comment: Bail-Ins and Government’s Commitment Power

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  \[ \longrightarrow \] This can matter significantly for what threats are credible or not.
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: $\lambda < n/\beta$

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• 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.
• 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?