Discussion of “Regulating Financial Networks Under Uncertainty”
by Carlos Ramírez (2019)

Alireza Tahbaz-Salehi
Northwestern University

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Financial Networks

• Growing literature on how financial linkages...
  (i) function as a mechanism for propagation and amplification of shocks
  (ii) generate systemic risk from micro shocks

• For the most part, the literature takes a **positive approach**: how various kinds of shocks propagate over various kinds of network interactions
  ➤ Reasonable first step

• But at the end of the day, one is mainly interested in **normative implications**
  ➤ proper, ex post response to a crisis?
  ➤ design of ex ante regulations/macroprudential policies?
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Financial Networks: Normative Implications

• Challenging in many ways
  ► positive analysis is a pre-requisite
  ► should think hard about the proper policy instruments
  ► endogenous response of market participants to any policy change
  ► ...

• One can argue the above are probably relevant in any normative setting.
• But on top of all that, policymakers typically lack proper information:
  ► lack detailed information about individual banks
  ► sometimes no info about network structure or even the nature of linkages
  ► Jackson and Pernoud (2019): “flying jets without instruments”
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How can policymakers regulate a network of interdependent financial institutions when they are uncertain about its precise structure?

What is the value to the policymaker of learning about the structure?

**Modeling approach:** simplify contagion model to focus on network uncertainty
- a reduced-form model of spillovers across financial institutions
- blunt policy instrument: policymaker can force banks to hold more liquid assets
- but exposures are unknown to the policymaker
- she can learn the exposures by paying a cost $\kappa$

**Analytical approach:** random graphs and random intervention
- network of spillovers created by a random graph model (Poisson, power law, ...)
- policymaker only knows the distribution $\{p_k\}_{k=1}^n$ of contagious exposures across banks
- absent network knowledge, the policymaker intervenes uniformly at random
This Paper: How to Fly a Jet without Instruments

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Main Results

• Optimal policy is jointly determined by
  ▶ (expected) susceptibility of the network to contagion
  ▶ cost of improving network transparency
  ▶ cost of regulating institutions
  ▶ investors' preferences.

• Value of network transparency increases when there is a lot of heterogeneity in network connections.
Comment/Clarification: Misspecified Beliefs?

• The paper assumes that banks **systematically underestimate** the likelihood of being affected by cascades of liquidity shocks.
  ▶ The role of the assumption is to make sure banks “under-insure” themselves against spillovers by under-investing in liquid assets, creating an inefficient equilibrium and room for intervention.

• But I am not sure why this is necessary. Given that there are negative spillovers, banks still do not internalize the consequence of “under-insurance” on **others**.

• Isn’t it possible to determine the parameter range over which all banks choose the “low” level of investment in the liquid asset, without the above assumption.

• More than just a cosmetic change
  ▶ the assumption distorts the desirability of interventions: the policymaker would want to regulate a single isolated bank that underestimates risks.
  ▶ would be nice to isolate the component of regulation coming from network interactions.
• One of the main findings of the paper is that the expected number of failing banks may be non-monotone in the extent of intervention.

• $x$: the fraction of banks that are regulated uniformly in random

• When there is large heterogeneity in bank connections,

  “for small values of $x$, increasing $x$ isolates banks with only few contagious exposures with high probability, making cascades relatively more likely.”

• This would be natural if there are strategic substitutabilities: securing more banks may induce others to take more risks.

• But if all banks are already taking maximal risk, why is it that more intervention induces more contagion?
Comment/Wishlist: Comparative Statics

- The model has many moving parts.
- Makes a convincing case that optimal intervention depends on the interaction of
  - distribution of interbank linkages
  - cost of improving network transparency
  - cost of regulation
  - ambiguity aversion

- It would be nice to have comparative static results that
  1. isolate each channel by itself
  2. clarify the interactions between different channels in a transparent manner
Comparative Statics: Example

• Nice and clean result for Poisson random networks

\[ p_k = e^{-\alpha} \frac{\alpha^k}{k!} \]

• The paper shows that the planner now has more incentives to identify the most contagious banks as \( \alpha \) goes up.

• However, an increase in \( \alpha \) corresponds to both
  ▶ the average number of contagious exposures per bank
  ▶ the variation of contagion exposures across banks.

• Both probably are quite relevant for the main result.
• But would be nice to have results that separate the average level of effect from the dispersion.