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

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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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This Paper: How to Fly a Jet without Instruments

- 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 κ

- 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

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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.

Comment/Question

- 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 α goes up.

- However, an increase in α 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.