

Intermediation and Voluntary Exposure to Counterparty Risk

Discussion by Lucy White

The Fundamental Point

- Efficient networks are not (always) equilibrium networks. And equilibrium networks are not always efficient.
- Why not? What's the externality?

The Fundamental Point

- Interestingly, the externality here is NOT that when one bank joins the network it increases or decreases others systemic risk.
- The externality is a pecuniary “business stealing” one. When a bank joins a lending chain it can “steal” other banks rents even if it makes no net contribution to surplus.

The Fundamental Point

- More generally, the problem is that the pricing is “wrong”: banks are not paid their net contribution to surplus when they join the network.
- If banks had to pay their externality (like a Groves-Clark-Ledyard mechanism) when they join (a “connection fee”) then (I conjecture) that networks would be efficient. But that may be difficult to implement.

Definitions: Efficiency and Equilibrium

- An efficient network involves only the needed banks in the lending chain (i.e. those that have funds, and those that have investment opportunities).
- Equilibrium networks sometimes involve additional banks in the lending chain. This is inefficient because those superfluous banks are needlessly exposed to the risk of default (with associated losses).
- [When lending fees are not generous enough, there are also equilibria with underconnection.]

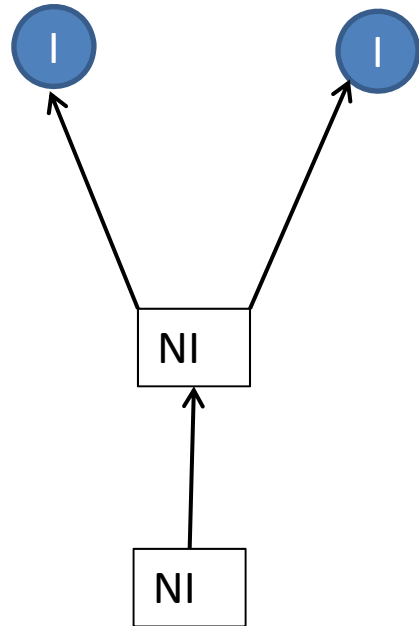
Why these extra banks?

- The superfluous banks join because they are able to get rents from intermediation (a fraction α of whatever the gains from intermediation are). This may offset (for them) the expected cost of default losses.
- But, the gain in intermediation rent is a pure transfer, so socially the loss to this extra intermediation is not offset.
- So why do the other participants in the network “let” this happen?

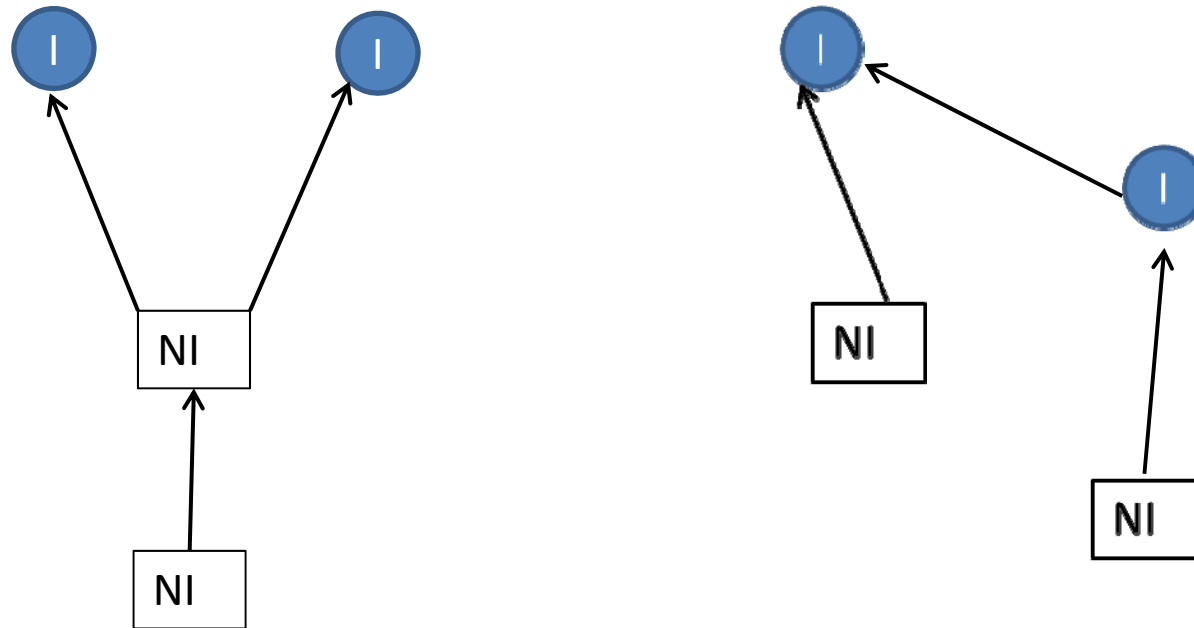
The accomplice

- The “superfluous” bank is always an I-bank (with a investment project but no funding), since banks with funding are always useful and never superfluous (since investment has CRS).
- The superfluous bank has an accomplice in deviating to the inefficient network: one of the NI banks, who wants to be on a shorter intermediated chain (to get more rents), and will succeed in doing so with some probability by attaching himself to the “deviating” I bank instead of the NI bank he is “supposed” to attach himself to.

The Efficient Network with 2I, 2 NI banks



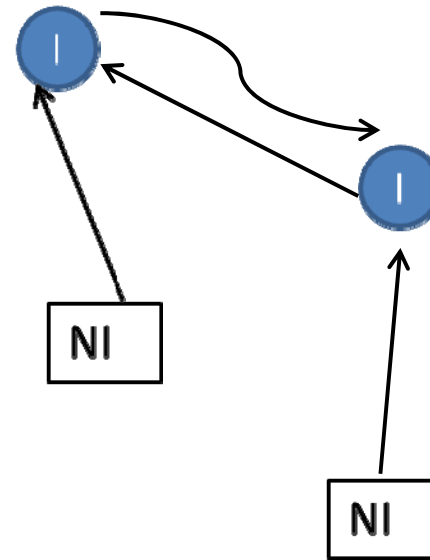
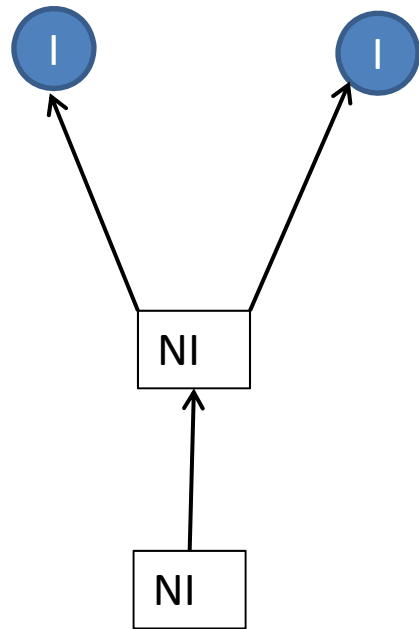
The Deviation



Why does this happen?

- NI can't directly connect to both I banks – since he has only 1 unit of funding, he's only allowed to connect to (“promise funds to”) 1 bank.
- But NI wants to connect directly to an I (because he gains more profits). This I can avoid the inefficiency of NI's \$1 not being used (when this I has no investment opportunity) by I also connecting to the other I bank. So there is a net gain to these two to deviating.

The Equilibrium



Key Assumptions (1)

- NI can't directly connect to more than 1 bank. (can't "overpromise funds").
- If it could, no I would have to intermediate a trade to another I.
- But...Generates a "realistic" looking network: "small" banks on the periphery have a relationship with a single "big" bank in the "core". Banks in the core have lots of connections to each other.

Key Assumptions (2)

- **Division of intermediation rents is exogenous.**
- If intermediation rents were endogenous, the other I and NI could compensate the deviating pair to prevent them deviating (social surplus is higher so this must be possible). But prices cannot adjust in this way.
- What's sufficient: anonymity, borrower indifferent to length of chain; positive payments to members of chain; lenders gain from shorter chains.
- Reasonable? Maybe banks are unaware of “who's upstream from them” (where the money comes from).

Conclusions

- Very nice, thought-provoking paper.
- Plausible network structure and interesting conclusions on efficiency.
- But what to do about it? “Ban” non-essential banks from being in the chain? In a search-type model these banks might be necessary.
- Central clearing – but done by a “non-I” bank?
- Policy response seems very difficult – need to discourage banks from “excessive” intermediation.
- Additional results on diversification inefficiency also very interesting but should probably be in a separate paper.