Traditional and Shadow Banks During the Crisis

Édouard Chrétien  Victor Lyonnet*
INSEE  HEC Paris

Summary

- Theory of the coexistence of traditional and shadow banks
- Shadow banks escape the costly regulation traditional banks must comply with, while traditional banks can access deposit insurance in a crisis.
- In equilibrium traditional and shadow banks coexist.
- An increase in deposit insurance leads to a decrease in the relative size of the traditional banking sector.
- In equilibrium, the shadow banking sector is larger than socially optimal.
- Consistent with several facts from the 2007 financial crisis.

Difference between T- and S-banks

- T-banks have access to deposit insurance at \( t = 1 \) in the bad news state. This enables them to issue risk-less debt that promise to pay up to a fixed amount \( k > 0 \) per bank.
- T-banks face regulatory costs: At \( t = 2 \), T-banks only get a fraction \( \delta \in [0, 1] \) of asset returns.

Coexistence between T- and S-banks: an Ecosystem

- Bankers' trade-off: low regulation costs but need to sell assets at a discount in a crisis versus high regulation cost but ability to buy assets at a discount in a crisis.
- The larger the relative size of the traditional (shadow) banking sector, the higher (lower) asset prices in a crisis, and the higher bankers' incentive to set up a shadow (traditional) bank in the first place.

Equilibrium consistent with three stylized facts

- Fact 1: Asset flow from shadow to traditional banks
- Fact 2: Liabilities flow from shadow to traditional banks
- Fact 3: Asset fire sales (see e.g. Gorton and Metrick, 2011)

Effects of changes in the level of deposit insurance (\( k \))

- On the one hand, T-banks' increased debt capacity allows them to operate on a larger scale.
- On the other hand, T-banks use their increased debt capacity to bid for S-banks' assets in a crisis, which leads to higher asset prices.

Expansion in deposit insurance

Expanding deposit insurance for traditional banks in a crisis increases the relative size of the shadow banking sector.

Normative analysis

- There is a pecuniary externality via asset prices: too many bankers set up a S-bank in equilibrium (as in Stein, 2012).
- Bankers fail to internalize that operating a S-bank reduces the support from T-banks in a crisis, hence reducing other S-banks' ability to issue risk-less debt initially.
- Welfare can always be improved by imposing lump sum taxes on S-banks and subsidizing T-banks.

Figure 1: Timeline

Figure 2: Asset payoff

Figure 3: Centralized and decentralized equilibrium allocations