

Title and Abstract Provided at Application

Title: Endogenous Financial Networks: Efficient Modularity and Why Shareholders Prevent It (joint with Jonathon Hazell, MIT)

Abstract: We study the implications for systemic risk of the classic conflict of interest between debt-holders and equity-holders. Through trades banks can diversify idiosyncratic risks and avoid failures following small shocks. However, the resulting financial interdependencies can create systemic risk and the possibility of multiple failures following large shocks. A social planner would resolve this trade-off by creating modular financial networks. However, we assume equity-holders control banks and show their exist trades away from the efficient networks that increase equity value. Finally, we ask which trades are profitable more generally, and whether these systematically exacerbate or ameliorate systemic risk?

Project Update

The paper has changed substantially in the last year. An empirical element has now been added and the questions being addressed have evolved. It is now a three-authored paper, with Dr. Co-Pierre Georg from the Bundesbank joining the project. Despite a realization that correlated shocks are likely to be an important contributor to systemic risk, the correlation between counterparty risk and risk from exposures outside the financial system has been largely overlooked. On the one hand, this is with good reason. Banks should be incentivized, by diversification motives, to form links to banks with different exposures to themselves, as in the canonical paper by Allen and Gale (2001). On the other hand, anecdotal evidence from the financial crisis shows that there were banks with similar outside exposures who were substantial counterparties to one another, and this may have contributed to system risk. The German commercial banking system provides an ideal setting to look for this pattern. We find robust evidence of that German commercial banks lend substantially more to each other, when they have more similar exposures outside the financial system. This network pattern, in which similar nodes are more likely to connect to each other, is a remarkably persistent finding across a huge array of very different network settings, and known in the networks literature as homophily. Our empirical findings motivate a theoretical investigation. First, we ask whether homophily is efficient. It is not. We then investigate the incentives of banks' equity holders to form homophilous networks. We characterize the efficient network, showing that banks are arranged into groups with strong links within group and weak links across groups that act like firebreaks. We then show that banks are incentivized to deviate from this efficient network by increasing the correlation of their exposures with their counterparties as a means of risk-shifting.

Externally this project has been presented widely since the last report. It has been presented in the CERF seminar series, at a financial network conference at Columbia University organized by Nobel laureate Joe Stiglitz, to practitioners at CERF in the city and at theory seminar of Universitat Autònoma de Barcelona.