Title: Optimal equity infusions in interbank networks

Author: Hamed Amini Andreea Minca Agnès Sulem

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Optimal equity infusions in interbank networks: Highlights

- We contribute to the literature on network models for systemic risk by addressing a new problem of optimal control of interbank contagion using equity infusions.
- The general model of failure propagation incorporates a funding illiquidity component on top of the network channeled insolvency propagation. In the complete information case, we make no modeling assumptions on the recovery rates.
- We introduce a theoretical model for intervention where the optimizing government seeks to minimize the losses stemming from insolvencies and inefficient runs by short term creditors.
- The partial information model extends the previous models to a continuous-time model with partial information about balance sheets revealed over time.
- Our perspective on the relation between insolvency risk and illiquidity risk differs and thus complements the recent literature on funding illiquidity. While, similarly to the recent single-bank funding liquidity risk models, the risk of insolvency prompts creditors to withdraw funding, in our paper the insolvency risk is carried through the network. The two perspectives are complementary. Previous models are single-bank models in which the focus is on the interaction of the short term creditors and in which the illiquidity barrier as a function of the capital is endogenous. Here, this function is exogenous, while insolvency risk comes from "far-away" in the network.