Assets Diversification and Systemic Risk in Financial System

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Abstract

This paper studies systemic risk on financial system, and focuses on the assets diversification due to liquidity dynamic allocation in this system. The more direct reason for bankruptcy,liquidity insolvency, is used. Firstly, diversification in interbank assets and in external assets has a dual effect: a mutual insurance and transmission channel for liquidity crisis. When the initial liquidity shock is small, mutual insurance dominates. Bankruptcy proportion increases as the connection level of interbank network increases.While when the shock is big, the opposite is true. Estimate of the threshold for big shock is also showed. A bank lowers its own probability of failure by diversifying its portfolios. However, if many banks do the same, the probability of big systemic risk can increase. These results help us to have a more profound view about the impact of diversification on the systemic risk in the financial system.

Keyword: complexity on financial system, systemic risk, complex network, multi-agent modeling, liquidity allocation

1 Figures and Tables

References

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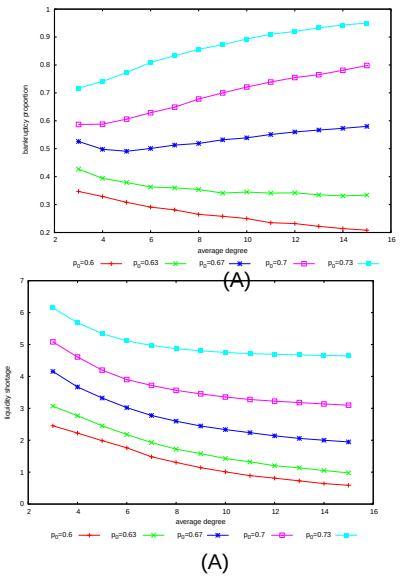

Figure1: Systemic risk in interbank assets diversification. The x-axis is average degree in the interbank network, the y-axis is bankruptcy proportion, and different curve represents for different household withdraw rate p_0. Bankruptcy proportion(up) and liquidity shortage (below) in random network.