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# From banks' strategies to financial (in)stability

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## Abstract

This paper aims to shed light on the emergence of systemic risk in credit systems. By developing an interbank market with heterogeneous financial institutions granting loans on different network structures, we investigate which market architecture is more resilient to liquidity shocks and how the risk spreads over the modeled system. In our model, credit linkages evolve endogenously *via* a fitness measure based on different banks' strategies. Each financial institution, in fact, applies a strategy based on a low interest rate, a high supply of liquidity or a combination of them. Interestingly, the choice of the strategy influences both the banks' performance and the network topology. In this way, we are able to identify the most effective tactics adapt to contain contagion and the corresponding network topology. Our analysis shows that, when financial institutions combine the two strategies, the interbank network does not condense and this generates the most efficient scenario in case of shocks.

**JEL codes:** G01; G02; D85

*Keywords:* Interbank market; dynamic network; fitness model; network resilience; bank strategy.

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## 1. Introduction

The role of the financial sector and the effects of financial development on the economic system have been extensively debated (Schumpeter, 1934; Robinson, 1952). Specifically, the development of the financial sector has traditionally been indicated as a key ingredient of the economic growth (Rajan and Zingales, 1996; Levine, 2005), as an instrument to foster entrepreneurship (Black and Strahan, 2002) and increase firms' productivity (Herrera and Minetti, 2007; Dabla-Norris et al., 2012). However, recent evidence has suggested that the rapid flourishing of the finance industry could have a negative effect on the economic system (Arcand et al., 2015). The fast expansion of the financial sector

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