

The Dynamics of the Interbank Market: Statistical Stylized Facts and Agent-Based Models

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Abstract: We review a number of basic stylized facts of the interbank market that have emerged from the empirical literature over the last years. Our objective is to explain these findings as emergent properties of dynamic agent-based model of the interaction within the banking sector. To this end, we develop a simple dynamic model of interbank credit relationships. Starting from a given balance sheet structure of a banking system with a realistic distribution of firm size, the necessity of establishing interbank credit connections emerges from idiosyncratic liquidity shocks. Banks initially choose potential trading partners randomly, but form preferential relationships via an elementary reinforcement learning algorithm. As it turns out, the dynamic evolution of this system displays a formation of a core-periphery structure with mostly the largest banks assuming the roles of money center banks mediating between the liquidity needs of many smaller banks. Preferential interest rates for borrowers with strong attachment to a lender prevent the system from becoming extortionary and guarantee the survival of the small periphery banks.