Empirical Essays On the Stability Of the Brazilian Financial System
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Summary

The financial crisis of 2007-09 was an extreme event which led to a profound reform of the regulatory framework for financial institutions that aims to reduce the probability of a new crisis. This thesis is composed of three chapters that investigate some vulnerabilities of financial markets that became apparent during the global financial crisis such as the interconnectedness of financial institutions, the effect of credit supply on house prices, and the run on nonbank financial intermediaries.

In Chapter 2, “Dynamic interbank network analysis using latent space models”, a dynamic latent space approach is used to model directed networks of monthly interbank exposures. In this model, each node has an unobserved temporal trajectory in a low-dimensional Euclidean space. Model parameters and latent 'banks' positions are estimated within a Bayesian framework. We apply this methodology to analyze two different datasets: the unsecured and the secured (repo) interbank lending networks of Brazilian banks. We show that the model that incorporates a latent space performs much better than the model in which the probability of a tie depends only on observed characteristics. The latent space model is able to capture some features of the dyadic data, such as transitivity, which the model without a latent space is not able to.

In Chapter 3, “The effect of bank credit supply on house prices: Evidence from Brazil”, we exploit the regulatory framework that governs housing lending in Brazil to estimate the effect of credit supply on house prices and loan terms. To establish the direction of causality, changes in savings deposits of parent banks are used as an instrumental variable for changes in credit supply at the municipality level. First, we show that growth in savings deposits positively affects lending in municipalities where banks have branches. We find that an increase in local credit supply is associated with a rise in the growth rate of house prices and leads to a decrease in the spread of contractual loan rates. Furthermore, we show that the increase in credit supply resulted in an increase in banks’ minimum provisions for loan losses due to an expansion of lending to less creditworthy borrowers.

In Chapter 4, “Investors’ behavior and mutual fund portfolio allocations during
the financial crisis in Brazil”, I examine the flow and performance of mutual funds in Brazil and their portfolio allocations during the financial crisis. First, consistent with the empirical literature, I show the sensitivity of fund flows to past performance and the negative impact of large outflows on fund returns, using a large dataset of mutual funds with different investment strategies. Subsequently, I show that mutual funds exposed to deposits and securities issued by small banks suffered significant outflows, due to concerns about the solvency of those banks after the Lehman’s default in 2008. Returns of funds exposed to small banks were also negatively affected. Funds adjusted their portfolios by reducing the exposure to deposits of small banks, but when term deposit coverage limits were raised, funds increased risk taking. Our results illustrate the potential risks presented by asset management firms to the extent that interconnections with other financial institutions can induce the transmission of shocks across markets.