Interbank Lending Relationships, Financial Crises, and Monetary Policy

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Summary in English

Disruptions of over-the-counter wholesale funding markets were at the heart of the financial crisis 2007/08 and the European sovereign debt crisis as of 2010. In particular, unsecured interbank lending markets exhibited significant turmoil as witnessed, for instance, by increased interbank spreads and decreased lending volumes. The recent developments in interbank markets trigger several questions that are both of academic and public policy interest: To what extend do prices and volumes in interbank markets reflect search frictions and asymmetric information about counterparty credit risk? Are these problems more severe for cross-border loans, and do market solutions (relationships) and monetary policy help to mitigate tensions in money markets? In this thesis I address these questions in three main chapters.

In the second chapter of this thesis, we analyze the role of lending relationships in the German interbank market during the first stage of the financial crisis from 2006 until 2007. We document trading patterns in the market and estimate a panel selection model of market participation and bilateral interest rates. We find that after the onset of the crisis in August 2007, relationship lenders provide cheaper loans to their close borrowers. Moreover, in particular opaque borrowers benefit more from lower interest rates when borrowing from a relationship lender. The findings are robust to the inclusion of controls for search frictions, borrower risk, reserve holdings and a large set of (time-varying) bank and bank-pair fixed effects. The results suggests that besides search frictions asymmetric information problems about counterparty risk are an important factor in the pricing of interbank loans.

In the third chapter, we propose a dynamic network model of unsecured interbank lending in an over-the-counter market to explain bilateral lending relationships. The key drivers of the model are credit risk uncertainty and search frictions. Banks choose which counterparties to approach for bilateral Nash bargaining and select monitoring of counterparties to reduce credit risk uncertainty. We solve the model and estimate the structural parameters using indirect inference based on network statistics of the Dutch interbank market from 2008-2011. The estimated model shows that credit risk uncertainty and peer monitoring are crucial factors in matching the dynamic structure of the lending network, in particular the existence of relationship lending and the core-periphery structure. Moreover, shocks to credit risk uncertainty can bring down market activity for extended periods of time, but banks with extensive relations stay in the market. Changes in the width of the central bank interest rate corridor have a direct effect on interbank lending by altering the outside options. Yet, another indirect effects kicks in as banks adjust their monitoring and search efforts as a response to the policy change.

In the forth chapter, we analyze the impact of financial crises and monetary policy on the supply of wholesale funding liquidity, and also the compositional effects via cross-border and relationship lending. Our empirical analysis is based on euro area interbank loan-level information for the 2008 to 2012 period to exploit the Lehman and sovereign crises and the ECB's main non-standard monetary policy policies on banks. We find that crises implies worse access, volume and spreads for overnight and even more for longer-term maturities. While after Lehman's failure supply restrictions particularly worsen for cross-border lending, we find significant heterogeneity during the sovereign debt crisis depending on the borrower's country of origin. Relationship lenders provide more access and higher volumes but charge higher prices during both crises. We further exploit the price dispersion in overnight lending and provide a new measure related to rationing in credit markets. Our results suggest important time, bank, and bank-pair heterogeneity, in particular riskier borrowers and borrowers from periphery countries face a higher price dispersion during the crisis. Moreover, the dispersion decreases when the ECB promises unlimited liquidity at a fixed price in the Lehman period or announces the 3-year-LTROs in December 2011.

In summary, this thesis provides new empirical and theoretical evidence of over-the-counter interbank lending markets in the euro area. Using a new loan-level dataset, it focuses on the bank-to-bank view of interbank lending and contributes to our understanding of the role of key frictions on interbank credit availability and conditions. Finally, a number of monetary policy analyses document the effect of various central bank interventions on interbank lending.