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Germany's interbank market during the 2007-08 crisis

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An oft-repeated assertion is that, in the economic and financial crisis, the interbank market fell victim to market failure, denying solvent credit institutions the ability to obtain funding. A recent analysis of the German interbank market now calls this narrative into question.

The interbank market is where banks trade with each other in foreign currency, securities or central bank money, and where they provide each other with mostly short-term, but sometimes also longer-term, liquidity.

In the economic and financial crisis that struck in the years 2007 and 2008, however, there were fears that this core function of the interbank market – redistributing liquidity efficiently among banks – was not working as it should. Central banks in many parts of the world responded with extensive measures in a bid to restore stability in the financial system and thus cushion the potentially negative impact on the real economy. Their action included not only injecting huge quantities of liquidity into the international financial system but also adjusting their monetary policy toolkits.

The non-standard measures taken by central banks may have succeeded in preventing a liquidity squeeze, but they also had the undesirable side-effect of eroding market discipline to a degree. This motivated us to analyse Germany's interbank market to see whether it is true that credit institutions were no longer able to raise funding in the interbank market that was both sufficient in quantity and fairly priced. It may well have been a situation similar to that in the US interbank market (see Afonso et al, 2011) – stress levels were elevated, but interbank liquidity did not generally dry up.

Importance of interbank markets and role of central banks

The role played by the interbank market, primarily in connection with market discipline and the provision of liquidity at risk-appropriate prices, has attracted intense debate in the literature. One robust insight is that, in the interbank market, it is usually possible to distinguish between banks that are insolvent and those that are experiencing a temporary bout of illiquidity. However, the disciplining effect of the interbank market is being stifled by the existence of implicit guarantees – just take the central bank's role as the lender of last resort, or the problems surrounding „too big to fail" institutions. That said, most analyses find that, under normal circumstances, the availability of liquidity and the price a bank pays for it in the interbank market will reflect that bank's risk profile.

One question remains unanswered, however, and that is whether banks can still adequately assess the riskiness of other market participants in times of intense uncertainty and market turmoil in the financial system as a whole.

Study focus and methodology
To answer this question, we conducted a study which analysed lending between German financial institutions in the period from the first quarter of 2000 to the third quarter of 2012. Using a two-step estimation model, we first tested how sensitive they were to shocks affecting the market as a whole. Examples of these shocks include elevated uncertainty surrounding the future path of the aggregate economy and a general loss of confidence affecting the interbank and financial markets. The second step looked at banks' sensitivity to shocks that might target just a single institution, such as an outflow of liquidity, a spike in loan defaults or a downturn in the regulatory capital ratio.

The thrust of our analysis was to examine how much of a bearing a relative deterioration in balance sheet-specific factors has on an institution's position in the interbank market. We began by identifying the probability of an interbank relationship being established, and then ascertained the major variables which determined the actual amount lent. By segregating the impact of idiosyncratic and aggregate shocks and distinguishing between periods with different market conditions, our analysis represents a major step towards gaining a better understanding of interbank market dynamics.

Interbank markets and relationships largely stable
Our results show that periods of general uncertainty and market disruption had an impact on interbank relationships in Germany which was statistically significant, but quantitatively an indication that economic tension was low. Figure 1 depicts the credit volume in the German interbank market overall as well as the credit volume net of intragroup lending. It reveals how surprisingly stable the interbank market was during this time, even after the third quarter of 2007 – a spell which saw events such as the collapse of IKB and the announcement by BNP Paribas that it would close a number of its investment funds, and the attendant spike in money market rates for unsecured lending. Evidently, then, there is nothing to support the oft-repeated assertion that Germany's interbank market either collapsed or succumbed to paralysis. Papers on the US interbank market (Afonso et al, 2011) and on the Italian and Portuguese interbank markets (Affinito, 2012; Cocco et al, 2009) likewise show that interbank liquidity did not generally dry up in these markets.

Lending in the German interbank market Figure 1

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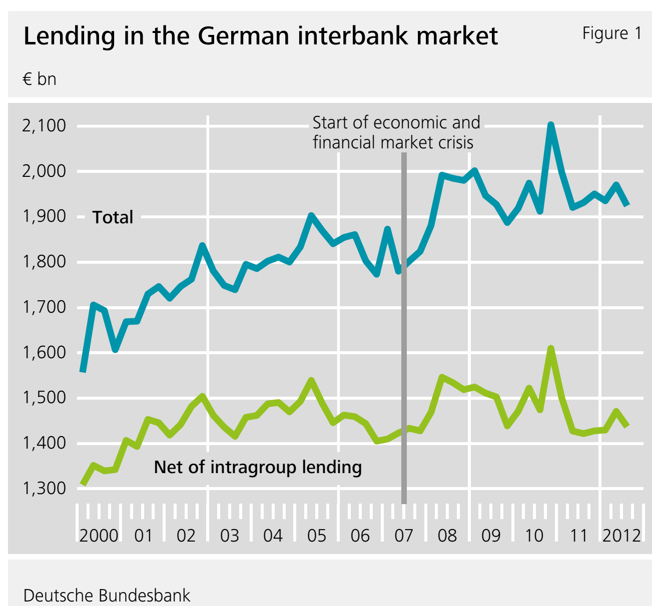

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Individual market participants facing difficulties
This apparent conflict with the general narrative can be resolved by analysing not only the changes in aggregate terms, but also the changes in individual lending relationships. This indicates that idiosyncratic factors are by far the most important determinants of stable lending relationships. It also shows that, during the crisis period, banks did not scale back their lending to other financial institutions uniformly, but based their behaviour on balance sheet-specific factors at the borrowing and lending banks.

At borrowing banks, a deterioration in the regulatory capital ratio, a decline in liquidity and a drop in the quality of the credit portfolio are the primary reasons why these institutions could only raise funding at less favourable conditions.

As for lending banks, it is mostly only a downturn in the quality of their own credit portfolios, ie an increase in non-performing loans, that prompts banks to withdraw from the interbank market to a significant degree. This shows that besides examining whether institutions meet the already-tightened capital adequacy and liquidity standards, banking supervisors also need to focus more of their attention on the quality of bank assets.

It is also evident that the effects do not follow a linear pattern. Only when a bank sustains considerable losses of more than 40 % of its regulatory capital will it experience funding problems in the interbank market. From that point on, the importance of interbank market funding diminishes at an ever increasing rate, however. Liquidity shocks – that is, a decline in an institution's liquidity resources caused by cash outflows, say, or (fire) sales of liquid securities – have less of an impact, relatively speaking. But unlike equity capital

shocks, their effects are linear: even relatively small shocks lead to (small-scale) funding problems and more major shocks to proportionally larger funding problems. Moreover, general conditions in the interbank market dictate how strong the effect of liquidity shocks will be. Remarkably, the impact of liquidity shocks in the pre-crisis period was four times larger than it was during the crisis period itself, which we define as beginning from the third quarter of 2007. A logical explanation for this would be that the interventions by central banks desensitised market participants to heightened liquidity risk.

Conclusion:

Our results would suggest that the stretched funding conditions which a number of banks in Germany experienced during the 2007 economic and financial market crisis cannot simply be blamed on a market failure in the German interbank market. We find that balance sheet factors – chiefly shocks to individual banks' capital and liquidity resources – as well as a deterioration in the quality of credit portfolios share some of the responsibility. Even in the midst of the crisis, German banks were capable of determining whether their counterparties were solvent or not. While broad-based central bank interventions in the interbank market can help to ensure that all financial institutions have access to liquidity during a crisis, this can also undermine the disciplining effect of the market.

Disclaimer:

The views expressed here do not necessarily reflect the opinion of the Deutsche Bundesbank or the Eurosystem.

Literature

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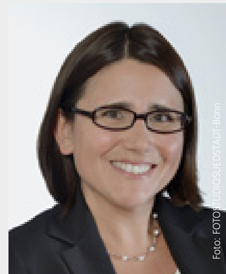

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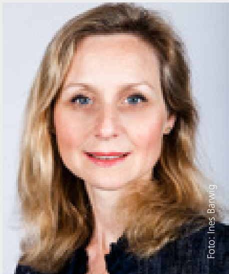

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