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Impact of the financial crisis on bank run risk – Danger of the days after

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ABSTRACT

We examine the developments of depositor knowledge, attitudes, and behavior throughout the recent financial crisis and discuss their impact on bank run risk. Based on a self-collected data set surveying depositors before (2007), at (2008), and after the peak of the crisis (2009), we observe a worrying dynamic pattern. At the peak, depositors knew more about deposit insurance, placed more importance on deposit security, and slightly raised their deposits. However, in the aftermath of the crisis the enhanced depositor knowledge proved to be non-permanent while the increased importance of deposit security and the exposure of depositors persisted. The proportion of completely uninformed, strongly involved, and highly exposed depositors, who carry the highest risk of triggering a bank run, was reduced around the peak of the crisis but rebounded strongly afterwards, even exceeding pre-crisis levels. These findings point to a higher bank run risk in the aftermath than during the financial crisis.

1. Introduction

The recent financial crisis led to the most dramatic collapse of the global financial markets since the great depression. Aside from enormous asset meltdowns (Brunnermeier, 2009), several financial institutions all over the world collapsed, had to merge, or experienced other kinds of bailouts. In this crisis, depositors played a crucial role. The US was hit by prominent bank failures induced by panicky investors withdrawing their deposits. IndyMac Bank, one of the largest mortgage originators, was hit by a bank run in July 2008 and had to be placed into conservatorship by the Federal Deposit Insurance Corporation (FDIC). Only two months later, Washington Mutual, the largest savings and loan association in the US, also fell victim to bank runners, resulting in the biggest bank failure in American history. These events demonstrate the power of depositors and their ability to make an existing crisis worse. Since any bank run carries the danger of being contagious, potentially triggering a banking crisis (Kaufman, 1994), this threat to the banking system as a whole, and through harmful spillover effects to the real economy, makes depositor behavior an important concern for regulators and politicians.

Diamond and Dybvig (1983) have shown in their model that a well-designed deposit insurance system can serve as effective bank run prevention, assuming that depositors are fully informed about it. Yet little empirical research has been done on depositor knowledge about this insurance system. Only depositors who are aware of their far reaching protection through the existing deposit insurance schemes can remain calm even in times of a crisis. The few studies dealing with depositor knowledge regarding deposit insurance find investors critically uninformed (Bowyer et al., 1986; Steiger et al., 2001; Inakura et al., 2005; Safakli and Gueryay, 2007). However, none of these studies explore the development of depositor knowledge and behavior throughout a financial crisis, i.e., in a situation when knowledge about deposit insurance truly matters.

Our paper aims to fill this gap. We examine the developments of depositor knowledge, attitudes, and behavior throughout the recent financial crisis and discuss their consequences for bank run risk. Our analysis is based on a self-collected data set obtained by surveying depositors before (2007), at the peak of (2008), and after the financial crisis (2009). The special feature of our data set is that we have actual and unbiased pre-crisis information on investor sentiment and behavior, which in combination with the two follow-up surveys yields a distinctive documentation of the developments throughout the financial crisis.

We find that at the peak of the crisis, depositors revealed enhanced knowledge about deposit insurance, placed more

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importance on deposit security, and even raised their deposits, compared to pre-crisis levels. However, in its aftermath depositors' knowledge enhancements did not persist while the relevance of deposit security remained high. Moreover, depositors stayed more strongly invested in deposits and hence were more exposed to the risk of bank failures. An analysis at the individual investor level shows that the proportion of depositors who carry the highest risk of being the trigger of a bank run was strongly reduced around the peak of the crisis but exceeded even pre-crisis levels in the aftermath. We argue that these developments led to an increase in bank run risk after the financial crisis, which fortunately has not materialized so far.

In Section 2 we review related literature and introduce the deposit insurance systems in Germany, which is where we conducted our surveys. We discuss the importance of depositor knowledge, attitudes, and behavior for bank run risk, and derive our hypotheses. Section 3 describes our empirical study and presents results. In Section 4 we conclude and draw policy implications.

2. Background and emerging hypotheses

2.1. Related literature

The foundation of this paper is the literature on bank runs. Early papers dealing with this phenomenon (Bryant, 1980; Diamond and Dybvig, 1983; Chari and Jagannathan, 1988; Gorton, 1988; Allen and Gale, 1998) primarily set up adequate models that provide explanations for bank runs and derive policy implications. Particularly important to our research is the work of Diamond and Dybvig (1983). They examine the role of deposit insurance within this nexus and identify it as a means to completely rule out bank runs while retaining welfare enhancing contracts. Based on their theoretical model, they find that fully informed and insured depositors never withdraw their savings prematurely. Hence, in the presence of deposit insurance and informed depositors, no banks runs should occur. They show that this holds true irrespective of the withdrawal policies of other agents.

However, the recent history of bank runs and previous findings from the literature question the theoretical assumption of depositors being (fully) informed. Despite the existence of comprehensive deposit insurance and frequent communication about its key characteristics, depositors decided to massively withdraw their savings which triggered bank runs. One possible explanation for this unpredicted behavior is that investor comprehension of the deposit insurance system is insufficient, undermining its effectiveness. The few studies focusing on depositor knowledge indeed show that depositors possess only marginal knowledge about the deposit insurance systems implemented (Steiger et al., 2001; Inakura et al., 2005; Safakli and Gueryay, 2007). Furthermore, Bowyer et al. (1986) show that this even holds for depositors who are actually involved in a bank failure. They report the results of a survey taken at a depositors' meeting in a bankrupt US institution and find that the majority of their 578 subjects had only limited or incorrect information about the bank's deposit insurance.

2.2. Deposit insurance in Germany

The German banking sector is composed of three main pillars: savings banks, credit cooperatives, and commercial banks. Each of the three pillars has its own privately administered and privately funded deposit insurance system (for an overview see Beck, 2002; FSB, 2012).

The deposit insurance systems of savings banks and credit cooperatives are similar, because both are based on the solidarity of their member institutions. Savings banks, as well as credit cooperatives, are set up as a two-tier system. Local banks are usually confined to operating in local markets that more or less do not overlap. The few affiliated central institutions mainly offer services that cannot be supplied efficiently by small local banks themselves, due to lack of competence or size (Koetter et al., 2006). Hence, neither savings banks nor credit cooperatives compete directly against each other. Therefore, neither pillars' deposit insurance systems focus solely on the coverage of deposits but rather protect the member institutions themselves (National Association of German Cooperative Banks, 2011; German Savings Bank Association, 2011). The primary goal of these voluntary guarantee schemes is to maintain the liquidity and solvency of all banks of the respective pillar. Membership in these schemes is compulsory for the associated institutions. Since the schemes safeguard the viability of the member institutions, the survival of the banks is basically guaranteed. Deposits at savings banks or credit cooperatives therefore enjoy virtually unlimited protection, unless the respective pillar collapses as a whole.

These comprehensive and far reaching deposit (also called institutional protection) schemes are the reason why savings banks and credit cooperatives are not obliged to participate in the compulsory deposit insurance system mandated by German law (Deposit Guarantee and Investor Compensation Act; Section 12 EAEG). The law is based on European directive 94/19/EC on deposit guarantee schemes and came into force in 1998. Since then, all deposit-taking credit institutions which have been granted authorization to conduct a banking business in Germany (i.e., primarily commercial banks) are required to cover their deposits through membership in the compulsory compensation scheme. As commercial banks are in direct competition with each other, the main purpose of the compulsory deposit insurance scheme is to guarantee the payout of insured deposits and not to bail-out a bankrupt institution. Thus, commercial banks are only forced to pay contributions to the compensation scheme to cover administrative costs and to provide sufficient funds for serving potential insurance claims. In December 2008, the European Parliament passed a legislative resolution (P6 TA(2008)0630) to extend the coverage provided by the compulsory deposit insurance schemes across Europe. It decided to increase the compulsory coverage level in two steps from the original 20,000 Euros up to 100,000 Euros. In addition, depositors' 10% loss participation in case of a bank failure was disposed. Furthermore, the length of payout delay in case of a bank failure was shortened from a maximum of 90 days to 30 days.

Aside from participating in the compulsory deposit insurance scheme, commercial banks had already established a voluntary system in Germany in 1976 (the so-called "Einlagensicherungsfonds des Bundesverbandes deutscher Banken e. V."). Today, this system is used to provide deposit insurance above the compulsory scheme's compensation to commercial bank customers. Until now, it fully secured the deposits of each customer for up to 30% of the relevant liable capital of the respective bank. This implies deposit protection up to several million Euros per customer, with a set minimum coverage of at least 1,500,000 Euros per customer (Association of German Banks, 2012).[1] Thus, depositors of commercial banks also enjoy virtually unlimited protection, as long as the insurance funds are sufficient, which is called into question only for very large banks (Bigus and Leyens, 2008).

To sum up, private depositors of German banks benefit from extensive guarantees provided by the different deposit insurance systems. Since the average amount of deposits per capita in

[1] In 2011, the union of commercial banks decided to reduce their voluntary coverage level over the next 13 years. Until 2025, depositor protection will be decreased to a guaranteed minimum of 437,500 Euros and an upper boundary of 8.75% of the relevant liable capital of the respective bank (Association of German Banks, 2012).