



Uninsured deposits as a monitoring device: Their impact on bond yields of banks



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ABSTRACT

We empirically analyze the impact of uninsured deposits on a bank's cost of public debt. Uninsured depositors can exert market discipline over a bank and potentially reduce its agency cost of debt through informed monitoring. We use a sample of public bond issues by U.S. bank holding companies from 1994 to 2013 and find statistically strong evidence that banks with more uninsured deposits relative to their assets issue bonds with a lower interest rate. Findings suggest a one standard deviation increase in uninsured deposits is associated with a 46–64 basis point decrease in bond yield. In addition, we find that bonds issued by banks with higher default risk or lower reputation benefit more from uninsured savers. Our paper contributes to the literature that explores market discipline and provides evidence that banks can benefit from it through a lower borrowing cost.

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1. Introduction

We empirically investigate the impact of uninsured deposits on a bank's cost of external funds. Calomiris and Kahn (1991) show how uninsured demandable deposits help create market oversight over a bank. Uninsured savers have an incentive to acquire information about their bank's risks and at every point in time they decide whether to retire or roll over their deposits. Diamond and Rajan (2001) argue this type of arrangement can create a credible commitment from the bank to not engage in moral hazard actions or rent extraction on some of its stakeholders, and in fact helps the bank raise demand deposits at a lower cost.

In this paper we test if the amount of uninsured deposits allow a bank to issue public debt at a lower cost. In a principal agent framework, Rey and Stiglitz (1993) show that uninsured savers can provide a layer of monitoring that helps reduce the agency cost of debt. Banks choose not to engage in asset substitution or risk-shifting if this results in uninsured savers withdrawing their deposits and starting a run that can potentially leave the bank

insolvent. Bondholders, aware of this, benefit from this market oversight and require a lower premium to lend their funds.

We collect a twenty year sample of public bond issues from U.S. bank holding companies (BHCs) and test if the proportion of uninsured deposits to total assets in a BHC reduces the interest rate spread over a Treasury bond of comparable maturity after controlling for bank and bond characteristics. We find that uninsured deposits lower the bond interest spread in a statistically and economically significant way.

Market discipline in the banking sector is considered an important complement to the oversight of formal regulators. Implied in the third pillar of the Basel II accord is that markets exert harsh punishment on banks that take excessive risks. Basel II states that market discipline “complement[s] the minimum capital requirements and the supervisory review process. ...Market discipline can contribute to a safe and sound banking environment.” (Basel Committee on Banking Supervision, 2006, p. 226).

Berger (1991) describes market discipline in banking as a situation in which private sector agents face costs that increase as banks undertake risks, and take actions on the basis of these costs. Flannery and Sorescu (1996) state that the “most valuable type of discipline requires that investors anticipate likely future changes in bank risk, and price the effects into securities offered for sale today” (p. 1356). This suggests that the agency cost of debt is an important part of the price of public bonds.

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It has long been recognized that dispersed ownership, coordination costs, and free riding make it unfeasible for bondholders to effectively monitor the firm. It is in this setting that uninsured deposits can play a significant role in mitigating the cost of agency for bondholders.

Calomiris and Kahn (1991) and Diamond and Rajan (2001) argue that uninsured depositors have an incentive to become informed about their bank's actions and risks. The sequential service rule, where demandable deposits are paid in a first-come first-served basis, promotes depositors to become informed. If default is possible, the sequential service rule encourages uninsured savers to be the first in line to withdraw their funds or they risk not being made whole. Empirical evidence from Maechler and McDill (2006) show that uninsured savers penalize riskier banks by withdrawing their funds, and increases in the interest rate offered to uninsured savers does not raise uninsured deposits in poorly performing banks.¹

The credible threat of uninsured savers causing a run reduces the bank's risk-taking. Rey and Stiglitz (1993) argue this reduces the agency cost of long-term debt since the uninsured deposits serve as a mechanism where the bank credibly commits to not engage in risk-shifting or rent extraction. Calomiris and Kahn (1991) explain how uninsured demandable deposits create an incentive-compatible intermediation, where the bank – assumed to possess better technology to assess loan risk ex-ante and monitor the borrower ex-post – lends the funds to the best perceived use and agrees to not act against the interests of depositors.

Rey and Stiglitz (1993) further show that as uninsured depositors become bank monitors and exert a form of market discipline on the bank, holders of long-term debt reap some of the benefits of this discipline.

To test our hypothesis we obtain a sample of 1505 public bond issues from 105 distinct BHCs from 1994 to 2013. We begin our sample in 1994 since the early 1990s was a time of regulatory change. The Federal Deposit Insurance Corporation Improvement Act of 1991 established the system of Prompt Corrective Action and made clear that uninsured depositors and other creditors were not protected by the government (Jagtiani et al., 2002). In addition, the National Depositor Preference Act of 1993 established the priority for the distribution of unsecured claims in the case of bank liquidation.²

We find strong statistical evidence that banks with more uninsured deposits relative to their assets pay lower yields in their public bonds. The economic magnitude of our results highlight the importance of uninsured deposits. For the typical bank in our sample, one standard deviation increase in uninsured deposits is associated with a 46–64 basis points reduction in bond yields, this represents between 25% and 35% of the average bond spread in our sample.

Boot et al. (1993) explain that in markets with repeated transactions reputational capital can serve to limit the incentives for moral hazard. By nature, banking entails the creation of repeated relations between bank and saver, and bank and borrower. Thus, reputation can be a bonding mechanism through which the bank can lower its agency cost of debt. We use different proxies for bank reputation – such as asset size, rating, and traded equity – and find that the impact of uninsured deposits on bond yields is much more relevant for banks with low reputation.

¹ In a sample of Latin American countries, Martinez Peria and Schmukler (2001) find that during banking crisis even insured depositors exert market discipline by withdrawing their funds from riskier banks.

² Curry et al. (2008) study the effect of CAMEL ratings on the loan profile of banks and find that for even this type of official bank supervision the impact changed after 1993.

In addition, Jensen and Meckling (1976) argue that the benefits to the firm from asset substitution are higher for firms with excessive leverage ratios or when they are approaching their default boundary. We find that the effect of uninsured deposits on bank bond spreads is roughly doubled for banks with higher default risk and in the top third of the distribution of liabilities to risk-weighted assets.

In further tests we demonstrate that the impact of uninsured deposits on bond yields is robust to several potential issues. The effect is not caused by deposits being a low-cost source of funding, but rather by their uninsured characteristic. We also show our results are not driven by a few banks in our sample that issue many multiple bonds, and they are not affected by a potential substitution effect between bonds and deposits.

Our paper provides evidence that banks can benefit from market discipline through a lower funding cost. We complement the findings of Diamond and Rajan (2001) who argue that uninsured deposits, by creating financial fragility, permit banks to issue demand deposits at a lower cost. Our findings suggest that uninsured depositors also help reduce the agency cost of debt and allow banks to issue public debt at a lower cost.

We contribute to the literature that explores the cost and benefits of deposit insurance on bank risk. Maechler and McDill (2006) and Martinez Peria and Schmukler (2001) show that depositors exert market discipline on banks and penalize those that take excessive risks, while in a cross country sample Demirgüç-Kunt and Huizinga (2004) show that explicit deposit insurance reduces market discipline on banks and may contribute to banking crises over the world.³

A vast previous literature, such as Flannery and Sorescu (1996), Morgan and Stiroh (2001), Evanoff and Wall (2002), among others, suggest that debt markets adequately differentiate riskier banks from safer ones and force each one to pay according to their risk. Further, Calomiris (1999) and Calomiris and Herring (2013) explore the way debt markets can improve bank supervision by providing an observable market price for bank risk.⁴

We provide a link between these two strands of literature by showing that the financial fragility created by uninsured deposits mitigates the agency cost of debt and allows banks to issue public debt at a lower cost. To the best of our knowledge, we are the first paper to document how uninsured deposits affect bond yield spreads of banks.

The rest of the paper is organized in the following manner. We develop our hypotheses and present our theoretical background in Section 2, our data and methodology is discussed in Section 3. Our results are presented in Section 4, after that we analyze the robustness of our findings. Lastly, we provide some concluding remarks.

2. Hypothesis development

Depository institutions finance their assets with a mix of deposits and long-term debt. Since deposits may be withdrawn at a moment's notice, this creates a well known asset maturity problem. Bank's assets include medium- to long-term investments (business loans, mortgage financing, etc.) but a sizable portion of their liabilities can be called upon at anytime. In their seminal work, Diamond and Dybvig (1983) argue this mismatch is part of

³ Beltratti and Stulz (2012) study an international sample of banks during the financial crisis of 2007–2008 and find no evidence that banks in countries with formal deposit insurance performed any worse during the crisis. Evidence in Cubillas et al. (2012) suggests that the market discipline of depositors weakens after a banking crisis, particularly in situations where explicit blanket guarantees, forbearance, and government recapitalization programs are used to deal with the crisis.

⁴ In a recent paper, Baele et al. (2014) show that equity markets also serve as a disciplining device by creating risk signals to which bank managers react.

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