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The disciplinary effect of subordinated debt on bank risk taking

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ABSTRACT

Using data for publicly listed commercial banks and bank holding companies around the world, I investigate the disciplinary effect of subordinated debt on bank risk taking in the period 2002–2008. In addition, I examine whether this effect depends on national bank regulations and legal and institutional conditions. I provide evidence that subordinated debt has a mitigating effect on bank risk taking. Further, the results suggest a threshold level of national bank regulations and economic development above which subordinated debt mitigates risk taking. Overall, the evidence supports the efficacy of proposals calling for increased use of subordinated debt in banking firms.

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1. Introduction

In this study, I examine whether subordinated debt mitigates bank risk taking and whether national bank regulations and economic development affect the relation between subordinated debt and bank risk taking. My study is motivated by policy considerations. It is evidenced from recent financial turmoil that excessive risk taking behavior of individual banks could expose the whole banking and financial system to systemic risk. Banking crises, in turn, have been shown by Dell'Ariccia et al. (2008), and Reinhart and Rogoff (2008) to have independent negative effects on the real economy. Hence, there is an increased call for more market discipline on banking firms. Subordinated debt has been widely proposed as a means to achieve this end.

Proponents of increased use of subordinated debt by banking firms argue that it can impose both direct and indirect market discipline on these firms, with an emphasis on the latter effect. Direct discipline is exerted through investors' monitoring and increasing a bank's expected cost of issuing subordinated debt in response to an increase in the bank's perceived risk. Indirect market discipline is exerted when other agents, for example, banking supervisors, use the information from subordinated debt markets to increase the bank's cost of operations. The anticipation of higher funding and operation costs in response to higher risk taking is expected to provide banks with greater incentives to refrain from taking excessive risk. This, in turn, is expected to lower banks' vulnerability to insolvency and consequently to reduce the likelihood of systemic risk.

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Most empirical studies in the field, such as Flannery and Sorescu (1996), DeYoung et al. (1998, 2001), Berger et al. (2000), Jagtiani et al. (2002), and Sironi (2003), have focused on investigating two issues. First, whether subordinated debt holders understand banking firms' true condition and incorporate these assessments promptly into the yields on their subordinated debt. And second, whether subordinated debt markets provide banking supervisors with relevant and helpful information for use in monitoring and disciplining bank risk taking. However, little is known about whether having subordinated debt in place mitigates bank risk taking.[1] In addition, while theories, such as in Decamps et al. (2004), Rochet (2004), and Distinguin (2008), suggest that the disciplinary effect of subordinated debt on bank risk taking depends crucially on national bank regulations and legal and institutional conditions, to my knowledge, no study has attempted to investigate this issue empirically.

My study uses a sample of publicly listed commercial banks and bank holding companies around the world with data available over the period 2002–2008. With alternative measures of bank risk taking and empirical methods that address concerns about endogeneity and sample selection, I find evidence supporting the view that, under certain conditions, subordinated debt has a mitigating effect on bank risk taking. In particular, I show that this effect is not driven by sample selection bias, is robust to a variety of robustness checks, and is in place during both the crisis and non-crisis periods. Moreover, the results suggest that the risk mitigating effect appears to be a distinctive feature of subordinated debt as a type of uninsured bank liabilities, possibly owing to its most junior status and a longer maturity than other uninsured bank debt. Also, the results are consistent with the prediction that there is some threshold level of national bank regulations and economic development above which subordinated debt exerts an effect on bank risk taking. Overall, the evidence lends support to proposals calling for increased use of subordinated debt in banking firms. Though I find that the disciplinary effect of subordinated debt is non-existent in too-big-to-fail banking firms and banking firms in which the government has a considerable stake, this does not necessarily downplay the role of subordinated debt in enhancing market discipline for the ultimate goal of reducing the likelihood of systemic risk, as destabilizing forces could arise from multiple smaller banks. However, it underscores the importance of serious consideration of a package of reforms that aim to stabilize the financial system and eliminate the too-big-to-fail issue.

In addition to regression analysis, I also conduct an event study where I use the nearest neighbor matching method to estimate the average effect on risk taking for banking firms that first have raw subordinated debt changed from zero to positive during the period 2003–2007. The results from this event study corroborate the study's key findings.

Examining risk taking by banks, my study is also closely related to the work of Laeven and Levine (2009) who study the effect of shareholders on bank risk taking. They provide evidence consistent with the view that large owners with substantial cash flow rights have greater incentives and power to increase bank risk taking than small shareholders, and that the relation between bank risk and national bank regulations depends on each bank's ownership structure. I, on the other hand, show that subordinated debt holders can help mitigate bank risk taking, and that this effect depends on national bank regulations as well as legal and institutional conditions.

The rest of the paper is organized as follows. Section 2 discusses characteristics of subordinated debt and its relation with bank risk taking, and reviews the empirical and theoretical studies on this relation. Section 3 presents testable hypotheses. Section 4 describes the methodology and data. Section 5 reports and analyzes empirical results. Section 6 concludes.

2. Characteristics of subordinated debt and its relation with banking firm risk taking

Since the 1980s, there have been several regulatory reform proposals to introduce a mandatory subordinated notes and debentures component as part of the bank capital requirement in the US.[2] This is argued to be a means to increase market discipline on banking firms. Such proposals, however, have not yet been implemented by US bank regulators as there are still concerns about using the signal extracted from debt yields to monitor or predict the viability of banking firms due to the lack of market depth, trading frequency, heterogeneous debt characteristics, and infrequency of issuance (Evanoff et al., 2007). Calomiris (1999) mentions that a market discipline approach failed to win sufficient political support, perhaps because the US Congress and many bank regulators were more comfortable with regulatory discretion than with market-controlled outcomes. However, it should be noted that proposals for a mandatory subordinated debt policy generally view supervisory review and market discipline as complementary rather than substitutes.

Efforts to enhance the role of market discipline are not specific to the US. In fact, market discipline is one of the three pillars of the Basel II Capital Accord (together with minimum capital requirements and supervisory review), and allowing/requiring subordinated debt as a part of regulatory capital is viewed as an indicator of enhanced private oversight. The perceived need for more effective market discipline has intensified for at least two reasons. First, the increasing size and complexity of banking organizations have significantly complicated bank supervision and regulation. The second reason, which is closely related to the first, is the desire of financial regulators to lower the potential vulnerability of the banking and financial system to systemic risk that could have severely adverse effects on the real economy.

While subordinated debt is not the only bank liability potentially capable of providing market discipline, it is argued that subordinated debt issues have characteristics that make them particularly attractive for providing increased market discipline

[1] Krishnan et al. (2005), and Ashcraft (2006) provide mixed evidence on this relation. In a recent study, Belkhir (in press) examines the effect of subordinated debt on the hedging behavior of US commercial banks over the 1995–2009 period and documents evidence that, under certain conditions, bank managers take subordinated debt holders' risk preferences into account when making risk management decisions.

[2] For a summary of different generations of proposals on subordinated debt holding, see Kwast et al. (1999), Evanoff and Wall (2000), Lang and Robertson (2002).

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