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Market discipline and bank efficiency☆

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ABSTRACT

This paper investigates whether depositors and market investors exert disciplinary pressure on bank management in terms of efficiency improvement. We find that banks with more outstanding deposits are more cost-efficient, although little effect is found with respect to profit efficiency. This implies that depositors, the primary providers of funds to banks, likely play an important role in disciplining bank management, at least in terms of enforcing efficient use of inputs. Market discipline has garnered increasing attention as a mechanism to ensure bank soundness. Our results imply that depositors, the largest creditors to banks, may be of primary importance in this mechanism.

1. Introduction

The aim of this paper is to investigate whether investors have a disciplinary effect on bank management. Bank corporate governance has a uniqueness that does not apply to non-financial corporations. In banking, the presence of regulators reduces the need for governance from other stakeholders. Due to the increasing complexity of banking organizations and to risk management practices, however, regulators have begun recently to draw attention to *market discipline*, the use of market information to discipline banks for their safe and sound management, especially as this concept was designated

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as one of the three pillars of the Basel II International Capital Framework (see Bank for International Settlement, 2006). The role of market investors in disciplining banks is thus not straightforward.

This paper investigates whether market discipline actually functions. We approach this issue from a unique angle. We apply a methodology of a distinct strand of literature: bank efficiency studies. Based on the literature, we estimate the cost inefficiency of banks. We then investigate whether proxies for market discipline as well as other governance mechanisms contribute to reduce the extent of the inefficiency. For the purpose of comparison, the same analysis is applied to profit inefficiency of banks as well.

Using data from the post-banking-crisis period in Japan, we find that banks with more outstanding deposits are more cost-efficient, although little effect is found with respect to profit efficiency. These results imply that at least in terms of enforcing efficient use of inputs, depositors in Japan may play an important role in disciplining banks. This finding is consistent with those in earlier studies that stress the importance of depositors in the market discipline mechanism in Japan (Fueda and Konishi, 2007 and Spiegel and Yamori, 2007).

The rest of the paper is composed as follows. Section 2 reviews related literature. Section 3 explains the data and the methodology. Section 4 presents the cost inefficiency results. Section 5 applies the methodology to profit inefficiency. The final section concludes the paper.

2. Literature review

In this paper we use inefficiency measures to investigate the extent of market discipline. The paper thus links, and is oriented toward two distinct strands of literature: market discipline studies and bank efficiency studies. First, a large number of studies have been conducted on market discipline.[1] Bliss and Flannery (2002) distinguish two aspects of market discipline: *market monitoring*, i.e., market investors' and depositors' assessments of banks' conditions which are to be reflected in the banks' securities prices and deposit rates or quantities, and *market influence*, i.e., banks' reactions brought on by market monitoring to counteract adverse changes in bank condition. Abundant studies have clarified that market monitoring is actually effective, while only a small number of studies have been conducted on market influence (e.g., Billett et al., 1998, and Bliss and Flannery, 2002).[2] The present study investigates whether or not banks are under pressure from market investors and depositors, and is thus considered as a market influence study.

This study's uniqueness as a market discipline study lies in its use of inefficiency measures to investigate market discipline. Bank performance measures have been used to investigate market influence, but performance measures depend not only on bank behavior but also on behavior of bank customers and the economic environment. Efficiency measures more directly reflect banks' responses to market discipline because they are relatively less likely to be affected by factors other than bank behavior. Another notable difference between the present study and existing market discipline studies is our use of multiple proxies to take account of market discipline from different investors.

Second, viewed as an efficiency study, this paper can be classified as a study on the determinants of bank inefficiency.[3] Some of those studies incorporate corporate governance factors as well as other factors as determinants of inefficiency. However, to the best of our knowledge, no study has made a thorough analysis taking into account the discussion in the market discipline studies, and using multiple proxies.[4]

[1] See surveys such as Flannery (1998), De Ceuster and Masschelein (2003), Kaufman (2003), and Flannery and Nikolova (2004).

[2] Some, but far from exhaustive examples of market monitoring studies focus on: uninsured large CDs (e.g., James, 1988, 1990 and Ellis and Flannery, 1992), subordinated debt (e.g., Sironi, 2003 and Evanoff and Wall, 2001), and equity shares (e.g., Park and Peristiani, 2007). Studies using data from Japan include Imai (2006) (deposits), Imai (2007) (subordinated debt), Fueda and Konishi (2007) (deposits), and Spiegel and Yamori (2007) (deposits). Fueda and Konishi (2007) also investigate whether market discipline leads to more bank restructuring.

[3] See Berger and Humphrey (1997) for a survey. Berger (2007) reviews international evidence. As for studies on determinants of bank inefficiency, Berger and Mester (1997) extensively review the literature and conduct the most conclusive analysis. See Altunbas et al. (2007) and Sturm and Williams (2008) for recent analysis.

[4] There are also some studies that have investigated bank efficiency in Japan (e.g., Molyneux et al., 1996, Altunbas et al., 2000, Harimaya, 2008 and Drake et al., 2009). However, no study has investigated the determinants of inefficiency of Japanese banks.