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Risk management, capital structure and lending at banks $\stackrel{\text{\tiny{theta}}}{\longrightarrow}$

A. Sinan Cebenoyan^{a,1}, Philip E. Strahan^{b,*}

 ^a Frank G. Zarb School of Business, Hofstra University, Hempstead, NY 11549, USA
 ^b Boston College, Carroll School of Management and Fellow, Wharton Financial Institutions Center, 324b Fulton Hall, 140 Commonwealth Avenue, Chestnut Hill, MA 02467, USA

Abstract

We test how active management of bank credit risk exposure through the loan sales market affects capital structure, lending, profits, and risk. We find that banks that rebalance their loan portfolio exposures by both buying and selling loans – that is, banks that use the loan sales market for risk management purposes rather than to alter their holdings of loans – hold less capital than other banks; they also make more risky loans (loans to businesses) as a percentage of total assets than other banks. Holding size, leverage and lending activities constant, banks active in the loan sales market have lower risk and higher profits than other banks. Our results suggest that banks that improve their ability to manage credit risk may operate with greater leverage and may lend more of their assets to risky borrowers. Thus, the benefits of advances in risk management in banking may be greater credit availability, rather than reduced risk in the banking system.

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^c Corresponding author. Tel.: +1-617-552-6430; fax: +1-617-552-0431.

E-mail addresses: finazc@hofstra.edu (A.S. Cebenoyan), philip.strahan@bc.edu (P.E. Strahan). ¹ Tel.: +1-516-463-5702.

1. Introduction

It is difficult to imagine another sector of the economy where as many risks are managed jointly as in banking. By its very nature, banking is an attempt to manage multiple and seemingly opposing needs. Banks stand ready to provide liquidity on demand to depositors through the checking account and to extend credit as well as liquidity to their borrowers through lines of credit (Kashyap et al., 2002). Because of these fundamental roles, banks have always been concerned with both solvency and liquidity. Traditionally, banks held capital as a buffer against insolvency, and they held liquid assets – cash and securities – to guard against unexpected withdrawals by depositors or draw downs by borrowers (Saidenberg and Strahan, 1999).

In recent years, risk management at banks has come under increasing scrutiny. Banks and bank consultants have attempted to sell sophisticated credit risk management systems that can account for borrower risk (e.g. rating), and, perhaps more important, the risk-reducing benefits of diversification across borrowers in a large portfolio. Regulators have even begun to consider using banks' internal credit models to devise capital adequacy standards.

Why do banks bother? In a Modigliani–Miller world, firms generally should not waste resources managing risks because shareholders can do so more efficiently by holding a well-diversified portfolio. Banks (intermediaries) would not exist in such a world, however. Financial market frictions such as moral hazard and adverse selection problems require banks to invest in private information that makes bank loans illiquid (Diamond, 1984). Because these loans are illiquid and thus costly to trade, and because bank failure itself is costly when their loans incorporate private information, banks have an incentive to avoid failure through a variety of means, including holding a capital buffer of sufficient size, holding enough liquid assets, and engaging in risk management. Froot et al. (1993) and Froot and Stein (1998) present a rigorous theoretical analysis of how these frictions can affect non-financial firms' investment as well as banks' lending and risk-taking decisions. According to their model, active risk management can allow banks to hold less capital and to invest more aggressively in risky and illiquid loans.

In this paper, we test how access to the loan sales market affects bank capital structure and lending decisions. Hedging activities in the form of derivatives trading and swap activities – activities that allow firms to manage their *market* risks – have been shown to influence firm performance and risk (e.g. Brewer et al., 2000). Our approach is to test whether banks that are better able to trade *credit* risks in the loan sales market experience significant benefits. We find clear evidence that they do. In particular, banks that purchase *and* sell their loans – our proxy for banks that use the loan sales market to engage in credit-risk management – hold a lower level of capital per dollar of risky assets than banks not engaged in loan buying or selling. Moreover, banks that only sell loans but do not buy them, or banks that only buy loans but do not sell them. This difference is important because it suggests that active rebalancing of credit risk – buying *and* selling rather than just selling (or buying) – allows banks to alter their capital structure. Our key results are therefore not driven

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