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Loan collateral and financial reporting conservatism: Chinese evidence

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ABSTRACT

We examine the relation between the use of collateral and financial reporting conservatism for a sample of Chinese firms. In the absence of flexibility in risk pricing through interest rates and strong contract enforcement in China, we find that lenders reduce collateral requirements from more conservative borrowers and that this negative relation is significantly moderated by borrowers' poor credit quality and low asset tangibility. Our finding that conservatism can result in a tangible benefit in the form of lower collateral requirements indicates that lenders value financial reporting conservatism. However, the benefit from financial reporting conservatism is muted as lenders become more concerned about borrowers' default risk or ability to pledge tangible assets as collateral against loans.

1. Introduction

Collateral requirements arise from standard agency problems in financial relationships. One set of theoretical studies explains collateral as a signaling device to address *ex ante* information gaps between borrowers and lenders. These models predict that collateral induces borrowers to reveal their default risk. Specifically, lenders provide a menu of contract terms such that high (low) quality borrowers choose secured (unsecured) loans at lower (higher) premiums (Bester, 1985; Chan and Kanatas, 1985; Besanko and Thakor, 1987a,b; Boot et al., 1991).

Another school of thought proposes that frictions other than *ex ante* information asymmetry motivate the use of collateral as part of an optimal debt contract. These frictions include *ex post* moral hazard problems (Myers, 1977; Smith and Warner, 1979; Aghion and Bolton, 1992), difficulties in enforcing contracts (Albuquerque and Hopenhayn, 2004; Cooley et al., 2004), and costly state verification (Townsend, 1979; Gale and Hellwig, 1985; Williamson, 1986; Boyd and Smith, 1993). The right to repossess collateral serves as a credible threat to ensure that borrowers behave in the best interest of lenders. Such a disciplinary role of collateral is central to the theory of incomplete financial contracts. Berger et al. (2011b) find that collateral requirements motivated by *ex post* moral hazard problems are empirically dominant, relative to collateral requirements used to address *ex ante* information asymmetry.

Although there is a sizable body of research on collateral use in debt contracts, the vast majority of that research focuses on developed markets. As a result, much remains to be known about collateral choice in emerging markets. Theory suggests that bank requests for collateral to deal with agency problems become higher in emerging markets where the information environment is generally more opaque (Hainz, 2003; Menkhoff et al., 2006, 2012). However, banks could also be concerned about the suitability of collateral as an efficient contracting tool due to weaker laws, institutions, and enforcement in emerging markets (Qian and Strahan, 2007; Bae and Goyal, 2009). A natural question that arises is whether there are other mechanisms that lenders can use to improve efficiency in setting collateral requirements. In this study, we focus on borrowers' financial reporting conservatism (hereafter referred to as conservatism) and study how it relates to the use of collateral in addressing the debt agency problem in China, the largest emerging market.

Basu (1997) interprets conservatism as "the accountants' tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses". Researchers advance four explanations for conservatism: contracting, litigation, regulation, and taxation (Watts, 2003). Under the contracting

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explanation, conservative reporting is a means of addressing moral hazard.[1] In the context of risky debt financing, asset substitution and underinvestment problems drive lenders' demand for timely information about the value of the firm's net assets in the event of liquidation. The consequences of moral hazard are of serious concern to lenders when firm value falls and shareholders' incentive to delay the recognition of bad news for fear of losing control rights to the firm's assets becomes stronger. Many accounting-based debt covenants (such as the debt-to-cash flow ratio, interest coverage ratio, and debt-to-equity ratio) restrain shareholders from opportunistically expropriating wealth from lenders when a firm approaches economic distress. Covenants that constrain such expropriation only become binding if the financial reporting system recognizes the deterioration of a firm's financial position. In that regard, conservatism (i.e., timely loss recognition) can improve the efficiency of these covenants because they are more likely to be binding in distress and therefore are more likely to limit wealth expropriation by shareholders. It is the use of accounting-based covenants that essentially leads to increased demand for conservatism. Clearly, lenders benefit from borrowers' conservatism and they can induce it by imposing certain contracting costs on borrowers.[2]

Most studies examining the (debt) contracting explanation focus on conditional conservatism (e.g., Zhang, 2008; Beatty et al., 2008; Nikolaev, 2010; Chen et al., 2010), often referred to as news-dependent or *ex post* conservatism, which involves firms writing down the book value of net assets in a timely manner upon receiving bad news but not writing up net assets as quickly upon receiving good news. In comparison, unconditional conservatism, often referred to as news-independent or *ex ante* conservatism, involves the predetermined understatement of the book value of net assets. Under unconditional conservatism, firms commit at inception to recognizing book values of net assets that are below the expected market values during their lives (Ryan, 2006). Ball and Shivakumar (2005) point out that conditional conservatism enhances contracting efficiency, but unconditional conservatism seems inefficient or at best neutral in contracting. Following the prior literature, we examine conditional conservatism and its relation to the use of collateral.

Because the use of collateral is costly to lenders and they can benefit from borrowers' conservatism, we expect that lenders will reduce collateral requirements from more conservative borrowers. More conservative borrowers are more likely to violate debt covenants and to violate them sooner, so conservatism benefits lenders at the expense of borrowers (Zhang, 2008). It is reasonable to argue that lenders are willing to share the benefits with conservative borrowers in the form of reduced collateral requirements.

We also conjecture that the negative relation between the use of collateral and conservatism is moderated as lenders become more concerned about default risk and the potential recovery in default. From lenders' perspective, the marginal benefit of collateral increases in loan default risk. As their exposure to this risk increases, lenders become reluctant to reduce collateral requirements and share the benefits from conservatism. Similarly, when borrowers have only limited ability to pledge tangible assets as collateral against loans, lenders find it more critical to maintain collateral requirements as opposed to relaxing them in exchange for borrowers' conservatism.

We test our hypotheses using a sample of Chinese firms. China is the largest emerging market and Chinese firms overwhelmingly rely on banks to finance their capital needs.[3] China also provides a unique opportunity for examining collateral requirements because of the government's tight control over interest rates during our sample period, which severely limits lenders' use of loan pricing to differentiate across borrowers with different risks (Podpiera, 2006; Koivu, 2009). In developed markets, lenders not only use collateral but also price risk to maximize profits. However, the endogenous decisions of setting interest rates and collateral requirements are likely to contaminate any observed relation between collateral use and conservatism. This is less of a concern in China.[4]

We hand-collect information on the sources of bank loans and the use of collateral disclosed in firms' annual financial reports for 5358 firm-year observations between 2001 and 2006. We measure collateral use at the firm-year level as the ratio of total collateral loans to total loans outstanding at the end of the year for which the sources of the loans and information on collateral are disclosed in the financial statements. Collateral loans account for 26.2% of outstanding loans in our sample. Following Khan and Watts (2009), we construct *C_Score* to measure conservatism and validate this measure in the Chinese setting.[5]

We first document that there is a negative relation between the use of collateral and conservatism after controlling for financial performance, risk and other loan features. The lower collateral requirements established for more conservative borrowers suggest that lenders generally value conservatism and are willing to share the benefits from conservatism with borrowers. Next, we classify sample firms into high and low observed credit quality groups based on whether they had any loans in default in the last year (Jiménez et al., 2006). We find that the negative relation between the use of collateral and conservatism is significantly less pronounced for firms with low observed credit quality. This is consistent with our expectation that when lenders offer debt financing to riskier borrowers, they perceive the marginal benefit of collateral to be higher and therefore are less likely to relax collateral requirements in exchange for conservatism.

Lastly, we classify sample firms into two equal-size groups by industry and year, according to the level of their asset tangibility (measured as the proportion of fixed assets to total assets at the

[1] The litigation explanation points out that litigation produces asymmetric payoffs in that overstating the firm's net assets is more likely to generate litigation costs for the firm than understating net assets. By understating net assets, conservatism reduces the firm's expected litigation cost. The taxation explanation posits that asymmetric recognition of gains and losses enables profitable firms to reduce the present value of taxes and thereby increase the value of the firm. Under the regulation hypothesis, financial reporting standard setters and regulators have incentives to favor conservative reporting because of the asymmetry in regulators' costs. They are likely to face more criticism if firms overstate net assets than if they understate net assets. Conservatism reduces the political costs imposed on them. We refer interested readers to Watts (2003) for a more detailed discussion on the four explanations for conservatism.

[2] Our discussion above focuses on the role of conservatism in enhancing the efficiency of (accounting-based) debt covenants *after* the loan is issued. When lenders assess a potential loan, they are concerned about the likelihood the borrower will have enough net assets to cover the loan. Since future values of the firm and net assets are generally not verifiable at the time when lenders evaluate a loan application, they obtain verifiable lower bound measures of the current value of net assets (generated by a conservative financial reporting system) and use those as inputs in the loan granting decision (Watts, 2003).

[3] During our sample period (2001–2006), Chinese listed firms obtained RMB (i.e., *Renminbi*, the Chinese currency) 12.5 trillion in new loans from banks, about 20 times the amount raised from the stock market (China Securities and Futures Statistical Yearbook, 2007).

[4] In a developed loan market such as the US, where interest rates are unconstrained, research shows that conservatism is negatively related to interest rates because lenders reward borrowers for conservative reporting by lowering interest rates (Zhang, 2008). Addressing our research questions in the US setting is likely to suffer from an endogeneity bias because we cannot rule out any indirect relationship between collateral use and conservatism through their common effect on interest rates.

[5] We note that although it is preferable to examine the relation between collateral requirements and conservatism at the individual loan level, comprehensive samples of private loan agreements with specific information on loan characteristics are not available in China. Therefore, we examine a firm-year measure of collateral loans and use proxies for various loan characteristics at the firm-year level.