

Balance Sheet Conservatism and Debt Contracting

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Abstract

We study the role of cumulative conservatism in asset values (balance sheet conservatism) on private debt contracting. We focus on *balance sheet conservatism* to isolate its effect from *conditional conservatism* which has been studied in the prior literature. We hypothesize that balance sheet conservatism provides lenders greater confidence in the collateral value of the firm's assets and reduces the risk in the loan (*Asset Value Hypothesis*). Second, we hypothesize that balance sheet conservatism constrains future conditional conservatism such that debt contracting efficiency is high only when the balance sheet conservatism is not high (*Constraint Hypothesis*). Using a sample of bank loans we study interest spreads, deal size, covenant intensity and covenant slack and find results consistent with our hypotheses. Our study sheds light on the screening and monitoring role of balance sheet conservatism in debt contracting.

Balance Sheet Conservatism and Debt Contracting

1. Introduction

Lenders rely upon financial statements for screening and monitoring of borrowers. Prior research has provided evidence of the linkages between borrower financial reporting choices and debt contracting (see surveys by Holthausen and Watts, 2001; Fields, Lys, and Vincent, 2001; and a discussion by Sloan, 2001). This study focuses on how conservative accounting choices in borrowers' financial statements impacts contract terms in private debt contracts. The evidence builds upon insights from recent literature which has examined a similar question (for example, Beatty, Weber and Yu, 2008; Zhang, 2008; Frankel and Litov, 2007; Nikolaev, 2007). The primary focus of these studies to examine how ongoing conditional conservatism facilitates monitoring of the borrower. In contrast, in this study we focus on how conservative asset values on the borrowers' balance sheet impact the setting of both the initial contract terms and the post-loan monitoring terms by lenders.¹

We define "balance sheet conservatism" as the cumulative conservatism in asset values and it includes the effects of both conditional and unconditional ongoing conservatism in periods prior to the loan contracting year. Therefore, balance sheet conservatism results in downward-biased estimates of asset values. We conjecture that the role of balance sheet conservatism in debt contracting could be twofold.

First, balance sheet conservatism could provide important information for screening the borrowers. The downward-biased asset value estimates could provide valuable information to lenders about the collateral value of the assets of the firm and the risk of non-realization of

¹ In general lenders are interested in the assessment of liquidation values of asset-based collateral as reflected on the balance sheet and the ability of the borrower to make periodic interest payments as reflected in the income statement and cash flow statements. Our focus is primarily on the debt contracting effects of the borrower's balance sheet values of assets.

loaned amounts. For example, Watts (2003) highlights the role of conservative asset values in alleviating the concern of lenders with respect to preservation of asset values in the event of potential repayment problems of the borrower.² However, based on Ball and Shivakumar (2006) it is not clear whether balance sheet conservatism would affect debt contracting above and beyond past conditional conservatism.³ Based on their argument, to the extent that the balance sheet conservatism is driven by past unconditional conservatism, any known bias in asset values can be undone. This suggests that any economic role of balance sheet conservatism in debt contracting would be largely subsumed by conditional conservatism of the borrower. However, while the effects of unconditional conservatism could be inverted, information asymmetries between the borrower and lender could make it hard for the lender to completely achieve this inversion. Thus the ultimate effect of balance sheet conservatism, through downward biased asset valuation, on debt contracting remains an open empirical question.

To explore these effects we relate the borrowers' level of balance sheet conservatism at the time of loan initiation on the cost of debt, access to debt and level of monitoring terms set by the lender. We expect that if downward biased asset values are valuable to the lender, borrowers with higher balance sheet conservatism would have a lower cost of debt, larger loan size, lower ex ante monitoring provisions (measured as number of covenants and slack in covenants). Alternatively, if understated asset values merely add noise then we expect that it would be contracting neutral or may even increase borrowing costs. We label these conjectures as the "*Asset Value Hypothesis*" of balance sheet conservatism.

² According to Watts (2003), understated asset values (driven by asymmetric treatment of gains and losses) could "prevent actions by managers and others that reduce the size of the pie available to all claimants on the firm" (p. 215).

³ While unconditional conservatism that is invariant to news always introduces a downward bias in asset values, the downward-bias in asset values arising from conditional conservatism arises from the combination of timely loss recognition and delayed gain recognition based on realization. Watts (2003) does not explicitly distinguish between conditional and unconditional conservatism, Basu (2001) and Ryan (2006) suggest that Watts' argument may involve both types of conservatism.

The second role of balance sheet conservatism in debt contracting relates to monitoring of borrowers. Balance sheet conservatism includes timely recognition of adverse economic events (i.e. conditional conservatism) in the past that could signal the borrower's willingness to make conservative accounting choices.⁴ Such conditional conservatism is valuable for lenders who could then monitor the firm using accounting based covenants and they reward borrowers with lower spreads (Zhang, 2008). However, firms who have been very conservative in the past are constrained in their ability to use write-downs to signal negative economic shocks in future if their asset values are already reported at their lower bound estimates, even when they consistently apply the same conservative accounting policies. We conjecture that balance sheet conservatism provides an estimate of the degree of the constraint on future conservatism at the time of loan contracting. High balance sheet conservatism would reduce the monitoring benefits to the lenders who would then be unwilling to offer lower spreads. We label this conjectured role of balance sheet conservatism on design of monitoring terms as the “*Constraint Hypothesis*”.⁵

We measure balance sheet conservatism by building on Roychowdhury and Watts (2007) who suggest that cumulative conservatism can be measured as the extent to which reported asset values understate the fair value of separable assets. As they point out, the market-to-book ratio would be a noisy measure of balance sheet conservatism because the market value contains the value of monopoly rents in addition to the value of separable assets. Further, several papers view market-to-book as the proxy for unconditional conservatism. In fact existing studies have documented mixed results on the effect of market-to-book ratio on debt contracting (Wittenberg-

⁴ Prior literature has argued that litigation risk and reputation concerns will prevent firms from changing their conservative accounting policies.

⁵ The constraining effect of the asset values in balance sheet on income statement conservatism has been discussed in prior research by Basu (2001), Givoly et al. (2006), and Ryan (2006), modeled by Beaver and Ryan (2005), and empirically tested by Pae et al. (2005), Ball and Shivakumar (2005), Gassen et al. (2006) and Roychowdhury and Watts (2007). However prior studies examining effects of conditional conservatism on debt contracting have tended to assume that the level of past conditional conservatism is a good proxy for the level of future conditional conservatism in earnings (Zhang, 2008).

Moerman, 2008; Beatty et al., 2008; Zhang, 2008; Ahmed et al., 2002).⁶ Therefore, to avoid issues related to noise in measurement of cumulative conservatism using market-to-book ratio, we adopt a different approach. We implement a model to tease out the effects of economic rents, growth options, distress, and market sentiment inherent in the market-to-book ratio. The idea behind the approach is to arrive at an estimate of the fair value of the borrower's separable assets to the book value at the point of the loan grant. We compute our measure of balance sheet conservatism as the residual from a regression of the book-to-market ratio on proxies for rents, misvaluations in the market value, and default risk.⁷

We perform a battery of robustness tests to check the validity of this measure. First, we regress the two components of book-to-market from our model, the fitted value (representing growth opportunities and rents) and the residual (representing balance sheet conservatism) on measures of timely loss recognition, conservative accruals and unconditional conservatism. We find that while our measure of balance sheet conservatism is related to proxies for past conservatism in the expected way, the fitted value does not demonstrate such relations. Second, when we estimate the Basu (1997) regression on groups of balance sheet conservatism and fitted value, only the balance sheet conservatism groups demonstrate patterns in timely loss recognition consistent with balance sheet conservatism resulting from past conservatism and constraining future conservatism. We describe these in greater detail in Section 4.3.

With regards to conditional conservatism, we use two alternative measures to address concerns inherent with individual firm-level measures.⁸ The measures are the sensitivity of

⁶ While Beatty et al. (2008) and Ahmed et al. (2002) document that market-to-book ratio or its adjusted version (following Beaver and Ryan, 2000) is related to debt contracting, Zhang (2008) and Wittenberg-Moerman (2008) find no evidence that market-to-book ratio affects either interest spread or trading spread.

⁷ Such a method is similar in spirit to what Beaver and Ryan (2000) do to decompose the book-to-market ratio into two components, persistent bias and temporary lags in book value.

⁸ See Ryan (2006), Dietrich et al. (2007), and Givoly et al. (2007) for detailed discussions of measurement issues of conditional conservatism.

earnings to bad news from Basu (1997), and the amount of negative non-operating accruals from Givoly and Hayn (2000). We then use principal components analysis to obtain the first principal component of these measures as a parsimonious measure of conditional conservatism of each firm.⁹

To test our hypotheses, we examine loan contracts during the period 1996 through 2006. With respect to our conjecture about the screening role of balance sheet conservatism we find that firms with higher balance sheet conservatism, on average face lower interest spreads. The change in interest spread is economically significant. Going from the 25th to the 75th percentile, balance sheet conservatism decreases the spreads for borrowers by 11 basis points. Next, we find that controlling for firm and deal characteristics, the size of the deal is increasing in balance sheet conservatism suggesting that borrowers' access to capital is increasing in balance sheet conservatism.

Finally, we examine whether the bank's monitoring effort is designed to be lower if balance sheet conservatism helps in better *ex ante* screening. We find that firms with higher balance sheet conservatism have debt agreements containing fewer covenants, both accounting based financial covenants and general covenants that restrict actions of the management. Further, the net worth covenant slack is also looser for these borrowers. Taken together, the results suggest that lenders do not *ex ante* expect to intensively monitor borrowers with higher balance sheet conservatism.

We then examine the constraining effect of balance sheet conservatism. Conditional conservatism is expected to improve debt contracting efficiency through the monitoring role only when the balance sheet conservatism is not high. Ignoring the constraint effect, we find some evidence that on a stand-alone basis, conditional conservatism results in lower spreads, consistent with Zhang (2008), and higher reliance on financial covenants (defined as the ratio of

⁹ Our results are robust to using a composite rank measure as well.

the number of financial covenants to the number of total covenants). However, past conditional conservatism and balance sheet conservatism are related constructs and therefore the effects of past conservatism alone cannot be interpreted without accounting for the balance sheet conservatism. We therefore interact past conditional and balance sheet conservatism at the firm level to examine the constraint hypothesis. We create nine mutually exclusive groups out of the interaction of independent sorts of conditional conservatism and balance sheet conservatism into three groups each (low, medium, and high). Holding constant the level of balance sheet conservatism, we find that spreads are decreasing in conditional conservatism only in the low balance sheet conservatism group, consistent with the constraint hypothesis. Further, we find that this result is driven by firms that have a high usage of financial covenants relative to general covenants.

Finally, we find that conditional conservatism is positively associated with reliance on accounting based covenants to monitor borrowers. After we interact past conditional and balance sheet conservatism using the nine groups based on a two-way sorting, we find that the positive association only exists for the groups that have low balance sheet conservatism, again supporting the constraint hypothesis.

This study highlights the difference in contractibility between conditional conservatism and balance sheet conservatism when designing debt contracts. While lenders value ongoing future timely recognition of losses, borrowers must be both *willing* and *able* to follow conservative accounting after the loan origination. In contrast, balance sheet conservatism represents pre-commitment by borrowers and provides the lenders *ex ante* benefits in terms of lower bound asset valuation. Our results show that lenders recognize this and consequently charge lower spreads and grant bigger loans for firms with high balance sheet conservatism and impose fewer

covenants and provide more slack in their net worth covenants. Balance sheet conservatism also affects the ability of firms to be conditionally conservative in the future and thus has an additional indirect impact on debt contracting. Lenders value the role of ongoing conditional conservatism only when balance sheet conservatism is not binding.

The rest of the paper is organized as follows: Section 2 introduces various concepts of conservatism. Section 3 outlines the research hypotheses. Section 4 describes the sample, the variable measurements, and the research design. Section 5 presents the summary statistics and the empirical results. Section 6 concludes the study.

2. Conditional, unconditional and balance sheet conservatism

Two types of conservatism result in understatement of the book values of net assets relative to the economic values. One is defined by Basu (1997) as representing “accountants’ tendency to require a higher degree of verification for recognizing good news than bad news in financial statements” (p. 4). The asymmetric verification leads to timely recognition of economic losses but not economic gains. Examples of this type of conservatism include lower of cost or market accounting for inventories and asset write-downs. Under timely loss recognition, reported earnings are more sensitive to contemporaneous losses, which make the income statement more informative to users who care about firms’ downward risks but not the upside potential. The impact on the income statement also flows through to the balance sheet due to the relation between the two financial statements. Writing down assets under bad news but not writing up for good news can result in persistent understatement of net assets on the balance sheet.

The other aspect of conservatism that causes understatement of assets is the selection of ‘conservative’ accounting methods (Basu, 1997; Givoly et al., 2007). Examples of such unconditional conservative accounting are immediate expensing for R&D costs, the use of

accelerated depreciation method relative to economic depreciation, and LIFO inventory valuation. This type of conservatism lowers asset values, and such a balance sheet effect persists over time while it generally result in understating earnings in the early years of an asset's life to eventually overstating earnings in the later years.

Both types of conservatism lead to understatement of asset values, but they differ in their potential to convey new information in the financial statements (Ball and Shivakumar, 2005; Beaver and Ryan, 2005; Ryan, 2006). Timely loss but not timely gain recognition introduces understatement conditional on the type of the news and is therefore called conditional conservatism. In contrast, applying conservative accounting methods brings in understatement by systematically allocating the cost over the life of an asset, without reflecting new information about changes in asset values (Basu, 2001, p. 1334), and is therefore referred to as unconditional conservatism. Ball and Shivakumar (2005) argue that the known biases (in earnings and asset values) are likely to reduce contracting efficiency as the biases do not bring any new information but noise to contracting parties.

In this study, we focus on balance sheet conservatism, which is the cumulative effect of past application of conditional and unconditional conservatism. The cumulative effect is reflected as persistent understatement of net asset values on the balance sheet. Balance sheet conservatism relates to conditional conservatism in two respects. On one hand, conditional conservatism, by writing down, but not up, the book asset values, contributes to balance sheet conservatism at the end of the period. On the other hand, balance sheet conservatism at the beginning of the period creates accounting slack that constrains future application of conditional conservatism, affecting

both the likelihood and the magnitude of future write-downs.¹⁰ For a detailed discussion also refer to Beaver and Ryan (2005), for a model of the interactions between conditional conservatism and unconditional conservatism at a conceptual level.

While the first effect can be easily understood from how balance sheet conservatism is defined, the second one is less obvious and is illustrated in the following example. Suppose a firm has a very low book value of an asset compared to its economic value, either caused by past asset write-downs or by adopting very conservative accounting methods or both. When there is a negative shock, unless the shock is sufficiently big so that the economic value drops below the book value, the firm will not recognize the bad news in the financial statement. Therefore, over a wide range of economic shocks conditional conservatism would not be observed for the firm. Moreover, even if the negative shock was big enough to trigger a write-down, the amount of the write-down for such a firm would be smaller than for firms with less accounting slack.

3. Hypotheses Development

3.1 Asset Value Hypotheses

One strand of literature on conservatism emphasizes that downward bias in net asset values help to address the agency problem in debt contracting.¹¹ Early literature on the study of accounting choices argues that income-decreasing accounting methods are preferred in debt contracting because they result in lower distributions to shareholders and management and thus leave a bigger pie to lenders. By examining samples of debt contracts, Leftwich (1983) finds evidence consistent with the argument that the adjustments to measurement rules make lending agreements systematically more conservative.

¹⁰ Accounting slack is usually defined as the difference between economic value and book value. However, according to Roychowdhury and Watts (2007), accounting slack is only the difference between market value of net separable assets and book value of net assets.

¹¹ The other strand points out that only timely loss recognition (conditional conservatism) increases contracting efficiency. Such an argument will be discussed in developing the *Constraint Hypothesis*.

Based on Basu (1997), Watts (2003) incorporates the aspect of “asymmetric verification requirements for gains and losses” (p. 208) into his argument on the role of accounting conservatism in contracting. Watts argues that understatement of net assets serves to constrain management opportunism and wealth transfer when contracting parties have “asymmetric information, asymmetric payoffs, limited horizons, and limited liability” (p. 209). Specifically, reporting net assets at the lower bound, derived from either prior timely loss recognition or unconditional conservative accounting methods, increases verifiability of net asset values, given managers’ incentives to introduce bias and noise in financial reporting. Understatement of net asset values not only helps to prevent improper distribution of firm wealth to managers and shareholders at the expense of debtholders and as a result increases the loan value, but also lowers the risk of uncertainty in asset valuations for lenders when borrowers are in the worst case scenario. Consequently, lenders would be willing to lend larger amounts to borrowers with higher balance sheet conservatism at lower interest spreads.

Further, balance sheet conservatism increases the collateral value of net assets when assessing liquidation value of the firm. Since lenders in private debt mostly have senior claims against net assets of the firm, more confidence on net asset values may reduce the need to monitor the loan. Therefore, for borrowers with higher balance sheet conservatism, lenders would rely less on the use of covenants and if using net worth covenant, would set looser net worth covenant to avoid frequent covenant violations, which could be costly in debt contracting process. Formally, our first set of the hypotheses based on asset values are stated in the alternative form as:

H1a: Interest spread is decreasing in balance sheet conservatism.

H1b: Loan size is increasing in balance sheet conservatism.

H1c: Covenant intensity is decreasing in balance sheet conservatism.

H1d: Net worth slack is increasing in balance sheet conservatism.

3.2 Constraint Hypotheses

Basu (1997) and Ball and Shivakumar (2005) highlight the importance of conditional conservatism in contracting. By timely reflecting contemporaneous loss information in financial statement, conditional conservatism increases contracting efficiency. Specifically in debt contracting, timely loss recognition affects the effectiveness of the use of covenants. Once a borrower's financial condition deteriorates, timely loss recognition triggers covenant violation more quickly. Therefore, lenders are able to obtain the control rights in a timely manner and take necessary actions to protect their interests.

What is essential in the above argument is that it is ongoing conditional conservatism with its potential to provide new information to contracting parties that really matters in the contracting process. Since lenders cannot observe future conditional conservatism at loan origination, prior research studying how conservatism affects debt contracting terms assumes that lenders use past level of conditional conservatism as a proxy for the borrower's willingness to be conditionally conservative in the future. Zhang (2008) and Nikolaev (2007) explicitly address the validity of this assumption in their studies examining the effect of past conditional conservatism on loan pricing and covenant intensity, respectively. They point out that borrowers' reputation effects and other constraints, such as the threat of auditor litigation or using fixed GAAP in computing covenants, would keep borrowers from changing accounting practice. But, even if borrowers could precommit to apply the same accounting practice after entering into the debt contracts, it is

still uncertain whether borrowers could keep the same level of conditional conservatism given the interactions between conditional and balance sheet conservatism.¹²

Beaver and Ryan (2005) conceptually use a model and simulation to capture how past applications of unconditional conservatism and conditional conservatism create accounting slack that preempts future conditional conservatism. The model is rich in terms of analyzing different forms of unconditional conservatism and frictions in the application of conditional conservatism and emphasizes that the application of conditional conservatism is probabilistic and history-dependent (p. 272). Consistent with Beaver and Ryan's (2005) conjectures on the constraining effect, empirical studies document that a negative association between the market-to-book ratio as a proxy for accounting slack caused by past conservatism and subsequent conditional conservatism (Pae et al., 2005; Ball and Shivakumar, 2006; Gassen et al., 2006; Roychowdhury and Watts, 2007). The constraining effect of balance sheet on income statement has also been examined by Barton and Simko (2002) in a different context. They find that overstated net assets on the balance sheet constrain managers' ability to bias earnings upwards in the future.

Due to the constraining effect of balance sheet conservatism on future ongoing conditional conservatism, we hypothesize that lenders would consider such a constraining effect and structure contract terms accordingly. Specifically, the relation between past conditional conservatism and debt contracting terms documented in prior studies would be driven by the firms with low levels of balance sheet conservatism (i.e. where the balance sheet conservatism does not constrain future conditional conservatism). We focus on two contracting terms, loan pricing and covenant intensity. As Zhang (2008) finds that lenders reward more conditionally

¹² Borrowers' willingness to commit to the same accounting practices has been examined in the studies testing debt covenant hypothesis (DeAngelo et al., 1994; DeFond and Jiambalvo, 1994; Sweeney, 1994; Dichev and Skinner, 2002). The results are mixed. In this paper, we assume that borrowers are willing to apply the same accounting practices and focus on borrowers' capability to maintain the level of conditional conservatism.

conservative borrowers with lower interest rates, we expect that such a negative relation would be driven by firms with lower accounting slack that are not constrained in reflecting future timely loss recognition. Ongoing conditional conservatism accelerates covenant violation and thus makes the use of covenants more effective. Nikolaev (2007) documents a positive relation between conditional conservatism and covenant intensity, confirming that conditional conservatism increases the effectiveness of covenants. Hence we expect that this positive relation would be driven by firms with low balance sheet conservatism. Formally, our second set of the hypotheses based on constraining effect are stated in the alternative form as:

H2a: Past conditional conservatism is associated with lower spreads only when balance sheet conservatism is not high.

H2b: The benefit of lower spreads is further consistent with it being a reward when a lender expects to monitor using accounting based covenants.

H2c: Past conditional conservatism is associated with greater reliance on financial covenants for monitoring the firm.

4. Data and research design

4.1 Sample selection

We collect private debt information from the Dealscan database for the time period from 1996 through 2006. The basic unit in Dealscan is a loan, which is also referred to as a “facility”. A borrower usually enters into multiple loans at the same time with either a single bank or a group of banks. These loans are grouped into a package, which is also called as a “deal”. The analyses in this study are conducted at the facility level. To avoid over-weighting those loans that are issued in the same year, which would have the same conservatism measures and control

variables, we only keep the loan with the largest borrowing amount for each borrower in each year.

Consistent with prior studies, we focus on dollar denominated loans borrowed by US firms. Borrowers in financial and regulated utility industries are excluded as the debt contract terms for these industries differ substantially from other industries. We retain revolvers with a maturity greater than one year and term loans. Further, we drop any loan without spread, maturity, and loan amount information.

We manually match borrowers in the loan data to firms in the COMPUSTAT universe by matching on company name. We require that each firm in the sample have necessary accounting information and stock return data to obtain borrower specific control variables and to estimate accounting conservatism. The final sample contains 4,835 loans.

4.2 Measuring debt contracting terms

The debt contracting terms studied in this paper are spread, deal size, covenant intensity, (tangible) net worth covenant slack, and usage of financial covenants. Spread is measured by the all-in-drawn spread (AIS). Dealscan computes this figure as the sum of the borrowing spread over the 6-month LIBOR and the related fees for each facility, assuming that the facility is fully used. Such a computation enables comparison of borrowing costs across facilities with different fee structures.

Access to capital is measured as the ratio of the deal size to total assets. Deal size is computed as the sum of all facilities included in a package.

Covenant intensity is measured as the number of financial covenants or the number of general covenants contained in a debt contract. According to Drucker and Puri (2007), Dealscan contains coding errors whereby some loans with covenants are misclassified as loans without any

covenants. But they also note that as long as Dealscan reports the existence of at least one covenant for the loan, the information for all other covenants appears to be correct. Therefore to minimize measurement errors in computing covenant intensity, we exclude loans for which Dealscan does not report any covenants when examining covenants related contracting terms.

(Tangible) net worth covenant slack is computed as the (tangible) net worth slack scaled by assets. (Tangible) net worth slack is the difference between (tangible) net worth at the end of the quarter before loan origination and the (tangible) net worth threshold specified in the debt contract. We examine tangible net worth and net worth separately because Frankel et al. (2007) and Beatty et al. (2008) document that the usage of these two types of covenants are very different. Tighter slack means higher restrictions imposed on the borrower, as the borrower is more likely to violate the covenant and transfer the control rights to the lenders.

4.3 Measuring balance sheet conservatism

The measure of balance sheet conservatism is based on an adjusted version of the book-to-market ratio. The market-to-book ratio reflects the understatement of net asset values to economic values and is a natural way to proxy for balance sheet conservatism. However, according to Roychowdhury and Watts (2007), accounting slack that arises from past conservatism is only the difference between market value of net separable assets and book value of net assets. The market-to-book ratio measures conservatism with errors as it also includes rents enjoyed by the firm in its current and future projects. To address the concern that the results might be caused by the things other than balance sheet conservatism, we regress book-to-market ratio on a set of variables that proxy for rents, growth, distress, and market sentiment, with industry and year fixed effects. The residual from the regression is our measure of Balance Sheet Conservatism. Specifically, the model is:

$$\begin{aligned}
\text{Book to Market} * (-1) = & \alpha + \beta_1 \text{Long Term Growth Forecasts} + \beta_2 \text{Sales Growth} + \\
& \beta_3 \text{Industry Concentration} + \beta_4 \text{Industry Concentration} \times \\
& \text{Indicator of Top Four Companies} + \beta_5 \text{Consumer Sentiment Index} + \beta_6 \text{S\&P Index} + \\
& \beta_7 \text{Profitability} + \beta_8 \text{Credit Rating} + \beta_9 \text{Standard Deviation of Returns} + \varepsilon
\end{aligned} \tag{I}$$

where Book-to-Market is computed as the book value of assets divided by the market value of equity plus the book value of debt.¹³ We multiply Book-to-Market by -1 so that the resulting measure is increasing in balance sheet conservatism.

We employ two forward looking growth measures to proxy for rents possessed by the firm and reflected in the stock price. We expect that the higher growth opportunities in the future, the higher Book-to-Market. The first growth measure is Long-Term Growth Forecasts, which is the median of all long term growth estimates made by analysts in the fiscal year prior to loan origination obtained from the IBES database. The second growth measure, Sales Growth, is based on Compustat information, defined as sales in the year of loan origination divided by sales in prior fiscal year.

We further use the interaction of Industry Concentration and Indicator of Top Four Companies to proxy for rents generated from market power. We expect that Book-to-Market is positively associated with the interaction term. Industry Concentration is the Herfindahl index calculated by summing the squares of the individual firm market shares based on sales for the four largest companies in an industry (four-digit sic code). We divide the measure by 10,000 to avoid very small coefficients. Indicator of Top Four Companies equals to 1 if the company is among the top four companies based on sales in an industry and 0 otherwise.

¹³ We use book-to-market instead of market-to-book since the former has better distributional properties than the latter.

To proxy for market sentiment that may lead to market overvalues or undervalues certain firms because their growth prospect, we use two market indexes. One is Consumer Sentiment Index. It is the index of the consumer sentiment from University of Michigan. According to Qiu and Welch (2006), this index is a good proxy for investor sentiment. The other index is S&P Index, which is the level of the S&P's Composite Index (NYSE/AMEX only) from CRSP. We expect a positive association between these two market indexes and Book-to-Market.

Last, we control for firm specific variables that proxy for distress. Profitability is measured as EBITDA scaled by the lag of assets. Credit Rating is S&P LT Domestic Issuer Credit Rating from Compustat. For those firms without credit rating information, we following Barth et al. (2008) and Beatty et al. (2008) to estimate ratings.¹⁴ Higher value of Credit Rating means lower credit quality. Standard Deviation of Returns is the measure of volatility of returns, defined as the standard deviation the daily return less the corresponding decile returns times 100 over 365 days right before the loan origination date. Higher volatility is suggestive of higher default risk (Frankel and Litov, 2007). We expect that the dependent variable (Book-to-Market*-1) is positive associated with Profitability and negatively associated with Credit Rating and Standard Deviation of Returns.

In order to validate our measure of Balance Sheet Conservatism, we perform two types of analyses to compare the properties of the residual value and fitted value from the first-stage regression.

Validation 1: In the first analysis, we regress the residual and fitted values respectively on several alternative measures of conservatism, similar to the validation method used in Beaver

¹⁴ We first regress the rating on Log(Assets), ROA, Debt-to-Assets, Dividend Indicator, Subordinated Debt Indicator and Loss Indicator, with industry and year fixed effects for rated firms. We then use the estimated coefficients from the first regression and the firm's financial information to compute a credit rating for each firm in each year. The computed rating values are winsorized at 2 and 27 to be consistent with the range of ratings reported in Compustat.

and Ryan (2000). The idea is that if the residual value captures Balance Sheet Conservatism, which is the cumulative effect of past conservatism, we should expect that it is positively associated with other measures proxy for past conservatism. Such a positive association, however, does not necessarily exist for the fitted value unless alternative conservatism measures are positively related to growth, market sentiment and distress. Specifically, we run the following regressions:

$$\begin{aligned} \text{Residual Value (Fitted Value)} = & \\ & \alpha + \beta_1 \text{LIFO Reserve Indicator} + \beta_2 \text{Accelerated Depreciation Indicator} + \\ & \beta_3 \text{Advertising Reserve} + \beta_4 \text{R\&D Reserve} + \\ & \beta_5 \text{Asymmetric Timeliness (Timely Loss Recognition)} + \beta_6 \text{Non Operating Accruals} + \varepsilon \end{aligned}$$

(II)

Where LIFO Reserve Indicator is 1 if LIFO Reserve is positive and 0 otherwise. Accelerated Depreciation Indicator takes value of 1 if the firm only uses accelerated depreciation and 0 otherwise. Advertising Reserve is amortized advertising expenses using a sum-of-the-years-digits method over two years. R&D Reserve is amortized R&D expenditures using a sum-of-the-years-digits method over five years. Asymmetric Timeliness and Timely Loss Recognition are the estimated coefficients from Basu's (1997) market-based model at industry level (three-digit sic codes) for each year of the sample period using prior ten years of data. The details on estimating Asymmetric Timeliness and Timely Loss Recognition are included Section 4.4. Non-Operating Accruals is measured following Beatty et al. (2008), which is the average of non-operating accruals scaled by assets over a period with a maximum of 5 years and a minimum of 2 years.

Validation 2: The second analysis follows Roychowdhury and Watts (2007) to focus on the relation between Asymmetric Timeliness / Timely Loss Recognition and Balance Sheet Conservatism. We start by assigning observations to three groups ranked by either the residual value or the fitted value. In each group, we then run pooled Basu (1997) regression over a pre-period and a post-period separately. The pre-period consists of a period covering three years before Book-to-Market is measured. The post-period is defined as a period covering three years after Book-to-Market is measure. By such a design, we study how Asymmetric Timeliness or Timely Loss Recognition is related to end-of-period and beginning-of-period balance sheet conservatism. Since the paper by Roychowdhury and Watts (2007) and other related research show that asymmetric timeliness is positively associated with end-of-period Market-to-Book and is negatively associated with beginning-of-period Market-to-Book, we expect to find such a pattern when the groups are ranked by the residual value but not when the groups are ranked by the fitted value.

Table 3 Panel A displays the results of measuring balance sheet conservatism. All the variables except Industry Concentration for which we do not have a predicated sign behave in the expected direction and are significant. The results indicate that Book-to-Market is positively associated with firm growth and market sentiment and negatively associated with the distress factor.

Panel B provides the results for the first validation analysis. When the dependent variable is the residual value, all the signs of the coefficients are consistent with our expectations. In other words, the balance sheet conservatism proxied by the residual value is increasing in all other measures of past conservatism. In contrast, when the dependent variable is the fitted value, almost all the signs of the coefficients are in the opposite direction. The only except is for R&D

Reserve. The positive relation between R&D Reserve and the fitted value is likely to be driven by the fact that R&D Reserve is also a good proxy for growth opportunity besides being a measure of conservatism.

Panel C shows the results for the second validation analysis. First, in the pre-period, which is a three-year period before Book-to-Market is measured, we find that Asymmetric Timeliness or Timely Loss Recognition increases in the groups ranked by the residual value. The differences of coefficients between high and low groups are highly significant. However, when we move to the post-period, the pattern dramatically changes. Asymmetric Timeliness or Timely Loss Recognition decreases in the groups ranked by the residual value, with a significant difference between high and low groups. Such a finding supports that past conditional conservatism contributes to balance sheet conservatism and balance sheet conservatism constrains future conditional conservatism. When the groups are ranked by the fitted value, we do not observe such a change of pattern moving from the pre-period to the post-period. Asymmetric Timeliness and Timely Loss Recognition always decrease from low to high groups. The contrast between the results on the residual value and on the fitted value again validate our measure of balance sheet conservatism capturing cumulative effect of past conservatism and being a better measure than the raw Book-to-Market.

4.4 Measuring conditional conservatism

Following Beatty et al. (2008) and Zhang (2008), we base our measure on alternative metrics of conditional conservatism to address problems associated with each individual measure identified by Ryan (2006) and Givoly et al. (2007). We use a composite measure of conditional conservatism computed as the principal component of the individual measures. We hope this composite measure, labeled as Conditional Conservatism, captures conditional

conservatism while minimizing the noise in any individual measure. This composite measure is our primary measure of conditional conservatism.

The first measure, Timely Loss Recognition, is the sensitivity of earnings to bad news derived from Basu's (1997) market-based model (referred to as the "Basu model" in the rest of the paper). In the model, stock return is used as a proxy for contemporaneous economic gains and losses. Because of accountants' higher verification requirement to recognize good news vs. bad news, earnings are expected to be more sensitive to negative returns than to positive returns. Specifically, the model is:

$$NI_{it} = \alpha + \beta R_{it} + \eta DR_{it} + \gamma R_{it} DR_{it} + \varepsilon_{it} \quad (I)$$

where NI_{it} is annual income before extraordinary items for firm i in the fiscal year t deflated by the market value of equity at the beginning of the year and adjusted by the average NI for sample firms in year t , R_{it} is the 12-month return on firm i ending three months after the end of the fiscal year less the corresponding CRSP equal-weighted market return, and DR_{it} is an indicator variable equal to one if the firm's market-adjusted return R_{it} is negative and zero otherwise. Observations with the deflated earnings or the returns falling to the top and bottom 1 percent are excluded. In the above regression, $(\beta + \gamma)$ is the measure of Timely Loss Recognition.

We estimate the Basu model at industry level since firm-specific time-series regressions have very few observations for each firm and are likely to result in noisy estimates with a downward bias (see Givoly et al. 2007 for detailed discussion). Specifically, we run the regressions by three-digit SIC codes for each year of the sample period of 1996 through 2006 using prior ten years of data. Industries with less than ten firms are excluded to ensure a reliable estimate of conditional conservatism. The corresponding industry-year measure of conditional conservatism is assigned to each sample firm.

The second measure, Non-Operating Accruals, are based on Givoly and Hayn (2000). We follow Beatty et al. (2008) to estimate this measure. Non-Operating Accruals is the average of non-operating accruals deflated by assets over the period with a maximum of 5 years and a minimum of 2 years before the loan origination year. The non-operating accruals are calculated using the annual data as (item 172 + item 14 – item 308 + item 302 + item 303 + item 304 + item 305). In order to make the direction of this measure consistent with other measures, we multiply the non-operating accruals by negative one.¹⁵

4.5 Research design

We use two models to analyze the relation between contract terms and conservatism. The first model examines balance sheet conservatism in isolation to see how it relates to contract terms. The second model incorporates interactions of conditional and balance sheet conservatism. We use the first model to test the asset value hypothesis and the second model to test the constraint hypothesis. Specifically, we estimate the following OLS regression including deal purpose fixed effects and industry fixed effects in Model (1):

$$\begin{aligned} \text{Loan Terms} = & \alpha + \gamma \text{Balance Sheet Conservatism} + \delta_1 \text{Log of Assets} + \delta_2 \text{Profitability} + \\ & \delta_3 \text{Loss Years} + \delta_4 \text{Leverage} + \delta_5 \text{Credit Rating} + \delta_6 \text{Standard Deviation of Returns} + \\ & \delta_7 \text{Long Term Growth Forecasts} + \delta_8 \text{Asset Tangibility} + \delta_9 \text{Facility to Assets} + \\ & \delta_{10} \text{Log of Maturity} + \delta_{11} \text{Collateral Indicator} + \delta_{12} \text{Revolver Indicator} + \varepsilon \end{aligned} \quad (1)$$

Where the loan terms is either Spread, Deal-to-Assets, Number of Financial Covenants, Number of General Covenants, or (Tangible) Net Worth Covenant Slack. Besides in the case of covenants and slack, we exclude collateral on the RHS since it is included as a general covenant and use the

¹⁵ We considered using the relative skewness of accruals versus cash flows as a third measure but the data requirements for estimating the firm-specific skewness measure reduced the data size considerably.

deal level versions of the other loan variables. For the Spread specification, we also include the Default Spread and Term Spread measured for the month of loan initiation. Balance sheet conservatism is *the residual value from the first stage regression*. The *Asset Value Hypothesis*, predicts that the coefficient on balance sheet conservatism will be negative for Spread (H1a), positive for Deal Size (H1b), negative for Covenant Intensity (H1c) and positive for Net Worth Slack (H1d), since balance sheet conservatism by reporting net asset values at lower bonds reduces the risk of the loan since asset valuations are more conservative.

We include a set of control variables to proxy for firm-specific and loan-specific risks that are likely to affect loan spreads. Firm-specific controls are computed using the financial and return data prior to loan origination. Besides the control variables already described in the previous section, the control variables include *Log Assets* measured as the log of the total assets for each firm, which is a proxy for reputation and information asymmetry. Leverage is measured as debt to capital as in Rajan and Zingales (1995). Following Berger et al. (1996), Asset Tangibility is computed as: $\text{Asset Tangibility} = (\text{Cash and Short-Term Investments} + 0.715 \times \text{Receivables} + 0.547 \times \text{Inventories} + 0.535 \times \text{PPE Net}) / \text{Assets}$.

The loan-specific controls include Facility-to-Assets, representing the ratio of the loan amounts to assets. *Log Maturity* is the log of the maturity (in months) of the loan, a proxy for the length of the loan. These loan characteristics can either convey borrowers' credit risks or represents trade-offs in contracting terms. Therefore, the signs of these control variables can go either way depending on whether debt terms complement or substitute with each other. *Collateral Indicator* indicates whether the loan is secured with collateral. Finally, we include dummies for the deal purpose, revolver and industry. All the standard errors are clustered at the firm and year levels.

In the second model to test interactions of conditional and balance sheet conservatism, we divide the observations into mutually exclusive nine groups, based on independent sorts of balance sheet conservatism and conditional conservatism into three groups each (high, medium, and low). We create nine indicator variables to represent the different combinations of conditional and balance sheet conservatism, ranging from *Low CC & Low BC* (captured in the intercept) to *High CC & High BC*. These groupings allow us to isolate the effect of one dimension of conservatism while keeping the other fixed. Specifically, the model is:

$$\text{Spread (Financial Covenant Use)} = \alpha + \sum_{i=1}^8 \text{Conservatism Group } i \times \beta_i + \gamma \text{Controls} + \varepsilon \quad (2)$$

Controls refers to the set of control variables that are used in Model (1) and are described above. The intercept captures the effects of the Low CC and Low BC group.

The *Asset Value Hypothesis* predicts that in comparison to groups with low balance sheet conservatism (Low BC), groups with high balance sheet conservatism (High BC) are associated with higher deal amount, lower loan spreads, less covenant intensity, and looser net worth covenant slack. The *Constraint Hypothesis* predicts that the relation between the spread and conditional conservatism should depend upon the specific balance sheet conservatism group that a firm is in. This is because past conditional conservatism is rewarded with lower spreads and results in the effective use of financial covenants only if such conditional conservatism is expected to persist in the future. Further the benefit is most likely when the lender uses accounting based covenants to monitor the borrower and so we examine the spread results for sub-samples based on the extent of financial covenants use.

5. Empirical results

This section is organized as follows. Section 5.1 discusses summary statistics and correlation matrix for the variables used in the later tests. Section 5.2 reports the multivariate analyses examining the effect of the two dimensions of accounting conservatism on loan pricing, deal size, covenant intensity, and net worth covenant slack.

5.1 Summary statistics

Table 1, Panel A provides the distribution of loans over the sample period from 1996 through 2006. Panel B displays the industry distribution of loans based on the industry classification in Barth et al. (1998). We exclude finance and utilities industries. Firms from the durable manufacturing industry comprise more than one fourth of the sample. Retail, services, and computers are the next three major industries in the sample.

Table 2 provides summary statistics of firm, loan, and deal characteristics as well as various measures of accounting conservatism. There is significant variation in firm size with the mean value of total assets being over \$3 billion while the median is \$694 million. The average firm is profitable and the median rating is almost 14 which corresponds to BB-. The median spread is 125 basis points and the median maturity is almost five years. The distributions of firm size and loan maturity are skewed and therefore we transform these variables to their log forms.

5.2 Multivariate Analysis

In this section, we investigate the relation between accounting conservatism and loan pricing, deal size, and covenants.

5.2.1 Tests of the Asset Value Hypothesis

Table 4 presents the results of the regression of spreads on balance sheet conservatism and control variables. The coefficient on balance sheet conservatism is negative and significant suggesting that lenders reward firms that provide lower-bound asset values with lower spreads. This is consistent with H1a of the *Asset Value Hypothesis*. The coefficients on most of the control variables representing firm characteristics have the expected signs. Larger firms with higher profitability, lower leverage, better credit ratings, less volatile returns, and larger portion of fixed assets tend to incur lower borrowing costs. The loan characteristics, such as size of loan and maturity, are negative and significant, consistent with the prior literature and suggesting that the loan terms may be proxying for a dimension of risk. The coefficient on collateral is significantly positive contrary to the expectation of a trade-off between the use of collateral and loan pricing. However this is consistent with Bharath et al. (2008) in a similar regression of spreads. We then estimate the regression after excluding high-tech firms (computers and pharmaceuticals) and young firms and continue to find strong results. Overall, Table 4 provides strong support for H1a of the *Asset Value Hypothesis* in the full sample as well as the sub-samples.

Table 5 reports the results for the relation between balance sheet conservatism and deal size. We find that the coefficient on balance sheet conservatism is positive and significant consistent with H1b of the *Asset Value Hypothesis*. The deal size is increasing in profitability and decreasing in volatility of returns and growth opportunities. We also find that it is associated with higher levels of leverage overall and longer maturities

Next, we examine the use of covenants in loan contracts (*Covenant Intensity*). The results are reported in Table 6. The dependent variable are the number of financial covenants and the number of general covenants. We find that covenant intensity, both financial and general, is

reducing in balance sheet conservatism, consistent with a lower need for monitoring. Control variables do not behave exactly the same when the dependent variable changes from the number of financial covenants to the number of general covenants, suggesting that the process to select financial vs. general covenants is different. Overall, the results in Table 6 are consistent with H1c of the *Asset Value Hypothesis* and suggests that firms with higher balance sheet conservatism have lower covenant intensity. In unreported tests, we re-estimate the model using a Poisson regression since our dependent variable is a count variable of the covenants and the results are very similar.

Finally, Table 7 reports the results from a regression of net worth slack on balance sheet conservatism. Here we find that the coefficient of interest is positive and significant, consistent with H1d of the *Asset Value Hypothesis*. Firms with higher levels of balance sheet conservatism tend to have higher net worth slack. We also find that large firms with better credit quality tend to have looser covenant slack.

Overall, the results in Table 4 through Table 7 highlight the important role for balance sheet conservatism in the debt contracting process as laid out under the *Asset Value Hypothesis*.

5.2.2 Tests of the Constraint Hypothesis

We next examine the constraint hypothesis by forming nine groups based on the interaction of conditional conservatism and balance sheet conservatism. We study the joint effect of these two dimensions of conservatism on spreads and covenant usage. Table 8 examines the relation between spreads and conservatism allowing for the interaction between past conditional conservatism and balance sheet conservatism. We first examine the effect of conditional conservatism on spreads, ignoring the interaction with balance sheet conservatism. In specification 1, we find that spreads are decreasing in conditional conservatism, consistent with

Zhang (2008). In specification 2, we regress spreads on the nine groups and conduct F-tests for the differences in coefficients across groups. Based on the *Constraint Hypothesis* H2a, we expect that the negative relation between past conditional conservatism (CC) and loan pricing should be driven by the firms with low levels of balance sheet conservatism (BC). We find that the difference between High CC and Low CC within the group of Low BC firms is negative and significant.

This specification also allows us to revisit the issue of whether the balance sheet conservatism results are concentrated in firms with high past conditional conservatism. We find that irrespective of the level of conditional conservatism, spreads reduce ranging from 17 to 25 basis points when you go from the low BC group to the high BC group . This suggests that the understatement of assets is valuable to the lenders regardless of the source of the conservatism.

In Table 8 panel C, we divide the sample into two groups based on financial covenant intensity relative to total covenant intensity and find that the reduction in spreads is driven by high use of financial covenants.

Finally, in Table 9 we report the results examining the reliance on financial covenants as a monitoring mechanism and find that while conditional conservatism by itself increases the reliance on financial covenants relative to general covenants., Once we interact conditional and balance sheet conservatism, the reliance on financial covenants relative to general covenants increases in conditional conservatism only for Low BC group.

Overall, taken together our results provide strong evidence that lenders care about borrowers' balance sheet conservatism in setting contract terms. Further, balance sheet conservatism imposes a constraint on the ongoing ability of the firm to be conservative and therefore past

conditional conservatism reduces the borrowing cost only when balance sheet conservatism is not high.

6. Conclusions

We shed light on the debt contracting implications of different dimensions of accounting conservatism. We study the property of conservative financial reporting wherein assets are reported in financial statements at their lower bound values. To measure the effect of conservatism on asset values we develop the construct of *balance sheet conservatism*. Balance sheet conservatism is the total accumulated conditional conservatism and unconditional conservative resulting from application of conservative accounting methods.

We hypothesize that the magnitude of balance sheet conservatism improves the confidence of the lender in the asset values that serve as collateral for the borrower and reduces the risk in the loan (*Asset Value Hypothesis*). Consequently, higher the level of balance sheet conservatism in the borrower financial reports, lower would be interest spreads, higher the deal size, lower the reliance on covenants, and higher the slack for the net worth covenant.

Another effect of balance sheet conservatism on debt contracting is through its impact on the future ability of firms to be conditionally conservative. Prior research assumes that the level of past conservatism is a good proxy of future conditional conservatism in earnings. However firms with high balance sheet conservatism are constrained in their ability to use write-downs to signal negative economic shocks in future since their asset values are already reported at their lower bound estimates. Thus balance sheet conservatism interacts with conditional conservatism in impacting the firm's ability to be conditionally conservative in the future. Therefore we hypothesize that conditional conservatism will improve debt contracting efficiency only when

the balance sheet conservatism is not too high (*Constraint Hypothesis*). Accordingly, we expect lower spreads and greater reliance on covenants for firms that are conditionally conservative only if current balance sheet conservatism is low and not a constraint. We find results consistent with our hypothesis.

Overall, our study adds to the understanding of the effect of accounting conservatism on debt contracting efficiency. We show that conservatism in asset values reported on the financial reports of the borrower at the time of the lending decision has a significant effect on debt contracting through screening and monitoring. Further, while prior literature has focused on the efficiency gains from conditional conservatism, we show that the benefits from conditional conservatism are constrained by balance sheet conservatism.

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Appendix: Description of Variables

Firm Characteristics

Log of Assets	The logarithm of assets.
Profitability	EBITDA scaled by the lag of assets.
Loss Years	The percentage of losses over the past 5 years. The loss is defined as negative net income before extraordinary income.
Leverage	The sum of long-term debt and debt in current liabilities divided by capital (defined as total debt plus equity)
Credit Rating	Credit Rating is S&P LT Domestic Issuer Credit Rating. Otherwise, Credit Rating is estimated using a method similar to Barth et al. (2008) and Beatty et al. (2008). First, we regress ratings on Log(Assets), ROA, Debt-to-Assets, Dividend Indicator, Subordinated Debt Indicator, and Loss Indicator, with industry and year fixed effects for rated firms. We then use the estimated coefficients from the first regression and the firm's financial information to compute a rating for each firm in each year. The computed rating values are winsorized at 2 and 27.
Standard Deviation of Returns	The standard deviation of the daily return less the corresponding decile returns times 100 over 365 days right before the loan origination date.
Long-Term Growth Forecasts	The median of all long-term growth estimates by analysts obtained from IBES.
Asset Tangibility	Following Berger et al. (1996), Asset Tangibility is computed as: $\text{Asset Tangibility} = (\text{Cash and Short-Term Investments} + 0.715 \times \text{Receivables} + 0.547 \times \text{Inventories} + 0.535 \times \text{PPE Net}) / \text{Assets}$.

Loan Characteristics

Spread	The interest rate spread over LIBOR on all drawn lines of credit.
Facility-to-Assets	The amount of facility divided by assets.
Deal-to-Assets	The amount of deal divided by assets.
Log of Maturity	The logarithm of maturity in months.
Collateral Indicator	An indicator variable taking value 1 if the loan is secured with collateral, and 0 otherwise. Missing values are treated as 0.
Performance Pricing Indicator	An indicator variable taking value 1 if the loan has a performance pricing option tying the promised yield to one or more accounting measures of performance, and 0 otherwise. Missing values are treated as 0.
Revolver Indicator	An indicator variable taking value 1 if the loan is a revolver loan, and 0 otherwise.
# Total Covenants	The number of total covenants including both financial and general covenants.
# Financial Covenants	The number of financial covenants based on accounting numbers. .
# General Covenants	The number of general covenants including dividend restrictions and sweeps.
Financial Covenants Use	The number of financial covenants based on accounting numbers divided by the number of total covenants.
(Tangible) Net Worth Slack	The difference between (Tangible) net worth at the quarter prior to loan origination and (tangible) net worth threshold specified in debt agreement scaled by assets.
Build-up Indicator	An indicator variable taking value 1 if the deal has a build-up provision for (tangible) net worth covenant, and 0 otherwise. Missing values are treated as 0.

Appendix: Description of Variables (Continued)

Conservatism Measures

Book-to-Market	-1 times the book value of assets divided by the market value of equity plus the book value of debt.
Balance Sheet Conservatism	To measure Balance Sheet Conservatism, we regress Book-to-Market Ratio on a set of variables that proxy for rents, growth, distress, and market sentiment, with industry and year fixed effects. The residuals are our measure of Balance Sheet Conservatism. See Table 3 Panel A for details.
Timely Loss Recognition	To measure Timely Loss Recognition, we estimate Basu's (1997) market-based model at industry level (three-digit sic codes) for each year using prior ten years of data: $NI = \alpha + \beta R + \eta DR + \gamma RDR + \varepsilon$. NI is Income before Extraordinary Items for firm i in the fiscal year t deflated by the market value of equity at the beginning of the year and adjusted by the average Income before Extraordinary Items for all firms in year t, R is the 12-month return on firm i ending three months after the end of the fiscal year less the corresponding CRSP equal-weighted market return, and DR is an indicator variable equal to 1 if the firm's R is negative and 0 otherwise. Observations with NI and R falling to the top and bottom 1 percent are excluded. $(\beta + \gamma)$ is the measure of Timely Loss Recognition.
Non-Operating Accruals	Following Beatty et al. (2008), Non-Operating Accruals is the average of non-operating accruals (COMPUSTAT #172 + #14 - #308 + #302 + #303 + #304 + #305) scaled by assets over a period with a maximum of 5 years and a minimum of 2 years.
Conditional Conservatism	A composite measure computed as the principal component of Timely Loss Recognition and Non-Operating Accruals.

Other

Default Spread	Difference between the yields of BAA and AAA corporate bonds.
Term Spread	Difference between the yields of 10-year T-bills and 2-year T-bills.

Note

All variables are measured at or for the fiscal year-end prior to loan origination date except for the ones that are indicated otherwise.

Table 1 Sample Description

The sample contains all loans originated from 1996 through 2006 with available loan data and control variables.

Panel A: Sample Distribution by Industry

Year	# Loans	Percent
1996	445	9.20
1997	507	10.49
1998	426	8.81
1999	375	7.76
2000	422	8.73
2001	459	9.49
2002	423	8.75
2003	439	9.08
2004	526	10.88
2005	472	9.76
2006	341	1.05
Total	4835	100

Panel A: Sample Distribution by Year

Industry	# Loans	Percent
Chemicals	160	3.31
Computers	522	10.80
Durable mfrs	1,303	26.95
Extractive	289	5.98
Food	146	3.02
Mining & Construction	149	3.08
Pharmaceuticals	118	2.44
Retail	918	18.99
Services	663	13.71
Textiles & Printing	390	8.07
Transportation	177	3.66
Total	4835	100

Table 2 Descriptive Statistics

The sample contains 4,835 loans originated from 1996 through 2006. All variables are described in the Appendix.

Variable	N	Mean	Q1	Median	Q3	Std Dev.
Firm Characteristics						
Assets (\$ millions)	4835	3063	243	694	2127	9623
Log(Assets)	4835	6.62	5.49	6.54	7.66	1.63
Profitability	4835	0.16	0.11	0.16	0.22	0.12
Loss Years	4835	0.16	0	0	0.2	0.24
Leverage	4835	0.35	0.17	0.35	0.51	0.23
Credit Rating	4835	13.74	12	14	16	3.40
Standard Deviation of Returns	4835	2.96	1.84	2.55	3.63	1.66
Long-Term Growth Forecasts	4835	16.83	12	15	20	7.57
Asset Tangibility	4835	0.47	0.39	0.48	0.54	0.12
Loan Characteristics						
Spread	4835	153.96	62.5	125	225	111.96
Facility-to-Assets	4835	0.26	0.11	0.21	0.35	0.22
Deal-to-Assets	4835	0.32	0.13	0.25	0.42	0.30
Maturity	4835	48.64	36	59	60	18.44
Log(Maturity)	4835	3.79	3.58	4.08	4.09	0.47
Collateral Indicator	4835	0.46	0	0	1	0.50
Performance Pricing Indicator	4835	0.62	0	1	1	0.48
Revolver Indicator	4835	0.85	1	1	1	0.36
# Total Covenants	4835	3.51	1	3	5	2.80
# Financial Covenants	4835	2.13	1	2	3	1.56
# General Covenants	4835	1.38	0	1	2	1.68
Financial Covenants Use	3686	0.58	0.40	0.60	0.75	0.24
Net Worth Slack	826	0.11	0.05	0.09	0.14	0.09
Tangible Net Worth Slack	789	0.16	0.07	0.13	0.22	0.12
Build-up Indicator	1798	0.59	0	1	1	0.49
Conservatism Measures						
Balance Sheet Conservatism	4835	-0.03	-0.15	-0.02	0.12	0.21
Book-to-Market	4835	-0.68	-0.86	-0.66	-0.48	0.28
Conditional Conservatism	4835	-0.02	-0.58	-0.12	0.35	0.97
Timely Loss Recognition	4835	0.26	0.17	0.24	0.31	0.16
Non-Operating Accruals	4835	0.02	0	0.01	0.03	0.05

Table 3 Measuring Balance Sheet Conservatism**Panel A: First Stage Regression**

Table 3 Panel A displays results of regressing Book-to-Market on a set of variables that proxy for rents, growth, distress, and market sentiment, with industry and year fixed effects. The residual for the regression is our measure of balance sheet conservatism. The sample consists of 21,330 firm-year observations from 1995 to 2005. Book-to-Market is computed as -1 times the book value of assets divided by the market value of equity plus the book value of debt. Long-Term Growth Forecasts is the median of all long-term growth estimates by analysts obtained from IBES. Sales Growth is sales at year $t+1$ divided by sales at year t . Industry Concentration is the Herfindahl index calculated by summing the squares of the individual firm market shares based on sales for the four largest companies in an industry (four-digit sic code) scaled by 10,000. Indicator of Top Four Companies is 1 if the company is among the top four companies based on sales in an industry (four-digit sic code) and 0 otherwise. Consumer Sentiment Index is the index of the consumer sentiment from University of Michigan. S&P Index is the level of the S&P's Composite Index (NYSE/AMEX only) from CRSP. Profitability is EBITDA scaled by the lag of assets. For those firms have credit rating information from Compustat, Credit Rating is S&P LT Domestic Issuer Credit Rating. Otherwise, Credit Rating is estimated using a method similar to Barth et al. (2008) and Beatty et al. (2008). First, we regress ratings on Log(Assets), ROA, Debt-to-Assets, Dividend Indicator, Subordinated Debt Indicator, and Loss Indicator, with industry and year fixed effects for rated firms. We then use the estimated coefficients from the first regression and the firm's financial information to compute a rating for each firm in each year. The computed rating values are winsorized at 2 and 27. Standard Deviation of Returns is the standard deviation of the daily return less the corresponding decile returns for the fiscal year. Industry is defined according to Barth et al. (1998). All variables except for Sales Growth (defined above) are measured at or for the fiscal year-end corresponding to the year end when Book-to-Market is measured. Compustat variables are truncated at 1% level for both top and bottom tails. ***, **, * denote significance at 1%, 5% and 10% levels respectively. Figures in parentheses are t-statistics based on OLS standard errors.

Variables	Predicted Sign	Book-to-Market
Long-Term Growth Forecasts	+	0.0108 *** (47.85)
Sales Growth	+	0.0822 *** (10.27)
Industry Concentration	?	-0.0372 ** (2.21)
Industry Concentration \times Indicator of Top Four Companies	+	0.0429 *** (3.96)
Consumer Sentiment Index	+	0.0038 *** (6.88)
S&P Index	+	0.0002 *** (9.07)
Profitability	+	0.6067 *** (44.78)
Credit Rating	-	-0.0085 *** (13.20)
Standard Deviation of Returns	-	-0.0157 *** (11.64)
Intercept		-1.4655 *** (28.78)
Industry Fixed Effects		Yes
Year Fixed Effects		Yes
Number of Observations		21,330
Adj R-squared		33.85%

Table 3 Measuring Balance Sheet Conservatism (Continued)**Panel B: Validation based on Alternative Conservatism Measures**

Table 3 Panel B compares results of regressing the residual value and fitted value respectively on alternative conservatism measures. The residual value and fitted value are from the first-stage regression shown in Panel A. The residual value is our measure of balance sheet conservatism. LIFO Reserve Indicator is 1 if LIFO Reserve is positive and 0 otherwise. Accelerated Depreciation Indicator is 1 if the footnote shows that the firm only uses accelerated depreciation and 0 otherwise. Advertising Reserve is amortized advertising expenses using a sum-of-the-years-digits method over two years. R&D Reserve is amortized R&D expenditures using a sum-of-the-years-digits method over five years. To measure Asymmetric Timeliness and Timely Loss Recognition, we estimate Basu's (1997) market-based model at industry level (three-digit sic codes) for each year of the sample period using prior ten years of data: $NI = \alpha + \beta R + \eta DR + \gamma RDR + \varepsilon$. γ is the measure of Asymmetric Timeliness and $(\beta + \gamma)$ is the measure of Timely Loss Recognition. Non-Operating Accruals is measured following Beatty et al. (2008), which is the average of non-operating accruals scaled by assets over a period with a maximum of 5 years and a minimum of 2 years. All variables are measured at or for the fiscal year-end corresponding to the year end when Book-to-Market is measured. ***, **, * denote significance at 1%, 5% and 10% levels respectively. Figures in parentheses are t-statistics based on robust standard errors clustered at both firm and year levels.

Variables	Predicted Sign	Residual Value	Fitted Value
LIFO Reserve Indicator	+	0.009 (1.04)	-0.035 *** (6.17)
Accelerated Depreciation Indicator	+	0.0329 (1.29)	-0.0018 (0.09)
Advertising Reserve	+	0.4247 *** (5.11)	-0.2202 *** (3.79)
R&D Reserve	+	0.6051 *** (5.85)	0.0025 (0.05)
Asymmetric Timeliness	+	0.0354 ** (1.97)	-0.0341 (1.20)
Non-Operating Accruals	+	0.1237 * (1.91)	-0.0579 * (1.89)
Intercept		-0.0419 *** (5.82)	-0.6282 *** (27.82)
Number of Observations		21,330	21,330
R-squared		5.15%	0.99%

Variables	Predicted Sign	Residual Value	Fitted Value
LIFO Reserve Indicator	+	0.0088 (1.01)	-0.0342 *** (6.13)
Accelerated Depreciation Indicator	+	0.0325 (1.27)	-0.0011 (0.05)
Advertising Reserve	+	0.4235 *** (5.11)	-0.2225 *** (3.92)
R&D Reserve	+	0.6074 *** (5.85)	-0.0099 (0.22)
Timely Loss Recognition	+	0.0281 (1.43)	-0.0894 *** (2.80)
Non-Operating Accruals	+	0.1247 * (1.92)	-0.0578 ** (1.88)
Intercept		-0.0405 *** (5.12)	-0.6129 *** (24.72)
Number of Observations		21,330	21,330
R-squared		5.13%	1.46%

Table 3 Measuring Balance Sheet Conservatism (Continued)

Panel C: Coefficients from Basu Regressions by Groups

Table 3 Panel C compares Basu coefficients for firms over the periods of t-2 to t and of t+1 to t+3 ranked by the residual value and fitted value respectively. The residual value and fitted value are from the first-stage regression shown in Panel A. The residual value is our measure of balance sheet conservatism. The following pooled regression is estimated in each two period for each group: $NI = \alpha + \beta R + \eta DR + \gamma RDR + \varepsilon$. Figures in parentheses are t-statistics based on OLS standard errors.

Ranked by Residual Value

		Pre-Period: t-2 to t				Post-Period: t+1 to t+3			
		Low	Medium	High	High - Low	Low	Medium	High	High - Low
Asymmetric Timeliness	γ	0.14 (19.58)	0.16 (24.19)	0.22 (28.42)	0.08 (8.23)	0.32 (27.86)	0.20 (28.31)	0.21 (31.58)	-0.11 (8.80)
Timely Loss Recognition	$\beta + \gamma$	0.14 (24.12)	0.16 (26.30)	0.20 (25.98)	0.06 (6.68)	0.30 (26.37)	0.19 (25.79)	0.18 (29.38)	-0.12 (9.97)
Number of Observations		19,656	19,459	19,038		17,106	17,307	17,735	
Adj. R-squared		5.37%	6.56%	6.83%		7.61%	7.05%	7.43%	

Ranked by Fitted Value

		Pre-Period: t-2 to t				Post-Period: t+1 to t+3			
		Low	Medium	High	High - Low	Low	Medium	High	High - Low
Asymmetric Timeliness	γ	0.22 (26.41)	0.09 (15.21)	0.10 (19.14)	-0.12 (11.78)	0.39 (32.86)	0.20 (27.57)	0.13 (23.84)	-0.26 (21.01)
Timely Loss Recognition	$\beta + \gamma$	0.19 (26.60)	0.09 (18.08)	0.10 (21.03)	-0.09 (9.35)	0.35 (29.84)	0.18 (25.41)	0.12 (23.14)	-0.22 (18.37)
Number of Observations		19,434	19,296	19,423		17,328	17,470	17,350	
Adj. R-squared		0.06%	0.04%	0.04%		0.09%	0.07%	0.06%	

Table 4 Balance Sheet Conservatism and Loan Spreads

The full sample contains 4,835 loans between 1996 and 2006 with all control variables available. The dependent variable is Spread. Specification 1 reports the results of the full sample, while specifications 2 and 3 are subsamples excluding high-tech industries (Computers and Pharmaceuticals) and young firms (lowest quintile of age), respectively. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

Dependent Variable = Spread in b.p.	1		2		3	
	Full Sample		Exclude High Tech Firms		Exclude Young Firms	
	Coefficient	t	Coefficient	t	Coefficient	t
Balance Sheet Conservatism	-39.61 ***	-6.51	-45.34 ***	-6.72	-41.30 ***	-5.46
Log of Assets	-14.62 ***	-14.24	-13.82 ***	-11.77	-14.02 ***	-10.56
Profitability	-102.22 ***	-7.22	-105.71 ***	-6.04	-120.22 ***	-6.61
Loss Years	42.69 ***	5.86	45.49 ***	5.59	34.69 ***	4.34
Leverage	66.23 ***	7.14	70.35 ***	6.58	64.87 ***	6.20
Credit Rating	4.00 ***	5.08	4.15 ***	4.40	3.65 ***	4.55
Standard Deviation of Returns	13.73 ***	10.34	13.02 ***	9.33	13.37 ***	8.37
Long-Term Growth Forecasts	-0.48 **	-2.20	-0.31	-1.35	-0.54 **	-2.48
Asset Tangibility	-29.23 **	-2.05	-1.78	-0.23	1.13	0.13
Facility-to-Assets	-19.82 ***	-2.88	-16.54 *	-1.97	-15.60 **	-2.31
Log of Maturity	-19.75 ***	-4.06	-20.65 ***	-4.39	-20.40 ***	-4.11
Collateral Indicator	46.94 ***	9.75	45.59 ***	8.93	50.39 ***	8.72
Default Spread	23.09	1.63	28.31 ***	1.91	23.12 *	1.67
Term Spread	10.86 ***	3.57	10.48 ***	3.35	11.20 ***	4.50
Revolver Indicator	-64.20 ***	-9.81	-67.41 ***	-9.65	-64.88 ***	-10.76
Intercept	263.60 ***	10.49	240.49 ***	8.60	258.80 ***	9.83
Deal Purpose Fixed Effects	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Number of Observations	4,835		4,191		4,110	
R-squared	0.629		0.619		0.636	

Table 5 Balance Sheet Conservatism and Access to Capital

The full sample contains 4,385 loans between 1996 through 2006 with all control variables available. The dependent variable is Deal-to-Assets which is a proxy for the borrower's access to bank loans. Specification 1 reports the results of the full sample, while specifications 2 and 3 are sub-samples excluding high-tech industries (Computers and Pharmaceuticals) and young firms (lowest quintile of age), respectively. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

Dependent Variable = Deal-to-Assets	1		2		3	
	Full Sample		Exclude High Tech Firms		Exclude Young Firms	
	Coefficient	t	Coefficient	t	Coefficient	t
Balance Sheet Conservatism	0.06 ***	3.62	0.06 ***	2.98	0.07 ***	3.20
Log of Assets	-0.08 ***	-15.57	-0.08 ***	-17.19	-0.08 ***	-13.70
Profitability	0.29 ***	5.83	0.33 ***	6.79	0.26 ***	4.19
Loss Years	-0.06 ***	-3.63	-0.06 ***	-3.42	-0.08 ***	-4.69
Leverage	0.13 ***	7.56	0.13 ***	6.38	0.12 ***	6.46
Credit Rating	0.00	-0.95	0.00	-1.34	0.00	-0.74
Standard Deviation of Returns	-0.01 **	-1.98	-0.01 ***	-2.26	0.00	-1.19
Long-Term Growth Forecasts	0.00 **	-1.66	0.00 *	-1.41	0.00	-1.41
Asset Tangibility	-0.12 ***	-3.03	-0.11 ***	-2.54	-0.11 ***	-2.52
Log of Maturity	0.15 ***	10.95	0.15 ***	9.80	0.14 ***	12.91
Collateral Indicator	0.04 ***	3.71	0.05 ***	3.57	0.04 ***	4.33
Revolver Indicator	-0.03	-1.60	-0.03	-1.53	-0.04 *	-1.68
Intercept	0.28 ***	5.29	0.28 ***	4.63	0.30 ***	5.53
Deal Purpose Fixed Effects	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Number of Observations	4835		4195		4113	
R-squared	0.40		0.39		0.40	

Table 6 Balance sheet conservatism and Covenant Intensity

The sample contains 3,833 loans between 1996 through 2006 with covenant information available on Dealscan and all control variables available. The dependent variable in specification 1 is the total number of financial covenants and in specification 2, it is the number of General Covenants. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

	1		2	
	# Financial Covenants		# General Covenants	
	Coefficient	t	Coefficient	t
Balance Sheet Conservatism	-0.65 ***	-6.82	-0.78 ***	-7.08
Log of Assets	-0.23 ***	-7.45	0.01	0.36
Profitability	1.13 ***	7.61	0.27 ***	1.23
Loss Years	-0.48 ***	-3.67	0.42 **	2.05
Leverage	0.61 ***	4.26	0.92 ***	6.19
Credit Rating	0.03 ***	2.67	0.08	3.52
Standard Deviation of Returns	-0.04 **	-3.03	0.00	0.12
Long-Term Growth Forecasts	0.00	0.10	-0.01 *	-1.82
Asset Tangibility	-0.71 **	-2.05	-1.21 ***	-5.29
Deal-to-Assets	0.04	0.63	1.19 ***	8.15
Log of Maturity	0.01	0.15	0.35 ***	4.36
Revolver Indicator	-0.32 ***	-4.69	-1.21 ***	-7.06
Intercept	4.30 ***	7.66	-0.57	-0.71
Deal Purpose Fixed Effects	Yes		Yes	
Industry Fixed Effects	Yes		Yes	
Number of Observations	3833		3833	
R-squared	0.179		0.324	

Table 7 Balance Sheet Conservatism and (Tangible) Net Worth Covenant Slack

The samples contain 826 and 789 loans between 1996 and 2006 with all control variables available and with either net worth covenant or tangible net worth covenant. The dependent variables are (Tangible) Net Worth Covenant Slack as described in Appendix. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

	1		2	
	Net Worth Covenant Slack		Tangible Net Worth Covenant Slack	
	Coefficient	t	Coefficient	t
Balance Sheet Conservatism	0.06 ***	3.41	0.05 **	2.51
Log of Assets	0.01	1.63	0.00	-0.34
Profitability	0.04	1.52	0.07 *	1.73
Loss Years	0.02	1.41	0.03 *	1.76
Leverage	-0.13 ***	-5.30	-0.15 ***	5.45
Credit Rating	0.00	0.59	0.00	-0.16
Standard Deviation of Returns	0.00	-0.93	0.00	-0.66
Long-Term Growth Forecasts	0.00 *	1.84	0.00 **	2.33
Asset Tangibility	-0.08	-1.60	-0.23 **	-2.45
Deal-to-Assets	-0.02	-1.38	-0.03	-1.21
Log of Maturity	0.00	0.20	-0.01	-0.86
Build-up Indicator	-0.03 ***	-3.70	-0.02 ***	5.09
Revolver Indicator	-0.07	-0.72	-0.01	-0.63
Intercept	0.17 ***	3.99	0.37	1.25
Deal Purpose Fixed Effects	Yes		Yes	
Industry Fixed Effects	Yes		Yes	
Number of Observations	826		789	
R-squared	0.202		0.219	

Table 8 Spread and the Interaction between Conditional and Balance Sheet Conservatism**Panel A: Regression Results**

Panel A reports the results of the regressions. The sample contains 4,835 loans between 1996 through 2006 with all control variables available. The dependent variable is Spread. Firms are independently sorted into three groups each based conditional conservatism (using the Overall CC measure) and balance sheet conservatism. Specification 1 reports the results for conditional conservatism and specification 2 reports the interaction groups. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

Dependent variable = Spread	1		2	
	Conditional Conservatism		Interactions	
	Coefficient	t	Coefficient	t
Conditional Conservatism	-4.00 ***	-2.71		
Low CC & Med BC			-9.62 ***	-3.08
Low CC & High BC			-25.02 ***	-4.39
Med CC & Low BC			-4.23	-1.34
Med CC & Med BC			-17.40 ***	-6.48
Med CC & High BC			-21.62 ***	-4.66
High CC & Low BC			-9.66 **	-1.84
High CC & Med BC			-16.65 ***	-5.78
High CC & High BC			-29.72 ***	-6.07
Log of Assets	-14.70 ***	-14.50	-14.62 ***	-14.72
Profitability	-115.03 ***	-9.04	-98.80 ***	-6.97
Loss Years	41.67 ***	5.80	45.64 ***	6.08
Leverage	69.98 ***	7.85	64.05 ***	7.44
Credit Rating	4.10 ***	4.85	3.92 ***	4.85
Standard Deviation of Returns	14.02 ***	10.70	13.81 ***	10.61
Long-Term Growth Forecasts	-0.49 **	-2.29	-0.47 **	-2.16
Asset Tangibility	-34.40 **	-2.32	-31.11 **	-2.11
Facility-to-Assets	-21.73 ***	-3.04	-20.32 ***	-2.86
Log of Maturity	-20.36 ***	-4.21	-20.25 ***	-4.10
Collateral Indicator	49.48 ***	10.69	47.56 ***	10.15
Default Spread	32.05 *	1.95	32.98 **	2.06
Term Spread	5.27 **	1.98	5.45 **	2.17
Revolver Dummy	-64.02 ***	-9.72	-64.16 ***	-9.82
Intercept	262.81 ***	9.74	274.76 ***	10.57
Deal Purpose Fixed Effects	Yes		Yes	
Industry Fixed Effects	Yes		Yes	
Number of Observations	4,835		4,835	
R-squared	0.623		0.628	

Table 8 Spread and the Interaction between Conditional and Balance Sheet Conservatism (Continued)

Panel B: Coefficients by Groups and F Tests

Panel B reports the coefficients, differences in coefficients across the nine groups of conservatism and the associated F-statistics. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

		Conditional Conservatism			Diff of Coeff	F Test of Diff
		Low	Medium	High	High - Low	Low vs. High
Balance Sheet Conservatism	Low	Intercept	-4.23	-9.66	-9.66	3.37*
	Medium	-9.62	-17.40	-16.65	-7.03	2.63
	High	-25.02	-21.62	-29.72	-4.70	1.35
Diff of Coeff	High - Low	-25.02	-17.39	-20.06		
F Test of Diff	Low vs. High	19.31***	10.59***	22.16***		

Table 8 Spread and the Interaction between Conditional and Balance Sheet Conservatism (Continued)

Panel C: Spread Results Conditioning on Monitoring

Panel C compares the spread results between loans with above-median Financial Covenants Use and loans with below-median Financial Covenants Use. Coefficients across the nine groups and the differences between high and low groups are reported. ***, **, * denote significance of F tests at 1%, 5% and 10% levels respectively.

Sample with above-median Financial Covenants Use (N=1562)

		Conditional Conservatism			Diff of Coeff	F Test of Diff
		Low	Medium	High	High - Low	Low vs. High
Balance Sheet Conservatism	Low	Intercept	-0.03	-7.19	-7.19	3.57*
	Medium	-1.73	-11.22	-9.00	-7.27	1.82
	High	-12.58	-15.55	-19.35	-6.77	1.26
Diff of Coeff	High - Low	-12.58	-15.52	-12.16		
F Test of Diff	Low vs. High	4.96**	7.04***	8.29***		

Sample with below-median Financial Covenants Use (N=2124)

		Conditional Conservatism			Diff of Coeff	F Test of Diff
		Low	Medium	High	High - Low	Low vs. High
Balance Sheet Conservatism	Low	Intercept	-2.56	-3.73	-3.73	0.22
	Medium	-8.31	-14.91	-19.02	-10.71	2.42
	High	-25.86	-16.73	-31.60	-5.74	0.76
Diff of Coeff	High - Low	-25.86	-14.17	-27.87		
F Test of Diff	Low vs. High	11.00***	6.08**	11.49***		

Table 9 Financial Covenants Use and the Interaction between Conditional and Balance Sheet Conservatism

Panel A: Regression Results

Panel A reports the results of the regressions. The sample contains 3,686 loans between 1996 through 2006 with all control variables available and with at least 1 financial covenant. The dependent variable is Financial Covenants Use as described in Appendix. Firms are independently sorted into three groups each based conditional conservatism (using the Overall CC measure) and balance sheet conservatism. Specification 1 reports the results for conditional conservatism and specification 2 reports the interaction groups. Standard errors are clustered using the two-way methodology at the firm level and the year level and t-statistics are reported. All variables are described in the Appendix. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

Dependent variable = Financial Covenant Use	1 Conditional Conservatism		2 Interactions	
	Coefficient	t	Coefficient	t
Conditional Conservatism	0.01 **	2.41		
Low CC & Med BC			0.03 ***	2.81
Low CC & High BC			0.06 ***	3.44
Med CC & Low BC			0.01	1.04
Med CC & Med BC			0.05 ***	3.83
Med CC & High BC			0.08 ***	11.32
High CC & Low BC			0.02 *	1.67
High CC & Med BC			0.04 ***	2.86
High CC & High BC			0.06 ***	5.80
Log of Assets	0.00	0.54	0.00	0.42
Profitability	0.13 ***	4.67	0.10 ***	3.10
Loss Years	-0.11 ***	-3.98	-0.12 ***	3.99
Leverage	-0.12 ***	-5.71	-0.10 ***	-4.43
Credit Rating	-0.02 ***	-5.49	-0.02 ***	-5.49
Standard Deviation of Returns	-0.02 ***	-5.07	-0.02 ***	-4.74
Long-Term Growth Forecasts	0.00 **	2.52	0.00 ***	2.58
Asset Tangibility	0.10 ***	3.32	0.10 ***	3.15
Deal-to-Assets	-0.11 ***	-7.18	-0.12 ***	-7.75
Log of Maturity	-0.04 ***	-3.00	-0.04 ***	-3.12
Revolver Dummy	0.08 ***	6.31	0.08 ***	6.32
Intercept	1.04 ***	11.20	1.00 ***	11.03
Deal Purpose Fixed Effects	Yes		Yes	
Industry Fixed Effects	Yes		Yes	
Number of Observations	3,686		3,686	
R-squared	0.283		0.291	

Table 9 Financial Covenants Use and the Interaction between Conditional and Balance Sheet Conservatism (Continued)

Panel B: Coefficients by Groups and F Tests

Panel B reports the coefficients, differences in coefficients across the nine groups of conservatism and the associated F-statistics. ***, **, * denote significance at 1%, 5% and 10% levels respectively.

		Conditional Conservatism			Diff of Coeff	F Test of Diff
		Low	Medium	High	High - Low	Low vs. High
Balance Sheet Conservatism	Low	Intercept	0.01	0.02	0.02	2.78*
	Medium	0.03	0.05	0.04	0.01	0.36
	High	0.06	0.08	0.06	0.00	0.00
Diff of Coeff	High - Low	0.06	0.07	0.04		
F Test of Diff	Low vs. High	11.84***	19.31***	10.10***		