

The impact of financial reporting quality on debt contracting: Evidence from internal control weakness reports*

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Abstract

In this paper, we exploit the syndicated loan market to study the impact of financial reporting quality on debt contracting. We rely on Sarbanes-Oxley internal control reports to measure financial reporting quality. We find that when a firm experiences a material internal control weakness, lenders decrease their reliance on financial covenants and financial-ratio-based performance pricing provisions. A material weakness is also associated with higher interest rates; this adverse effect on loan pricing is mitigated if a loan is issued by a relationship lender. Further, following an internal control weakness report, lenders substitute financial covenants with loan collateral. The effects of an internal control weakness on loan contractual terms become stronger for more serious weaknesses, as measured by company-level and fraud-related weaknesses. We also find that lenders continue to view a firm's financial reporting quality as deficient even after the weakness is corrected, suggesting that a material internal control weakness has a long-term reputation effect.

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1. Introduction

The role of financial reporting quality in debt contracting is one of the fundamental questions in accounting research. Watts and Zimmerman [1986], Watts [1993], Ball [2001] and Holthausen and Watts [2001] suggest that financial statement information is particularly important for contracting purposes. Leftwich [1983], Dichev and Skinner [2002], Asquith et al. [2005] and Li [2009] document that in setting debt covenants and performance pricing provisions, lenders rely explicitly on financial statement numbers.

Despite the considerable interest that researchers have in the relationship between financial reporting quality and debt contracting, the number of studies that empirically examine this relationship is limited. Zhang [2007], Ball et al. [2008], Wittenberg-Moerman [2008] and Sunder et al. [2009] explore whether financial reporting timeliness in general and timely loss recognition in particular affect debt contractual terms and debt trading. Francis et al. [2005] and Bharath et al. [2008] examine how accruals quality affects debt contractual terms. To shed more light on the importance of financial reporting quality for debt contracting, this paper studies whether a material weakness in internal controls, according to Section 302 of the Sarbanes-Oxley Act, affects loan pricing and non-price contractual terms.

Sarbanes-Oxley requires managers of firms filing under Sections 13(a) or 15(d) of the Securities Exchange Act to test and report on the quality of the internal controls. A material internal control weakness (ICW, hereafter) is defined as “[a] deficiency, or a combination of deficiencies, in internal controls over financial reporting such that there is a reasonable possibility that a material misstatement of the registrant’s annual or interim financial statements will not be prevented or detected on a timely basis by the company’s internal controls” (www.sec.gov). Because lenders explicitly contract on financial statement numbers and rely on

those numbers to monitor a borrower, a reasonable probability of a material misstatement in a borrower's financial statements is expected to have a first order effect on debt contractual terms.

Relying on internal control reports to measure reporting quality has a number of important advantages over the reporting quality measures used in prior research. First, prior research suggests that accruals models suffer from significant measurement error and therefore are likely to incorrectly characterize a firm as having poor reporting quality (Dechow et al. [1995], Hribar and Collins [2002], Hribar and Nichols [2007], Ball and Shivakumar [2008]). Core et al. [2007] and Cohen [2008] question the ability of discretionary accruals to proxy for reporting quality and suggest that there is no relation between accruals quality and the cost of capital. Second, reporting timeliness (accounting conservatism) and discretionary accruals are strongly associated with a borrower's business model and production function. Therefore, the observed cross-sectional differences in timeliness and accruals measures are likely to be driven by these fundamental properties, as opposed to reporting quality per se. The approach we take in our study is to directly examine the changes in the terms of new loans following the disclosure of an ICW; this method allows us to use each borrower as its own control and is therefore superior to the cross-sectional examination of timeliness and accrual measures used in prior studies.

Third, our measure indicates that there is a reasonable probability of a *material* misstatement in a firm's financial statements. FASB Concept Statement 2 defines materiality as "...the magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the inclusion or correction of the item." Therefore, material weakness reports allow us to identify a meaningful change in the lenders' perception of the borrower's reporting quality without significant researcher judgment.

In contrast, financial reporting timeliness and discretionary accruals measures require the researcher to make an ad hoc decision on whether an observed change in these measures is likely to be meaningful to the lenders. Finally, while reporting timeliness and accruals quality capture specific aspects of financial reporting quality, the periodic rigorous assessment of the reliability of a borrower's financial reporting system provided by internal control reports is a more comprehensive measure of financial reporting quality. FASB Concept Statement 2 identifies both relevance and reliability as the two primary qualities that make financial statements useful for decision makers. Our measure directly captures the reliability of financial statements.

We examine the effect of material ICWs on the financial covenants, general covenants, pricing, performance pricing and collateral of syndicated loans. For the sample of firms that experience a material ICW, we examine whether these contractual terms differ for new loans issued in three distinct periods: before an ICW is reported (prior period, hereafter), from the day the ICW is reported through the day it is corrected (uncorrected period, hereafter) and after an ICW is corrected (corrected period, hereafter).

Financial covenants allow lenders to perform efficient monitoring of a borrower. Syndicate lenders set financial covenants fairly tight relative to the underlying variables and use them as "trip wires" for borrowers (Dichev and Skinner [2002]). We hypothesize that low financial reporting quality, as indicated by a material ICW, will decrease the effectiveness of financial covenants in conveying changes in a borrower's creditworthiness to the lender. We predict and find that lenders lower their reliance on financial covenants when a borrower's financial statements are subject to a material ICW. The number of financial covenants imposed by lenders during the uncorrected period decreases by 0.36 relative to the prior period. This effect is economically significant, given that it represents a 21.9 percent decrease in the number of

covenants. Further, we find a significant decrease in the number of financial covenants used in the corrected period relative to the prior period. This finding implies that lenders continue to distrust financial covenants as an ex-post monitoring tool even after the ICW has been corrected, suggesting a long-term reputation effect imposed by the ICW. In contrast to the financial covenant results, we do not find that ICWs affect the lenders' reliance on general covenants.

Because internal control reports assess the integrity of a firm's financial reporting system, we expect that they also affect loan pricing. We predict that low financial reporting quality affects loan pricing via two channels. First, as argued above, low reporting quality is likely to decrease the lenders' reliance on financial covenants. The agency theory of covenants suggests that there is a trade-off between the number of covenant restrictions imposed by a loan contract and the interest rate (Jensen and Meckling [1979], Myers [1977], Smith and Warner [1979]). Therefore, a decrease in the number of financial covenants should be compensated by an ex-ante increase in the interest rate. Second, we expect poor financial reporting quality to affect the interest rate through an increase in uncertainty. Financial statements are an important mechanism for communicating information to lenders and for facilitating loan monitoring. Therefore, a reasonable possibility of a material misstatement in a borrower's financial statements increases the uncertainty regarding the firm's creditworthiness and consequently increases the agency cost of debt, which should be priced by lenders. In addition, we expect this higher uncertainty to translate into higher information asymmetry between a firm and its lenders. Relative to lenders, managers have better knowledge about the firm's creditworthiness. Therefore, a low reliability of a borrower's financial reporting system is likely to increase information asymmetry, which in turn should increase the interest rate (Verrecchia [2001], Easley et al. [2002], Easley and O'Hara [2004], Lambert et al. [2007], Wittenberg-Moerman, [2009]). Consistent with our prediction, the

interest rate on loans issued during the uncorrected period increases by 29 basis points relative to the prior period, which represents an 11.4 percent increase in the interest rate. We find that this adverse effect on loan pricing is mitigated if the loan is issued by a relationship lender.

Next, we examine whether ICWs influence performance pricing provisions, which link the loan interest rate to a borrower's subsequent performance. These provisions are indexed to either financial statement ratios or to a credit rating. Because credit ratings frequently lag behind recent changes in a firm's credit quality (Warga and Welch [1993], Hite and Warga [1997], De Franco et al. [2009]), lenders may view financial ratios as more timely indicators of the changes in a borrower's creditworthiness. However, when reporting quality is low, lenders can trade off more timely financial ratios for more reliable credit ratings. We predict and find that lenders are less likely to base performance pricing provisions on financial ratios when a borrower's financial statements are subject to an ICW. The probability that this provision is based on a financial ratio decreases by 20 percent during the uncorrected period, relative to the prior period.

We also find that following an ICW report, lenders are more likely to require a borrower to provide collateral. The probability that a loan is collateralized increases by three percent during the uncorrected period and by eight percent during the corrected period, relative to the prior period. This finding suggests that lenders substitute less efficient financial covenants with loan collateral in order to decrease potential losses in the event of a loan default.

We perform a number of additional tests to enhance our findings. First, we examine whether the effect of an ICW on loan terms is stronger for more serious ICWs, as measured by company-level and fraud-related weaknesses. We show that the changes in all loan contractual terms we examine are more substantial following more serious ICW disclosures, reinforcing our primary findings and inferences. Second, we address the joint determination of loan terms. We

allow for simultaneity between the interest rate and financial covenants, and we estimate all loan terms that we examine as a system of equations using a seemingly unrelated regression model. All findings are robust to the joint determination of loan terms. Finally, we address potential survivorship bias and hold-up issues and show that the results are not affected.

Our results are distinct from those of Kim et al. [2009] who compare the loans of ICW firms following the ICW disclosure to the loans of non-ICW firms. Kim et al. [2009] find that the loans related to firms with company-level ICWs have a higher interest rate and a higher probability of being secured, but contrary to our findings, have a higher number of financial and general covenants. While Kim et al. [2009] attribute these differences in the loan terms to ICWs, we show that their results are likely to be due to higher riskiness and information opacity of ICW firms relative to non-ICW firms (see Section 5.5 for further discussion).

Our paper contributes directly to the literature that examines the influence of financial reporting quality on debt contracting. Prior research supports the proposition that financial reporting quality affects debt contractual terms; however, this proposition was difficult to examine absent a compelling measure of financial reporting quality. By demonstrating that ICWs significantly impact loan terms, our study provides strong support for the importance of reporting quality for debt contracting. Further, this study broadens our understanding of how financial reporting quality affects non-price contractual terms. Prior research primarily explores the effect of financial reporting quality on the cost of debt capital. By providing evidence that ICWs decrease the lenders' reliance on financial covenants and financial-ratio-based performance pricing provisions and increase the lenders' reliance on loan collateral, this paper documents the importance of financial reporting quality in shaping non-price debt contractual terms.

Our study is also related to the research that examines the effect of the Sarbanes-Oxley Act on capital markets. While Beneish et al. [2008], Hammersley et al. [2008] and Ashbaugh-Skaife et al. [2009] find that firms with ICWs have a higher cost of equity, Ogneva et al. [2007] suggest that after properly controlling for firm characteristics, ICWs do not affect the cost of equity. We contribute to this literature by exploring how ICWs affect the cost of capital in the syndicated loan market, which represents one of the main sources of financing for U.S. firms. Finally, we complement and extend recent literature that investigates simultaneity in debt pricing and covenant structure decisions (Bradley and Roberts [2004], Demiroglu and James [2008]).

The following section provides a brief description of the syndicated loan market. The third section presents the research design. The fourth section describes the data. The fifth section discusses our empirical findings. The sixth section concludes.

2. The syndicated loan market

Syndicated lending represents more than 50 percent of corporate financing originated in the U.S.; of the top 500 non-financial firms in the Compustat universe, 90 percent rely on syndicated loan financing (Weidner [2000], Sufi [2007]). A syndicated loan is provided by a group of lenders, and it is structured and managed by one or several banks known as arrangers (Standard & Poor's [2007]). The arranger negotiates the loan agreement, coordinates the documentation process, recruits loan participants and performs primary monitoring and enforcement responsibilities (Lee and Mullineaux [2004]). While each of the syndicate lenders is only responsible for their portion of the total loan, the loan is governed by a common loan contract. Syndicated loans are floating rate debt issues, priced at an interest rate spread above a reference rate, such as Prime, LIBOR or Certificate of Deposit. Syndicated loans are always senior debt

instruments and typically contain more numerous and stricter financial covenants than public debt issues (Smith and Warner [1979], Assender [2000], Dichev and Skinner [2002]).

Loan contracts often include an internal control provision as an affirmative covenant. This covenant generally requires a borrower to report if an ICW event occurred, however reporting an ICW typically does not trigger technical default.¹ For example, a 2005 loan contract between Texas Industries and the syndicate arranged by Bank of America states that the borrower must certify that “[s]ince the date of the Audited Financial Statements, there has been no event or circumstance (including, without limitation, an Internal Control Event), either individually or in the aggregate, that has had or could reasonably be expected to have a Material Adverse Effect [on the Financial Statements].” This evidence supports the importance, to lenders, of an assessment of the reliability of a borrower’s financial reporting.

3. Research Design

3.1. Within-sample analysis

We focus on the temporal changes in debt contractual terms for firms reporting an ICW, because ICW firms are fundamentally different from non-ICW firms. Ge and McVay [2005] and Doyle et al. [2007a] find that smaller, younger, financially weaker, more complex, high growth and restructured firms are more likely to report ICWs. Firms experiencing an ICW are also likely to have weaker corporate governance than non-ICW firms. To the extent that we cannot perfectly control for all firm characteristics associated with ICWs, we believe that analyzing the changes

¹ To verify that ICWs do not trigger technical default, we randomly selected 50 ICW firms from our sample and examined, based on their 10-K and 10-Q SEC filings, whether they reported covenant violations. Firms have to report covenant violations according to SEC Regulation S-X. We examined whether a covenant violation is mentioned in the same 10-K or 10-Q filing that includes the ICW disclosure. If the ICW is disclosed in the 10-Q, we also examined the 10-K for the same fiscal year. In the majority of financial statements that we examined, firms explicitly stated that they are in compliance with all covenants imposed by their loan agreements. In a few cases where firms reported covenant violations, they were unrelated to ICWs.

in the terms of new loans *within* the sample of ICW firms is a more appropriate approach than comparing the loans of ICW firms to the loans of non-ICW firms.

Our analysis consists of three distinct time periods. The prior period spans the three year period before the ICW was first reported. The uncorrected period starts at the first ICW report and ends on the date of the first clean internal control report. For our sample, the average time period of an uncorrected weakness is 1.26 years. The corrected period spans the three years after the ICW is corrected. The purpose of separating the sample into these periods is to pinpoint changes in accounting quality. Lenders are likely to view firms as having low reporting quality during the uncorrected period, while reporting quality should be restored during the corrected period. However, if an ICW imposes a long-term reputation effect, it is possible that lenders continue to view a firm as having low reporting quality even after the weakness is corrected. Our sample includes all loans issued to ICW firms in the three periods of interest: 1,456 loans issued in the prior period, 594 loans issued in the uncorrected period and 778 loans issued in the corrected period. We control for firm characteristics at the time of loan issuance and for a variety of loan features. We include year fixed effects in each regression to control for time varying effects on loan terms, and we estimate t-statistics based on standard errors clustered at the firm level. In Section 5.6, we report robustness tests that address the validity of our research design.

3.2. Financial covenants

To examine the impact of ICWs on covenant intensity, we estimate the following model:

$$\text{Financial Covenants} = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \sum \beta_i (\text{Control}_i), \quad (1)$$

where *Uncorrected* is an indicator variable equal to one if the loan is issued during the uncorrected period, zero otherwise, and *Corrected* is an indicator variable equal to one if the loan is issued in the corrected period, zero otherwise. We expect that during the period of decreased

accounting quality, lenders will be less likely to rely on financial covenants to monitor the borrower. This should be reflected by a negative coefficient on the *Uncorrected* variable. If lenders continue to distrust financial covenants as an ex-post monitoring tool even after the ICW is corrected, we expect a negative coefficient on the *Corrected* variable.

The control variables include loan and firm characteristics that are likely to affect financial covenant intensity. Because small, less profitable and highly leveraged firms are characterized by a high agency cost of debt, the number of covenants is expected to be negatively related to size and profitability and positively related to leverage. We predict that institutional loans have a higher number of covenants, because relative to bank term loans, these loans are more risky, have a longer maturity and have a back-end-loaded repayment schedule. We also control for the existence of performance pricing provisions, because Asquith et al. [2005] suggest that these provisions are common when the potential for adverse selection and moral hazard is higher. Longer maturity loans typically have a higher default risk and higher ex-post incentive conflicts (Flannery [1986], Demiroglu and James [2008]). According to the agency theory of covenants (Jensen and Meckling [1979], Myers [1977], Smith and Warner [1979]), we predict a negative relation between the interest rate and the number of covenants. Finally, we control for credit ratings, loan size, collateral, the number of syndicate lenders and whether the loan is a revolver.

To benchmark our results for financial covenants, we estimate the same model using general covenants as the dependent variable. Following Bradley and Roberts (2004), we include sweeps and dividend restrictions in the general covenant index. Sweeps are prepayment covenants that mandate the early retirement of the loan conditional on a particular borrower's action and include restrictions on debt issuance, equity issuance, asset sales and insurance proceeds. They are stated as percentages which correspond to the fraction of the loan that must

be retired in such an event. For example, a contract imposing a 50 percent debt issuance sweep will force the borrower to prepay 50 percent of the principal value of the loan if a borrower issues more than an agreed-upon amount of debt. A decrease in financial reporting quality should not affect the number of general covenants, because these covenants do not rely on financial statement numbers.² Alternatively, lenders can substitute general covenants for financial covenants when a borrower's financial reporting is of low quality. We therefore expect the coefficients on the *Uncorrected* and *Corrected* variables in the general covenant regression to be either insignificantly different from zero or positive.³

3.3. Interest Rate

We examine how financial reporting quality affects loan pricing by the following model:

$$\text{Interest Rate} = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \sum \beta_i (\text{Control}_i) \quad (2)$$

Our coefficients of interest are β_1 and β_2 . We expect the interest rate to increase during the uncorrected period, relative to the prior period. The prediction regarding the corrected period is more ambiguous. The interest rate will be higher in the corrected period if lenders continue to view a borrower's financial reporting quality as inferior even after an ICW is remediated.

² While we classify dividend restrictions as general covenants, in some loan contracts they may be linked to financial statements. More specifically, dividend payments may be restricted by a specified amount per fiscal year or by a proportion of a borrower's cash or earnings. Dividend covenants may also condition payments on a firm's creditworthiness; creditworthiness is measured by credit ratings or by financial ratios. In addition, dividend covenants may not impose restrictions on periodic dividend payments, but may instead limit other distributions to equity holders, such as stock repurchases over a specified number of shares. Because DealScan does not reflect the complexity of dividend covenants and reports only a binary variable indicating the presence of such a covenant, we cannot determine whether or not a dividend covenant in the loan agreement is linked to financial statement numbers. Consequently, we classify dividend restrictions as general covenants. As a robustness test, we exclude dividend restrictions from the general covenant index and re-estimate the general covenant model. This test produces similar results and inferences to the analysis tabulated in Table 3.

³ A decrease in financial reporting quality can also decrease lenders' reliance on borrowing base restrictions (so-called asset-based lending). Borrowing base restrictions are typically found in revolvers to speculative-grade borrowers (LSTA [2007], and Standard & Poor's [2007]). These restrictions define a maximum borrowing limit tied to a formula primarily based on a borrower's inventory and receivables. Because only 13% of our sample loans are subject to a borrowing base restriction, we do not analyze these restrictions in this study.

We control for loan size because prior studies find that larger loans are priced at lower interest rates (Booth [1992], Beatty et al. [2002]). We include firm size because small firms have greater information asymmetries and a higher probability of distress (Bharath et al. [2007]). We also control for revolvers; prior research finds that revolvers are priced at lower interest rates than term loans (Harjoto et al. [2004], Zhang [2008]). Because of the higher agency cost of debt associated with institutional loans, we expect these loans to be priced at a higher interest rate. In addition, we control for the number of syndicate participants; a syndicate is structured with fewer lenders when a firm is more informationally opaque and has a higher probability of default (Lee and Mullineaux [2004], Sufi [2007]). Finally, we control for credit quality and loan maturity.

3.4. Performance Pricing and Collateral

We test the choice of the performance pricing provision using the following Probit model:

$$P(PP \text{ Acc. Ratio} = 1) = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \sum \beta_i (\text{Control}_i), \quad (3)$$

where the dependent variable equals one if the provision is based on an accounting ratio and zero if it is based on a credit rating. We expect that poor accounting quality will decrease the probability that lenders base the performance pricing provision on an accounting ratio. In choosing our control variables we generally follow Ball et al. [2008]. We restrict the estimation of the performance pricing model to the loans of borrowers with available credit ratings and to the borrowers whose loan contracts include performance pricing provisions both before and after the ICW report.

Based on our prediction that poor financial reporting quality leads to a decrease in the number of financial covenants used, we test whether loan securitization substitutes for financial covenants imposed by lenders. We examine loan securitization by the following Probit model:

$$P(\text{Secured} = 1) = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \sum \beta_i (\text{Control}_i) \quad (4)$$

If lenders substitute less efficient financial covenants with loan collateral, we expect a positive coefficient on the uncorrected and corrected indicator variables. We generally follow Bharath et al. [2009] when choosing control variables in the collateral model.

4. Data

4.1. Data sources and sample selection

We obtain data on ICW reports filed under Sarbanes-Oxley Section 302 from Audit Analytics. Section 302 refers to the ‘Corporate Responsibility for Financial Reports’ and requires that chief executive officers and chief financial officers evaluate the design and effectiveness of internal controls and report their overall conclusions on a quarterly basis. Any company filing periodic reports under Sections 13(a) or 15(d) of the Exchange Act, without exception for firm size, must comply with the rule starting August 29, 2002.

As we discussed in Section 3, we limit our sample to firms reporting ICWs. We also restrict our sample to firms reporting *material* weaknesses in their internal controls, as these weaknesses are most likely to result in a material misstatement in the financial reports. This results in an initial sample of 2,231 firms reporting material weaknesses over the September 2002 through July 2008 period (Table 1, Panel A). Then, we match our ICW sample to public firms on the DealScan database and retain all loans issued in the prior, uncorrected or corrected periods.⁴ DealScan is provided by the Loan Pricing Corporation (LPC) and provides a wide range of loan characteristics, such as interest rate, amount and covenants. Matching Audit Analytics to DealScan leads to a sample of 3,666 loans. Further, we eliminate loans (facilities⁵)

⁴ To identify public borrowers on DealScan we have previously matched it with COMPUSTAT. We match these databases based on the tickers available on DealScan and by hand, based on a firm’s name, industry and state.

⁵ In the syndicated loan market a loan is referred to as a ‘facility.’ Usually, a number of facilities with different maturities, interest rate spreads and repayment schedules are structured and syndicated as one transaction (deal) with a borrower. The analysis in this paper is performed at the individual facility level.

missing the loan or firm characteristics required for the empirical analysis. Finally, to ensure that our results are not due to changes in the sample's composition, we require the firm to have at least one loan issued in the prior period and at least one loan issued in either the uncorrected or corrected periods. Our final sample includes 2,828 facilities issued to 788 borrowers.

Panel B of Table 1 reports the distribution of the sample loans by the year of origination. The loans are concentrated in the 2003 through 2007 period. Analysis of the distribution across the three periods of interest suggests that the facilities in the prior period are concentrated in the 2002-2005 period, while facilities in the uncorrected and corrected periods are concentrated in the later years of our sample. For our research sample, 187 loans were issued before firms were required to file Section 302 reports. Because these firms may have had ICWs but were not required to report them, we eliminate these loans (verifying that the remaining firms have a loan both in the prior and in the uncorrected or corrected periods) and repeat the empirical analysis (untabulated). These tests produce similar results and inferences to the tabulated analyses.

4.2. Descriptive Statistics

Table 2, Panel A reports descriptive statistics for our sample. All variables are defined in Appendix A. On average, the loans are priced at an interest rate of 252 basis points above LIBOR. This interest rate is high relative to the mean interest rate of 198 basis points for all syndicated loans of public firms issued during our sample period; the evidence implies that the borrowers who are subject to ICWs are risky, consistent with Doyle et al. [2007a]. The loans are restricted by an average of 1.64 financial covenants and 4.35 general covenants. Seventy-six percent of the sample loans are subject to a performance pricing provision; across these loans, 65 percent have performance pricing provisions based on financial ratios. Eighty-two percent of the sample loans are secured. A typical firm in our sample has a credit rating of B+, further

suggesting that firms reporting a material ICW have a high credit risk. The sample loans are syndicated by an average of 6.7 lenders; during our sample period, syndicated loans of public firms are characterized by an average of 9 lenders. The relatively small number of syndicate lenders indicates that the borrowers in our sample are risky and informationally opaque (Lee and Mullineaux [2004], Sufi [2007]). The average loan in our sample is \$334M and has a mean maturity of 49 months. Forty-seven percent of the sample loans are issued by relationship lenders. The firms in our sample are relatively small, consistent with Doyle et al. [2007a].

The loan terms we examine in this study are highly correlated with each other (Table 2, Panel B). This evidence is consistent with Melnik and Plaut [1986], who suggest that a loan contract is a package of n -contractual terms which cannot be split and traded separately. These terms include both price and non-price features, and the lenders offer the borrower a set of loan contracts which can trade off certain features for others. For example, lenders may offer a firm a loan contract with a higher interest rate and fewer financial covenants or a contract with a lower interest rate and a higher number of financial covenants. A significant negative correlation between the interest rate and the number of financial covenants for the loans in our sample supports this trade-off. We address the trade-off between the interest rate and financial covenants in Section 5.3 and the joint determination of all main variables of interest in Section 5.6.

5. Empirical Results

5.1. The impact of financial reporting quality on financial covenants

Table 3, Column 1 presents the results from the covenant regression. Consistent with our prediction, a decrease in financial reporting quality, as proxied by an uncorrected ICW, leads to a decrease in the number of financial covenants imposed by a loan contract. The result is both statistically and economically significant. When compared to the mean number of financial

covenants in the prior period of 1.64, the coefficient of -0.36 on the *Uncorrected* variable represents a 22 percent decrease in the number of covenants. The coefficient on *Corrected* is also negative and statistically and economically significant. This implies that lenders continue to distrust financial covenants as an ex-post monitoring tool even after the firm has corrected the ICW, suggesting that ICWs impose a long-term reputation effect on the borrower.⁶

The relationships between the number of financial covenants and the control variables are consistent with the predicted signs. In particular, the variables associated with the firm's risk and potential ex-post incentive conflicts are positively associated with the number of covenants. Note that while we expect the interest rate to be negatively related to covenants, we find a positive relation between these variables. These results are potentially due to the simultaneity between the interest rate and covenant decisions. We address this issue in Section 5.3.

We also examine whether the effect of an ICW on financial covenants is mitigated if a loan is issued by a relationship lender (Column 2). Relationship lenders previously transacted with the firm, and thus they have extensive knowledge of the firm's operations and well-developed channels of communication with the firm's managers (Bharath et al. [2009], Sufi [2007]). We augment the financial covenant model with the *Relationship Lender* indicator variable and the interaction terms between this variable and *Uncorrected* and *Corrected*. A decrease in financial covenants following an ICW is not different for relationship versus non-relationship loans.

In contrast to the financial covenant results, we do not find a relation between general covenants and financial reporting quality (Table 3, Column 3). The coefficients on *Uncorrected* and *Corrected* are insignificantly different from zero, consistent with the proposition that a change in accounting quality does not affect covenants which are not directly based on financial

⁶ An untabulated test suggests that the difference in coefficients on the *Uncorrected* and *Corrected* variables is not significantly different from zero (p -value=0.22).

statement numbers. These results also imply that general covenants do not substitute for financial covenants to reduce the ex-post incentive conflicts between a borrower and the lenders.⁷

We also perform covenant-level analyses and examine four major categories of financial covenants imposed by the sample loans' contracts: an interest coverage restriction (min interest coverage, min fixed charge coverage, min debt service coverage and min cash interest coverage), a net worth restriction (min net worth and min tangible net worth), a CAPEX restriction and a debt to profitability restriction (max debt to EBITDA and max senior debt to EBITDA). Untabulated tests indicate a decrease in the lenders' reliance on three out of the four major covenant categories. Following an ICW, the frequencies of interest coverage, net worth and CAPEX restrictions decrease by 6.4 percent, 8.2 percent and 6.6 percent, respectively (all the changes are significant at the 5 percent level). We observe a decrease in the use of the debt to profitability restrictions, but the change is not statistically significant. We infer that ICWs affect financial covenants based on both income statement and balance sheet numbers.

It is important to emphasize that, following an ICW, a decrease in the number of financial covenants is not inconsistent with an increase in uncertainty regarding the borrower. Because lenders impose a higher number of financial constraints on more informationally opaque borrowers (Bradley and Roberts, 2004, and Standard & Poor's, 2007), one could argue that, *holding all else constant*, following an ICW report, lenders should impose a higher number of financial covenants. However, ICWs reveal to lenders that covenants based on financial statement numbers are less efficient in conveying changes in a borrower's creditworthiness. Consequently, following ICWs, lenders should decrease their reliance on financial covenants as

⁷ As a robustness test, we re-estimate both the financial and general covenant regressions using a Poisson regression. All the results and inferences remain the same.

an ex-post monitoring tool. Further, lenders are likely to substitute financial covenants by more efficient tools and/or compensate the decrease in financial covenants by an increase in loan price.

5.2. *The impact of financial reporting quality on loan pricing*

Next, we investigate the impact of accounting quality on the interest rate charged on a loan (Table 4). The first column shows that poor accounting quality leads to higher interest rates. The coefficient on *Uncorrected* is positive and statistically significant. Economically, reporting an uncorrected ICW increases the interest rate by 29.0 basis points. When compared to the mean interest rate in the period prior to an ICW report, this effect represents an 11 percent increase in the interest rate. In contrast, the coefficient on *Corrected* is not statistically different from zero, suggesting that there is no pricing effect after the ICW is corrected.

The loadings on the control variables are generally consistent with predictions. Similar to the financial covenant regression but contradictory to our prediction, we find that the number of financial covenants is positively related to the interest rate. The loan pricing estimation is robust to controlling for the number of general covenants, the purpose of the loan, the reputation of the syndicate's lead arranger and whether the loan is secured or traded.

We also examine whether the adverse effect of an ICW on loan pricing is different for relationship versus non-relationship loans. Following an ICW disclosure, the increase in uncertainty regarding a borrower and in information asymmetry between a borrower and the lenders should be smaller for loans issued by relationship lenders. Therefore, we expect the effect of an ICW on loan pricing to be less pronounced for relationship loans. In Column 2, we augment the interest rate model with the *Relationship Lender* indicator variable and the interaction terms between this variable and *Uncorrected* and *Corrected*. The results are

consistent with our predictions. The interest rates on relationship loans issued during the uncorrected period are 11.33 basis points lower than those on non-relationship loans.

5.3. Simultaneous estimation of the interest rate and the number of financial covenants

The agency theory of covenants suggests that there is a trade-off between the number of covenant restrictions imposed by a loan contract and the interest rate (Jensen and Meckling [1979], Myers [1977], Smith and Warner [1979]). Theory suggests that managers, acting on behalf of shareholders, have incentives to take actions that negatively impact debtholders. One way of mitigating this conflict of interest is to use covenants as a mechanism to restrict management behavior and to better align the interests of managers and bondholders. Since the restrictions imposed by the covenants are costly to the firm, they are offset by a lower cost of debt. While the joint determination of the interest rate and covenants has long been recognized, a majority of the prior empirical studies have not addressed this simultaneity issue.⁸ In this section we explore whether the potential simultaneity between loan pricing and financial covenant intensity affects our findings. The importance of this test is supported by Gigler et al. [2009] who show that when testing the effect of financial reporting quality on debt contractual terms, the trade-off between the interest rate and covenants should be explicitly considered.

To address this issue, we estimate a system of two equations where the interest rate and the number of financial covenants are simultaneously determined. As instruments for the number of financial covenants, we rely on the *Syndicate Relationship*, *Reputable Arranger* and *Traded* variables. The first two variables are designed to capture information asymmetry between the lead arranger of the syndicate and the other syndicate participants. When there is high information asymmetry within the syndicate, syndicate participants rely to a lesser degree on ex-

⁸ Bradley and Roberts [2004], Demiroglu and James [2008] and Vasvari [2008] are notable exceptions.

post monitoring by the lead arranger (Ivashina [2009]). Consequently, syndicate participants are likely to require that loan contractual terms be designed to facilitate the ex-post monitoring of a borrower. As suggested by prior research, financial covenants enhance efficient monitoring of the borrower, decreasing the importance of the monitoring effort by the lead arranger of syndication. Therefore, we expect that high information asymmetry within the syndicate is associated with a higher number of financial covenants imposed by the loan agreement.

To address information asymmetry within the syndicate, we follow Ivashina [2009] and use the syndicate-specific reputation of the arranger, measured in terms of the previous arranger-participant relationships (the *Syndicate Relationship* variable). Sufi [2007] and Ivashina [2009] also find that when an arranger has an established reputation, information asymmetry within the syndicate is significantly reduced (the *Reputable Arranger* indicator variable). Because high values for the *Syndicate Relationship* variable and the *Reputable Arranger* indicator variable reflect low information asymmetry within the syndicate, we predict and find a negative relation between these variables and the number of financial covenants (Table 5, Column 1).⁹

We do not expect the *Syndicate Relationship* and *Reputable Arranger* variables to directly affect the interest rate. In a highly competitive market like the syndicated loan market, the reputation of the lead arranger should not affect loan pricing (Gupta et al. [2008]). Sufi [2007] finds that information asymmetry within the syndicate is not significantly related to the interest rate. In an untabulated test, we find that, controlling for the number of financial covenants, the coefficients on the *Syndicate Relationship* and *Reputable Arranger* variables are insignificantly different from zero in the interest rate model.

⁹Prior research also shows that information asymmetry within the lending syndicate is mitigated by the arranger retaining a larger share of the loan (Dennis and Mullineaux [2000] and Sufi [2007]). For our sample, only 16 percent of the loans have the arranger's share data available, which prevents the inclusion of this variable in the analysis.

Prior research also suggests that traded loans are associated with a higher number of financial covenants (Drucker and Puri [2009], Wittenberg-Moerman [2009]). Financial covenants facilitate monitoring of the borrower by uninformed lenders who purchase loans on the secondary loan market. The positive coefficient on the *Traded* variable in the financial covenant estimation confirms that this relation holds for our research sample (Table 5, Column 1). Therefore, as an additional instrumental variable, we include the *Traded* variable in the financial covenant model. Controlling for borrower- and loan-specific characteristics, there is no evidence that traded loans are priced differently than non-traded loans.

To instrument the interest rate, we follow Bharath et al. [2009] and use the average interest rate of all loans issued in the syndicated loan market over the six month period prior to the loan issuance. The average market interest rate primarily reflects changes in institutional investors' demand for syndicated loans (Ivashina and Sun [2009]). As expected, we find a positive and significant association between the interest rate and the *Average Prior Rate* (Table 5, Column 2). Note that there is no empirical or institutional evidence that investors' demand for syndicated loans directly affects non-price loan contractual terms such as financial covenants.

We also examine the relevance and validity of the instruments. First, we test the relevance, or strength, of the instruments. As seen in Table 5, Columns 1 and 2, the partial-F statistic is 19.89 in the financial covenant regression and 8.94 in the interest rate regression. Both tests have p-values of 0.00, indicating that *Ave Prior Rate* is a strong instrument for the interest rate and that *Syndicate Relationship*, *Reputable Arranger* and *Traded* are collectively strong instruments for financial covenants. Partial R-Squares reveal that these variables have explanatory power in their respective regressions. Next, we are able to test the validity of the instruments for financial covenants. Tests of the instruments' exogeneity can be performed if the number of instruments is

higher than the number of endogenous variables; this condition holds for the interest rate regression since we have one endogenous variable and three instruments. We compute the Hansen-J statistic for over-identification restrictions, which is a joint test of the null hypotheses that the interest rate model is correctly specified and that the instruments are orthogonal to the error term. Our results show a Hansen-J statistic of 3.628 with a p-value of 0.16. We therefore fail to reject the null hypothesis that our instruments are relevant and valid.

We take comfort that our simultaneous estimation of the interest rate and financial covenants is correctly identified because the results show a significant and negative relation between the interest rate and financial covenants (Table 5, Columns 3 and 4). The higher the interest rate, the smaller the number of financial covenants imposed by the loan contract. The coefficient of -0.002 on the *Interest Rate* variable in the financial covenant regression indicates that a one standard deviation increase in the interest rate translates into a 0.35 decrease in the number of financial covenants; this is equivalent to 21.1 percent of the mean number of covenants for the sample loans. As suggested by the interest rate estimation, a higher number of financial covenants is associated with a lower interest rate. A one standard deviation increase in the number of financial covenants decreases the interest rate by 49.3 basis points, which represents 19.5 percent of the mean interest rate for our sample. This negative and significant relation between the interest rate and the number of financial covenants is consistent with theoretical predictions but was not observed in our prior findings (Tables 3 and 4). We suggest that these results support a successful identification of the simultaneous equation system.

The results presented in Table 5, Columns 3 and 4, confirm that allowing for the joint determination of the interest rate and the number of financial covenants does not affect our main conclusion that financial reporting quality significantly affects these loan terms. In this

specification, the coefficients on the *Uncorrected* and *Corrected* variables in the covenant regression remain negative and significant. ICWs continue to be associated with a higher interest rate in the uncorrected period relative to the prior period. When controlling for simultaneity, we find that the interest rate also increases during the corrected period relative to the prior period. This finding is consistent with a long-term reputation effect imposed by a material ICW but should be interpreted with caution given its marginal statistical significance. The rest of the explanatory variables are largely unaffected when controlling for simultaneity.

5.4. The impact of financial reporting quality on performance pricing provisions and collateral

Table 6 presents the results from the performance pricing estimation. Consistent with our prediction, we find that poor financial reporting quality leads to a lower probability that a performance pricing provision is based on a financial statement ratio. Economically, the probability that this provision is based on a financial ratio decreases by 20 percent during the uncorrected period. As our sample is restricted to the borrowers whose loan contracts include performance pricing provisions both before and after an ICW report, this finding suggests a ‘switch’ from the performance pricing provisions based on financial statement ratios to those based on credit ratings. We find no lasting reputational impact of an ICW on performance pricing provisions. The coefficients on the control variables are mostly consistent with our predictions and with those reported in Ball et al. [2008].

In Column 2 we augment the performance pricing model with *Number Rating Changes*. This variable proxies for the quality of credit ratings and is measured as the number of credit rating changes in the three year period prior to the loan issuance. We assume that if credit ratings are frequently updated, then they are more timely in reflecting recent changes in a firm’s credit quality. The results reveal that more frequently updated credit ratings decrease the probability

that a performance pricing provision will be based on a financial ratio. Controlling for the number of credit rating changes does not affect the coefficients on our main variables of interest.

Table 7 presents evidence on whether financial reporting quality impacts the probability of a loan being secured. We find that the coefficients on both the *Uncorrected* and the *Corrected* variables are positive and significant, suggesting that lenders are more likely to require a borrower to post collateral following an ICW. The coefficient of 0.282 on *Uncorrected* translates into a three percent increase in the probability that a loan will be backed by collateral; the coefficient of 0.494 on *Corrected* translates into an eight percent increase in this probability.¹⁰ This finding suggests that lenders substitute less efficient financial covenants with loan collateral when a borrower's financial reporting quality is low. The coefficients on the control variables are consistent with our predictions. In particular, variables indicating a higher credit risk are associated with an increase in the probability that the loan is secured.

We also test (untabulated) whether the effect of an ICW on the performance pricing provision and collateral differs across relationship and non-relationship loans. We find that changes in these loan terms are unrelated to the nature of the borrower-lender relationship.

5.5. The effect of the seriousness of an ICW on loan terms and comparison to Kim et al. [2009]

In this section we examine whether relatively more serious problems in internal controls result in more significant changes in loan contractual terms following the ICW disclosure. We incorporate two approaches to estimate the severity of an ICW. First, we follow Doyle et al. (2007b) and separate ICWs into more serious, company-level material weaknesses, and less serious, account-specific material weaknesses. We find that 93.9 percent of our sample loans are

¹⁰ An untabulated test suggests that the difference in coefficients on the *Uncorrected* and *Corrected* variables is not significantly different from zero (p -value=0.77).

related to firms with at least one company-level weakness. Therefore, in order to investigate cross-sectional variation in ICWs, we count the number of company-level weaknesses for each ICW report and classify the loan as *Company-High* if the number of company-level weaknesses in the report is greater than the sample median. We assume that a higher number of company-level weaknesses indicates a more widespread internal control problem.¹¹ As evidenced in Table 8, Panel A, the coefficients on *Uncorrected*Company-High* and *Corrected*Company-High* indicate that more widespread internal control problems result in more serious changes in loan contractual terms. Loans issued to firms with a higher number of company-level weaknesses have a more pronounced decrease in financial covenants, a larger increase in the interest rate, a lower probability of using financial-ratio-based performance pricing provisions and a higher probability of being secured.

Second, we test the effects of ICWs related to fraud. For our sample, 8.6 percent of the weaknesses are fraud-related. The interaction term variables in Panel B of Table 8 show that fraud-related ICWs lead to more significant changes in loan terms. More serious, fraud-related weaknesses result in a more significant decrease in financial covenants, a more significant increase in the interest rate and a higher probability of a loan being secured. We do not find that the performance pricing provision choice is affected by fraud-related weaknesses; this result is probably due to the extremely small number of fraud-related weaknesses (2.8 percent) for the performance pricing sample.

We would also like to point out that the paper's results are distinct from those of Kim et al. [2009]. Kim et al. [2009] compare the loans of ICW firms following the ICW disclosure to the

¹¹We classify the following weaknesses as company-level: board, audit committee and other corporate governance issues; company size, financial constraints, or other limiting issues; inadequate disclosure issues; financial close process, policy or timeliness issues; financial records controlled by a third party; information technology, access or security issues; senior management tone or self-dealing issues; personnel inadequacies or segregation of duty issues.

loans of non-ICW firms. They find that the loans related to firms with company-level ICWs have a marginally higher number of financial and general covenants, a higher interest rate, a higher probability of being secured and a smaller number of syndicate participants. In contrast, we find a significant decrease in financial covenants for loans of ICW firms following an ICW disclosure. This result is reinforced by our findings of a decrease in financial-ratio-based performance pricing provisions. We believe that the differences between our findings and those of Kim et al. [2009] are driven by differences in research design. The cross-sectional research design of Kim et al. [2009] attributes differences in the loan terms between ICW and non-ICW firms to an ICW disclosure when, in fact, these differences are likely to be due to differences in more fundamental firm characteristics, such as riskiness and information opacity.

To exemplify this proposition, in untabulated analysis we examine whether the loan terms of ICW firms are significantly different from the loan terms of non-ICW firms even *prior* to the ICW disclosure. Because Kim et al. find that loan terms differ between ICW and non-ICW firms only for company-level ICWs, we construct a sample of loans issued to company-level ICW firms *prior* to the ICW report and loans issued to non-ICW firms. We find that relative to the loans of non-ICW firms, loans of company-level ICW firms had a higher number of financial and general covenants, were priced at higher interest rates, were more likely to be secured and had a smaller number of lenders even in the period *prior* to the ICW disclosure. Therefore, we conjecture that the differences between loan contractual terms of ICW and non-ICW firms reported by Kim et al. [2009] are unlikely to be attributed to the impact of the ICW disclosure.¹²

¹² In a related study, Ghosh and Lubberink (2006) also find that ICW firms experience a higher cost of debt than non-ICW firms in the period prior to an ICW disclosure. While we attribute this result to fundamental differences between ICW and non-ICW firms, Ghosh and Lubberink (2006) suggest that the higher cost of debt of ICW firms is explained by lenders anticipating ICWs. Our results show a significant change in the loan terms following an ICW, which is inconsistent with lenders fully anticipating ICWs.

5.6. Robustness tests

5.6.1. Research design issues

Our research design requires a firm to have a loan both in the prior and uncorrected or corrected periods, which may introduce survivorship bias into our sample and affect the financial covenant analysis. As a firm borrows in the syndicated loan market for a longer time period, it is likely to become better known by lenders, and therefore they can impose a smaller number of financial covenants to monitor the firm.

To address the survivorship bias concern, we conduct “difference-in-differences” tests. For each ICW firm, we match a firm that did not report an ICW during our sample period; we match firms based on the quarter-year of the internal control report and the firms’ size and leverage at the time of the report. Then, for each matched non-ICW firm, we impose an artificial “ICW date” on the date of its clean internal control report and an artificial “correction date” by assigning the same correction date as the ICW firm’s correction date. As a result, the matched non-ICW firms have three artificial periods that correspond to the ICW sample periods. The prior period includes all loans issued to the matched firm in the three year period before the artificial “ICW date”, the uncorrected period includes all loans issued to the matched firm between the artificial “ICW date” and the artificial “correction date” and the corrected period includes all loans issued to the matched firm in the three year period following the artificial “correction date.” We then run a “difference-in-differences” analysis where the prior, uncorrected and corrected periods include loans issued to both the ICW and the non-ICW firms.

The results of this test are reported in Table 9, Column 1. Insignificant coefficients on the *Uncorrected* and *Corrected* variables in the financial covenant model indicate that the matched non-ICW firms do not experience a decrease in the number of covenants following the artificial

“ICW date.” In contrast, the significant coefficients on *Uncorrected*ICW* and *Corrected*ICW* indicate a decrease in financial covenants in the loan contracts of ICW firms following the ICW report. These results are consistent with our main findings.

The relationship lending test reported in Table 3 further alleviates the survivorship bias concern. This bias is expected to have the strongest effect on relationship loans, because if a firm has a long-term relationship with the lender, information asymmetry between the firm and the lender should substantially decrease over time, leading to a reduction in the use of covenants. This test reveals that the decrease in financial covenants following an ICW is not different for relationship versus non-relationship loans. In untabulated analysis, we also re-estimate the financial covenant regression restricting the prior and corrected periods to one year before the ICW is reported and to one year after it is corrected, respectively. This test substantially shortens the time period for which we require a firm to survive and therefore mitigates the survivorship bias concern. Despite a decrease in the sample size, all results and inferences are unchanged. Further, we incorporate in the financial covenant model a variable reflecting the number of years that the firm has borrowed in the syndicated loan market. Our findings are robust to the incorporation of this variable in the analysis. Finally, note that survivorship bias would also suggest that the interest rates should decrease over time and that lenders should impose more lenient non-price contractual terms. These predictions are opposite to the results that we find.

With respect to the interest rate model, our research design implies that the increase in the interest rates that we observe could be attributed to hold-up costs, which are expected to increase over time. We perform a number of tests to address this concern. First, the hold-up problem should be significantly smaller for borrowers who have access to the public debt market. We repeat the interest rate tests, restricting the sample to firms that have publicly traded debt as

reported by the Mergent Fixed Income Securities Database; our results are robust to this restriction (untabulated). Second, we control for the number of years a firm has borrowed in the syndicated loan market. This does not affect our interest rate findings. Finally, we perform the “difference-in-differences” test for the interest rate model. As evidenced from Column 2 of Table 9, the coefficient on the *Uncorrected* variable is insignificant, indicating that non-ICW matched firms do not experience an increase in loan pricing following the artificial “ICW date”. The coefficient on the interaction term *Uncorrected*ICW* is significantly positive, consistent with our findings of an increase in the interest rate for ICW firms. We also perform the “difference-in-differences” test for the performance pricing provisions and security analyses (Table 9, Columns 3 and 4). We find results consistent with our main findings. We believe that this evidence further alleviates the concerns associated with the time-series nature of our research design.

5.6.2. *Additional robustness tests*

We address the simultaneity between the interest rate and financial covenants, but our empirical analysis treats the rest of the variables of interest as exogenous. The regressions using loan terms involve a variety of simultaneity and endogeneity problems, making finding the appropriate instruments extremely difficult. Further, it is unfeasible to concurrently endogenize all loan contractual terms that we examine in this paper. To address the joint determination of the loan terms, we estimate the interest rate, financial covenant, general covenant, performance pricing provision and collateral regressions as a system of equations using a seemingly unrelated regression (SUR) model (untabulated), which allows the error terms in all five regressions to be correlated. All findings are robust to the SUR estimation of the loan contractual terms: coefficients on both the *Uncorrected* and the *Corrected* variables have similar statistical and economic significance to our primary specifications, and all inferences remain the same.

In addition, we address a potential concern that management internal control reports are only audited on an annual basis, and therefore managers may act opportunistically when reporting on internal controls. We analyze the distribution of the ICW reports and find that for our sample, 21.2 percent of ICWs are reported in the first fiscal quarter, 31.7 percent in the second, 25.1 percent in the third and 22.0 percent in the fourth. The fact that ICW reports are evenly distributed over the year alleviates a concern that managers strategically time the reporting of ICWs. Further, we match fourth-fiscal-quarter management reports to fiscal-year-end auditor reports (Section 404 reports) for 2004-2008, a period for which year-end auditor internal control reports are available. We find that auditor opinions on internal controls agreed with management opinions on internal controls in 100 percent of the cases in our sample. Finally, in untabulated analysis, we repeat the estimation of all the regressions using Section 404 ICW reports; our main findings remain unchanged in both the uncorrected and corrected periods.

To further verify the stability of our results, we ensure that the credit crisis does not drive the post-weakness loan characteristics by excluding from the sample all loans issued in 2008 and their corresponding pre-weakness loans. Our results are not sensitive to the exclusion of these loans. The results are robust to imposing additional restrictions on our sample. In untabulated analyses, we limit our sample to loans for which DealScan reports at least one financial covenant and re-estimate all regressions involving financial covenants. We also repeat the general covenant test for the sample restricted to loans subject to at least one general covenant. Inferences from these analyses are identical to the tabulated results.¹³ As an additional robustness

¹³When DealScan reports that a loan is not subject to covenants, it indicates one of the following: 1) LPC has verified that the loan contract does not impose covenants or 2) LPC has not been able to obtain covenant information. In our primary analysis, we set covenants equal to zero for these loans. It is important to note that DealScan's covenant coverage has significantly improved since 1996 and that all of the sample facilities have been issued after that point. Therefore, we do not expect the covenant coverage issue to have a significant impact on our empirical findings.

test, we restrict our sample to loans with an available credit rating and repeat the regression analyses. The results of these tests are similar to our primary specifications in statistical and economic significance. With respect to the collateral model, we perform an analysis including only borrowers whose loans had been unsecured in the prior period. The results of this estimation are consistent with those reported in Table 7. In addition, all regressions are robust to controlling for the purpose of the loan and the borrower's market-to-book ratio.

6. Conclusions

In this paper, we investigate the impact of a material weakness in internal controls on financial covenants, general covenants, the interest rate, performance pricing provisions and loan collateral. Because lenders explicitly contract on financial statement numbers and extensively rely on financial statements to monitor a borrower, we predict that ICW reports, which reflect the reliability of a borrower's financial reporting, significantly affect loan contractual terms. Alternatively, one could argue that lenders do not learn new information from the assessment of a borrower's internal controls over financial reporting or that this assessment is not valuable to the lenders. Our paper brings empirical evidence to bear on this important issue.

We find that following an ICW report, lenders decrease their reliance on financial covenants and on financial-ratio-based performance pricing provisions relative to the period prior to the report. The ICW is also associated with higher interest rates. This effect is twofold. First, a decrease in the reliance on covenants is compensated through an increase in the interest rate. Second, a decrease in financial reporting quality increases uncertainty regarding a borrower and information asymmetry between a borrower and its lenders, leading to higher interest rates. Further, following an ICW report, lenders are more likely to require a borrower to provide collateral. We find that the effects of an ICW on loan contractual terms become stronger for

more serious weaknesses, as measured by a high number of company-level weaknesses and fraud-related weaknesses. Overall, we provide compelling evidence that in setting debt contractual terms, lenders rely on an assessment of the reliability of a firm's reporting system provided by internal control reports.

Our findings corroborate a significant impact of financial reporting quality on debt pricing and non-price contractual terms and thus contribute to the literature on the importance of financial reporting quality in debt contracting. The analysis also contributes to the literature on the effect of the Sarbanes-Oxley Act on the cost of capital. We demonstrate that ICW reports are associated with a significantly higher cost of syndicated loan financing, the dominant source of corporate financing for U.S. firms.

Appendix A: Data Definitions

Average Prior Rate:	The average All-In-Drawn-Spread for all loans originated in the syndicated loan market (and recorded in DealScan) over the six month period prior to entering into the loan contract.
Company High:	An indicator variable equal to one if the total number of company-level weaknesses disclosed in the ICW report is greater than the sample median, zero otherwise.
Corrected:	An indicator variable equal to one if the loan is issued in the three year period following a corrected material internal control weakness, zero otherwise.
Credit Rating:	The numerical equivalent of S&P, Moody's, Fitch or DPR senior debt rating. It is set as equal to one for the highest senior debt rating, through 27 for the lowest senior debt rating. For firms not rated by S&P, we assign the Moody's senior debt rating; for firms not rated by either S&P or Moody's, we assign the Fitch senior debt rating; finally, for firms not rated by S&P, Moody's or Fitch, we assign the DPR senior debt rating. We use a conventional conversion scheme to match ratings from all four rating agencies. The corporate credit rating variable is set to 28 for firms without an available S&P, Moody's, Fitch or DPR debt rating. Credit ratings are collected from the S&P Historical Rating Database and from the Mergent FISD database.
Financial Covenants:	The number of financial covenants imposed by the loan agreement.
Firm Size:	A logarithm of the borrower's total assets in the year prior to entering into a loan contract.
Fraud:	An indicator variable equal to one if the ICW is fraud-related, zero otherwise.
General Covenants:	The number of general covenants imposed by the loan agreement. This includes equity issuance sweeps, debt issuance sweeps, asset sales sweeps, insurance proceeds sweeps and dividend restrictions.
ICW:	An indicator variable equal to one if the loan is issued to a firm that reports an ICW, zero otherwise.
Institutional Investor:	An indicator variable taking the value of one if the loan's type is term loan B, C or D (institutional term loans), zero otherwise.

Interest Rate:	The interest rate is based on the All-In-Drawn-Spread measure reported by DealScan. This measure is equal to the amount the borrower pays in basis points over LIBOR for each dollar drawn down, so it accounts for both the spread of the loan and the annual fee paid to the bank group. LPC always uses the LIBOR spread or the LIBOR-equivalent spread option to calculate the All-In-Drawn spread.
Leverage:	The ratio of the long-term debt to total assets, estimated in the year prior to entering into a loan contract.
Loan Size:	A logarithm of the loan's amount.
Maturity:	The number of months between the facility's issue date and the date when the loan matures.
Number Lenders:	Number of participants in the loan syndicate, including the arranger.
Number Rating Changes:	Number of times a borrower's credit rating changed over the three year period prior to a loan's issuance.
PP Acc. Ratio:	An indicator variable taking the value of one if the loan contract has a performance pricing provision based on an accounting ratio; it is equal to zero if it has a performance pricing provision based on a credit rating.
PP Indicator:	An indicator variable taking the value of one if the loan contract incorporates a performance pricing option, zero otherwise.
Profitability:	The ratio of EBITDA to total assets, estimated in the year prior to entering into a loan contract.
Relationship Lender:	An indicator variable taking the value of one if at least one of the loan's lead arrangers had been a lead arranger of the borrower's previous loans over the 5 year period preceding the loan's issuance date, zero otherwise.
Reputable Arranger:	An indicator variable taking the value of one if the loan is syndicated by one of the top six arrangers, based on the arranger's average market share in the primary loan market. In the case of multiple arrangers, we consider the highest market share across the arrangers involved in the loan transaction.
Revolver:	An indicator variable taking the value of one if the loan's type is revolver, zero otherwise.

Secured:	An indicator variable taking the value of one if the loan is backed by collateral, zero otherwise.
Syndicate Relationship:	The syndicate-specific reputation of the arranger, measured in terms of the previous arranger-participant relationships. For every syndicate participant, the number of previous relationships between the lead arranger and the participant is deflated by the total number of deals syndicated by the arranger (the estimation is performed over a five year period preceding the loan's issuance). The syndicate-specific measure is estimated as the averaged relationship measure across all syndicate participants.
Tangibility:	The ratio of net PPE plus inventory to total assets, estimated in the year prior to entering into a loan contract.
Traded:	An indicator variable taking the value of one if the loan is traded on the secondary loan market, zero otherwise. The data is provided by the Loan Trade Database.
Uncorrected:	An indicator variable equal to one if the loan is issued during a period of an uncorrected material internal control weakness. We define this period from the day of the first material internal control weakness through the day of the first report where the weakness has been corrected.

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Table 1: Sample selection

Panel A presents our sample selection process and Panel B presents the distribution of sample loans by the year of issuance. Column (1) of Panel B tabulates the total number of loans per year. Column (2) tabulates the number of loans per year for loans issued before a firm reported a material weakness in internal controls (prior period). Column (3) tabulates the number of loans per year for loans issued during the period that an internal control has not yet been corrected (uncorrected period). Column (4) tabulates the number of loans issued per year for loans issued after the material weakness has been corrected (corrected period).

Panel A: Sample Selection Process		
Filters	Facilities	Firms
Material Weaknesses ¹		2,231
Intersection with DealScan Public Companies ²	3,666	1,166
Excluding Facilities with Missing Data ³	3,088	856
Matched Before and After Sample ⁴	2,828	788

1. The sample includes all SOX Section 302 material weakness reports for the period September 2002 through July 2008, as reported by Audit Analytics.
2. Companies filing material weakness are matched to public borrowers on the DealScan database for the period September 1999 through December 2008. We include all facilities (loans) that the company initiated in the period from three years before the internal control weakness was reported through three years after the internal control weakness was corrected.
3. We require firms to have non-missing DealScan and Compustat data for each of our loan- and firm-level control variables.
4. We require that the firm has at least one facility before the internal control weakness report and one facility after the report.

Table 1 Continued

Panel B: Distribution of sample loans by year of issuance								
Year	Total		Prior		Uncorrected		Corrected	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Facilities	Percentage	Facilities	Percentage	Facilities	Percentage	Facilities	Percentage
1999	3	0.11%	3	0.21%	0	0.00%	0	0.00%
2000	6	0.21%	6	0.41%	0	0.00%	0	0.00%
2001	56	1.98%	56	3.85%	0	0.00%	0	0.00%
2002	199	7.04%	199	13.67%	0	0.00%	0	0.00%
2003	399	14.11%	364	25.00%	11	1.85%	24	3.08%
2004	578	20.44%	479	32.90%	43	7.24%	56	7.20%
2005	522	18.46%	232	15.93%	178	29.97%	112	14.40%
2006	396	14.00%	81	5.56%	170	28.62%	145	18.64%
2007	520	18.39%	36	2.47%	184	30.98%	300	38.56%
2008	149	5.27%	0	0.00%	8	1.35%	141	18.12%
	2,828	100.00%	1,456	100.00%	594	100.00%	778	100.00%

Table 2: Descriptive statistics and correlation matrix

Panel A presents the descriptive statistics for the total sample of 2,828 facilities. Panel B presents the Pearson correlation matrix of selected variables. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

Panel A: Descriptive statistics

	N	Mean	Standard Deviation	25%	Median	75%
<u>Loan Characteristics</u>						
Interest Rate	2,828	251.81	173.16	140	225	325
Financial Covenants	2,828	1.64	1.58	0	2	3
General Covenants	2,828	4.35	3.81	0	5	8
Number Lenders	2,828	6.70	8.42	2	4	8
Loan Size (\$M)	2,828	334.47	278.82	45	125	314
Maturity	2,828	48.92	28.21	32	56	60
PP Indicator	2,828	0.76				
PP Acc. Ratio	2,045	0.65				
Secured	2,828	0.82				
Relationship Lender	2,828	0.47				
Institutional Investor	2,828	0.17				
Revolver	2,828	0.52				
<u>Firm Characteristics</u>						
Firm Size	2,828	2,103	1,989	128	778	1,702
Profitability	2,828	0.09	0.29	0.06	0.09	0.15
Leverage	2,828	0.31	0.31	0.09	0.27	0.46
Tangibility	2,828	0.42	0.31	0.22	0.4	0.6
Credit Rating	2,128	14	10	12	14	16
Unrated	700	28				
<u>Accounting Quality Variables</u>						
Uncorrected	2,828	0.21				
Corrected	2,828	0.28				

Panel B: Pearson correlation matrix

	Interest Rate	Financial Covenants	General Covenants	PP Acc. Ratio	Secured	Number Lenders	PP Indicator	Institutional Investor	Revolver	Credit Rating	Uncorrected	Corrected
Interest Rate	1	-0.073***	0.212***	0.305***	0.478***	-0.387***	-0.276***	0.269***	-0.235***	0.291***	0.007***	-0.077***
Financial Covenants		1	0.641***	0.259***	0.070***	0.068***	0.477***	0.039**	0.117***	0.145***	-0.069***	-0.143***
General Covenants			1	0.252***	0.225***	0.082***	0.363***	0.116***	0.000	0.082***	-0.045***	-0.045***
PP Acc. Ratio				1	0.403***	-0.240***	0.833***	-0.032	0.198***	0.515***	-0.021	-0.024
Secured					1	-0.277***	-0.219***	0.169***	-0.067***	0.220***	0.069***	-0.066***
Number Lenders						1	0.248***	0.005	0.054***	-0.412***	-0.021	-0.019
PP Indicator							1	-0.161***	0.290***	0.002	-0.039**	-0.026
Institutional Investor								1	-0.471***	0.061***	0.029*	-0.002
Revolver									1	0.147***	0.021	0.013
Credit Rating										1	0.028*	-0.031*
Uncorrected											1	-0.293***
Corrected												1

Table 3: Financial and general covenants as a function of financial reporting quality

This table presents the results from the estimation of the covenant models. In Column (1) we regress the number of financial covenants on our financial reporting quality variables and the loan- and firm-specific control variables. In Column (2) we add relationship lending to the financial covenant model. In Column (3) we estimate the general covenant model. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

$$\text{Covenants} = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \beta_3 \text{Institutional Investor} + \beta_4 \text{Revolver} + \beta_5 \text{Interest Rate} + \beta_6 \text{Secured} + \beta_7 \text{Loan Size} + \beta_8 \text{Maturity} + \beta_9 \text{Credit Rating} + \beta_{10} \text{Number Lenders} + \beta_{11} \text{PP Indicator} + \beta_{12} \text{Firm Size} + \beta_{13} \text{Profitability} + \beta_{14} \text{Leverage} + \varepsilon$$

Parameter	Predicted Sign	Financial (1)	Financial (2)	General (3)
Uncorrected	-/?	-0.362*** (0.00)	-0.468*** (0.00)	-0.050 (0.88)
Corrected	-/?	-0.500*** (0.00)	-0.683*** (0.00)	0.121 (0.75)
Uncorrected*Relationship Lender			0.220 (0.27)	
Corrected*Relationship Lender			0.283 (0.12)	
Relationship Lender			-0.069 (0.50)	
Institutional Investor	+	0.560*** (0.00)	0.428*** (0.00)	0.735*** (0.00)
Revolver	?	0.049 (0.42)	0.011 (0.85)	-0.297** (0.05)
Interest Rate	-	0.001*** (0.01)	0.000 (0.50)	0.003*** (0.00)
Secured	+	0.896*** (0.00)	0.915*** (0.00)	0.908*** (0.00)
Loan Size	-	-0.061* (0.07)	-0.060* (0.09)	0.053 (0.52)
Maturity	+	-0.003 (0.33)	-0.001 (0.24)	0.002*** (0.00)
Credit Rating	+	-0.004 (0.42)	-0.004 (0.48)	-0.012 (0.34)
Number Lenders	?	0.010** (0.05)	0.010* (0.06)	0.017** (0.03)
PP Indicator	+	1.465*** (0.00)	1.216*** (0.00)	3.820*** (0.00)
Firm Size	-	-0.162*** (0.00)	-0.144*** (0.00)	-0.128 (0.17)
Profitability	-	0.515 (0.12)	0.743** (0.05)	0.870 (0.25)
Leverage	+	0.010 (0.95)	-0.096 (0.57)	0.215 (0.58)
Year Fixed Effects		Yes	Yes	Yes
Number Observations		2,828	2,828	2,828
Adj. R-Square		27.6%	30.5%	28.3%

Table 4: Interest rate as a function of financial reporting quality

This table presents the results from the estimation of the interest rate model. Our primary specification is in Column (1); we regress the interest rate on our financial reporting quality variables and loan- and firm-specific control variables. In Column (2) we test whether the impact of financial reporting quality on the interest rate is mitigated if the loan is issued by a relationship lender. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

$$\text{Interest Rate} = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \beta_3 \text{Institutional Investor} + \beta_4 \text{Revolver} + \beta_5 \text{Financial Covenants} + \beta_6 \text{Loan Size} + \beta_7 \text{Maturity} + \beta_8 \text{Credit Rating} + \beta_9 \text{Number Lenders} + \beta_{10} \text{PP Indicator} + \beta_{11} \text{Firm Size} + \beta_{12} \text{Profitability} + \beta_{13} \text{Leverage} + \varepsilon$$

Parameter	Predicted Sign	Interest Rate	
		(1)	(2)
Uncorrected	+	28.959** (0.04)	34.351** (0.03)
Corrected	+	-0.386 (0.98)	3.929 (0.86)
Uncorrected*Relationship Lender	-		-11.326** (0.04)
Corrected*Relationship Lender			-1.231 (0.95)
Relationship Lender	-		-19.692*** (0.01)
Institutional Investor	+	41.139*** (0.00)	43.087*** (0.00)
Revolver	-	-71.288*** (0.00)	-68.123*** (0.00)
Financial Covenants	-	7.898** (0.02)	8.523** (0.02)
Loan Size	-	-15.859*** (0.00)	-18.739*** (0.00)
Maturity	+	-0.003 (0.95)	-0.003 (0.95)
Credit Rating	+	1.266** (0.03)	1.279** (0.05)
Number Lenders	-	-1.628** (0.03)	-1.663** (0.04)
PP Indicator	-	-70.571*** (0.00)	-71.125*** (0.00)
Firm Size	-	-5.153 (0.28)	-4.352 (0.42)
Profitability	-	-121.564*** (0.01)	-166.683*** (0.01)
Leverage	+	64.060*** (0.00)	55.711*** (0.00)
Year Fixed Effects		Yes	Yes
Number Observations		2,828	2,828
Adj. R-Square		26.9%	29.6%

Table 5: Simultaneous estimation of the interest rate and financial covenants

This table presents the results from the simultaneous estimation of the interest rate and financial covenant models. Columns (1) and (2) present the results of the first stage estimation of the financial covenant and the interest rate models, respectively. Columns (3) and (4) present the estimation of the interest rate regression and the financial covenant regression as a system of two equations. We use 3sls, with the *Average Prior Rate* variable as our instrument for the interest rate and *Syndicate Relationship*, *Reputable Arranger*, and *Traded* as our instruments for covenants. All variables are defined in Appendix A. Regressions include year fixed effects. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively.

$$\begin{aligned} \text{Financial Covenants} = & \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \beta_3 \text{Institutional Investor} + \\ & \beta_4 \text{Revolver} + \beta_5 \text{Interest Rate} + \beta_6 \text{Loan Size} + \beta_7 \text{Maturity} + \beta_8 \text{Credit Rating} + \\ & \beta_9 \text{Number Lenders} + \beta_{10} \text{PP Indicator} + \beta_{11} \text{Firm Size} + \beta_{12} \text{Profitability} + \beta_{13} \text{Leverage} + \\ & \beta_{14} \text{Syndicate Relationship} + \beta_{15} \text{Reputable Arranger} + \beta_{16} \text{Traded} + \varepsilon \end{aligned}$$

$$\begin{aligned} \text{Interest Rate} = & \gamma_0 + \gamma_1 \text{Uncorrected} + \gamma_2 \text{Corrected} + \gamma_3 \text{Institutional Investor} + \gamma_4 \text{Revolver} + \\ & \gamma_5 \text{Financial Covenants} + \gamma_6 \text{Loan Size} + \gamma_7 \text{Maturity} + \gamma_8 \text{Credit Rating} + \gamma_9 \text{Number Lenders} + \\ & \gamma_{10} \text{PP Indicator} + \gamma_{11} \text{Firm Size} + \gamma_{12} \text{Profitability} + \gamma_{13} \text{Leverage} + \gamma_{14} \text{Average Prior Rate} + \omega \end{aligned}$$

Parameter	Financial	Interest Rate	Financial	Interest Rate
	Covenants		Covenants	
	(1)	(2)	(3)	(4)
Uncorrected	-0.335*** (0.00)	32.483*** (0.02)	-0.317*** (0.00)	44.211*** (0.00)
Corrected	-0.414*** (0.00)	3.55 (0.83)	-0.347*** (0.00)	18.324* (0.08)
Institutional Investor	0.313*** (0.00)	40.917*** (0.00)	0.254*** (0.00)	33.693*** (0.00)
Revolver	0.017 (0.76)	-71.130*** (0.00)	0.397*** (0.00)	-62.557*** (0.00)
Interest Rate			-0.002** (0.02)	
Financial Covenants				-31.227*** (0.00)
Loan Size	-0.056* (0.07)	-15.557*** (0.00)	-0.055* (0.08)	-14.011*** (0.00)
Maturity	-0.001 (0.21)	0.002 (0.96)	-0.001 (0.29)	0.008 (0.89)
Credit Rating	0.001 (0.95)	1.254** (0.03)	-0.002 (0.48)	1.302*** (0.00)
Number Lenders	0.009* (0.06)	-1.670** (0.02)	0.010*** (0.01)	-1.684*** (0.00)
PP Indicator	1.24*** (0.00)	-69.995*** (0.00)	1.535*** (0.00)	-103.956*** (0.00)
Firm Size	-0.129*** (0.00)	-5.378 (0.26)	-0.186*** (0.00)	-1.112 (0.74)
Profitability	0.743 (0.12)	-122.446*** (0.00)	0.569** (0.02)	-132.702*** (0.00)
Leverage	-0.102 (0.52)	63.863*** (0.00)	-0.151 (0.14)	62.003*** (0.00)
Average Prior Rate		1.220** (0.02)		1.219*** (0.00)
Syndicate Relationship	-0.031** (0.02)		-2.255*** (0.00)	
Reputable Arranger	-0.147* (0.10)		-0.445*** (0.00)	
Traded	0.547*** (0.00)		0.840*** (0.00)	
Year Fixed Effects	Yes	Yes	Yes	Yes
Number Observations	2,828	2,828	2,828	2,828
Adj. R-Square	36.0%	30.7%	30.7%	24.2%
Partial F Test	19.89	8.94		
Pr>F	0.00	0.00		
Partial R-Square	3.29%	1.30%		

Table 6: The impact of financial reporting quality on the probability of accounting-based performance pricing provisions

This table presents the results from the probit regression estimation of the probability of using accounting-based performance pricing provisions. The dependent variable equals one if the performance pricing provision is based on a financial statement ratio, zero if it is based on a credit rating. Column (1) is our main specification and Column (2) adds a control for the number of credit rating changes. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

$$P(PPAcc.Ratio = 1) = \alpha + \beta_1 Uncorrected + \beta_2 Corrected + \beta_3 Institutional\ Investor + \beta_4 Revolver + \beta_5 Secured + \beta_6 Loan\ Size + \beta_7 Maturity + \beta_8 Credit\ Rating + \beta_9 Number\ Lenders + \beta_{10} Firm\ Size + \beta_{11} Profitability + \beta_{12} Leverage + \varepsilon$$

Parameter	Predicted Sign	P(PP Acc. Ratio=1)	
		(1)	(2)
Uncorrected	-	-0.507** (0.02)	-0.530** (0.02)
Corrected	-	-0.067 (0.79)	-0.142 (0.57)
Institutional Investor	+	-0.433* (0.09)	-0.372 (0.13)
Revolver	?	0.543*** (0.00)	0.525*** (0.00)
Secured	+	0.962*** (0.00)	1.064*** (0.00)
Loan Size	-	-0.034 (0.71)	-0.025 (0.78)
Maturity	?	0.007* (0.07)	0.005 (0.15)
Credit Rating	+	0.097*** (0.00)	0.114*** (0.00)
Number Lenders	?	0.018** (0.03)	0.017** (0.03)
Firm Size	-	-0.406*** (0.00)	-0.386*** (0.00)
Profitability	-	1.920** (0.03)	1.925** (0.02)
Leverage	+	0.279 (0.42)	0.491 (0.17)
Number Rating Changes	-		-0.051* (0.08)
Year Fixed Effects		Yes	Yes
Number Observations		2,045	2,045
Pseudo R-Square		44.5%	48.0%

Table 7: Predicting the probability that a loan will be secured

This table presents the results from the probit regression estimation of the probability that the lenders would require a loan to be secured. The dependent variable equals one if the loan is secured, zero otherwise. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

$$P(\text{Secured} = 1) = \alpha + \beta_1 \text{Uncorrected} + \beta_2 \text{Corrected} + \beta_3 \text{Institutional Investor} + \beta_4 \text{Revolver} + \beta_5 \text{Loan Size} + \beta_6 \text{Maturity} + \beta_7 \text{Credit Rating} + \beta_8 \text{Number Lenders} + \beta_9 \text{Firm Size} + \beta_{10} \text{Profitability} + \beta_{11} \text{Leverage} + \beta_{12} \text{Tangibility} + \varepsilon$$

Parameter	Predicted Sign	P(Secured=1)
Uncorrected	+	0.282** (0.04)
Corrected	+	0.494*** (0.00)
Institutional Investor	+	0.936*** (0.00)
Revolver	-	-0.156* (0.09)
Loan Size	-	-0.160*** (0.00)
Maturity	+	0.013*** (0.00)
Credit Rating	+	-0.007 (0.20)
Number Lenders	?	-0.011*** (0.01)
Firm Size	-	-0.259*** (0.00)
Profitability	-	-3.991*** (0.00)
Leverage	+	0.939*** (0.00)
Tangibility	+	0.139 (0.38)
Year Fixed Effects		Yes
Number Observations		2,828
Pseudo R-Square		27.2%

Table 8: The impact of the relative seriousness of an ICW on loan terms

This table examines the effect of the relative seriousness of the ICW on loan terms. In Panel A, we consider firms with the number of company-level weaknesses greater than the sample median as having more severe internal control problems. In Panel B, we consider firms with fraud related weaknesses as having more severe internal control problems. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

Panel A: Number of company-level weaknesses

Parameter	Financial Covenants (1)	Interest Rate (2)	PP Ratio (3)	Security (4)
Uncorrected	-0.275** (0.02)	25.447** (0.05)	-0.404** (0.02)	0.139** (0.03)
Corrected	-0.449*** (0.00)	2.106 (0.90)	-0.130 (0.61)	0.396*** (0.00)
Uncorrected*Company-High	-0.241** (0.04)	19.911* (0.08)	-0.356* (0.06)	0.276** (0.05)
Corrected*Company-High	-0.202* (0.08)	18.584 (0.42)	0.148 (0.84)	0.208* (0.06)
Company-High	0.097 (0.39)	23.753* (0.09)	-0.185 (0.35)	0.136 (0.23)
Institutional Investor	0.418*** (0.00)	40.836*** (0.00)	-0.401* (0.10)	0.899*** (0.00)
Revolver	0.008 (0.89)	-71.759*** (0.00)	0.475*** (0.01)	-0.169* (0.07)
Interest Rate	0.000 (0.61)			
Financial Covenants		7.788** (0.02)		
Secured	0.899*** (0.00)		1.111*** (0.00)	
Loan Size	-0.055* (0.08)	-15.871*** (0.00)	-0.005 (0.96)	-0.163*** (0.00)
Maturity	-0.001 (0.24)	-0.009 (0.82)	0.005 (0.15)	0.014*** (0.00)
Credit Rating	-0.002 (0.68)	1.216** (0.04)	0.109*** (0.00)	-0.005 (0.30)
Number Lenders	0.010** (0.05)	-1.653** (0.02)	0.014** (0.05)	-0.010*** (0.01)
PP Indicator	1.218*** (0.00)	-69.970*** (0.00)		
Firm Size	-0.126*** (0.00)	-5.793 (0.22)	-0.443*** (0.00)	-0.250*** (0.00)
Profitability	0.773*** (0.01)	-116.848*** (0.01)	2.096** (0.02)	-3.327*** (0.00)
Leverage	-0.074 (0.64)	67.567*** (0.00)	0.379 (0.27)	1.011*** (0.00)
Tangibility				0.163 (0.31)
Year Fixed Effects	Yes	Yes	Yes	Yes
Number Observations	2,828	2,828	2,045	2,828
Adj. R-Square	34.8%	27.9%	39.5%	26.8%

Panel B: ICWs related to fraud

	Financial Covenants	Interest Rate	PP Ratio	Security
Parameter	(1)	(2)	(3)	(4)
Uncorrected	-0.361*** (0.00)	27.199** (0.05)	-0.499*** (0.00)	0.219* (0.06)
Corrected	-0.495*** (0.00)	1.330 (0.93)	-0.088 (0.57)	0.428*** (0.00)
Uncorrected*Fraud	-0.106* (0.06)	52.481** (0.05)	-0.079 (0.32)	0.789** (0.04)
Corrected*Fraud	-0.33* (0.08)	2.941 (0.86)	0.044 (0.93)	0.959** (0.03)
Fraud	0.133 (0.58)	15.841 (0.34)	5.13 (0.96)	0.185 (0.419)
Institutional Investor	0.402*** (0.00)	42.349*** (0.00)	-0.451* (0.06)	0.957*** (0.00)
Revolver	0.006 (0.91)	-71.556*** (0.00)	0.501*** (0.00)	-0.153 (0.11)
Interest Rate	0.000 (0.78)			
Financial Covenants		7.089** (0.03)		
Secured	0.913*** (0.00)		1.046*** (0.00)	
Loan Size	-0.052* (0.10)	-16.476*** (0.00)	-0.034 (0.69)	-0.157*** (0.00)
Maturity	-0.001 (0.19)	-0.009 (0.86)	0.006* (0.07)	0.013*** (0.00)
Credit Rating	-0.003 (0.61)	1.271** (0.03)	0.108*** (0.00)	-0.007 (0.15)
Number Lenders	0.010** (0.04)	-1.667** (0.02)	0.015** (0.04)	-0.011** (0.02)
PP Indicator	1.190*** (0.00)	-67.153*** (0.00)		
Firm Size	-0.135*** (0.00)	-5.039 (0.29)	-0.410*** (0.00)	-0.275*** (0.00)
Profitability	0.793** (0.02)	-120.198*** (0.01)	1.877** (0.03)	-3.975*** (0.00)
Leverage	-0.102 (0.52)	66.230*** (0.00)	0.398 (0.24)	0.929*** (0.00)
Tangibility				0.173 (0.28)
Year Fixed Effects	Yes	Yes	Yes	Yes
Number Observations	2,828	2,828	2,045	2,828
Adj. R-Square	34.8%	27.7%	40.6%	29.8%

Table 9: Difference-in-differences analysis

This table presents the results of the difference-in-differences tests for the sample of ICW firms and a matched sample of non-ICW firms. For each matched firm, we impose an artificial “ICW date” on the date of its clean internal control report and an artificial “correction date” by assigning the same correction date as the ICW firm’s correction date. Regressions include year fixed effects and standard errors are heteroskedasticity robust, clustered at the firm level. P-values are reported in parentheses. ***, **, * denote significance at the 1, 5 and 10 percent levels, respectively. All variables are defined in Appendix A.

	Financial Covenants	Interest Rate	PP Ratio	Security
Parameter	(1)	(2)	(3)	(4)
Uncorrected	-0.079 (0.52)	-1.273 (0.90)	-0.034 (0.87)	0.031 (0.79)
Corrected	-0.134 (0.22)	13.745 (0.21)	-0.105 (0.68)	0.069 (0.60)
Uncorrected*ICW	-0.284*** (0.00)	21.394** (0.04)	-0.602** (0.02)	0.314** (0.04)
Corrected*ICW	-0.351*** (0.00)	-17.300 (0.16)	-0.126 (0.62)	0.321*** (0.01)
ICW	-0.033 (0.64)	27.828*** (0.00)	0.261* (0.06)	0.090 (0.22)
Institutional Investor	0.475*** (0.00)	50.209*** (0.00)	-0.355* (0.07)	1.391*** (0.00)
Revolver	0.000 (0.99)	-56.263*** (0.00)	0.448*** (0.00)	-0.027 (0.67)
Interest Rate	0.000 (0.27)			
Financial Covenants		10.507*** (0.00)		
Secured	0.868*** (0.00)		1.211*** (0.00)	
Loan Size	-0.109*** (0.00)	-14.593*** (0.00)	0.028 (0.64)	-0.105*** (0.00)
Maturity	0.000 (0.46)	-0.004*** (0.00)	0.006** (0.04)	-0.001* (0.06)
Credit Rating	-0.001 (0.82)	1.539*** (0.00)	0.111*** (0.00)	0.003 (0.38)
Number Lenders	0.010*** (0.00)	-1.548*** (0.00)	0.008 (0.15)	-0.007** (0.04)
PP Indicator	1.271*** (0.00)	-67.849*** (0.00)		
Firm Size	-0.093*** (0.00)	-10.042*** (0.01)	-0.494*** (0.00)	-0.303*** (0.00)
Profitability	0.705** (0.02)	-133.628*** (0.00)	-0.553 (0.37)	-2.269*** (0.00)
Leverage	0.028 (0.85)	87.635*** (0.00)	0.186 (0.50)	1.280*** (0.00)
Tangibility				0.196 (0.67)
Year Fixed Effects	Yes	Yes	Yes	Yes
Number Observations	5,975	5,975	3,765	5,975
Adj.R-Square	35.7%	31.6%	45.3%	29.5%