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The Impact of Financial Reporting Quality on Debt Contracting: Evidence from Internal Control Weakness Reports

ANNA M. COSTELLO* AND REGINA WITTENBERG-MOERMAN*

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ABSTRACT

We examine the effect of financial reporting quality on the trade-off between monitoring mechanisms used by lenders. 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 use of financial covenants and financial-ratio-based performance pricing provisions and substitute them with alternatives, such as price and security protections and credit-rating-based performance pricing provisions. We also find that changes in debt contract design following internal control weaknesses are substantially different from those following restatements, where lenders impose tighter monitoring on managers' actions, but do not decrease their use of financial statement numbers.

ICW → ↓ # covenants & financial ratios based performance

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1. Introduction

The role of financial reporting quality in debt contracting is one of the fundamental issues 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, Beatty, and Weber [2005], and Li [2010] show that in setting debt covenants and performance pricing provisions, lenders rely explicitly on financial statement numbers. While a number of recent studies suggest that different attributes of financial reporting quality affect debt contractual terms, there is little empirical evidence on the effect of financial reporting quality on the choice of monitoring mechanisms used by lenders (Armstrong, Guay, and Weber [2010]).[1] In particular, prior studies suggest that lenders impose overall more stringent terms when financial reporting quality is low, but they do not address the trade-offs that lenders can make between different monitoring mechanisms. However, Melnik and Plaut [1986] suggest that a loan contract is a package of *n*-contractual terms, and lenders offer the borrower a trade-off between different terms. Gigler et al. [2009] also show that, to evaluate the effect of reporting quality on debt contracting, we need to explicitly consider the trade-offs between contractual terms. In this paper, we examine whether lenders decrease their use of contractual terms based on accounting numbers and substitute them with non-accounting-based terms when financial reporting is of low quality.

We address this question by examining how lenders change the design of debt contracts following the disclosure of a material internal control weakness (ICW, hereafter). Section 302 of the Sarbanes Oxley Act (SOX) requires managers of all public 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 ICW 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). Thus, internal control reports provide a rigorous assessment of the reliability of a firm's financial reporting, which we expect to have a first-order effect on the design of debt contracts.[2]

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[1] See Francis et al. [2005], Zhang [2008], Bharath, Sunder, and Sunder [2008], and Graham, Li, and Qiu [2008]. Most pertinent to our study is Ball, Bushman, and Vasvari [2008], who examine how financial reporting timeliness affects the choice of performance pricing provisions.

[2] Supporting the importance to lenders of an assessment of the reliability of a borrower's financial reporting, loan contracts often include an internal control provision as an affirmative covenant. This covenant requires a firm to report the occurrence of an internal control event; the failure to inform the lenders can trigger a loan's default.

For firms that experience an ICW, we examine whether debt contractual terms differ for new syndicated loans issued in three distinct periods: before an ICW is reported (prior period, hereafter), from the day an ICW is reported through the day it is corrected (uncorrected period, hereafter) and after an ICW is corrected (corrected period, hereafter). Because ICWs reveal to lenders that financial covenants are less efficient in conveying changes in a borrower's creditworthiness, we predict that lenders decrease their use of financial covenants as an ex post monitoring tool when a borrower's financial statements are subject to an ICW. We find that the number of financial covenants imposed by lenders during the uncorrected period decreases by 0.36 relative to the prior period, which represents a 21.9% decrease in the number of covenants. Further, we find that lenders continue to distrust financial covenants as an expost monitoring tool even after the ICW has been corrected, suggesting that the ICW imposes a long-term reputation effect.

We predict that an ICW will increase loan pricing via two channels. First, an ICW decreases the lenders' reliance on financial covenants. Agency theory suggests that there is a trade-off between the number of covenants and the interest rate (Jensen and Meckling [1976], Myers [1977], Smith and Warner [1979]). Therefore, a decrease in the number of financial covenants should be compensated by an increase in the interest rate. Second, we expect an ICW 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 increases uncertainty regarding the firm's creditworthiness and consequently increases the agency costs of debt, which should be priced by lenders (Lambert, Leuz, and Verrecchia [2007]). Because of managers' information advantage relative to lenders, we also expect this higher uncertainty to translate into higher information asymmetry between a firm and its lenders, which in turn should increase the interest rate (Verrecchia [2001], Easley, Hvidkjaer, and O'Hara [2002]). 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% increase in the interest rate.

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 3% during the uncorrected period and by 8% during the corrected period, relative to the prior period. This finding suggests that lenders require collateral to compensate for the decrease in the number of financial covenants. Furthermore, we test the effect of an ICW on loan maturity and the number of general covenants. We find no evidence that these monitoring mechanisms substitute for the decrease in the number of financial covenants.[3]

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[3] In a related study, Kim, Song, and Zhang [2009] compare the loans of ICW firms to those of non-ICW firms and find that the loans related to ICW firms have a higher interest rate and a

Further, we predict that lenders move away from financial-ratio-based performance pricing provisions and toward credit-rating-based provisions when a borrower's financial statements are subject to an ICW. Because credit ratings frequently lag recent changes in a firm's credit quality (Hite and Warga [1997], De Franco, Vasvari, and Wittenberg-Moerman [2009]), lenders view financial ratios as more timely indicators of changes in a firm's creditworthiness. However, when an ICW indicates that reporting quality is low, lenders are likely to trade off more timely financial ratios for more reliable credit ratings. We find that the probability that the provision is based on a financial ratio decreases by 20% during the uncorrected period, relative to the prior period.

Finally, to shed more light on the impact of financial reporting quality on loan terms, we contrast lenders' responses to ICWs with their responses to financial restatements. We find that, following a restatement, lenders increase the interest rate, collateral protection, and the number of general covenants and decrease loan maturity but do not decrease their reliance on financial covenants or financial-ratio-based performance pricing provisions. This evidence is consistent with Graham, Li, and Qiu [2008], who examine the effect of restatements on loan terms in the pre-SOX period. We also show that when a restatement is preceded by an ICW, lenders increase the number of general covenants and decrease maturity, but do not change other contractual terms. This suggests that ICWs provide lenders with an early signal for a decrease in financial reporting quality, prompting them to adjust the design of debt contracts prior to the event of a restatement.

We conjecture that when managers restate financial statements, lenders both increase price and security protections and monitor managers more tightly by imposing additional general covenants (restricting managers' operating, investment, and financial activity) and by decreasing loan maturity (forcing managers to refinance more frequently). We suggest that tighter monitoring is explained, at least partially, by restatements being often associated with managers' culpability in misreporting, which results in a decrease in lenders' trust in management. In contrast, ICWs are attributed primarily to a firm's complexity and insufficient resources and reflect a *potential* for an accounting misstatement. As a result, lenders do not restrict managers' actions, but instead decrease their reliance on contractual terms based on accounting numbers and substitute them with non-accounting-based terms.[4]

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higher probability of being secured, but contrary to our findings, they have a higher number of financial and general covenants. Although Kim, Song, and Zhang [2009] attribute these differences in the loan terms to an ICW disclosure, we show that their results are due to the higher riskiness and information opacity of ICW firms relative to non-ICW firms (see section 4.5).

[4] See section 4.6 and Burns and Kedia [2006], Efendi, Srivastava, and Swanson [2007], Cheng and Farber [2008], DeFond and Jiambalvo [1994], Richardson, Tuna, and Wu [2003], Ge and McVay [2005], Ogneva, Subramanyam, and Raghunandan [2007], Ashbaugh-Skaife,

We view our paper as making four main contributions. First, we contribute to the literature on the role of financial reporting quality in debt contracting. By establishing that an ICW causes lenders to move away from financial covenants and toward security and price protection and to substitute financial-ratio-based performance pricing provisions with provisions based on credit ratings, we explicate the effect of reporting quality on the choice of monitoring mechanisms used by lenders. To the best of our knowledge, we are the first to show that low financial reporting quality does not lead to overall tighter debt contractual terms but rather triggers a trade-off between debt contracting mechanisms based on accounting numbers and those that are not. Further, we establish that lenders decrease their reliance on financial covenants when financial reporting quality is low.

Second, we extend and complement prior research by documenting a significant relation between the reliability of financial statements and debt contractual terms. Francis et al. [2005] and Bharath, Sunder, and Sunder [2008] rely on accruals quality and Zhang [2008] and Ball, Bushman, and Vasvari [2008] on financial reporting timeliness to establish the link between reporting quality and debt contracting. Accruals models suffer from measurement error and often 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]). In addition, abnormal accruals and reporting timeliness are strongly associated with a firm's business model and production function, making it difficult to attribute the cross-sectional differences in these measures to reporting quality per se. Accruals quality and reporting timeliness also capture only specific aspects of reporting quality. In contrast, internal control reports provide an unambiguous and comprehensive measure of the reliability of a firm's financial reporting. By demonstrating that ICWs significantly impact loan terms, our study provides strong support for the importance of reporting quality for debt contracting.

Third, we contribute to the literature that examines whether financial reporting quality affects the cost of capital. Many studies examine this question in the equity market, but there is no consensus on the relation between the quality of financial reporting and the cost of equity capital (Core, Guay, and Verdi [2007]).[5] Specific to ICWs, Beneish, Billings, and Hodder [2008], Hammersley, Myers, and Shakespeare [2007], and Ashbaugh-Skaife et al. [2009] find that firms with ICWs have a higher cost of equity, although

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Collins, and Kinney [2006], and Doyle, Ge, and McVay [2007a] for a discussion of the main factors that explain restatements and ICWs.

[5] Botosan [1997], Francis et al. [2004, 2005], Ecker et al. [2006], and Botosan and Plumlee [2007] show that lower-quality financial information results in a higher cost of equity capital, while Ball and Brown [1969], Core, Guay, and Verdi [2007], and Hughes et al. [2007] argue that the effect of reporting quality is diversifiable. While Lambert, Leuz, and Verrecchia [2007] support the effect of accounting information on the equity cost of capital, they argue that this effect is fully captured by an appropriately specified forward-looking beta.

Ogneva, Subramanyam, and Raghunandan [2007] find no effect after controlling for firm characteristics. We show that an ICW significantly increases loan pricing, providing strong support for the effect of financial reporting quality on the cost of debt capital.

Finally, we contribute to the debate on the costs versus benefits of SOX. Critics of SOX argue that it is a regulatory imposition with very low economic benefits. Supporters of SOX emphasize that it provides important information to capital markets and improves transparency. We add to this debate by showing that ICWs provide useful information to lenders, triggering substantial changes in debt contract design and allowing for more efficient debt contracting.

The following section presents the research design. The third section describes the data. The fourth section discusses our empirical findings. The fifth section concludes.

2. *Research Design*

2.1 WITHIN-SAMPLE ANALYSIS

We focus on 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, Ge, and McVay [2007a] find that smaller, younger, financially weaker, more complex, high growth and restructured firms are more likely to report ICWs. To the extent that we cannot perfectly control for firm characteristics associated with ICWs, analyzing changes in the terms of new loans *within* the sample of ICW firms results in a stronger design than comparing the loans of ICW firms to those of non-ICW firms.

Our analysis consists of three distinct time periods. The prior period spans the three years 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 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 could 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 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.

2.2 DEBT CONTRACTUAL TERMS

To examine the impact of ICWs on loan terms, we estimate the following model:

$$Contractual\ term = \alpha + \beta_1 Uncorrected + \beta_2 Corrected + \sum \beta_i (Control_i), \quad (1)$$

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. Our coefficients of interest are β_1 and β_2.

First, we examine how ICWs affect financial covenants. 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 a monitoring tool even after the ICW is corrected, we also 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 high agency costs 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, Beatty, and Weber [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 [2010]). According to the agency theory of covenants (Jensen and Meckling [1976], 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.

Second, we investigate the impact of an ICW on the interest rate. We expect it to increase following an ICW if lenders view a borrower's accounting quality as inferior and/or if they compensate for the decrease in financial covenants with an increase in loan price. We control for loan size because larger loans are priced at lower interest rates (Booth [1992], Beatty, Ramesh, and Weber [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, Mullineaux, and Yi [2006], Zhang [2008]). Because of the higher agency costs 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.

Based on our prediction that a reasonable probability of a material misstatement leads to a decrease in the number of financial covenants, we next test whether loan securitization substitutes for financial covenants imposed by lenders. 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.

We also test whether general covenants substitute for the decrease in the number of financial covenants. Following Bradley and Roberts [2004], we include sweeps and dividend restrictions in the general covenant index.[6] Sweeps are prepayment covenants that mandate the early retirement of the loan conditional on a particular firm's action and include restrictions on debt issuance, equity issuance, asset sales, and insurance proceeds. They are stated as percentages that correspond to the fraction of the loan that must be retired in such an event. For example, a contract imposing a 50% debt issuance sweep will force the borrower to prepay 50% of the principal value of the loan if a borrower issues more than an agreed-upon amount of debt. If lenders substitute general covenants for financial covenants, we expect coefficients on the *Uncorrected* and *Corrected* variables in the general covenant regression to be positive.

To compensate for the decrease in the monitoring efficiency caused by a reduction in the number of financial covenants, lenders can also reduce loan maturity. Shorter maturity induces more frequent refinancing, which allows lenders to periodically evaluate a firm's creditworthiness and more frequently renegotiate the loan terms. In estimating loan maturity, we control for firm and loan characteristics suggested by prior research to affect maturity (see Barclay and Smith [1995], Stohs and Mauer [1996], Scherr and Hulbert [2001], and Ortiz-Molina and Penas [2008]). Because of a nonmonotonic relation between a borrower's credit quality and debt

[6] 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 reestimate the general covenant model. This test produces similar results and inferences to the analysis tabulated in table 5.

maturity (Diamond [1991]), we include both the *Credit Rating* and *Credit Rating Square* variables in the model.[7]

Last, we test the choice of the performance pricing provision following ICWs. We expect that a decrease in the reliability of a firm's financial statements will decrease the probability that lenders base the performance pricing provision on an accounting ratio. In choosing our control variables we generally follow Ball, Bushman, and Vasvari [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.

3. Data

3.1 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.

Our initial sample consists of 2,231 firms reporting material weaknesses over the September 2002 through July 2008 period (table 1). We match our ICW sample to public firms in the DealScan database and retain all loans issued in the prior, uncorrected or corrected periods. DealScan is provided by Loan Pricing Corporation (LPC) and contains 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. Furthermore, we eliminate loans (facilities[8]) missing the loan or firm characteristics required for the empirical analysis. 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.[9]

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[7] 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], 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.

[8] 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.

[9] 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

TABLE 1
Sample Selection

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

This table presents our sample selection process.

[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 it was corrected.

[3]We require firms to have nonmissing 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.

3.2 DESCRIPTIVE STATISTICS

Table 2, panel A reports descriptive statistics. All variables are defined in appendix A. On average, the loans are priced at 252 basis points above LIBOR. This 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 borrowers subject to ICWs are relatively risky, consistent with Doyle, Ge, and McVay [2007a]. The loans are restricted by an average of 1.64 financial covenants and 4.35 general covenants. Seventy-six percent of sample loans are subject to a performance pricing provision; across these loans, 65% 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, the syndicated loans of public firms are characterized by an average of 9 lenders. The relatively small number of syndicate lenders indicates that borrowers in our sample are relatively 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, also consistent with Doyle, Ge, and McVay [2007a].

The loan terms we examine in this study are highly correlated (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 that cannot

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the uncorrected or corrected periods) and repeat the empirical analysis (untabulated). These tests produce results and inferences similar to the tabulated analyses.

TABLE 2
Descriptive Statistics and Correlation Matrix

Panel A: Descriptive Statistics

	N	Mean	Standard Deviation	25%	Median	75%
Loan characteristics						
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 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				
Firm characteristics						
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
Accounting quality variables						
Uncorrected	2,828	0.21				
Corrected	2,828	0.28				

(*Continued*)

TABLE 2 — *Continued*

Panel B: Pearson Correlation Matrix

	Interest Rate	*Financial Covenants*	*General Covenants*	*PP 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 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

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% levels, respectively. All variables are defined in appendix A.

be split and traded separately. These terms include both price and nonprice features, and the lenders offer the borrower a trade-off between certain contractual terms. 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 our main variables of interest in section 4.7.2.

4. Empirical Results

4.1 THE IMPACT OF FINANCIAL REPORTING QUALITY ON FINANCIAL COVENANTS

Table 3, column 1 presents the results from the financial covenant regression. Consistent with our prediction, an uncorrected ICW leads to a decrease in the number of financial covenants imposed by a loan contract. 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% 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 a monitoring tool even after the firm has corrected the ICW, suggesting that ICWs impose a long-term reputation effect on the borrower.[10] 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.

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 have both 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 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.

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], Standard & Poor's [2007]), one could argue that, *holding all else constant,* following an ICW report, lenders should impose more

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

TABLE 3

Financial Covenants as a Function of Financial Reporting Quality

		Financial Covenants	
Parameter	Predicted Sign	(1)	(2)
Uncorrected	−	−0.362***	−0.468***
		(0.00)	(0.00)
Corrected	−/?	−0.500***	−0.683***
		(0.00)	(0.00)
Uncorrected ∗ *Relationship Lender*			0.220
			(0.27)
Corrected ∗ *Relationship Lender*			0.283
			(0.12)
Relationship Lender			−0.069
			(0.50)
Institutional Investor	+	0.560***	0.428***
		(0.00)	(0.00)
Revolver	?	0.049	0.011
		(0.42)	(0.85)
Interest Rate	−	0.001***	0.000
		(0.01)	(0.50)
Secured	+	0.896***	0.915***
		(0.00)	(0.00)
Loan Size	−	−0.061*	−0.060*
		(0.07)	(0.09)
Maturity	+	−0.003	−0.001
		(0.33)	(0.24)
Credit Rating	+	−0.004	−0.004
		(0.42)	(0.48)
Number Lenders	?	0.010**	0.010*
		(0.05)	(0.06)
PP Indicator	+	1.465***	1.216***
		(0.00)	(0.00)
Firm Size	−	−0.162***	−0.144***
		(0.00)	(0.00)
Profitability	−	0.515	0.743**
		(0.12)	(0.05)
Leverage	+	0.010	−0.096
		(0.95)	(0.57)
Year fixed effects		Yes	Yes
Observations		2,828	2,828
Adj. R^2		27.6%	30.5%

This table presents the results from the estimation of the financial covenant model. In column 1, we regress the number of financial covenants on the uncorrected and corrected ICW variables and the loan- and firm-specific control variables. In column 2, we add relationship lending to the financial 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% levels, respectively. All variables are defined in appendix A.

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

Covenants

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 decrease their reliance on financial covenants and are likely to substitute them by more efficient tools and/or compensate for the decrease in financial covenants with an increase in loan price.[11]

4.2 THE IMPACT OF FINANCIAL REPORTING QUALITY ON LOAN PRICING

In table 4, we investigate the impact of accounting quality on the interest rate charged on a loan. The first column shows that disclosure of an ICW leads to higher interest rates. The coefficient on *Uncorrected* is positive and statistically significant and implies that reporting an uncorrected ICW increases the interest rate by 29 basis points, which represents an 11% 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.[12]

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 interaction terms between this variable and *Uncorrected* and *Corrected*. 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.

4.3 THE IMPACT OF FINANCIAL REPORTING QUALITY ON COLLATERAL AND ADDITIONAL MONITORING MECHANISMS

Table 5, column 1 presents evidence on whether lenders require a borrower to post collateral to compensate for the decrease in the number of financial covenants. We find that the coefficients on both the *Uncorrected*

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[11] In untabulated tests, we 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). We find a significant decrease in the frequencies of interest coverage, net worth, and CAPEX restrictions of 6.4%, 8.2%, and 6.6%, respectively. We infer that ICWs affect financial covenants based on both income statement and balance sheet numbers.

[12] The pricing estimation is robust to controlling for the number of general covenants, the loan purpose, the reputation of the syndicate's lead arranger, and whether the loan is secured or traded (untabulated).

TABLE 4
Interest Rate as a Function of Financial Reporting Quality

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

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 the uncorrected and corrected ICW 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% levels, respectively. All variables are defined in appendix A.

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

TABLE 5

The Impact of Financial Reporting Quality on Loan Security, General Covenants, and Maturity

Parameter	*Secured* (1)	*General Covenants* (2)	*Maturity* (3)
Uncorrected	0.282**	−0.050	−0.003
	(0.04)	(0.88)	(0.94)
Corrected	0.494***	0.121	0.095
	(0.00)	(0.75)	(0.15)
Institutional Investor	0.936***	0.735***	0.388***
	(0.00)	(0.00)	(0.00)
Revolver	−0.156*	−0.297**	
	(0.09)	(0.05)	
Interest Rate		0.003***	−0.001**
		(0.00)	(0.02)
Financial Covenants			0.008
			(0.55)
Secured		0.908***	0.093***
		(0.00)	(0.01)
Loan Size	−0.160***	0.053	0.052***
	(0.00)	(0.52)	(0.00)
Maturity	0.013***	0.002***	
	(0.00)	(0.00)	
Credit Rating	−0.007	−0.012	0.015**
	(0.20)	(0.34)	(0.02)
Credit Rating Sq			−0.001
			(0.42)
Number Lenders	−0.011***	0.017**	−0.003
	(0.01)	(0.03)	(0.45)
PP Indicator		3.820***	0.193***
		(0.00)	(0.00)
Firm Size	−0.259***	−0.128	0.077***
	(0.00)	(0.17)	(0.00)
Profitability	−3.991***	0.870	0.858***
	(0.00)	(0.25)	(0.00)
Leverage	0.939***	0.215	0.044
	(0.00)	(0.58)	(0.52)
Tangibility	0.139		0.009
	(0.38)		(0.86)
Year fixed effects	Yes	Yes	Yes
Observations	2,828	2,828	2,828
Psuedo/Adj. R^2	27.2%	28.3%	22.1%

This table presents the results from the estimation of the security, general covenant, and maturity models. Column 1 is a probit regression estimation of the probability that the lenders require a loan to be secured. The dependent variable equals one if the loan is secured, zero otherwise. In column 2, we regress the number of general covenants on the uncorrected and corrected ICW variables and control variables. In column 3, we regress the logarithm of maturity on the ICW variables and control variables. 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% levels, respectively. All variables are defined in appendix A.

and the *Corrected* variables are positive and significant, suggesting that the probability of a loan being secured increases following an ICW. The coefficient of 0.282 on *Uncorrected* translates into a 3% increase in the probability that a loan will be backed by collateral; the coefficient of 0.494 on *Corrected*

translates into an 8% increase in this probability.[13] 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.

With respect to general covenants and maturity, the coefficients on *Uncorrected* and *Corrected* are insignificantly different from zero, suggesting that lenders do not use these monitoring mechanisms to substitute for the decrease in the number of financial covenants (table 5, columns 2 and 3). In untabulated analyses we examine whether the effect of an ICW on collateral, general covenants, and maturity is different for relationship loans compared to non-relationship loans; we find that this is not the case.

4.4 THE IMPACT OF FINANCIAL REPORTING QUALITY ON PERFORMANCE PRICING PROVISIONS

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% during the uncorrected period. As our performance pricing analysis 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 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, Bushman, and Vasvari [2008]. In untabulated tests, we also find that the effect of an ICW on the performance pricing provision does not differ across relationship and non-relationship loans.

4.5 THE EFFECT OF THE SERIOUSNESS OF AN ICW ON LOAN TERMS

In this section, we examine whether more serious internal control problems result in more significant changes in loan contractual terms following the ICW disclosure. We use two approaches to estimate the severity of an ICW. First, we follow Doyle, Ge, and McVay [2007b] and separate ICWs into more serious, company-level material weaknesses, and less serious, account-specific material weaknesses.[14] We find that 93.9% of our

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

[14] We 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.

TABLE 6

The Impact of Financial Reporting Quality on the Probability of Accounting-Based Performance Pricing Provisions

	PP Ratio	
Parameter	Predicted Sign	(1)
Uncorrected	−	−0.507**
		(0.02)
Corrected	−	−0.067
		(0.79)
Institutional Investor	+	−0.433*
		(0.09)
Revolver	?	0.543***
		(0.00)
Secured	+	0.962***
		(0.00)
Loan Size	−	−0.034
		(0.71)
Maturity	?	0.007*
		(0.07)
Credit Rating	+	0.097***
		(0.00)
Number Lenders	?	0.018**
		(0.03)
Firm Size	−	−0.406***
		(0.00)
Profitability	−	1.920**
		(0.03)
Leverage	+	0.279
		(0.42)
Year fixed effects		Yes
Observations		2,045
Psuedo R^2		44.5%

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. The regression includes 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% levels, respectively. All variables are defined in appendix A.

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

sample loans are related to firms with at least one company-level weakness. 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. 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

(table 7, panel A).[15] 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 higher probability of being secured, and a lower probability of using financial-ratio-based performance pricing provisions.

Second, we test the effects of ICWs related to fraud. For our sample, 8.6% of the weaknesses are fraud-related. The coefficients on the interaction term variables in panel B of table 7 indicate that 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%) for the performance pricing sample.[16]

Our findings are distinct from those of Kim, Song, and Zhang [2009], who compare the loans of ICW firms following the ICW disclosure to the loans of non-ICW firms. Kim, Song, and Zhang [2009] find that the loans of firms with company-level ICWs have a marginally higher number of financial covenants, which contradicts our finding of a significant decrease in financial covenants following an ICW disclosure. They also show that the loans of ICW firms have a marginally higher number of general covenants, a higher interest rate, a higher probability of being secured, and a smaller number of syndicate participants. We suggest that while the cross-sectional research design of Kim, Song, and Zhang [2009] attributes differences in the loan terms between ICW and non-ICW firms to an ICW disclosure, these differences may be, in fact, due to differences in more fundamental firm characteristics, such as riskiness and information opacity.

To investigate this proposition, in untabulated analysis we examine whether the terms of loans issued to ICW firms *prior* to the ICW disclosure are significantly different from those of loans issued to non-ICW firms. We find that, relative to the loans of non-ICW firms, loans of company-level ICW firms have a higher number of financial and general covenants, are priced at higher interest rates, are more likely to be secured, and have a

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[15] We use the methodology of Norton, Wang, and Ai [2004] to compute the marginal effects of interaction terms in probit models. In the security model, the mean interaction effect for *Uncorrected* $*$ *Company-High* is 0.216 (p-value $= 0.06$) and for *Corrected* $*$ *Company-High* is 0.198 (p-value $= 0.08$). In the performance pricing model, the mean interaction effect for *Uncorrected* $*$ *Company-High* is -0.342 (p-value $= 0.08$).

[16] We compute the mean interaction effect (MIE) for the interaction variables in the security probit regression (Norton, Wang, and Ai [2004]). The MIE of *Uncorrected* $*$ *Fraud* is 0.762 (p-value $= 0.06$) and the MIE of *Corrected* $*$ *Fraud* is 0.952 (p-value $= 0.05$). In addition, in untabulated tests, we find no evidence that more severe ICWs, as measured by both a high number of company-level weaknesses and fraud-related weaknesses, affect general covenants and loan maturity. It is important to note that fraud-related weaknesses do not reflect the realization of fraud, but rather suggest that a potential fraudulent activity may not be detected or prevented in a timely manner.

smaller number of lenders even in the period *prior* to the ICW disclosure. Therefore, we conjecture that the differences between the loan contractual terms of ICW and non-ICW firms reported by Kim, Song, and Zhang [2009] are unlikely to be attributed to the impact of the ICW disclosure.

TABLE 7

The Impact of the Relative Seriousness of an ICW on Loan Terms

Panel A: Number of Company-Level Weaknesses

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

(*Continued*)

TABLE 7 — *Continued*

Panel B: ICWs Related to Fraud

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

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% levels, respectively. All variables are defined in appendix A.

4.6. COMPARATIVE ANALYSIS OF ICWS AND RESTATEMENTS

In this section, we analyze how the changes in debt contract design following ICWs differ from those following restatements. Both ICWs and restatements imply that a firm's financial reporting is of low quality, but there are three primary distinctions between these phenomena. First, restatements usually result from past malfeasance or misreporting, and the announcement of a restatement coincides with the correction of previously reported numbers. In contrast, ICWs imply that the firm's internal controls are not sufficient to prevent or detect *potential* accounting misstatements. Second, restatements are often linked to aggressive accounting and management culpability. Prior research suggests that managers' compensation incentives (Burns and Kedia [2006], Efendi, Srivastava, and Swanson [2007], Cheng and Farber [2008]) and capital market pressure (DeFond and Jiambalvo [1994], Richardson, Tuna, and Wu [2003]) are key motivating factors leading to restatements. Supporting the relation between managers' economic interests and restatements, Desai, Hogan, and Wilkins [2006] and Collins et al. [2009] show that managers of restating firms experience substantial reputational penalties, as reflected by their high turnover and inability to secure comparable subsequent employment. Conversely, prior research suggests that the primary factors explaining ICWs include the firm's small size, young age, high growth, high complexity, restructuring activity, and insufficient resources (Ge and McVay [2005], Ogneva, Subramanyam, and Raghunandan [2007], Ashbaugh-Skaife, Collins, and Kinney [2006], Doyle, Ge, and McVay [2007a]). Third, while both restatements and ICWs increase uncertainty about reported accounting numbers, restatements also cause a significant real "wealth effect." Restatements not only change historic financial numbers, typically reducing past profitability, but they are also often associated with a decrease in future profitability, which leads to a downward revision in investors' estimate of firm value (Kinney and McDaniel [1989], Palmrose, Richardson, and Scholz [2004], Graham, Li, and Qiu [2008]).[17]

To identify differences between lenders' contractual responses to ICWs and restatements, we obtain restatements from Audit Analytics for the period from September 2002 to December 2008, which overlaps with our ICW sample period.[18] We differentiate restatements that are not "pre-empted" by previously disclosed ICWs from those that occur after an ICW disclosure.

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[17] In untabulated analysis, we find that firms that restate their financial statements experience a significant deterioration in profitability, sales turnover, and credit quality in the three-year period following the restatement, relative to the three-year period prior to it. In contrast, firms reporting ICWs do not experience changes in profitability or sales turnover and have a marginal increase in credit quality in the three-year period following an ICW, relative to the three-year period prior to it.

[18] We verify that the changes in loan terms we attribute to ICWs cannot be explained by a borrower's subsequent restatement. For a sample of 2,148 loans issued to firms that reported ICWs but did not subsequently restate, we find that the changes in debt contractual terms are similar to the changes we documented in our primary analysis.

For firms that restate their financial statements without a previous ICW, we compare the terms of loans issued in the three-year period before the restatement to the terms of loans issued in the three-year period after the restatement. The construction of this "clean" restatement sample ensures that the changes in contractual terms following the restatement are not due to a previously disclosed ICW.[19] For firms that disclose an ICW before they restate their financial statements, we compare the terms of loans issued in the interim period between the ICW disclosure and the restatement to the terms of loans issued in the two-year period after the restatement. We limit the post-restatement period to two years in order to be consistent with the average time of the interim period. This ensures that changes in debt contract design following the restatement represent the incremental effect of restatements on loan terms relative to the effect of ICWs. We ensure that each firm in the restatement samples has at least one loan in the periods preceding and following the restatement, resulting in 2,299 loans issued to 727 firms that restated their financial statements without previously reporting an ICW and 442 loans issued to 118 firms that restated their financial statements after an ICW.[20]

For the "clean" restatement sample, we find that, relative to loans issued before restatements, post-restatement loans have a higher interest rate, a higher probability of being secured, a higher number of general covenants, and a shorter maturity (table 8, panel A). However, the lenders do not decrease the number of financial covenants and do not move away from financial-ratio-based performance pricing provisions. We infer from these results that when firms restate financial statements, lenders decrease their trust in management, which can be explained, at least partly, by the previously documented link between restatements and management culpability. As a result, lenders both increase price and security protections and monitor managers more tightly by imposing additional general covenants and by decreasing loan maturity. Additional general covenants restrict managers' operating, investment, and financial activities and shorter maturities force managers to refinance more frequently. This contrasts with how lenders respond to ICWs, when they decrease their reliance on financial covenants and financial-ratio-based performance pricing provisions and substitute these contractual terms with price and security protection and credit-rating-based provisions, but do not change the number of general covenants or the loan maturity. This evidence suggests that when low financial reporting quality is attributed primarily to a firm's complexity and insufficient

[19] The "clean" restatement sample includes 107 firms that reported an ICW *after* a restatement. All the results and inferences are robust to excluding these firms from the analysis.

[20] To ease the comparison of the results to those in Graham, Li, and Qiu [2008], we estimate the covenant models using Poisson regressions. In untabulated analysis, we reestimate our primary covenant regressions using Poisson regressions. The incidence ratio from the Poisson regression suggests that the number of financial covenants in the uncorrected and corrected periods decreases by around 45%, relative to the prior period.

resources (as with ICWs), lenders do not restrict managers' actions, but instead decrease their reliance on contractual terms based on accounting numbers and substitute them with non-accounting-based terms.

Table 8, panel B reports the results for firms that reported an ICW before a restatement. We find that, relative to loans issued during the interim period, post-restatement loans have a higher number of general covenants and a shorter loan maturity, but do not experience changes in interest rate, collateral, performance pricing provisions, or number of

TABLE 8

The Comparative Analysis of ICWs and Restatements

Panel A: The Effect of a Restatement on Loan Terms for Firms That Did Not Previously Report an ICW

Parameter	*Financial Covenants* (1)	*Interest Rate* (2)	*Secured* (3)	*General Covenants* (4)	*Maturity* (5)	*PP Ratio* (6)
Restatement	−0.055	17.538**	0.268***	0.066***	−0.041**	−0.040
	(0.20)	(0.03)	(0.01)	(0.00)	(0.02)	(0.77)
Institutional Investor	0.402***	81.789***	1.838***	0.214***	0.471***	−0.344*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.06)
Revolver	0.035	−13.437***	0.120**	−0.067***		0.011
	(0.11)	(0.00)	(0.03)	(0.00)		(0.91)
Interest Rate	0.001***			0.001***	−0.001*	
	(0.00)			(0.00)	(0.09)	
Financial Covenants		11.985***			0.029***	
		(0.00)			(0.00)	
Secured	0.458***			0.422***	0.143***	1.023***
	(0.00)			(0.00)	(0.00)	(0.00)
Loan Size	0.033**	−14.735***	−0.166***	0.071***	0.072***	−0.090*
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)
Maturity	−0.001**	0.048	0.004***	−0.001		0.014***
	(0.02)	(0.51)	(0.00)	(0.11)		(0.00)
Credit Rating	−0.003	1.487***	0.025***	0.002	0.068***	0.055***
	(0.26)	(0.00)	(0.00)	(0.17)	(0.00)	(0.00)
Credit Rating Sq					−0.002***	
					(0.00)	
Number Lenders	0.008***	0.053	0.014***	0.011***	0.004***	−0.000
	(0.00)	(0.84)	(0.00)	(0.00)	(0.01)	(0.95)
PP Indicator	0.850***	−43.402***		0.728***	0.143***	
	(0.00)	(0.00)		(0.00)	(0.00)	
Firm Size	−0.075***	−15.748***	−0.306***	−0.079***	−0.057***	−0.521***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Profitability	0.049	−239.371**	−3.289***	0.393***	0.557***	1.561***
	(0.76)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Leverage	−0.141*	138.854***	1.990***	0.088***	0.335***	0.171
	(0.08)	(0.00)	(0.00)	(0.00)	(0.00)	(0.44)
Tangibility			0.246		0.272*	
			(0.87)		(0.08)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,299	2,299	2,299	2,299	2,299	1,602
Adj./Pseudo R^2	18.4%	44.9%	32.0%	26.8%	24.0%	34.3%

(*Continued*)

TABLE 8 — *Continued*

Panel B: The Incremental Effect of a Restatement on Loan Terms Relative to the Effect of an ICW

Parameter	*Financial Covenants* (1)	*Interest Rate* (2)	*Secured* (3)	*General Covenants* (4)	*Maturity* (5)	*PP Ratio* (6)
Restatement	0.131	−28.941	0.132	0.065***	−0.187*	−1.205
	(0.21)	(0.27)	(0.66)	(0.01)	(0.06)	(0.98)
Institutional Investor	0.185**	7.803	0.343	−0.094	0.273***	−0.472
	(0.02)	(0.82)	(0.58)	(0.34)	(0.01)	(0.99)
Revolver	−0.023	−117.589***	−0.806**	−0.234***		−0.346
	(0.69)	(0.00)	(0.04)	(0.00)		(0.99)
Interest Rate	0.001*			0.001***	0.001**	
	(0.06)			(0.00)	(0.05)	
Financial Covenants		30.752**			−0.122***	
		(0.02)			(0.01)	
Secured	0.204			0.488***	−0.057	1.540**
	(0.25)			(0.00)	(0.59)	(0.02)
Loan Size	−0.135***	21.505*	−0.163	−0.076**	0.012	0.851
	(0.00)	(0.10)	(0.34)	(0.04)	(0.82)	(0.94)
Maturity	−0.003	0.243	0.007	0.000		0.033*
	(0.11)	(0.63)	(0.36)	(0.74)		(0.08)
Credit Rating	−0.002	0.051	1.621**	−0.025***	0.001	0.387***
	(0.89)	(0.98)	(0.05)	(0.00)	(0.13)	(0.00)
Credit Rating Sq					−0.050*	
					(0.09)	
Number Lenders	0.033***	−11.928***	−0.054*	0.013*	0.014	1.238
	(0.00)	(0.00)	(0.07)	(0.09)	(0.26)	(0.85)
PP Indicator	0.556***	−90.552***		0.746***	0.408***	
	(0.00)	(0.00)		(0.00)	(0.00)	
Firm Size	−0.061	−17.348*	−0.236**	0.043	0.087	−6.228**
	(0.22)	(0.08)	(0.03)	(0.22)	(0.14)	(0.03)
Profitability	0.133	−328.33**	−3.161**	−0.472	2.027***	1.245**
	(0.80)	(0.02)	(0.04)	(0.18)	(0.00)	(0.02)
Leverage	0.095	105.773**	2.227***	−0.251	0.440**	0.765
	(0.78)	(0.05)	(0.01)	(0.36)	(0.03)	(0.89)
Tangibility			0.055		0.087	
			(0.43)		(0.79)	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	442	442	442	442	442	289
Adj./Pseudo R^2	17.4%	44.3%	37.1%	20.3%	19.4%	28.5%

In this table, we analyze how changes in debt contract design following ICWs differ from those following restatements. In panel A, we investigate changes in loan terms for firms that restate their financial statements without previously reporting ICWs. In panel B, we investigate the incremental effect of restatements on loan terms for firms that report ICWs and then subsequently restate their financial statements. We estimate financial covenant and general covenant models using a Poisson regression. 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% levels, respectively. All variables are defined in appendix A.

financial covenants. These findings reinforce our inference that, relative to ICWs, restatements prompt lenders to more tightly monitor managers' activities. Furthermore, this suggest that in the post-SOX period, ICWs provide lenders with an early signal for a decrease in financial reporting quality,

prompting lenders to adjust the interest rate and loan security prior to the event of restatement.

4.7 ROBUSTNESS TESTS

4.7.1. Intertemporal Analysis. Our analysis of the effect of an ICW on the design of debt contracts requires a firm to have a loan both in the prior and uncorrected or corrected periods, which may introduce survivorship bias into our sample. As a firm borrows in the syndicated loan market for a longer time period, it is likely to become better known to lenders, which may affect their monitoring activities.

To address the survivorship bias concern, we conduct "difference-in-differences" tests. We match each ICW firm to 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, 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 reestimate 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

TABLE 9
Difference-in-Differences Analysis

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

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% levels, respectively. All variables are defined in appendix A.

and therefore mitigates the survivorship bias concern. Despite a decrease in the sample size, all results and inferences are unchanged. Finally, 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 two 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 test, 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 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 provision and security analyses (table 9, columns 3 and 4). We find results consistent with our main findings.[21] We believe that this evidence further alleviates concerns associated with the time-series nature of our research design.

4.7.2. The Joint Determination of Loan Contractual Terms. Agency theory suggests that there is likely to be a trade-off between the number of covenant restrictions imposed by a loan contract and the interest rate (Jensen and Meckling [1976], Myers [1977], Smith and Warner [1979]). Specifically, since the restrictions imposed by covenants are costly to the firm, they are offset by a lower cost of debt. Gigler et al. [2009] 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 verify that the potential simultaneity between loan pricing and financial covenant intensity does not affect our findings, we estimate a system of two equations where the interest rate and the number of financial covenants are simultaneously determined.

To instrument 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 and syndicate participants. When there is high information

[21] We compute the marginal effects of the interaction terms (Norton, Wang, and Ai [2004]) and find that the mean interaction effects for *Uncorrected* $*$ *ICW* and *Corrected* $*$ *ICW* in the security model are positive and significant and that the mean interaction effect for *Uncorrected* $*$ *ICW* is negative and significant in the performance pricing model (untabulated).

asymmetry within the syndicate, the participants rely to a lesser degree on ex post monitoring by the lead arranger (Ivashina [2009]) and are likely to require that loan contractual terms be designed to facilitate the ex post monitoring of a borrower. Because financial covenants enhance efficient monitoring of the borrower, high information asymmetry within the syndicate is expected to be associated with a higher number of financial covenants imposed by the loan agreement. To address information asymmetry within the syndicate, we follow Sufi [2007] and Ivashina [2009] and use the reputation of the lead arranger, measured by the arranger's market share (the *Reputable Arranger* indicator variable), and the syndicate-specific reputation of the arranger, measured in terms of the previous arranger-participant relationships (the *Syndicate Relationship* 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 10, column 1).

Prior research also suggests that traded loans have more financial covenants to facilitate monitoring of the borrower by uninformed lenders who purchase loans on the secondary loan market (Drucker and Puri [2009], Wittenberg-Moerman [2008]). The positive coefficient on *Traded* in the financial covenant estimation confirms that this relation holds for our research sample (table 10, column 1). We do not expect the *Syndicate Relationship*, *Reputable Arranger*, and *Traded* variables to directly affect the interest rate; the coefficients on these variables are insignificantly different from zero in the interest rate model.

To instrument 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 [2010]). As expected, we find a positive and significant association between the interest rate and the *Average Prior Rate* (table 10, column 2). Note that there is no empirical or institutional evidence that investor demand for syndicated loans directly affects non-price loan contractual terms such as financial covenants.[22]

We take comfort that our simultaneous estimation of the interest rate and financial covenants is correctly identified because the results show a significant negative relation between the interest rate and financial covenants (table 10, columns 3 and 4). The coefficient of −0.002 on the *Interest Rate*

[22] Partial *F*-statistics indicate 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 (table 10, columns 1 and 2). Partial *R*-squares reveal that these variables have explanatory power in their respective regressions. Because the interest rate regression has one endogenous variable and three instruments, we also test the validity of the instruments for financial covenants. We find a Hansen *J*-statistic of 3.628 with a *p*-value of 0.16 and therefore fail to reject the null hypothesis that our instruments are relevant and valid.

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% 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% of the mean interest rate for our sample. This negative

TABLE 10

Simultaneous Estimation of the Interest Rate and Financial Covenants

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

(*Continued*)

TABLE 10— *Continued*

Parameter	Financial Covenants (1)	Interest Rate (2)	Financial Covenants (3)	Interest Rate (4)
Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,828	2,828	2,828	2,828
Adj. R^2	36.0%	30.7%	30.7%	24.2%
Partial F-Test	19.89	8.94		
Pr > F	0.00	0.00		
Partial R^2	3.29%	1.30%		

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% levels, respectively.

$$\begin{aligned} \textit{Financial Covenants} = {} & \alpha + \beta_1 \textit{ Uncorrected} + \beta_2 \textit{ Corrected} + \beta_3 \textit{ Institutional Investor} + \beta_4 \textit{ Revolver} \\ & + \beta_5 \textit{ Interest Rate} + \beta_6 \textit{ Loan Size} + \beta_7 \textit{ Maturity} + \beta_8 \textit{ Credit Rating} + \beta_9 \textit{ Number Lenders} \\ & + \beta_{10} \textit{ PP Indicator} + \beta_{11} \textit{ Firm Size} + \beta_{12} \textit{ Profitability} + \beta_{13} \textit{ Leverage} \\ & + \beta_{14} \textit{ Syndicate Relationship} + \beta_{15} \textit{ Reputable Arranger} + \beta_{16} \textit{ Traded} + \varepsilon \\ \textit{Interest Rate} = {} & \gamma_0 + \gamma_1 \textit{ Uncorrected} + \gamma_2 \textit{ Corrected} + \gamma_3 \textit{ Institutional Investor} + \gamma_4 \textit{ Revolver} \\ & + \gamma_5 \textit{ Financial Covenants} + \gamma_6 \textit{ Loan Size} + \gamma_7 \textit{ Maturity} + \gamma_8 \textit{ Credit Rating} \\ & + \gamma_9 \textit{ Number Lenders} + \gamma_{10} \textit{ PP Indicator} + \gamma_{11} \textit{ Firm Size} + \gamma_{12} \textit{ Profitability} + \gamma_{13} \textit{ Leverage} \\ & + \gamma_{14} \textit{ Average Prior Rate} + \omega \end{aligned}$$

and significant relation between the interest rate and the number of financial covenants is consistent with theoretical predictions but was not observed in tables 3 and 4. These results suggest successful identification of the simultaneous equation system.

The results presented in columns 3 and 4 of table 10 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. The coefficients on the *Uncorrected* and *Corrected* variables in the covenant regression remain negative and significant. The interest rate is higher in the uncorrected period and is marginally higher during the corrected period, relative to the prior period.

While we address the simultaneity between the interest rate and financial covenants, 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. Furthermore, it is infeasible to concurrently endogenize all the loan contractual terms that we examine in this paper. To address this issue, we estimate the interest rate, financial covenant, collateral, general covenant, maturity, and performance pricing provision regressions as

a system of equations using a seemingly unrelated regression (SUR) model, which allows the error terms in all five regressions to be correlated (untabulated). 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.

4.7.3. Additional Robustness Tests. The results are also 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 reestimate 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.[23] As an additional robustness test, we restrict our sample to loans with an available credit rating; 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 5. In addition, all regressions are robust to controlling for the purpose of the loan and the borrower's market-to-book ratio. We also ensure that the credit crisis does not drive the post-ICW loan characteristics by excluding from the sample all loans issued in 2008 and their corresponding pre-ICW loans. Our results are not sensitive to the exclusion of these loans.

In addition, we repeat the estimation of all the regressions using Section 404 ICW reports; our main inferences remain unchanged in both the uncorrected and corrected periods (untabulated). We note that auditor opinions on internal controls agreed with management opinions on internal controls in 100% of the cases in our sample for 2004–2008, a period for which year-end auditor internal control reports are available.

Last, we verify that reporting an ICW does not trigger technical default. We randomly select 50 ICW firms from our sample and examine whether they reported covenant violations 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 examine the 10-K for the same fiscal year). Firms have to report covenant violations in 10-K or 10-Q filings according to SEC Regulation S-X. In the majority of financial statements that we examine, firms explicitly stated that they are in compliance with all covenants imposed by their loan agreements. In

[23] When 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.

the few cases where firms reported covenant violations, they were unrelated to ICWs.

5. *Conclusions*

We examine the effect of financial reporting quality on the trade-off between monitoring mechanisms used by lenders in debt agreements. We find that when a firm experiences an ICW, lenders move away from financial covenants and toward security and price protection. Lenders also substitute financial-ratio-based performance pricing provisions with provisions based on credit ratings. 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. We demonstrate that low financial reporting quality does not lead to overall tighter debt contractual terms, as suggested by prior research, but rather triggers a trade-off between contractual terms based on accounting numbers and non-accounting-based terms.

We also compare changes in debt contract design following ICWs to those following restatements and find that when firms restate financial statement numbers, lenders both increase price and security protections and monitor managers more tightly by imposing additional general covenants and by decreasing loan maturity. However, lenders do not decrease the number of financial covenants and do not move away from financial-ratio-based performance pricing provisions. Therefore, while the *potential* for accounting misstatements decreases lenders' reliance on accounting numbers, the *realization* of misreporting triggers tighter monitoring of managers' actions.

Our study provides novel evidence on the role of financial reporting quality in the design of debt contracts. We document the effect of reporting quality on the choice of monitoring mechanisms used by lenders and establish an important link between reporting quality and lenders' reliance on financial covenants. In addition, we document a significant relation between the reliability of financial statements and loan terms and thus corroborate the importance of financial reporting quality in debt contracting. Our findings also contribute to the literature on the impact of financial reporting quality on the cost of capital. Finally, by demonstrating that an ICW disclosure allows for more efficient debt contracting, we add to the debate on the costs versus benefits of SOX.

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 taking the value of 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 taking the value of 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 1 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 taking the value of 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 taking the value of 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. When maturity is the dependent variable, we use the logarithm of maturity.

Number Lenders:	Number of participants in the loan syndicate, including the arranger.
PP 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 five-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.
Restatement:	An indicator variable taking the value of one if the loan is issued after a firm restates its financial statements, zero otherwise.
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.

REFERENCES

ARMSTRONG, C.; W. GUAY; AND J.WEBER. "The Role of Information and Financial Reporting in Corporate Governance and Debt Contracting." Working paper, University of Pennsylvania, 2010. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1571138.

ASHBAUGH-SKAIFE, H.; D. COLLINS; AND W. KINNEY JR. "The Discovery and Reporting of Internal Control Deficiencies Prior to SOX-Mandated Audits." *Journal of Accounting and Economics* 44 (2007): 166–92.

ASHBAUGH-SKAIFE, H.; D. COLLINS; W. KINNEY JR.; AND R. LAFOND. "The Effect of SOX Internal Control Deficiencies on Firm Risk and Cost of Equity." *Journal of Accounting Research* 47 (2009): 1–43.

ASQUITH, P.; A. BEATTY; AND J. WEBER. "Performance Pricing in Bank Debt Contracts." *Journal of Accounting and Economics* 40 (2005): 101–28.

BALL, R. "Infrastructure Requirements for an Economically Efficient System of Public Financial Reporting and Disclosure." *Brookings-Wharton Papers on Financial Services*, (2001): 69–127.

BALL, R., AND P. BROWN. "Portfolio Theory and Accounting." *Journal of Accounting Research* 7 (1969): 300–23.

BALL, R.; R. BUSHMAN; AND F. VASVARI. "The Debt-Contracting Value of Accounting Information and Loan Syndicate Structure." *Journal of Accounting Research* 46 (2008): 247–87.

BALL, R., AND L. SHIVAKUMAR. "Earnings Quality at Initial Public Offerings." *Journal of Accounting and Economics* 45 (2008): 324–49.

BARCLAY, M., AND C. SMITH. "The Maturity Structure of Corporate Debt." *The Journal of Finance* 50 (1995): 609–31.

BEATTY, A.; K. RAMESH; AND J. WEBER. "The Importance of Accounting Changes in Debt Contracts: The Cost of Flexibility in Covenant Calculations." *Journal of Accounting and Economics* 33 (2002): 205–27.

BENEISH, D.; M. BILLINGS; AND L. HODDER. "Internal Control Weaknesses and Information Uncertainty." *The Accounting Review* 83 (2008): 665–703.

BHARATH, S.; S. DAHIYA; A. SAUNDERS; AND A. SRINIVASAN. "So What Do I Get? The Bank's View of Lending Relationships." *The Journal of Financial Economics* 85 (2007): 368–419.

BHARATH, S.; S. DAHIYA; A. SAUNDERS; AND A. SRINIVASAN. "Lending Relationships and Loan Contract Terms: Does Size Matter?" *Review of Financial Studies* (2009), forthcoming.

BHARATH, S.; J. SUNDER; AND S. V. SUNDER. "Accounting Quality and Debt Contracting." *The Accounting Review* 83 (2008): 1–28.

BOOTH, J. "Contract Costs, Bank Loans, and the Cross-Monitoring Hypothesis." *Journal of Financial Economics* 31 (1992): 25–42.

BOTOSAN, C. "Disclosure Level and the Cost of Equity Capital." *The Accounting Review* 72 (1997): 323–49.

BOTOSAN, C., AND M. PLUMLEE. "Are Information Attributes Priced?" Working Paper, University of Utah, 2007. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=475222.

BRADLEY, M., AND M. ROBERTS. "The Structure and Pricing of Corporate Debt Covenants." Working paper, Duke University, 2004. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=466240.

BURNS, N., AND S. KEDIA. "The Impact of Performance-Based Compensation on Misreporting." *Journal of Financial Economics* 79 (2006): 35–67.

CHENG, Q., AND D. FARBER. "Earnings Restatements, Changes in CEO Compensation, and Firm Performance." *The Accounting Review* 83 (2008): 1217–50.

COLLINS, D.; A. MASLI; A. REITENGA; AND J. SANCHEZ. "Earnings Restatements, the Sarbanes-Oxley Act and the Disciplining of Chief Financial Officers." *Journal of Accounting, Auditing and Finance* 24 (2009): 1–34.

CORE, J.; W. GUAY; AND R. VERDI. "Is Accruals Quality a Priced Risk Factor?" *Journal of Accounting & Economics* 46 (2007): 2–22.

DECHOW, P.; R. SLOAN; AND A. SWEENEY. "Detecting Earnings Management." *The Accounting Review* 70 (1995): 193–225.

DEFOND, M., AND J. JIAMBALVO. "Debt Covenant Violation and Manipulation of Accruals." *Journal of Accounting and Economics* 17 (1994): 145–76.

DE FRANCO, G.; F. VASVARI; AND R. WITTENBERG-MOERMAN. "The Informational Role of Bond Analysts." *Journal of Accounting Research* 47 (2009): 1201–48.

DESAI, H.; C. HOGAN; AND M. WILKINS. "The Reputational Penalty for Aggressive Accounting: Earnings Restatements and Management Turnover." *The Accounting Review* 81 (2006): 83–112.

DEMIROGLU, C., AND C. JAMES. "The Information Content of Bank Loan Covenants." *Review of Financial Studies* (2010), forthcoming.

DIAMOND, D.W. "Debt Maturity Structure and Liquidity Risk." *Quarterly Journal of Economics* 106 (1991): 709–37.

DICHEV, I., AND D. SKINNER. "Large-Sample Evidence on the Debt Covenant Hypothesis." *Journal of Accounting and Economics* 40 (2002): 1091–123.

DOYLE, J.; W. GE; AND S. MCVAY. "Determinants of Weaknesses in Internal Control over Financial Reporting." *Journal of Accounting and Economics* 44 (2007a): 193–223.

DOYLE, J.; W. GE; AND S. MCVAY. "Accruals Quality and Internal Control over Financial Reporting." *The Accounting Review* 82 (2007b):1141–70.

DRUCKER, S., AND M. PURI. "On Loan Sales, Loan Contracting, and Lending Relationships." *Review of Financial Studies* 22 (2009): 2635–72.

EASLEY, D.; S. HVIDKJAER; AND M. O'HARA. "Is Information Risk a Determinant of Asset Returns?" *The Journal of Finance* 58 (2002): 2185–210.

EASLEY, D., AND M. O'HARA. "Information and the Cost of Capital." *The Journal of Finance* 59 (2004): 1553–83.

ECKER, F.; J. FRANCIS; I. KIM; P. OLSSON; AND K. SCHIPPER. "A Returns-Based Representation of Earnings Quality." *The Accounting Review* 81 (2006): 749–80.

EFENDI, J.; A. SRIVASTAVA; AND E. SWANSON. "Why Do Corporate Managers Misstate Financial Statements? The Role of Option Compensation and Other Factors." *Journal of Financial Economics* 85 (2007): 667–708.

FLANNERY, M. "Asymmetric Information and Risky Debt Maturity Choice." *Journal of Finance* 41 (1986): 19–37.

FRANCIS, J.; R. LAFOND; P. OLSSON; AND K. SCHIPPER. "Cost of Equity and Earnings Attributes." *The Accounting Review* 79 (2004): 967–1010.

FRANCIS J.; R. LAFOND; P. OLSSON; AND K. SCHIPPER. "The Market Pricing of Accruals Quality." *Journal of Accounting and Economics* 39 (2005): 295–327.

GE, W., AND S. MCVAY. "The Disclosure of Material Weaknesses in Internal Control After the Sarbanes-Oxley Act." *Accounting Horizons* 19 (2005): 137–58.

GIGLER, F.; C. KANODIA; H. SAPRA; AND R. VENUGOPALAN. "Accounting Conservatism and the Efficiency of Debt Contracts." *Journal of Accounting Research* 47 (2009): 767–97.

GRAHAM, J.; S. LI; AND J. QIU. "Corporate misreporting and bank loan contracting." *Journal of Financial Economics* 89 (2008): 44–61.

HAMMERSLEY, J.; L. MYERS; AND C. SHAKESPEARE. "Market Reactions to the Disclosure of Internal Control Weaknesses and to the Characteristics of Those Weaknesses Under Section 302 of the Sarbanes Oxley Act of 2002." *Review of Accounting Studies* 13 (2007): 141–65.

HARJOTO, M.; D. MULLINEAUX; AND H. YI. "Loan Pricing at Investment Versus Commercial Banks." *Financial Management* 35 (2006): 49–70.

HITE, G., AND A. WARGA. "The Effect of Bond-Rating Changes on Bond Price Performance." *Financial Analysts Journal* 53 (1997): 35–51.

HOLTHAUSEN, R., AND R. WATTS. "The Relevance of Value Relevance Literature for Financial Accounting Standard Setting." *Journal of Accounting and Economics* 31 (2001): 3–75.

HRIBAR, P., AND D. COLLINS. "Errors in Estimating Accruals: Implications for Empirical Research." *Journal of Accounting Research* 40 (2002): 105–34.

HRIBAR, P., AND D. NICHOLS. "The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management." *Journal of Accounting Research* 45 (2007): 1017–53.

HUGHES, J.; J. LIU; AND J. LIU. "Information Asymmetry, Diversification, and Cost of Capital." *The Accounting Review* 82 (2007): 705–29.

IVASHINA, V. "The Effects of Syndicate Structure on Loan Spreads." *Journal of Financial Economics* 92 (2009): 300–19.

IVASHINA, V., AND Z. SUN. "Institutional Demand Pressure and the Cost of Corporate Loans." *Journal of Financial Economics* (2010). Forthcoming.

JENSEN, M.; AND W. MECKLING. "Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure." *Journal of Financial Economics* 3 (1976): 305–60.

KIM, J.; B. SONG; AND L. ZHANG. "Internal Control Weakness and Bank Loan Contracting: Evidence from SOX Section 404 Disclosures." Unpublished paper, City University of Hong Kong, 2009. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1080479.

KINNEY, W., AND L. MCDANIEL. "Characteristics of Firms Correcting Previously Reported Quarterly Earnings." *Journal of Accounting and Economics* 11 (1989): 71–93.

LAMBERT, R.; C. LEUZ; AND R. VERRECCHIA. "Accounting Information, Disclosure, and the Cost of Capital." *Journal of Accounting Research* 45 (2007): 385–420.

LEE, S., AND D. MULLINEAUX. "Monitoring, Financial Distress, and the Structure of Commercial Lending Syndicates." *Financial Management* 33 (2004): 107–30.

LEFTWICH, R. "Accounting Information in Private Markets: Evidence from Private Lending Agreements." *The Accounting Review* 58 (1983): 23–42.

LI, N. "Negotiated Measurement Rules in Debt Contracts." *Journal of Accounting Research* 48 (2010): 1103–44.

LOAN SYNDICATIONS AND TRADING ASSOCIATION (LSTA). *The Handbook of Loan Syndications and Trading*, edited by A. Taylor and A. Sansone. New York: McGraw-Hill, 2007.

MELNIK, A., AND S. PLAUT. "Loan Commitment Contracts, Terms of Lending and Credit Allocation." *The Journal of Finance* 41 1986: 425–36.

MYERS, S. "Determinants of Corporate Borrowing." *Journal of Financial Economics* 5 (1977): 147–76.

NORTON, E.; H. WANG; AND C. AI. "Computing Interaction Effects and Standard Errors in Logit and Probit Models." *The Stata Journal*, (2004): 103–16.

OGNEVA, M.; K. SUBRAMANYAM; AND K. RAGHUNANDAN. "Internal Control Weakness and Cost of Equity: Evidence from SOX Section 404 Disclosures." *The Accounting Review* 82 (2007): 1255–07.

ORTIZ-MOLINA, H., AND M. PENAS. "Lending to Small Businesses: The Role of Loan Maturity in Addressing Information Problems." *Small Business Economics* 30 (2008): 361–83.

PALMROSE, Z.; V. RICHARDSON; AND S. SCHOLZ. "Determinants of Market Reactions to Restatement Announcements." *Journal of Accounting and Economics* 37(2004): 59–89.

RICHARDSON, S.; I. TUNA; AND M. WU. "Predicting Earnings Management: The Case of Earnings Restatements." Working paper, University of Pennsylvania, 2003. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=338681.

SCHERR, F., AND M. HULBURT. "The Debt Maturity of Small Firms." *Financial Management* 30 (2001): 85–111.

SMITH, C., AND J. WARNER. "On Financial Contracting: An Analysis of Bond Covenants." *Journal of Financial Economics* 7 (1979): 117–61.

Standard & Poor's. *A Guide to the U.S. Loan Market*. 2007.

STOHS, M., AND D. MAUER. "The Determinants of Corporate Debt Maturity Structure." *Journal of Business* 69 (1996): 279–312.

SUFI, A. "Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans." *The Journal of Finance* 62 (2007): 629–68.

VERRECCHIA, R. E. "Essays on Disclosure." *Journal of Accounting and Economics* 32 (2001): 91–180.

WATTS, R.L. "A Proposal for Research on Conservatism." Unpublished paper, University of Rochester, 1993. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=6044.

WATTS, R.L., AND J.L. ZIMMERMAN. *Positive Accounting Theory*, Englewood Cliffs, NJ: Prentice-Hall. 1986.

WITTENBERG-MOERMAN, R. "The Role of Information Asymmetry and Financial Reporting Quality in Debt Trading: Evidence from the Secondary Loan Market." *Journal of Accounting and Economics* 46 (2008): 240–60.

ZHANG, J. "The Contracting Benefits of Accounting Conservatism to Lenders and Borrowers." *Journal of Accounting and Economics* 45 (2008): 27–54.