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Abstract: We study the relation between state contract law and the use of balance-sheet and income-statement based covenants in debt contracts. Incomplete contract theory suggests that balance-sheet based covenants ex ante resolve debtholder-shareholder conflicts, whereas income-statement based covenants serve as trip wires that trigger the switch of control rights ex post. Importantly, it is more difficult for lenders to exert their control rights ex post if the contract law is more favorable to debtors (i.e., the law is pro-debtor). We therefore ask whether lenders using pro-debtor law are more likely to rely on balance-sheet based covenants, and our evidence provides an affirmative answer to this question. Pro-debtor state contract law is positively associated with the weight given to balance-sheet based covenants (vs. income-statement based covenants) in the debt contract. Moreover, we extend our inquiry beyond financial covenants and find additional evidence that lenders using the law of pro-debtor states are more likely to rely on contractual features that align cash flow rights ex ante, rather than allocating control rights ex post through enforcement. In particular, we document that borrowing base restrictions, which limit the amount a lender provides to the borrower based on the borrower's working capital assets, are more common in contracts that are governed by pro-debtor state contract law.

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1. Introduction

The use of accounting information in debt contracts has been a longstanding important topic in accounting research. There is strong theoretical motivation for the inclusion of accounting numbers in debt covenants, and a rich line of empirical work supports the theoretical motivation. The extant research in this area shows that a variety of accounting signals are used in debt contracts. However, the literature has not explained the variation in accounting signals used in debt covenants. For example, Armstrong, Guay and Weber (2010) note that it is important to understand “*which factors affect the choice of financial ratios over which covenants are written*”. Moreover, Christensen, Nikolaev and Wittenberg-Moerman (2016) emphasize that “*what explains differences in the choice of accounting signals and how their thresholds are set is not well understood*”.

In this paper, we identify state contract law as an important determinant for the choice of accounting information in debt covenants. We utilize the heterogeneity in state contract laws in terms of being favorable to debtors or lenders, and we ask whether this heterogeneity affects the composition of balance-sheet based and income-statement based information in debt covenants.

The distinction between balance-sheet and income-statement based covenants is tied to the incomplete contract theory, which differentiates between cash flow rights and control rights (Aghion and Bolton, 1992). Deriving from this theory, Christensen and Nikolaev (2012) examine the factors that affect the covenant mix (i.e., the trade-off between balance-sheet and income-statement based covenants), and suggest that balance-sheet based covenants align the interests of the contracting parties *ex ante* (i.e., cash flow rights), whereas income-statement based covenants

reallocate decision rights in the event of ex post risk (i.e., control rights).¹ In a related study, Demerjian (2011) describes the recent decline in the use of balance-sheet based covenants and hypothesizes that FASB’s recent focus on the “balance sheet approach” has led balance sheet information to lose prominence.

In negotiating a debt contract, borrowers and lenders select the state contract law that governs the agreement, and prior studies have shown that this choice of law is an important consideration in understanding the relationship between borrowers and lenders. Honigsberg, Katz and Sadka (2014) describe the variation in contract law across states, and show that contract enforcement—such as lenders’ monitoring and imposition of control rights upon default—is weaker when the contract is governed by law that is favorable to debtors (i.e., pro-debtor law). Specifically, when the contract law is more pro-debtor, borrowers are more likely to violate covenants, and the implications of these violations, measured as changes in the borrower’s investment policy, are less severe. While Honigsberg et al. (2014) analyze the relation between state contract law and two contractual features—cash collateral and yield—the study does not analyze how state contract law affects the use of accounting information in debt contracts.

We link differences in state contract law to the theoretical distinction between balance-sheet and income-statement based covenants in debt contracts, and we question whether the contract law is related to the mix of balance-sheet and income-statement based covenants. Balance-sheet based covenants ex ante align the interests of lenders and borrowers, whereas income-statement based covenants act as trip wires that shift control rights in the event of a risky financial situation (Christensen and Nikolaev, 2012). We argue that the trip-wire characteristic of income-

¹ Christensen and Nikolaev (2012) classify covenants as *capital covenants* and *performance covenants*. Although there is a difference in terminology, these classifications measure the same construct as balance sheet based covenants and income statement covenants, respectively.

statement based covenants is less attractive when a debt contract is governed by pro-debtor state contract law, because it will be more difficult for lenders to enforce their control rights following technical default. Hence, borrowers and lenders may prefer to align their interests ex ante through the use of balance-sheet based covenants rather than to rely on income-statement based covenants. Accordingly, we test whether the composition of balance-sheet and income-statement based covenants in debt contract varies depending on the state law governing the contract.

We contribute to the literature on the use of accounting information in debt contracts by identifying the governing state contract law as a significant determinant in the trade-off between balance-sheet based and income-statement based covenants. Specifically, we find that borrowers who use pro-debtor contract law are more likely to rely on balance-sheet covenants as opposed to income statement based covenants. Our findings, which are based on the two contract law measures developed by Honigsberg et al. (2014), lend support to the hypotheses put forth in Christensen and Nikolaev (2012).

Our primary results are robust to a battery of additional tests. First, we run two within sample robustness tests. The first uses only the subset of borrowers who use contract law from multiple states with different pro-debtor index levels. The second uses only borrowers who use the law of the state of Massachusetts, which experienced a significant change in its contract law during our sample period. All results remain consistent.

Furthermore, we analyze a different contractual feature: borrowing base restrictions. Borrowing base restrictions, which are commonly used in debt contracts, use the borrower's working capital assets to limit the amount a lender provides to the borrower (Flannery and Wang, 2011; Mutlu, 2015). These restrictions provide the lender with additional protection by enabling

the lender to cut the flow of funds to the borrower, based on conditions it considers risky. Because the restriction allows the lender to restrict cash flow without necessarily exerting control rights—the lender can decline to provide additional funding based on the size of the debtor’s borrowing base asset—these contractual features provide another test for whether the use of accounting information in debt contracts is related to the law governing the contract. Consistent with the intuition from our primary results, we find that borrowing base restrictions are more likely to be included in debt contracts when lenders are more restricted in their ability to exert control rights in the event of default (i.e., pro-debtor).

We make two contributions to the literature. First, we show that that the legal environment is an important factor in understanding how accounting information is used in debt contracts. The use of accounting information in debt contractual settings is a major strand in accounting literature, yet there is still much to learn about this topic (Skinner, 2011). We join this line of literature by showing that a novel factor—the governing state contract law—is a significant determinant of the trade-off between the use of balance sheet and income statement numbers in debt contracts. Specifically, debt contracts are more likely to rely on balance-sheet covenants, which align the interests of the borrower and lender *ex ante*, rather than income-statement based covenants, which are mainly used for *ex post* intervention, when it will be more difficult for the lender to enforce his rights upon default. Second, we identify a specific channel through which the governing state contract law can influence the debt contracting process. Honigsberg et al. (2014) provide initial evidence that state contract law is an important consideration in understanding the resolution—and frequency—of technical default, but they do not examine what causes these different outcomes. We extend prior evidence on the role of state contract law by analyzing the covenant

package, which is a path through which the differences in state contract law can be expected to manifest in debt contracts.

2. Motivation and Hypothesis Development

2.1. State Contract Law and Debt Contracts

Contracts are inherently incomplete because they can only specify the limits of future actions—they necessarily omit the details of future courses of action to be negotiated at a later date (Coase, 1937). This incomplete contract theory explains the need for authority (or decision power) when market mechanisms become too costly to coordinate economic activities (Christensen et al., 2016). The use of authority in contractual settings was later formalized by studies such as Grossman and Hart (1986) and Hart and Moore (1990).

The incomplete contract theory suggests a natural relation between contracts and the enforcement of decision rights among contracting parties. As a result, the relation between law and debt contracting has been studied since the influential piece by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). For example, Mansi, Maxwell and Wald (2009) provide evidence that firms incorporated in states with greater creditor protection face lower bond yield spreads and higher credit ratings. Recent studies analyzing changes in bankruptcy laws in Italy have shown that bankruptcy laws affect loan interest rates and firm investment decisions (Rodano, Serrano-Velarde and Tarantino, 2016), and that the efficiency of courts enforcing debt contracts enhances the contractibility (i.e., conservatism) of accounting numbers (Bonetti, 2015).

A branch of this literature focuses on the association between the legal environment and debt contract features, specifically covenants. Qi and Wald (2008) examine the variation in state corporate law with respect to the minimum asset-to-debt ratio necessary to issue distributions to

shareholders, and find that firms incorporated in states with stricter restrictions are less likely to include dividend payout restrictions. Miller and Reisel (2012) analyze public bonds issued in the US and find that they are more likely to include covenants when the creditor protection laws of the issuer's country are weak. Similarly, Hong, Hung and Zhang (2015) report that debt covenants are more prevalent in countries with stronger law enforcement.

Honigsberg et al. (2014) emphasize the distinction between state corporate law and state contract law. They note that the relationship between shareholders and management is primarily governed by state corporate law, whereas the law governing each commercial contract is determined by the parties to the contract and stated in the contract itself. The state of contract and state of incorporation are frequently different; indeed, using a sample of over 3,000 debt contracts, Honigsberg et al. (2014) find that the firm's state of incorporation and the state of contract used to govern the debt contract are the same less than 10% of the time.

Lenders and borrowers have substantial flexibility in choosing the state contract law that will govern their debt contract.² The parties may prefer the law of one state over another for a variety of reasons. For example, the substantive law often differs across states—this could lead to a cause of action that is recognized in one state but not another. The law may also be more developed in one state, in which case the contracting parties will have relatively greater certainty regarding the law and how the courts will rule on any issues that arise. Procedural rules regarding litigation and the efficiency of court systems also differ across states.

² In the context of commercial contracts, courts will enforce the contracting parties' choice of law only if that state has a "reasonable relationship" to the contract. However, the "reasonable relationship" clause has been interpreted very broadly over recent decades (Eisenberg and Miller, 2010). Additionally, in an effort to create work for state-licensed attorneys, many states have enacted statutes that are meant to ensure choice of law clauses in commercial contracts are enforced. Combined, these factors provide parties to commercial contracts with substantial flexibility in selecting the law that will govern their agreement (Eisenberg and Miller, 2010).

Based on the substantive and procedural differences in contract law across states, Honigsberg et al. (2014) develop an index to measure the ease with which lenders can enforce their contractual rights. Using the index to classify some states as pro-debtor (e.g., California) and some states as pro-lender (e.g., New York), they compare how the repercussions of covenant violations vary depending on the law governing the contract. They find that, when the law is favorable to the lender, there are significantly fewer covenant violations but the repercussions of covenant violations (measured as changes in the borrower's investment policy) are more severe. Moreover, their study yields initial evidence consistent with our own. In analyzing how contract characteristics vary across states, they find evidence that debt contracts governed by pro-debtor state law are more likely to include cash collateral. Similar to our findings here, their evidence on cash collateral, which provides lenders with greater control rights, suggests that borrowers and lenders use other contractual features to substitute for lenders' relatively weaker ability to enforce their control rights under pro-debtor state contract law.

2.2. Balance-sheet Based versus Income-statement Based Covenants

Debt covenants are used extensively by private lenders to protect themselves from value destroying actions by borrowers. Agency theory suggests that covenants are designed to reduce agency problems between equity- and debt-holders (Smith and Warner, 1979). Incomplete contract theory also provides important insights into the use of covenants in debt contracts and complements the agency theory perspective (Christensen et al., 2016). Aghion and Bolton (1992) distinguish between cash flow rights and control rights as independent contracting instruments. Cash flow rights refer to the alignment of interests between debtholders and lenders by giving the agent a monetary stake in the firm. However, perfect alignment of interests between contracting parties ex ante is not always feasible since the future states of the world are not verifiable.

Therefore, contracts are also designed to reallocate control rights based on a contractible signal in the future. For example, financial covenants allow the borrower to retain control if her performance, as defined by a specific metric, exceeds a specific threshold. If her performance does not meet the threshold, control rights will be transferred to the lender.³

Accounting information is an important input to debt covenants (Dichev and Skinner, 2002). Indeed, the contractual use of accounting information is the main subject of positive accounting theory (Watts and Zimmerman, 1986). Research in this area has shown that contracting parties are very sensitive to accounting characteristics. Even “cosmetic” accounting changes can affect the measurements of covenants in debt contracts (Leftwich, 1981), and financial ratio based covenants are used less extensively in debt contracts when the quality of accounting information is poor (Costello and Wittenberg-Moerman, 2011).

Accounting information serves as the basis for financial debt covenants, but definitions of accounting numbers are often negotiated and modified in the debt contracting process (Dichev and Skinner, 2002; Li, 2010). For example, Li (2010) shows that transitory earnings components are usually excluded from covenant definitions. Moreover, a rich line of literature suggests that conservative accounting numbers are preferable for debtholders (e.g. Aier, Chen and Pevzner, 2014; Ball, Robin and Sadka, 2008; Zhang, 2008). Therefore, in their review of the literature on debt covenants, Armstrong et al. (2010) note that debtholders value some accounting attributes but not others. They urge researchers to analyze factors that lead debtholders to favor certain types of

³ Reallocation of control rights over the life of the loan has recently been investigated by accounting scholars. For example, Li, Vasvari and Wittenberg-Moerman (2015) analyze dynamic covenants that become more restrictive over time and show that, despite poor performance, lenders might want to allow borrowers to retain control rights.

accounting information, and specifically note that it is important to understand “which factors affect the choice of financial ratios over which covenants are written.”

Recent studies have focused on the distinction between covenants that are based on balance sheet numbers versus those based on income statement numbers. Based on the incomplete contract view of Aghion and Bolton (1992), Christensen and Nikolaev (2012) suggest that balance-sheet based covenants are used to achieve ex ante interest alignment between debtholders and shareholders (i.e., cash flow rights), whereas income-statement based covenants are used for contingent control transfers because they are timelier and more forward-looking (i.e., control rights). Therefore, Christensen and Nikolaev (2012) provide evidence that the use of balance-sheet based covenants is negatively associated with financial constraints of the borrower, and positively associated with the contractibility of the borrower’s accounting information. In a related study, Demerjian (2011) suggests that the decreasing prominence of covenants based on balance sheet numbers can be, at least partly, attributed to the switch in standard setting to a balance sheet focus. The collective evidence from these studies shows that balance sheet numbers are deemed more useful than income statement numbers in certain situations, and vice versa.

As proposed by Aghion and Bolton (1992), debt covenants are designed to address the incompleteness of the debt contract by reallocating control rights in future contingencies. This allocation of control rights underlies the importance of the legal regime governing property and contractual disputes (Hong et al., 2015). Building on the theoretical connection between legal institutions and the use of debt covenants to allocate control rights, we identify the variation in state contract law as a channel through which covenants facilitate debt contracting. Specifically, the differences in contract enforcement between pro-debtor and pro-lender state contract laws provide us with an appropriate setting to analyze the distinct roles of covenants that primarily align

cash flow rights (i.e., balance-sheet based covenants) versus the ones that allocate control rights in contingent states of the world and rely on enforcement of property rights (i.e., income-statement based covenants).⁴

On the one hand, the differences in contract enforcement between pro-debtor and pro-lender state laws could lead to differences in the composition of the total covenant package. When it is more difficult for lenders to enforce their contractual rights, the primary benefit of income statement covenants, the trip wire feature, will be less efficient. This may lead lenders to use fewer income-statement based covenants—and to instead prefer balance-sheet based covenants that align the contracting parties' interests *ex ante*. Similarly, because it will be easier for lenders to exert their control rights upon default under pro-lender state contract law, parties may be more likely to include income-statement based covenants when the contracts are governed by pro-lender law.

Alternatively, selection into pro-lender state contract law could result from the lender's desire for stronger enforcement rights and the borrower's willingness to commit that he poses little risk to the lender. Similarly, selection into pro-debtor state contract law could be seen as a premium bought by the borrower through higher yield spreads (Honigsberg et al., 2014), which might not necessarily lead to an effect on the covenant composition. Therefore, the effect of the state contract law on the trade-off between balance sheet based and income statement based covenants remains an open empirical question.

Based on the above discussion, we form the following hypothesis in alternative form:

⁴ We do not suggest that balance-sheet based covenants are not enforced—merely that they create different *ex ante* incentives than income-statement based covenants by primarily addressing the *ex ante* cash flow rights alignment problem in the contract. This is consistent with the finding in Christensen and Nikolaev (2012) that income-statement based covenants are more likely to be violated than balance-sheet based covenants.

Hypothesis: Debt contracts governed by pro-debtor (pro-lender) state contract law rely more (less) on balance sheet based covenants than on income statement based covenants.

3. Sample Selection and Methodology

3.1. Sample

Our main sample is derived from the studies of Nini, Smith and Sufi (2009) and Honigsberg et al. (2014). Nini et al.'s (2009) data set, which the authors kindly provide online, contains information for 3,720 bank loan contracts issued during the period of 1996-2005. The authors obtained these contracts from the Security and Exchange Commission's EDGAR database of registered public company filings using a text-search program. Honigsberg et al. (2014) review these contracts and determine the governing law for each contract. They could find the governing law for 3,689 of the contracts, which constitute the base of our sample.

We access the loan contract specific information through Loan Pricing Corporation's (LPC) Dealscan database. Dealscan contains historical information on contract details, terms and conditions. In addition to SEC filings and public documents such as 10Ks, 10Qs, 8Ks and registration statements, Dealscan compiles data from loan syndicators and other internal sources, therefore providing a high level of coverage of the U.S. loan market. The loan data in Dealscan is organized in deals (or packages) and facilities (or tranches). A loan deal refers to a specific agreement between a borrower and a lender (or a syndicate of lenders), and might include several facilities with different terms and characteristics. We perform our analyses at the deal level, as the set of covenants written in the loan contract are applicable to the overall deal.

We access firm specific accounting and market data through the Compustat and CRSP databases. Although Dealscan provides some information on the borrowing firms, such as the firm

names, industries and countries, it does not provide a universal firm identifier for matching with other databases. We therefore use the matching table described in Chava and Roberts (2008), and kindly provided by Michael Roberts on his website, to match the borrowing firms in Dealscan with the S&P's Compustat database.

3.2. Variable Measurement

3.2.1. Classification of State Contract Law

We classify state contract law using the two measures defined in Honigsberg et al. (2014). First, we use the Pro-Debtor Index, which is an aggregate score from six features of state law that relate to the lender's ability to enforce the contract. The Pro-Debtor Index ranges from 6 to 12, with higher scores reflecting that the state contract law is more favorable to the debtor. Consistent with Honigsberg et al. (2014), we only categorize the ten states with 1% or more of the total number of contracts. The classification of these ten states, and the corresponding Pro-Debtor Index scores, is presented in Appendix 1A. The most pro-debtor state is California with a Pro-Debtor Index of 12, while the most pro-lender state is New York with a Pro-Debtor Index of 6.

Second, we classify state law based on the perceived litigation risk posed to lenders (Honigsberg et al. 2014). This metric, which is calculated as number of lawsuits per state divided by number of debt contracts per state, is based on the theory that litigation is driven by uncertainty (Priest and Klein, 1984). In other words, parties are more likely to litigate rather than settle when the legal rules are uncertain because both parties think they may win, whereas the parties are more likely to settle when the legal rules are clear because they can foresee the outcome of any potential litigation. As it relates to the enforcement of debt contracts, the states with high legal uncertainty are generally pro-debtor, and the states with low legal uncertainty are generally pro-lender

(Honigsberg et al. 2014). As such, the states with the lowest frequency of litigation are characterized as pro-lender, and vice versa. Accordingly, as shown in Appendix 1B, states are categorized as pro-lender, medium, or pro-debtor (following Honigsberg et al. 2014, the three states with the highest rate of litigation are considered pro-debtor, the three states with the lowest frequency of litigation are considered pro-lender, and all other states are considered to pose a medium risk). We use this ranking to create two indicator variables: the first reflects the states with high litigation risk (pro-debtor): California, Florida and Pennsylvania, and the second reflects the states with low litigation risk (pro-lender): Illinois, North Carolina and New York.

3.2.2. Classification of Covenants

We classify covenants into balance-sheet based and income-statement based covenants, following Christensen and Nikolaev (2012). Balance-sheet based covenants are also called capital covenants and they control for agency problems by addressing conflicts of interests between debtholders and shareholders *ex ante*. Income-statement based covenants are also called performance covenants, and they address agency problems by providing lenders with control rights when the value of the lender's claim is at risk. Appendix 2 provides a classification of the different types of debt covenants.

To study the covenant mix, we use three dependent variables drawn from prior literature. Our primary dependent variable, which we label it as the Balance-Sheet Ratio, is the ratio of the number of balance-sheet covenants over the total number of covenants (Christensen and Nikolaev, 2012). As Christensen and Nikolaev (2012) argue, this measurement as a ratio is advantageous because it captures the variation in the covenant packages of firms that rely on both balance-sheet and income-statement based covenants.

Our two remaining dependent variables are based on Demerjian (2011). In his study examining the declining use of balance-sheet based covenants in debt contracts, Demerjian (2011) constructs an indicator variable which takes the value of one if the covenant package includes a balance-sheet based covenant. We follow this approach and construct two discrete measures to reflect the covenant mix: (1) Balance Sheet Covenant (a dummy set to one if the covenant package includes a balance-sheet based covenant, and zero otherwise), and (2) Income Statement Covenant (a dummy set to one if the covenant package includes an income-statement based covenant, and zero otherwise).⁵

3.3. Empirical Models

In order to test the relation between the covenant mix and the law governing the contract, we estimate the following model augmented from Christensen and Nikolaev (2012):

$$\begin{aligned}
 \text{Balance-Sheet Ratio} = & \beta_0 + \beta_1 \text{State Contract Law} + \beta_2 \text{AGE} + \beta_3 \text{DIVYIELD} + \beta_4 \text{LEV} \\
 & + \beta_5 \text{SIZE} + \beta_6 \text{BTM} + \beta_7 \text{ROA} + \beta_8 \text{LOSS} + \beta_9 \text{ADV} + \beta_{10} \text{RD} + \beta_{11} \text{TANG} + \beta_{12} \text{ALTZ} \\
 & + \beta_{13} \text{RETVOL} + \beta_{14} \text{DEALSIZE} + \beta_{15} \text{MATURITY} + \beta_{16} \text{LENDFREQ} \\
 & + \beta_{17} \text{REVOLVER} + \beta_{18} \text{SECURED} + \varepsilon,
 \end{aligned} \tag{1}$$

where State Contract Law refers to the empirical proxies of state law defined above (i.e., the Pro-Debtor Index and the indicator variables representing the state's perceived litigation risk). We control for the firm and loan specific characteristics most likely to affect the covenant mix, as defined by Christensen and Nikolaev (2012) (all such variables are defined in Appendix 3). If loan contracts governed by pro-debtor law give more weight to balance-sheet based covenants, the Pro-Debtor Index will be positively associated with the Balance-Sheet Ratio (i.e., β_1 will be positive).

⁵ Demerjian (2011) uses a subset of the covenants used by Christensen and Nikolaev (2012). These differences are noted in Appendix 2. For consistency, the analyses using the dependent variables based on each study use only the covenants specific to each study.

Moreover, as noted above, we also use Demerjian's (2011) measure of balance-sheet and income-statement based covenants, in order to provide depth and robustness to our analysis. If loan contracts are less likely to include at least one balance sheet covenant when the law is pro-lender based on the state's perceived risk of litigation, β_1 will be negative. Consistently, if loan contracts are less likely to include at least one income statement covenant when the law is pro-debtor based on the state's perceived risk of litigation, β_1 will be negative. We utilize Demerjian's (2011) bivariate probit model for this inquiry:

$$\begin{aligned}
P(\text{Balance-Sheet Covenant or Income-Statement Covenant}) = & \beta_0 + \beta_1 \text{State Contract Law} \\
& + \beta_2 \text{VR} + \beta_3 \text{TANG} + \beta_4 \text{LEASES} + \beta_5 \text{INSTRANCHE} + \beta_6 \text{PriorIS} + \beta_7 \text{PriorBS} \\
& + \beta_8 \text{ROA} + \beta_9 \text{LEV} + \beta_{10} \text{BTM} + \beta_{11} \text{ALTZ} + \beta_{12} \text{SIZE} + \beta_{13} \text{SYNSIZE} + \beta_{14} \text{CAPEX} \\
& + \beta_{15} \text{PP} + \beta_{16} \text{SECURED} + \text{Year Fixed Effects} + \text{Industry Fixed Effects} + \varepsilon, \quad (2)
\end{aligned}$$

where State Contract Law refers to the empirical proxies defined above. All other variables are defined in Appendix 3.

4. Results

4.1. Descriptive Statistics

We merge our main sample from Nini et al. (2009) and Honigsberg et al. (2014) with loan specific information from Dealscan, and firm specific information from Compustat and CRSP. As mentioned above, we keep loan contracts governed by the ten states with 1% or more of the total number of contracts (these ten states account for roughly 90% of the original sample). The further requirement of relevant information for our main multivariate analysis yields a final sample of 2,321 loan contracts. Descriptive statistics are tabulated in Table 1, Panel A. The Pro-Debtor Index ranges from 6 to 12 by definition, and the mean is 7.82, which means most of the loan contracts

are governed by relatively pro-lender state contract law. Consistently, 70% of loan contracts are governed by state laws with low litigation risk (pro-lender group), and 12% are governed by state laws with high litigation risk (pro-debtor group).

The descriptive statistics on the covenant mix are consistent with prior literature. Approximately one-third of the covenants are balance-sheet based covenants (mean Balance-Sheet Ratio is 0.36), consistent with Christensen and Nikolaev (2012). Additionally, 61% of loan contracts include at least one balance-sheet based covenant, while 84% include at least one income-statement based covenant. These figures are consistent with Demerjian (2011), who reports mean figures of 61% and 79% for balance-sheet based and income-statement based covenants, respectively.

Table 1, Panel B reports the correlation matrix for our main variables. Consistent with the definition of state contract law measures, the Pro-Debtor Index is negatively associated with the low litigation risk indicator and positively associated with the high litigation risk indicator. More importantly, the Pro-Debtor Index is positively associated with both the Balance Sheet Ratio and the Balance Sheet Covenant variables. Overall, the correlation matrix suggests that pro-debtor state contract laws are associated with a higher usage of balance-sheet based covenants.

4.2. Multivariate Analyses

As discussed earlier, balance sheet based covenants are intended to align the interests of the borrower and lender ex ante, whereas income-statement based covenants allow lenders to identify and resolve concerns that occur ex post. Based on this conceptual difference, the mix of covenants may vary depending on the law governing the contract. In particular, as suggested by the descriptive statistics, contracts governed by pro-debtor state contract law may be more likely

to include balance-sheet based covenants, and contracts governed by pro-lender state contract law may be more likely to include income-statement based covenants.

Table 2, Panel A examines the covenant mix using the estimation shown in model (1). The first column replicates the baseline model of Christensen and Nikolaev (2012).⁶ The second column augments the baseline model by introducing the Pro-Debtor Index. The coefficient on the Pro-Debtor Index is positive and significant (t -statistic is 2.56), indicating that contracts governed by pro-debtor law are more likely to use balance-sheet based covenants. In column 3, we use the low litigation risk indicator, and find that the coefficient is negative and significant (t -statistic is -2.91). Similarly, in column 4, we include the high litigation risk indicator, and the coefficient is positive and significant (t -statistic is 2.59). Overall, the results in Table 2, Panel A show that the use of balance-sheet based covenants is positively associated with pro-debtor law.

In the Panel B of Table 2, we repeat the analysis in model (1) but include year fixed effects and a trend variable. Since there is evidence that there is a temporal change in the composition of the covenant mix in debt contracts (Demerjian, 2011), it is important to control for this effect through year fixed effects. Columns 1 through 3 repeat the main analysis with year fixed effects; the results remain statistically and economically consistent. Columns 4 through 6 repeat the main analysis with the inclusion of a trend variable, which we calculate by subtracting 1995 (year of first observation) from the observation year. The results remain robust.

⁶ Specifically, we replicate the first column in Table 3 of Christensen and Nikolaev (2012). In the other columns, they also include financial constraint proxies by excluding AGE, DIVYIELD and LEV from the model. In untabulated analyses, we also adopt this approach and use the financial constraint measure developed by Whited and Wu (2006), and find similar results.

4.3. Bivariate Probit Model

In Table 3, we estimate the bivariate probit model (2) following Demerjian (2011). The first column replicates the base model of Demerjian (2011). Our results are generally similar, except that the coefficient on VR variable (volatility ratio), although negative, is not statistically significant. We attribute this to the different sample size that we employ in our analysis. We are bound by Nini et al.'s (2009) sample as we need to identify the state law governing each loan contract, therefore reducing the power of our tests. On the other hand, Demerjian (2011) uses the full Dealscan sample of 8,527 private debt agreements issued between 1996 and 2007.

In column 2 of Table 3, the Pro-Debtor Index is positively associated with the probability that the contract includes a balance-sheet based covenant (z -statistic is 2.55). Consistently, using the alternate measure of law based on litigation risk, column 3 shows that contracts governed by pro-lender law are less likely to include a balance-sheet based covenant (z -statistic is -2.24). By contrast, the association between the use of pro-lender law, as measured by litigation risk, and inclusion of a balance-sheet based covenant is not significant.

In columns 5-7 of Table 3, the dependent variable is a dummy reflecting whether the contract includes an income-statement based covenant. The Pro-Debtor Index and low litigation risk indicator are not significant, whereas in column 7, the high litigation risk indicator (i.e., pro-debtor state) is negatively associated with the likelihood that the contract includes an income-statement based covenant (z -statistic is -2.69).⁷ Taken together, these results show that contracts governed by pro-lender state contract law are less likely to include balance-sheet based covenants,

⁷ Our sample size for the multivariate probit model is 2,222. The difference from the sample size in Table 2 is due to different variables used in different models. Also, the probit model drops non-varying fixed effects from the estimation (e.g. an industry where all debt contracts include a balance-sheet based covenant is excluded from the estimation in columns 1-4 of Table 3), which leads to different sample sizes in Table 3.

but are not significantly more likely to include an income-statement based covenant. Similarly, contracts governed by pro-debtor state contract law are less likely to include income-statement based covenants, but are not more likely to include balance-sheet based covenants.

5. Robustness Tests

An alternative explanation for our main results is that firm specific characteristics drive the association between the covenant mix and the governing state contract law. That is, borrowers or lenders who are more likely to use a specific type of information (e.g., balance sheet information vs. income statement information) in debt contracts might self-select into specific states' contract laws. In order to address this concern, we identify 166 borrowers who use contract laws from states with different pro-debtor index classifications (i.e., borrowers who have more than one contract, where those contracts are governed by state laws with different pro-debtor indexes).⁸ Column 1 of Table 4 reports the estimation of model (1) on this sub-sample. The Pro-Debtor Index is positively associated with the Balance-Sheet Ratio, but this effect is not significant (t -statistic is 1.34).

We repeat the same analysis with litigation risk variable. Specifically, we require borrowers to have at least one contract governed by a low litigation state law, and at least one contract governed by a high litigation state law. This filtering yields a sample of 123 debt contracts issued by 46 borrowers, and we estimate our main model on this sub sample, reported on columns 2 and 3 of Table 4. In column 2, the indicator for low litigation risk is negatively associated with the Balance-Sheet Ratio (t -statistic is -2.00), and the indicator for high litigation risk is positive and significant in column 3 (t -statistic is 2.00). Overall, the results in Table 4 are consistent with

⁸ There are 241 borrowers who use different state laws in their contracts, but we further restrict this sample to those firms with contracts from different pro-debtor index levels, in order to avoid sorting on variation by firm type. For example, a borrower using contract laws from Massachusetts, Ohio and Pennsylvania is not included in this sample, because all these states have a pro-debtor index of 10.

our primary findings and provide support that our results are not driven by a particular borrower characteristic.

To further analyze the robustness of our results, we examine a temporal change in a single state. The Pro-Debtor Index tends to be sticky over time; however, the state of Massachusetts had a major change in the value of the Pro-Debtor Index with a reasonable length of pre and post period time (the index value decreased from 12 to 10 in 2000). We label the pre-2000 period as the pro-debtor time, and post-2000 period as the pro-lender time. Out of 91 loan contracts that use Massachusetts as the governing contract law in our sample, 37 are from the pre-2000 period, and 54 are from the post-2000 period. In Table 5, which estimates model (1) on this Massachusetts sample, we include the Pre-2000 variable as an indicator of the pro-debtor time period. In column 1, the Pre-2000 variable is positively associated with the Balance-Sheet Ratio, supporting our primary finding that pro-debtor state contract law is associated with a higher ratio of balance-sheet covenants. In column 2, we repeat the same analysis with the inclusion of year fixed effects, and the inference is the same.

6. Additional Analysis with Borrowing Base Restrictions

As Melnik and Plaut (1986) note, debt contracts include a variety of contractual features. Aside from covenants, there are important features such as performance pricing grids (Asquith, Beatty and Weber, 2005), collateral (Bharat, Sunder and Sunder, 2008), cross-acceleration provisions (Beatty, Liao and Weber, 2012), and borrowing base restrictions (Mutlu, 2015). Borrowing base restrictions are included in revolving credit lines and specify a maximum loan limit and a certain borrowing base, where the borrowing base is typically based on eligible working capital assets of the borrowing firm. The borrower can draw the lesser of the loan limit or the

specified percentage of the borrowing base from this revolving line. As a result, the availability of funds in the borrowing base line is contingent upon the eligibility of the borrowing base assets. Flannery and Wang (2011) find that borrowers with high risk and low cash flow are relatively more likely to use borrowing base lines than borrowers with less risk. Consistently, Mutlu (2015) documents that borrowing base restrictions are more likely to be included in the revolving credit line, when the borrower has lower financial reporting quality. In particular, as the quality of financial statements deteriorate; lenders become more likely to include borrowing base restrictions as additional monitoring mechanisms, therefore limiting the likelihood that the borrower will draw down all the credit from the line before defaulting on the loan.

As a further test of the differences in debt contracting across legal regimes, we investigate the use of borrowing base restrictions. From the incomplete contract theory perspective, borrowing base restrictions are geared towards aligning cash flow rights, as the lender can restrict the cash flow based on the success of borrowing base assets. Therefore, borrowing base restrictions provide a test for whether our primary finding—that borrowers and lenders are more likely to rely on incentive-alignment mechanisms that are less driven by ex post enforcement of control rights when such enforcement is more difficult—extends to contractual features beyond covenants. Based on our primary results, we expect that lenders will be more likely to utilize borrowing base restrictions when the contract is governed by pro-debtor law.

We test this idea by modeling the probability that the loan deal includes a borrowing base restriction, adopting the bivariate probit specification in Flannery and Wang (2011) and Mutlu (2015). We control for those variables most likely to affect the use of borrowing base restrictions, such as the firm's risk and size. Since borrowing base restrictions are included in revolving

facilities, any deal without a revolving facility is excluded from the sample, leaving us with 2,021 contracts for this analysis.

Table 6 reports the results of the borrowing base restriction model. In the first column, we add the Pro-Debtor Index to the base model, but the coefficient on the index is not significant. In columns 2 and 3, we include the indicators for low and high litigation risk, respectively, as measures of state contract law. The low litigation risk indicator (i.e., pro-lender state) is also not significant, but the high litigation risk indicator (i.e., pro-debtor state) is significantly positive, consistent with our prior findings. This result shows that our primary findings are not limited to the covenant mix, but also extend to other contractual features such as borrowing base restrictions.

7. Conclusion

Our paper analyzes the relation between the use of accounting information in debt contracts and the state law governing the contract. We show that the covenant mix—as defined by the composition of balance-sheet and income-statement based covenants—varies depending on whether the law is more or less favorable to the lender. Balance-sheet based covenants, which are considered to align the interests of debtholders and shareholders *ex ante*, are used more frequently when the law is more favorable to the borrower. By contrast, income-statement based covenants, which are considered to be trip wires that trigger the switch of control rights in the event of a risky situation, are used more frequently when the law is favorable to lenders. Because it is more difficult for lenders to enforce their control rights *ex post* under pro-debtor law (Honigsberg et al., 2014), the primary benefit of income-statement based covenants is likely to be weaker under debtor law.

Our results, which are robust to a battery of robustness tests and alternative dependent variables, contribute to the accounting literature on the use of accounting information in debt contracts by showing that a novel factor—the state law governing the contract—is a significant determinant of the covenant mix. Moreover, by utilizing a unique contracting feature, the use of borrowing base restrictions, we show that our primary finding regarding the use of accounting information and the legal environment extends to additional contract features beyond financial covenants. Finally, we join the early literature on the association between the governing law and debt contracts, and demonstrate specific channels by which state contract law can lead to differences in debt contracting.

Appendix 1A: Pro-Debtor Index

	Governing Law	Pro-Debtor Index
Most Pro-Debtor	California	12
	Georgia	11
	North Carolina	11
	Texas	11
	Ohio	10
	Pennsylvania	10
	Massachusetts	10
	Florida	8
	Illinois	8
	Most Pro-Lender	New York

Appendix 1B: Perceived Litigation Risk

Governing Law	Litigation Risk Group
California	High litigation risk group (Pro-debtor)
Florida	
Pennsylvania	
Ohio	Medium litigation risk group
Massachusetts	
Georgia	
Texas	
Illinois	Low litigation risk group (Pro-lender)
North Carolina	
New York	

For detail on the construction of these measures, see Honigsberg et al. (2014).

Appendix 2: Covenant Mix

Income-Statement Based Covenants	Balance-sheet Based Covenants
Min. Cash Interest Coverage	Min. Quick Ratio
Min. Debt Service Coverage*	Min. Current Ratio*
Min. EBITDA	Max. Debt to Equity
Min. Fixed Charge Coverage*	Max. Loan to Value
Min. Interest Coverage*	Max. Debt to Tangible Net Worth
Max. Debt to EBITDA*	Max. Leverage ratio*
Max. Senior Debt to EBITDA	Max. Senior Leverage
	Net Worth*
	Tangible Net Worth*

This appendix tabulates the covenant classifications into balance-sheet based and income-statement based covenants, following Christensen and Nikolaev (2012). Covenants marked with a (*) are also included in Demerjian's (2011) classification. For example, "Min. Cash Interest Coverage" is marked as an income-statement based covenant only in Christensen and Nikolaev (2012), while "Min. Debt Service Coverage" is an income-statement based covenant in both Christensen and Nikolaev (2012) and Demerjian (2011).

Appendix 3: Variable Definitions

ADV: Advertising expenditures scaled by total revenues. Compustat items: XAD/REVT. Missing values of XAD are set to zero.

AGE: Natural logarithm of the number of years a firm exists in Compustat.

ALTZ: Altman's (1968) Z score. Compustat items: $1.2*((ACT-LCT)/AT) + 1.4*(RE/AT) + 3.3*(PI/AT) + 0.6*((PRCC_F*CSHO)/LT) + 0.999*(REVT/AT)$.

BTM: Book-to-market ratio of equity. Compustat items: $SEQ/(PRCC_F*CSHO)$.

CAPEX: Indicator variable taking the value of one if the loan deal includes a maximum CAPEX covenant, zero otherwise.

DEALSIZE: Natural logarithm of total loan deal size specified in Dealscan.

DIVYIELD: Dividend yield, calculated as the cash dividends paid divided by the market capitalization. Compustat items: $DVC/(PRCC_F*CSHO)$.

INSTRANCHE: Indicator variable taking the value of one if the loan deal includes a Type A or Type B term loan facility, zero otherwise.

LEASES: Magnitude of operating leases as described in Ge (2006) and Demerjian (2011). Compustat items: $((MRC1/1.1) + (MRC2/1.21) + (MRC3/1.331) + (MRC4/1.4641) + (MRC5/1.61051))/AT$.

LENDFREQ: Lending frequency, as calculated by the number of loans a borrower received over the last five years according to Dealscan.

LEV: Leverage, calculated as long term liabilities divided by market value of total assets. Compustat items: $DLTT/(AT-SEQ+(PRCC_F*CSHO))$.

LOSS: Loss indicator, taking the value of 1 if income before extraordinary items is negative, zero otherwise. Compustat item: IB.

MATURITY: Natural logarithm of the maturity of loan deal size specified in Dealscan.

PP: Indicator variable taking the value of one if Dealscan indicates that the loan deal includes performance pricing indicator, zero otherwise.

PriorBS: Indicator variable taking the value of one if the firm's most recent loan deal includes a balance-sheet based covenant based on Demerjian's (2011) classification, zero otherwise.

PriorIS: Indicator variable taking the value of one if the firm's most recent loan deal includes an income-statement based covenant based on Demerjian's (2011) classification, zero otherwise.

RD: Research and development expenditures scaled by total revenues. Compustat items: XRD/REVT. Missing values of XRD are set to zero.

RETVOL: Natural logarithm of return volatility, calculated over the last 24 months using the CRSP monthly file.

REVOLVER: Indicator variable taking the value of one if Dealscan indicates that the loan deal includes a revolving facility, zero otherwise.

ROA: Return on assets. Compustat items: IB/AT.

SECURED: Indicator variable taking the value of one if Dealscan indicates that the loan deal is secured, zero otherwise.

SIZE: Natural logarithm of the market value of assets. Compustat items: AT-SEQ + (PRCC_F*CSHO).

SYNSIZE: Number of creditors that Dealscan indicates participated in the loan deal.

TANG: Asset tangibility. Compustat items: PPENT/AT.

VR: Natural logarithm of the volatility ratio, which measures a firm's balance sheet focus, as described by Demerjian (2011). It is defined as the ratio of book value volatility over adjusted net income volatility. Book value volatility is the five-year standard deviation of the change in book value. The change in book value is the change in retained earnings (REQ) with the annualized dividend (DVSPQ*CSHOQ) added back. Adjusted net income volatility is the five-year standard deviation of net income (NIQ) minus special items (SPIQ) and non-operating income and expense (NOPIQ).

Variables Used in the Further Analysis with Borrowing Base Restrictions

AR_NC: Accounts receivable scaled by non-cash total assets. Compustat items: RECT/(AT-CH)

BBASE: An indicator variable taking the value of one if Dealscan indicates that a credit facility in the loan deal includes a borrowing base restriction, zero otherwise.

CFOVOL: Cash flow volatility measured by the standard deviation of operating cash flows (Compustat items: OANCF-XIDOC) divided by average total assets during the previous five fiscal years.

EXCASH: Excess cash as the difference between the actual cash holdings and predicted cash holdings by the model developed in Opler et al. (1999). We use the reduced form regression in Opler et. al's (1999) Table 5, Panel A, where natural logarithm of cash/assets is regressed on market-to-book ratio, natural logarithm of assets, cash flows/assets, net working capital/assets, industry sigma (mean of standard deviations of cash flow over assets over 20 years, for firms in the same industry), R&D/sales and an indicator for being in a regulated industry.

INDAR: Industry-year median of accounts receivables. Industries are defined as Fama and French's (1997) 48 groups.

INDINV: Industry-year median of inventory. Industries are defined as Fama and French's (1997) 48 groups.

INTANG_NC: Intangible assets scaled by non-cash total assets. Compustat items: $\text{INTAN}/(\text{AT-CH})$

INV_NC: Total inventory scaled by non-cash total assets. Compustat items: $\text{INVT}/(\text{AT-CH})$

MISINTANG: An indicator variable taking the value of one if the intangible assets field is missing in Compustat, zero otherwise.

MISRD: An indicator variable taking the value of one if the research and development expenses field is missing in Compustat, zero otherwise.

OTC: An indicator variable taking the value of one if the firm's stock is traded over the counter (not traded on the NYSE, AMEX, or NASD), zero otherwise.

RD_NC: Research and development expenses scaled by non-cash total assets. Compustat items: $\text{XRD}/(\text{AT-CH})$.

ROA_NC: Return on assets, calculated as earnings before extraordinary items divided by non-cash total assets. Compustat items: $\text{IB}/(\text{AT-CH})$.

SIZE_NC: Natural logarithm of non-cash total assets. Compustat items: AT-CH .

SP: An indicator variable taking the value of one if the firm's stock is included in major S&P indexes (S&P 500, S&P Midcap 400, S&P Smallcap 600), zero otherwise.

TANG_NC: Non-cash asset tangibility, defined as gross property, plant, and equipment scaled by non-cash total assets. Compustat items: $\text{PPENT}/(\text{AT-CH})$.

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Table 1, Panel A: Descriptive Statistics

Variables	N	Mean	Median	Min.	5%	25%	75%	95%	Max.	Std. Dev.
Pro-Debtor Index	2,321	7.82	6	6	6	6	10	12	12	2.29
Low litigation risk (Pro-lender)	2,321	0.7	1	0	0	0	1	1	1	0.46
High litigation risk (Pro-debtor)	2,321	0.12	0	0	0	0	0	1	1	0.32
Balance-Sheet Ratio	2,321	0.36	0.33	0	0	0	0.5	1	1	0.34
Balance-Sheet Covenant	2,321	0.61	1	0	0	0	1	1	1	0.49
Income-Statement Covenant	2,321	0.84	1	0	0	1	1	1	1	0.37
AGE	2,321	2.78	2.77	0.69	1.39	2.08	3.58	3.95	3.99	0.84
DIVYIELD	2,321	0.01	0	0	0	0	0.01	0.04	0.07	0.02
LEV	2,321	0.18	0.15	0	0	0.06	0.27	0.47	0.66	0.15
SIZE	2,321	7.28	7.25	2.08	4.52	6.14	8.42	10.11	12.44	1.7
BTM	2,321	0.63	0.49	0.05	0.14	0.31	0.76	1.55	3.32	0.51
ROA	2,321	0.03	0.04	-0.3	-0.09	0.01	0.07	0.13	0.23	0.07
LOSS	2,321	0.19	0	0	0	0	0	1	1	0.39
ADV	2,321	0.01	0	0	0	0	0	0.05	0.14	0.02
RD	2,321	0.02	0	0	0	0	0.01	0.09	0.2	0.04
TANG	2,321	0.34	0.28	0.02	0.05	0.15	0.51	0.83	0.91	0.24

Table 1, Panel A: Descriptive Statistics (Continued)

Variables	N	Mean	Median	Min.	5%	25%	75%	95%	Max.	Std. Dev.
ALTZ	2,321	3.94	3.15	0.02	0.84	2.05	4.75	9.76	19.98	3.15
RETVOL	2,321	-2.12	-2.13	-3.13	-2.83	-2.42	-1.8	-1.39	-1.02	0.44
DEALSIZE	2,321	19.19	19.23	11.85	16.88	18.32	20.03	21.34	23.94	1.35
MATURITY	2,321	3.62	3.83	0.69	2.48	3.56	4.09	4.28	5.2	0.65
LENDFREQ	2,321	3.55	3	1	1	2	4	8	15	2.49
REVOLVER	2,321	0.95	1	0	0	1	1	1	1	0.22
SECURED	2,321	0.5	1	0	0	0	1	1	1	0.5
VR	2,258	1.99	1.32	0.01	0.81	1.04	2.02	4.92	57.47	2.78
LEASES	1,942	0.07	0.03	0	0.01	0.02	0.08	0.32	0.61	0.11
INSTRANCHE	2,321	0.12	0	0	0	0	0	1	1	0.33
PriorIS	2,321	0.64	1	0	0	0	1	1	1	0.48
PriorBS	2,321	0.52	1	0	0	0	1	1	1	0.5
SYNSIZE	2,321	10.03	8	1	1	3	14	27	42	8.53
CAPEX	2,321	0.22	0	0	0	0	0	1	1	0.42
PP	2,321	0.79	1	0	0	1	1	1	1	0.4

This table shows descriptive statistics of variables used in analyses. The sample includes 2,321 loan contracts provided by Nini et al. (2009) and merged with Dealscan, Compustat and CRSP for loan deal and firm level information. Sample period is 1996-2005. All variables except logged and categorical variables are winsorized at top and bottom 1% levels. Refer to Appendix 3 for variable definitions.

Table 1, Panel B: Correlation Matrix

	Pro-Debtor Index	Low litigation risk (Pro-lender)	High litigation risk (Pro-debtor)	Balance-Sheet Ratio	Balance-Sheet Covenant	Income-Statement Covenant
Pro-Debtor Index		-0.83 <i><.0001</i>	0.51 <i><.0001</i>	0.12 <i><.0001</i>	0.16 <i><.0001</i>	0.02 <i>0.25</i>
Low litigation risk (Pro-lender)	-0.86 <i><.0001</i>		-0.56 <i><.0001</i>	-0.12 <i><.0001</i>	-0.14 <i><.0001</i>	-0.02 <i>0.44</i>
High litigation risk (Pro-debtor)	0.51 <i><.0001</i>	-0.56 <i><.0001</i>		0.08 <i><.0001</i>	0.05 <i>0.03</i>	-0.06 <i>0.00</i>
Balance-Sheet Ratio	0.09 <i><.0001</i>	-0.09 <i><.0001</i>	0.07 <i>0.00</i>		0.81 <i><.0001</i>	-0.55 <i><.0001</i>
Balance-Sheet Covenant	0.15 <i><.0001</i>	-0.14 <i><.0001</i>	0.05 <i>0.03</i>	0.74 <i><.0001</i>		-0.23 <i><.0001</i>
Income-Statement Covenant	0.02 <i>0.26</i>	-0.02 <i>0.44</i>	-0.06 <i>0.00</i>	-0.68 <i><.0001</i>	-0.23 <i><.0001</i>	

This table shows the correlation matrix of dependent variables and main test variables used in the analyses. Pearson correlations are reported on the lower diagonal, while Spearman correlations are reported on the upper diagonal. Significance levels are tabulated in italics under each correlation coefficient.

Table 2, Panel A: State Contract Law and the Covenant Mix

VARIABLES	(1)	(2)	(3)	(4)
		Balance-Sheet Ratio		
Pro-Debtor Index		0.011** (2.56)		
Low litigation risk (Pro-lender)			-0.053*** (-2.91)	
High litigation risk (Pro-debtor)				0.061*** (2.59)
AGE	0.002 (0.15)	0.004 (0.26)	0.004 (0.24)	0.004 (0.23)
DIVYIELD	1.320 (1.59)	1.372* (1.67)	1.409* (1.74)	1.330 (1.61)
LEV	-0.141** (-2.36)	-0.140** (-2.30)	-0.138** (-2.24)	-0.141** (-2.39)
SIZE	0.009 (1.20)	0.012 (1.63)	0.011 (1.50)	0.009 (1.21)
BTM	0.008 (0.44)	0.007 (0.40)	0.005 (0.31)	0.007 (0.43)
ROA	-0.062 (-0.43)	-0.056 (-0.40)	-0.047 (-0.33)	-0.052 (-0.37)
LOSS	-0.070** (-2.26)	-0.068** (-2.27)	-0.068** (-2.25)	-0.069** (-2.30)
ADV	-1.123*** (-3.37)	-1.128*** (-3.35)	-1.140*** (-3.41)	-1.114*** (-3.38)
RD	0.787** (2.18)	0.726** (1.99)	0.722** (1.99)	0.707* (1.96)
TANG	0.262*** (5.55)	0.250*** (5.16)	0.250*** (5.28)	0.261*** (5.51)
ALTZ	-0.004 (-1.26)	-0.005 (-1.50)	-0.005 (-1.46)	-0.005 (-1.46)
RETVOL	-0.065** (-2.28)	-0.066** (-2.37)	-0.064** (-2.27)	-0.066** (-2.30)
DEALSIZE	-0.040*** (-3.99)	-0.037*** (-3.59)	-0.036*** (-3.66)	-0.037*** (-3.71)
MATURITY	-0.095*** (-6.41)	-0.092*** (-6.70)	-0.092*** (-6.56)	-0.094*** (-6.53)
LENDFREQ	0.001 (0.32)	0.001 (0.33)	0.001 (0.31)	0.001 (0.26)
REVOLVER	0.106*** (2.82)	0.100*** (2.71)	0.102*** (2.74)	0.103*** (2.73)
SECURED	-0.107*** (-5.68)	-0.103*** (-5.55)	-0.104*** (-5.70)	-0.105*** (-5.67)
Constant	1.145*** (6.32)	0.977*** (4.60)	1.101*** (6.09)	1.088*** (6.11)
Observations	2,321	2,321	2,321	2,321
Adjusted R-squared	0.171	0.174	0.175	0.173

This panel presents the results from estimating model (1). The dependent variable is the Balance-Sheet Ratio. Robust t-statistics are calculated by clustering standard errors at both borrowing firm and year levels, and reported in parentheses. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. Refer to Appendix 3 for variable definitions.

Table 2, Panel B: State Contract Law and the Covenant Mix, with Time Effects

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Balance-Sheet Ratio					
Pro-Debtor Index	0.009*			0.008*		
	(1.93)			(1.86)		
Low litigation risk (Pro-lender)		-0.043**			-0.043**	
		(-2.09)			(-2.08)	
High litigation risk (Pro-debtor)			0.050**			0.048**
			(2.10)			(1.99)
Trend				-0.025***	-0.025***	-0.025***
				(-5.46)	(-5.44)	(-5.46)
AGE	0.014	0.014	0.014	0.014	0.014	0.014
	(0.99)	(0.99)	(0.98)	(0.97)	(0.97)	(0.96)
DIVYIELD	1.471*	1.501*	1.436*	1.362*	1.393*	1.329
	(1.77)	(1.82)	(1.70)	(1.66)	(1.71)	(1.59)
LEV	-0.164***	-0.162***	-0.165***	-0.174***	-0.172***	-0.175***
	(-3.12)	(-3.05)	(-3.22)	(-3.08)	(-3.01)	(-3.16)
SIZE	0.035***	0.034***	0.032***	0.034***	0.033***	0.032***
	(3.88)	(3.75)	(3.41)	(3.80)	(3.67)	(3.33)
BTM	0.024	0.022	0.024	0.020	0.018	0.020
	(1.18)	(1.11)	(1.20)	(1.01)	(0.93)	(1.03)
ROA	-0.021	-0.013	-0.017	-0.072	-0.064	-0.068
	(-0.16)	(-0.10)	(-0.13)	(-0.59)	(-0.52)	(-0.57)
LOSS	-0.074***	-0.074***	-0.075***	-0.074***	-0.074***	-0.075***
	(-2.68)	(-2.66)	(-2.71)	(-2.82)	(-2.79)	(-2.84)
ADV	-1.059***	-1.069***	-1.047***	-1.098***	-1.108***	-1.086***
	(-3.11)	(-3.15)	(-3.12)	(-3.21)	(-3.25)	(-3.22)
RD	0.606*	0.603*	0.590*	0.615*	0.611*	0.600*
	(1.68)	(1.68)	(1.67)	(1.72)	(1.72)	(1.71)
TANG	0.231***	0.231***	0.240***	0.233***	0.232***	0.242***
	(4.95)	(5.06)	(5.27)	(5.00)	(5.11)	(5.34)
ALTZ	-0.007*	-0.007*	-0.007*	-0.007*	-0.007*	-0.007*
	(-1.95)	(-1.92)	(-1.90)	(-1.88)	(-1.84)	(-1.82)
RETVOL	-0.039	-0.037	-0.038	-0.055**	-0.053**	-0.054**
	(-1.56)	(-1.46)	(-1.54)	(-2.22)	(-2.11)	(-2.17)
DEALSIZE	-0.051***	-0.050***	-0.051***	-0.051***	-0.051***	-0.051***
	(-4.49)	(-4.56)	(-4.71)	(-4.47)	(-4.53)	(-4.68)
MATURITY	-0.085***	-0.085***	-0.086***	-0.075***	-0.075***	-0.076***
	(-7.59)	(-7.39)	(-7.46)	(-6.24)	(-6.08)	(-6.07)
LENDFREQ	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-0.26)	(-0.27)	(-0.31)	(-0.18)	(-0.19)	(-0.24)
REVOLVER	0.100***	0.101***	0.102***	0.097***	0.098***	0.099***
	(2.91)	(2.94)	(2.92)	(2.84)	(2.87)	(2.85)
SECURED	-0.082***	-0.083***	-0.084***	-0.087***	-0.088***	-0.088***
	(-6.22)	(-6.27)	(-6.30)	(-6.69)	(-6.76)	(-6.77)
Year Fixed Effects	YES	YES	YES	NO	NO	NO
Observations	2,321	2,321	2,321	2,321	2,321	2,321
Adjusted R-squared	0.209	0.209	0.208	0.205	0.206	0.205

This panel repeats the analysis in Panel A, but with the inclusion of year fixed effects and/or a trend variable. Robust t-statistics are calculated by clustering standard errors at both borrowing firm and year levels, and reported in parentheses. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. Refer to Appendix 3 for variable definitions.

Table 3: State Contract Law and the Probability of Inclusion of Balance-Sheet and Income-Statement Based Covenants

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	P(Balance-Sheet Covenant)=1				P(Income-Statement Covenant)=1		
Pro-Debtor Index		0.041** (2.55)			-0.017 (-0.77)		
Low litigation risk (Pro-lender)			-0.171** (-2.24)			0.064 (0.60)	
High litigation risk (Pro-debtor)				-0.050 (-0.49)			-0.363*** (-2.69)
VR	-0.014 (-0.28)	-0.018 (-0.35)	-0.018 (-0.33)	-0.013 (-0.25)	0.002 (0.02)	0.001 (0.02)	0.016 (0.23)
TANG	0.375* (1.78)	0.332 (1.57)	0.338 (1.59)	0.379* (1.80)	-0.406 (-1.47)	-0.414 (-1.50)	-0.386 (-1.39)
LEASES	-0.282 (-0.78)	-0.307 (-0.84)	-0.315 (-0.86)	-0.277 (-0.76)	-0.714 (-1.23)	-0.711 (-1.23)	-0.625 (-1.06)
INSTRANCHE	-0.427*** (-3.94)	-0.402*** (-3.71)	-0.403*** (-3.71)	-0.430*** (-3.96)	1.080*** (4.01)	1.082*** (4.02)	1.080*** (4.00)
PriorIS	-0.749*** (-9.23)	-0.746*** (-9.20)	-0.745*** (-9.19)	-0.751*** (-9.27)	1.580*** (13.50)	1.582*** (13.49)	1.567*** (13.30)
PriorBS	1.234*** (15.80)	1.219*** (15.61)	1.225*** (15.67)	1.235*** (15.81)	-0.785*** (-7.05)	-0.787*** (-7.09)	-0.772*** (-6.92)
ROA	1.482*** (3.39)	1.545*** (3.53)	1.557*** (3.55)	1.475*** (3.36)	2.828*** (5.23)	2.819*** (5.21)	2.870*** (5.35)
LEV	-0.506* (-1.85)	-0.512* (-1.86)	-0.495* (-1.80)	-0.506* (-1.85)	0.382 (0.86)	0.380 (0.86)	0.369 (0.83)
BTM	-0.085 (-1.27)	-0.083 (-1.24)	-0.086 (-1.28)	-0.085 (-1.28)	-0.188** (-1.98)	-0.186* (-1.96)	-0.190** (-1.97)
ALTZ	-0.019 (-1.63)	-0.023* (-1.96)	-0.022* (-1.88)	-0.018 (-1.55)	0.016 (0.96)	0.016 (0.95)	0.019 (1.13)
SIZE	-0.079** (-2.55)	-0.067** (-2.15)	-0.070** (-2.24)	-0.080** (-2.56)	-0.303*** (-7.17)	-0.302*** (-7.16)	-0.306*** (-7.34)
SYNSIZE	-0.004 (-0.88)	-0.003 (-0.56)	-0.003 (-0.61)	-0.005 (-0.92)	0.021*** (2.94)	0.022*** (2.99)	0.020*** (2.80)
CAPEX	-0.156* (-1.77)	-0.150* (-1.69)	-0.154* (-1.74)	-0.157* (-1.78)	0.008 (0.06)	0.008 (0.06)	0.016 (0.13)
PP	-0.010 (-0.12)	-0.017 (-0.22)	-0.015 (-0.19)	-0.011 (-0.14)	0.638*** (5.94)	0.637*** (5.93)	0.623*** (5.76)
SECURED	-0.175** (-2.08)	-0.173** (-2.06)	-0.175** (-2.07)	-0.176** (-2.09)	-0.189* (-1.73)	-0.187* (-1.71)	-0.197* (-1.80)
Year and Industry Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Observations	2,212	2,212	2,212	2,212	2,196	2,196	2,196
Pseudo R-Squared	0.276	0.278	0.278	0.276	0.363	0.363	0.368

This panel presents the results from estimating the bivariate probit model (2). In columns 1-4 the dependent variable equals one if the loan deal includes a balance-sheet based covenant, and is zero otherwise. In columns 5-7 the dependent variable equals one if the loan deal includes an income-statement based covenant, and is zero otherwise. Robust z-statistics are calculated by clustering standard errors at the borrowing firm level, and reported in parentheses. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. Refer to Appendix 3 for variable definitions.

Table 4: Robustness Test, Sub-Sample of Firms using Multiple State Contract Laws

VARIABLES	(1)	(2)	(3)
		Balance-Sheet Ratio	
Pro-Debtor Index	0.011 (1.34)		
Low litigation risk (Pro-lender)		-0.072** (-2.00)	
High litigation risk (Pro-debtor)			0.048** (2.00)
AGE	-0.003 (-0.11)	-0.046 (-1.05)	-0.048 (-1.08)
DIVYIELD	2.055 (1.14)	-0.869 (-0.40)	-0.907 (-0.41)
LEV	-0.028 (-0.20)	0.154 (0.57)	0.143 (0.54)
SIZE	-0.007 (-0.33)	0.044 (1.14)	0.042 (1.10)
BTM	0.015 (0.43)	0.187** (2.28)	0.185** (2.18)
ROA	-0.033 (-0.11)	0.001 (0.00)	-0.025 (-0.07)
LOSS	-0.087 (-1.55)	-0.135* (-1.85)	-0.136* (-1.81)
ADV	0.292 (0.60)	1.702** (2.31)	1.766** (2.48)
RD	-0.153 (-0.24)	0.012 (0.03)	0.026 (0.06)
TANG	0.239** (2.23)	-0.091 (-0.51)	-0.079 (-0.46)
ALTZ	-0.002 (-0.38)	0.003 (0.30)	0.003 (0.32)
RETVOL	-0.018 (-0.29)	0.021 (0.25)	0.023 (0.27)
DEALSIZE	-0.020 (-0.94)	-0.077** (-2.47)	-0.079** (-2.36)
MATURITY	-0.049 (-1.54)	0.072* (1.94)	0.070* (1.92)
LENDFREQ	0.007 (0.68)	0.001 (0.04)	0.000 (0.04)
REVOLVER	-0.002 (-0.03)	-0.073 (-0.98)	-0.073 (-0.97)
SECURED	-0.142*** (-3.28)	-0.093 (-1.15)	-0.102 (-1.19)
Constant	0.785** (2.22)	1.373** (2.39)	1.375** (2.24)
Observations	444	123	123
Adjusted R-squared	0.130	0.095	0.084

This table presents the results from estimating model (1) on the sub-sample of borrowers that use more than one state's contract law. The dependent variable is the Balance-Sheet Ratio. Robust t-statistics are calculated by clustering standard errors at both borrowing firm and year levels, and reported in parentheses. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. Refer to Appendix 3 for variable definitions.

Table 5: Robustness Test, Loan Deals where Massachusetts is the Governing State Contract Law

VARIABLES	(1)	(2)
	Balance-Sheet Ratio	
Pre-2000 (Pro-Debtor)	0.124*	0.229***
	(1.87)	(5.95)
AGE	0.003	-0.041
	(0.06)	(-0.84)
DIVYIELD	3.236**	4.340**
	(2.45)	(2.40)
LEV	0.608***	0.541***
	(5.68)	(2.77)
SIZE	0.014	0.037
	(0.30)	(0.73)
BTM	-0.145**	-0.090
	(-2.46)	(-1.65)
ROA	-0.895***	-0.704*
	(-2.94)	(-1.92)
LOSS	-0.133	-0.112
	(-1.23)	(-1.03)
ADV	0.008	0.125
	(0.01)	(0.17)
RD	0.642	0.674
	(1.24)	(1.05)
TANG	0.267*	0.242*
	(1.81)	(1.68)
ALTZ	0.018**	0.020***
	(2.13)	(2.75)
RETVOL	0.068	0.047
	(0.57)	(0.33)
DEALSIZE	-0.007	-0.024
	(-0.20)	(-0.47)
MATURITY	-0.156***	-0.124***
	(-4.46)	(-3.69)
LENDFREQ	-0.063***	-0.066***
	(-3.43)	(-4.02)
REVOLVER	0.069	0.036
	(1.03)	(0.81)
SECURED	-0.043	-0.065
	(-0.51)	(-0.85)
Constant	1.089**	1.094
	(2.07)	(1.33)
Year Fixed Effects	NO	YES
Observations	91	91
Adjusted R-squared	0.315	0.415

This panel presents the results from estimating model (1) on the sub-sample of borrowers that use Massachusetts contract law in our sample. The dependent variable is the Balance-Sheet Ratio. Robust t-statistics are calculated by clustering standard errors at both borrowing firm and year levels, and reported in parentheses. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. Refer to Appendix 3 for variable definitions.

Table 6: Robustness Test, State Contract Law and the Inclusion of Borrowing Base Restrictions

VARIABLES	(1)	(2)	(3)
		P(BBASE)=1	
Pro-Debtor Index	-0.010 (-0.44)		
Low litigation risk (Pro-lender)		-0.027 (-0.26)	
High litigation risk (Pro-debtor)			0.262** (1.97)
SIZE_NC	-0.277*** (-5.94)	-0.271*** (-5.81)	-0.269*** (-5.89)
ROA_NC	-4.754*** (-5.27)	-4.725*** (-5.22)	-4.708*** (-5.17)
ALTZ	-0.086** (-2.27)	-0.086** (-2.27)	-0.089** (-2.32)
CFOVOL	7.179*** (4.91)	7.110*** (4.89)	6.972*** (4.80)
BTM	0.473*** (3.73)	0.467*** (3.68)	0.458*** (3.60)
LEV	0.885** (2.07)	0.904** (2.11)	0.928** (2.19)
EXCASH	-0.060 (-1.54)	-0.061 (-1.58)	-0.063 (-1.61)
RD	4.526* (1.86)	4.339* (1.79)	3.795 (1.55)
MISRD	0.189 (1.54)	0.183 (1.50)	0.177 (1.43)
AGE	-0.002 (-0.03)	-0.000 (-0.00)	0.003 (0.04)
OTC	0.108 (0.66)	0.112 (0.69)	0.117 (0.72)
SPIND	-0.328*** (-2.69)	-0.333*** (-2.74)	-0.339*** (-2.78)
AR_NC	1.844*** (2.97)	1.824*** (2.94)	1.820*** (2.94)
INV_NC	3.235*** (5.39)	3.244*** (5.40)	3.293*** (5.47)
INDAR	2.106 (0.64)	2.112 (0.65)	2.078 (0.64)
INDINV	1.127 (0.32)	0.975 (0.28)	1.062 (0.30)
TANG_NC	-0.367 (-0.89)	-0.382 (-0.93)	-0.405 (-0.99)
INTANG_NC	-0.240 (-0.51)	-0.242 (-0.51)	-0.220 (-0.47)
MISINTANG	0.007 (0.04)	0.011 (0.06)	0.025 (0.14)
Year and Industry Fixed Effects	YES	YES	YES
Observations	2,021	2,021	2,021
Pseudo R-Squared	0.410	0.410	0.412

This table shows the results of a bivariate probit model. The dependent variable equals one if a credit line in the loan deal includes a borrowing base restriction, and is zero otherwise. Robust z-statistics are calculated by clustering standard errors at the borrowing firm level. *, ** and *** stand for significance levels at $p < 0.1$, $p < 0.05$, and $p < 0.01$ levels, respectively. For this analysis, all variables except logged and categorical variables are winsorized at the top and bottom 5% levels. Refer to Appendix 3 for variable definitions.