



University of Richmond
UR Scholarship Repository

Accounting Faculty Publications

Accounting

2019

Loan purpose and accounting based debt covenants

Daniel Gyung Paik

University of Richmond, daniel.paik@richmond.edu

Timothy L. Hamilton

University of Richmond, thamilt2@richmond.edu

Brandon Byunghwan Lee

Sung Wook Yoon

Follow this and additional works at: <https://scholarship.richmond.edu/accounting-faculty-publications>

 Part of the [Accounting Commons](#)

This is a pre-publication author manuscript of the final, published article.

Recommended Citation

Paik, Daniel Gyung, Timothy Hamilton, Brandon Byunghwan Lee, and Sung Wook Yoon. "Loan Purpose and Accounting Based Debt Covenants." *Review of Accounting & Finance* 18, no. 2 (2019): 321–343.
<https://doi.org/10.1108/RAF-10-2017-0194>

This Post-print Article is brought to you for free and open access by the Accounting at UR Scholarship Repository. It has been accepted for inclusion in Accounting Faculty Publications by an authorized administrator of UR Scholarship Repository. For more information, please contact scholarshiprepository@richmond.edu.

Loan purpose and accounting based debt covenants

TIMOTHY HAMILTON
Robins School of Business
University of Richmond
thamilt2@richmond.edu
(804) 287-1815

BRANDON BYUNGHWAN LEE
School of Business and Economics
Indiana University Northwest
byulee@iun.edu
(909) 242-0326

DANIEL GYUNG H. PAIK*
Robins School of Business
University of Richmond
daniel.paik@richmond.edu
(804) 289-8573

SUNG WOOK YOON
David Nazarian College of Business and Economics
California State University, Northridge
sungwook.yoon@csun.edu
(818) 677-2428

*Corresponding author: Robins School of Business, 239 RSB, 28 Westhampton Way, University of Richmond, VA, 23173 Office: (804) 289-8573, Fax: (804) 289-8878, e-mail: daniel.paik@richmond.edu.

Loan purpose and accounting based debt covenants

ABSTRACT

In this paper, we investigate the association between the purpose of a loan and the type of debt covenants, separated into balance-sheet-based and income-statement-based covenants. We use private loan deal observations obtained from the *DealScan* database over the period between 1996 and 2013. We classify our sample loan deals into three categories based on the purpose of borrowing, namely borrowings for corporate daily operating purposes, financing purposes, and acquisition and investing purposes. Our results provide evidence that the purpose of the loan is significantly associated with the type of debt covenants, suggesting that the lender and the borrower have considered the loan purpose when structuring their debt agreements. More specifically, the results indicate that the loans borrowed to fund acquisitions or long-term investment projects are more likely to have income-statement-based covenants, and less likely to have balance-sheet-based covenants. In contrast, the loans borrowed for corporate daily operating purposes or financing purposes are more likely to contain balance-sheet-based covenants relative to income-statement-based covenants.

1. INTRODUCTION

The use of debt covenants to improve transparency and efficiency in private commercial loans has generated a greater interest in the variety of covenants observed in the market. Our study builds on a growing literature that examines the type of debt covenants found in private loan contracts. Dichev and Skinner (2002) conclude that loan covenants are not “boilerplate.” Rather, covenants generally reflect characteristics of the lender and the borrower. For example, creditors may adjust covenants to reflect the financial characteristics of the borrower. Aghion and Bolton (1992) develop a model in which a firm’s financial constraints help determine the type of covenants found in debt contracts. Similarly, Christensen and Nikolaev (2012) argue that balance-sheet- and income-statement-based financial ratios serve different purposes in covenants. They find that the choice of financial ratio type in debt covenants, balance sheet or income statement, is influenced by a firm’s financing constraints. Demerjian (2011) and Christensen and Nikolaev (2012) document increasing income-statement-based- and decreasing balance-sheet-based ratios found in debt covenants over time. Demerjian (2011) attributes this decline to the shift toward a “balance sheet approach” in accounting standards, which makes the balance sheet too volatile for contracting purposes.

In this paper, we investigate the association between the purpose of the loan and the type of debt covenants, separated into income-statement- and balance-sheet-based covenants. Our study is the first to identify differences in trends over time for the use of income-statement- and balance-sheet-based covenants as it relates to different loan purposes. Our study is closely related to Demerjian (2011) and Christensen & Nikolaev (2012), who investigate the use of balance-sheet- versus income-statement-based covenants. Aghion & Bolton (1992) and Christensen & Nikolaev (2012) argue that balance-sheet-based covenants in debt contracts align interests

between the borrower and the lender, while income-statement-based covenants contribute to the transfer of control rights from the borrower to the lender. We build on prior research to examine the degree to which loan purpose is associated with the choice between income-statement-based and balance-sheet-based covenants.

Our analysis uses 6,613 loan deal observations obtained from the *DealScan* database over the period between 1996 to 2013. We first investigate the purposes for borrowing on a private loan, and the dollar amount of loans by loan purpose. We find that the most common reason for borrowing on a loan is to use the money for corporate daily operating purposes, and the second most prevalent purpose for a loan is to pay down the balance on another loan. In addition, we investigate the association between the purpose of the loan and the type of debt covenants, separated into balance-sheet-based and income-statement-based covenants.

We conduct multinomial logit regression analysis to test the relationship between the choice of financial ratios in a debt covenant and the purpose of a loan, controlling for financing constraints and other factors that have been identified as important to debt covenant analysis in prior studies (e.g., Chava and Roberts 2008; Christensen and Nikolaev 2012). Our regression analysis provides evidence that the purpose of the loan is significantly associated with the type of debt covenants, suggesting that the lender and the borrower consider the loan purpose when structuring their debt agreements. Our results indicate that the loans borrowed for the corporate daily operating purposes or for financing needs, such as to repay debt, recapitalize capital structure, or to buy back stock, are more likely to include balance-sheet-based ratios, and less likely to include income-statement-based ratios in the covenants. On the other hand, debt covenants attached to the loans to fund acquisitions or long-term investment projects are more likely to use income-statement-based ratios relative to balance-sheet-based ratios.

More specifically, the results indicate that loan contracts for investment and acquisition purposes, rather than operating or financing purposes, are significantly more likely to include income-statement-based financial ratio covenants. In a second specification, we further delineate loan purpose and find that loans for operating activities and financial purposes both increase the likelihood that the loan will include balance sheet ratios and decrease the likelihood of income statement ratios. These findings contain important and economically significant implications indicating that loan lenders and borrowers agree to include different types of accounting information (that is, income-statement- versus balance-sheet-based financial ratios) in their loan covenants for different purpose loans.

Overall, our findings imply that the loan purpose is a significant factor in determining the choice of accounting information used in covenants. These results extend the findings of Demerjian (2011) and Christensen and Nikolaev (2012), suggesting that loan purpose is an important consideration in addition to other financing constraints.

The following section presents a background on debt covenants and outlines empirically testable hypotheses. Section 3 describes the data and our empirical methodology. Section 4 reports results and robustness tests. Finally, section 5 concludes.

2. BACKGROUND and HYPOTHESES

2.1: Loan Borrowing and Debt Covenants

Debt covenants often accompany private loans as a means for the lender to reduce its exposure to default. In general, debt covenants are designed to reduce agency costs by creating the conditions under which control rights transfer to creditors (Aghion and Bolton 1992; Tirole 2006; Chava and Roberts 2008). Apilado and Millington (1992) show that covenants are more

prevalent for smaller firms and for larger loans, suggesting the role of covenants as a measure of protection in uncertain environments. Loan covenants that are not sufficiently strict may result in an inability of the lending company to recognize financial danger, while overly stringent covenants may impede the borrower's ability to operate successfully. In this way, lenders carefully use covenants to protect their investments. Dichev and Skinner (2002) and Chava and Roberts (2008) provide evidence that lenders set tight covenants and use minor violations to take action in modifying the loan agreement.

For borrowers, covenants may generate restrictions on business activities but provide an additional means of demonstrating financial and operational stability. In many cases, borrowers are willing to accept restrictive debt covenants as doing so decreases the cost of debt (Reisel 2009; Billett et al. 2007). Bradley and Roberts (2015) provide evidence that loan yields are lower when companies include covenants in their loan agreements. They also document that there is a positive relation between the inclusion of covenants and the maturity of a loan. Given their role in facilitating efficient loan agreements, covenants have taken on a large role in the loan market.

Both positive debt covenants, which refer to actions that the borrowing company must fulfill, and negative debt covenants, which set restrictions on the borrowing company's activities, frequently make use of financial ratios. For example, a company may be required to maintain a current ratio over 1.0, demonstrating its ability to cover its short-term debt. These ratios provide lenders with the information to monitor a borrower's financial condition and offer the lender further insight into the current and future financial status of the borrowing company (Whited, 1992). It is important to note that the use of financial ratios in debt covenants is quite common.

Demerjian (2007) finds that 78% of the deals in a sample of 16,364 syndicated loan agreements include at least one financial ratio.

In Table 1, the most common financial covenants are organized into six subcategories. We first classify the financial ratios identified in *Dealscan* as either income statement or balance sheet ratios based on the source of financial information used in calculation of the ratio, consistent with prior research (Demerjian and Owens, 2016; Christensen and Nikolaev, 2012; Demerjian, 2011). They are first labeled by their relative financial statement, followed by their subcategory. The six types (subcategories) of financial ratio covenants include the following: 1. interest coverage, 2. debt-to-earnings, 3. current ratio, 4. net worth, 5. leverage, and 6. debt amount. While the two subcategories for the income-statement-based ratios have five accounting-based ratios, the four subcategories of the balance sheet-based financial ratios have seven financial ratios commonly used in loan covenants. Among these financial ratio covenants, debt to EBITDA ratio has by far the highest frequency (59.0%), followed by debt to assets (17.7%) and debt to tangible net worth (7.5%).

(Insert Table 1 about here.)

Our research question explores whether variation in the type of debt covenant used (income-statement-based versus balance-sheet-based) is related to the purpose of the loan. To examine this question, we classify loans into one of three groups based on the purpose of the loan: 1) Acquisition and Investing, 2) Operating, or 3) Financing. In Panel A of Table 2, we define the subgroups within loan purpose groups to provide more information on the types of business activities included in each group.

(Insert Table 2 about here.)

2.2: Prior Studies and Hypotheses Development

Firms acquire new debt from three main sources: public debt, bank private loans, and non-bank private loans. Diamond (1984) and Boyd and Prescott (1986) argue that private debt has significant advantages over public debt in terms of monitoring efficiency.

Previous research has examined the role that debt covenants play in determining parameters of the private debt. Dichev and Skinner (2002) argue that covenants act as an early warning device that allow lenders to shorten the loan maturity. Regarding the specific nature of the covenant, Demiroglu and James (2010) find that violations of loosely set covenants have a more severe impact on business activities. This implies that the covenant agreement includes information about the borrower's expected future financial position.

Furthermore, evidence suggests that debt covenants serve as useful mechanisms to address agency problems. Dichev and Skinner (2002) find that debt covenant violations lead to higher interest rates. More generally, their results indicate that covenant violations are somewhat frequent and act as useful signals that loan adjustments are necessary. Similarly, Chava and Roberts (2008) find significant declines in a firm's capital investment due to changes in credit lines and interest spreads following a violation of loan covenants. Firms may also face an increased likelihood of losing control of rights through debt restructuring or the acceleration of debt payments (Nini et al. 2009; Ozelge 2007).

Recent research demonstrates that balance-sheet-based ratios, which act as a constraint on leverage, are used less frequently by financially constrained firms than are income-statement-based ratios in debt covenants (Christensen and Nikolaev 2012). This is consistent with Dichev and Skinner's (2002) conclusion that creditors adjust covenants to reflect the financial characteristics of the borrower. Moreover, the decrease in the use of balance sheet ratios in debt

covenants is well documented (Demerjian 2011; Skinner 2011; Christensen and Nikolaev 2012). Demerjian (2011, p. 179) argues that the decline in the use of accounting information in debt contracting is a result of accounting standard setters' movement toward a balance sheet approach in financial reporting. Such a change in practices makes the balance sheet a less useful tool for debt contracting purposes since it may contain increased volatility about true asset and liability values (Demerjian, 2011).

Our study builds on a growing literature that explores the type of debt covenants found in loan contracts. Aghion and Bolton (1992) develop a model in which a firm's financial constraints help determine the type of covenants found in debt contracts. They base their model of capital structure on incomplete contracts theory, which proposes that financial contracts use accounting information to align the interests of the owners of a firm (shareholders) with its creditors. They argue that debt financing is an efficient way of allocating contingent control between creditors and shareholders. This can be done by establishing covenants that specify the financial conditions that a firm must maintain. If the firm breaks its covenants, control passes to the creditors.

Christensen and Nikolaev (2012) apply the Aghion and Bolton (1992) model to a setting that differentiates balance sheet and income statement based covenants. They argue that balance sheet ratios serve as accurate measures of investment in the firm but provide an insufficient picture of future performance. Income statement ratios, however, reflect current performance and thus offer more information regarding timely financial problems. The authors find that covenants tend to include relatively more income statement ratios as the borrowing firm becomes financially constrained, supporting their argument that loan agreements will reflect lender and borrower preferences for specific types of information.

We extend the Christensen and Nikolaev (2012) study to incorporate loan purpose as an additional factor in debt covenant agreements. We hypothesize that loan purposes influence the choice of income statement versus balance sheet metrics included in debt covenants. From the lender's perspective, the risk on the loan will be directly related to the manner in which the money is used. For example, if a firm borrows on a loan to provide money for acquisitions or investing purposes, the lender is likely to consider this a riskier loan than a loan to fund daily operating activities or financing purposes. Firms' acquisitions or investing-related activities are rather long-term and forward looking, and therefore carry a higher risk for the lender. As discussed above, income statement metrics may provide better forward-looking financial information.

In addition, when lenders write debt covenants to fund the borrowers' long-term-oriented events such as takeover, acquisition line, leveraged buyout, capital expenditure, equipment purchase, and so on, lenders have an incentive to ensure that the borrowing firms have strong current and future profitability to support these acquisition or investing-related activities. A firm's profitability is summarized and reported in income statement. For this reason, we expect lenders to use income statement covenants for loans that fund long-term activities. Our first hypothesis follows:

H1: Debt covenants for a loan borrowed for long-term investment or acquisitions are more likely to contain income statement based covenants, relative to balance sheet based covenants.

In contrast, we anticipate that if a firm borrows on a loan to provide money for daily corporate operations or financing purposes, the lender is more likely to use balance sheet metrics relative to income statement metrics in debt covenants. These predictions are based on the notion that balance sheet ratios provide lenders with valuable information about the borrower's level of investment within the firm. Furthermore, balance sheet ratios likely provide a better summary of the borrowing firm's financial standing, such as its liquidity and solvency. For loans that will be used to cover current financing or daily operations, lenders may be more interested in balance sheet information.

Christensen and Nikolaev (2012) argue that the role of balance-sheet covenants in debt contracts is to align lender–borrower interests by requiring that borrowers maintain enough capital inside the company. Balance-sheet covenants depend on information about sources and uses of capital (i.e., balance sheet information only) and thus directly limit the level of debt in a company's capital structure. When lenders and borrowers prepare debt covenants for loans to fund borrowers' daily activities, such as increasing working capital, or to fund financing activities, such as debt repayments or CP backup (Commercial Paper backup line of credit),¹ lenders must ensure that the borrowing firms have sufficient capital to repay the debt and interest. A firm's capital structure is summarized and reported in the balance-sheet. Two additional hypotheses follow:

H2a: Debt covenants for a loan borrowed for daily corporate operations are more likely to contain balance-sheet-based covenants, relative to income-statement-based covenants.

¹ A CP backup line of credit (LOC) protects a company's investors if the company defaults on its commercial paper. To protect investors from default, the company can pay a fee to a bank in exchange for a backup line. The CP backup line will be used to pay off any commercial papers if the company defaults.

H2b: Debt covenants for a loan borrowed for financing purposes are more likely to contain balance-sheet-based covenants, relative to income-statement-based covenants.

3. SAMPLE, DESCRIPTIVE STATISTICS, and METHODS

3.1: Sample

We use the *Compustat North America* database to collect firms' financial statement data for the period 1996 to 2013.² We exclude regulated industries, i.e. financial firms and utilities that have industry specific accounting rules. In addition, we use the *Dealscan* database to determine the financial ratios contained in debt covenants. *Dealscan* collects firms' loan information from their financial filings with the SEC.³ The size of the deals varies from \$100,000 to \$13 billion. We then merge the *Compustat* and *Dealscan* data sets. We require all firms to have valid data for all variables included in our regression models. Finally, we remove the extreme outlier values for certain variables (*FinConstraint-WW*, *FinConstraint-KZ*, *FinConstraint-CL*, and *VR*)⁴ by eliminating the top and the bottom one percent of the observations.⁵ This process results in a final sample containing 6,613 firm-year observations.

3.2: Descriptive Statistics

Table 2 displays our sample loan deals based on loan purpose and loan deal amount. Panel A indicates that the most common reason for borrowing on a loan is for operating

² The first year that the *DealScan* database reports data is 1996. The sample year is fiscal year.

³ The majority of firms included in *Dealscan* are publicly listed companies however, to a limited degree, *Dealscan* also gathers privately held companies' loan information from bank submissions.

⁴ *FinConstraint-WW_{it}*, *FinConstraint-KZ_{it}*, and *FinConstraints-CL_{it}* are index of financial constraints based on Whited and Wu (2006), Kaplan and Zingales (1997), and Cleary (1999), respectively. *VR* is the volatility ratio suggested by Demerjian (2011). All variables are defined in Appendix A.

⁵ We repeated our main regression analyses using the winsorized data. The sample size of the winsorized data is 7,008. The results from the winsorized sample are qualitatively consistent (not reported) with those from the truncated sample.

purposes, which includes daily operating activities and working capital. This comprises 60.7% of the total sample. Aside from operating purposes, financing purposes account for 24.1% of the sample, primarily in the form of debt repayment (18.3%). The remaining 15.3% of the sample includes loans for Acquisition and Investing. Within this group, acquisition activities make up the majority of observations (14.6% of the total sample), while investing activities make up only 0.7% of the total sample.

In Panel A of Table 2, we also report the mean and median size of loans for each loan purpose group. For the entire sample, the mean loan amount is \$441 million with a median of \$200 million, implying a distribution that exhibits a slight positive skew. Operating and Financing activities have mean loan amounts of \$409 million and \$366 million, respectively, similar to the overall sample mean. The distribution of loan amounts in the Acquisition and Investing group indicates larger amounts than the other two groups, with a mean of \$684 million and a median of \$250 million.

In Panel B of Table 2, we report the frequency of loan deals by loan purposes over our sample period, along with the portion of total loans each year that were used for a specific purpose. We see evidence in columns (5-6) that financing purpose transactions decrease gradually in terms of absolute numbers and percentages. Conversely, we see sharp increase in operating purpose borrowing transactions from 2001, indicated by columns (3-4). Overall, loan transactions decrease gradually from 2006-2009, but appear to rebound in 2010. This pattern is likely the result of economic recession. Similarly, focusing on years of economic down-turns, (at the trough and right after the trough of economic cycle such as years) in 2001, 2002, 2003, and 2009, the frequency of loans for acquisition & investing purposes is smaller relative to remaining years and below the mean of 15.3% across years. We expect that in economic downturns lenders

are reluctant to lend money for the acquisition and investment or other aggressive business activities, as it may increase financial risk. It is important to note that throughout these years of the 2007-2009 recession and after, trends for loan purpose type generally remain consistent, as operating purpose loans continue to make up a larger portion of the total. Thus, we do not believe there is any structural break that would affect our empirical analysis.

Panel C of Table 2 reports similar statistics to Panel B but in terms of loan value, presenting mean loan size (in US million dollars) and the portion of total loan value each year allocated to each loan purpose. Patterns in loan value closely follow patterns in the number of loans seen in Panel B. In terms of percentage, financing purpose loan value decreases gradually (53.6% in 1996 to 2.8% in 2013) while operating purpose loan amount increases sharply from 2001 (9.5% in 1996 to 37.0% in 2001, and to 85.6% in 2013).

Table 3 displays the count of loans by purpose and by debt covenant. In Panel A, we report the number of loans for each purpose with an income statement (IS) debt covenant as a percent of the total number of loans for that purpose, and similarly for balance sheet (BS) debt covenants. This summary indicates that IS-covenants tend to be more common than BS covenants in the sample period.⁶ In addition, the use of BS covenants steadily decreases, regardless of the loan purpose. The use of IS covenants is fairly stable for financing and acquisition and investment loans, but we see an increase in IS covenants attached to operating loans.

(Insert Table 3 about here.)

⁶ The sample summary statistics show that 62.4% have IS only, 12.2% have BS only, and 25.3% have both IS and BS covenants.

Panel B of Table 3 shows the breakdown of loans by purpose for each debt covenant category. For both subsets, loans with IS covenants and loans with BS covenants, similar trends are apparent. Loans for financing activities decrease steadily from more than half of the total number of loans to less than five percent of loans. For acquisition and investment loans, there is a small increase in the percent of loans from 1996-2000, followed by a drop to the point where these loans also make up less than ten percent of all loans. Conversely, the percent of loans for operating activities, among loans with IS covenants and among those with BS covenants, rises sharply.

Overall, our data indicate an increase in the use of IS covenants, particularly for operating loans, and a sharp decrease in the use of BS covenants. While the increase in IS covenants is driven primarily by the trend in loan for operating purposes, the decrease in BS covenants is clear for all loan purposes. Considering that operating purpose loans make up the majority of the sample (4,011 of the 6,613 observations, or 60.7%), our results are consistent with the findings of Demerjian (2011) related to increasing IS (decreasing BS) covenant ratios. Our study is the first to identify differences in trends over time for the use of IS and BS covenants as it relates to different loan purposes. In the next section, we present our methodology for exploring these patterns more formally and in greater detail.

3.2: Method

We use a multinomial logistic regression model to investigate the relationship between loan purpose and the use of income statement (IS) or balance sheet (BS) ratios in debt covenants. We use the following specification to model the likelihood of a BS or an IS covenant as part of the loan agreement:

$$\log\left(\frac{P(\text{Covenant_Type}_k)}{P(\text{Covenant_Both})}\right) = \beta_{0k} + \beta_{(1k \text{ to } 3k)} * \text{LoanPurpose}_{it} + \beta_{(4k \text{ to } 9k)} * \text{Financial Constraint Variables}_{it} \\ + \beta_{10k} * \text{VR}_{it} + \beta_{11k} * \text{Size}_{it} + \beta_{12k} * \text{Book-to-Market}_{it} + \beta_{13k} * \text{ROA}_{it} + \beta_{14k} * \text{Loss}_{it} + \beta_{15k} * \text{Adv}_{it} \\ + \beta_{16k} * \text{R\&D}_{it} + \beta_{17k} * \text{Tangible}_{it} + \beta_{18k} * \text{Z-Score}_{it} + \beta_{19k} * \text{StdRet}_{it} + \beta_{20k} * \text{DealSize}_{it} \\ + \beta_{21k} * \text{Maturity}_{it} + \beta_{22k} * \text{Revolver}_{it} + \beta_{23k} * \text{Secured}_{it} \quad \text{(Model 1-4)}$$

where k indicates inclusion of balance-sheet-based ratios or income-statement-based ratio.

LoanPurpose_{it}	The purpose of the loan ($\text{LoanPurpose_Oper}_{it}$ or $\text{LoanPurpose_Finan}_{it}$ or $\text{LoanPurpose_InvAcq}_{it}$, where
$\text{LoanPurpose_Oper}_{it}$	= 1 if the purpose of the loan is to fund daily corporate operating activities; 0 otherwise
$\text{LoanPurpose_Finan}_{it}$	= 1 if the purpose of the loan is to fund financing activities; 0 otherwise
$\text{LoanPurpose_Inv\&Acq}_{it}$	= 1 if the purpose of the loan is to fund investing or acquisition activities; 0 otherwise

Financial Constraint Variables (used in 4 models alternatively)

Model 1:

Age_{it}	= Natural logarithm of the number of years the firm in <i>CRSP</i>
Dividends_{it}	= Dividend yield defined as the ratio of common dividends to the market value of equity
Leverage_{it}	= Ratio of long-term debt to market value of total assets

Model 2:

$\text{FinConstraint-WW}_{it}$	= Index of financial constraints based on Whited and Wu (2006)
--------------------------------	--

Model 3:

$\text{FinConstraint-KZ}_{it}$	= Index of financial constraints based on Kaplan and Zingales (1997)
--------------------------------	--

Model 4:

$\text{FinConstraints-CL}_{it}$	= Index of financial constraints based on Cleary (1999)
---------------------------------	---

Other Control Variables

VR_{it}	= Ratio of book value volatility to adjusted net income volatility as defined in Demerjian (2011)
Size_{it}	= Natural logarithm of the market value of total assets
$\text{Book-to-Market}_{it}$	= Book-to-market ratio
ROA_{it}	= Return on assets
Loss_{it}	= 1 if the firm has negative net income; 0 otherwise
Adv_{it}	= Advertising expense divided by total revenue
R\&D_{it}	= R&D expense divided by total revenue
Tangible_{it}	= Asset tangibility defined as the ratio of net value of property, plant, and equipment to total assets
Z-Score_{it}	= Altman's credit risk score
StdRet_{it}	= Natural logarithm of the standard deviation of daily returns over the fiscal year
DealSize_{it}	= Natural logarithm of total deal
Maturity_{it}	= Months to maturity
Revolver_{it}	= 1 if a revolving facility exists in the deal package; 0 otherwise
Secured_{it}	= 1 if debt is secured; 0 otherwise

The primary objective of the model is to measure the impact of loan purpose on the inclusion of a BS or an IS covenant. However, our model includes a number of control variables

that indicate properties of the loan and properties of the borrowing firm. These variables have been identified as important to debt covenant analysis in prior research (e.g., Chava and Roberts 2008; Christensen and Nikolaev 2012). We use the volatility ratio (*VR*), identified by Demerjian (2011) to measure the volatility in adjustments introduced to balance sheet items. Other variables capture the current capital state of the firm through the value of total assets (*Size*), the firm's book-to-market ratio (*Book-to-Market*), asset tangibility (*Tangible*), and credit risk (*Z-Score*). To control for income and expenses, we include an indicator variable equal to 1 if the firm has negative net income (*Loss*), advertising expenses as a percent of total revenue (*Adv*), research and development expenses (*R&D*), and the standard deviation of daily returns over the fiscal year (*StdRet*). Finally, in addition to loan purpose, we include other potentially important aspects of the loan, such as the size of the loan (*DealSize*), the number of months to maturity (*Maturity*), and indicator variables for a revolving facility in the loan (*Revolver*) and for secured debt (*Secured*).

We also include financial constraint variables in the models. This inclusion of financial constraints variables follows an extensive prior finance and accounting literature (e.g., Christensen and Nikolaev 2012; Paik et al. 2015). There are several potential ways to measure and control for financial constraints in this context. We follow Christensen and Nikolaev (2012) to construct four different sets of indexes to measure firms' finance constraints: (1) *Age*, *Dividends*, and *Leverage*, (2) *FinConstraint-WW* as suggested in Whited and Wu (2006), (3) *FinConstraint-KZ* as suggested by Kaplan and Zingales (1997), and (4) *FinConstraint-CL* from Cleary (1999).⁷ Following Christensen and Nikolaev (2012), we conduct four separate regressions, Models (1) – (4), where each specification includes alternative financing constraint

⁷ More detailed explanations of these financial constraint variables are presented in Appendix A.

measures to avoid multi-collinearity. All models include the remaining control variables listed above and differ only in the variables used to measure financial constraints.

Model (1) includes several firm-specific characteristics as proxies for financial constraints, including *Age*, *Dividends* and *Leverage*. We expect that older (*Age*) and dividend paying (*Dividends*) firms are less likely to be financially constrained, whereas highly leveraged (*Leverage*) firms are more likely to be financially constrained. Model (2)-(4) include *FinConstraint-WW*, *FinConstraint-KZ* and *FinConstraint-CL*, respectively, as measures of financial constraint. We expect a negative impact of financial constraint on the likelihood of having a BS covenant and a positive impact of financial constraint on the likelihood of having an IS covenant.

Table 4 reports summary statistics for the variables included in our main regressions. The mean values of our variables of interest, *IScovenants* and *BScovenants*, are 0.878 and 0.376, respectively, suggesting that on average, IS covenants are included more frequently than BS covenants. The mean values of *Age* (2.750), *Dividends* (0.009), *Leverage* (0.187), and of other financial constraint variables such as *FinConstraint-WW*, *FinConstraint-KZ*, and *FinConstraint-CL* are similar to the means reported in Christensen and Nicholaev (2012) and Paik et al. (2015). Additionally, the mean value of *VR* (Volatility Ratio) is 1.903, and it is similar in size to the mean value of 1.922 reported in Demerjian (2011). The mean values of all other control variables reported in Table 4 are consistent with those reported in prior studies such as Christensen and Nicholaev (2012) and Paik et al. (2015). In sum, our basic descriptive statistics suggest that our sample is consistent with the samples used in prior research examining debt covenants. We now turn to our logit analysis to further explore the relationship between loan purpose and debt covenants.

(Insert Table 4 about here.)

4. RESULTS

Before discussing results of the multinomial logit analysis, we present mean *differences* for the prevalence of IS and BS covenants. Panel A of Table 5 reports the portion of loans in our sample that contains an IS or BS covenant, disaggregated by loan purpose. Loans for acquisition and investing purposes tend to rely on IS covenants, as 94 percent include IS-based covenants while only 27 percent include BS-based covenants. Shares of operating (financing) purpose loans with IS-based and BS-based covenants are 87 (85) percent and 35 (51) percent, respectively.

(Insert Table 5 about here.)

Panel B reports statistical tests for the mean difference in use of IS-based covenants across loan purpose types. Here we use a chi-squared test for the overall mean differences in the presence of multiple groups and use the Marascuilio procedure for pair-wise mean differences. Results indicate that the average number of acquisition and investing purpose loans with IS covenants is statistically significantly greater than both operating and financing purpose loans, before controlling for financial constraint variables and other variables. This finding is statistically significant at the 1% level. We also find a more frequent use of IS covenants for operating loans relative to financing loans; and the difference is statistically significant at the 5% level ($t = 2.04$, $p\text{-value} = 0.04144$).

Similar mean differences for BS-based covenants are shown in Panel B of Table 5. Loans prepared for acquisition and investing purpose loans have a less frequent use of BS-based covenants compared to operating and financing purpose loans, and operating loans have a significantly lower average use of BS covenants. These differences are statistically significant at

the 1% level. In general, evidence from mean differences offers support for our three hypotheses and suggests that loan purpose is an important factor in determining the type of debt covenant attached to a loan.

In Table 6, we present results for our four different multinomial logit specifications based on financial constraint controls as Models 1-4. We report coefficient estimates that indicate the impact of loan purpose and financial constraints. In general, coefficient estimates on other control variables are consistent across models and across our two dependent variable specifications. While coefficient magnitudes vary somewhat, sign and significance remain largely unchanged. Specifically, we find that the total debt size (*Dealsize*) and whether the deal is secured (*Secured*) decrease the likelihood of a debt contract containing a BS covenant and increase the likelihood of inclusion of an IS covenant. Conversely, firm size (*Size*), the book-to-market ratio of the borrowing firm (*Book-to-Market*), and asset tangibility (*Tangible*) all have a positive impact on the likelihood of the use of a BS covenant but decrease the likelihood of an IS covenant. Finally, the estimated impact of months to maturity on the debt (*Maturity*) decreases the likelihood of a BS covenant and increases the likelihood of an IS covenant. Estimates of the impact of loan maturity suggest a potential risk response in providing debt to firms, as lenders may consider income statement ratios as a better indicator of the long-term health of the borrowing firm. These results fit well with our subsequent estimates, as they relate to long-term financing.⁸

(Insert Table 6 about here.)

In our sample, every loan observation has some type of covenant so the choice set for the dependent variable includes either only an IS covenant, only a BS covenant, or both types of

⁸ Full regression results are reported in Appendix B, Table 6-A.

covenants. Our model estimates coefficients for the IS and BS choices, treating *both* as the normalized category. Therefore, our results are somewhat conservative in that they identify, for example, the impact of having an IS covenant relative to having no IS covenant or both types of covenant.⁹ In addition, the first set of models in Table 6 focuses only on loan purpose for acquisition and investing relative to all other purposes without distinguishing between operating and financing.

Table 6 shows regression estimates and p-values for statistical significance. Focusing on our primary variable of interest, we find that *LoanPurpose_Inv&Acq* has a positive impact on the likelihood of a loan containing an IS covenant and a negative impact on the likelihood of a loan containing a BS covenant. These impacts are consistent and statistically significant across all four models. Estimates indicate that covenants attached to the loans borrowed to fund investing or acquisition activities are more likely to include income statement based ratios than non-acquisition and non-investing purpose loans. Similarly, loans borrowed to fund investing or acquisition activities are less likely to include balance sheet based ratios.

More specifically, in Table 6, -0.3979, the coefficient on the variable *BS:LoanPurpose_Inv&Acq* in Model 1 indicates that loan contracts for investment & acquisition purposes are less likely to include balance-sheet-based ratio covenants as compared to loan contracts for other purposes. On the other hand, 0.3369, the coefficient on *IS:LoanPurpose_Inv&Acq* in Model 1 indicates that debt contracts for investment and acquisition purposes are more likely to use income-statement-based ratio covenants in loan contracts. The remaining models, Models 2-4, show consistent patterns with the same directions

⁹ We also estimated bivariate logit models in which the dependent variable indicated the existence of a balance sheet covenant, whether or not it was also accompanied by an income statement covenant. Similarly, we repeated the regressions for income statement covenants. Empirical results are qualitatively identical and similar in magnitude.

(signs) and comparable magnitudes of coefficients. In general, our results suggest that loan purpose is an important component in determining the structure of debt contracts. These results offer support for Hypothesis 1. Furthermore, all financing constraint variables have the expected sign and are significant across all models.

To test Hypotheses 2a and 2b, we run models similar to 1-4 but replace *LoanPurpose_Inv&Acq* with the variables *LoanPurpose_Oper* and *LoanPurpose_Finan*. Results, labeled as models 1a-4a and shown in Table 7, confirm results from our previous specification. Again, finance constraints have the expected impact. Across all four models, we find that *LoanPurpose_Oper* and *LoanPurpose_Finan* have a positive effect on the likelihood of a BS covenant being in place. This suggests a more frequent use of BS covenants when loans are for either operating or financing activities, similar to results from Table 6. Regarding the use of an IS debt covenant, negative coefficients indicate a decreased likelihood when the loan is for operating or financing activities. Coefficients are consistent across the four models and statistically significant at least at 0.05 level.

(Insert Table 7 about here.)

From Table 7, the Model 1 coefficients on *BS:LoanPurpose_Oper* and *BS:LoanPurpose_Finan*, 0.3937 and 0.3998, respectively indicate that loans for the purpose of operating and financing activities include balance-sheet-based ratios more often in loan covenants, compared to loans for investment and acquisition. Similarly, the -0.3502 and -0.3234 coefficients on *IS:LoanPurpose_Oper* and *IS:LoanPurpose_Finan* in Model 1 shows that debt covenants for these activities are less likely to include income-statement-based ratios than loan covenants for other purposes. The coefficients in the remaining Models 2-4 show consistent results and have the same signs and similar magnitudes as in Model 1. These results, similar to

earlier results, imply that different financial ratios are used differently across different loan purposes.

Overall, regression results in Table 7 provide strong support for Hypothesis 2a and Hypothesis 2b. That is, loans borrowed to fund daily corporate operating activities and financing purposes are significantly less likely to include covenants with income-statement-based ratios and more likely to include covenants with balance-sheet-based ratios.

5. CONCLUSION

Private debt financing is a key element of business activity, as firms use loans for a variety of purposes, including funding daily corporate operations, repaying debt, and funding merger and acquisition related deals. Along with an increase in the use of business loans, financial covenants in debt contracts have emerged as a common and useful tool to increase efficiency in lending. Such covenants frequently make use of financial ratios derived from income statements and/or balance sheets to ensure that the borrower is meeting a threshold of financial stability.

In this study, we examined how the use of specific types of debt covenants, based on balance sheet or income statement information, is related to the purpose of the loan. Overall, our findings imply that the loan purpose is a significant factor in determining the choice of accounting information used in covenants. Our results extend the findings of Christensen and Nikolaev (2012) to include the loan purpose in addition to other financing constraints. Specifically, we provide evidence that debt covenants for a loan borrowed for daily corporate operations and financing activities are more likely to contain balance-sheet-based covenants, and less likely to contain income-statement-based covenants. Conversely, debt covenants for a loan

borrowed for long-term investment or acquisitions are more likely to contain income-statement-based covenants, and less likely to contain balance-sheet-based covenants.

Overall, our results provide important evidence regarding the connection between debt covenant structure and loan purpose. In doing so, it contributes to the literature on debt contract design (for example, Dichev and Skinner 2002; Chava and Roberts 2008; Demerjian 2011; Christensen and Nikolaev 2012). Despite much interest in debt contract design, Skinner (2011) argues that we still have incomplete knowledge of the economic factors that structure debt contracts. Income-statement based covenants depend on measures of profitability and efficiency, and act as trip wires that transfer control rights to lenders when borrowing firms' performance deteriorates. On the other hand, balance-sheet-based covenants rely on information about sources and uses of capital, and align interests between borrowing firms and lenders by restricting the borrower's capital structure. We show that loan purpose is significantly associated with the choice between income-statement-based- and balance-sheet-based covenants. This result further illustrates ways in which accounting information improves contracting efficiency.

Our results are limited to the U.S. market with its institutional structure. In future studies, it would be interesting to perform similar investigations on firms in other countries. An additional line of research that would extend our findings could investigate the relation between the loan purpose and the choice of debt covenants through analysis of firms' debt risk profiles.

Appendix A: Variable Definitions

$$(IS\ Covenant_{it}, BS\ Covenant_{it}, Both\ Covenants) = f(\beta_{0k} + \beta_{(2k\ to\ 3k)} * LoanPurpose_{it} + \beta_{(4k\ to\ 5k)} * Financial\ Constraint\ Variables_{it} + \beta_{10k} * VR_{it} + \beta_{11k} * Size_{it} + \beta_{12k} * Book-to-Market_{it} + \beta_{13k} * ROA_{it} + \beta_{14k} * Loss_{it} + \beta_{15k} * Adv_{it} + \beta_{16k} * R\&D_{it} + \beta_{17k} * Tangible_{it} + \beta_{18k} * Z-Score_{it} + \beta_{19k} * StdRet_{it} + \beta_{20k} * DealSize_{it} + \beta_{21k} * Maturity_{it} + \beta_{22k} * Revolver_{it} + \beta_{23k} * Secured_{it})$$

(Model 1-4)

where k indicates inclusion of balance-sheet-based ratios or income-statement-based ratio.

- IS Covenant_{it}* = An indicator variable which takes the value of 1 if a loan deal has only an income-statement-based covenant; 0 otherwise
- BS Covenant_{it}* = An indicator variable which takes the value of 1 if a loan deal has only a balance-sheet-based covenant; 0 otherwise
- Both Covenants_{it}* = An indicator variable which takes the value of 1 if a loan deal has a balance-sheet-based covenant and an income-statement-based covenant; 0 otherwise. This serves as the reference category in our model.
- LoanPurpose_{it}* = The purpose of the loan (*LoanPurpose_Oper_{it}* or *LoanPurpose_Finan_{it}* or *LoanPurpose_InvAcq_{it}*), where
- LoanPurpose_Oper_{it}* = 1 if the purpose of the loan is to fund daily corporate operating activities; 0 otherwise
- LoanPurpose_Finan_{it}* = 1 if the purpose of the loan is to fund financing activities; 0 otherwise
- LoanPurpose_Inv&Acq_{it}* = 1 if the purpose of the loan is to fund investing or acquisition activities; 0 otherwise

Financial Constraint Variables (in 4 alternative models)

Model 1:

- Age_{it}* = Natural logarithm of the number of years the firm in CRSP
- Dividends_{it}* = Dividend yield defined as the ratio of common dividends to the market value of equity
- Leverage_{it}* = Ratio of long-term debt to market value of total assets

Model 2:

- FinConstraint-WW_{it}* = Index of financial constraints based on Whited and Wu (2006)

Model 3:

- FinConstraint-KZ_{it}* = Index of financial constraints based on Kaplan and Zingales (1997)

Model 4:

- FinConstraints-CL_{it}* = Index of financial constraints based on Cleary (1999)

More specifically,

- FinConstraint-WW* = $-0.091 * CF_{it} - 0.062 * DIVPOS_{it} + 0.021 * TLTD_{it} - 0.044 * LNNTA_{it} + 0.102 * ISG_{it} + 0.035 * SG_{it}$, where
- CF* = ratio of cash flow to total assets
- DIVPOS* = indicator that takes the value of one if the firm pays cash dividends
- TLTD* = ratio of the long-term debt to total assets, *LNNTA* is the natural log of total assets
- ISG* = firm's three-digit industry sales growth
- SG* = firm's sales growth.

$$FinConstraint-KZ = -1.002 * CashFlow/K_{it} + 0.28 * Q_{it} + 3.139 * Debt/TotalCapital_{it} - 39.368 * Dividends/K_{it} - 1.315 * Cash/K_{it}, \text{ where}$$

CashFlow/K = earnings before extraordinary items plus depreciation divided by the net value of property, plant, and equipment (PPE)
Q = Tobin's Q (Market value of equity + Book value of debt) / Long-term debt plus equity
Debt/TotalCapital = Long-term debt / Sum of long-term debt and equity
Dividends/K = (Common dividends + Preferred dividends) / Net PPE
Cash/K = (Cash + Cash equivalents) / Net PPE

$$FinConstraint-CL = 0.0432 * Current_{it} - 0.0011 * FCCov_{it} + 0.0039 * Slack/K_{it} - 3.3525 * NI_{it} - 0.5723 * SalesGrowth_{it} + 0.6067 * Debt_{it}, \text{ where}$$

Current = Current assets/ Current liabilities
FCCov = (Pretax income – interest) / (Interest + Preferred dividends)
Slack/K = (cash + 0.5 * inventory + 0.70 * accounts receivable – short term loans) / net PPE
NI = Net Income Margin = Income before extraordinary items/Sales
Sales growth = Annual growth in sales revenue
Debt = Long-term debt / Total assets.

Other Control Variables

- VR* = Ratio of Book Value Volatility to Adjusted Net Income Volatility (Book Value Volatility/ Adjusted Net Income Volatility); Book Value Volatility is the five-year standard deviation of changes in retained earnings plus dividends. Adjusted Net Income Volatility is the five-year standard deviation of Net Income minus Special Items and Non-Operating Income and Expense – based on Demerjian (2011).
- Size* = Natural logarithm of the market value of total assets (log(AT – SEQ + PRCCF×CSHO))
- Book-to-Market* = Book-to-market ratio (Compustat: SEQ/(PRCCF×CSHO))
- ROA* = Return on assets (Income before extraordinary items / Total assets)
- Loss* = An indicator variable (1 if the firm has negative net income; 0 otherwise)
- Adv* = Advertising expense divided by total revenue (Compustat: XADV/REVT)
- R&D* = R&D expense divided by total revenue (Compustat: XRD/REVT). Missing R&D expense is replaced with zeros
- Tangible* = Asset tangibility defined as the ratio of net value of property, plant, and equipment to total assets (Compustat: PPENT/AT)
- Z-Score* = Altman's credit risk score computed as

$$Z = 1.2 * (Current Assets - Current Liabilities)/Total Assets + 1.4 * Retained Earnings/Total Assets + 3.3 * Pretax Income/Total Assets + 0.6 * Market Capitalization/Total Liabilities + 0.999 * Revenue/Total Assets.$$
- StdRet* = Natural logarithm of the standard deviation of daily returns over the fiscal year.
- DealSize* = Natural logarithm of total deal
- Maturity* = Months to maturity
- Revolver* = An indicator variable (1 if a revolving facility exists in the deal package; 0 otherwise)

Secured = An indicator variable (1 if debt is secured; 0 otherwise)

Appendix B: TABLE 6-A – Coefficients on Control Variables in TABLE 6

Variables	Model 1	Model 2	Model 3	Model 4
<i>Control Variables</i>				
BS: VR	-0.0813** (0.0202)	-0.0698** (0.0423)	-0.0636* (0.0627)	-0.0629* (0.0633)
IS: VR	0.0405** (0.0323)	0.0409** (0.0288)	0.0403** (0.0311)	0.0359* (0.0523)
BS: Size	0.5087*** (0.0000)	0.1049 (0.1723)	0.5546*** (0.0000)	0.5447*** (0.0000)
IS: Size	-0.0498 (0.2173)	-0.0097 (0.8568)	-0.0697* (0.0803)	-0.0505 (0.2093)
BS: Book-to-Market	0.2233*** (0.0048)	0.0676 (0.3445)	0.1988*** (0.0070)	0.1961*** (0.0083)
IS: Book-to-Market	-0.1520** (0.0127)	-0.0767 (0.1741)	-0.1067* (0.0655)	-0.1229* (0.0332)
BS: ROA	-0.6930 (0.4666)	0.0390 (0.9683)	-1.8612* (0.0512)	-0.9287 (0.3894)
IS: ROA	0.6976 (0.2843)	0.6069 (0.3527)	0.8252 (0.2118)	2.5939*** (0.0005)
BS: Loss	0.1568 (0.3605)	0.0763 (0.6509)	0.0431 (0.7980)	0.0842 (0.6218)
IS: Loss	0.4429*** (0.0001)	0.4794*** (0.0000)	0.4811*** (0.0000)	0.3802*** (0.0007)
BS: Adv	-4.0887 (0.1014)	-3.4434 (0.1721)	-4.9543* (0.0557)	-2.8803 (0.2430)
IS: Adv	7.4038** (0.0000)	7.0457** (0.0000)	7.1373** (0.0000)	6.5908** (0.0000)
BS: R&D	8.7488*** (0.0000)	8.6646*** (0.0000)	7.1368*** (0.0000)	7.2224*** (0.0000)
IS: R&D	0.4017 (0.6720)	0.0693 (0.9409)	0.4294 (0.6445)	0.3989 (0.6687)
BS: Tangible	0.8146*** (0.0001)	0.6449*** (0.0016)	1.2916*** (0.0000)	0.6399*** (0.0017)
IS: Tangible	-2.2014*** (0.0000)	-2.0683*** (0.0000)	-2.1520*** (0.0000)	-1.9642*** (0.0000)
BS: Z-Score	-0.0297 (0.1729)	0.0163 (0.3898)	-0.0201 (0.2906)	-0.0172 (0.3713)
IS: Z-Score	-0.0059 (0.7069)	-0.0271* (0.0692)	-0.0229 (0.1148)	-0.0153 (0.2962)
BS: StdRet	5.3220 (0.2162)	4.4275 (0.2990)	-2.3229 (0.5843)	-4.5649 (0.2922)
IS: StdRet	-2.3465	-0.5611	0.0785	1.1230

	(0.3823)	(0.8340)	(0.9762)	(0.6704)
BS: DealSize	-0.2588***	-0.2678***	-0.2377***	-0.2457***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
IS: DealSize	0.2786***	0.3035***	0.2999***	0.2872***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
BS: Maturity	-0.0257***	-0.0255***	-0.0257***	-0.0258***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
IS: Maturity	0.0109***	0.0118***	0.0118***	0.0115***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
BS: Revolver	0.4036***	0.4130***	0.3890***	0.4050***
	(0.0009)	(0.0006)	(0.0011)	(0.0006)
IS: Revolver	0.0412	0.0114	0.0076	0.0210
	(0.5714)	(0.8743)	(0.9163)	(0.7716)
BS: Secured	-0.1386	-0.2285**	-0.3787***	-0.3913***
	(0.2412)	(0.0492)	(0.0009)	(0.0006)
IS: Secured	0.4548***	0.5509	0.5732***	0.5907***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Year fixed effects	Included	Included	Included	Included
No. of observations	6,613	6,613	6,613	6,613

This table presents results for our four different specifications to test Hypothesis 1 as the following Models 1-4.

$$\log\left(\frac{P(\text{Covenant_Type}_k)}{P(\text{Covenant_Both})}\right) = \beta_{0k} + \beta_{(1k \text{ to } 3k)} * \text{LoanPurpose}_{it} + \beta_{(4k \text{ to } 9k)} * \text{Financial Constraint Variables}_{it} \\ + \beta_{10k} * \text{VR}_{it} + \beta_{11k} * \text{Size}_{it} + \beta_{12k} * \text{Book-to-Market}_{it} + \beta_{13k} * \text{ROA}_{it} + \beta_{14k} * \text{Loss}_{it} + \beta_{15k} * \text{Adv}_{it} \\ + \beta_{16k} * \text{R\&D}_{it} + \beta_{17k} * \text{Tangible}_{it} + \beta_{18k} * \text{Z-Score}_{it} + \beta_{19k} * \text{StdRet}_{it} + \beta_{20k} * \text{DealSize}_{it} \\ + \beta_{21k} * \text{Maturity}_{it} + \beta_{22k} * \text{Revolver}_{it} + \beta_{23k} * \text{Secured}_{it} \quad (\text{Model 1-4})$$

where k indicates inclusion of balance-sheet-based ratios or income-statement-based ratio.

All variables are defined in Appendix A. The numbers in parentheses are p-values. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

REFERENCE

- Aghion P. and Bolton, P. (1992) An incomplete contracts approach to financial contracting. *The Review of Economic Studies*, 59(3), pp. 473-494.
- Apilado, V. P. and Millington, J. K. (1992) Restrictive loan covenants and risk adjustment in small business lending. *Journal of Small Business Management*, 30(1), pp.38-48.
- Billett, M. T., T. H. D. King, and D. C. Mauer. (2007) Growth opportunities and the choice of leverage, debt maturity, and covenants, *The Journal of Finance* 62, pp. 697–730.
- Boyd, J. H. and Prescott, E. C. (1986) Financial intermediary-coalitions. *Journal of Economic Theory*, 38(2), pp. 211-232.
- Bradley, M. and Roberts, M. (2015) The structure and pricing of corporate debt covenants. *The Quarterly Journal of Finance*, 5(02), pp. 1-37.
- Chava, R. and Roberts, M. R. (2008) How does financing impact investment? The role of debt covenants, *Journal of Finance*, 63(5), pp. 2085-2121.
- Christensen H. and Nikolaev, V. (2012) Capital versus performance covenants in debt contracts, *Journal of Accounting Research*, 50(1), pp. 75-116.
- Cleary, S. (1999) The relationship between firm investment and financial status. *Journal of Finance* 54, pp. 673-692.
- Demerjian P. (2007) Financial ratios and credit risk: The selection of financial ratio covenants in debt contracts. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=929907
- Demerjian P. (2011) Accounting standards and debt covenants: Has the ‘balance sheet approach’ led to a decline in the use of balance sheet covenants? *Journal of Accounting & Economics*, 52(2), pp. 178-202.
- Demerjian, P. and E. Owens (2016) Measuring the probability of financial covenant violation in private debt contract. *Journal of Accounting & Economics* 61 (2-3), pp. 433-447.
- Demiroglu, C., and James, C. (2010) The information content of bank loan covenants. *The Review of Financial Studies*, 23(10), pp. 3700–3737.
- Diamond, D. (1984) Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51, pp. 393-414.
- Dichev, I., and Skinner, D. (2002) Large–sample evidence on the debt covenant hypothesis. *Journal of Accounting Research*, 40(4), pp. 1091-1123.

- Kaplan, S. and L. Zingales. (1997) Do financing constraints explain why investment is correlated with cash-flow. *Quarterly Journal of Economics* 112 (1), pp. 168-216.
- Nini, G., D. C. Smith, and A. Sufi. (2009) Creditor control rights and firm investment policy, *Journal of Financial Economics* 92 (3), pp. 400-420.
- Ozelge, S. (2007) The role of banks and private lenders in forced CEO turnover, New York University.
- Paik, D., van der Laan Smith, J., Lee, B., and Yoon, S. (2015) The relation between accounting information in debt covenants and operating leases, *Accounting Horizons* 29 (4), pp. 969-996.
- Reisel, N. (2009) On the value of restrictive covenants: Empirical investigation of public bond issues, *Journal of Corporate Finance* 27, pp. 251.
- Skinner D. J., (2011) Discussion of “accounting standards and debt covenants: Has the “balance sheet approach” led to a decline in the use of balance sheet covenants, *Journal of Accounting & Economics*, 52(2), pp. 203-208.
- Tirole, J. (2006) The theory of corporate finance, Princeton University Press.
- Whited, T. M. (1992) Debt, liquidity constraints, and corporate investment: Evidence from panel data, *Journal of Finance* 47, pp. 1425-60.
- Whited, T., and G. Wu. (2006) Financial constraints risk. *Review of Financial Studies* 19, pp. 531–559.

TABLE 1
Financial Debt Covenants

Source of Information	Type of Financial Covenants	Num. of Obs.	Percent (%)	Deal Amount (\$million)	
				Mean	Median
Income Statement	Interest Coverage Ratio				
	Earnings to cash interest	7	0.1%	209	100
	Earnings to fixed charge	448	6.8%	282	125
	Earnings to interest expense	195	2.9%	723	425
	Debt-to-Earnings Ratio				
	Debt to EBITDA	3,903	59.0%	436	220
	Senior debt to EBITDA	116	1.8%	212	65.25
Balance Sheet	Current Ratio				
	Current ratio	134	2.0%	214	75
	Debt service coverage	76	1.1%	122	34.44
	Quick ratio	33	0.5%	52	15
	Net Worth Ratio				
	Debt to tangible net worth	496	7.5%	164	23.35
	Leverage Ratio				
	Debt to equity	33	0.5%	148	50
	Debt to assets	1,170	17.7%	677	350
	Debt Amount				
Senior leverage	1	0.0%	235	235	
Total					
		6,613	100.0%	441	200

In this table, the most common financial debt covenants are first labeled by their relative financial statement (income statement vs. balance sheet) followed by their subcategory. The six types (subcategories) of financial ratio covenants include the following: 1. interest coverage, 2. debt-to-earnings, 3. current ratio, 4. net worth, 5. leverage, and 6. debt amount.

TABLE 2
Loan Purpose Distributions

Panel A: Deal Amount and Sample Distribution by Type of Loan Purpose

Loan Purpose Group	Specific Type of Loan Purpose	Num. of Obs.		Percent (%)	Deal Amount (\$million)	
		Group	Specific		Mean	Median
Acquisition & Investing		1,010		15.3%	\$684	\$250
	Acquisition	966		14.6%	699	252
	Takeover		671	10.1%	810	310
	Acquisition line		271	4.1%	428	175
	LBO (Leveraged buyout)		24	0.4%	635	260
	Investing	44		0.7%	362	100
	Capital expenditure		29	0.4%	448	142
	Equipment purchase		10	0.2%	34	41
	Security purchase		2	0.0%	129	129
	Telcom buildout		2	0.0%	813	813
	Real estate purchase		1	0.0%	700	700
Operating		4,011		60.7%	409	200
	Corporate daily operating		2,153	32.6%	499	275
	Working capital		1,858	28.1%	305	150
Financing		1,592		24.1%	366	160
	Debt repayment		1,207	18.3%	272	115
	CP backup		253	3.8%	812	500
	IPO (Initial Public Offering) financing		80	1.2%	396	170
	Projects finance		15	0.2%	175	50
	Spinoff		11	0.2%	424	350
	Recapitalization		10	0.2%	244	138
	Dividend recapitalization		6	0.1%	358	188
	Ship finance		5	0.1%	268	67
	Debtor-in-possession		2	0.0%	390	390
	Exit financing		2	0.0%	1,748	1,748
	Credit enhancing		1	0.0%	8	8
Overall		6,613		100.0%	\$441	\$200

Panel B: Frequency and Relative Frequency of Loans by Loan Purpose

	Inv&Acq	% of Total	Operating	% of Total	Financing	% of Total	Overall
1996	62	16.8%	97	26.4%	209	56.8%	368
1997	83	18.4%	117	26.0%	250	55.6%	450
1998	119	30.4%	80	20.5%	192	49.1%	391
1999	99	26.9%	70	19.0%	199	54.1%	368
2000	68	20.5%	79	23.8%	185	55.7%	332
2001	47	11.5%	200	48.9%	162	39.6%	409
2002	50	10.4%	322	67.2%	107	22.3%	479
2003	35	7.4%	361	76.6%	75	15.9%	471
2004	71	12.9%	423	76.8%	57	10.3%	551
2005	71	13.6%	418	79.9%	34	6.5%	523
2006	78	18.1%	320	74.1%	34	7.9%	432
2007	74	20.8%	260	73.0%	22	6.2%	356
2008	48	19.8%	179	74.0%	15	6.2%	242
2009	12	7.3%	143	87.2%	9	5.5%	164
2010	21	9.5%	189	85.9%	10	4.5%	220
2011	25	7.3%	311	90.4%	8	2.3%	344
2012	32	11.9%	221	82.2%	16	5.9%	269
2013	15	6.1%	221	90.6%	8	3.3%	244
Total	1,010	15.3%	4,011	60.7%	1,592	24.1%	6,613

Panel C: Mean Value and Relative Value of Loans by Loan Purpose

	Inv&Acq (\$million)	% of Total	Operating (\$million)	% of Total	Financing (\$million)	% of Total
1996	569	36.9%	93	9.5%	245	53.6%
1997	685	36.7%	112	8.5%	339	54.8%
1998	656	65.6%	99	6.7%	172	27.7%
1999	371	32.8%	166	10.4%	319	56.8%
2000	581	32.0%	152	9.7%	389	58.3%
2001	737	22.1%	290	37.0%	394	40.8%
2002	439	15.9%	237	55.2%	373	28.9%
2003	325	8.2%	242	62.6%	545	29.3%
2004	462	14.3%	367	67.6%	730	18.1%
2005	797	20.1%	482	71.6%	684	8.3%
2006	606	20.2%	511	69.8%	691	10.0%
2007	790	27.3%	574	69.7%	292	3.0%
2008	1,131	46.6%	314	48.2%	398	5.1%
2009	293	6.4%	337	87.9%	343	5.6%
2010	1,124	18.7%	494	74.0%	917	7.3%
2011	1,217	11.8%	709	85.4%	916	2.8%
2012	1,516	26.9%	556	68.2%	545	4.8%
2013	1,404	11.6%	705	85.6%	637	2.8%
Total	684	23.7%	409	56.3%	366	20.0%

Panel A of this table displays our sample loan deals based on loan purpose and loan deal amount. Panel B reports the frequency of loan deals by loan purposes over our sample period, along with the portion of total loans each year that were used for a specific purpose. Panel C reports similar statistics to Panel B but in terms of loan value. Panel C shows the mean value of loan deals by loan purpose for each year. The “% of total” in Panel C refers to total value of loan deals for each loan purpose as a percent of the total value of loans in a given year.

TABLE 3
Loan Purpose and Covenant Type

Panel A: Portion of Loans with IS/BS Covenant (as percent of loans for purpose)

	LoanPurpose Inv&Acq		LoanPurpose Operating		LoanPurpose Financing	
	IS	BS	IS	BS	IS	BS
1996	93.5%	56.5%	71.1%	76.3%	84.7%	71.8%
1997	91.6%	30.1%	70.9%	75.2%	82.8%	67.2%
1998	95.8%	39.5%	76.3%	71.3%	84.9%	56.3%
1999	96.0%	31.3%	84.3%	54.3%	88.4%	48.2%
2000	95.6%	35.3%	73.4%	59.5%	85.9%	44.3%
2001	95.7%	23.4%	89.5%	44.0%	88.9%	38.9%
2002	98.0%	24.0%	91.6%	37.0%	84.1%	47.7%
2003	97.1%	25.7%	92.0%	33.8%	77.3%	42.7%
2004	93.0%	23.9%	92.9%	31.7%	82.5%	36.8%
2005	94.4%	12.7%	89.0%	32.3%	91.2%	20.6%
2006	91.0%	16.7%	86.6%	28.8%	97.1%	11.8%
2007	95.9%	16.2%	88.5%	25.0%	90.9%	13.6%
2008	91.7%	16.7%	85.5%	35.8%	60.0%	40.0%
2009	91.7%	16.7%	92.3%	26.6%	88.9%	44.4%
2010	90.5%	19.0%	89.9%	25.9%	70.0%	30.0%
2011	92.0%	8.0%	83.9%	29.9%	75.0%	37.5%
2012	84.4%	18.8%	87.8%	23.5%	87.5%	18.8%
2013	80.0%	20.0%	82.8%	23.5%	87.5%	37.5%

Panel B: Portion of Loans with IS/BS Covenant (as percent of loans with covenant)

	Income Statement			Balance Sheet		
	Inv&Acq	Operating	Financing	Inv&Acq	Operating	Financing
1996	19.1%	22.7%	58.2%	13.5%	28.6%	57.9%
1997	20.8%	22.7%	56.6%	8.9%	31.3%	59.8%
1998	33.7%	18.0%	48.2%	22.2%	26.9%	50.9%
1999	28.8%	17.9%	53.3%	18.8%	23.0%	58.2%
2000	23.0%	20.6%	56.4%	15.7%	30.7%	53.6%
2001	12.2%	48.6%	39.1%	6.8%	54.3%	38.9%
2002	11.3%	68.0%	20.7%	6.6%	65.4%	28.0%
2003	8.0%	78.3%	13.7%	5.5%	74.8%	19.6%
2004	13.0%	77.7%	9.3%	9.9%	77.9%	12.2%
2005	14.3%	79.1%	6.6%	6.0%	89.4%	4.6%
2006	18.6%	72.7%	8.7%	11.9%	84.4%	3.7%
2007	22.1%	71.7%	6.2%	15.0%	81.3%	3.8%
2008	21.4%	74.3%	4.4%	10.3%	82.1%	7.7%
2009	7.3%	87.4%	5.3%	4.5%	86.4%	9.1%
2010	9.7%	86.7%	3.6%	7.1%	87.5%	5.4%
2011	7.9%	90.0%	2.1%	2.0%	94.9%	3.1%
2012	11.5%	82.6%	6.0%	9.8%	85.2%	4.9%
2013	5.9%	90.6%	3.5%	5.2%	89.7%	5.2%

This table displays the count of loans by purpose and by source of information (income statement vs. balance sheet). Panel A reports the number of loans for each purpose with an income statement (IS) debt covenant as a percent of the total number of loans for that purpose, and similarly for balance sheet (BS) debt covenants. Panel B shows the breakdown of loans by purpose for each debt covenant category.

TABLE 4
Basic Statistics

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
IScovenants	0.878	1.000	0.328	0.000	1.000
BScovenants	0.376	0.000	0.484	0.000	1.000
Age	2.750	2.773	0.833	0.000	4.477
Dividends	0.009	0.000	0.016	0.000	0.294
Leverage	0.187	0.161	0.149	0.000	0.873
FinConstraint-WW	-0.312	-0.310	0.094	-0.527	-0.091
FinConstraint-KZ	-0.808	0.443	4.007	-29.896	4.048
FinConstraint-CL	0.003	0.005	0.374	-1.460	1.480
VR	1.903	1.294	1.989	0.177	45.127
Size	7.230	7.302	1.783	1.801	11.901
Book-to-Market	0.660	0.510	0.658	0.001	21.564
ROA	0.036	0.040	0.071	-0.645	0.433
Loss	0.198	0.000	0.398	0.000	1.000
Adv	0.010	0.000	0.029	0.000	0.385
R&D	0.018	0.000	0.044	0.000	0.487
Tangible	0.330	0.257	0.243	0.005	0.970
Z-Score	3.299	2.773	2.720	-6.905	53.640
Stdret	0.030	0.026	0.016	0.007	0.241
Dealsize	18.979	19.114	1.500	11.850	23.288
Maturity	47.267	57.000	21.948	1.000	252.000
Revolver	0.665	1.000	0.472	0.000	1.000
Secure	0.543	1.000	0.498	0.000	1.000

This table reports summary statistics for the variables included in our main regressions. All variables are defined in Appendix A.

TABLE 5
Mean Difference Results

Panel A: Type of Debt Covenants by Loan Purpose

Loan Purpose	IS		BS	
	Mean	Std. Dev.	Mean	Std. Dev.
Acq. & Inv.	0.94	0.24	0.27	0.44
Operating	0.87	0.33	0.35	0.48
Financing	0.85	0.36	0.51	0.50

Panel B: Differences in Type of Covenants by Loan Purpose

Overall Differences

	Test Statistic	p-value
IS Covenant	44.64***	< 0.0001
BS Covenant	178.06***	< 0.0001

IS Covenant

	Mean Difference	t-statistic	p-value
Acq. & Inv. vs. Operating	0.06***	7.00	< 0.0001
Acq. & Inv. vs. Financing	0.09***	7.33	< 0.0001
Operating vs. Financing	0.02**	2.04	0.04144

BS Covenant

	Mean Difference	t-statistic	p-value
Acq. & Inv. vs. Operating	-0.08***	-5.27	< 0.0001
Acq. & Inv. vs. Financing	-0.24***	-12.79	< 0.0001
Operating vs. Financing	-0.16***	-10.68	< 0.0001

This table presents mean differences for the prevalence of IS and BS covenants. Panel A reports the portion of loans in our sample that contains an IS or BS covenant, disaggregated by loan purpose. Panel B reports statistical tests for the mean difference in use of IS-based and BS-based covenants across loan purpose types. We use a chi-squared test for the overall mean differences in the presence of multiple groups and use the Marascuillo procedure for pair-wise mean differences.

TABLE 6
B/S & I/S Covenant and Loan Purpose of Investing & Acquisition:
Multinomial Logit Regression

Variables	Model 1	Model 2	Model 3	Model 4
BS: LoanPurpose_Inv&Acq	-0.3979** (0.0220)	-0.3621** (0.0360)	-0.4048** (0.0183)	-0.3920** (0.0226)
IS: LoanPurpose_Inv&Acq	0.3369*** (0.0008)	0.3385*** (0.0007)	0.3407*** (0.0007)	0.4151*** (0.0000)
BS: Age	0.1002 (0.1358)			
IS: Age	-0.1896*** (0.0000)			
BS: Dividends	0.9914*** (0.0000)			
IS: Dividends	-0.1445* (0.0732)			
BS: Leverage	-1.4787*** (0.0015)			
IS: Leverage	1.1525*** (0.0001)			
BS: FinConstraint_WW		-10.7227*** (0.0000)		
IS: FinConstraint_WW		1.3860 (0.1169)		
BS: FinConstraint_KZ			-0.0840*** (0.0000)	
IS: FinConstraint_KZ			0.0080 (0.4518)	
BS: FinConstraint_CL				0.0085 (0.9613)
IS: FinConstraint_CL				0.6644*** (0.0000)
Other control variables	Included	Included	Included	Included
Year fixed effects	Included	Included	Included	Included
No. of observations	6,613	6,613	6,613	6,613

This table presents results for our four different specifications to test Hypothesis 1 as the following Models 1-4.

$$\log\left(\frac{P(\text{Covenant_Type}_k)}{P(\text{Covenant_Both})}\right) = \beta_{0k} + \beta_{(1k \text{ to } 3k)} * \text{LoanPurpose}_{it} + \beta_{(4k \text{ to } 9k)} * \text{Financial Constraint Variables}_{it} \\
+ \beta_{10k} * \text{VR}_{it} + \beta_{11k} * \text{Size}_{it} + \beta_{12k} * \text{Book-to-Market}_{it} + \beta_{13k} * \text{ROA}_{it} + \beta_{14k} * \text{Loss}_{it} + \beta_{15k} * \text{Adv}_{it} \\
+ \beta_{16k} * \text{R\&D}_{it} + \beta_{17k} * \text{Tangible}_{it} + \beta_{18k} * \text{Z-Score}_{it} + \beta_{19k} * \text{StdRet}_{it} + \beta_{20k} * \text{DealSize}_{it} \\
+ \beta_{21k} * \text{Maturity}_{it} + \beta_{22k} * \text{Revolver}_{it} + \beta_{23k} * \text{Secured}_{it} \quad (\text{Model 1-4})$$

where k indicates inclusion of balance-sheet-based ratios or income-statement-based ratio.

All variables are defined in Appendix A. The numbers in parentheses are p-values. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

TABLE 7
B/S & I/S Covenant and Loan Purpose of Operating & Financing:
Multinomial Logit Regression

Variables	Model 1-a	Model 2-a	Model 3-a	Model 4-a
BS:LoanPurpose_Oper	0.3937** (0.0335)	0.3595* (0.0515)	0.4011** (0.0287)	0.3945** (0.0315)
IS:LoanPurpose_Oper	-0.3502*** (0.0015)	-0.3528*** (0.0013)	-0.3547*** (0.0012)	-0.4258*** (0.0001)
BS:LoanPurpose_Finan	0.3998** (0.0307)	0.3625** (0.0482)	0.4062** (0.0260)	0.3878** (0.0339)
IS:LoanPurpose_Finan	-0.3234*** (0.0034)	-0.3240*** (0.0031)	-0.3265*** (0.0029)	-0.4039*** (0.0003)
BS: Age	0.1000 (0.1366)			
IS: Age	-0.1899*** (0.0000)			
BS: Dividends	0.9915*** (0.0000)			
IS: Dividends	-0.1439* (0.0743)			
BS: Leverage	-1.4794*** (0.0015)			
IS: Leverage	1.1510*** (0.0001)			
BS: FinConstraint_WW		-10.7236*** (0.0000)		
IS: FinConstraint_WW		1.3809 (0.1182)		
BS: FinConstraint_KZ			-0.0840*** (0.0000)	
IS: FinConstraint_KZ			0.0080 (0.4550)	
BS: FinConstraint_CL				0.0086 (0.9608)
IS: FinConstraint_CL				0.6637*** (0.0000)
Other control variables	Included	Included	Included	Included
Year fixed effects	Included	Included	Included	Included
No. of observations	6,613	6,613	6,613	6,613

This table presents results for our four different specifications to test Hypotheses 2-A and 2-B as the following Models 1-4.

$$\log\left(\frac{P(\text{Covenant_Type}_k)}{P(\text{Covenant_Both})}\right) = \beta_{0k} + \beta_{(1k \text{ to } 3k)} * \text{LoanPurpose}_{it} + \beta_{(4k \text{ to } 9k)} * \text{Financial Constraint Variables}_{it}$$

$$\begin{aligned}
& + \beta_{10k} *VR_{it} + \beta_{11k} *Size_{it} + \beta_{12k} *Book-to-Market_{it} + \beta_{13k} *ROA_{it} + \beta_{14k} *Loss_{it} + \beta_{15k} *Adv_{it} \\
& + \beta_{16k} *R\&D_{it} + \beta_{17k} *Tangible_{it} + \beta_{18k} *Z-Score_{it} + \beta_{19k} *StdRet_{it} + \beta_{20k} *DealSize_{it} \\
& + \beta_{21k} *Maturity_{it} + \beta_{22k} *Revolver_{it} + \beta_{23k} *Secured_{it} \qquad \qquad \qquad (Model 1-4)
\end{aligned}$$

where k indicates inclusion of balance-sheet-based ratios or income-statement-based ratio.

All variables are defined in Appendix A. The numbers in parentheses are p-values. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.