

Creditor Mandated Purchases of Corporate Insurance*

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Abstract

We present novel empirical evidence on the contractually mandated purchase of insurance by corporate creditors. In a large sample of private credit agreements of publicly-traded firms, we find that nearly all agreements contain at least a boilerplate provision requiring the borrower to purchase insurance. In about 80 percent of the agreements, the insurance covenant is more explicit. We focus on four additional features of the insurance covenant: explicit permission for the borrower to self-insure, requirements of coverage for specific risks, naming the lender as a loss payee, and mandating that any insurance proceeds be used to repay the loan. We find that credit agreements contain more stringent insurance requirements for borrowers that are smaller and pose higher credit risk, measured in a variety of ways. We also find that insurance requirements are highly correlated with many other terms of the loan and are strongly positively correlated with the loan being secured by collateral and the loan size being limited by a borrowing base. We argue that insurance provides value by protecting lenders from changes in anticipated seniority, which is particularly valuable for secured lenders. This makes mandatory insurance requirements an important ingredient of credit agreements designed to encourage monitoring by senior, secured lenders.

1. Introduction

Corporate credit agreements frequently require the borrower to purchase insurance, providing an answer to the long-debated question why publicly-traded corporations would demand insurance. Since the seminal work of Mayers and Smith (1982) first identified that the public corporate form provides maximal diversification opportunities, researchers have looked for alternatives to risk-aversion in explaining the corporate demand for insurance. Mayers and Smith (1987) and others have pointed to covenants in lending agreements as a source of corporate demand and have written models to identify the value that insurance can create.

Our paper provides the first large-sample evidence on the use of insurance covenants in credit agreements. We show that lenders nearly always mandate that borrowers have some form of insurance, and in many cases tailor the insurance requirements to the borrower's specific situation. In addition to a requirement simply to have insurance, credit agreements also may include: conditions that the borrower insure particular risks; provisions that the lender be named as an additional loss payee or that insurance proceeds be use to pay down loan balances; and explicit permission that the borrower self-insure. Given that over three-quarters of public firms use credit agreements of the type we study, creditor mandated purchases of insurance are an important source of the corporate demand for insurance.

We code these insurance requirements for a sample of 3,175 private credit agreements and show empirically that they are related to a number of borrower specific characteristics. Specifically, we show that the size and credit quality of the borrower are

significantly related to the use of various insurance provisions. Larger firms are less likely to be required to buy insurance and more likely to be permitted to self-insure. Firms posing higher credit risk are more likely to be required to buy insurance for specific risks, more likely to have to name the lender as a loss payee, and more likely to be required to use any insurance proceeds to pay down loan balances.

These correlations are consistent with existing theories that explain insurance covenants as a means to avoid underinvestment problems. Myers (1977) shows that managers of a levered firm may limit the scale of investment if the returns to a profitable project accrue to creditors in the form of reduced credit risk. Since the underinvestment problem worsens as firms become more levered, insurance may be valuable since it helps reduce the probability of insolvency, as shown in Garven and MacMinn (1993). For firms with higher ex-ante credit risk, the benefit of insurance is even larger, since it takes a smaller loss to make the firm insolvent. We find a very strong correlation between the credit risk of the borrower and the stringency of the insurance requirement; for example, about one-quarter of loans to firms with investment-grade debt ratings require specific coverage, but more than three-quarters of loans to speculative-grade borrowers have similar provisions.

We also find that the use of insurance covenants is highly correlated with other features of the loan contract, particularly the presence of collateral and the use of a borrowing base.¹ Loans that are secured are much more likely to require specific coverage – often covering the asset serving as collateral – and much more likely to name

¹ As we describe in more detail below, a borrowing base limits the size of the loan to a fraction of an asset owned by the borrower, such as inventory or accounts receivable.

the lender as an additional loss payee or require prepayment from insurance proceeds. We conjecture that the insurance requirement creates value by limiting the possibility that senior, secured lenders become unsecured claimants following an insurable loss. Existing theories of corporate capital structure identify several reasons why some loans are secured by collateral, but whatever the reason, insurance helps guarantee the value of the collateral, reinforcing the underlying value of collateral.

In Section 2, we discuss existing theories regarding the corporate demand for insurance and highlight existing theories that explain the use of insurance requirements. Section 3 explains the collection of our sample of loan agreements and coding of insurance requirements. We also present summary statistics that illustrate the widespread use of insurance covenants in loan agreements. Section 4 presents results on the correlations between firm characteristics and the use of insurance covenants; Section 5 on the correlations between firm characteristics and insurance covenants. Section 6 concludes.

2. Background on the Corporate Demand for Insurance

2.1. Demand from Creditors

The value of managing risk (including insurance purchases) for publicly-traded firms cannot arise from the benefits of diversification, as is the case for individuals. As Mayers and Smith (1983) first point out, the nature of the corporate form permits risk to be spread across a large group of shareholders, each of whom can form a portfolio suited to her taste for risk. With risk already spread across a large number of

shareholders, there is little value in further diversifying risk within an insurance company. Moreover, when efficient markets require a risk premium for transferring undiversifiable risk, any risk management activities undertaken by the firm do not create risk-adjusted value but simply change the risk-return profile of the firm, which shareholders can undo on their own account.

Without diversification as a motive for risk management, alternative explanations are needed to justify why risk is costly to firms. Existing theories rely on a consistent explanation that downside changes in asset values or earnings are more valuable than similar upside changes, creating concavity in the value function and an incentive for firms to minimize randomness in asset values or earnings.

Corporate taxes can create a motive for firms to manage risk through two mechanisms. First, Smith and Stulz (1985) show that convexities in the tax code can create an incentive for firms to hedge their earnings to avoid increases in marginal tax rates. Progressive tax schedules and incomplete offsets for losses create mild convexities that provide some incentive for firms to smooth earnings (Graham and Smith, 1999). However, Graham and Rogers (1999) show that the larger tax motive for hedging arises from increased debt capacity. To the extent that corporate risk management permits firms to substitute tax-advantaged debt for equity, firms can create value by reducing their tax liability.

Avoiding costs associated with financial distress have also been proposed as a motive for corporate risk management. To the extent that risk management can limit the occasions when financial distress creates deadweights costs, there is an obvious

increase in expected firm value. Financial distress costs can include direct costs associated with bankruptcy or debt restructuring and indirect costs arising from forgone investment opportunities. Froot, Scharfstein, and Stein (1993) develop a model where a reduction in earnings or assets reduces the amount of internal capital available to invest; meaning firms must either cut back on investment or resort to more costly external finance. Under the standard assumptions of diminishing returns to scale in production and convex costs of external finance, hedging creates value by permitting the firm to achieve a better scale more cheaply, helping to coordinate financing and investment decisions.

Finally, various corporate stakeholders may not have a fully diversified stake in a corporation, and risk management may permit the firm to achieve better terms with such parties. Such stakeholders include creditors, managers and employees, suppliers, and customers, all of whom may have a highly concentrated stake in the firm. Risk in the firm's prospect may affect these stakeholders, who will demand compensation for bearing the risk. By managing this risk or transferring some of it to a more diversified counterparty such as an insurance company, the firm may be able to reduce the total risk premiums it pays.

2.2. Demand from Creditors

Since Smith and Warner (1979) first noted that corporate bond indentures can contain a provision requiring the borrower to purchase insurance, theories have attempted to explain why such a provision could create value. Smith and Warner (1979) point to the potential comparative advantage that insurance companies might have in

evaluating and pricing certain risks. By contractually committing to purchase insurance, borrowers strengthen their promise to adhere to a given investment policy and not unduly shift risk to lenders. Smith and Warner (1982) push further this argument by identifying why insurance is a superior means to commit to not shift risk to creditors after receiving credit. In particular, the insurance contract gives the insurance company significant incentive to properly monitor and difficult to bribe.

Subsequent to this initial explanation, the leading theory explaining insurance covenants relied on anticipated conflicts of interest between equity-holders and creditors that might discourage the firm from taking profitable investments. Myers (1977) shows that a levered firm may forgo a positive-NPV project if some of the project returns accrue to creditors, and Mayers and Smith (1987) extend this logic to support the use of insurance covenants in bond agreements. Intuitively, since an uninsured loss to a borrower's assets will make existing debt riskier, the underinvestment problem may worsen after a loss. In order to commit to making optimal future investment decisions, equityholders promise to buy insurance to maintain asset values in the future. Schnabel and Roumi (1989) and Garven and MacMinn (1993) formalize this logic and show that existing equityholders can create value by minimizing the expected agency costs of underinvestment.

The existing theories generate two explicit hypotheses that we use to motivate our empirical analysis. First, in the presence of conflicts of interest between creditors and equity-holders, debt agreements will include insurance requirements. This suggests a simple prediction that we should find widespread use of insurance requirements.

Second, given that conflicts of interest are exacerbated when the borrower's debt is riskier, we expect that insurance requirements will be more common and more explicit when the borrower poses a higher credit risk. The following, from Mayers and Smith (1982), suggests a straightforward, testable prediction:

Since potential transfers from bondholders to the firm's other claimholders are increased the larger the fixed claims in the capital structure, we suggest that the probability of inclusion of insurance covenants will increase with the firm's debt/equity ratio.

3. Data and summary statistics

We examine mandatory insurance covenants in a set of credit agreements collected directly from Security and Exchange Commission (SEC) filings by public firms. SEC rules and precedent have established that public companies are required to include copies of all "material" contracts, which includes private credit agreements.² The contracts typically appear as exhibits at the end of a 10-K or 10-Q report or as an attachment to an 8-K filing. The SEC's *Edgar* electronic filing system permits us to search, extract, and download these credit agreements. Nini, Smith, and Sufi (2008) analyze covenants restricting investment in the same set of credit agreements and provide more detail on the exact procedure used to collect the contracts, which is only summarized here.

3.1. Loan agreements from DealScan and Edgar

² The reporting requirements for credit agreements fall within item 601(b) of regulation S-K, which is the general provision that requires exhibits to be filed with the SEC. Item 4 and item 10 under this regulation require disclosure of securities and material contracts, respectively. Most credit agreements fall within one of these two categories.

The process begins with the set of loan deals from Reuters LPC's *DealScan* database initiated between 1996 and 2005 to nonfinancial firms that we can match to Standard & Poor's *Compustat* annual database. We include only deals for which borrower financial data are available for the fiscal year prior to the loan agreement being signed.³ Our starting year corresponds to when the SEC began requiring firms to file electronically; electronic filings are only sparsely available on Edgar prior to 1996. Once these restrictions are in place, we are left with 9,580 loan deals.

From Compustat, we construct financial statistics based on the fiscal year prior to the loan agreement being signed. EBITDA is operating earnings before taxes, depreciation, amortization, and interest payments, which we typically scale by the book value of total assets. The book leverage ratio is long term debt plus short term debt, scaled by book assets. The market to book ratio is total assets less the book value of equity plus the market value of equity, all scaled by total assets. The book value of equity is the book value of assets less the book value of liabilities and preferred stock plus deferred taxes. The market value of equity is common shares outstanding multiplied by the share price. Tangible assets include the net value of property, plant, and equipment, and cash is the book value of cash plus short-term investments. We include only deals for which these borrower-level variables are non-missing.

DealScan provides no information on insurance requirements, so we use match these loans with the loan contracts extracted from 10-Q, 10-K, and 8-K filings from Edgar as in Nini, Sufi, and Smith (2009). As reported in Nini, Sufi, and Smith (2009), DealScan

³ Specifically, we require non-missing data on cash flow, total assets, long-term debt, short-term debt, total liabilities, preferred stock, stock price, and common shares outstanding.

observations are matched to the borrower's respective set of SEC filings based on the firm's tax identification number, and then the filings are scanned for the following 10 terms in capital letters: "credit agreement," "loan agreement," "credit facility," "loan and security agreement," "loan & security agreement," "revolving credit," "financing and security agreement," "financing & security agreement," "credit and guarantee agreement," and "credit & guarantee agreement." If one of these terms is found and the document contains the capitalized search term "table of contents" within 60 lines after the initial search term, the credit agreement is extracted from Edgar.

Of the 9,580 deals in DealScan, we have the actual loan contract for about one-third of the deals, which yields a sample of 3,175 loan contracts. Nini, Sufi, and Smith (2008) discuss the reasons why the search program misses a substantial number of observations available in DealScan. The upshot is that the use of the Edgar sub-sample of DealScan contracts does not lead to any meaningful bias in our results.

3.2. Insurance requirements

From our sample of loan contracts, we collect information on insurance requirements contained in each agreement. Insurance requirements are usually documented in the affirmative covenants section near the end of the credit agreement. Many of the provisions are boilerplate requirements that the borrower maintain insurance "similar to other like firms." For example, the April 28th, 2000 loan agreement for Alcoa Inc. contained the following insurance requirement:

SECTION 5.05. Insurance. Borrower shall, and shall cause its consolidated Subsidiaries to, insure and keep insured, in each case with reputable insurance companies, so much of its respective properties to such an extent and against such risks, or in lieu thereof, in

the case of any Borrower, maintain or cause to be maintained a system or systems of self-insurance, as is customary in the case of corporations engaged in the same or similar business or having similar properties similarly situated.

Such a provision requires Alcoa to have insurance but permits a self-insurance alternative.

Conversely, many loan agreements contain insurance provisions that are much more explicit. In addition to a generic requirement for some insurance, we code the following four possible requirements: whether the agreement permits self-insurance, whether the agreement requires certain insurance coverages (e.g. workers' compensation or property insurance), whether the agreement mandates that the lender be named an additional loss payee⁴, and whether the agreement mandates that some portion of insurance proceeds be used to pay down the loan. As an example, consider the August 5th, 1997 credit agreement to Three Rivers Holding Company Corp.

8.03 Insurance. (a) Holdings will, and will cause each of its Subsidiaries to (i) maintain, with financially sound and reputable insurance companies, insurance on all its property in at least such amounts and against at least such risks as is consistent and in accordance with industry practice and (ii) furnish to the Agent and each of the Banks, upon request, full information as to the insurance carried. In addition to the requirements of the immediately preceding sentence, Holdings will at all times cause insurance of the types described in Schedule VIII to be maintained (with the same scope of coverage as that described in Schedule VIII) at levels which are consistent with its practices immediately before the Initial Borrowing Date, taking into account the age and fair market value of equipment. Such insurance shall include physical damage insurance on all real and personal property (whether now owned or hereafter acquired) on an all risk basis,

⁴ In practice, the requirement that the lender be named as loss payee is typically accompanied by a requirement that the lender be named as an additional named insured, although we do not explicitly code the additional named insured requirement.

covering the full repair and replacement costs of all such property and business interruption insurance for the actual loss sustained. The provisions of this Section 8.03 shall be deemed supplemental to, but not duplicative of, the provisions of any Security Documents that require the maintenance of insurance.

(b) Holdings will, and will cause each of its Subsidiaries to, at all times keep the respective property of Holdings and its Subsidiaries (except real or personal property leased or financed through third parties in accordance with this Agreement) insured in favor of the Collateral Agent, and all policies or certificates with respect to such insurance (and any other insurance maintained by, or on behalf of, Holdings or any Subsidiary of Holdings) (i) shall be endorsed to the Collateral Agent's satisfaction for the benefit of the Collateral Agent (including, without limitation, by naming the Collateral Agent as certificate holder, mortgagee and loss payee with respect to real property, certificate holder and loss payee with respect to personal property, additional insured with respect to general liability and umbrella liability coverage and certificate holder with respect to workers' compensation insurance), (ii) shall state that such insurance policies shall not be cancelled or materially changed without at least 30 days' prior written notice thereof by the respective insurer to the Collateral Agent and (iii) shall be deposited with the Collateral Agent.

(c) If Holdings or any of its Subsidiaries shall fail to maintain all insurance in accordance with this Section 8.03, or if Holdings or any of its Subsidiaries shall fail to so name the Collateral Agent as an additional insured, mortgagee or loss payee, as the case may be, or so deposit all certificates with respect thereto, the Agent and/or the Collateral Agent shall have the right (but shall be under no obligation) to procure such insurance, and the Credit Parties agree to jointly and severally reimburse the Agent or the Collateral Agent, as the case may be, for all costs and expenses of procuring such insurance.

For this example, the agreement requires specific coverages and requires that the lending bank (here, the Collateral Agent) be named as an additional loss payee.

Moreover, if the borrower fails to buy insurance, the lender can purchase insurance on behalf of the borrower and bill the premium to the borrower. This observation would receive a 1 for three of our five possible requirements: some insurance required, specific coverage required, and lender named as loss payee.

We also code if an agreement requires mandatory repayment of outstanding loans based on the proceeds of insurance. For example, the February 17th, 1998 credit agreement to F.Y.I. Incorporated includes the provision:

F.Y.I. will cause all proceeds of insurance paid on account of the loss of or damage to any Property of F.Y.I. or any of its Subsidiaries and all awards of compensation for any Property of F.Y.I. or any of its Subsidiaries taken by condemnation or eminent domain to be paid directly to the Agent to be applied against or held as security for the Obligations, at the election of the Agent and the Required Lenders.

Such mandatory prepayments are common in private credit agreements and are generically known as sweeps provisions. Security issuance and asset sales are other events which can trigger a mandatory prepayment. We term provisions of this type as an insurance sweep.

For our full sample of loans, we code five types of insurance requirements: any contractual provision regarding insurance (“Some Insurance Requirement”), specific coverage mandated by the contract (“Specific Coverage Required”), a provision permitting self-insurance (“Self-Insurance Permitted”), a requirement to name the lender as loss payee (“Lender named as Loss Payee”), and a stipulation that insurance proceeds be used to repay the loan (“Insurance Proceeds Sweep”). To identify the provisions, we first search all of our sample contracts for the term “insurance” and then further examine to confirm the nature of the requirement. Second, we read the mandatory prepayments section of each agreement to identify if proceeds from insurance payments must be used to repay the loan. Since details of any required coverage are often provided in attached exhibits that are not included in the loan

agreement, we do not code the nature of the exact coverage that is required but just note the presence of an explicit requirement.

We also use the information collected by Nini, Smith, and Sufi (2008) on the presence of various financial covenants in the credit agreements. Combined with information from DealScan, we have a large set of variables that describe additional qualities of the loan contract.

3.3. Summary statistics

Table 1 contains the summary statistics for the sample of 3,175 private credit agreements and provides novel large-sample results on the use of insurance requirements in debt contracts. Panel A shows that nearly all (97.3%) of the sample loan agreements contain a requirement that the borrower be insured. Over roughly the same sample period, Sufi (2007) shows that over 80 percent of public firms utilize private credit agreements in the form of bank lines of credit. In concert, these two statistics imply that creditor mandated purchases of insurance create a significant demand for corporate insurance.

The remaining entries in Panel A show that the additional refinements are fairly common in our sample. Only around 20 percent (not shown in table) of the sample contracts contain only the boilerplate requirement for insurance, with the remaining 80 percent of contract being tailored to the needs of the relevant borrowers and lenders.

More than one-half (55.1%) of agreements require borrowers to buy specific types of insurance. After reading the contracts, we can confirm that many types of commercial insurance lines are required, including workers' compensation, product and

general liability, commercial auto, and commercial property coverage.⁵ Slightly less than one-third (31.5 percent) of the agreements explicitly permit the borrower to self-insure at least some of the risks faced by the firm.⁶ In some cases, the nature of the self-insurance is clearly described, such as permitting the borrower to insure through a captive insurance company. Alternatively, the agreement may simply permit the borrower to continue with a generic “existing” self-insurance plan.

About one-third (33.7 percent) of agreements require the lender to be named as an additional loss payee, which, among other rights, means that insurance payments are made jointly to the borrower and the lender. The requirement would also require the insurance company to notify the lender in case the policy is cancelled or lapses due to failure to pay insurance premiums. Similarly, about one-third (32.9 percent) explicitly require in the loan contract that some portion of any insurance proceeds be used to pay down any existing principal balances. Due to the similarity of the loss payee and insurance sweep provisions, and their high empirical correlation documented below, we will combine the two indicators into an indicator “Lender Controls Funds” that is set to 1 if the loan has either a loss payee or a sweeps provision.

As shown in Panel B., insurance requirements are common across industries, although there is noticeable variation. Borrowers in service industries appear to have more stringent requirements, with specific coverage requirements and sweeps

⁵ We do not count a title insurance requirement as a specific coverage since title insurance contains provides very little insurance.

⁶ Very few agreements explicitly forbid self-insurance, but some agreements specify requirements that would effectively prohibit self-insurance, such as requiring insurance to be with an insurer rated by A.M. Best.

provisions more common. As shown in panel C., the use of the various insurance requirements has been relatively stable across calendar time.

The final panel in Table 1 shows how the likelihood of insurance requirements varies with the credit rating of the borrower. There is strong evidence that insurance requirements are much stricter for borrowers with lower ratings, very much consistent with the prediction from Mayers and Smith (1982). Most notable is the large increase the strictness of the insurance requirements as firms fall below investment-grade status (BBB), as there is a large increase in the naming of specific coverage requirements, a decrease in permitted self-insurance, and striking increases in loss payee and sweeps provisions. Perhaps most remarkable is the relative lack of loss payee and sweeps provisions for firms with investment-grade ratings (A or better and BBB).

4. Insurance requirements and firm characteristics

In this section, we examine the nature of insurance requirements in credit agreements, focusing on correlations with firm level characteristics from the period just prior to the loan signing. Table 2 shows the pair-wise correlations across the five insurance requirements found in our sample. Since the fraction of agreements containing at least some insurance requirement is so close to 1, the correlation with other requirements is positive but fairly low. As a result, we find the additional insurance requirements to be informative about the “strictness” of the insurance

requirement.⁷ The naming of specific required coverage is positively correlated with the loss payee and sweep provisions (45.3% and 37.4%, respectively), but the correlations are low enough that there is unique information in each of the indicators. The loss payee and sweep provisions are quite highly correlated (58.8%), so we combine them to form a separate indicator in some of our analysis. Specifically, we form a variable indicating that the contract contains either a loss payee provision or a sweep provision, which we interpret as giving the lending bank control over funds paid as part of insurance proceeds.

4.1. The effect of borrower characteristics on the insurance provisions

In this section, we examine the impact of cross-sectional differences in borrower characteristics on the use of insurance provisions. We use several measures of borrower credit quality to estimate the impact of differences in credit quality on the nature of insurance requirements. First, the borrower's leverage ratio is computed as the ratio of total book debt to total assets. Leverage is easy to measure, available for almost all borrowers, and is a common indicator of the credit risk posed by a particular borrower. The debt to assets ratio is measured as of the fiscal year immediately prior to the loan being signed. The second measure of credit quality is the borrower's S&P issuer credit rating as of the year-end before origination of the loan. Since the credit rating is only available for firms rated by S&P – about one-half of our sample – we create a dummy variable for rating categories and include a category for unrated firms. Finally,

⁷ Conversations with lenders confirm that insurance requirements are a boilerplate component of credit agreements that lenders alter when needed.

we use the ratio of EBITDA to assets as a profitability measure under the assumption that more profitable firms have lower credit risk.⁸

We also examine the relationship between insurance provisions and measures of firm size, asset tangibility, and growth opportunities. Firm size is measured by total assets, asset tangibility is measured as the ratio of property, plant, and equipment to total assets, and growth opportunities are measured as the ratio of the market value of assets to the book value of assets.

Table 3 presents summary statistics for the eight borrower characteristics. These variables correspond closely with averages from Compustat over the similar sample period, suggesting we have a roughly random sample of firms.

Table 4 presents results of four regressions where the dependent variable is one of our insurance requirement indicator variables. The estimates reflect the average partial effect of borrower characteristics on the likelihood that a loan agreement contains a particular insurance requirement. Our dataset is best considered as a cross-section of credit agreements for firms, although we do have some firms that borrow at multiple dates. We do not include firm fixed-effects but do cluster our standard errors by borrower, effectively allowing for arbitrary correlation between residuals for loans to the same firm.⁹ Our outcome of interest is the likelihood of a particular insurance requirement, which is a discrete $\{0,1\}$ variable. We estimate standard probit models on the pooled data and compute average marginal effects from coefficient estimates.

⁸ In our data, there is a strong positive correlation between the borrower's leverage, our measure of borrower's profitability, and the interest rate spread charged on the loan.

⁹ All results are robust to including one observation per firm.

Table 4 presents the estimates for each of each of four dependent variables. Despite the lack of significant variation in the inclusion of some insurance requirement, we see that firm size and a very high credit rating are negatively correlated with the use of an insurance provision. Even though insurance requirements are nearly always included, some very large and highly rated borrowers are able to remove the requirement from their loan agreements. We also see that the relative size of the loan has a small positive effect on the inclusion of some insurance requirement.

The use of a specific coverage requirement is highly sensitive to the credit quality of the borrower. Compared with unrated borrowers, investment-grade firms (A or better or BBB) are much less likely to have specific coverages mandated in their loan agreements. Similarly, very low rated borrowers are much more likely to be required to purchase specific coverages. Moving from the highest rated borrowers to the lowest rated, there is an increase of about 49 (.199 + .291) percentage points in the probability that a loan requires specific coverages. Given the mean likelihood of 0.549, this effect is quite significant. Similarly, a one standard deviation increase in the leverage ratio adds 3 percentage points to the probability that loan requires specific coverages. This effect is after conditioning on credit ratings, which are very highly correlated with leverage.

The effect of credit quality is equally strong in explaining the use of loss payee and sweep provisions. Highly rated borrowers are much less likely to give control over insurance funds to the lender. In the last regression, moving from the highest rated borrowers to the lowest rated, there is an increase of 56.9 (.321 + .248) percentage

points in the probability that a loan gives the lender some control over insurance proceeds. Given the mean likelihood of 42 percent, these also reflect important effects.

5. Insurance requirements and Other Loan Characteristics

5.1. Empirical relationship

In this section, we explore empirically how other loan contract terms are related to the various insurance provisions. There is a vast literature showing how loan terms respond to borrower characteristics, so we do not interpret our results as causal. Nevertheless, we estimate regressions to measure partial correlations and identify conditionally strong relationships between the usages of various loan terms.

We focus on several important loan terms that are available in the data. In addition to the size of the loan, the maturity of the loan, and the interest rate spread charged on the loan, we focus on several additional non-price terms. Specifically, we concentrate on whether the loan is secured, whether the loan contains a restriction on dividend payments, whether a loan contains restriction on investment, whether the loan contains a cash-flow sweep, whether the loan contains a borrowing base, and the number of financial covenants in the loan.

Table 5 reports unconditional means of these loan terms. Table 6 repeats the regressions in Table 4 but also includes 9 additional loan terms as explanatory variables. The results show that insurance requirements are strongly correlated with the loan being secured, the loan containing additional cash flow sweeps, and the loan containing

a borrowing base. A borrowing base restricts the firm's maximum amount of borrowing to an easily measurable asset, such as inventory or accounts receivable.

Loans secured by collateral are 15.6 percentage points more likely to contain a specific coverage requirement and 36.0 percentage points more likely to grant the lender control over insurance funds. Loans with a borrowing base are 23.1 percentage points more likely to contain a specific coverage requirement and 44.8 percentage points more likely to grant the lender control over insurance funds. Loans with cash flow sweeps are 18.6 percentage points more likely to contain a specific coverage requirement and 57.7 percentage points more likely to grant the lender control over insurance funds.

5.1. Theoretical background and a new explanation

The theoretical justification for the observed correlation between the use of an insurance requirement and additional loan features such as collateral and a borrowing base is yet undeveloped, but there is relevant literature on why firms have debt of different maturity and priority. The distinguishing feature of a collateralized loan is a first lien on assets that gives secured lenders priority in bankruptcy. A borrowing base limits the capacity of the borrower to add additional leverage, and when combined with collateral provides lender with a very safe claim. In the data, loans with a borrowing base are nearly always secured, and typically are used by relatively risky borrowers. The combination suggests that such loans give the lender a very safe claim on an otherwise risky firm.

A set of theories examines how firms choose the priority of their financial claims as part of an optimal capital structure (Diamond (1993), Rajan and Winton (1995), Repullo and Suarez (1998), Gorton and Kahn (2000), Park (2000) and DeMarzo and Fishman (2007) for examples). A particularly relevant model is provided in Park (2000), who justifies giving lenders with monitoring capabilities senior priority status in the capital structure. In the model, lenders can prevent borrowers from undertaking negative-NPV projects only by threatening to liquidate the project, a decision that can be made more accurately if the lender invests in learning about the firm. Lenders will only have to become informed if their cash-flow claim is both at-risk and can be preserved by liquidating the risky project in certain states of the world. Making lenders a large part of the capital structure creates risk that provides incentive, and making lenders senior gives them an incentive to liquidate risky projects, since they are not damaged too badly from costs associated with liquidation. The model justifies combining monitoring capabilities (e.g. financial covenants), with a senior secured cash-flow claim in firms where the moral hazard problem is fairly severe. DeMarzo and Fishman (2007) hint at the value of seniority in the conclusion to their paper, writing "..., it may be optimal to make the credit line senior in the event of default so as to increase the incentives for the bank to follow through with a threat of termination." In a world where liquidation destroys value, it may be optimal to give some creditors a relatively safe claim to provide incentives to liquidate the firm. Collateral and borrowing bases provide just such safety.

The spirit of these models has been confirmed empirically by Rauh and Sufi (2008) and Carey and Gordy (2008). Rauh and Sufi (2008) show that firms with higher credit risk have more secured debt and more junior debt in their capital structures, compared with lower credit risk borrowers who have more uniform debt structures. They conjecture that the collateral puts senior lenders in their own priority class to let them appropriate the full return of their monitoring effort, and the junior debt reduces the size of the senior debt to give senior lenders incentive to shut down failing firms. Carey and Gordy (2008) document that recovery rates on defaulted senior secured claims are much higher than those on subordinated claims. Moreover, they show that the share of bank debt in the firm's capital structure is strongly, positively related to the firm-level recovery rate, which they interpret as banks forcing insolvent borrowers into default earlier when they have a larger claim. The empirical results from these papers are very much consistent with the notion that senior secured lenders provide value by committing to quickly liquidate failing firms.

In such models where the value of collateral and seniority is to provide incentives to liquidate failing firms, the value of the insurance requirements, sweeps provisions, and loss payee requirements become obvious. Specifically, insurance on the value of collateral helps minimize the possibility that a senior, secured lender becomes an unsecured claimant due to destruction of the collateral. By insuring risks to the value of collateralized assets, senior lenders increase their incentive to monitor their borrowers and liquidate failing firms. Since it is precisely the value of collateral that generates benefits in these models, risks to the value of collateral are likely to undo the benefits.

For example, following a complete loss to collateralized assets, senior secured lenders would become pari passu with other lenders and face the same costs from liquidation as all other creditors. This will limit the incentive of lenders to liquidate failing firms and diminish the motivation for lenders to monitor their borrower's in the first place. Buying insurance to limit the frequency or severity of such events would have obvious value.

The use of loss payee and sweeps provisions are also reconcilable with such models. In particular, following an insurable loss, first repaying existing secured lenders prevents them from having their claim subordinated by a collateralized claim on the new asset. Moreover, such a model explains why the insurance is provided by a firm other than the lender, who could in theory collect the insurance premium and pay the indemnity (or forgive the loan) following a loss. However, by providing the insurance, the lender would face a loss on cash flow rights that would mitigate the incentives for monitoring and liquidating. It's the security in the cash flow claim that provides the monitoring incentive, which would be undone through simultaneous provision of insurance.

6. Conclusion

We provide evidence of widespread use of insurance covenants in the private credit agreements of a random sample of publicly traded companies. These restrictions are more likely to be put in place for low credit quality firms and are more likely to be used when the loan is secured with collateral. The strong correlation with collateral suggests that insurance requirements are an important component of a covenant package designed to encourage monitoring by senior, secured lenders.

References

- Core, John, (1997). "On the Corporate Demand for Directors' and Officers' Insurance." *Journal of Risk and Insurance* 64: 63-87.
- Diamond, Douglas (1993). "Seniority and maturity of debt contracts." *Journal of Financial Economics* 53: 341-368.
- Carey, Mark and Michael Gordy (2007). "Banks as the Grim Reaper: Debt Composition and Recoveries on Defaulted Debt." working paper, Board of Governors of the Federal Reserve System.
- Fama, Eugene and Ken French (1997). "Industry Costs of Equity." *Journal of Financial Economics* 47(2): 427-65.
- Garven, James and Richard Macminn (1993). "The Underinvestment Problem, Bond Covenants, and Insurance." *Journal of Risk and Insurance* 60: 635-646.
- Garven, James and Richard Macminn (2000). "On Corporate Insurance" in: Dionne, G. (Ed.), Handbook of Insurance. Kluwer Academic Publishers, 541-564.
- Gorton, Gary and James Kahn (2000). "The Design of Bank Loan Contracts," *Review of Financial Studies*, 13: 331-364.
- Graham, J.R., and D.A. Rogers (2002). "Do Firms Hedge in Response to Tax Incentives?" *Journal of Finance* 57: 815-839.
- Graham, J.R. and C.W. Smith, Jr. (1999). "Tax Incentives to Hedge," *Journal of Finance* 54: 2241-2262.
- Hoyt, Robert and Ho Khang (2000). On the Demand for Corporate Property Insurance. *Journal of Risk and Insurance* 67: 91-107.
- MacMinn, Richard (1987). "Insurance and Corporate Risk Management." *Journal of Risk and Insurance* 54: 658-677.
- Mayers, David and Clifford Smith (1982). "On the Corporate Demand for Insurance." *Journal of Business* 55: 281-296.
- Mayers, David and Clifford Smith (1987). "Corporate Insurance and the Underinvestment Problem." *Journal of Risk and Insurance* 54: 45-54.
- Mayers, David and Clifford Smith (1990). "On the Corporate Demand for Insurance: Evidence from the Reinsurance Market." *Journal of Business* 63: 19-40.

Myers, Stewart (1977). "The Determinants of Corporate Borrowing." *Journal of Financial Economics* 5: 147-175.

Nini, Greg, David Smith, and Amir Sufi (2008). "Creditor Control Rights and Firm Investment Policy." *Journal of Financial Economics*, forthcoming.

Park, Cheol (2000). "Monitoring and the Structure of Debt Contracts." *Journal of Finance*, 55: 2157-2195.

Rajan, Raghuram and Andrew Winton (1995). "Covenants and Collateral as Incentives to Monitor." *Journal of Finance* 50: 1113-1146.

Rauh, Joshua and Amir Sufi (2008). "Capital Structure and Debt Structure." working paper, University of Chicago.

Regan, Laureen and Yeon Hur (2007). "On the Corporate Demand for Insurance: The Case of Korean Nonfinancial Firms." *Journal of Risk and Insurance* 74: 829-850.

Repullo, Rafael and Javier Suarez (1998). "Monitoring, Liquidation, and Security Design." *Review of Financial Studies* 11: 163-187.

Schnabel, Jacques and Ebrahim Roumi (1989). "Corporate Insurance and the Underinvestment Problem: An Extension." *Journal of Risk and Insurance* 56: 155-159.

Smith, Clifford and Rene Stulz (1985). "Determinants of Firms' Hedging Policies." *Journal of Financial and Quantitative Analysis* 20: 391-405.

Smith, Clifford and Jerold Warner (1979). "On Financial Contracting: An Analysis of Bond Covenants." *Journal of Financial Economics* 7: 117-161.

Sufi, Amir (2007). "Bank lines of credit in corporate finance: An empirical analysis." *Review of Financial Studies*, forthcoming.

Table 1
Insurance Covenants, Summary Statistics

This table presents the summary statistics on the use of various insurance requirements in 3,175 private credit agreements. The agreements are from SEC filings over the period 1996-2005. The insurance requirements generally are found in the affirmative covenants section of the credit agreement contract. "Some Insurance Requirement (Some Insurance)" refers to any covenant requiring the borrower to have insurance; "Specific Coverages Required (Specific Coverage)" refers to covenants that specifically name the type of insurance the firm must purchase; "Self-Insurance Permitted (Self-Insurance)" refers to covenants that explicitly permit the borrower to self-insure; "Lender Named as Loss Payee (Loss Payee)" refers to covenants that require the lender be named as an additional loss payee in any insurance contract; and "Insurance Proceeds Sweep (Insurance Sweep)" refers to a provision in the credit agreement that mandates that some portion of insurance payments be used to pay down the loan. All reported statistics are unweighted means of the number of loan contracts containing the provision. In Panel B., borrower industry is based on 4-digit SIC code from Compustat and classified as in Fama and French (1997). In Panel C., the calendar year of the loan is based on the signing date of the loan from DealScan. In Panel D., the credit rating of the borrower is from the prior fiscal-year end from Compustat.

A. Aggregate	Fraction of Loans with Requirement
Some Insurance Requirement	97.3%
Specific Coverages Required	55.1%
Self-Insurance Permitted	31.5%
Lender Named as Loss Payee	33.7%
Insurance Proceeds Sweep	32.9%

B. By Borrower Industry

Industry	N	Some Insurance	Specific Coverage	Self-Insurance	Loss Payee	Insurance Sweep
Business Services	329	97%	63%	28%	41%	42%
Petroleum and Natural Gas	244	96%	56%	18%	33%	29%
Retail	215	99%	53%	40%	33%	34%
Utilities	198	97%	35%	51%	9%	12%
Telecommunications	156	96%	58%	25%	43%	46%
Wholesale	150	95%	61%	27%	44%	33%
Electronic Equipment	134	99%	62%	24%	40%	32%
Transportation	131	99%	60%	34%	24%	30%
Machinery	124	97%	48%	25%	19%	23%
Healthcare	120	99%	78%	40%	54%	43%
Restaurants, Hotel, Motel	109	99%	65%	34%	36%	42%
Chemicals	86	99%	30%	37%	22%	24%
Construction Materials	81	94%	54%	36%	33%	27%
Computers	79	98%	57%	17%	39%	35%
Steel Works, Etc.	77	100%	56%	38%	39%	34%
Pharmaceutical Products	65	99%	69%	20%	49%	40%
Printing and Publishing	61	97%	28%	18%	15%	12%
Automobiles and Trucks	61	85%	61%	34%	36%	38%
Business Supplies	58	98%	31%	47%	17%	24%
Apparel	56	100%	55%	16%	52%	45%
Medical Equipment	56	100%	45%	45%	36%	25%
Food Products	55	98%	42%	40%	29%	29%
Measuring and Control Equip	55	96%	62%	22%	35%	22%
Construction	54	100%	67%	28%	26%	20%
Consumer Goods	54	100%	57%	33%	35%	35%
Entertainment	54	100%	78%	35%	46%	59%
Electrical Equipment	49	100%	47%	41%	18%	29%
Recreational Products	38	100%	42%	47%	40%	50%
Rubber and Plastic Products	35	100%	63%	40%	37%	37%
Aircraft	32	100%	34%	44%	22%	38%
Personal Services	32	97%	63%	25%	44%	47%
Textiles	21	100%	76%	14%	38%	43%
Nonmetallic Mines	19	100%	42%	42%	32%	21%
Shipping Containers	15	93%	40%	47%	20%	27%
Candy and Soda	13	62%	23%	8%	15%	23%
Fabricated Products	12	100%	83%	33%	58%	50%
Alcoholic Beverages	11	100%	27%	9%	36%	18%
Coal	10	100%	90%	60%	50%	50%
Shipbuilding, Railroad Eq	10	90%	50%	20%	30%	70%
Precious Metals	6	100%	17%	17%	0%	0%
Miscellaneous	5	100%	60%	40%	60%	20%
Defense	3	100%	67%	33%	0%	0%
Tobacco Products	2	0%	0%	0%	0%	0%

C. By Calendar Year of Loan

Year	N	Some Insurance	Specific Coverage	Self-Insurance	Loss Payee	Insurance Sweep
1996	96	97%	54%	32%	29%	23%
1997	386	98%	56%	31%	29%	22%
1998	355	98%	61%	22%	37%	37%
1999	330	97%	61%	28%	36%	36%
2000	306	96%	55%	28%	32%	31%
2001	316	96%	51%	31%	34%	33%
2002	366	98%	54%	32%	33%	34%
2003	341	98%	59%	30%	42%	44%
2004	399	97%	49%	39%	30%	29%
2005	280	98%	51%	41%	32%	35%

D. By Credit Rating of the Borrower

Credit Rating	N	Some Insurance	Specific Coverage	Self-Insurance	Loss Payee	Insurance Sweep
A or better	261	88%	13%	49%	0%	1%
BBB	548	96%	26%	45%	3%	7%
BB	494	98%	61%	32%	39%	47%
B	271	97%	79%	26%	63%	65%
CCC or worse	19	100%	79%	26%	53%	68%
Unrated	1,582	99%	66%	25%	43%	37%

Table 2
Pair-wise Correlations of Insurance Covenants

This table presents pair-wise correlations for the five insurance requirements found in 3,175 private credit agreements. The agreements are from SEC filings over the period 1996-2005. The insurance requirements generally are found in the affirmative covenants section of the credit agreement contract. "Some Insurance" refers to any covenant requiring the borrower to have insurance; "Specific Coverage" refers to covenants that specifically name the type of insurance the firm must purchase; "Self-Insurance" refers to covenants that explicitly permit the borrower to self-insure; "Loss Payee" refers to covenants that require the lender be named as an additional loss payee in any insurance contract; and "Insurance Sweep" refers to a provision in the credit agreement that mandates that some portion of insurance payments be used to pay down the loan. Reported statistics are unweighted, pairwise Pearson correlations of the indicator variables denoting that the contract contains the provision.

	Some Insurance	Specific Coverage	Self-Insurance	Loss Payee
Specific Coverage	18.4%			
Self-Insurance	11.2%	-1.4%		
Loss Payee	11.2%	45.3%	-13.8%	
Insurance Sweep	10.4%	37.4%	-11.4%	58.8%

Table 3
Borrower Characteristics, Summary Statistics

This table presents unweighted sample statistics for various borrower characteristics from the sample of 3,175 private credit agreements extracted from SEC filings over the period 1996-2005. Borrower characteristics are taken from Compustat and measured as of the fiscal year-end immediately preceding the loan signing date as reported in DealScan. The “Market to Book Ratio” is the ratio total assets less the book value of equity plus the market value of equity, all scaled by total assets; Tangible Assets is property, plant, and equipment; EBITDA is operating income before depreciation; Cash includes short-term investments. Loan Amount is from DealScan and is the size of the total loan package, including lines of credit. All ratios are winsorized at the 1st and 99th percentile.

Variable	Mean	Median	Standard Deviation	1 st Percentile	99 th Percentile
Total Assets (\$ millions)	3,483	759	10,025	19	42,770
Net Sales (\$ millions)	2,746	722	6,390	13	32,175
Book Debt to Assets	0.302	0.294	0.198	0.000	0.920
Market to Book Ratio (%)	1.703	1.390	1.011	0.674	6.757
Tangible Assets to Total Assets (%)	0.342	0.275	0.245	0.019	0.905
EBITDA to Total Assets (%)	0.130	0.125	0.089	-0.187	0.396
Cash to Total Assets (%)	0.078	0.037	0.104	0.000	0.557
Loan Amount to Total Assets (%)	0.307	0.237	0.255	0.017	1.320
Altman Z-Score	3.568	2.874	3.022	-1.270	18.636

Table 4

Insurance Requirements and Borrower Characteristics

This table presents estimated coefficients from cross-sectional regressions that relate the probability of having various insurance requirements on borrower characteristics measured as of the fiscal year-end immediately preceding the loan agreement. The sample is 3,175 private credit agreements extracted from SEC filings over the period 1996-2005. The dependent variable in all regressions is an indicator variable that equals one if the credit agreement contains the particular insurance requirement, which generally is found in the affirmative covenants section of the credit agreement contract. “Some Insurance Requirement” refers to any covenant requiring the borrower to have insurance; “Specific Coverages Req’d” refers to covenants that specifically name the type of insurance the firm must purchase; “Self-Insurance Permitted” refers to covenants that explicitly permit the borrower to self-insure; “Lender Controls Funds” combines “Lender Named as Loss Payee” and “Insurance Sweep” into a single indicator identifying covenants that require the lender be named as an additional loss payee or provisions that mandates that some portion of insurance payments be used to pay down the loan. All regressions contain year and 2-digit SIC code dummy variables. Credit ratings are from Standard & Poor’s as reported in Compustat as of prior year fiscal year end, and the excluded category is unrated borrowers. Standard errors are clustered by borrower, since the same borrower may appear multiple times in the sample.

Table 4 (continued)
Insurance Requirements and Borrower Characteristics

	Some Insurance Requirement		Specific Coverages Req'd		Self-Insurance Permitted		Lender Controls Funds	
	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect
Ln(assets)	-0.235 ** (0.059)	-0.016	-0.199 ** (0.027)	-0.079	0.241 ** (0.025)	0.093	-0.351 ** (0.027)	-0.105
Book Debt / Assets	-0.642 (0.422)	-0.064	0.434 ** (0.172)	0.158	-0.378 * (0.167)	-0.127	0.940 ** (0.175)	0.359
Market-to-Book	0.194 * (0.104)	0.009	-0.068 * (0.031)	-0.027	0.007 (0.033)	0.003	-0.077 * (0.034)	-0.025
Tangible Assets / Assets	0.053 (0.423)	0.003	-0.107 (0.131)	-0.042	-0.139 (0.165)	-0.050	-0.392 * (0.180)	-0.115
EBITDA / Assets	1.830 * (0.972)	0.023	-0.520 (0.364)	-0.204	1.061 ** (0.371)	0.400	-2.119 ** (0.363)	-0.277
Cash / Assets	-1.370 * (0.795)	-0.241	-0.052 (0.293)	-0.020	-0.013 (0.307)	-0.005	-0.315 (0.313)	-0.095
Loan Amount / Assets	2.533 ** (0.614)	0.023	0.381 ** (0.118)	0.141	0.192 (0.121)	0.073	0.781 ** (0.126)	0.299
Rating: A or better	-0.426 * (0.238)	-0.035	-0.760 ** (0.156)	-0.291	-0.020 (0.113)	-0.007	-1.255 ** (0.250)	-0.248
Rating: BBB	0.173 (0.225)	0.008	-0.448 ** (0.105)	-0.177	-0.062 (0.092)	-0.023	-0.604 ** (0.113)	-0.163
Rating: BB	0.276 (0.239)	0.011	0.173 * (0.092)	0.066	-0.102 (0.086)	-0.037	0.598 ** (0.089)	0.226
Rating: B	-0.136 (0.262)	-0.008	0.455 ** (0.126)	0.165	-0.020 (0.109)	-0.007	0.812 ** (0.115)	0.311
Rating: CCC or worse			0.564 (0.371)	0.199	0.017 (0.342)	0.006	0.839 (0.363)	0.321

Table 5**Other Loan Characteristics and Insurance Requirements, Summary Statistics**

This table presents unweighted sample statistics for various loan provisions from the sample of 3,175 private credit agreements extracted from SEC filings over the period 1996-2005. Loan characteristics are taken from DealScan, except for Covenant Restricting Investment, which is taken directly from the credit agreements. Loan Size is the maximum amount of borrowing permitted under the loan agreement; Loan Maturity is the maximum time the loan may be outstanding; Loan Spread is the contracted interest rate measured in basis points above the London Interbank Offer Rate (LIBOR); Loan Secured is a dummy variable indicating the loan is secured with collateral; Covenant Restricting Dividends is a dummy indicating a covenant that directly restricts the payment of dividends; Covenant Restricting Investment is a dummy indicating a covenant that directly restricts the borrower's capital expenditures; Cash Flow Sweep is a dummy indicating a covenant that forces the borrower to repay the loan with excess cash flows; Loan Has Borrowing Base is a dummy indicating that the amount of borrowing is specifically linked to a balance sheet item (e.g. inventory); and Number of Financial Covenants is the count of financial covenants in the agreement.

	Some Insurance Requirement		Specific Coverages Required		Self-Insurance Permitted		Lender Named as Loss Payee		Insurance Sweep		Lender Controls Funds	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Loan Size (\$000s)	1471.1	401.4	617.9	283.2	360.4	588.2	552.9	198.0	507.5	281.2	565.1	254.9
Loan Maturity (years)	2.6	3.5	3.1	3.7	3.5	3.4	3.3	3.8	3.1	4.1	3.1	4.0
Loan Spread (bps)	123.7	172.0	123.8	208.2	184.4	140.7	128.4	252.6	130.3	251.7	114.3	245.9
Loan Secured (%)	0.29	0.66	0.40	0.82	0.70	0.53	0.44	0.98	0.46	0.95	0.36	0.95
Covenant Restricting Dividends (%)	0.39	0.83	0.70	0.91	0.84	0.76	0.74	0.96	0.74	0.95	0.71	0.95
Covenant Restricting Investment (%)	0.07	0.33	0.16	0.45	0.34	0.29	0.20	0.54	0.21	0.55	0.16	0.54
Cash Flow Sweep (%)	0.30	0.46	0.33	0.55	0.47	0.42	0.38	0.60	0.33	0.71	0.31	0.65
Number of Financial Covenants (%)	1.29	2.60	2.25	2.84	2.64	2.43	2.44	2.83	2.45	2.82	2.36	2.86
Loan has Borrowing Base (%)	0.02	0.14	0.06	0.19	0.16	0.09	0.05	0.30	0.08	0.25	0.05	0.25

Table 6
Insurance Requirements and Other Loan Characteristics

This table presents estimated coefficients from cross-sectional regressions that relate the probability of having various insurance requirements on borrower characteristics and other loan provisions. Borrower characteristics are measured as of the fiscal year-end immediately preceding the loan agreement, and other loan provisions are from the same loan agreement. The sample is 3,175 private credit agreements extracted from SEC filings over the period 1996-2005. The dependent variable in all regressions is an indicator variable that equals one if the credit agreement contains the particular insurance requirement, which generally is found in the affirmative covenants section of the credit agreement contract. “Some Insurance Requirement” refers to any covenant requiring the borrower to have insurance; “Specific Coverages Req’d” refers to covenants that specifically name the type of insurance the firm must purchase; “Self-Insurance Permitted” refers to covenants that explicitly permit the borrower to self-insure; “Lender Controls Funds” combines “Lender Named as Loss Payee” and “Insurance Sweep” into a single indicator identifying covenants that require the lender be named as an additional loss payee or provisions that mandates that some portion of insurance payments be used to pay down the loan. All regressions contain year and 2-digit SIC code dummy variables. Credit ratings are from Standard & Poor’s as reported in Compustat as of prior year fiscal year end, and the excluded category is unrated borrowers. Standard errors are clustered by borrower, since the same borrower may appear multiple times in the sample

Table 6 (continued)
Insurance Requirements and Other Loan Characteristics

	Some Insurance Requirement		Specific Coverages Req'd		Self-Insurance Permitted		Lender Controls Funds	
	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect
Ln(assets)	-0.441 ** (0.095)	-0.042	-0.224 ** (0.037)	-0.089	0.182 ** (0.037)	0.067	-0.303 ** (0.046)	-0.114
Book Debt / Assets	-0.456 (0.478)	-0.044	0.225 (0.169)	0.087	-0.355 * (0.172)	-0.113	0.364 * (0.196)	0.144
Market-to-Book	0.369 ** (0.134)	0.016	-0.027 (0.032)	-0.011	0.009 (0.033)	0.003	-0.002 (0.039)	-0.001
Tangible Assets / Assets	0.093 (0.493)	0.005	0.042 (0.172)	0.016	-0.172 (0.167)	-0.058	-0.114 (0.201)	-0.044
EBITDA / Assets	1.962 * (1.156)	0.027	0.283 (0.362)	0.109	0.794 * (0.392)	0.307	-0.418 (0.421)	-0.153
Cash / Assets	-2.384 ** (0.904)	-0.649	-0.085 (0.299)	-0.034	-0.030 (0.310)	-0.011	0.103 (0.356)	0.040
Rating: A or better	-0.330 (0.283)	-0.028	-0.494 ** (0.133)	-0.194	-0.030 (0.118)	-0.011	-0.336 (0.273)	-0.125
Rating: BBB	0.223 (0.268)	0.011	-0.254 ** (0.097)	-0.101	-0.088 (0.095)	-0.031	-0.050 (0.132)	-0.019
Rating: BB	0.042 (0.289)	0.003	-0.014 (0.088)	-0.005	-0.120 (0.088)	-0.041	0.279 ** (0.102)	0.111
Rating: B	-0.392 (0.325)	-0.035	0.248 * (0.116)	0.096	0.008 (0.112)	0.003	0.238 * (0.128)	0.095
Rating: CCC or worse			0.185 (0.352)	0.072	0.032 (0.349)	0.012	-0.139 (0.379)	-0.053

Table 6 (continued)
Insurance Requirements and Other Loan Characteristics

	Some Insurance Requirement		Specific Coverages Req'd		Self-Insurance Permitted		Lender Controls Funds	
	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect	Coefficient (Std Error)	Marginal Effect
Ln(loan amount)	0.125 (0.094)	0.007	0.083 * (0.039)	0.033	0.040 (0.038)	0.014	0.093 * (0.048)	0.037
Loan Spread	0.000 (0.001)	0.000	0.001 * (0.000)	0.000	0.000 (0.000)	0.000	0.003 ** (0.000)	0.001
Loan Maturity	-0.008 (0.038)	-0.001	0.017 (0.018)	0.007	0.010 (0.018)	0.004	0.065 ** (0.022)	0.025
Loan Secured	0.359 * (0.211)	0.016	0.417 ** (0.067)	0.156	-0.063 (0.070)	-0.022	0.978 ** (0.077)	0.360
Loan has Dividend Restriction	0.446 ** (0.153)	0.018	0.067 (0.067)	0.026	-0.007 (0.065)	-0.002	0.106 (0.088)	0.042
Loan has Investment Restriction	0.355 (0.289)	0.016	0.246 ** (0.065)	0.095	0.142 * (0.066)	0.052	0.241 ** (0.071)	0.096
Loan has Cash Flow Sweep	-0.099 (0.193)	-0.007	0.186 ** (0.062)	0.072	0.021 (0.062)	0.007	0.577 ** (0.072)	0.226
Loan has Borrowing Base	0.620 * (0.377)	0.022	0.231 ** (0.081)	0.089	-0.196 ** (0.084)	-0.066	0.448 ** (0.090)	0.177
Loan has 1, 2 or 3 Fin. Covenants	1.412 ** (0.199)	0.027	-0.117 (0.117)	-0.046	0.188 (0.120)	0.070	-0.191 (0.144)	-0.073
Loan has 4 or more Fin. Covenants	2.206 ** (0.473)	0.027	-0.048 (0.128)	-0.019	0.101 (0.131)	0.037	-0.145 (0.153)	-0.056