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How Laws Affect Contracts: Evidence from Yankee Bond Covenants

Yaxuan Qi, Lukas Roth, and John K. Wald*

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Abstract

We examine how country-level legal and institutional differences in creditor and shareholder rights shape the use of bond covenants. Using comprehensive debt covenant information for a sample of Yankee bonds issued by firms from more than 50 countries, we find that bond contracts for firms incorporated in countries with stronger creditor rights use fewer restrictive covenants. This finding suggests that creditor rights laws substitute for debt covenants in reducing the agency cost of debt. On the other hand, bond contracts for firms incorporated in legal regimes with stronger shareholder rights include more covenants, suggesting that greater shareholder rights may actually increase the shareholder-bondholder agency conflict. These results are robust to alternative measures of creditor rights and shareholder rights. We also document that stronger firm-level corporate governance is positively related to the use of restrictive covenants even after controlling for country institutions.

Keywords: Covenants, contracts, creditor rights, shareholder rights, corporate governance

JEL Classifications: G38; K22

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The "nexus of contracts" view of the firm (Jensen and Meckling, 1976; Myers, 1977; and Smith and Warner, 1979) suggests that the firms' stakeholders contract to maximize firm value while reducing agency costs. Under this view, management and shareholders agree on restrictive bond covenants to bind themselves from expropriating creditors. In this sense, bond covenants are used to mitigate the agency conflict between shareholders and bondholders. The number and types of covenants depends on the degree of agency conflicts and the costs of including restrictive covenants.[1]

In this paper, we study how country-level legal investor protection shapes the use of contractual creditor protection mechanisms in debt contracts, in particular, the use of bond covenants.[2] We conjecture that legal investor protection can either increase or decrease the use of bond covenants depending on whether these laws alleviate or exacerbate agency conflicts between bondholders and shareholders. Using a sample of Yankee bonds issued by firms from more than 50 countries, we find that bonds issued by firms incorporated in countries with stronger creditor rights use fewer restrictive covenants—thus, creditor rights laws substitute for debt covenants in reducing the agency cost of debt. On the other hand, firms incorporated in legal regimes with strong shareholder rights generally use more restrictive covenants, suggesting that stronger shareholder protection may exacerbate the shareholder-bondholder conflict and hence induce more restrictive covenant protections.

We draw our motivation from the recent law and finance literature. One line of research documents that stronger legal and institutional creditor protection reduces loan spreads, increases loan maturity and quantity, and enhances ownership concentration (see Esty and Megginson,

[1] For further discussion, see Malitz (1986); Begley and Feltham (1999); Nash, Netter, and Poulsen (2003); Billett, King and Mauer (2007); Qi and Wald (2008); and Chava, Kumar, and Warga (2008).

[2] In this paper, we use the terms shareholder protection, shareholder rights, and minority shareholders protection interchangeably.

2003; Qian and Strahan, 2007; Bae and Goyal, 2007; and Djankov, McLiesh, and Shleifer). While greater creditor protection laws provide creditors with improved recovery in bankruptcy, covenants provide restrictions on firm behavior prior to default. Smith and Warner (1979) propose the costly contracting hypothesis, suggesting that if covenants are costly to implement, firms have an incentive to leave them out. We therefore conjecture that better country creditor protection laws may lead firms to include fewer covenants in their debt contracts, as protection in bankruptcy may partly substitute for pre-bankruptcy debt restrictions.

Another stream of law and finance research shows that legal and institutional protection of shareholders affects firm-level corporate governance, and in turn increases firm value (see, for example, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV hereafter), 2000, 2002; and Doidge, Karolyi, and Stulz, 2007).[3] However, better shareholder protection is not necessarily good news for all the firm's stakeholders. In particular, if management's interests are more closely aligned with shareholders' interests, managers may be more likely to take advantage of opportunities to shift wealth from creditors to stockholders. Conversely, if managers are not closely aligned with shareholders, managers may be more likely to "enjoy the quiet life" as Bertrand and Mullainathan (2003) show. This "quiet life" may be a boon for bondholders, even though it significantly decreases stockholder value. Prior evidence on the cost of debt supports this argument. Klock, Mansi, and Maxwell (2005), Cremers, Nair, and Wei (2007), and Chava, Livdan, and Purnanandam (2008) find that less takeover protection is associated with a higher cost of debt, and this lower takeover protection is typically associated with decreased managerial entrenchment and stronger governance. If this higher cost of debt reflects an increase in the potential stockholder-bondholder conflict, then we similarly expect to find that stronger legal

[3] Related research uses country-level data to study how differences in laws and institutions affect financial market development and economy growth (see, for example, LLSV, 1998; Djankov, McLiesh, and Shleifer, 2007; and Djankov, Hart, Mcliesh, and Shleifer, 2008).

protection of shareholders is associated with the use of more bond covenants. Thus, while our first hypothesis is that greater creditor rights are associated with the use of fewer covenants, our second hypothesis is that laws or institutions providing greater shareholder protection are associated with more covenant use.

We consider a sample of Yankee bonds with detailed covenant information from more than 50 countries. As these bonds are issued in the U.S., they are subject to U.S. securities laws. However, creditors of Yankee bonds are still affected by home-country institutions.[4] Our analysis considers whether the debt contract contains any covenants, a covenant index equal to the number of covenants included in the debt contract, sub-indices for different covenant categories, and the use of individual covenants. Our main measure of country-level creditor protection is a creditor rights index (Djankov, McLiesh, and Shleifer, 2007; and LLSV, 1998), and our main measure of shareholder protection is the revised anti-director index (Djankov, La Porta, Lopez-de-Silanes, and Shleifer, 2008). We also separate these indices into their sub-scores and consider alternative measures of creditor and shareholder protection, including a firm-level governance index, as proposed by the existing literature.

We find weak evidence that creditor rights are negatively related to the likelihood that a bond includes any covenants and strong evidence that shareholder rights are positively related to the probability of using covenants. Increasing shareholder rights by one implies a 5% to 14% higher probability of including covenants in the bond contract.

Both creditor rights and shareholder rights impact the use of covenants significantly when measured with the covenants index. Specifically, for creditor rights, a one unit increase is associated with a reduction of 23% to 38% in the number of covenants used. This negative

[4] For instance, Miller and Puthenpurackal (2002) show that home country creditor protection impacts yield spreads for Yankee bonds.

relation between creditor protection and the use of covenants strongly supports our first hypothesis, that country-level protection laws substitute for firm-level contracting. We also find that greater shareholder rights are significantly positively related to covenant use, supporting our second hypothesis.[5] A one unit increase in shareholder rights is associated with a 21% to 33% increase in the covenants index.

We then break down the creditor rights and shareholder rights indices into their components and consider which component has the largest impact on covenant use. Out of the creditor rights laws, we find that laws which ensure that secured creditors are paid first have the largest (most negative) economic and statistical impact on the use of bond covenants. From the shareholder rights index, we find that preemptive rights, which limit the issuance of shares to related parties at below-market prices, have the largest impact on covenant use.

We further examine how creditor and shareholder rights affect the use of individual covenants. Creditor rights are negatively related to all types of individual covenants whereas the impact of shareholders rights on individual covenants is mixed. Shareholder rights are positively associated with the use of covenants that reduce expropriation of bondholder wealth, such as restrictions on dividend payments, additional debt borrowing, asset and investment restrictions, and covenants related to default. Thus, greater shareholder rights may imply that management is more active on behalf of stockholders, and this may increase the incidence of conflicts between shareholders and bondholders. This finding is consistent with Klock, Mansi, and Maxwell (2005), Cremers, Nair, and Wei (2007), and Chava, Livdan, and Purnanandam (2008) who show that firms with stronger corporate governance are charged higher rates in the credit market. It is interesting to note that shareholder rights are negatively related to stock issuance covenants,

[5] A related issue, outside the scope of this paper, is the degree to which covenants are priced in the bond markets; see Bradley and Roberts (2003), and Reisel (2007), and Wei (2005).

suggesting that firms with well-aligned minority interests may already avoid the dilutive effects of stock issuances. Therefore, strong shareholder rights substitute for covenants restricting stock issuance.

To shed more light on the interaction between firm-level corporate governance mechanisms and country-level investor protection, we collect corporate governance data for our sample of international firms from Institutional Shareholder Services (ISS). This splits our sample in half as coverage is not complete. We document, after controlling for country-level investor protection, that strong firm-level corporate governance is positively correlated with the use of several types of restrictive covenants. This result is consistent with our finding that strong shareholder rights may increase the shareholder-bondholder conflict.[6]

This paper contributes to the existing literature in several ways. First, we advance the bond covenant literature (see, e.g., Smith and Warner, 1979, among others) by showing that country-level laws and institutions are important determinants of firm-level contract design. Second, we extend the law and finance literature (see, e.g., LLSV, 2000, 2002, among others). We jointly consider the institutional creditor protection as well as shareholders protection in determining the use of restrictive bond covenants. We show how country-level institutions can either increase or decrease the use of bond covenants depending on whether these institutions alleviate or exacerbate agency conflicts between bondholders and shareholders. In addition, as we show that restrictive covenants substitute for creditor rights, our results suggest that previous findings (see, e.g., Qian and Strahan, 2007) understate the degree to which creditor rights laws reduce the cost of debt. That is, since firms in less protected legal regimes are more likely to include greater covenant protection in their debt contracts, the value of creditor rights protection

[6] There is also some limited research on the impact of firm-level governance covenant use for the U.S. Specifically, Begley and Feltham (1999) find a positive relation between the use of covenants and both the CEO's equity ownership and the ratio of equity to cash compensation.

to bondholders would be stronger after considering restrictive covenants than the literature suggests. Finally, this paper complements the corporate governance literature which shows how firms with stronger corporate governance may be punished in credit markets (see, e.g., Cremers, Nair, and Wei, 2007).

Relatively little prior research has addressed international bond contracting. Anderson (1999) studies a sample of Brazilian bond contracts and shows how they are designed to mitigate particular institutional problems including high inflation risk and weak national institutions. Miller and Reisel (2009) is a concurrent paper examining Yankee bond covenants. Our results are different from Miller and Reisel's in that we find stronger shareholder rights may increase the agency cost of debt and induce more restrictive covenants whereas they show that stronger shareholder rights reduce the use of covenants. This difference arises from our *joint* examination of creditor and shareholder rights, while including other institutional variables as controls, whereas they *individually* examine the impact of each institutional variable on the use of covenants. In addition, Miller and Reisel use the anti-self dealing index as the measure of shareholder rights while we use the revised anti-director index as our primary measure of shareholder rights and the anti-self dealing index as a robustness check.

The rest of the paper is organized as follows. Section I details the data and empirical method. Section II presents the main empirical results, Section III provides robustness tests, and Section IV concludes.

I. Data

We compile legal and institutional variables, country-level characteristics, firm-level, and bond-level data from various sources. Variable descriptions are provided in Appendix A, and

covenant features are detailed in Appendix B. In this section, we describe our sample as well as the measurement of bond covenants, institutional variables, and controls.

A. Yankee Bond Sample

We gather data on bond issues from Mergent's Fixed Investment Securities Database (FISD). FISD contains detailed information on bonds at the time of issuance, such as offering amount, call and put features, bond ratings, and bond covenants. Using the 2007 version of FISD, we extract a sample of Yankee bonds issued by non-U.S. firms in the U.S. domestic bond market (in U.S. dollars). Foreign government, agency, and quasi-government issuers are excluded. We also exclude medium-term notes, as FISD provides typically no covenant information for these issues. We exclude all bonds for which the "subsequent" data flag is set to "no" indicating that FISD does not provide covenant information for this particular issue. The initial sample includes 1,884 bond issues from 68 countries. We delete bonds for which information on the issuer's country is missing, and drop bonds issued before 1991. This leaves us with a sample of 1,351 bonds issued by 639 firms from 57 countries.

B. Covenant Variables

Our dependent variables are whether or not the issue includes any bond covenants, the number of covenants, and more specific variables about the type of covenants used. For each bond issue, FISD reports more than 50 variables on bondholder protective, issuer restrictive, and subsidiary restrictive covenants. Typically, there are multiple covenants that restrict the same activity. Therefore, we group FISD covenant variables into 22 covenant dummies that indicate whether a specific type of activity is restricted. For example, a *dividend payment dummy* indicates if there is a covenant limiting dividend payments of the issuer or a subsidiary of the

issuer. Similarly, a *funded debt dummy* specifies if there is a covenant restricting the issuer or a subsidiary of the issuer from issuing additional debt. Our construction of these 22 covenant dummies is similar to Billett, King, and Mauer (2007) in which they group FISD's covenants into 15 indicators.[7]

We further classify the 22 covenant indicators into eight major covenant categories. These eight covenant categories comprise of payment restrictions, borrowing restrictions, asset and investment restrictions, stock issuance restrictions, default-related covenants, anti-takeover-related covenants, profit maintenance covenants, and rating triggers covenants. We create covenant indices for each category by summing the covenant dummy variable within each category. A higher index score indicates stronger creditor protection for a specific type of activity. For each category, we also create a dummy variable indicating whether there are any covenants related to this type of restriction.

The first category is *payment restrictions* consisting of two covenant dummies, dividend related payments and other restricted payments. The second category is *borrowing restrictions* including eight covenant dummy variables, restricting the firm from additional debt activities. Specifically, these restrictions prevent the issuer and/or issuer's subsidiaries from issuing additional debt with a maturity of one year or longer, restrict the issuer from issuing additional subordinate, senior, or secured debt, and limit total leverage. Moreover, these borrowing-related covenants place restrictions on asset sale-and-leaseback transactions, on the acquisition of liens on property, and on the issuance of guarantees.

The third covenant category is *asset and investment restrictions*, which limits asset sales, restricts the issuer in certain business dealings with its subsidiaries, and restricts subsidiaries'

[7] The additional seven covenant dummies we consider are covenants on liens, restrictions on issuing guarantees, restrictions on transactions with affiliates, preferred stock issuance restrictions, and stock transfers restrictions, and covenants requiring minimum earnings and net worth.

investments. The fourth category, *stock issuance restrictions*, contains three covenants which limit additional common stock issuance, preferred stock issuance, and stock transfers between the issuer and its subsidiaries. *Default-related covenants* protect bondholders by triggering default in their bond contract should default occur in any other debt of the firm. Two covenants comprise the *anti-takeover-related covenants* category. A poison put covenant gives bondholders the option to sell back their bonds to the issuer should a change of control of the issuer occur. A merger covenant indicates that a consolidation or merger of the issuer with another entity is restricted. Finally, the last two categories are *profit maintenance covenants* and *rating trigger covenants*. Profit maintenance covenants require the issuer or its subsidiaries to maintain a minimum earnings ratio or net worth. A rating trigger covenant protects bondholders from credit rating changes by providing a put provision in the event of a rating decline. Since in our sample the profit maintenance and rating trigger covenants are used in less than 2% of bond issues, we do not consider them explicitly in our empirical analysis.

Besides the 22 covenant indicators, and the 8 covenant categories, we also create an overall covenant index of bondholder protection by summing the 22 covenant indicators for each bond. Lastly, we define a covenant dummy that equals one if any covenants are used. Detailed classifications and descriptions of all covenant variables are provided in Appendix B.

C. Country-level Creditor and Shareholder Protection

We measure the country-level effectiveness of creditor protection with an index of aggregate creditor rights following LLSV (1998) and Djankov et al. (2007). This index is compiled for each year from 1978 to 2003.[8] Starting from a score of zero, the creditor rights

[8] As creditor rights rarely change, we set index values for the years 2004 to 2006 to those observed in 2003. Our results are unaffected when we drop the years for which we do not have creditor rights information from the analysis.

index is incremented by one as each of the following requirements is met: (1) there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization; (2) secured creditors are able to seize their collateral after the reorganization petition is approved, i.e., there is no automatic stay or asset freeze; (3) secured creditors are paid from the proceeds of liquidating a bankrupt firm before other creditors such as the government or workers; and (4) management does not retain administration of its property pending the resolution of the reorganization. The creditor rights index ranges from zero to four and a higher score corresponds to stronger creditor rights.

We use the revised anti-director index from Djankov et al. (2008) as our main measure of the effectiveness of shareholder protection provided by a country's commercial code and corporate laws. Starting with a score of zero, the shareholder rights index is incremented by one as each of the following requirements is met: (1) shareholders are allowed to mail their proxy vote to the firm; (2) firms cannot require that shareholders deposit their shares prior to a general shareholders meeting, thus preventing them from selling those shares for a number of days; (3) shareholders are allowed to cast all their votes for one candidate standing for election to the board of directors (cumulative voting) or laws allow a mechanism of proportional representation in the board by which minority interests may name a proportional number of director to be board; (4) minority shareholders can launch a judicial venue to challenge the decisions of management or step out of the company by requiring the company to purchase their shares when they object to certain fundamental changes, such as merges, asset disposition, and changes in the articles of incorporation; (5) shareholders are granted the first opportunity to buy new issues of stock, and this right can be waived by shareholders only; and (6) the minimum percentage of

ownership share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than 10 percent.

To address Spamann's (2008) concern that the original anti-director index is not accurate, we use Spamann's anti-director index as a robustness check. Since our purpose is to examine how legal and institutional investor protection impacts the use of covenants, we use the creditor rights index collected from bankruptcy laws and anti-director index collected from commercial codes or corporate laws as our main measures. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) create an anti-self dealing index which focuses on private enforcement mechanism such as disclosure, approval, and litigation. They argue that this legal control system serves a better legal protection of minority shareholders than the anti-director index. We use this anti-self dealing index from Djankov et al. (2008) as an alternative measure of shareholder rights. Additionally, we examine the impact of each of the four and six components of creditor rights and shareholder rights on the use of bond covenants, respectively.

Besides the degree of investor protection, the enforcement of these laws may also affect the use of covenants. We therefore consider enforcement, measured with a public enforcement index from La Porta, Lopez-de-Silanes, and Shleifer (2006), which proxies for the quality of public enforcement of securities laws in a country. We also use the effectiveness of bankruptcy law compiled by WEF's Global Competitiveness Report (2005) as a measure of bankruptcy law enforcement.[9]

Djankov, Mcliesh, and Shleifer (2007) study the private creditor market in 129 countries and argue that information-sharing institutions substitute for creditor protection laws in the

[9] For robustness, we also consider measures of bankruptcy efficiency developed by Djankov, Hart, Mcliesh, and Shleifer (2008). Specifically, we use a measure of how efficiently the bankruptcy of a hotel would be handled, and a variable measuring the number of days to resolve a payment dispute through courts. The results with these measures are similar.

development of credit markets. We therefore include a dummy for public information sharing institutions, which indicates whether a public credit registry operates in the country. In addition, we control for the general legal environment by including rule of law (see Kaufmann, Kraay, and Mastruzzi, 2008), which measures the law and order tradition of a country. In unreported tests, we use property rights to control for the general legal environment. As the impact of property rights is very similar to that of the rule of law (these two variables have a 0.91 correlation), we only include rule of law in our specification. We control for legal origin variables as a further robustness check.

D. Control Variables

We control for bond characteristics, firm characteristics, and other country factors. The bond-level controls include dummy variables capturing whether the bond issue is a private placement exempt from registration under SEC Rule 144a, and whether it is secured, callable, or putable.[10] We also control for the offering amount and maturity. We use S&P and Moody's bond ratings to create a dummy variable highyield, which equals one if the bond rating is below BBB or Baa. Bond-level characteristics are potentially endogenously determined with covenant use; however, in practice our results are unaffected by whether we include these variables in the analysis.

We obtain firm-level controls from Worldscope. In particular, we extract data to construct firm-level controls that measure firm size (log total assets), return on assets or ROA (net income divided by total assets), leverage (total debt divided by total assets). As the literature argues that a firm's growth opportunity affect the use of covenants (see, e.g. Billett et al., 2007), we use two variables to capture growth opportunities. The first one is R&D expense

[10] In the total sample of 1351 bonds, 57 bonds are secured, 48 bonds are putable, 581 bonds are callable, and 603 bonds are issued under SEC Rule 144a.

(total R&D expenses divided by total assets), the second one is the market-to-book ratio (defined as the market value of equity plus the book value of debt divided by total assets). The data are obtained at the end of the quarter prior to the bond issue. We also include year and one-digit SIC industry dummies in all regressions.

The country level controls include log GDP per capita, inflation, and sovereign rating. We measure the overall country risk with Standard & Poor's sovereign debt ratings, which are translated into comprehensive credit ratings with values ranging from 22 (AAA with positive outlook) to 0 (C with negative outlook) following the key in Appendix C (see also Gande and Parsley, 2007).

We are able to match about 72% of the bond issues with firm-level data from Worldscope. Our sample size is further reduced because of missing or incomplete firm-level information. After merging with firm-level variables, our sample has 858 bonds issued by 397 firms from 41 countries.

E. Firm-level Governance, Cross-listing, and Dividends

Klock, Mansi, and Maxwell (2005), Cremers, Nair, and Wei (2007), and Chava, Livdan, and Purnanandam (2008) find that firms with stronger firm-level corporate governance are charged higher rates in the credit market. Therefore, if strong corporate governance increases the agency cost of debt, we expect that firms with strong corporate governance should include more restrictive covenants to reduce these agency costs. We use firm-level corporate governance information from the global CGQ database provided by Institutional Shareholder Services (ISS). ISS's global CQG database contains corporate governance data of more than 1,700 non-U.S. companies, dating back to 2003. We use the average of the firm's corporate governance index from 2003 and 2007 as our measure of governance. Merging with the ISS data further reduces

our sample to 391 bonds issued by 162 firms from 20 countries. While this smaller sample is comprised of larger firms, the dispersion in our key variables, the creditor rights and shareholder rights indices, is still high across all our analyses.[11]

The literature shows that cross-listing in regimes with strong investor protection laws may reduce the impact of the home country's legal institutions (see, e.g. Fuerst, 1998; Stulz, 1999; Coffee 1999). If this bonding hypothesis also applies for the credit markets, the impact of creditor rights and shareholder rights on the use of covenants should be lower for firms which are cross-listed in strong legal regime such as the U.S. We therefore examine whether cross-listing affects the relation between the home country's legal institutions and the use covenants. The cross-listing dummy equals one if a firm's shares are cross-listed in the U.S., either through an ADR program or direct exchange listing, and zero otherwise. We test the impact of cross-listing as well as various interactions between the cross-listing dummy and our key legal variables on covenant use.

Brockman and Unlu (2008) argue that dividend payments substitute for creditor rights in reducing the agency cost of debt. We therefore investigate whether dividend payments impact the use of covenants and the relation between legal institutions and covenants. If dividend payments substitute for creditor rights in reducing the agency cost of debt, the impact of creditor rights on the use of covenants should be lower for firms which pay dividends. We add a dummy variable, dividend, that equals one if the firm pays dividends, and zero otherwise. We also test various interactions between the dividend dummy and our key legal variables.

II. Empirical Results

A. Summary Statistics

[11] See Doidge, Karolyi, and Stulz (2007) for a discussion of ISS's corporate governance index.

Figure 1 provides three graphical views of the average frequency with which any covenants are used and the average number of covenants for different years. The frequency with which covenants are used first rises in the early 1990's, to approximately 85% in 1993, then plummets around 2001 or 2002. Just over 20% of Yankee bond issues in our 2007 sample use any covenants. The number of covenants also increases in the early 1990's, to an average of approximately six in 1998 and then declines afterwards. This infrequent use of covenants may reflect investor myopia as default rates have recently been relatively low.[12] Panel C of Figure 1 presents the frequency of different types of covenants. The trends of all types of covenants over time are similar while the frequency of covenants on payment and stock is lower than others.

In Table I, we report descriptive statistics for our covenant variables. Just 53% of bonds in the sample include some covenants. The average number of covenants used is 3.12 with a maximum number of 15. Among the eight covenant categories, the most frequently used types of restrictions are anti-takeover restrictions (46.3%), asset and investment restrictions (45.7%), borrowing restrictions (43.4%), and default-related restrictions (41.8%). Payment restrictions occur 16.2% of the time, and the frequency of stock issuance restrictions is 12.3%. Profit-maintenance and rating-related covenants are rarely used, with frequencies of 1.3% and 0.7%, respectively. Panel B of Table I presents the correlation coefficient of various types of covenant indices. Consistent with other papers (e.g. Qi and Wald, 2008), a debt contract which includes one type of covenant is more likely to include other types of covenants.

Table II lists means for average frequency of bonds with covenants; the average number of covenants used; and selected institutional and country-level variables by country and legal origins. For instance, for firms listed in countries with English legal origin, 60.5% of 410 bonds

[12] The case for such myopic behavior by creditors can partly be seen in the recent credit crunch. See, for instance, the description in Brunnermeier (2008).

include covenants. In contrast, only 28.6% of the 63 bonds from socialist origin countries use any covenants. We control for legal origin and other country-level and firm-level factors in the analysis below. The three countries with highest frequencies of bond issues are United Kingdom (199 issues), Mexico (124 issues) and Brazil (113 issues). In unreported robustness tests, we find that our results are robust to removing these countries from the sample.

Panel A of Table III provides summary statistics on the variables used in the analysis. Our covenant index is negatively correlated with both the creditor rights and the shareholder rights indices. Covenant use is also negatively related to firm size, and this may reflect the greater use of covenants by lower rated firms, which are typically smaller (not reported). We use multivariate regressions to more accurately discern the effects of institutional and firm characteristics on covenant use.

Panel B of Table III provides correlations between our institutional variables. Creditor rights have a positive correlation of 0.37 with the shareholder rights index. Creditor rights also have relatively high positive correlations with measures of public enforcement, effectiveness of bankruptcy law, rule of law, and property rights, and negative correlations with public information sharing and ownership concentration. In particular, the correlation between creditor rights and property rights is 0.59, and the correlation between creditor rights and ownership concentration is -0.62, and we are therefore careful to consider regressions both with and without these additional institutional variables, as multicollinearity may be an issue. Note that the strong negative relation between property rights (or creditor rights) and ownership concentration is consistent with Li, Moshirian, Phan, and Zein (2006), who document that institutional shareholding patterns across countries are determined by macro corporate governance factors such as shareholder protection, and law enforcement.

B. Legal Institutions and the Overall Use of Covenants

Table IV presents our first multivariate regressions, on whether the debt issue includes any protective covenants. Column (1) is a regression on our two institutional variables only, the creditor rights and shareholder rights indices; column (2) includes firm characteristics; column (3) includes country characteristics; column (4) includes bond issue characteristics, and columns (5) and (6) includes other legal/institutional variables. Overall, these regressions show weak evidence of substitution between the creditor rights index and bond covenants; however, as the analysis below shows, this is largely due to the imprecision of this particular dependent variable. We consider the total number of covenants, and specific classes or individual covenants in the analysis below.

This initial analysis does suggest that issues subject to greater shareholder rights are more likely to include covenants, as the coefficient on the shareholder rights index is significant in all the regressions. The marginal effect of the shareholder rights index is reported as Mfx (Shareholder rights index), and a one unit improvement in shareholder rights increases the probability of including covenants by 4.7% to 13.9% depending on the specification.

Table V provides the results from a Poisson regression, where the dependent variable is the covenant index, i.e., the number of protective covenants used. The columns in Table V again provide regressions with just the key institutional variables, with firm characteristics, with country characteristics, with other issue characteristics, and lastly with additional legal/institutional variables. Here, we find strong support for the hypothesis that country level creditor rights substitute for covenants in bond contracts. The coefficient on creditor rights is significant in all six regressions at the 1% level. Moreover, we find support for the notion that more shareholder-friendly firms may be more subject to bondholder-shareholder agency

problems, and therefore creditors may require more covenants. Specifically, the coefficient on the shareholder rights index is positive and significant in all the regressions, although the significance is marginal in the first three regressions.

Marginal effects of creditor rights and shareholder rights indices for each regression are reported in row Mfx (Creditor rights) and Mfx (Shareholder rights index), respectively. These numbers suggest that creditor rights and shareholder rights indices are economically important in determining the use of covenants. A one unit improvement in the creditor rights index reduces the number of covenants used by 22.9% to 43.5%. A one unit increase in the shareholder rights index causes a 20.6% to 33.3% increase in the number of covenants used.

Consistent with the agency theory and previous papers (Malitz, 1986; Begley and Feltham, 1999; Nash, Netter, and Poulsen, 2003; and Billett et al., 2007), firms with high agency risk are more likely to include more protective covenants. In particular, we find that small firms (low total asset), growth firms (high R&D expense relative to total asset), and high leverage firms include more protective covenants in their bond contracts. Firms with more fixed assets (high PPE value relative to total asset) are also more likely to use covenants. Private placed bonds use significantly fewer covenants, and this may reflect alternative sources of monitoring by institutional lenders relative to public bondholders as a way to alleviate moral hazard (see, Diamond, 1991). Callable bonds include significantly more covenants. Consistent with agency theory and prior results, high yield bonds include significantly more covenants.

We examine other institutional variables with care because these variables are highly correlated with creditor and shareholder rights as shown in Table III, and thus multicolinearity may be an issue. We find public enforcement is highly positively related to the covenant index suggesting that strong public enforcement laws encourage the use of more restrictive covenants.

Thus, as one might expect, if covenants are easier to enforce, they are more valuable and therefore more likely to be used. Effectiveness of bankruptcy law is also associated with more debt covenants, and this may reflect greater value for such covenants with improved bankruptcy procedures. In unreported regressions, we also consider the enforceability of contract, efficient outcome of debt enforcement in bankruptcy, and days of bankruptcy enforcement (see, Djankov, Hart, McLiesh, and Shleifer, 2008). These law enforcement variables generally show that stronger law enforcement encourages the use of covenants. We find public information sharing is significantly negatively related to the use of covenants suggesting that information sharing by institutions may serve as a substitute for debt covenants in mitigating moral hazard. We find that a strong rule of law is associated with reductions in the use of covenants.

C. Legal Institutions and the Use of Specific Types of Covenants

Table VI provides Poisson regressions on covenant indices of various types, where the covenants are categorized into payment restrictions, borrowing restrictions, asset restrictions, stock restrictions, default-related, and anti-takeover related covenants (see Table I for further details). We do not study the profit maintenance and rating decline covenant indices because these two types of covenants are very rarely used. In all cases, creditor rights are significantly negatively related to the use of each of these types of covenants. The shareholder rights index is significantly positively related to several types of covenants; specifically, to borrowing, asset, default, and anti-takeover restrictions. In unreported regressions, we run a similar analysis on dummy variables for whether any covenants in each class are included in the deal, as well as checking whether the results are impacted by excluding other institutional variables, bond-level controls, or country-level controls; we find similar results.

We compare the marginal effects of creditor rights and shareholder rights indices in determining the use of each type of covenants. We find that shareholder rights are relatively more important than creditor rights in determining the use of default related covenants. The marginal effect of shareholder rights index is 7.8% compared to -4.2% for the creditor rights index. The shareholder rights index is also slightly more important in the use of anti-takeover covenants, although, as discussed below, the individual antitakeover covenants are not similarly impacted by these laws.

The shareholder rights index is also more important than the creditor rights index in determining the use of asset and investment related covenants, possibly reflecting creditors' concerns about potential risk-shifting or other stockholder-bondholder conflicts for firms embedded with strong shareholder rights. The creditor rights index is relatively more important in the use of payment restriction covenants and borrowing restriction covenants as shown in columns (1) and (2) of Table VI. It is interesting to note that shareholder rights are negative although insignificantly related to the use of stock issuance restriction covenants. Detailed study of individual covenant in Table VII below provides more information on this issue.

D. Legal Institutions and the Use of Individual Covenants

Table VII further presents probit regressions for each of the 16 most commonly used individual covenants. We only study those covenants used in at least 5% of bond issues (as shown in Table I). Consistent with our prior results, firms subject to higher creditor rights are less likely to include most types of covenants while firms with strong shareholder rights are more likely to use most types of covenant. Economically, the most significant impact is on negative pledge covenants (i.e., restrictions on the issuance of secured debt; column 3), asset sale

restrictions (column 13), consolidation merge restrictions (column 15), and cross-default acceleration covenants (column 16).

The individual covenant regressions provide a more detailed picture of how the shareholder rights index impacts covenant use. Columns (1) and (2) study the two types of payment restrictive covenants. In contrast to the results reported in Table VI, we find both creditor rights and shareholders rights significantly impact the use of payment restriction covenants. As for the borrowing restriction covenants (columns 3 to 8), both creditor rights and shareholder rights are significantly related to three of the six borrowing restrictions.

Columns (9) and (10) of Table VII report the regression results for the two stock issuance covenants. Consistent with the findings in Table VI, we show that the shareholder rights index is significantly negatively related to subsidiary stock issuance restrictions. We believe that this finding reflect the shareholder-bondholder alignment in term of stock issuance. Minority shareholders are unwilling to issue new stocks that dilute existing shareholders. Therefore, stronger shareholder rights protection is negatively related to covenants restricting stock issuance. However, the marginal effect for the stock issuance covenants is almost zero, suggesting that the economic impact of this variable is small.

We find creditor rights are significantly negatively related to the restriction on issuer's transaction with subsidiaries and covenants on asset sale (columns 11 and 12). The shareholders rights index is significantly positively related to the restriction on issuer's transaction with subsidiaries and restriction on issuer's asset sales (columns 11 and 12). Consistent with Table VI, shareholder rights are relatively more important in terms of the economic impact for these variables. Kahan and Klauser (1993) discuss how change of control put provisions, i.e., poison puts, may provide more entrenchment of managers than creditor protection. Firms with

stronger shareholder rights may therefore avoid this particular type of covenant as this entrenchment may harm minority holders. Unlike the significant positive coefficients on shareholder rights for most covenants, the coefficient on shareholder rights is not significant for poison puts, which is consistent with these covenants having a potentially negative impact on shareholders (column 14). The coefficient on shareholder rights for the more general consolidation/merger restriction is positive and significant (column 15), although Kahan and Klauser (1993) suggest this restriction have relatively little economic impact. The shareholder rights index is also important in determining the use of cross-default acceleration covenants (column 16). These results are consistent with cross-default covenants addressing a potential shareholder-bondholder agency problem that may increase for firms with stronger shareholder rights.

E. Individual Components of Creditor Rights and Shareholder Rights

Panel A of Table VIII breaks down the creditor rights index into its components, and considers them jointly in column (1) and individually in columns (2) through (5). While the individual creditor rights components appear to have a negative relation with covenant use, by far the strongest relation, and the only one that is significant when all are considered together, is with whether secured creditors are paid first. Thus of the five creditor rights, the one that appears to have the greatest impact is whether secured creditors are paid first.

Similarly, Panel B of Table VIII breaks down the shareholder rights index into its components. Considered individually, several of the shareholder rights components have a significant impact, but when all are considered together (in column 1), only preemptive rights has a significant impact on the use of covenants. Without preemptive rights, majority shareholders can expropriate minority shareholders by offering shares to related parties (or to

themselves) at below-market prices. Thus, the analysis suggests that preemptive rights may be the index component that most reduces entrenchment by a controlling group. As we hypothesize above, this reduction in the "quiet life" appears to be associated with an increase in the shareholder-bondholder agency conflict.

F. Firm-level Corporate Governance

We suggest that greater shareholder rights laws are positively related to the use of bond contracts because they imply a more active management which increases the potential for stockholder-bondholder conflicts. This implies that firm-level improvements in governance (that is, closer alignment of stockholders' and managers' interests) may also imply an increase in stockholder-bondholder conflicts and therefore greater covenant use. In Table IX, we therefore add controls for firm-level corporate governance. Although including firm-level governance reduces our sample to 391 observations, the sample still has 162 firms from 20 countries. Because of the smaller sample, we exclude other institutional variables and bond characteristics from these regressions.

After controlling for firm-level governance, the coefficients on creditor rights and shareholder rights are very similar to those from our previous regressions. Interestingly, firm-level corporate governance is positively related to the use of most types of covenants. This echoes our main finding that stronger shareholder rights may increase the stockholder-bondholder conflict, and therefore increase the use of covenants. This finding is also consistent with Klock, Mansi, and Maxwell (2006) and Chava, Livdan, and Purnanandam (2008) who find that firms that are more open to the corporate control market are punished in credit markets. The results in Table IX also suggest that, economically, country-level shareholder rights laws are more important than firm-level governance in shaping the use of covenants. This result is

consistent with Doidge et al. (2007), who find that country-level protection matters more than firm-level characteristics.

III. Robustness, Cross-listing, and Dividends

We consider a number of additional tests to ensure the robustness of our findings. Specifically, we examine the robustness of our results to alternative measures of shareholder rights and creditor rights, to the inclusion of legal origin variables, and to various sub-samples.

Table X reports robustness tests. In Panel A, we consider the anti-self dealing index as an alternative to the shareholder rights index. The anti-self dealing index is positively related to most types of covenants although it is statistically insignificant. Consistent with our finding in Table V, the anti-self dealing index is significantly positively related to the use of default covenants and negatively related to the use of stock issuance covenants.

In Panel B of Table X, we control for legal origin dummies as well as creditor rights and shareholder rights. The results show that firms from English origin countries (the benchmark) are more likely to include covenants than those from other legal origins. German and Scandinavian origin firms use significantly fewer covenants than English origin firms whereas French and Socialist origin firms are not statistically different from English origin firms.

Since our creditor and shareholder rights are country-level variables, unknown country-level factors may cause the errors to be correlated among bonds issued from same country. In Panel C of Table X, we redo our estimation using a sample with only one bond from each firm and we correct the standard errors for clustering by country. This method allows us to correct for potential correlation among bonds within a country while avoiding the correlation of bonds from the same firm. As shown in the Panel C of Table X, our results are robust when this approach is used.

In unreported regressions, we also use Spamann's anti-director index as a further robustness check, and we find it provides similar results as our shareholder rights index. Additionally, we exclude bonds from a country with high frequencies of bond issues (i.e., U.K., Mexico, and Brazil) to check whether our results are driven by one particular country. We drop bonds issued after 2003 since our creditor rights index is time-varying up to 2003 and we assumed that it is unchanged after that. We drop bonds issued by financial companies because these companies usually use fewer covenants. We also check the robustness of our results to excluding private placement bonds. Our results are not affected when using these sub-samples.

In further unreported regressions, we study whether cross-listing in the U.S. stock market (i.e., either via an ADR or through direct listing on U.S. stock exchanges) reduces the impact of the home country's legal institutions by bonding firms to a stronger U.S. legal regime. We include a cross-listing dummy and an interaction between the cross-listing dummy and both creditor rights and shareholder rights indices in our baseline specification. However, we find no evidence to support the bonding hypothesis for creditors.

We also study whether dividend payments can substitute for creditor rights in reducing the agency cost of debt (see Brockman and Unlu, 2008). We include a dividend payment dummy equal to one if a firm pays dividends and interactions of this dividend dummy with creditor rights and shareholder rights indices. We find no significant empirical results for either the dividend dummy or these interactions, and thus no evidence that dividend payments reduce the agency problems mitigated by covenants. Note that paying dividends may have several impacts regarding these contracting problems. Dividend payments may be associated with a reduction in information asymmetry or closer monitoring of management. Alternatively, they may also reflect a greater willingness to expropriate wealth from bondholders, after all, there are

covenants specifically restricting such payments. Thus, the insignificant impact of dividends on covenant use may reflect these mixed effects.

IV. Conclusions

We use a sample of bonds issued by foreign firms in the U.S. to study how cross-country differences in statutory investor protection affect the use of bond covenants. These covenants are used to mitigate the agency costs arising from conflicts between shareholders and bondholders. Our findings suggest that laws protecting creditors and shareholders' significantly impact the number and types of restrictive debt covenants. Specifically, stronger home-country creditor protection laws substitute for covenants in Yankee bonds. Given the costly contracting hypothesis, stronger creditor protection laws may reduce bondholder-stockholder agency problems without requiring explicit covenants. This finding shows how creditor protection could then reduce the cost of debt (as found by Qian and Strahan, 2007, and Bae and Goyal, 2008), while creating more opportunities for higher leverage (as found by Djankov et al., 2007).

On the other hand, we find that the shareholder rights index and a firm-level governance measure are both positively associated with the use of most covenants. Thus, a better alignment of stockholder-manager interests may increase the likelihood of stockholder-bondholder conflicts. This result is consistent with the lower cost of debt for U.S. firms with worse governance found by Klock, Mansi, and Maxwell (2005), Cremers, Nair, and Wei (2007), and Chava, Livdan, and Purnanandam (2008). However, greater shareholder rights are not associated with the use of more restrictions on equity issuance, as firms whose minority equity protection would already avoid such equity dilution.

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Table I
Types of Covenants

This table presents summary statistics of various covenants included in foreign bonds issued in the U.S. (Yankee bonds). Panel A presents the mean, standard deviation, and other descriptive statistics. Panel B reports correlations. The data are from the Fixed Income Securities Database (FISD) and the sample period is 1991 to 2007. FISD provides more than 50 variables on bondholder protection, restrictions on issuers, and restrictions on subsidiaries. Since typically there are multiple variables for one type of restricted activity, we group FISD variables into 22 covenant dummies that indicate whether a specified activity is restricted or not. For example, *dividend payments* equals one if there is a covenant limiting dividend payments of the issuer or the subsidiary, and zero otherwise. We sum these 22 dummies to compute the *Covenants index*, which measures the total number of covenants used. A higher score indicates stronger creditor protection via bond covenants. *Covenant dummy* is a variable equals one if any covenants is used, zero otherwise. We further classify the 22 covenant dummies into eight major categories according to the type of restricted activities. We create covenant indices for each of these eight categories by summing the covenant dummies within each category. For each category, we also create a dummy variable that indicates whether any covenants related to that category are included. Appendix B provides detailed descriptions of individual covenants. Correlation coefficients in bold are significant at the 1% level.

Panel A: Summary statistics

Covenants	Corresponding variable in FISD	Mean	S.D.	Max
Total covenants				
Covenant dummy		53.00%	0.50	1
Covenant index		3.12	4.00	15
Payment restrictions				
Payment dummy		16.21%	0.37	1
Payment index		0.30	0.70	2
Dividend payment	Total	14.73%	0.35	1
	Isu_dividends_related_payments	0.59%	0.08	1
	Sub_dividends_related_payments	14.36%	0.35	1
Other payment	Isu_restricted_payments	15.47%	0.36	1
Borrowing restrictions				
Borrowing dummy		43.38%	0.50	1
Borrowing index		0.94	1.26	5
Funded debt	Total	0.15%	0.04	1
	Isu_funded_debt	0.15%	0.04	1
	Sub_funded_debt	0.00%	0.00	1
Subordinate debt	Isu_subordinated_debt_issuance	0.81%	0.09	1
Senior debt	Isu_senior_debt_issuance	0.15%	0.04	1
Secured debt	Negative_pledge_covenant	39.90%	0.49	1
Indebtedness	Total	18.58%	0.39	1
	Isu_indebteness	17.91%	0.38	1
	Sub_indebteness	16.58%	0.37	1
	Isu_leverage_test	0.22%	0.05	1
	Sub_leverage_test	0.07%	0.03	1
Leaseback	Total	23.83%	0.43	1
	Isu_leaseback	23.61%	0.42	1
	Sub_sales_leaseback	21.98%	0.41	1
Liens	Total	2.37%	0.15	1
	Isu_liens	2.22%	0.15	1
	Sub_liens	2.15%	0.14	1
Guarantees	Sub_guarantees	7.99%	0.27	1

Asset restrictions				
Asset dummy		45.74%	0.50	1
Asset index		0.18	0.53	3
Transactions	Isu_transaction_affiliates	16.21%	0.37	1
Investments	Total	2.07%	0.14	1
	Isu_investments	1.85%	0.13	1
	Sub_investments_unrestricted	0.81%	0.09	1
Asset sales	Total	45.45%	0.50	1
	Asset_sale_clause	12.29%	0.33	1
	Isu_sale_assets	45.08%	0.50	1
	Sub_sale_assets_unrestricted	0.07%	0.03	1
Stock issuance restrictions				
Stock dummy		12.29%	0.33	1
Stock index		0.64	0.79	3
Common stock	Total	8.59%	0.28	1
	Isu_stock_issuance_issuer	1.85%	0.13	1
	Sub_stock_issuance	8.22%	0.27	1
Preferred stock	Sub_preferred_stock_issuance	3.85%	0.19	1
Other stock	Isu_stock_transfer_sale	5.77%	0.23	1
Default restrictions				
Default dummy		41.75%	0.49	1
Default index		0.42	0.49	2
Cross default	Total	41.75%	0.49	1
	Cross_acceleration	39.01%	0.49	1
	Cross_default	2.81%	0.17	1
Anti-takeover restrictions				
Anti-takeover dummy		46.34%	0.50	1
Anti-takeover index		0.62	0.74	2
Poison put	Change_control_put_provisions	17.02%	0.38	1
Merger	Isu_consolidation_merger	45.15%	0.50	1
Profit/net-worth restrictions				
Profit dummy		1.26%	0.11	1
Profit index		0.01	0.11	1
Earnings	Total	0.07%	0.03	1
	Isu_fixed_charge_coverage	0.07%	0.03	1
	Sub_fixed_charge_coverage	0.00%	0.00	1
	Isu_net_earnings_test_issuance	0.00%	0.00	1
Net worth	Total			
	Isu_maintenance_net_worth	1.18%	0.11	1
	Declining_net_worth	0.00%	0.00	1
Rating decline restrictions				
Rating trigger dummy		0.67%	0.08	1
Rating trigger index		0.01	0.08	1
Rating decline	Rating_decline_trigger_put	0.67%	0.08	1

Panel B: Correlations of the use of covenants

	Payment	Borrowing	Asset	Stock	Default	Anti-takeover	Profit
Payment	1.00						
Borrowing	**0.76**	1.00					
Asset	**0.75**	**0.84**	1.00				
Stock	**0.75**	**0.63**	**0.57**	1.00			
Default	**0.47**	**0.72**	**0.68**	**0.37**	1.00		
Anti-takeover	**0.71**	**0.85**	**0.92**	**0.56**	**0.69**	1.00	
Profit	0.06	0.06	0.04	0.06	0.02	**0.08**	1.00
Rating trigger	**0.09**	**0.13**	**0.10**	**0.09**	**0.14**	**0.10**	-0.01

Table II
Covenants and Investor Protection across Countries and Legal Origins

This table presents data on the use of covenants, the number of covenants used (i.e. the covenant index), and the country-level investor protection institutions across countries and legal origins. The covenants data and bond information are from FISD. The sample period is 1991 to 2007. All variables are described in Appendix A.

Country	Number of bonds	Bonds with covenants	Covenant index	Creditor rights index	Shareholder rights index	Sovereign rating	GDP/capita in USD
English origin							
Australia	61	42.6%	2.1	3.0	4.0	20.1	20,178
Canada	21	61.9%	5.3	1.0	4.0	20.1	22,340
Hong Kong	34	52.9%	3.4	4.0	5.0	17.0	25,502
India	13	61.5%	2.0	2.0	5.0	11.4	458
Ireland	9	66.7%	4.3	1.0	5.0	20.4	25,695
Israel	4	50.0%	6.0	3.0	4.0	15.3	19,711
Jamaica	4	0.0%	0.0	2.0	4.0	7.0	3,150
Malaysia	15	40.0%	2.0	3.0	5.0	16.1	4,188
New Zealand	3	100.0%	4.0	4.0	4.0	19.7	13,169
Saudi Arabia	1	0.0%	0.0	3.0	na	16.0	8,669
Singapore	35	62.9%	4.9	3.0	5.0	21.0	22,298
South Africa	3	0.0%	0.0	3.0	5.0	12.7	3,370
Thailand	8	50.0%	2.9	2.5	4.0	14.6	2,198
United Kingdom	199	70.4%	3.8	4.0	5.0	21.0	24,330
Total	410	60.5%	3.5	3.4	4.8	19.6	21,113
French origin							
Argentina	33	63.6%	5.1	1.0	2.0	9.1	7,735
Belgium	2	0.0%	0.0	2.0	3.0	20.0	22,116
Brazil	113	53.1%	2.9	1.0	5.0	8.9	3,467
Chile	48	50.0%	2.4	2.0	4.0	15.4	5,099
Colombia	8	25.0%	1.4	0.0	3.0	11.4	2,289
Dominican Republic	2	0.0%	0.0	2.0	na	8.0	2,755
Ecuador	1	100.0%	12.0	0.0	2.0	.	1,361
Egypt	6	16.7%	1.2	2.0	3.0	11.2	1,574
El Salvador	1	0.0%	0.0	3.0	2.0	11.0	2,204
France	49	63.3%	4.4	0.0	3.5	21.0	22,413
Greece	7	57.1%	4.3	1.0	2.0	15.7	11,456
Guatemala	1	0.0%	0.0	1.0	na	9.0	1,803
Indonesia	18	50.0%	4.2	2.4	4.0	9.5	823
Italy	20	60.0%	2.2	2.0	2.0	17.8	18,953
Jordan	1	0.0%	0.0	1.0	1.0	10.0	1,774
Kuwait	1	0.0%	0.0	3.0	na	16.0	17,498
Lebanon	2	0.0%	0.0	4.0	na	6.5	4,767
Mexico	124	62.9%	5.0	0.0	3.0	11.4	5,619
Netherlands	76	55.3%	3.7	3.0	2.5	21.0	22,561
Panama	2	100.0%	3.5	4.0	2.0	10.5	4,238
Philippines	15	66.7%	5.3	1.0	4.0	10.7	937
Portugal	2	100.0%	3.0	1.0	2.5	18.5	9,677
Spain	66	54.6%	1.9	2.0	5.0	20.3	14,687
Turkey	6	16.7%	0.3	2.0	3.0	8.2	3,156
Venezuela	18	83.3%	0.9	3.0	1.0	7.4	5,325
Total	622	56.4%	3.5	1.3	3.5	14.1	9,828

German origin							
Austria	2	0.0%	0.0	3.0	2.5	21.0	24,604
Germany	70	27.1%	1.1	3.0	3.5	21.0	22,763
Japan	29	44.8%	1.3	1.8	4.5	19.9	37,360
Korea, Republic	63	42.9%	1.9	3.0	4.5	16.1	11,102
Switzerland	24	16.7%	0.8	1.0	3.0	21.0	33,325
Taiwan	1	0.0%	0.0	2.0	3.0	17.0	15,647
Total	189	33.3%	1.3	2.6	3.9	19.2	22,439
Socialist origin							
China	10	60.0%	3.8	2.0	1.0	13.7	937
Czech Republic	3	33.3%	1.7	3.0	4.0	15.7	5,366
Kazakhstan	15	6.7%	0.5	2.1	4.0	11.6	1,833
Poland	9	77.8%	7.2	1.0	2.0	13.3	4,051
Russian Federal	25	12.0%	0.6	1.9	4.0	10.6	2,225
Ukraine	1	0.0%	0.0	2.0	3.0	7.0	824
Total	63	28.6%	2.1	1.9	3.2	11.9	2,316
Scandinavian origin							
Denmark	4	0.0%	0.0	3.0	4.0	20.5	29,577
Finland	5	40.0%	2.0	1.0	3.5	20.0	22,619
Norway	30	66.7%	3.4	2.0	3.5	21.0	37,020
Sweden	26	46.2%	4.5	1.2	3.5	20.3	25,423
Total	65	52.3%	3.5	1.7	3.5	20.6	30,815

Table III
Summary Statistics

Panel A shows summary statistics; Panel B reports correlations of institutional variables. All variables are described in Appendix A. The sample period is 1991 to 2007. Correlation coefficients in bold are significant at the 1% level.

Panel A: Summary statistics

Variables	Mean	S.D.	Min	Max	Obs.
Key institutional variables					
Creditor rights index	2.16	1.31	0.00	4.00	1,349
Shareholder rights index	3.94	1.04	1.00	5.00	1,342
Component of creditor rights index					
Restriction on reorganization (CR1)	0.29	0.46	0.00	1.00	1,349
No automatic asset freeze (CR2)	0.62	0.49	0.00	1.00	1,349
Secured creditor paid first (CR3)	0.67	0.47	0.00	1.00	1,349
Management does not stay (CR4)	0.58	0.49	0.00	1.00	1,349
Component of shareholder rights index					
Vote by mail (SR1)	0.60	0.49	0.00	1.00	1,342
Shares not deposited (SR2)	0.59	0.49	0.00	1.00	1,342
Cumulative voting (SR3)	0.29	0.46	0.00	1.00	1,342
Oppressed minorities (SR4)	0.61	0.42	0.00	1.00	1,342
Preemptive rights (SR5)	0.89	0.32	0.00	1.00	1,342
Percentage capital to call meeting (SR6)	0.08	0.03	0.03	0.25	1,327
Alternative measure of key variables					
Spamann Anti-director index	3.93	0.91	2.00	5.00	1,254
Anti-self dealing index	0.51	0.29	0.08	1.00	1,342
Other institutional variables					
Public enforcement index	0.51	0.23	0.00	0.90	1,272
Enforceability of contract	6.70	1.54	4.29	8.94	1,270
Efficiency of bankruptcy	67.37	27.68	6.60	96.10	1,336
Log (Days of contract enforcement)	5.42	0.78	3.87	7.29	1,349
Public information sharing	0.35	0.48	0.00	1.00	1,351
Effectiveness of bankruptcy law	5.40	1.04	2.70	6.60	1,330
Rule of law	0.87	0.99	-1.09	1.99	1,349
Property rights	72.83	19.68	30.00	90.00	1,270
Ownership concentration	0.42	0.15	0.18	0.67	1,272
Country characteristics					
Sovereign rating	16.69	4.89	0.00	21.00	1,346
Log (GDP / capita)	9.29	1.01	5.93	10.62	1,349
Inflation	9.76	101.83	-6.18	2239.13	1,349
Firm characteristics					
Log (Total asset)	16.78	2.06	8.30	21.37	1,026
ROA	4.62	7.62	-23.53	45.00	971
R&D / Total asset	0.00	0.01	0.00	0.09	1,351
PPE / Total asset	0.35	0.28	0.00	0.92	1,015
Market to book ratio	2.12	4.00	0.15	33.90	923
Leverage	0.35	0.18	0.01	0.92	1,021
Corporate governance index	65.56	22.83	2.80	97.72	441
Dividend (dummy)	0.55	0.50	0.00	1.00	1,351
Cross-listing (dummy)	0.18	0.38	0.00	1.00	1,351
Bond characteristics					
Log (Issue size)	12.63	0.92	0.00	15.20	1,351
Log (Maturity)	7.98	0.67	5.24	10.51	1,336
Private issue	0.45	0.50	0.00	1.00	1,351
Callable bond	0.43	0.50	0.00	1.00	1,351
Putable bond	0.04	0.19	0.00	1.00	1,350
Secured bond	0.04	0.20	0.00	1.00	1,351
Highyield bond	0.35	0.48	0.00	1.00	1,351

Panel B: Correlations of institutional variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Creditor right index	(1)	1.00											
Shareholder rights index	(2)	**0.37**	1.00										
Spamann Anti-director index	(3)	**0.22**	**0.62**	1.00									
Anti-self dealing index	(4)	**0.68**	**0.59**	**0.24**	1.00								
Public enforcement index	(5)	**0.32**	**0.38**	**0.28**	**0.66**	1.00							
Enforceability of contract	(6)	**0.60**	**0.22**	**0.20**	**0.45**	**0.16**	1.00						
Efficiency of bankruptcy	(7)	**0.44**	**0.17**	**-0.10**	**0.44**	0.04	**0.66**	1.00					
Log (days of contract enforcement)	(8)	**-0.25**	0.00	**-0.31**	-0.04	**0.08**	-0.48	**-0.58**	1.00				
Public information sharing	(9)	**-0.22**	**-0.09**	**0.32**	**-0.30**	-0.07	**-0.38**	**-0.65**	**0.25**	1.00			
Effectiveness of bankruptcy law	(10)	**0.56**	**0.28**	**0.25**	**0.52**	**0.29**	**0.93**	**0.68**	**-0.51**	**-0.35**	1.00		
Rule of law	(11)	**0.55**	**0.24**	**0.36**	**0.46**	**0.22**	**0.90**	**0.71**	**-0.60**	**-0.22**	**0.91**	1.00	
Property rights	(12)	**0.59**	**0.23**	**0.27**	**0.48**	**0.21**	**0.81**	**0.67**	**-0.53**	**-0.24**	**0.84**	**0.91**	1.00
Ownership concentration	(13)	**-0.62**	**-0.36**	**-0.33**	**-0.58**	**-0.24**	**-0.68**	**-0.59**	**0.44**	**0.41**	**-0.67**	**-0.70**	**-0.69**

Table IV
Legal Institutions and the Use of Covenants

This table provides Probit regression estimates of whether any protective covenants are used on creditor rights and shareholder rights. All variables are described in Appendix A, and the sample period is 1991 to 2007. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index) and Mfx (Shareholder rights index) measure marginal effects of a one-unit change of either index on the probability of including any covenants in bond contracts.

	Covenant dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
Creditor rights index	0.025	-0.059	-0.089	-0.045	-0.152[a]	-0.087
	(0.55)	(-1.16)	(-1.52)	(-0.58)	(-1.86)	(-0.83)
Shareholder rights index	0.118[a]	0.229[c]	0.243[c]	0.367[c]	0.330[c]	0.357[c]
	(1.92)	(3.09)	(3.22)	(3.97)	(3.34)	(3.44)
Public enforcement index					1.412[c]	1.630[c]
					(3.73)	(3.76)
Public information sharing					-0.509[c]	-0.449[b]
					(-2.69)	(-2.20)
Effectiveness of bankruptcy law						0.087
						(0.41)
Rule and law						-1.193[c]
						(-3.03)
Log (Total asset)		0.119[c]	0.110[c]	0.034	0.161[b]	0.170[c]
		(2.98)	(2.71)	(0.58)	(2.54)	(2.69)
ROA		0.000	0.002	-0.003	-0.001	0.000
		(-0.019)	(0.22)	(-0.35)	(-0.11)	(-0.013)
R&D / Total asset		0.763	-0.115	1.232	5.563	5.933
		(0.15)	(-0.022)	(0.25)	(1.09)	(1.11)
PPE / Total asset		-0.023	0.027	0.346	0.375	0.261
		(-0.072)	(0.081)	(0.89)	(0.95)	(0.64)
Market to book ratio		0.021	0.022	0.035	0.029	0.033
		(1.17)	(1.15)	(1.54)	(1.24)	(1.43)
Leverage		-0.351	-0.393	-0.317	0.29	0.377
		(-0.90)	(-1.00)	(-0.67)	(0.60)	(0.76)
Sovereign rating			0.009	-0.015	-0.047	0.086
			(0.30)	(-0.38)	(-1.16)	(1.36)
Log (GDP / capita)			0.047	-0.051	-0.028	0.131
			(0.39)	(-0.29)	(-0.16)	(0.64)
Inflation			-0.001	-0.023	-0.021	-0.026
			(-0.090)	(-1.50)	(-1.31)	(-1.55)
Log (Issue size)				0.416[c]	0.365[c]	0.319[c]
				(3.67)	(3.18)	(2.71)
Log (Maturity)				0.079	0.063	0.086
				(0.64)	(0.52)	(0.75)
Private issue				-2.048[c]	-2.171[c]	-2.222[c]
				(-10.6)	(-11.3)	(-11.2)
Callable bond				0.531[c]	0.541[c]	0.553[c]
				(3.03)	(2.90)	(2.91)
Putable bond				0.397	0.482	0.381
				(1.11)	(1.19)	(0.96)
Secured bond				0.549	0.788[b]	0.930[c]
				(1.50)	(2.28)	(2.60)
Highyield bond				0.432[b]	0.376[b]	0.338[a]
				(2.30)	(2.02)	(1.80)
Mfx (Credit rights index)	1.00%	-2.30%	-3.50%	-1.70%	-5.80%	-2.60%
Mfx (Shareholder rights index)	4.70%	8.90%	9.40%	14.00%	12.60%	13.40%
Observations	1,303	850	849	821	805	785
Number of firms	639	395	395	382	370	364
Log Likelihood	-705.5	-445	-444.1	-290.9	-270.8	-262.7

Table V
Legal Institutions and the Number of Bond Covenants

This table provides Poisson regression estimates of the covenants index (the number of protective covenants) on creditor rights and shareholder rights. All variables are described in Appendix A, and the sample period is 1991 to 2007. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index) and Mfx (Shareholder rights index) measure marginal effects of a one-unit change of either index on the number of covenants in bond contracts.

	Covenant index					
	(1)	(2)	(3)	(4)	(5)	(6)
Creditor rights index	-0.097[c]	-0.125[c]	-0.167[c]	-0.117[c]	-0.150[c]	-0.125[c]
	(2.84)	(3.16)	(3.70)	(3.03)	(3.92)	(3.15)
Shareholder rights index	0.087[a]	0.097[a]	0.104[a]	0.164[c]	0.136[c]	0.143[c]
	(1.68)	(1.90)	(1.90)	(3.76)	(2.88)	(2.73)
Public enforcement index					0.741[c]	0.872[c]
					(3.76)	(4.06)
Public information sharing					-0.194[b]	-0.133
					(2.42)	(1.64)
Effectiveness of bankruptcy law						0.199[a]
						(1.75)
Rule and law						-0.67[c]
						(4.26)
Log (Total asset)		-0.081[c]	-0.094[c]	-0.033	0.014	0.013
		(2.82)	(3.23)	(1.04)	(0.50)	(0.49)
ROA		0.006	0.007	0.004	0.005	0.006
		(0.71)	(0.94)	(0.99)	(1.13)	(1.22)
R&D / Total asset		2.386	0.768	2.461	3.859[b]	3.855[a]
		(0.78)	(0.25)	(1.22)	(2.00)	(1.77)
PPE / Total asset		0.257	0.322	0.423[b]	0.424[c]	0.392[b]
		(1.12)	(1.34)	(2.63)	(2.69)	(2.46)
Market to book ratio		-0.009	-0.007	-0.004	-0.009	-0.005
		(1.22)	(0.71)	(0.64)	(1.27)	(0.62)
Leverage		0.521[b]	0.449[a]	0.26	0.507[b]	0.558[c]
		(2.01)	(1.71)	(1.32)	(2.59)	(2.80)
Sovereign rating			0.034	0.043[c]	0.02	0.084[c]
			(1.49)	(2.66)	(1.13)	(3.83)
Log (GDP / capita)			-0.037	-0.117[a]	-0.072	0.044
			(0.43)	(1.80)	(0.99)	(0.49)
Inflation			0.006	0.000	0.003	-0.001
			(0.62)	(0.01)	(0.44)	(0.10)
Log (issue size)				0.038	0.034	-0.001
				(0.81)	(0.72)	(0.03)
Log (maturity)				0.023	0.02	0.055
				(0.42)	(0.40)	(1.19)
Private issue				-1.246[c]	-1.256[c]	-1.245[c]
				(7.75)	(8.10)	(8.16)
Callable bond				0.338[c]	0.322[c]	0.298[c]
				(4.42)	(4.60)	(4.26)
Putable bond				0.193	0.215	0.217
				(1.33)	(1.58)	(1.48)
Secured bond				0.076	0.137	0.062
				(0.49)	(0.84)	(0.35)
Highyield bond				0.703[c]	0.609[c]	0.551[c]
				(6.30)	(5.25)	(4.47)
Mfx (Credit rights index)	-22.86%	-28.77%	-38.34%	-23.39%	-29.46%	-24.33%
Mfx (Shareholder rights index)	20.60%	22.39%	23.76%	32.64%	26.63%	27.85%
Observations	1,303	858	857	843	827	827
Number of firms	639	397	397	388	376	376
Log Likelihood	-3553.7	-2134.7	-2124.6	-1692.3	-1626.5	-1603.6

Table VI
Institutional Investor Protection and the Use of Various Types of Covenants

This table provides Poisson regression estimates of the sub-category covenants indices (the number of covenants related to a specific type of protection) on creditor rights and shareholder rights. Covenant classifications are reported in Appendix B, all other variables are described in Appendix A, and the sample period is 1991 to 2007. Covenants used in at least 5% of bond issues are considered only. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index) and Mfx (Shareholder rights index) measure marginal effects of a one-unit change of either index on the dependent variable.

	Covenant index					
	Payment	Borrowing	Asset	Stock	Default	Anti-takeover
	(1)	(2)	(3)	(4)	(5)	(6)
Creditor rights index	-0.26[c]	-0.138[c]	-0.075[a]	-0.327[c]	-0.146[c]	-0.075[b]
	(3.15)	(3.18)	(1.67)	(2.70)	(3.05)	(1.84)
Shareholder rights index	0.205	0.097[a]	0.169[b]	-0.276	0.264[c]	0.100[a]
	(1.53)	(1.77)	(2.58)	(1.22)	(4.01)	(1.84)
Public enforcement index	1.479[b]	0.724[c]	1.082[c]	1.646[a]	0.577[b]	0.987[c]
	(2.31)	(3.20)	(4.34)	(1.71)	(2.41)	(4.25)
Public information sharing	-0.504[a]	-0.059	-0.07	-0.087	-0.106	-0.258[c]
	(1.92)	(0.62)	(0.69)	(0.29)	(1.04)	(2.69)
Effectiveness of bankruptcy law	-0.411	0.234	0.131	2.156[c]	0.142	0.081
	(1.25)	(1.61)	(0.96)	(3.66)	(1.01)	(0.68)
Rule and law	-0.863[b]	-0.583[c]	-0.597[c]	-2.373[c]	-0.439[b]	-0.687[c]
	(2.02)	(3.38)	(3.49)	(3.80)	(2.46)	(4.48)
Log (Total asset)	-0.149[a]	-0.064[a]	0.065[a]	-0.226[b]	0.062[a]	0.053[a]
	(1.95)	(1.88)	(1.90)	(2.47)	(1.73)	(1.90)
ROA	0.016	0.014[b]	0.003	0.015	-0.002	0.002
	(1.33)	(2.20)	(0.60)	(1.33)	(0.34)	(0.51)
R&D / Total asset	14.692[b]	4.525	2.973	9.912	-1.136	2.88
	(2.56)	(1.55)	(1.11)	(0.88)	(0.21)	(1.10)
PPE / Total asset	0.824[b]	0.844[c]	0.102	0.509	0.470[b]	0.215
	(2.01)	(3.81)	(0.54)	(0.89)	(1.97)	(1.28)
Market to book ratio	-0.047[b]	-0.008	-0.001	-0.046[a]	0.027[b]	0.002
	(2.26)	(0.81)	(0.14)	(1.78)	(2.45)	(0.17)
Leverage	1.437[c]	0.647[b]	0.541[b]	1.073[a]	0.014	0.390[a]
	(3.06)	(2.63)	(2.21)	(1.89)	(0.05)	(1.82)
Sovereign rating	0.293[c]	0.074[c]	0.049[a]	0.162[a]	0.027	0.092[c]
	(4.01)	(2.78)	(1.72)	(1.65)	(1.02)	(3.86)
Log (GDP / capita)	0.124	0.025	0.134	-0.169	0.026	0.082
	(0.70)	(0.25)	(1.28)	(0.74)	(0.23)	(0.86)
Inflation	0.021	-0.006	0.006	-0.047	-0.005	0.001
	(1.40)	(0.49)	(0.62)	(1.53)	(0.51)	(0.08)
Log (issue size)	-0.251[b]	-0.007	0.03	-0.199	0.019	0.073
	(2.08)	(0.13)	(0.57)	(1.22)	(0.30)	(1.43)
Log (maturity)	-0.22	-0.043	0.157[b]	-0.335	0.000	0.155[c]
	(1.45)	(0.75)	(2.55)	(1.61)	(0.01)	(2.79)
Private issue	-1.04[c]	-1.337[c]	-1.276[c]	-0.97[b]	-1.165[c]	-1.374[c]
	(3.13)	(8.19)	(8.22)	(2.35)	(7.34)	(8.74)
Callable bond	0.636[c]	0.227[c]	0.245[c]	0.728[b]	0.082	0.258[c]
	(2.87)	(2.98)	(3.01)	(2.59)	(0.99)	(3.54)
Putable bond	0.052	0.287[a]	0.275	0.431	0.026	0.21[a]
	(0.06)	(1.84)	(1.52)	(0.60)	(0.18)	(1.70)
Secured bond	0.588[a]	-0.228	0.173	0.309	0.088	0.107
	(1.87)	(1.13)	(0.75)	(0.69)	(0.56)	(0.63)
Highyield bond	2.052[c]	0.386[c]	0.427[c]	1.869[c]	0.138	0.395[c]
	(4.16)	(3.12)	(3.28)	(2.77)	(1.13)	(3.69)
Mfx (Credit rights index)	-0.96%	-6.96%	-3.55%	-0.32%	-4.15%	-3.46%
Mfx (Shareholder rights index)	0.75%	4.89%	8.04%	0.27%	7.51%	4.65%
Observations	827	827	827	827	827	827
Number of firms	376	376	376	376	376	376
Log Likelihood	-279.2	-769.3	-690.7	-176.9	-534.7	-674.8

Table VII
Institutional Protection and the Use of Individual Bond Covenants

This table seeks to examine how institutional investor protection affects the use of individual bond covenants. The table reports Probit regression estimates of individual covenants dummies on creditor rights and shareholder rights. Covenant classifications are reported in Appendix B, all other variables are described in Appendix A, and the sample period is 1991 to 2007. Covenants used in at least 5% of bond issues are considered only. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index) and Mfx (Shareholder rights index) measure marginal effects of a one-unit change of either index on the dependent variable.

	Payment restrictions		Borrowing restrictions					
	Subsidiary dividends related payments restriction	Issuer restricted payments restriction	Negative pledge covenant	Issuer indebtedness restriction	Subsidiary indebtedness restriction	Issuer asset sale & leaseback restriction	Subsidiary asset sale & leaseback restriction	Subsidiary guarantee restriction
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Creditor rights index	-0.490[c]	-0.469[c]	-0.14	-0.441[c]	-0.540[c]	-0.154	-0.118	-0.350[b]
	(-3.58)	(-3.49)	(-1.47)	(-3.87)	(-3.92)	(-1.53)	(-1.19)	(-2.54)
Shareholder rights index	0.446[c]	0.389[b]	0.176[a]	0.377[b]	0.542[c]	0.03	0.022	0.007
	(2.61)	(2.47)	(1.71)	(2.50)	(3.31)	(0.25)	(0.18)	(0.035)
Other institutional variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mfx (Credit rights index)	-0.34%	-0.39%	-5.19%	-0.44%	-0.15%	-2.30%	-1.78%	-0.05%
Mfx (Shareholder rights index)	0.31%	0.33%	6.55%	0.38%	0.15%	0.45%	0.33%	0.00%
Observations	816	816	826	816	816	826	826	788
Number of firms	368	368	375	368	368	375	375	362
Log Likelihood	-99.72	-104.6	-259.8	-115.5	-99.14	-227.3	-242.1	-74.41

Table VII continued.

	Stock restrictions		Asset restrictions			Anti-takeover restrictions		Default restrictions
	Subsidiary stock issuance restriction	Issuer stock transfer & sale restriction	Issuer transaction w/ affiliates restriction	Asset sale clause covenant	Issuer asset sale restriction	Change of control put provisions	Issuer consolidation merger restriction	Cross-default acceleration covenant
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Creditor rights index	-0.636[c]	-0.500[c]	-0.345[c]	-0.507[c]	-0.028	-0.463[c]	-0.011	-0.103
	(-4.19)	(-2.75)	(-3.17)	(-3.52)	(-0.30)	(-3.83)	(-0.12)	(-1.21)
Shareholder rights index	-0.550[a]	0.11	0.511[c]	-0.078	0.213[b]	0.084	0.207[b]	0.403[c]
	(-1.82)	(0.52)	(3.44)	(-0.45)	(2.15)	(0.59)	(2.12)	(3.86)
Other institutional variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mfx (Credit rights index)	0.00%	-0.01%	-0.52%	-0.14%	-1.11%	-0.64%	-0.43%	-3.70%
Mfx (Shareholder rights index)	0.00%	0.00%	0.77%	-0.02%	8.47%	0.12%	8.27%	14.49%
Observations	775	827	816	754	812	816	812	826
Number of firms	357	376	368	350	371	368	371	375
Log Likelihood	-79.17	-67.88	-128.7	-87.94	-301.9	-119.7	-296.4	-315.8

Table VIII
Individual Components of Institutional Investor Protection and the Use of Bond Covenants

This table examines how each component of the creditor rights index and shareholder rights index affects the use of bond covenants. Panel A reports Poisson regression estimates of the covenant index (the number of protective covenants) individual components of creditor rights, and Panel B repeats the analysis for shareholder rights. All variables are described in Appendix A, and the sample period is 1991 to 2007. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Components of creditor rights and the use of bond covenants

	Covenant index				
	(1)	(2)	(3)	(4)	(5)
Restriction on reorganization	0.021	-0.072			
	(0.23)	(0.74)			
No automatic asset freeze	-0.003		-0.152		
	(0.02)		(1.44)		
Secured creditor paid first	-0.528[c]			-0.573[c]	
	(3.55)			(4.05)	
Management does not stay	-0.083				-0.275[b]
	(0.56)				(2.65)
Shareholder rights index	0.067	0.100[b]	0.126[b]	0.055	0.125[b]
	(1.13)	(2.21)	(2.22)	(1.33)	(2.54)
Other institutional variables	Yes	Yes	Yes	Yes	Yes
Firm level variables	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes
Observations	827	827	827	827	827
Number of firms	376	376	376	376	376
Log likelihood	-1588.3	-1618.7	-1615.8	-1589.3	-1607.7

Panel B: Components of shareholder rights and the use of bond covenants

	Covenant index						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Creditor rights index	-0.173[c]	-0.096[c]	-0.092[c]	-0.094[c]	-0.125[c]	-0.115[c]	-0.096[c]
	(4.51)	(2.65)	(2.70)	(2.68)	(3.22)	(3.29)	(2.83)
Vote by mail	0.078	0.093					
	(0.48)	(1.01)					
Shares not deposited	-0.11		-0.207[b]				
	(0.87)		(2.17)				
Cumulative voting	0.083			0.151			
	(0.56)			(1.33)			
Oppressed minorities	0.26				0.294[b]		
	(1.57)				(2.47)		
Preemptive rights	0.613[c]					0.553[c]	
	(3.66)					(3.72)	
Capital to call meeting	1.347						0.37
	(0.64)						(0.24)
Other institutional variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	813	827	827	827	827	827	813
Number of firms	371	376	376	376	376	376	371
Log likelihood	-1534.1	-1614.3	-1610.8	-1613.5	-1608.9	-1592.5	-1570.8

Table IX
Firm-level Corporate Governance

This table provides Poisson regression estimates of various covenant indices on creditor rights and shareholder rights, controlling for firm-level corporate governance. Column (1) uses the overall covenant index, and columns (2) to (7) report numbers for various sub-indices of covenants. Covenant classifications are reported in Appendix B, all other variables are described in Appendix A, and the sample period is 1991 to 2007. Covenants used in at least 5% of bond issues are considered only. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm; the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index), Mfx (Shareholder rights index), and Mfx (Firm-level governance) measure marginal effects of a one-unit change of either index on the dependent variable.

	Covenant index						
	Total	Payment	Borrowing	Asset	Stock	Default	Anti-takeover
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Creditor rights index	-0.188[b]	-0.145	-0.168[b]	-0.099	-0.735	-0.115	-0.087
	(2.48)	(0.46)	(2.09)	(1.21)	(1.29)	(1.32)	(0.83)
Shareholder rights index	0.179[b]	2.833[c]	-0.001	0.187[b]	-0.059	0.306[b]	0.252[b]
	(2.25)	(5.97)	(0.00)	(1.97)	(0.06)	(2.39)	(2.66)
Corporate governance index	0.011[b]	0.018	0.015[c]	0.009[b]	0.001	0.006	0.005
	(2.51)	(0.58)	(3.13)	(1.98)	(0.04)	(0.94)	(0.83)
Other institutional variables	No	No	No	No	No	No	No
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	No	No	No	No	No	No	No
Mfx (Credit rights index)	-32.82%	0.00%	-6.01%	-4.82%	0.00%	-3.05%	-4.10%
Mfx (Shareholder rights index)	31.14%	0.02%	-0.02%	9.08%	0.00%	8.09%	11.88%
Mfx (Firm-level governance)	0.02%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%
Observations	391	388	391	391	391	391	388
Number of firms	162	160	162	162	162	162	160
Log Likelihood	-739.6	-55.4	-318.6	-326.3	-45.44	-246.3	-315.5

Table X
Robustness Tests

This table provides Poisson regression estimates of various covenant indices on creditor and shareholder protection. Column (1) uses the overall covenant index, and columns (2) to (7) report numbers for various sub-indices. Panel A reports results using the anti-self dealing index in Djankov et al. (2008) as an alternative measure of shareholder rights; Panel B shows results with controlling for legal origins; Panel C reports the results using a sample of one bond per firm with standard errors corrected for clustering by county. Covenant classifications are reported in Appendix B, all other variables are described in Appendix A, and the sample period is 1991 to 2007. Covenants used in at least 5% of bond issues are considered only. All regressions include year and one-digit industry dummy variables. Standard errors are robust and corrected for clustering by firm (by country in Panel C); the associated t-statistics are reported in parentheses. a, b, and c denote significance at the 10%, 5%, and 1% levels, respectively. Mfx (Creditor rights index), Mfx (Shareholder rights index), and Mfx (Anti-self dealing index) measure marginal effects of a one-unit change of either index on the dependent variable.

Panel A: Anti-self dealing index

	Covenant index						
	Total	Payment	Borrowing	Asset	Stock	Default	Anti-takeover
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Creditor rights index	-0.129[c]	-0.209[b]	-0.124[b]	-0.091	-0.024	-0.160[b]	-0.099[a]
	(2.55)	(2.29)	(2.35)	(1.60)	(0.21)	(2.61)	(1.88)
Anti-self dealing index	0.348	-0.117	0.076	0.528	-3.306[c]	0.796[c]	0.442
	(1.26)	(0.23)	(0.26)	(1.63)	(3.32)	(2.04)	(1.49)
Other institutional variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mfx (Credit rights index)	-25.09%	-0.84%	-6.28%	-4.36%	-0.02%	-4.62%	-4.57%
Mfx (Anti-self dealing index)	67.99%	0.47%	3.85%	25.28%	2.52%	22.98%	20.46%
Observations	827	827	827	827	827	827	827
Number of firms	376	376	376	376	376	376	376
Log Likelihood	-1613	-280.5	-770.8	-693.3	-173.1	-538.8	-675.3

Panel B: Controlling for legal origins

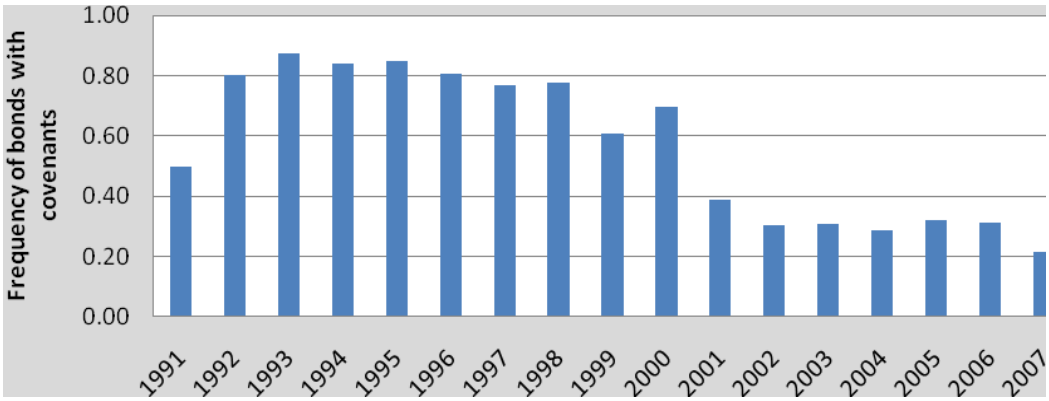
	Covenant index						
	Total	Payment	Borrowing	Asset	Stock	Default	Anti-takeover
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Creditor rights index	-0.127[c]	-0.289[c]	-0.133[c]	-0.07	-0.398[c]	-0.114[b]	-0.096[b]
	(3.33)	(3.95)	(3.11)	(1.53)	(2.98)	(2.02)	(2.43)
Shareholder rights index	0.138[c]	0.306[b]	0.110[b]	0.152[b]	0.13	0.234[c]	0.084[a]
	(3.09)	(2.24)	(2.12)	(2.59)	(0.81)	(4.32)	(1.74)
Legal origin French	-0.030	0.407	0.015	-0.039	0.437	-0.047	-0.161
	(0.27)	(1.20)	(0.11)	(0.29)	(1.21)	(0.29)	(1.30)
Legal origin German	-0.653[c]	-0.701	-0.424[b]	-0.894[c]	-14.863[c]	-0.518[c]	-0.772[c]
	(3.67)	(0.80)	(2.35)	(3.98)	(28.88)	(2.69)	(3.53)
Legal origin Scandinavian	-0.413[b]	-0.64	-0.308[a]	-0.455[c]	-0.156	-0.055	-0.517[c]
	(2.54)	(1.02)	(1.73)	(3.01)	(0.24)	(0.34)	(3.31)
Legal origin Socialist	-0.037	-0.099	-0.003	0.138	0.012	-0.285	-0.053
	(0.20)	(0.17)	(0.01)	(0.54)	(0.02)	(1.07)	(0.24)
Other institutional variables	No	No	No	No	No	No	No
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mfx (Credit rights index)	-25.26%	-1.36%	-6.89%	-3.32%	-0.04%	-3.35%	-4.48%
Mfx (Shareholder rights index)	27.39%	1.44%	5.70%	7.26%	0.01%	6.85%	3.93%
Observations	843	843	843	843	843	843	843
Number of firms	388	388	388	388	388	388	388
Log Likelihood	-1676.1	-289	-799.9	-710.3	-185	-549.7	-694.2

Panel C: One bond per firm with clustering by country

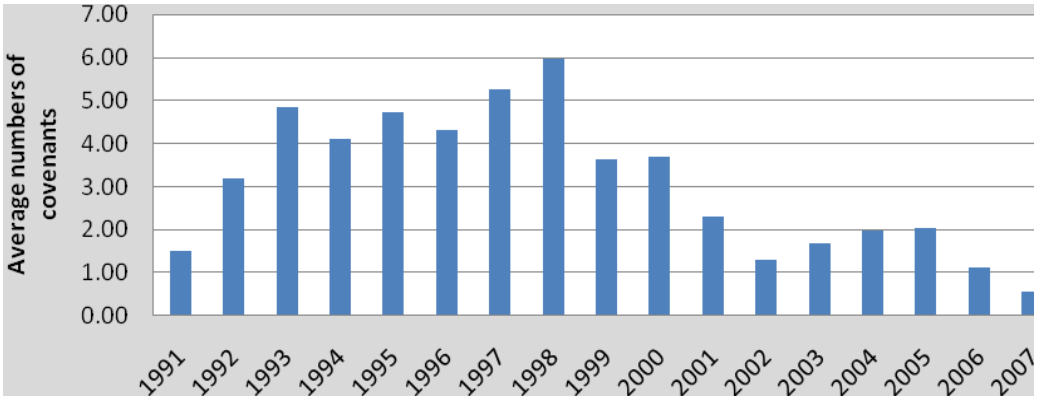
	Covenant index						
	Total	Payment	Borrowing	Asset	Stock	Default	Anti-takeover
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Creditor rights index	-0.147[b]	-0.471[c]	-0.136[b]	-0.07	-0.466[b]	-0.117[a]	-0.064
	(2.44)	(4.05)	(2.19)	(0.90)	(2.84)	(1.69)	(0.90)
Shareholder rights index	0.266[b]	0.397[c]	0.243[b]	0.238[a]	0.145	0.298[c]	0.185
	(2.27)	(2.10)	(2.24)	(1.80)	(0.52)	(3.48)	(1.42)
Other institutional variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm level variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mfx (Credit rights index)	-19.98%	-0.03%	-5.43%	-2.33%	0.00%	-2.34%	-2.04%
Mfx (Shareholder rights index)	36.18%	0.03%	9.66%	7.87%	0.00%	5.95%	5.88%
Observations	361	361	361	361	361	361	361
Number of firms	36	36	36	36	36	36	36
Log Likelihood	-617.3	-107.3	-309.1	-259.3	-71.9	-201.8	-250.9

Figure 1
Bond Covenants over Time

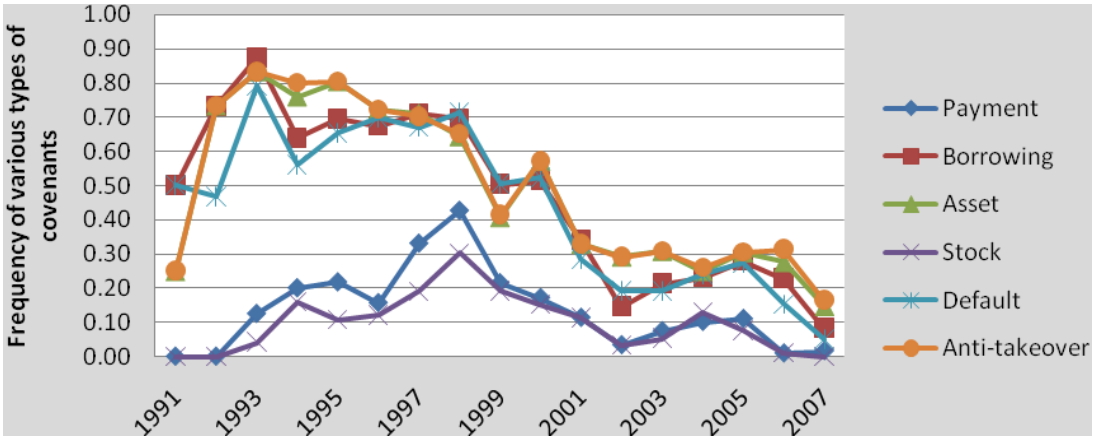
The figure shows the use of covenants in bond contracts over time. Panel A shows the frequency of bonds with covenants, Panel B displays the average number of covenants (i.e., the covenant index, see Appendix B), and Panel C reports the frequency of various types of covenants.



Panel A: Frequency of bond with covenants over time



Panel B: Number of covenants over time



Panel C: Frequency of various types of covenants over time

Appendix A
Definition of Variables

Variables	Description
	A. Country-level institutions
Legal origin	Identifies the legal origin of the company law or commercial code of each country (English, French, Socialist, German, and Scandinavian). *Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998 and 1999).*
Creditor rights index	An index aggregating creditor rights. A score of one is assigned when each of the following rights of secured lenders are defined in laws and regulations: (1) there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization; (2) secured creditors are able to seize their collateral after the reorganization petition is approved, i.e., there is no automatic stay or asset freeze; (3) secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers; and (4) management does not retain administration of its property pending the resolution of the reorganization. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) and is constructed for every year from 1978 to 2003. The index is time-varying and index values for the years 2004 to 2006 are set equal to the index values of the year 2003. *Sources: Bankruptcy and reorganization laws, Djankov, McLiesh, and Shleifer (2007), and La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).*
Restrictions on reorganization (CR1)	Variable equals 1 if there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization, 0 otherwise. *Sources: Bankruptcy and reorganization laws, Djankov, McLiesh, and Shleifer (2007), and La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).*
No automatic stay (CR2)	Variable equals 1 if secured creditors are able to seize their collateral after the reorganization petition is approved, i.e., there is no automatic stay or asset freeze, 0 otherwise. *Sources: Bankruptcy and reorganization laws, Djankov, McLiesh, and Shleifer (2007), and La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).*
Secured creditor paid first (CR3)	Variable equals 1 if secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers, 0 otherwise. *Sources: Bankruptcy and reorganization laws, Djankov, McLiesh, and Shleifer (2007), and La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).*
Management does not stay (CR4)	Variable equals 1 if management does not retain administration of its property pending the resolution of the reorganization, 0 otherwise. *Sources: Bankruptcy and reorganization laws, Djankov, McLiesh, and Shleifer (2007), and La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).*
Shareholder rights index	Revised LLSV anti-director rights index. This index of Anti-director rights is formed by adding one when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) when shareholders have preemptive rights that can only be waived by a shareholders meeting; and (6) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting is less than or equal to ten percent (the sample median); The range for the index is from zero to six. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*
Vote by mail (SR1)	Equals one if the company law or commercial code allows shareholders to mail their vote to the firm, and zero otherwise. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*
Shares not deposited (SR2)	Equals one if the company law or commercial code does not allow firms to require that shareholders deposit their shares prior to a general shareholder meeting, thus preventing them from selling those shares for a number of days, and zero otherwise. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*

Cumulative vote (SR3)	Equals one if the company law or commercial code allows shareholder to cast all their votes for one candidate standing for election to the board of directors (cumulative voting) or if the company law or commercial code allows a mechanism of proportional representation in the board by which minority interests may name a proportional number of directors to the board, and zero otherwise. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*
Oppressed minorities (SR4)	Equals one if the company law or commercial code grants minority shareholders either a judicial venue to challenge the decisions of management or of the assembly or the right to step out of the company by requiring the company to purchase their shares when they object to certain fundamental changes, such as merges, asset dispositions, and changes in the articles of incorporation. The variable equals zero otherwise. Minority shareholders are defined as those shareholders who own 10 percent of share capital or less. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*
Preemptive rights (SR5)	Equals one when the company law or commercial code grants shareholders the first opportunity to buy new issues of stock, and this right can be waived only by a shareholder's vote; equals zero otherwise. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008).*
Percentage of capital to call meeting (SR6)	The minimum percentage of ownership of share capital that entitles a shareholder to call for an extraordinary shareholder's meeting; it ranges from 1 to 33 percent. *Source: Djankov La Porta, Lopez-de-Silanes, and Shleifer (2008)*
Spamann Anti-director index	An index of anti-director rights is formed by adding one when: (1) the country allows shareholders to mail their proxy vote, (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting, (3) cumulative voting or proportional representation of minorities on the board of directors is allowed, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting is less than or equal to 10% (the sample median), or (6) when shareholders have preemptive rights that can only be waived by a shareholders' meeting. The range for the index is from 0 to 5. *Source: Spamann (2008).*
Anti-self dealing index	An index of anti-self dealing is formed by taking the average of ex-ante and ex-post private control of self-dealing indices. The Index of ex-ante control of self-dealing transactions is an average of approval by disinterested shareholders and ex-ante disclosure. The Index of ex-post control of self-dealing transactions is an average of disclosures in periodic filings and ease of proving wrongdoing. *Source: Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)*
Public enforcement index	In index that measured the quality of public enforcement of securities laws. The index equals the arithmetic mean of (1) supervisor characteristics index, (2) rule-making power index, (3) investigative powers index, (4) orders index, and (5) criminal index. Higher index values indicate greater enforcement. *Source: La Porta, Lopez-de-Silanes, and Shleifer (2006).*
Enforceability of contracts	The relative degree to which contractual agreements are honored and complications presented by language and mentality differences. Scale for 0 to 10, with higher scores indicating higher enforceability. *Source*: *Business Environmental Risk Intelligence.* Exact definition in *Knack, Stephen and Philip Keefer (1995).*
Efficiency of bankruptcy	The relative efficiency in the outcome of a bankruptcy case. The estimated present value of the terminal value of the firm after bankruptcy costs in the case of Mirage hotel in Djankov, Hart, McLiesh and Shleifer (2008). *Source: Djankov, Hart, McLiesh, and Shleifer (2008).*
Days of contract enforcement	The number of days to resolve a payment dispute through courts. The data are based on the methodology in Djankov et al. (2003) but describe the number of calendar days to enforce a contract of unpaid debt worth 50% of the country's GDP per capita. The variable is constructed as at January 2003. *Djankov, Hart, McLiesh, and Shleifer (2008).*
Public information sharing	The variable equals 1 if a public credit registry operates in the country, 0 otherwise. A public registry is defined as a database owned by public authorities (usually the Central Bank or Banking Supervisory Authority), that collects information on the standing of borrowers in the financial system and makes it available to financial institutions. The

	variable is constructed as at January for every year from 1978 to 2003. *Source: Djankov, McLiesh, and Shleifer (2007).*
Effectiveness of bankruptcy law	Assessment of the effectiveness of bankruptcy law. Low score indicates creditor protection law is nonexistent or pporly enforced, High score indicates creditor protection law is well defined and strictly enforced. Scale from 0 to 7. S*ource: WEF, Global Competitiveness Report (2005).*
Rule of law	The variable measures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Average of index between 1996 and 2007. Higher scores indicate greater tradition of rule of law. *Source: Kaufmann, Kraay, and Mastruzzi (2008), see also http://www.govindicators.org.*
Property rights	Index of property rights. *Source: http://www.heritage.org*
Ownership concentration	Average percentage of common shares not owned by the top three shareholders in the ten largest non-financial, privately-owned domestic firms in a given country. A firm is considered privately-owned if the State is not a known shareholder in it. *Source: La Porta,Lopez-de-Silances, and Shleifer (2006).*
	B. Bond-level variables
Offering size	Amount borrowed in million U.S. dollars.
Maturity	Number of days until to the bond's maturity.
Private	Variable equals 1 if the bond is a private placement exempt from registration under SEC Rule 144a, 0 otherwise.
Call	Variable equals 1 if the bond is callable, 0 otherwise
Put	Variable equals 1 if the bond is putable, 0 otherwise.
Secured	Variable equals 1 if the bond is secured, 0 otherwise.
Highyield	Variable equals 1 if the bond rating is below Baa or BBB, 0 otherwise
	C. Firm-level variables
Firm size	Total assets in U.S. dollars.
ROA	Return-on-assets defined as net income divided by total assets.
R&D / firm size	Expenses for research and development divided by total assets.
PPE / firm size	Property, plant, and equipment to total assets.
Market to book ratio	Market-to-book value defined as the market capitalization of stock plus total debt divided by total assets.
Leverage	Financial leverage defined as the sum of long and short term debt divided by total assets.
Corporate governance index	Average corporate governance score of a firm from 2003 to 2007. *Source: ISS.*
Cross-listing	Variable equals 1 if the firm participates in an ADR program at the time of the bond issue or directly listed in U.S. stock exchanges, and 0 otherwise. *Source: Bank of New York, Citigroup, and JP Morgan.*
Dividend	Variable equals 1 if a firm paid dividend and 0 otherwise.
	D. Other variables
Sovereign rating	We code Standard & Poors sovereign credit ratings into Comprehensive Credit Rating (CCR) as described in Appendix C following Gande and Parsley (2007). *Source: Standard & Poors.*
GDP / capita	Real GDP per capita in U.S. dollars (basis: year 2000). *Source: World Bank.*
Inflation	Inflation measured as the change of the GDP deflator. *Source: World Bank.*

Appendix B
Classification of Covenants

Covenant indices	Covenant dummies	Corresponding variable in FISD	Definition (FISD)
Payment	Dividend payment	Isu_dividends_related_payments	Flag indicating that payments made to shareholders or other entities may be limited to a certain percentage of net income or some other ratio.
		Sub_dividends_related_payments	Limits the subsidiaries' payment of dividends to a certain percentage of net income or some other ratio. For captive finance subsidiaries, this provision limits the amount of dividends which can be paid to the parent. This provision protects the debt holder against a parent from draining assets from its subsidiaries.
	Other payment	Isu_restricted_payments	Restricts issuer's freedom to make payment (other than dividend related payments) to shareholders and others.
Borrowing	Funded debt	Sub_funded_debt	Restricts issuer's subsidiaries from issuing additional funded debt (debt with an initial maturity of longer than one year).
		Isu_funded_debt	Restricts issuer from issuing additional funded debt. Funded debt is an debt with an initial maturity of one year or longer.
	Subordinated debt	Isu_subordinated_debt_issuance	Restricts issuance of junior or subordinated debt
	Senior debt	Isu_senior_debt_issuance	Restricts issuer to the amount of senior debt is may issuers in the future.
	Secured debt	Negative_pledge_covenant	The issuer cannot issue secured debt unless it secures the current issue on a pari passu basis.
	Indebtedness	Isu_indebtedness	Restricts user from incurring additional debt with limits on absolute dollar amount of debt outstanding or percentage total capital.
		Sub_indebtedness	Restricts the total indebtedness of the subsidiaries.
		Isu_leverage_test	Restricts total-indebtedness of the issuer.
		Sub_leverage_test	Limits subsidiaries' leverage.
	Leaseback	Isu_leaseback	Restricts issuer to the type or amount of property used in a sale leaseback transaction and may restrict its use of the proceeds of the sale. A sale leaseback transaction is a method of raising capital in which an organization sells some specific assets to an entity that simultaneously leases the asset back to the organization for a fixed term and agreed upon rate.
		Sub_sales_leaseback	Restricts subsidiaries from selling then leasing back assets that provide security for the debtholder. This provision usually requires that assets or cash equal to the property sold and leased back be applied to the retirement of the debt in question or used to acquire another property to increase the debtholders' security.
	Liens	Sub_liens	Restricts subsidiaries from acquiring liens on their property.
		Isu_liens	In the case of default, the bondholders have the legal right to sell mortgaged property to satisfy their unpaid obligations.
	Guarantee	Subsidiary_guarantee	Subsidiary is restricted from issuing guarantees for the payment of interest and/or principal of certain debt obligations.

Asset	Asset sales	Asset_sale_clause	Covenant requiring the issuer to use net proceeds from the sale of certain assets to redeem the bonds at par of at a premium. This covenant does not limit the issuers right to sell assets.
		Isu_sale_assets	Restriction on the ability of an issuer to sell assets or restrictions on the issuer's use of the proceeds from the sale of assets. Such restrictions may require the issuer to apply some or all of the sales proceed to the repurchase of debt through a tender offer or call.
		Sub_sale_assets_unrestricted	Issuer must use proceeds from sale of subsidiaries' assets (either certain asset sales or all asset sales over some threshold) to reduce debt.
	Transaction	Isu_transaction_affiliates	Issuer is restricted in certain business dealings with its subsidiaries.
	Investment	Isu_investments	Restricts issuer's investment policy to prevent risky investments.
		Sub_investments_unrestricted	Restricts subsidiaries' investment.
Stock	Common stock	Isu_stock_issuance_issuer	Restricts issuer from issuing additional common stocks.
		Sub_stock_issuance	Restricts issuer from issuing additional common stock in restricted subsidiaries. Restricted subsidiaries are those which are considered to be consolidated for financial test purposes.
	Preferred stock	Sub_preferred_stock_issuance	Restricts subsidiaries' ability to issue preferred stock
	Other stock	Isu_stock_transfer_sale	Restricts the issuer from transferring, selling, or disposing of it's own common or the common stock of a subsidiary.
Default	Default	cross_acceleration	A bondholder protective covenant that allows the holder to accelerate their debt, if any other debt of the organization has be accelerated due to an event of default.
		cross_default	A bondholder protective covenant that will activate an event of default in their issue, if an event of default has occurred under any other debt of the company.
Anti-takeover	Poison put	change_control_put_provisions	Upon a change of control in the issuer, bondholders have the option of selling the issue back to the issuer (poison put). Other conditions may limit the bondholder's ability to exercise the put option. Poison puts are often used when a company fears an unwanted takeover by ensuring that a successful hostile takeover bid will trigger an event that substantially reduce the value of the company.
	Merger	isu_consolidation_merger	Indicates that a consolidation or merger of the issuer with another entity is restricted.
Profit	Earnings	isu_fixed_charge_coverage	Issuer is required to have a ratio of earnings available for fixed charges, of at least a minimum specified level.
		sub_fixed_charge_coverage	Subsidiaries are required to maintain a minimum ratio of net income to fixed charges.
		isu_net_earnings_test_issuance	To issue additional debt the issuer must have achieved or maintained certain profitability levels. This test is a variation of the (more common) fixed coverage tests.
	Net worth	isu_maintenance_net_worth	Issuer must maintain a minimum specified net worth.
		declining_net_worth	If issuer's net worth (as defined) falls below minimum level, certain bond provisions are triggered.
Rating decline	Rating decline	rating_decline_trigger_put	A decline in the credit rating of the issuer (or issue) triggers a bond holder put provision.

Appendix C
Comprehensive Credit Rating

Following Gande and Parsley (2007) we code S&P sovereign credit ratings using the following chart. The reported credit rating is assigned a numerical code from 0 through 21 to obtain the explicit credit rating (ECR). Next, we add the reported information on the credit outlook (COL), coded from -1 to +1, to obtain the comprehensive credit rating (CCR), i.e., CCR = ECR + COL. For example, if a country is rated BB+ with stable credit outlook, its ECR and CCR are 11. If S&P revises the outlook to credit watch-negative (from stable), the ECR remains 11. However, its CCR is 10.50.

Explicit credit rating (ECR)		Credit Outlook (COL)	
Sovereign rating	Conversion number	Outlook	Conversion number
AAA	21	Positive	1
AA+	20	Credit Watch-Developing	0.5
AA	19	Stable	0
AA-	18	Credit Watch-Negative	-0.5
A+	17	Negative	-1
A	16		
A-	15		
BBB+	14		
BBB	13		
BBB-	12		
BB+	11		
BB	10		
BB-	9		
B+	8		
B	7		
B-	6		
CCC+	5		
CCC	4		
CCC-	3		
CC	2		
C	1		
SD, D	0		