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Governance Mechanisms and Bond Prices

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Abstract

We investigate the effects of shareholder governance mechanisms on bondholders and document two new findings. **First**, the impact of shareholder control (proxied by large institutional blockholders) on credit risk depends on takeover vulnerability. Shareholder control is associated with higher (lower) yields if the firm is exposed to (protected from) takeovers. In the presence of shareholder control, the difference in bond yields due to differences in takeover vulnerability can be as high as 66 basis points. **Second**, event risk covenants reduce the credit risk associated with strong shareholder governance. Therefore, without bond covenants, shareholder governance and bondholder interests diverge.

In their survey, Shleifer and Vishny (1997) broadly term corporate governance as "the ways through which suppliers of capital to corporations assure themselves of getting a return on their investment". In general, the Anglo-Saxon view of corporate governance has mainly focused on transparency and strengthening shareholder rights, as witnessed by the recent governance reforms in the US and the UK.[1] However, policies that benefit stockholders will not necessarily benefit bondholders. In particular, different governance mechanisms available to shareholders can have different consequences for bondholders. For example, acquisitions and disciplinary takeovers can benefit target shareholders but also hurt the target bondholders by adding more debt to the firm.[2] Such an increase in leverage can reduce the value of the outstanding bonds not only by increasing the probability and the deadweight costs of a possible future bankruptcy but also by reordering the priority of claims in bankruptcy.[3] An extreme case of an increase in leverage is that of Leveraged Buyouts. For example, Warga and Welch (1993) show that bondholder losses range on average between 6-7% on Leveraged Buyout announcements.[4] More generally, if greater shareholder control results in an increase in leverage, existing bondholders stand to lose unless the benefits of increasing leverage (e.g. reducing managerial misuse by reducing free cash flow (Jensen, 1986)) are large.

Since stronger shareholder control also better aligns management to shareholders, bondholder concerns of asset substitution might be heightened as well (Jensen and Meckling, 1976). Therefore, the net impact of strong shareholder governance on bondholders depends on the nature of the governance mechanisms in place, is theoretically unclear and is ultimately an empirical issue – a sentiment reflected in the following statement by a prominent bond rating agency:[5] *"Generalized implications for creditors of companies that have controlling shareholders are not clear to us at this*

point. While there is substantial overlap between creditor and shareholder interests, there also are important potential conflicts."

This paper makes two contributions. First, it documents the impact of the interaction of different shareholder governance mechanisms on bondholders. While the impact of governance on bondholders has received recent attention in e.g. Bhojraj and Sengupta (2003), Klock, Mansi and Maxwell (2005) and Anderson, Mansi and Reeb (2004), the implications of the interaction between different governance mechanisms are new. Second, the paper highlights the importance of bondholder governance through the use of bond covenants. This investigation, to our knowledge the first, shows that bondholder governance is important in aligning shareholder and bondholder interests.

We first investigate how bondholders are affected by different governance mechanisms that strengthen shareholders by focusing on shareholder control and takeover defenses. We proxy for strong shareholder control by using data on large institutional blockholders (i.e., with equity ownership greater than 5%). We use institutional rather than all blockholders due to the difficulty of collecting data on all blockholders for all firms in our sample, but also because we want to exclude blockholders who are aligned with management.[6] Next, we proxy for a firm's exposure to takeovers by considering its charter-level takeover defense provisions. Our analysis here consists of three parts. First, we examine how shareholder control, takeover vulnerability and their interaction affect bond yields. Second, we check if rating agencies account for the interaction between the different governance mechanisms. Third, to shed further light on any risk differences, we compare returns of bond portfolios differing in their issuer's shareholder governance

characteristics. With respect to the aforementioned second contribution, we then explore whether bond covenants help in the convergence of shareholder and bondholder interests.

Using quarterly, trader-quoted bond yields of an average of 1,218 issues per year from 1990 to 1997, we document several striking results. First, depending on the governance mechanisms in place, shareholder governance can either increase or decrease bondholder risk. In particular, shareholder control is associated with **higher** yields if the firm is *exposed* to takeovers. On the other hand, shareholder control is associated with **lower** yields only if the firm is *protected* from takeovers. In the presence of shareholder control, the difference in bond yields due to differences in takeover vulnerability can be as high as 66 basis points. Since takeovers become more likely with stronger shareholder control (Shleifer and Vishny (1986)) and/or weaker takeover defenses, these results suggest that strong shareholder governance increases bondholders' concerns of takeover risk. The increase in credit risk associated with shareholder control and weak takeover defenses is the strongest for firms that are small and are hence more likely to be takeover targets, which provides further support for this view.

Bond ratings do not appear to completely account for the interaction between shareholder control and takeover vulnerability, and thus do not suffice to explain yields. Moreover, we find strong evidence that bond portfolios differing in their issuer's shareholder governance characteristics have different realized returns as well. Specifically, we show that buying bonds of firms with strong shareholder control and high takeover vulnerability and selling bonds of firms with neither high shareholder control nor takeover vulnerability generates an annual return of up to 1.5%. Again, the differences in returns are higher for firms that are small.

We then show that bondholder governance, by way of bond covenants, mitigates the potential conflict between shareholders and bondholders. Since the previous results suggest that the source of this conflict comes from exposure to takeovers, we consider the role of covenants that reduce a bond's exposure to event risk. We find that issues that are well protected through leverage restricting covenants, net worth requirements and the poison put covenant are least affected by the appearance of a blockholder. Combined with earlier research – Cremers and Nair (2005) which looks at the interaction of various governance mechanisms and finds that shareholder control and takeover defenses are complementary shareholder governance mechanisms – these results show that event risk covenants help in the convergence of shareholder and bondholder interests.

To the best of our knowledge, this is the first paper that documents that shareholder governance can have *divergent* and economically important effects on bondholders. Our work is closely related to Bhojraj and Sengupta (2003), Klock, Mansi and Maxwell (2005) and Anderson, Mansi and Reed (2004) in their focus on the relation between bondholder wealth and corporate governance. The main difference is that this paper considers the interaction of different governance mechanisms.[7] We find that the interaction between different governance mechanisms is crucial, as the relation between governance and bondholder wealth is not uniform across all firms, as assumed in these related papers. In addition, this paper also uses a portfolio approach and a time series of bond prices to see how the effects of governance evolve into bond returns. Finally, these papers do not explore the role of bond covenants, which we find to be critical for determining whether shareholder and bondholder interests converge or diverge.

The results in this paper also add to the findings of both Gompers, Ishii, and Metrick (2003) and Cremers and Nair (2005), which look at the impact of shareholder governance on equity returns and firm performance. Furthermore, our approach adds to the literature that investigates the effect of shareholder control and firm decisions on bondholders by focusing on bondholder wealth changes around certain events (e.g. looking at spin-offs (Maxwell and Rao, 2003), mergers and acquisitions (Billet, King and Mauer, 2004), and seasoned equity offerings (Eberhart and Siddique, 2002)). We apply the long run event study methodology used for equity prices in Gompers, Ishii and Metrick (2003) and Cremers and Nair (2005) to bonds. This approach, new in the literature on bondholder wealth effects, helps us understand how bondholders price in the effects of greater shareholder control and how bond prices change over time. Finally, we use covenant information to show the importance of event risk in bondholders' reaction to changes in governance.

The rest of the paper is organized as follows. After describing the data in section I, we present results relating bond yields and credit ratings to governance mechanisms in section II. Section III investigates how bond prices change over time. In section IV, we take a closer look at our findings by using issue specific covenant information. Section V concludes.

1. Data

The data used in this study can be separated into three categories; data on (A) corporate bonds, (B) governance mechanisms and (C) firm characteristics.

1.1. Corporate Bonds

We use two sources to collect the information required on corporate bonds. We use the Lehman Brothers' Bond Database (LBBD) to construct quarterly yield spreads of bonds (used in Sections 2 and 4). LBBD reports the institutional pricing for Treasury and corporate bonds, and is available only until 1997. As our firm-specific shareholder governance proxies only start in 1990, we use only the latter part of the database. Our sample includes an average of 1,218 corporate bonds per year from 1990 to 1997. On average, there are 4.1 corporate bonds with the same issuing firms in our sample.[8] LBBD contains both matrix prices and dealer quotes, where matrix prices are set according to some pricing algorithm based on bonds with similar characteristics. As matrix prices are regarded as less reliable than actual dealer quotes (see e.g. Warga and Welch (1993)), we only use dealer quotes.[9] Total monthly returns based on full prices (including accrued interest) are used in the long-run portfolio return analysis in Section 3. Finally, LBBD also provides information on some issue-level control variables such as issue size, number of years to maturity, dummies for callability, senior and senior-secured debt, and credit ratings (for details, see the description of Table 3).

The risk-free term structure of interest rates is from the Salomon Brothers Yield Book, which includes the quarterly treasury benchmark yields with time-to-maturity of 1, 2, 3, 5, 10, 20 and 30 years. The term structure of interest rate is used to compute yield spreads (Sections 2 and 4) as well as abnormal bond returns (Section 3).

The Fixed Income Securities Database (FISD) provides information on bond covenants that protect bond investors. FISD contains detailed issue-level information on over 140,000 corporate, US Agency, US Treasury and supranational debt securities.[10]

Specifically, we focus on covenant provisions related to leverage restrictions, net worth restrictions and the existence of a 'poison put', as these have been shown to crucially affect bondholder reactions to takeovers (Asquith and Wizman (1990)). While net worth and leverage restrictions limit the amount of debt the firm can have, a poison put covenant gives bondholders the option of selling the issue back to the issuer at par or at a premium upon a change of control of the issuer firm.

1.2 Governance Mechanisms

The first shareholder governance mechanism considered is the presence of an active shareholder, which we refer to as the existence of shareholder control. Our proxy for whether or not there is shareholder control is a dummy for the existence of an institutional blockholder, denoted by BLOCK = 1 if such an institutional blockholder is present. Blockholders are defined as shareholders who own at least 5% of the firm's outstanding shares. To construct this measure, we use data on institutional share holdings from Thompson / CDA Spectrum database, which collects quarterly information from the SEC 13f filings.[11,12] By using institutional blockholdings rather than simply institutional ownership, we mitigate two concerns. First, by only considering institutional rather than all blockholders, we exclude blockholders who are firm insiders. As a result, our proxy corresponds to the notion of shareholder governance where external shareholders govern firm insiders.[13] Second, by using institutional blockholders rather than institutional holdings, we mitigate the problem that institutions with minor stakes have few incentives to be involved in firm-specific decisions and reduce the noise associated with picking up non-monitoring shareholders. Furthermore, Shleifer and Vishny (1986) argue that blockholders often have substantial effective voting control, enabling them to pressurize the firm's management and play an important role in acquisitions. Empirically, the use of

blockholder data is important to measure the takeover vulnerability of the firm (see, e.g., Cremers, Nair and John (2005)).[14]

The second shareholder governance mechanism is exposure to the market for corporate control. We use data on anti-takeover provisions in the firm's charter from Investor Research Responsibility Center (IRRC) publications to construct an anti-takeover index (ATI) that proxies an individual firm's takeover vulnerability. The IRRC data used to construct these indices are available during our time period for the years 1990, 1993 and 1995. While IRRC does not update all companies in a new edition, Gompers, Ishii and Metrick (2003) argue that there is no reason to suspect systematic biases in this data.

ATI (for a more detailed description, see Cremers and Nair (2005)) uses information on three anti-takeover provisions that the literature has recognized to be critical for takeovers – the existence of blank check preferred stock, classified boards and restrictions on calling special meetings and action through written consent. Blank check preferred stock is a class of un-issued shares of preferred stock, whose existence much simplifies the process of creating new classes of preferred stock to raise additional funds from sophisticated investors without obtaining separate shareholder approval. This kind of stock not only implicitly equips the firm with a poison pill, but also enables the management to issue new classes of stock without shareholder approval and significantly reduces takeover probability (see e.g. Ambrose and Megginson (1992)). Further, classified boards (where not all directors are up for election simultaneously) as well as restrictions on calling specials meetings and action through written consent create significant delays in takeover battles (see e.g. Bebchuk, Coates, and Subramanian (2002)

and Daines and Klausner (2001)).[15] Therefore, these provisions create barriers to takeovers in addition to the poison pill (or the blank check preferred stock). In fact, some legal scholars deem classified boards the single most important factor in takeover defense due to the long delay it causes.[16]

These three provisions produce a takeover vulnerability index varying from 1 to 4, subtracting one point from 4 if a provision *is* in place. We classify firms with ATI = 1 as having lowest takeover vulnerability, and those with ATI = 4 as being most prone to takeovers. In any year, about 31% of firms have ATI = 1, 32% have ATI = 2, 32% have ATI = 3, and finally about 5% of firms have ATI = 4.

The index based on Gompers, Ishii and Metrick (2003) is termed EXT. The index EXT incorporates 24 different provisions (including the 3 provisions captured by ATI) in 5 categories – tactics for delaying hostile bidders, voting rights, director/officer protection, other takeover defenses and state laws – all of which directly affect takeover protection.[17] The index EXT is formed by adding one point if the firm does not have a specific defensive provision in place and zero otherwise, leading to values between 0 and 24. As a result, a larger value of EXT signifies fewer protections against the market for corporate control and thus greater exposure to takeovers.[18] Our results are robust to using EXT rather than ATI.[19] Similar to Cremers and Nair (2005), we interpret ATI as a more narrow proxy for takeover vulnerability, while the EXT index measures more broadly the level of shareholder rights.

1.3 Firm Characteristics

Firm characteristics such as market capitalization are obtained from the Compustat / CRSP database. Firm accounting data are from the Compustat Quarterly database. All variables are lagged by 3 months to ensure that the accounting information is public when the yields and the ratings are updated.

2. Shareholder Governance and Bond Prices

In this section, we document the impact of stronger governance on corporate bond spreads. Our sample consists of an average of 1,218 bonds from 299 firms per year, with an average of 4.3 bonds per firm.[20] We start by presenting some summary statistics of our data. Table 1 reports the average number of bonds per year and per firm as well as the quartile percentages of the shareholdings of the largest blockholder, the distribution of the anti-takeover index (ATI) and the quartile levels of the shareholders rights index, EXT. Around 63% of firms have a blockholder at any one time and, consistent with the evidence on increasing institutional ownership in the 1990s (Gompers and Metrick, 1999), blockholder ownership increases over this time period. The number of firms in the four ATI groups and the quartile levels of EXT are also reported. The distribution of firms based on the level of their takeover vulnerability (ATI or EXT) is fairly stable. About a quarter of firms have EXT $\leq$ 12 and a quarter of firms have EXT $\geq$ 16. The distribution of ATI is more lopsided, with about 32% of the firms having the lowest takeover vulnerability (ATI = 1) and only 5% of the firms having the highest takeover vulnerability (ATI = 4).

Table 2 reports the correlation matrix of ATI, EXT, BLOCK, SIZE, and RATING. RATING is defined such that a higher value implies a lower probability of bankruptcy. The high correlation of RATING and SIZE (56%) suggests, as expected, that smaller

firms have riskier bonds and therefore lower ratings. Incidentally, the presence of blockholders, which are more likely in smaller firms (as evidenced by the correlation of -28% between BLOCK and SIZE), is also associated with lower ratings. The correlation between takeover vulnerability and rating is insignificant. Also, the correlations between the two measures of takeover vulnerability and blockholding are, at best, mixed and low. Finally, the correlation between ATI and EXT equals 66%, such that the 3 provisions in ATI pick up a very significant part of the broader EXT index. We now proceed to document the impact of the governance mechanisms on bondholders.

Table 3 reports the results from the pooled panel regression of quarterly corporate bond spreads on the various governance-related variables plus the firm-specific control variables, using ATI as the proxy for exposure to takeovers.[21] The bond spread is calculated as the difference between the bond yield and the yield on a risk-free Treasury bond of identical maturity. For that purpose, we retrieve quarterly Treasury benchmark yields with time-to-maturity of 1 year, 2 years, 3 years, 5 years, 10 years, 20 years and 30 years from Salomon Brothers Yield Book. We use linear interpolation to calculate Treasury yields with time-to-maturity below 30 years. For the few observations with time-to-maturity above 30 years, we use the 30-year Treasury benchmark. Bond spreads are in percentage terms.

In these pooled panel regressions, we control for leverage, firm performance (as measured by the return on assets), log size of the assets in place, volatility of the firm's equity, log of the issue's amount outstanding, time to maturity, duration[22], seniority, secured characteristics, callability and credit ratings to investigate the impact of shareholder control (BLOCK) and exposure to takeovers (ATI and the interaction ATI x

BLOCK) on bondholders.[23] As expected, bondholders demand higher yields for smaller issues, firms with poor performance, higher stock return volatility, higher leverage and issues which are callable by the issuers.[24] Not surprisingly, seniority also reduces the required yields, where the coefficient of -0.27 indicates that senior issues have spreads that are on average 27 basis points lower. The coefficient on the senior secured dummy, though negative, is not significant (in the fixed effects regressions presented later this coefficient is significant). The interaction term, ATI x BLOCK, is intended to capture the 'effective' takeover vulnerability, since the presence of a blockholder might be necessary to facilitate takeovers even if the firm does not have takeover protection.[25] Thus, a blockholder in addition to weak takeover defenses makes a firm truly vulnerable to takeovers.

Model 4 of Table 3 presents our first main result, where we consider all three variables (ATI, BLOCK and ATI*BLOCK) simultaneously in addition to the set of controls. BLOCK has a strongly negative and significant coefficient, equal to –0.18 with a t-stat of -3.60, and ATI*BLOCK has a strongly positive and significant coefficient, equal to 0.08 with a t-stat of 4.23. These results show that the presence of a strong shareholder is associated with lower bond risk only if the firm is protected from takeovers. If, on the contrary, the firm is exposed to takeovers, the presence of a strong shareholder is associated with higher yield spreads.

Our finding that BLOCK appears to be associated with two opposite effects means that regressions such as model 1 considering only shareholder control could be misleading. The above result also corroborates the complementary relationship of firms' takeover provisions and the existence of active shareholders established in Cremers and

Nair (2005). The evidence for complementarity is further strengthened by observing that both ATI and the interaction ATI*BLOCK by themselves have positive and significant coefficients in regression models 2 and 3, respectively, while only the interaction has a positive and significant coefficient in model 4.

The observed effects, which indicate that increased exposure to the market for corporate control is associated with greater risk for bondholders and higher bond spreads, are economically important. A firm with both active shareholders (i.e. BLOCK equal to one) and few anti-takeover provisions (ATI = 4) is associated with a yield spread of 14 basis points **higher** (-18 + 4 x 8) than firms without a blockholder. A firm with a blockholder but strong takeover protection (ATI = 1) is associated with a yield spread of 10 basis points **lower** than a firm without a blockholder. Thus, contingent on the exposure to takeovers, blockholders are associated with contrasting effects on yield spreads, with the difference between ATI = 4 and ATI = 1 equal to 24 basis points (14 - (-10) basis points). The combination of both shareholder governance mechanisms appears to increase bondholder risk.

We further investigate the results in model 4 by considering the importance of size in the interaction between governance mechanisms and bond spreads due to their impact on takeover vulnerability. Since smaller firms are more likely to be taken over, takeover vulnerability now includes the presence of a blockholder, few takeover defenses, and a smaller size. We sort all firms independently into 3 different groups according to size (small-medium-large), and create dummies for small and large size. The dummy coefficients should be interpreted relative to the associated medium categories. Here, size is measured as the market capitalization of the outstanding equity.

Model 5 presents the results of adding the interaction of the small and large size dummies with ATI*BLOCK to the variables in model 4. If takeovers are indeed the concern for bondholders, the increased risk associated with strong shareholder control and larger takeover vulnerability would be weaker for large firms, which is confirmed by the results. In large firms, the presence of both governance mechanisms (BLOCK=1 and ATI=4) is associated with an increase of only 7 basis points (-17 + 6 x 4). Put differently, a large firm (largest third of firms) with a blockholder and highest exposure to takeovers (ATI = 4) is associated with a yield spread of 12 basis points lower than a small or medium size firm with a blockholder and complete exposure to takeovers (ATI = 4).

2.1. Blockholder appearance and Bond spreads

In table 4, we explore the impact of changes in shareholder control on yield spreads by adding fixed issuer effects to the models in Table 3.[26] The fixed issuer effects capture any missing firm characteristics and could reduce concerns of endogeneity, e.g. due that firms that consistently have institutional blockholders are different from other firms. We focus on firms with constant ATI, as this allows us to look at how the appearance of a blockholder is related to change in spreads, while avoiding the noise in ATI changes that arises due to the infrequent sampling of ATI (3 years).[27]

We find that the results of Table 3 are robust to the addition of the fixed issuer effects. The appearance of a blockholder is again associated with lower yield spreads only if the firm is protected from takeovers (-3 basis points) and with higher yield spreads if the firm is exposed to takeovers (up to 21 basis points).[28] Further, the impact of size on the coefficient of ATI*BLOCK is stronger with fixed issuer effects. Specifically, the

(cumulative) coefficient on ATI*BLOCK is 0.04 for large firms and 0.16 for small firms. The appearance of a blockholder is associated with an increase of 50 basis points (= 16 x 4 - 14) if the firm is exposed to takeovers (ATI = 4) and is small in size, and with an increase of only 2 basis points (= 4 x 4 – 14) if the firm is large and is vulnerable to takeovers (ATI = 4). Finally, in the presence of a blockholder the yield difference between a firm most prone to takeovers (ATI = 4 and small size) and a firm that is least vulnerable to takeover (ATI = 1, and large size) is 60 basis points (= 16 x 4 – 4 x 1).

As these results indicate, the reaction of bondholders to the appearance of a blockholder is not only a function of the takeover defense but also of firm size. Since smaller firms are more likely targets, the results indeed suggest that the source of concern for the bondholders is due to takeovers.

2.2. Robustness

Previously, we corrected the t-statistics (see footnote 21) to incorporate the inherent correlation between multiple bond issues for the same issuer. However, this correction is only approximate. To eliminate any remaining concerns, we redo our tests with only one bond issue per issuer by selecting that issue of each firm with the maximum available number of time series observations.[29] Our sample now includes 388 issues from 388 unique firms. In Table 5, we report the results for the appearance of an institutional blockholder using this sample (thus again adding fixed issuer effects).

Strengthening our earlier results, blockholder appearances are associated with a reduction in yield spreads only if the firm is protected from takeovers. The reduction in the yield spread is now 11 basis points. At the same time, blockholder appearances

increase yield spreads if the firm is exposed to takeovers. This increase can be as high as 58 basis points (= 19 x 4 - 28). We also find that the difference in yield spread changes due to blockholder appearances between a small firm exposed to takeover (ATI = 4) and a large firm protected from takeovers (ATI = 1) is 66 basis points (= 19 x 4 – 10 x 1).

We verify that our results are robust with respect to our proxy for takeover vulnerability by using EXT, the broader index of shareholder rights (see Gompers, Ishii and Metrick, 2003) as an alternative measure of takeover vulnerability. As mentioned earlier, EXT utilizes 24 provisions relating to shareholder rights, rather than the 3 most important to takeovers as in the anti-takeover index (ATI). The results using EXT are qualitatively similar to those using ATI and are omitted here.

It is useful to discuss the results in Klock, Mansi and Maxwell (2005) in order to highlight the importance of considering different shareholder governance mechanisms. Klock et al. focus on the direct relationship between bond yields and the Gompers, Ishii and Metrick (2003) index (EXT). In effect, their paper exclusively investigates the equivalent of model 2 (Tables 3 and 4) in our paper, and does not account for the interaction of EXT with the presence of active shareholders (BLOCK) nor explores the effects of size on this interaction. However, as regression models 3 and 4 indicate, the interaction between shareholder control and takeover protection is important and varies across firms.

2.3 The Nature of Shareholder Control

This section considers the nature of the shareholder control in more detail by considering the implications of some alternative specifications of shareholder control. Of

specific interest is the sensitivity of our results to the use of the blockholder dummy specification.

In Table 6 (Panel A), we report results using the ownership percentage of the largest external blockholder (BLKPCT) rather than a 0/1 dummy variable. Confirming earlier results, the coefficient of the interaction between takeover defenses (ATI) and the percentage of institutional block-ownership is strongly positive (1 basis point per ATI-point, with a t-statistic of 3.66) while the coefficient of the percentage ownership variable is negative (-2 basis points with a t-statistic of –2.59). Thus, the appearance of a shareholder with 10% ownership in a firm with low takeover defenses (ATI = 4) increases the yield spread by 20 basis points (1 x 4 x 10 – 2 x 10). In contrast, the appearance of such a shareholder in a firm protected from takeovers (ATI = 1) would reduce the yield spread by 10 basis points (1 x 1 x 10 -2 x 10).

Shareholder control appears to increase bondholder risk when takeovers protection is weak. This suggests that shareholder governance might not always benefit bondholders. An alternative interpretation is the possibility that large shareholders do not actively monitor but rather simply reap benefits at the cost of other (minority) shareholders and bondholders (see e.g. Shleifer and Summers (1988) and Bhojraj and Sengupta (2003)). However, the results in Cremers and Nair (2005) suggest that the presence of large shareholders benefits shareholders. Still, it might be the case that shareholders reap benefits solely at the bondholders' expense, using takeovers as the main channel. However, prior evidence (Warga and Welch, 1993) suggests that the increase in shareholder wealth on takeovers is significantly higher than the accompanying losses to bondholders. This implies that large shareholder play an active governance role and that

actions by shareholders such as facilitating takeovers, while hurting bondholders, might not be done solely to transfer wealth from bondholders to shareholders.[30]

Next, we construct a variable measuring the total ownership of all institutional shareholders who own more than 5% of the firm (TOTBLK). Using TOTBLK as a proxy for shareholder control shows how the previous results change due to the presence of more than one blockholder. Arguably, the monitoring incentives of a large shareholder would be highest if the large shareholder is the only large shareholder. To see if this is indeed the case, we investigate how the relation between shareholder and yield spreads is a function of the number of shareholders (N_BLK). The results are reported in Table 6 (Panel B). These results using this new measure of shareholder control (TOTBLK) not only confirm our earlier results but also suggest that the effect between blockholdings and yield spreads is a function of the number of blockholders. When there is only one single blockholder, the results are very similar to the results in Panel A. As the number of blockholders increases, the perceived risk in bonds due to the presence of shareholder control and takeover vulnerability appears to reduce. If the total block ownership is kept fixed, for each additional blockholder the coefficient on ATIxTOTBLK reduces by 0.3 basis points (with a t-statistic 2.72). This result confirms the intuition that, ceteris paribus, shareholder control is likely to be strongest when the number of controlling shareholders is low.

2.4. Shareholder Governance and Credit Ratings

The results presented so far include rating controls. However, ratings might, correctly or incorrectly, account for the effect of governance mechanisms and the interactions between them. This subsection checks that the previous results are not driven

by these rating controls by showing how the results change when ratings are not used as control variables. Table 7 presents results for pooled panel regressions with and without fixed-issuer effects, similar to Tables 3 and 4, but without using rating controls. We find that the previously documented complementary relation between controlling shareholders and takeover vulnerability remains and appears even stronger. The increase in yield spreads associated with the appearance of a blockholder can be up to 60 basis points (15 x 4) for firms that are small and are exposed to takeovers (ATI = 4). The comparable number when ratings were controlled for was 50 basis points (16 x 4 - 14). With the complementary relation between BLOCK and ATI getting stronger, the beneficial impact of BLOCK by itself is no longer statistically significant. However, the estimate on BLOCK in the fixed effects regression is still consistent with the main results in both the sign as well as the magnitude.

The robustness of the complementary interaction suggests that, relative to the yield results, the rating agencies may underestimate the importance of the interaction of the two governance mechanisms. The weakening of the beneficial effect of BLOCK, on the other hand, suggests that the rating agencies are perhaps too pessimistic about the consequences of an appearance of an institutional blockholder. In order to better interpret the impact of the rating dummies in the yield regressions, we directly investigate how shareholder control and takeover vulnerability affect the likelihood that a firm falls in a particular S&P rating category. If the rating agencies indeed capture these relations, removing the rating controls should make our results economically even stronger. On the other hand, if the rating agencies capture these governance mechanisms in a direction opposite to the yield spread results, then the removal of rating dummies should weaken our results.[31, 32]

An Ordered PROBIT model is used to relate the different rating categories to the governance and control variables (see Blume, Lim and MacKinlay, 1998 and Bhojraj and Sengupta, 2003, for other papers using an Ordered PROBIT for this purpose). Following Fama and French (2001), we first estimate the PROBIT regressions across firms for each quarter separately and then, in the spirit of Fama and MacBeth (1973), report the time series averages of the coefficients. This allows for correlation of the regression residuals across bonds. We define a six-way classification representing S&P ratings (closest to) AAA, AA, A, BBB, BB, B, respectively. The model is set up such that it is modeling the probability of the highest rating level. Finally, the models use the same set of controls as those used for the bond-spread regressions in the previous section, which facilitates a direct comparison.

The results are presented in Table 8. The marginal effects of BLOCK, ATI and ATI*BLOCK individually are again considered in the first three models and all three are once more combined in model 4. We find that the existence of an institutional blockholder, as a proxy for an active shareholder, strongly decreases ratings by itself. This is evidenced by a coefficient of BLOCK equal to –0.45 (t-stat of –10.3) in model 1, confirming one of the main results in Bhojraj and Sengupta (2003). However, as we will later see, the negative impact on ratings is mostly due to the interaction of BLOCK with ATI, and not of BLOCK by itself.

Interestingly, ATI by itself in model 2 has a positive and significant coefficient of 0.07 (t-stat of 4.97). This separate effect of ATI is more robust than the corresponding effect in the yield spread regressions, where the effect of ATI by itself is only very

marginally significant for fixed issuer effects and disappears when ATI*BLOCK is included as well. This is the first paper documenting the effect of takeover vulnerability on ratings, and our results confirm that the rating agencies indeed take takeover protection provisions into account.

We also find that ratings react to the interaction of BLOCK and ATI in the same direction as yield spreads do. ATI*BLOCK by itself in model 3 has a negative and significant coefficient of –0.17 (t-stat of –10.5). Combining BLOCK, ATI and ATI*BLOCK all three in model 4 increases the economic significance of ATI (coefficient of 0.21 with t-stat of 8.66) as well as the complementary interaction of ATI with BLOCK (coefficient of –0.26 with t-stat of –6.99). In contrast with the bond spread regressions where BLOCK was found to have opposite effects depending on whether a firm is prone to takeovers or not, the coefficient on BLOCK here is not statistically significant.

Next, the effect of size on the impact of takeover vulnerability as measured by ATI*BLOCK appears to be particularly significant for ratings (see model 5). The marginal effect for the smallest third of firms is strongly negative (decreasing ratings), while there is almost no effect for the largest third of firms.

As the yield spread results without rating controls suggested, these results show that the rating agencies view shareholder control as harmful for the firm's bondholders, especially if the firm is exposed to takeovers and is relatively small. The results in this section are therefore consistent with the notion that rating agencies take an overly pessimistic view of the consequence of an appearance of a blockholder, account for

takeover defenses correctly and underestimate the complementary relation between shareholder control and takeover vulnerability. As a result, the combined effect of high takeover vulnerability and high shareholder control could be even higher than what the yield-spread regressions including rating controls suggest.

3. Shareholder Governance and Bond Returns

In this section, we investigate whether risk differences exist between bonds based on the issuer's shareholder governance characteristics by comparing the returns of a portfolio of firms with both a large shareholder and high takeover vulnerability to a portfolio of firms with neither a large blockholder nor a high vulnerability to takeovers. By using realized bond returns, we can also see to what extent expectations inherent in yield spreads are reflected in realized returns.

Our sample consists of 75 monthly returns from 1991:1 to 1997:3. At the beginning of each quarter, we independently sort all firms on BLOCK and on either ATI or EXT. Using BLOCK, we form two groups (with and without an institutional blockholder) while using ATI and EXT, we form three groups, either ATI = 1, ATI = 2, ATI >2 or EXT $\leq$ 11, 11 < EXT $\leq$ 15, EXT > 15. The cutoffs for both ATI and EXT were chosen to get the most even distribution of firms over three portfolios.[33] Thus, we create 2 x 3 = 6 portfolios by a two-way sort on ATI (or EXT) and BLOCK. For all portfolios, we compute both the equally-weighted and the value-weighted (using the market value of each bond issue) excess return of all firms' bond issues.

We find that a portfolio that buys bonds of firms that have a blockholder and high takeover vulnerability (ATI > 2) and sells bonds of firms that have no blockholder and

low exposure to takeovers (ATI = 1) generates an annualized return of 1.53%. While this does suggest a difference in risk between these issuers with different shareholder governance characteristics, this difference might be due to differences in other sources of systematic risk. Therefore, we account for systematic risk differences in the portfolios using the Elton, Gruber and Blake (1995) four-factor model: including an equity market factor (S&P 500 excess returns), a corporate bond market factor (Salomon Brothers (SB) corporate bond index excess returns), a default risk factor (the difference between returns from the SB High Yield bond market index and the SB Treasury market index), and finally a factor capturing option features (the difference between returns from the SB Medium Term Mortgage index and the SB Medium Term Treasury index).

This bond-pricing model does not generate any significant abnormal returns for a portfolio that uses all the bonds in our sample. However, this bond-pricing model (similar to others in the literature) ignores the impact of corporate governance. As a result, if the expectations inherent in the yields are correct, bonds of firms with high shareholder control and high takeover vulnerability would generate an abnormal return relative to this bond-pricing model due to an increase in credit risk. The spread and rating results suggests that BLOCK and ATI are complements in being associated with higher yields, particularly for firms that are small, reflecting higher takeover vulnerability. Accordingly, for bonds with both a high BLOCK and high ATI, we would expect positive abnormal bond returns for the current bond-pricing models.

In Table 9, we report the annualized abnormal returns or alphas of several long-short portfolios. First, we estimate the alphas accruing to four portfolios that each buy bonds of firms with a blockholder and sell bonds of firms without a blockholder - one portfolio

considers all firms unconditionally and the other three portfolios consider firms conditional on one of the three levels of takeover vulnerability (using ATI or EXT groups). Second, we estimate the alphas accruing to three portfolios, each of which buys bonds of firms in the highest ATI or EXT category and sells bonds of firms in the lowest ATI or EXT category: again one portfolio considers all firms unconditionally and the other two portfolios consider firms conditional on one of the two groups of shareholder control (using BLOCK). The results are presented in Panel A for ATI and Panel B for EXT.

The long-short portfolio that holds firms with and sells firms without a blockholder produces a clearly statistically significant annualized abnormal return of 1.25% for the equally-weighted portfolio (t-stat of 3.44) and of 0.67% for the value-weighted portfolio (t-stat of 2.74). Interestingly, the long-short portfolios conditional on ATI/EXT show that these abnormal returns are driven by bonds of firms vulnerable to takeovers. This provides strong evidence for a complementary relation of BLOCK with ATI/EXT. For the equally-weighted portfolios, the mean returns and the alphas are increasing in the level of both ATI and EXT. For example, the annualized alpha of the long-short portfolio that buys bonds of firms with a blockholder and shorts those without a blockholder equals 0.77% (t-stat of 1.67) for firms with the lowest level of EXT and equals 1.63% (t-stat of 2.94) for firms with the highest level of EXT. As a result, the equally-weighted portfolios suggest that blockholding seems to be only associated with higher abnormal bond returns for firms that are most vulnerable to takeovers.

For ATI, the value-weighted portfolios are fully consistent with the equally-weighted portfolios. However, the value-weighted portfolios using EXT show no pattern in either

mean bond returns or alphas. The difference between equal and value-weighted results is suggestive of a size effect, similar to that found for yields spreads. Finally, we consider the importance of ATI and EXT by looking at the returns to a portfolio that buys bonds of firms in the highest ATI or EXT category and shorts those in the lowest category. The results for using ATI and EXT are presented in Panel C and D, respectively, of Table 9. We find no evidence for any abnormal returns for ATI at all. For EXT, the equal-weighted portfolios show an abnormal return, but only for those firms where there is also a blockholder present, again confirming complementarity. For example, the annualized alpha of such long-short portfolio for firms without a blockholder is 0.27% (t-stat of 0.57), and of the portfolio with only firms with a blockholder is 1.13% (t-stat of 2.32). However, there is no discernible pattern using value-weighted portfolios and EXT, which is, once more, suggestive of a size effect.

In conclusion, the realized bond returns are consistent with the expectations inherent in the yield results and suggest that bondholders require a higher rate of return in the presence of shareholder control when the firm has low takeover defense and is small in size.

4. Bondholder Governance: Aligning Bondholders and Shareholders

We have documented that bondholders require a higher yield when shareholder governance is strong. The required yield is higher for exposure to shareholder control especially when the firm has few takeover defenses and is small in size. These results suggest that bondholders are concerned with takeover risk - perhaps due to the likelihood of increased leverage, restructuring or asset substitution that can frequently accompany (hostile) takeovers. In either case, if takeovers are indeed the cause of concern, one would

expect bondholders to use covenants, a form of bondholder governance, to protect themselves against such expected losses. In particular, issues that are protected from event risk would benefit more from improvements in shareholder governance.[34]

We consider three covenants - covenants restricting firm leverage, covenants on net worth restrictions, and the 'poison put covenant'. Covenants restricting firm leverage place limits on issuing funded debt and on leverage levels while net worth covenants restrict the firm's liabilities.[35] Asquith and Wizman (1990) show that these covenants are often violated in takeovers and thus provide protection to bondholders, even in extreme examples of hostile takeovers such as Leveraged Buyouts. Specifically, Asquith and Wizman (1990) find that issues protected by these covenants do not lose and often gain on LBO announcements. The poison put covenant gives bondholders the option of selling the issue back to the issuer at par or at a premium upon a change of control in the issuer (Cook and Easterwood, 1994, Crabbe, 1991), thus providing reasonable protection from takeovers.

We retrieve information on bond covenants from the FISD database and focus on firms whose takeover vulnerability remains constant during the sample period.[36] From the original sample, we are left with 1,353 unique issues by 341 unique firms, with an annual average of 3.06 issues per firm, for which the covenant data is available. We create an issue-specific protection dummy (PROTECTION), that takes the value of 1 if the issue has any of these three covenant protections in place.[37] The protection dummy is positively correlated with the existence of a blockholder (28%) as well with seniority (35%) but negatively correlated with the existence of the senior secured provision (-53%). Table 10 documents the importance of event risk in the impact of shareholder governance

mechanisms on bondholders by interacting the variables of interest (BLOCK and ATI*BLOCK) with the protection index (PROTECTION). The results include fixed issuer effects.

We find that the appearance of a blockholder increases the yields of issues without any protection by 13 basis points but has a negligible effect (2 basis points) for issues with protection (Model 1). This is consistent with the findings of Asquith and Wizman (1990). For example, if the issue is protected, then the estimates from regression I suggest that the appearance of a blockholder will be associated with an increase in the yield spread of 2 basis points (= 13 – 11). The complementary effect of shareholder control and takeover vulnerability is also almost completely reversed by protection (Model 2). Issues exposed to event risk are associated with the strongest increase in yields on the appearance of a blockholder. Both these findings are borne out in regression Model 3, where we disentangle the effects of the blockholders in isolation and of blockholders contingent on differing levels of takeover vulnerability. We find that issues not protected by covenants lose substantially from the appearance of a blockholder, especially with higher takeover vulnerability. The coefficient on ATI x BLOCK suggests that the increase in yield spreads associated with the appearance of a blockholder can be as high as 80 basis points (= 20 x 4) for issues without covenant protection. If, on the other hand, the issue is protected the increase in yield spreads can be at most 16 basis points (= 20 x 4 – 16 x 4).

These results suggest that having protective covenants reduces bondholder concerns of shareholder governance through strong shareholder control and few takeover defenses. Therefore, this confirms that takeovers are indeed the cause of concern for the

unprotected bondholders. Some possible reasons are that higher leverage, spin-offs and other asset substitution might become more likely with a takeover or even an attempted takeover.[38] More importantly, the results show that covenants play an important role in the convergence of shareholder and bondholder interests.

5. Conclusion

We investigate the impact of shareholder governance mechanisms on bondholders. Using the presence of an institutional blockholder to proxy for shareholder control and firm-level anti-takeover provisions to proxy for takeover vulnerability, we find that stronger shareholder control is associated with higher yields, lower ratings and higher returns only if takeover vulnerability is high. The increase in credit risk associated with the presence of strong shareholders and takeover vulnerability is the highest for firms that are small. The magnitude of these effects is economically large. For example, in the presence of shareholder control, the difference in bond yields due to differences in takeover vulnerability can be as high as 66 basis points.

We then investigate whether bond covenants help align the interest of shareholders and bondholders. Indeed, we find that in the presence of bond covenants shareholder governance reduces the conflict between shareholder and bondholder interests. The increase in yield spreads associated with strong shareholder governance mechanisms is 80 basis points for issues without covenant protection and only 16 basis points for protected issues. In conclusion, the results in this paper show that strengthening shareholder control does not automatically benefit all bondholders, especially not those bondholders who are exposed to event risk through a lack of covenants and have few takeover defenses.

Results in this paper suggest at least two avenues for future research. The findings in this paper suggest that the impact of shareholder governance on a firm is likely to be a function of bond covenants. Consequently, the paper encourages an investigation into the role of covenants for the implications of shareholder governance for firm value. If for firms without bond covenants, a complementary design of two shareholder governance mechanisms - shareholder control and takeover exposure – increases the cost of debt, the design of different governance mechanisms might be related to the capital structure of the firm. Another avenue of future research is to investigate the role of governance-related event risk in explaining bond returns, especially since portfolios that long firms with both strong shareholder control and high takeover vulnerability and short firms without either shareholder control or takeover vulnerability generate economically large annualized abnormal returns of 1% to 1.6%, depending on the proxies used.

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[1] See for example Black (1998), Bebchuk et al. (2002), Bebchuk (2004) and the Sarbanes-Oxley ct of 2002.

[2] Among others, Kim and McConnell (1977), Cook and Martin (1991) and Ghosh and Jain (2000) show that, on an average, firm leverage significantly increases after a takeover.

[3] Even if a bond has priority covenants that prevent the firm from issuing bonds of equal or higher seniority, these priority rules are not completely upheld in the case of financial distress (see e.g. Franks and Torous (1989), Weiss (1990) and Eberhart, Moore, and Roenfeldt (1990)).

[4] In a more general setting of all mergers and acquisitions in the 1980's and the 1990's, Billet, King and Mauer (2004) consider the impact of takeovers on bondholder wealth. Although this study does not separate disciplinary takeovers from mergers and takeovers for managerial interests, it shows that when takeovers are accompanied by an increase in asset risk or reduction in credit rating of the target firm, the bondholders of the target firm lose.

[5] See Moody's 'Rating Methodology' (2003).

[6] In doing so, we also exclude independent, non-institutional blockholders. See footnote 12, 13 and 14 in Section 1.2 for further discussions.

[7] In particular, Bhojraj and Sengupta (2003) use aggregate institutional ownership and two measures of concentrated institutional ownership as their proxies for governance. Klock, Mansi and Maxwell (2003) use the index compiled by Gompers, Ishii and Metrick (2003) and look at yields only. Like Klock, Mansi and Maxwell (2003), Chava, Dierker and Livdan (2004) also use the index compiled by Gompers, Ishii and Metrick (2003) but focus on bank loans. Finally, Anderson, Mansi and Reeb (2004) relate the cost of debt to characteristics of the board of directors such as board and accounting committee independence and size.

[8] While the average number of issues per firm is 4.1, the standard deviation is 4.6. The quartile cutoffs for the number of issues per firm are 1 (25%), 2 (median) and 5 (75%). All our results are robust to excluding firms above the 90 percentile category.

[9] The availability of dealer quotes may cause an inevitable sample selection bias as large, actively traded companies are more likely to have their bonds included in our sample. However, the effect on our results is unclear.

[10] For more details, we refer to the data provider's website at http://www.mergent.com.

[11] The 1978 amendment to the Security and Exchange Act of 1934 requires all institutional investors with more than $100 million under management to report their shareholdings to the SEC.

[12] Non-institutional blockholders are omitted in the study, due to the difficulty of collecting reliable data for such a large sample over this time period. However, consistent with our results, Anderson, Mansi and Reeb (2003) find that family ownership reduces the cost of debt.

[13] A concern that could be raised is that we do not consider non-institutional external blockholders. Non-institutional blockholders are omitted in the study due to the difficulty in collecting reliable data for such a large sample over the time period. This omission only makes it difficult to observe any effects related to governance since some firms with weak measured shareholder governance might actually be well governed.

[14] The 5% cutoff for blockholding is consistent with a large literature on corporate governance (for a recent article on blockholder data see Dlugosz, Fahlenbrach, Gompers and Metrick (2006)) and is also the cutoff above which owners are required to file with the SEC.

[15] Daines and Klausner (2001) show that restrictions on calling special meetings coupled with restrictions on acting through written consent can delay the acquirer by 12 to 18 months, depending on state laws.

[16] Bebchuk et al. (2002) find that an effective classified board doubled the odds of remaining independent for an average target. A classified board can impose a delay of up to 2 years. Classified boards are sometimes also referred to as 'staggered'.

[17] For a more detailed description of the 24 provisions, see Gompers, Ishi and Metrick (2003).

[18] Therefore, our external governance index is a linear transformation of the index as used in Gompers, Ishi and Metrick (2003), which is denoted by G, such that EXT = 24 – G, such that both ATI and EXT are proxying takeover vulnerability. Doing so considerably improves exposition when considering the interaction of BLOCK with either ATI or EXT, since an increase in any of these three variables signifies better shareholder governance.

[19] The results using EXT are qualitatively similar to those using ATI and are available on request.

[20] We remove firms in financial and regulated industries.

[21] All regression results in the paper are corrected for heteroscedasticity (White) and serial correlation (Newey-West using 1 lag). To account for the correlation among issues of the same firm, we compute the average correlation among issues of the same firm (33%) and crudely adjust for this by dividing the t-stats by the square root of 0.33 x 4.1 = 1.17 (with 4.1 being the average number of issues per firm). We also check whether our results are robust on considering only one issue per firm.

[22] Time-to-maturity and duration are highly correlated and results using either one are similar to each other. This is also the case for log size of asset in place and log of issue's amount outstanding. Estimations reported in the table use time-to-maturity and log of issue's amount outstanding in the controls.

[23] We also looked at controls concerning putability. The results are similar and are not reported.

[24] Results are similar when the firm's asset size is used instead of issue size.

25 Shleifer and Vishny (1986) argue that even if a firm is exposed to the market for corporate control, disciplinary takeovers are unlikely to occur if the shareholders are dispersed. Thus, a blockholder is essential, in addition to low takeover defense to make a firm truly vulnerable to takeovers. See Ivashina, Nair, Saunders, and Massoud (2004) for supportive evidence.

[26] The coefficients on the control variables are omitted in the interest of exposition and are similar to the ones reported in Table 3.

[27] We lose, on an average, 69 firms per year with an average of 4.6 issues per firm per year.

[28] The regressions reported in Table 4 were also run on the entire sample of firms and not just firms with a constant ATI. Results were similar and are available upon request.

[29] We also used only the senior unsecured issues and the results remain similar.

[30] One interpretation might be that blockholders do not facilitate takeovers but rather simply appear when takeovers become more likely. We think the results presented here are not likely to be driven by this interpretation as blockholders also appear in firms with many takeover defenses. In addition, the yields in these firms also reduce on the appearance of a blockholder, suggesting they still play a governance role.

[31] Note that ratings are determined by an agency. If bondholders, on the other hand, had determined both ratings and yield spreads, a two-stage regression would be more appropriate. Nevertheless, a two-stage regression in this case produces results that are fully consistent with our main findings. For example, using ATI as a proxy for takeover vulnerability, for a hypothetical firm with all the variables (except for BLOCK) set at the sample median level (e. g. the sample median of ATI is 2), the appearance of a blockholder (BLOCK changes from 0 to 1) is associated with an overall yield increase of 5.7 basis points. Specifically, BLOCK affects rating through the PROBIT model in the first step, which translates into a yield change of 2.4 basis points in the second step yield regression. The remaining 3.3 basis points in the yield increase reflect the extra effect of BLOCK which is not captured in the rating agency model. The effect of BLOCK becomes significantly larger when the firm has high takeover vulnerability (ATI=4), in which case an overall yield increase of 27.4 basis points is observed when a blockholder appears. The change is further decomposed into a rating effect of 4.4 basis points and a non-rating effect of 23 basis points. The analysis above uses an extended framework of Winship and Mare (1984) and Wu (1993), and detailed results are available upon request.

[32] At the same time, the economic meaning of the rating analysis is less clear without a theory of ratings.

[33] See Table 1 for the distribution of firms over both ATI and EXT categories.

[34] A following question is why all issues do not have such covenants. One reason is that such covenants are relatively new (see, e.g., Asquith and Wizman (1990)) and several bonds were issued before such covenants were prevalent. This creates an interesting natural experiment for us to test whether shareholder governance and bondholder governance converge.

[35] Asquith and Wizman (1990) provide a detailed discussion about the relevance of each category regarding protecting bondholder from leverage-increasing Leveraged Buyouts.

[36] As earlier, we choose to focus on firms with constant ATI, as this allows us to look at how the appearance of a blockholder is related to change in spreads while avoiding the noise in ATI changes that arises due to the infrequent sampling (3 years).

[37] We thank Ron Masulis for suggesting this. Results using a protection index that simply adds a point for each of the covenants present are similar but weaker.

[38] In the 80's, due to the predominance of LBOs, an increase in leverage was an obvious concern. However, this is less obvious in the 1990's and so we document how leverage changes for hostile targets in the more recent period of 1990-2001. Using SDC and excluding open market purchases, we detect 100 hostile takeovers in our sample. To classify the bid as hostile, we use the same algorithm used by Mitchell and Lehn (1990). Out of these, we consider the 26 completed hostile takeovers only, as we are interested in leverage changes after the takeover. Further, we are able to detect the acquirer and get quarterly leverage data for only 16 of these completed deals. Although our sample is small, we find that for each one of these 16 cases, the leverage increases after the takeover. The graph for average leverage around the takeover announcement quarter is shown in Figure 1. The average increase is significant and the expectation of higher leverage post takeovers could drive ex-ante bondholders' expectations.

Table 1. Number of firms and issues, percentiles of BLOCK, EXT and ATI

Year	1991	1992	1993	1994	1995	1996	1997
Number of Firms	235	271	324	296	293	329	346
Number of Issues	871	1229	1407	1222	1202	1257	1335
Issues/firm	3.71	4.54	4.34	4.13	4.10	3.82	3.86
25% percentile of largest block	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
50% percentile of largest block	5.25%	5.20%	5.64%	5.86%	6.50%	6.97%	7.26%
75% percentile of largest block	8.71%	8.19%	8.63%	9.08%	9.58%	10.33%	10.39%
25% percentile of EXT	12	12	12	12	12	12	12
50% percentile of EXT	14	14	14	14	14	14	14
75% percentile of EXT	16	16	16	16	16	16	16
% of firms with ATI = 1	30.6%	30.3%	30.6%	33.8%	33.8%	38.9%	39.6%
% of firms with ATI = 2	33.2%	32.8%	34.6%	35.1%	34.5%	34.3%	33.8%
% of firms with ATI = 3	31.1%	31.4%	29.3%	26.4%	26.6%	21.3%	21.4%
% of firms with ATI = 4	5.1%	5.5%	5.6%	4.7%	5.1%	5.5%	5.2%

The table presents the following summary statistics for the first quarters of the years 1991 to 1997 as found in our sample: the average number of non-financial firms and bond issues; the 25%, 50% and 75% percentiles of the percentage of shares held by the largest institutional blockholder (holding minimum 5% of outstanding equity, BLOCK); the 25%, 50% and 75% percentiles of the shareholder rights index EXT (see Gompers, Ishii and Metrick (2003)); and finally the percentages of firms in the four anti-takeover index (ATI) groups.

Table 2. Spearman Correlation

	EXT	ATI	BLOCK	SIZE
ATI	66.39%			
BLOCK	-5.09%	0.16%		
SIZE	2.11%	3.64%	-28.63%	
RATING	-0.35%	-0.14%	-35.97%	56.00%

The table presents the pairwise Spearman correlations of the following six variables, all pooled across time and firms: the shareholder rights indices ATI and EXT; the existence of an institutional blockholder BLOCK-holder; the large/median/small dummy for market capitalization (SIZE); and the firm's RATING. SIZE and LEVERAGE are defined using the 33% and 67% percentiles from sorting firms every quarter on market capitalization and on industry-adjusted leverage, respectively. A higher value of RATING represents a lower probability of expected bankruptcy. Specifically, we use S&P ratings categories on a scale from 22 to 2, with e.g. AAA = 22, BB+ = 12 and C = 2.

Table 3. Shareholder Governance Mechanisms and Bond Spreads: ATI

MODEL	1	2	3	4	5
BLOCK	-0.00			**-0.18**	**-0.17**
	(-0.17)			**(-3.60)**	**(-3.49)**
ATI		**0.02**		-0.02	-0.02
		(2.44)		(-1.33)	(-1.47)
ATI*BLOCK			**0.02**	**0.08**	**0.09**
			(2.18)	**(4.23)**	**(4.20)**
ATI*BLOCK*I_{large}					**-0.03**
					(-2.39)
ATI*BLOCK*I_{small}					0.00
					(0.11)
LN AMT	-0.02	-0.02	-0.02	-0.03	-0.02
	(-0.94)	(-1.12)	(-0.93)	(-1.23)	(-0.78)
LEVERAGE	0.48	0.47	0.48	0.48	0.48
	(4.99)	(4.93)	(4.99)	(5.02)	(5.07)
ROA	-0.06	-0.06	-0.06	-0.06	-0.06
	(-5.55)	(-5.60)	(-5.54)	(-5.62)	(-5.46)
VOLATILITY	47.41	47.38	47.22	47.32	47.30
	(5.58)	(5.60)	(5.56)	(5.58)	(5.55)
TTM	0.00	0.00	0.00	0.00	0.00
	(1.73)	(1.92)	(1.69)	(1.66)	(1.61)
C	0.64	0.64	0.64	0.64	0.64
	(28.58)	(28.63)	(28.61)	(28.69)	(28.66)
SENIOR	-0.27	-0.27	-0.27	-0.27	-0.27
	(-2.66)	(-2.64)	(-2.65)	(-2.68)	(-2.68)
SENIOR SECURED	-0.15	-0.16	-0.15	-0.17	-0.16
	(-1.44)	(-1.51)	(-1.41)	(-1.63)	(-1.58)
CR2	0.07	0.08	0.07	0.08	0.08
	(1.23)	(1.34)	(1.32)	(1.43)	(1.39)
CR3	0.20	0.21	0.20	0.22	0.21
	(3.37)	(3.51)	(3.40)	(3.69)	(3.52)
CR4	0.45	0.46	0.44	0.45	0.43
	(6.21)	(6.18)	(6.07)	(6.33)	(6.02)
CR5	1.43	1.44	1.42	1.45	1.42
	(12.17)	(11.99)	(11.97)	(12.35)	(12.02)
CR6	2.57	2.58	2.56	2.58	2.55
	(14.29)	(14.18)	(14.13)	(14.37)	(13.94)
Adj. R^2	54.6%	54.7%	54.7%	54.7%	54.7%
No. of Observations	29235	29235	29235	29235	29235

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI and BLOCK, a constant (omitted), plus a set of controls, where LN AMT is log of the issue's amount outstanding, LEVERAGE is the issuer's leverage (including both short- and long-term debt), ROA is the firm's return on asset, VOLATILITY is the firm's annualized stock return volatility using the past 180 days' stock returns, TTM denotes the bond's time to maturity in years, C is a dummy for callability, SENIOR is a dummy for being senior (but not secured), SENIOR SECURED is a dummy for being senior secured, and CR2 to CR6 are dummies for rating categories AA to B, including the "+" and "-" modified categories. Dummies indicating the 33% of largest/smallest firms are $\mathbf{I}_{\mathbf{large}}$ and $\mathbf{I}_{\mathbf{small}}$. The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 21 for a detailed descriptions).

Table 4. Effect of shareholder control on bond spreads: ATI + fixed issuer effects

Model	1	2	3	4
BLOCK	**0.06**		-0.11	**-0.14**
	(2.43)		(-1.51)	**(-1.93)**
ATI*BLOCK		**0.04**	**0.08**	**0.16**
		(3.41)	**(2.55)**	**(4.30)**
ATI*BLOCK* I_{large}				**-0.12**
				(-5.18)
ATI*BLOCK* I_{small}				0.00
				(0.11)
Adj. R2	66.0%	66.0%	66.0%	66.2%
No. of Obs	23309	23309	23309	23309

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI and BLOCK (see Table 1 for a description), a set of controls (see Table 3 for a description), plus issuer dummies. Only the results for the governance variables are reported. Dummies indicating the 33% of largest/smallest firms are $\mathbf{I_{large}}$ and $\mathbf{I_{small}}$. After excluding financial and regulated firms and firms whose ATI measure changes during the sample period (see discussion in 2.2 in the text and footnote 27), our sample includes an average of 981 bonds per year from 1990 to 1997, with on average 4.0 corporate bond issues per firm. The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 21 for a detailed description).

Table 5. Effect of shareholder control on bond spreads using one bond per firm: ATI + fixed issuer effects

Model	1	2	3	4
BLOCK	0.05		**-0.27**	**-0.28**
	(1.18)		**(-2.27)**	**(-2.37)**
ATI*BLOCK		**0.05**	**0.16**	**0.19**
		(2.45)	**(3.07)**	**(3.49)**
ATI*BLOCK* I_{large}				**-0.09**
				(-2.71)
ATI*BLOCK* I_{small}				-0.00
				(-0.09)
Adj. R2	78.7%	78.7%	78.7%	78.8%
No. of Obs	5337	5337	5337	5337

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI and BLOCK (see Table 1 for a description), a set of controls (see Table 3 for a description), plus issuer dummies. Only the results for the governance variables are reported. Dummies indicating the 33% of largest/smallest firms are $\mathbf{I_{large}}$ and $\mathbf{I_{small}}$ respectively. After excluding financial and regulated firms and firms whose ATI measure changes during the sample period (see discussion in 2.2 in the text and footnote 27), and by focusing on one issue by each issuer, our sample includes 388 bonds (firms). The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 21 for a description).

Table 6. Effect of shareholder control on bond spreads using alternative measures of blockholders: ATI + fixed issuer effects

Model	1	3
A. Results Using BLKPCT		
BLKPCT	**0.01**	**-0.02**
	(2.76)	**(-2.59)**
ATI*BLKPCT		**0.01**
		(3.66)
Adj. R2	65.9%	66.0%
No. of Obs	22997	22997
B. Results Using TOTBLK and N_BLK		
TOTBLK	**0.01**	**-0.02**
	(4.58)	**(-2.24)**
TOTBLK*N_BLK	**-0.003**	0.00
	(-4.15)	(1.12)
ATI*TOTBLK		**0.01**
		(4.02)
ATI*TOTBLK*N_BLK		**-0.003**
		(-2.72)
Adj. R2	66.0%	66.0%
No. of Obs	22997	22997

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI, BLKPCT defined as the percentage holdings of largest blockholders of the firm (Panel A), TOTBLK defined as the total percentage holdings of all blockholders and N_BLK defined as the number of blockholders of the firm (Panel B), and a set of controls (see Table 3 for a description). After excluding financial and regulated firms and firms whose ATI measure changes during the sample period (see discussion in 2.2 in the text and footnote 27), our sample includes an average of 897 bonds per year from 1990 to 1997, with on average 4.1 corporate bond issues per firm. Model specifications investigated include model 1 and 3 in Table 4. The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 21 for a detailed descriptions).

Table 7. Shareholder Governance Mechanisms and Bond Spreads:
ATI, no rating dummies

	Panel		Panel with Fixed Effects	
Model	**4**	**5**	**3**	**4**
BLOCK	**-0.17**	**-0.16**	-0.09	-0.12
	(-2.83)	**(-2.73)**	(-1.12)	(-1.57)
ATI	**-0.03**	**-0.04**		
	(-2.26)	**(-2.60)**		
ATI*BLOCK	**0.14**	**0.16**	**0.08**	**0.15**
	(5.65)	**(5.93)**	**(2.23)**	**(3.92)**
ATI*BLOCK* I_{large}		**-0.11**		**-0.12**
		(-7.06)		**(-4.83)**
ATI*BLOCK* I_{small}		**0.14**		0.02
		(4.83)		(0.54)
Adj. R2	46.6%	48.0%	64.9%	65.3%
No. of Obs	23309	23309	23309	23309

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI and BLOCK (see Table 1 for a description), a constant (omitted), size and leverage dummies, a set of controls (see Table 3 for a description). Only the results for the governance variables are reported. Model specifications investigated include model 4 and 5 in Table 3 for the panel analysis *without* issuer fixed effect, and model 3 and 4 for the panel analysis *with* issuer fixed effect, with rating dummies removed from all specifications. The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 12 for a description).

Table 8. Shareholder Governance Mechanisms and Ratings: ATI

Model	1	2	3	4	5
BLOCK	**-0.45**			0.07	0.04
	(-10.3)			(0.78)	(0.40)
ATI		**0.07**		**0.21**	**0.22**
		(4.97)		**(8.66)**	**(8.67)**
ATI*BLOCK			**-0.17**	**-0.26**	**-0.39**
			(-10.5)	**(-6.99)**	**(-8.43)**
ATI*BLOCK* I_{large}					**0.40**
					(21.38)
ATI*BLOCK* I_{small}					**-0.21**
					(-5.65)
LNAMT	0.35	0.36	0.38	0.34	0.15
	(9.69)	(9.71)	(11.10)	(9.07)	(4.75)
LEVERAGE	-4.07	-4.14	-4.14	-4.16	-4.07
	(-27.1)	(-29.4)	(-26.8)	(-26.7)	(-25.9)
ROA	0.20	0.20	0.21	0.20	0.17
	(6.14)	(6.31)	(6.17)	(6.48)	(5.63)
VOLATILITY	-79.0	-82.4	-80.4	-78.8	-77.2
	(-22.6)	(-21.5)	(-22.0)	(-22.2)	(-19.8)
TTM	0.01	0.01	0.01	0.01	0.01
	(8.47)	(7.12)	(8.68)	(11.49)	(7.65)
C	-0.07	-0.05	-0.08	-0.07	-0.06
	(-2.12)	(-1.60)	(-2.17)	(-1.92)	(-1.91)
SENIOR	1.77	1.81	1.77	1.79	1.68
	(27.23)	(29.81)	(27.51)	(27.13)	(23.87)
SENIOR SECURED	1.50	1.58	1.56	1.52	1.40
	(18.09)	(20.08)	(18.29)	(18.75)	(14.97)
Ave. Model Chi-Square	1725.04	1756.41	1731.09	1708.40	1629.54
No. of Obs.	23309	23309	23309	23309	23309

Reported are the results from an Ordered PROBIT model relating corporate bond ratings to the governance variables ATI and BLOCK (see Table 1 for a description), a constant (omitted), plus a set of controls (see Table 3 for a description) Dummies indicating the 33% of largest/smallest firms are I_{large} and I_{small}. Following Fama and French (2001), we first estimate one Ordered PROBIT model across bonds in each quarter and then report the time series average of the coefficients and their t-statistics between parentheses. We use a 6-way classification representing S&P ratings (closest to) AAA, AA, A, BBB, BB, B.

Table 9. Abnormal returns of long-short bond portfolios differing in shareholder governance characteristics

EW long-short portfolios				*VW long-short portfolios*			
Panel A: Long blockholder, short no blockholder, using ATI							
Mean	*Alpha*	*t-stat*	*ATI*	*Mean*	*Alpha*	*t-stat*	*ATI*
1.19	**1.25**	**3.44**	**All**	**1.10**	**0.67**	**2.74**	**All**
0.81	**0.82**	1.31	1	0.57	0.55	1.33	1
1.15	**1.36**	**3.25**	**2**	0.94	0.43	1.41	2
1.49	**1.34**	**2.35**	**3**	**1.65**	**0.91**	**1.99**	**3**
Panel B: Long blockholder, short no blockholder, using EXT							
Mean	*Alpha*	*t-stat*	*EXT*	*Mean*	*Alpha*	*t-stat*	*EXT*
0.65	0.77	1.67	1	**1.23**	**0.84**	**2.24**	**1**
1.05	**1.27**	**2.66**	**2**	0.70	0.55	1.45	2
1.80	**1.63**	**2.94**	**3**	1.37	0.69	1.56	3
Panel C: Long high ATI, short low ATI							
Mean	*Alpha*	*t-stat*	*BLOCK*	*Mean*	*Alpha*	*t-stat*	*BLOCK*
0.39	-0.01	-0.02	All	-0.31	-0.35	-1.24	All
0.05	-0.22	-0.35	0	-0.83	-0.51	-1.60	0
0.73	0.30	0.51	1	0.24	-0.15	-0.29	1
Panel D: Long high EXT, short low EXT							
Mean	*Alpha*	*t-stat*	*BLOCK*	*Mean*	*Alpha*	*t-stat*	*BLOCK*
0.04	0.27	0.57	0	-0.10	0.04	0.13	0
1.19	**1.13**	**2.32**	**1**	0.04	-0.12	-0.21	1

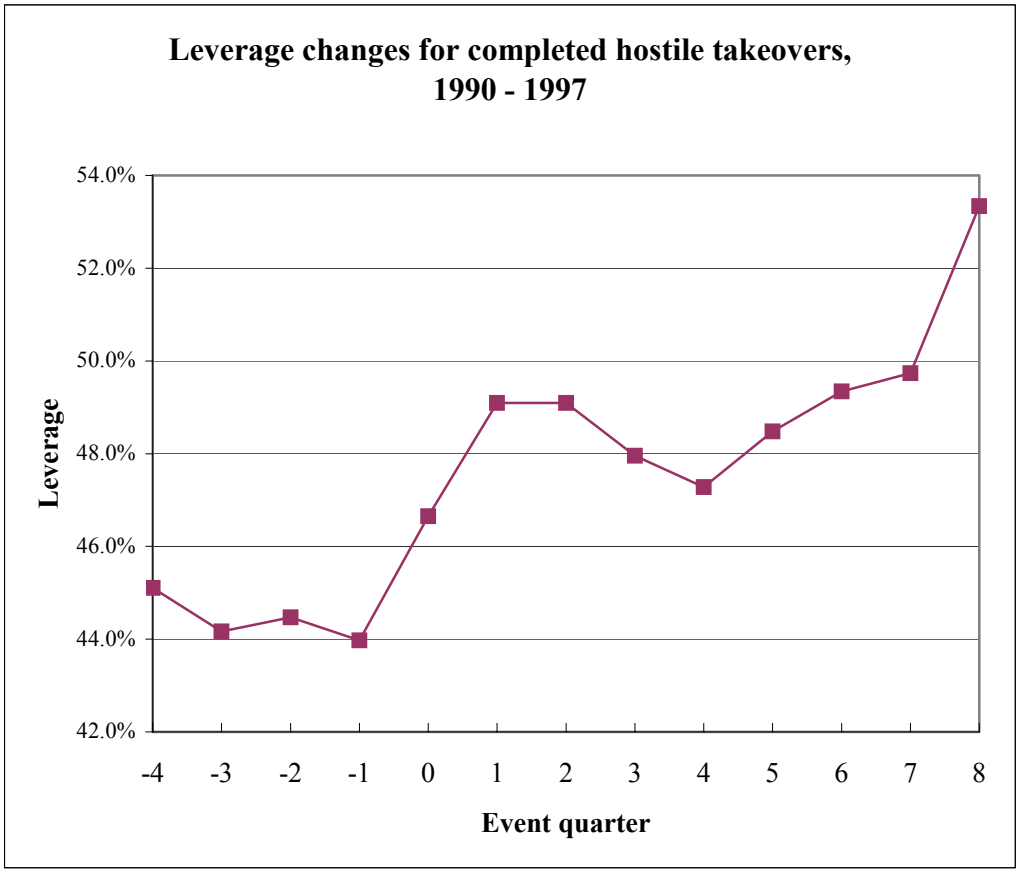
Reported are the annualized mean excess returns and the annualized abnormal return of several long-short bond portfolios. We use the Elton, Gruber and Blake (1995) four-factor bond-pricing model to calculate abnormal returns. In Panel A (B), the portfolios buy all bonds of firms with, and short bonds of firms without a blockholder, either unconditional or conditional on the level of ATI (EXT). Here, the levels of ATI and EXT refer to the levels of their categories, not their precise respective values. Further, in Panel C (D), the portfolios buy all bonds of firms with the highest category of ATI (EXT) and short bonds of firms in the lowest ATI (EXT) category, either unconditional or conditional on the existence (BLOCK = 1) or the absence (BLOCK = 0) of a blockholder. Both equally weighted and value-weighted portfolios are used.

Table 10. Takeover Risk and Bond Covenants

Model	1	2	3
BLOCK	**0.13**		-0.30
	(2.60)		(-1.47)
BLOCK*(PROTECTION>0)	**-0.11**		0.25
	(-2.34)		(1.37)
ATI*BLOCK		**0.08**	**0.20**
		(3.36)	**(2.24)**
ATI*BLOCK*(PROTECTION >0)		**-0.06**	**-0.16**
		(-2.88)	**(-2.06)**
Adj. R^2	74.6%	74.6%	74.7%
No. of Observations	15781	15781	15781

Reported are the pooled OLS regression coefficients plus their t-statistics in parentheses of regressing quarterly corporate bond spreads on the governance variables ATI and BLOCK (see Table 1 for a description), a dummy for PROTECTION>0 (see Section 4 for a description), a set of controls (see Table 3 for a description), plus issuer dummies. Only the results for the governance and PROTECTION variables are reported. Our sample includes bonds which have valid covenant information in the Fixed Investment Security Database. After excluding financial and regulated firms and firms whose ATI measure changes during the sample period (see discussion in 2.2 in the text and footnote 27), the final sample includes on average 623 bonds per year from 1990 to 1997, with on average 3.1 corporate bond issues per firm. The t-statistics are corrected for heteroskedasticity, serial correlation and contemporaneous correlation among bonds issued by the same issuer (see footnote 21 for a description).

Figure 1. Leverage changes for completed hostile takeovers



The graph below shows the average leverage of firms that were hostile targets. Time 0 signifies the quarter during which the takeover-announcement was made. We use a sample of 16 completed hostile takeovers in our time period of 1990 – 1997 for which we were able to get all relevant leverage data.