Institutional Investor Attention, Agency Conflicts, and the Cost of Debt

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Key Words: Shareholder Distraction, Agency conflicts, Dual Holders, Cost of debt

JEL Classifications: G23, G34

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Abstract

Using Kempf, Manconi, and Spalt's (2017) measure of shareholder inattention, constructed from exogenous industry shocks to institutional investor portfolios, we find that firms with distracted shareholders are associated with a higher cost of debt. This effect is stronger for firms with more powerful CEOs, higher information asymmetry, and those operating in less competitive product markets. Further testing suggests that the inattention–cost of debt relation is driven primarily by dual holders directly observing shareholder distraction. Our results are robust to controlling for inattention at the retail investor level and to other external monitors, including credit rating agencies, financial analysts, and Big 4 auditors. Overall, our evidence suggests that institutional shareholder inattention has an incrementally negative effect on bond pricing.

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1. Introduction

A large literature shows that shareholder inattention is an important determinant of asset prices.[1] Much of this work examines inattention at the retail investor level using a variety of proxies, such as extreme returns, trading volume, news and headlines, advertising spending, and price limits. Because the majority of these studies use indirect proxies to measure investor attention, such events are often associated with contemporaneous changes in firm fundamentals. This makes it difficult to separate the effect of heightened investor attention from that of changes in firm fundamentals (Madsen and Niessner 2019). Da et al. (2011) propose a more direct measure of investor inattention using aggregate search frequency in Google, and they re-examine the effect of retail investor attention on asset prices. In addition to endogeneity, the main limitation of this literature is that using retail investors as a proxy for market participants may not accurately capture attention because retail investors do not represent an economically significant group of shareholders: They hold a small percentage of the aggregate value of all traded stocks, they are not required to report their holdings to the Securities and Exchange Commission, and they are relatively uninformed due to their informational disadvantages and psychological biases (Barber and Odean 2008).

More recently, Kempf, Manconi, and Spalt (2017, KMS hereafter) focus on institutional rather than retail investors to address the small-shareholder inattention problem.[2] Institutional investors represent a special class of large shareholder that has unique incentives to monitor firm performance (Shleifer and Vishny 1986). These investors, however, may not have sufficient cognitive ability to process all of the information available in the market. KMS (2017) posit that institutional shareholders have only limited attention in the sense that they cannot constantly monitor all of the companies in their portfolios. As a result, they are likely to focus on certain firms while neglecting others. This argument suggests that, at a firm level, monitoring intensity is likely to vary over time. Consistent with such variation, KMS (2017) find that, when institutional shareholders are distracted, managers are less likely to be terminated for poor performance. They are also more likely to pursue privately optimal decisions that may be detrimental to minority shareholders, such as making value-destroying acquisitions, granting timely CEO stock options, and curtailing dividends.

[1] See, for example, Drake et al. (2012), Choi and Varian (2012), Da et al. (2011), Ginsberg et al. (2009), Teoh et al. (1998a, 1998b), and Hirshleifer and Teoh (2003) for evidence on investor inattention.

[2] For the purpose of this research, we use the terms inattention, investor inattention, shareholder distraction, and investor distraction interchangeably to mean the loosening of monitoring constraint by shareholders.

In this paper, we study the effect of shareholder inattention on bond pricing.[3] From a bondholder perspective, it is theoretically unclear whether distraction has a positive or negative effect on bond valuation. On the one hand, distraction adversely affects bond pricing by intensifying the agency conflicts associated with loosening monitoring constraints, which influences the likelihood of default. KMS (2017) show that inattention can exacerbate managerial agency problems and information asymmetry, which can lead firms to deviate from value maximization. Liu et al. (2020) study the voting behavior of institutional investors in annual director elections, and document that distracted shareholders weaken board oversight. Moreover, Abramova et al. (2020) and Basu et al. (2019) find that investor inattention has negative consequences for firms' disclosure decisions. On the other hand, inattention implies that management faces less pressure to act in the interests of shareholders. For example, KMS (2017) find that when institutional shareholders are distracted, managers are more likely to curtail dividends and make diversifying acquisitions, both of which could benefit bondholders. Chu (2018) further shows that mergers between shareholders and creditors of the same firms reduce corporate payouts. Thus, whether shareholder distraction positively or negatively affects the cost of debt is an open empirical question.

We begin our analysis by examining the distraction–cost of debt relation in an institutional shareholder setting. To this end, we rely on KMS's (2017) firm-level proxy for institutional investor distraction. Their measure assumes that shareholder attention declines if a firm's institutional investors experience a shock to parts of their portfolios that are unrelated to the focal firm, i.e., large positive or negative returns in industries unrelated to the firm. Importantly, distraction events arising in other industries are, by construction, exogenous to the firm. Thus, firms within an industry are differentially exposed due to variations in their investor base. KMS (2017) argue that their measure captures periods in which shareholders are likely to direct their attention to the parts of their portfolios that are affected by a shock and, as a result, away from the firm. This relaxation of monitoring constraints allows managers to actively pursue their own private benefits.

Using a sample of publicly traded bonds for 21,345 firm-quarter observations from 1,094 firms over the 1993–2015 period, we find evidence that institutional shareholder distraction adversely affects bondholders. More specifically, we find a persistent and positive relation between institutional

[3] We focus on the bond market rather than the loan market because the former is less informationally efficient in terms of corporate defaults and bankruptcies (Altman et al. 2004). Similarly, Dichev and Skinner (2002) find that private lenders use debt covenants as "trip wires" for borrowers, that private debt covenants tend to be set tightly, and that violations are not necessarily associated with financial distress.

shareholder distraction and yield spreads that is incremental to the effect of institutional ownership. This result holds when we re-estimate the distraction measure separately for positive and negative extreme industry returns and when we split the sample based on investment-grade and non-investment-grade debt categories. Economically, a 1-standard deviation increase in the institutional shareholder distraction measure across all models is associated with an 11- to 26-basis point annual increase in yield spreads.

To validate our institutional shareholder setting, we examine the relation between inattention and the cost of debt financing at the retail investor level. Da et al. (2011) argue that the demand for public information via Google searches captures retail investors' attention. Drake et al. (2012), however, suggest that internet searches may also capture the attention of sophisticated traders. We expect retail-level investing in the equity market to be of little consequence for bond valuations because participants in the bond market are mainly institutional investors (Bessembinder and Maxwell 2008). Using hand-collected data for a large sample of search frequencies in Google, we do not find evidence of differences in yield spreads associated with retail investor inattention. Our findings suggest that institutional equity holders, not retail investors, are important monitors of management.

Next, we investigate the possible cross-sectional heterogeneity underlying our main finding. KMS (2017) show that CEOs who are more powerful than their boards may find it easier to exploit shareholder distraction to make privately optimal decisions that destroy firm value. Following Abernethy et al. (2015), we use a multidimensional measure of CEO power based on four agency variables known to influence the cost of debt: board co-option (Sandvik 2020), CEO pay slice (Bebchuk et al. 2011; Chen et al. 2013), CEO tenure (Hermalin and Weisbach 1998; Harford and Li 2007; Graham et al. 2020), and CEO duality (Aktas et al. 2019). Using the interaction between CEO power and distraction, we find that the effect of institutional shareholder inattention on yield spreads is more pronounced in firms with more powerful CEOs.

A large theoretical literature examines how information asymmetry affects the cost of capital (e.g., Leland and Pyle 1977; Stiglitz and Weiss 1981; Diamond 1985). Empirically, Cohen and Lou (2012) show that firms with higher levels of information asymmetry are more difficult to monitor and value. Han and Zhou (2014) show that measures of information asymmetry capture adverse selection in corporate bond trading, are key determinants of yield spreads, and help forecast corporate defaults. More recently, Derrien et al. (2016) use exogenous increases in information asymmetry to show that the cost of debt increases for firms that lose an analyst due to a broker closure or a merger. Accordingly,

we also consider the role of several widely used proxies for information asymmetry, such as asset intangibility (Almeida and Campello 2007), analyst forecast dispersion (Mansi et al. 2011; Gao et al. 2020), and organizational complexity as captured by the number of segments in which a firm operates (Mansi and Reeb 2002). Using interactions between the information asymmetry proxies and distraction, we find that the effect of institutional investor inattention on yield spreads is more pronounced in firms with relatively high levels of information asymmetry.

We further investigate whether the extent of product market competition impacts the effect of shareholder distraction on the cost of debt. Prior research suggests that a competitive product market serves as a powerful corporate governance mechanism that incentivizes management not to engage in value-reducing expropriation (Alchian 1950; Stigler 1958; Giroud and Mueller 2010; Chhaochharia et al. 2017). In our context, we posit that managers are more likely to exploit institutional shareholder distraction under weak product market competition. Using an interaction between distraction and a commonly used measure of product competition (market concentration based on the four largest firms' sales), we find that the effect of investor distraction on bond yield spreads is greater in firms that operate in less competitive product markets.[4] Collectively, the cross-sectional results support our finding of a positive and significant relation between distracted institutional shareholders and yield spreads. We show that this effect is stronger in firms with a more powerful CEO, those with greater information asymmetry, and those operating in less competitive product markets.

To shed light on how bond investors observe shareholder distraction, we investigate the economic mechanisms underlying our main prediction. We are particularly interested in whether bondholders observe shareholder distraction directly, or observe potentially value-destroying managerial actions and/or deteriorations in credit risk and adjust their valuation accordingly. To this end, we conduct three tests. The first focuses on the distraction of dual and non-dual holders. While the distraction of both types of institutional investors can affect bond pricing, we posit that dual holders, who hold equity positions and at the same time are creditors, are more likely to drive this relation. Because dual holders are part of the institutional equity ownership base, they are likely to observe extreme return shocks to their portfolio and, given their debt holdings, have access to superior information about the issuing firm (Jiang et al. 2010). In addition, given their equity holdings, dual holders are uniquely positioned to observe and, as debtholders, potentially price in the distraction of other institutional

[4] Alternatively, competition can influence the cost of debt through default risk and the loss given default. Because greater competition reduces future income, increases cash flow risk, and increases business risk (Bolton and Scharfstein 1990), it can increase firms' default risk (Valta 2012).

equity holders in a firm (non-dual holders). Therefore, we expect bond yield spreads to reflect the distraction of dual and non-dual holders resulting from extreme return events, with this effect being mainly driven by distracted dual holders.

Consistent with this expectation, we find positive and significant relations between the distraction of dual and non-dual holders and the cost of debt, with this relation being stronger for dual holder than that for non-dual holders. Economically, a 1-standard deviation increase in distraction is associated with 22- and 14-basis point increases in yield spreads annually for distracted dual and non-dual holders, respectively. When we simultaneously account for the effects of distracted dual holders and non-overlapping distracted non-dual holders, we find that only distracted dual holders matter to bond pricing. These results are consistent with the monitoring role of these overlapping investors and their informational advantage (Jiang et al. 2010).

The second test examines mechanisms related to managerial actions that can potentially affect bondholders during distraction periods: acquisitions (within-industry and diversifying) and dividend cuts (KMS 2017). Consistent with the notion that diversifying acquisitions increases managerial private benefits, KMS (2017) find that distraction has a stronger impact on these deals than on within-industry acquisitions. Using interactions between the distraction measure and proxies for these managerial actions, we find no compelling evidence that these actions moderate the effect of distraction on the cost of debt. Note that while these corporate actions are not necessarily value-destroying for bondholders, they could still provide a signal about managers acting in their own self-interest.

The third test explores the effects of distraction on firm credit risk that result from value-destroying managerial actions, such as credit ratings, distance to default, and firm idiosyncratic risk (e.g., Ashbaugh-Skaife et al. 2006; Harford et al. 2018). We posit that if yield spreads reflect the response of a firm's credit risk to value-destroying managerial actions, we would expect shareholder distraction to have an economically meaningful impact on credit risk. Although statistically significant, we find that only a small fraction of the economic increases in the cost of debt can be explained by observed changes in a firm's credit risk proxies. Collectively, the results of these three tests support the view that the documented effect of distraction on the cost of debt is primarily a reflection of dual holders directly observing shareholder distraction.

Our research contributes to recent work on limited attention and asset prices. While a large strand of the literature explores the effect of investor inattention on stock prices and corporate outcomes, no study to date has examined the effects of limited shareholder attention at the retail and institutional

levels on bond pricing.[5] The bond market thus provides an ideal laboratory to study inattention because the effects of shareholder distraction on the cost of debt have not yet been studied and are *ex ante* ambiguous.[6] Our finding of a positive and significant relation between shareholder inattention and bond yield spreads suggests that distraction contains information beyond the previously identified determinants of debt pricing. Importantly, our results illuminate the role that distracted dual holders play in mitigating bondholder-shareholder conflicts. As such, this work is related to the growing research on the consequence of dual holders on corporate outcomes (e.g., Jiang et al. 2010; Bodnaruk and Rossi 2016, 2021; Chu et al. 2020).

Our study also contributes to the literature on the importance of information flow from the stock market to the bond market. Existing studies examine the timing of information efficiency in the markets, with the majority documenting that stock prices lead bond prices. Kwan (1996), for example, finds that individual stocks tend to lead individual bonds when incorporating firm-specific information. Gebhardt et al. (2005) find no momentum spillover from corporate bonds to stocks, suggesting that past corporate bond return information is not useful for predicting stock returns in the cross-section. Downing et al. (2009) find that stock returns predict returns on non-investment-grade bonds at daily and hourly frequencies, which implies that information in the stock market is valuable to traders in the bond market. More recently, Kecskés et al. (2013) provide evidence that equity short sellers are skilled information processors who supply predictive information to the bond market. Our research builds on this work by showing that a loosening of monitoring constraints by institutional shareholders provides predictive information to the bond market.

The remainder of this paper is organized as follows. Section 2 briefly discusses our motivation. The data, variables, and summary statistics are described in Section 3. Section 4 presents our main evidence on the relation between inattention and the cost of debt, as well as the results of cross-sectional heterogeneity tests. Section 4 also investigates the economic mechanisms underlying the distraction–cost of debt relation. Section 5 concludes.

[5] In a sample of non-M&A bidders, KMS (2017) find that institutional distraction is costly to shareholders because it reduces future stock returns.

[6] Another reason shareholder inattention may not affect the cost of debt is the illiquid nature of the bond market. Li (2021) documents that differences in liquidity cannot explain the relation between sophisticated investor attention allocation, as proxied for by trading volume, and price underreactions to information in the bond market.

2. Distraction, Agency Conflicts, and the Cost of Debt

Financial institutions, such as banks, pension funds, insurance companies, and other entities that trade in large share quantities, own close to 70% of all equity shares invested in the U.S. market. Together, these institutions provide stakeholders with a valuable monitoring function by focusing on maximizing long-term value, as opposed to generating short-term profits, and by regularly engaging with management to achieve this objective (e.g., Monks and Minow 1995; Shleifer and Vishny 1997; Bushee 1998; Harford et al. 2018). However, recent research argues that institutional investors do not have the cognitive ability to monitor all firms in their portfolios (KMS 2017). As a result, they are likely to focus on certain firms while neglecting others. Managers that are aware of a relaxation of monitoring constraints may try to pursue private benefits at the expense of firms' stakeholders. For example, KMS (2017) show that when shareholders are distracted, managers are more likely to make value-destroying acquisitions, grant timely CEO stock options, force fewer CEO turnovers for poor performance, and curtail dividends. Distracted shareholders are also less likely to engage with corporations, as evidenced by fewer conference calls and proposals in general meetings (Druz et al. 2020). Liu et al. (2020) find that shareholder distraction weakens board oversight. Abramova et al. (2020) and Basu et al. (2019) similarly document that shareholder distraction negatively affects firms' disclosure decisions.

We argue that institutional shareholder distraction (or reduced monitoring) is associated with increased agency costs between bondholders and shareholders and between management and all external stakeholders. Smith and Warner (1979) identify four major sources related to the bondholder–shareholder conflict: dividend payout, claim dilution, asset substitution, and underinvestment. Dividend payout is related to the risk that existing bondholders face when issuing firms pay out unsustainably large dividends to existing shareholders. If those dividends are financed by issuing additional debt or reducing investment, it may increase the probability of future default (Kalay 1982). Claim dilution occurs when the value of bondholders' claims is reduced by issuing additional debt, especially when the current debt is not priced to reflect this additional issuance. An asset substitution problem arises when issuing firms substitute high-risk projects for low-risk ones after selling their bonds to unsuspecting bondholders. Lastly, the underinvestment problem occurs whenever issuing firms forgo profitable NPV investment opportunities because bondholders would capture a disproportionate share of firm value resulting from such investments (Myers 1977). The

increase in this agency risk decreases the expected value of cash flows and increases default risk to bondholders, leading to a higher cost of debt.

While the lack of shareholder monitoring allows managers to make more privately optimal decisions that may be detrimental to shareholders, these decisions may be advantageous to bondholders. As a result, they may lead to a decrease in the cost of debt. For example, KMS (2017) show that, when institutional shareholders are distracted, managers are more likely to cut dividends (i.e., increase future cash flow) and make diversifying acquisitions (co-insurance, e.g., Amihud and Lev 1981), both of which could be valuable to bondholders.[7] Therefore, from a bondholder perspective, it is theoretically unclear whether distraction has a positive or negative effect on debt valuation. We empirically address this question by examining the effect of shareholder inattention on the cost of debt, and exploring the mechanisms underlying the distraction–cost of debt relation.

3. Data, Variables, and Summary Statistics

3.1. Data Sources and Sample Construction

Our data come from several sources. Our main tests are based on the intersection of the Lehman Brothers (LBFI) and TRACE fixed income databases, the Fixed Income Securities Database (FISD), the Compustat Industrial quarterly and annual databases, and the Thomson Reuters Financial (13F) database. Data for the institutional shareholder distraction measure are provided by Professor Elisabeth Kempf at the University of Chicago.

We use the LBFI database to obtain firms' cost of debt for the 1993–2006 period, and the TRACE database to obtain firms' cost of debt in 2007 and thereafter. Both the LBFI and TRACE databases cover the majority of publicly traded debt in the over-the-counter market, and are representative of the sample of traded bonds (see, e.g., Klock et al. 2005; Kecskés et al. 2013; Billet et al. 2007). Our final dataset contains month-end security-specific information such as bid price, coupon, yield to maturity, Moody's and S&P credit ratings, issue date, and maturity date on non-convertible bonds contained in the Lehman Brothers bond indices and traded on the Nasdaq exchange. Securities are included in the Lehman Brothers bond indices based on credit rating, liquidity, maturity, size, and

[7] Note, however, that these corporate actions could also be detrimental to bondholders. Dividend cuts could signal that managers are acting in their own self-interest, and diversifying acquisitions may reflect managerial empire building (Morck et al. 1990).

trading frequency. Because the TRACE dataset only includes pricing and yield information, we merge it with the FISD to obtain debt-specific characteristics.

Balance sheet and income statement data come from Compustat, and institutional ownership data come from the Thomson Reuters Financial (13F) database. We exclude heavily regulated firms (SIC codes 4900 to 4999) and financial firms (SIC codes 6000 to 6999) because they are subject to different accounting rules and regulations. Our final sample consists of 21,345 firm-quarter observations from 1,094 firms over the 1993–2015 period.

3.2. Main Variables

3.2.1. Measuring the Cost of Debt Financing

We use the dependent variable, the log of the yield spread or the bond risk premium, to measure the cost of debt. *Yield Spread* is defined as the difference between the yield to maturity on a corporate bond and the yield to maturity on its equivalent duration-matched Treasury security. For firms with multiple observations in the sample, we compute a weighted average yield spread, where the weight is equal to the amount outstanding for each security, divided by the total amount outstanding for all available publicly traded bonds (e.g., Mansi et al. 2009). In cases where there is no corresponding Treasury yield available for a given maturity, we calculate the Treasury yield spread by using interpolation based on the Svensson (1994) exponential functional form model.

3.2.2. Measuring Shareholder Inattention

We capture institutional shareholder distraction at a firm level using KMS's (2017) aggregate measure of inattention. Although we cannot directly observe distraction, KMS (2017) use an identification strategy based on a firm's pool of institutional investors and its stock holdings in firms other than the focal firm. Specifically, to identify time-varying shifts in investor attention, KMS (2017) use exogenous shocks to unrelated industries held by a firm's institutional investors. The rationale is that, under the constraint of bounded attention, investors tend to shift their attention away from the focal firm to segments of their portfolio that are subject to industry shocks. In identifying distraction (i.e., attention-grabbing) events, KMS (2017) use "extreme" positive and negative industry returns in a given quarter. Because these events typically take time to develop and be understood, they can draw

on limited attention capacity for an extended period, leading to a temporary relaxation of the monitoring constraints faced by the focal firm's managers.[8]

We obtain firm-level proxy for distraction (*Distraction*) by weighing the level of inattention for each institutional investor in a given firm and then aggregating the scores. We also separately compute firm-level proxies for distraction for positive (*Distraction Positive Shock*) and negative (*Distraction Negative Shock*) events. In doing so, we weigh the level of inattention for each institutional investor in a given firm driven by extreme positive and negative returns in unrelated industries. We then again aggregate the scores across the firm's institutional investors. Higher values for these measures indicate that a representative investor experiences greater distraction, and therefore temporarily relaxes monitoring of a given firm.

By construction, these measures of shareholder distraction are affected by whether a shock occurs in an industry unrelated to the firm, whether the industry experiencing the shock is important to an investor's portfolio, and whether an investor that experienced an unrelated industry shock has incentives to monitor the focal firm. These measures thus have two main advantages for our purposes. First, they avoid endogeneity problems because they distinguish between exogenous changes in monitoring and attention-grabbing events that occur in other industries. Second, because these measures are time-varying, we can examine whether the time variation in firm-level distraction explains variation in bond yield spreads.

Turning to retail investor inattention, we follow Da et al. (2011) and use Google's search volume index (SVI). The SVI is a relative search popularity score, defined on a scale of 0 to 100, based on the number of searches for a term relative to the total number of searches for a specific geography and for a given time period. We obtain weekly SVI information for the 2004–2014 period by using a stock's ticker symbol, and then construct monthly SVI scores by averaging weekly SVI for each stock. Following Da et al. (2011), we exclude ambiguous ticker symbols such as A, AUTO, ALL, B, BABY, BED, DNA, GPS, GAS, and GOLF, as they may not be related to equity. In cases where weekly SVI data near the end of a calendar month include the first few days of the next month, we prorate the weekly SVI based on the number of days in that month. We then compute a stock's abnormal SVI as the log ratio of SVI to its SVI lagged value (*Retail Inattention*).

[8] KMS (2017) provide several examples of attention-grabbing events: the recent global financial crisis (2007Q4 industry return: -10.1%), the tech bubble (2000Q1 industry return: +14.8%), and the Gulf of Mexico oil spill (2010Q2 industry return: -11.4%).

3.2.3. Control Variables

The remaining variables are firm- and security-specific controls. Firm-specific controls include size, leverage, profitability, market-to-book, sales growth, and cash flow volatility. Specifically, *Firm Size*, a proxy for economies of scale and a takeover deterrent, is measured as the natural log of total assets. *Leverage*, a proxy for financial health, is measured as the ratio of long-term debt to total assets. *Performance*, a proxy for financial profitability, is measured as the ratio of earnings before interest, taxes, depreciation, and amortization scaled by total assets. *Sales Growth* is a firm's annual growth in revenue. *Market-to-Book*, a proxy for growth opportunities, is computed as the market value of assets (measured as the number of shares outstanding times the share price, plus the book value of debt) scaled by the book value of assets. *Cash Flow Volatility* is the standard deviation of firm performance over the past 10 years. We further control for shareholder monitoring using *Institutional Ownership*, computed as the ratio of common shares owned by institutions divided by the total number of common shares outstanding.

Security-specific control variables include credit rating, maturity, age, callability, and a high-yield dummy. A firm's credit rating is the average of its Moody's and S&P bond ratings, and represents average credit rating at the date of the yield observation. Bond ratings are computed using a conversion process, whereby AAA-rated bonds are assigned a value of 22, and D-rated bonds a value of 1 (see Table A1 in the Online Appendix for the full list of bond rating numerical conversions). We follow the literature, and allow for the fact that the credit rating variable may incorporate part or all of the information from investor inattention (Klock et al. 2005). Specifically, to estimate the effect of credit rating excluding the effect of distracted shareholders, we regress the rating variable on the distraction variable. The error term from this specification, *Credit Rating*, incorporates credit rating information without the influence of distraction. This is our primary measure of credit ratings in our multivariate analysis.

We control for term structure effects using debt maturity, and for liquidity effects using bond age. For an individual security, *Bond Maturity* is the number of years remaining until the bond matures, and *Bond Age* is the length of time (in years) that a bond has been outstanding. For firms with multiple bonds, we compute weighted average maturity, bond age, and credit rating using the sum of the weighted measures of all bonds for each firm. The weight is the amount outstanding for each debt issue divided by the total amount outstanding for all publicly traded debt for the firm (Mansi et al.

2009). We also control for *Callability*, a dummy variable that equals 1 if the issue is callable, and for *High Yield*, a dummy variable that equals 1 when the debt is non-investment-grade, to account for the non-linear relation between bond yield spreads and credit ratings. We winsorize all variables at the 1% level to mitigate the influence of outliers. Table 1 provides a description and the data sources for the main variables used in the analysis.

3.3. Descriptive Statistics

Panel A of Table 2 gives the sample summary statistics. Specifically, we report the mean, median, standard deviation, 25th percentile, and 75th percentile for the main variables used in our analyses. In the cost of debt analysis, the variable of interest is the yield spread, which has a mean, median, and standard deviation of 288, 192, and 303 basis points, respectively. Because the mean and median values differ substantially from each other, the yield spread is highly skewed. Therefore, we use the log of the yield spread in our multivariate analysis to provide a better fit and to ensure that any fitted values remain positive. Looking at the firm-specific control variables, sample firms have a mean, median, and standard deviation of total assets of $11 billion, $4.4 billion, and $18 billion, respectively. The median leverage ratio is 30%, with a standard deviation of 16.7%, which implies that a large portion of the sample firms have significant liabilities in their capital structure. Our sample firms are profitable overall, with a mean profitability ratio of 3.6%, a market-to-book ratio of 3.11, and cash flow volatility of 4.3%. On average, institutions owned 71.3% of shares outstanding, with a standard deviation of 18.8%.

With respect to the bond-specific controls, the mean and median numerical bond ratings for the sample are equivalent to S&P ratings of BB+ and BBB-, respectively, which implies ratings at or slightly below investment-grade debt. On average, traded debt has a maturity of 9.1 years, with a standard deviation of 5.4 years, and has been outstanding for 3.4 years. The sample is tilted toward investment-grade debt at 58%, with the remaining 42% consisting of non-investment-grade debt.

Panel B of Table 2 shows the full sample distribution across industries using the Fama–French 12-industry classification. The firms in our sample are concentrated mainly in manufacturing (24.7%), wholesale and retail trade (15.1%), consumer non-durables (9.7%), business equipment (9.2%), chemicals and allied products (7.2%), healthcare (7%), energy (6.5%), telecommunications (4.3%), consumer durables (1.6%), and other industries, which includes mines, construction, building material, transportation, hotels, business services, and entertainment (14.8%).

Panel C of Table 2 provides the Pearson correlation coefficients among shareholder distraction, cost of debt, and select controls. In general, we note low correlations between shareholder distraction and the control variables, suggesting that multicollinearity is not a concern in our multivariate analysis. One exception is the high correlation between distracted dual and non-dual holders. This is expected because both entities are part of the institutional shareholder base. This issue is discussed is detail in Section 4.3.1. In general, yield spread is positively correlated with the distraction measure, leverage, cash flow volatility, high yield dummy, and callability; it is negatively correlated with size, performance, market-to-book, credit ratings, bond maturity, and bond age. The correlation coefficients provide initial evidence that firms with distracted shareholders tend to have a higher cost of debt.

4. Empirical Analysis

4.1. Distraction and the Cost of Debt

In our main analyses, we examine the relation between the log of yield spreads and the inattention measures—*Distraction, Distraction (Positive Shock), Distraction (Negative Shock),* and *Retail Inattention*—while controlling for firm- and security-specific factors known to influence the cost of debt. We perform multivariate regressions using various specifications. All models include firm fixed effects to control for unobservable firm-specific time-invariant factors and industry × quarter fixed effects to control for the effect of any factors that are invariant within the industry-date. We cluster standard errors at the firm level. Our primary regression model is as follows:

$$Log(Spread_{i,t}) = a + \beta_1\, Inattention_{i,t-1} + \beta_{2\text{-}7}\, Firm\ Controls_{i,t-1} + \beta_{8\text{-}12}\, Debt\ Controls_{i,t} + Firm\ FE + Industry \times Quarter\ FE + \varepsilon_{i,t}, \quad (1)$$

where *Spread* is the bond yield spread, and *Inattention* is one of our four measures of distraction. *Inattention* and *Firm Controls* are lagged with respect to yield information. A positive and significant coefficient on inattention, β_1, would support the hypothesis that looser monitoring constraints are value-decreasing for bondholders.

Firm controls include size, leverage, profitability, market-to-book, and sales growth. We expect firm size to be negatively related to the log of the yield spread because larger firms enjoy greater economies of scale and stability. Leverage should be positively related to yield spreads because higher level of debt is associated with a higher probability of default, while market-to-book should be

negatively associated with yield spreads because firms with more growth opportunities use less debt and hence have a lower probability of default. We further expect sales growth and firm profitability to be negatively related to the cost of debt because more profitable firms have a lower probability of default. Lastly, we control for institutional ownership to account for firm governance structure. We expect this variable to be associated with a lower cost of debt due to the monitoring effects of institutional ownership.

Security-specific controls include credit ratings, bond maturity, and bond age. We expect credit ratings to be negatively associated with yield spreads because firms with better ratings have a lower probability of default, and therefore a lower cost of debt. We expect bond age and bond maturity to be positively related to yield spreads because bonds that are less liquid and those with higher maturities require a higher rate of return.

Table 3 reports the results of our regressions on the effect of inattention measures on the cost of debt. Model 1, our primary specification, uses KMS's (2017) institutional distraction measure. Models 2 and 3 focus on distraction when industry returns are extreme (positive or negative). Models 4 and 5 are similar to Model 1, but break the sample down into investment-grade (greater than or equal to credit ratings of BBB-) and non-investment-grade debt (below credit ratings of BBB-). Model 6 is similar to Model 1, but replaces institutional shareholder distraction with retail investor inattention based on Google's SVI.

In Models 1–5, we find a positive and significant relation between shareholder distraction and bond yield spreads. Across models, the coefficient varies from 0.159 for the extreme positive industry returns sample to 0.286 for the non-investment-grade sample. In terms of economic significance, a 1-standard deviation increase in shareholder distraction is associated with an increase in yield spreads ranging from 11 (Model 3: $0.159 \times 0.06 \times 288 \times 4$) to 26 (Model 5: $0.286 \times 0.08 \times 288 \times 4$) basis points annually. Models 2 and 3 show that the observed effect of distraction on the cost of debt comes from both extreme positive and negative industry returns. Models 4 and 5 report that distraction is positively related to the cost of debt in both the investment-grade and non-investment-grade samples, but its effect is slightly larger for the high-yield bond sample. In Model 6, we find an insignificant relation between retail investor inattention and the cost of debt. This is consistent with institutional equity holders, rather than retail investors, as important monitors of management. Collectively, these results suggest that a relaxation of monitoring constraints by institutional investors is detrimental to bondholders.

The control variables take the theoretically predicted signs in all models and, in general, are statistically significant. More specifically, at the firm level, our proxies for firm size, performance, and growth opportunities are negatively related to yield spreads, while leverage and cash flow volatility are positively related to yield spreads. Institutional ownership is negatively related to yield spreads, which is consistent with the monitoring effectiveness of institutional shareholders (Bhojraj and Sengupta 2003). At the bond level, maturity, age, and callability are all positively related to spreads, while credit rating is negatively related to yield spreads.

To check the generalizability of our main results, we conduct several robustness tests. Table A2 in the Online Appendix reports the estimation results. Model 1 controls for retail investor attention using *Advertising Intensity*, calculated as advertising expenses scaled by sales. Lou (2014) documents that managers adjust firm advertising to attract investor attention and influence short-term stock returns. The results are similar to those obtained in our primary specification (Model 1 in Table 3). Models 2 and 3 control for analyst following and Big 4 auditor as alternative external monitors. Gao et al. (2020) document that analyst following can constrain managerial opportunism. Mansi et al. (2004) show that auditor quality provides both insurance and information roles that can be beneficial to security claimants. We compute *Analyst Following* as the log of the number of analysts following the firm, and *Big 4 Auditor* as an indicator variable that equals 1 if one of the Big 4 accounting firms is the firm's auditor. In both specifications, we continue to find a positive and significant relation between institutional shareholder distraction and yield spreads. However, only the coefficient on analyst following in Model 2 is negative and significant (Mansi et al. 2011).

We next control for two governance factors that are known to influence the cost of debt: Bebchuk et al.'s (2009) entrenchment index (*EIndex*), and CEO compensation pay mix (*CEO Pay Mix*). Prior literature documents that bondholders are interested in governance mechanisms that constrain managerial incentives. Klock et al. (2005), for example, find that takeover defenses that limit shareholders' interests relative to those of managers are beneficial to bondholders. Bebchuk et al. (2009) construct an entrenchment index using a subset of six anti-takeover provisions: classified boards, golden parachutes, limits to amend charter, limits to amend bylaws, supermajority, and poison pill. They find that these provisions are associated with lower firm value. Accordingly, in Model 4 of Table A2, we control for managerial entrenchment using the *EIndex*. In addition, Ortiz-Molina (2006) finds a positive relation between managerial ownership and the cost of debt, albeit only for smaller ownership. In Model 5, we control for CEO compensation pay mix, *CEO Pay Mix*, which is the pay

of the top five managers in the form of stock and option grants (SOG), divided by the sum of SOG, salary, and bonus compensation. In both specifications, we continue to find a positive and significant relation between shareholder distraction and yield spreads. In Model 6, we also control for a firm's relatedness to the shock industries using Hoberg and Phillips's (2010) measure of 10-K text-based 25-industry classifications. Our results continue to hold.

For completeness, we conduct two additional but unreported tests. First, we control for two significant crisis events: the dot-com bubble in 2000, and the global financial crisis in 2009. Our rationale is that, while KMS's (2017) distraction measure is based on "extreme" industry return periods, it is not necessary for the event to stretch over a longer term for it to impact monitoring capacity. The results corroborate our main findings, and are not sensitive to excluding either of these crisis event periods. Second, we investigate whether the relation between shareholder distraction and the cost of debt differs when we control for the different types of institutional investors. Using Bushee's (1998) classification of institutional investors as transient, quasi-indexers, or dedicated investors, we find that our main evidence continues to hold. We also segment institutional investors based on their horizons (short- or long-term), following Gaspar et al. (2005), and find similar results. Overall, these results provide additional support for the view that distracted institutional shareholders are costly to bondholders.

4.2. Distraction, Firm Heterogeneity, and the Cost of Debt

The results thus far suggest that firm-level temporal variation in monitoring intensity driven by shareholder distraction affects bond pricing. In this section, we investigate how firm heterogeneity affects the association between distraction and the cost of debt. In particular, we are interested in whether and how certain firm characteristics, such as CEO power, information asymmetry, and product market competition, exacerbate the adverse consequences of distraction. We expect the costs of distraction to be higher under firm characteristics that are more conducive to managerial opportunism. For ease of exposition, we standardize the interaction variables to have a mean of 0 and a standard deviation of 1 in all specifications.

We begin by examining the effect of managerial opportunism, proxied for by *CEO Power*, on the relation between institutional shareholder distraction and the cost of debt. KMS (2017) argue that, in the absence of shareholder monitoring, CEOs have an incentive to maximize private benefits at the

expense of shareholder value. KMS (2017) further show that more powerful CEOs can exploit an increase in shareholder distraction by engaging in privately optimal corporate actions, such as value-destroying acquisitions. Accordingly, we expect distraction to have a stronger effect on firms with more powerful CEOs. We measure *CEO Power* as a function of four variables: co-optionality of independent directors, CEO pay slice, CEO tenure, and CEO-chairman duality (Coles et al. 2014; KMS 2017). *Board Co-Option,* a proxy for lax monitoring, is computed as the fraction of independent directors appointed after a CEO assumed office in a given year. *CEO Pay Slice*, a proxy for CEO influence, is computed as the fraction of the aggregate compensation of the top five executives that is captured by the CEO. *CEO Tenure*, a proxy for entrenchment, is computed as the number of years the CEO has been in office. *CEO-Chairman Duality*, a proxy for CEO control power, is an indicator variable that equals 1 if the CEO is the chair of the board in a given year. In the spirit of Abernethy et al. (2015), we aggregate these four variables using principal component analysis to obtain our proxy for *CEO Power*. Data on board co-option come from the website of Lalitha Naveen, CEO pay slice comes from ExecuComp, and CEO tenure, CEO age, and director variables come from Institutional Shareholder Services (ISS).

To test our prediction, we add the proxy for CEO power and its interaction with shareholder distraction to our main regression. Model 1 of Table 4 reports the results. We find a positive and significant coefficient on distraction, a negative but insignificant coefficient on CEO power, and a positive and significant coefficient on the interaction between distraction and CEO power. Economically, moving CEO power from the first to the third quartile augments the effect of a 1-standard deviation increase in shareholder distraction on yield spreads by about 19 basis points annually. This suggests that more powerful CEOs pursue private benefits when institutional investors are distracted. Recognizing the increased potential for expropriation, bondholders react to the weakened monitoring by increasing the cost of debt.

We next examine whether the effect of shareholder distraction is heterogeneous with respect to various measures of information asymmetry. Recent research shows that effective governance lowers firms' cost of debt by increasing monitoring and reducing information asymmetry (Derrien et al. 2016; Gao et al. 2020). To the extent that institutional ownership can provide effective oversight from a bondholder perspective, the value of monitoring should be greater for firms that are more difficult to monitor and price. Accordingly, we expect the positive relation between institutional investor distraction and yield spreads to be stronger for firms with higher information asymmetry.

To test this prediction, we measure information asymmetry using asset intangibility, analyst forecast dispersion, and organizational complexity (Kang et al. 2018). *Asset Intangibility* is (-1) × [(0.715 × Receivables + 0.547 × Inventory + 0.535 × Capital) + Cash] scaled by total assets. A higher value indicates greater intangibility. *Analyst Forecast Dispersion* is the standard deviation in analysts' quarterly earnings per share forecasts, deflated by stock price (Mansi et al. 2011). *Organizational Complexity* is the number of segments in which the firm operates. In Models 2–4 of Table 4, we re-run our baseline distraction model after including the respective measure of information asymmetry and its interaction with distraction. The results are in line with our prediction. Across all proxies for information asymmetry, the coefficients on the interaction terms are positive and significant at either the 1% or 5% levels. Economically, moving the information asymmetry proxies from the first to the third quartile augments the effect of a 1-standard deviation increase in shareholder distraction on yield spreads by approximately 2 to 17 basis points annually. These findings are largely consistent with our prediction that distraction is costlier for firms that suffer greater information asymmetry problems, and hence are more difficult for bondholders to value.

We also consider firm heterogeneity with respect to industry competition. Prior research has argued that a high level of product market competition can induce management to avoid wasting corporate resources (Alchian 1950; Stigler 1958; Hart 1983; Schmidt 1997; Aghion et al. 1999). The idea is that, in a competitive market, inefficient use of corporate resources will render firms unable to compete and eventually lead to insolvency (Chhaochharia et al. 2017).[9] Several empirical studies show that industry competition plays an important role in aligning incentives within firms (Karuna 2007). However, Chhaochharia et al. (2017) also find that corporate governance is more important when firms face weak product market competition. Accordingly, we expect managers to be more likely to exploit shareholder distraction, and investor inattention to have a more pronounced effect on the cost of debt, in firms in less competitive industries.

Using a measure of market concentration (*C4*), we capture market structure by summing the market shares of the four largest firms in a given 3-digit SIC industry (Hou and Robinson 2006). Our competition proxy (*High C4*) is an indicator variable that equals 1 if the firm is in the top tercile of the *C4* distribution. In Model 5 of Table 4, we re-run our main regression after controlling for industry

[9] Prior theoretical studies do not uniformly agree that product market competition increases efficiency. For example, Scharfstein (1988) argues that managers' incentives to exert effort will be lower because profits are lower in competitive industries. Raith (2003) helps reconcile the conflicting results by endogenizing entry into the product market. He finds that, once entry is endogenized, stronger competition implies a better alignment of incentives.

competition and its interaction with our investor distraction measure. Consistent with the disciplinary role of product market competition, we find that the positive relation between distraction and the cost of debt is more pronounced for firms operating in a weaker product market environment. Economically, moving from a more competitive to a less competitive industry augments the effect of a 1-standard deviation increase in shareholder distraction on yield spreads by about 16 basis points annually. Overall, the results suggest that weaker monitoring by institutional shareholders is costly for bondholders when firms have more powerful CEOs, lower information asymmetry, and weaker product market competition.

4.3. How do Bondholders Observe Shareholder Distraction?

Although the analysis above suggests that institutional shareholder distraction affects bond pricing, it remains unclear how bondholders observe distraction. Bondholders can directly observe signals of dual and non-dual shareholder distraction, and price in the potentially value-destroying effects *ex ante*. They can also respond to value-destroying managerial actions and/or observable deteriorations in firm credit risk during distraction periods. We test these conjectures by focusing first on the effects of distraction by dual and non-dual holders. While both types of institutional investors can affect bond pricing, we posit that dual holders, who simultaneously own equity and debt in the same firm, are more likely to drive this effect. Next, we examine decisions indicative of managerial self-dealing (i.e., acquisitions and dividend cuts), and explore the indirect mechanism related to firms' credit risk that results from value-destroying managerial actions (i.e., credit ratings, distance to default, and firm idiosyncratic risk).[10] A priori, it is unclear which mechanism is driving our main evidence. The results could suggest that both direct and indirect mechanisms are at play. Alternatively, one mechanism (e.g., bondholders directly pricing dual and non-dual holder distraction) may be the driver, while the effects of the others (e.g., value-destroying managerial actions or firm credit risk) are economically trivial.

4.3.1. Distracted Dual and Non-Dual Holders

Recent research suggests that dual holders and non-dual holders have distinct information advantages and effects on corporate outcomes. Peyravan (2020), Auh and Bai (2020), and Bodnaruk and Rossi (2021) show that dual holders can obtain more information about firms and their

[10] We are indebted to two anonymous reviewers for suggesting this analysis.

stakeholders at a lower cost than pure shareholders or creditors. Consistent with dual holders acting as monitors on behalf of creditors, evidence also shows that firms with dual holders have better access to bond markets (Bodnaruk and Rossi 2021), higher investment efficiency (Antón and Lin 2020), lower costs of financial distress (Chu et al. 2020), lower CEO compensation sensitivity to risk (Chen et al. 2019), and lower payouts (Chu 2018). Therefore, we begin our analysis by exploring whether bondholders directly observe signals of dual and non-dual shareholders' distraction.

We argue that, a priori, distracted dual holders and non-dual holders could affect bond pricing, as both are subject to industry shocks. However, distracted dual holders may have a greater effect because they are likely to observe extreme return shocks to their portfolios. As debtholders, they also have access to superior information about the debt issuing firm (Jiang et al. 2010). Moreover, dual holders are sophisticated investors and are likely aware of their peers' equity holdings (e.g., non-dual holders) in investee firms. Hence, we posit they will be better able to observe and potentially price in non-dual holders' distraction. Accordingly, we expect the distraction of dual and non-dual holders to separately affect bond pricing (as both are subject to common industry shocks), with distracted dual holders having a stronger effect. To the extent that distracted dual holders can capture information on non-dual holders' distraction, we expect only distracted dual holders to matter to bond pricing when considered simultaneously with non-overlapping distracted non-dual holders.[11]

To test whether bond yield spreads are a direct reflection of the distraction of dual and non-dual holders, we separately examine the inattention–cost of debt relation for distracted dual and non-dual holders. Following Jiang et al. (2010) and Chu (2018), we identify firms with dual holders using data from the Thomson Reuters Financial Institutional Ownership (13F) database and DealScan over the 1989–2015 period. To measure distraction of dual and non-dual holders, we compute dual holder ownership as the fraction of a firm's total shares outstanding held by dual holders.

Table 5 reports the results. Model 1 examines the relation between distracted dual holders and the cost of debt. Model 2 is similar to Model 1 but considers distracted non-dual holders rather than distracted dual holders. Model 3 examines the joint effect on the cost of debt. All models include firm fixed effects and industry × quarter fixed effects. In Model 1, we find that dual holder distraction is associated with an increase in the cost of debt. The effect is similar, albeit weaker, in Model 2 for non-dual holder distraction. A 1-standard deviation increase in the distraction of dual holders increases

[11] However, given that dual holders proxy for both fewer debt-equity conflicts and for bondholders who are able to directly observe shareholder distraction, it is difficult to draw a strong conclusion from this test.

yield spreads by about 22 basis points annually (Model 1: 2.533 × 0.0074 × 288 × 4), and about 14 basis points annually for non-dual holders (Model 2: 0.159 × 0.075 × 288 × 4). Consistent with our expectation, we find that the effect of distracted dual holders is stronger than that for non-dual holders, with the difference being significant at the 5% level.

In Model 3, we include the distraction of both dual and non-dual holders. Given the high correlation of 59% between the variables—reflecting similar levels of exposure to common industry shocks—we orthogonalize non-dual holder distraction with respect to dual holder distraction. The residual captures non-overlapping information about non-dual holder distraction that is not incorporated in dual holder distraction. When we include the residual, we find that only distracted dual holders significantly affect bond pricing.[12] Taken together, these results suggest that distracted dual holders drive the relation between inattention and the cost of debt, consistent with the monitoring role of these overlapping investors and their informational edge.

4.3.2. Managerial Actions

Next, we examine whether bondholders respond to value-destroying managerial actions during distraction periods. Similar to KMS (2017), we use a set of managerial actions (i.e., acquisitions and dividend cuts) to study the effects of variations in the outcomes of corporate decisions on the cost of debt. KMS (2017) argue that, when shareholders are distracted, self-interested managers have an incentive to maximize their private benefits via various corporate actions, one of which is M&A activity. Such action is relevant to our analysis because acquisitions represent substantial discretionary investments, can be timed by managers, have easily observable announcement dates, and have been shown to have bondholder wealth effects (Billett et al. 2004). Our measure for acquisition activity is a dummy variable that equals 1 if the acquisition took place in a given quarter. We obtain M&A announcement data from SDC and Capital IQ. We consider all acquisitions, within-industry acquisitions, and diversifying acquisitions. Within-industry deals involve an acquirer and a target operating in the same industry; diversifying deals involve an acquirer and a target in different industries. All acquisitions are the summation of within-industry and diversifying acquisitions. Industries are defined according to the Fama–French 12-industry classification.

[12] Although the coefficient of non-dual holder distraction is statistically insignificant, we cannot infer the amount of non-overlapping information about non-dual holders' distraction that is priced by dual holders.

Table 6 displays our results using interactions between the acquisition proxies and the shareholder distraction measure. The coefficient on distraction captures the effect of institutional shareholder inattention in the absence of an acquisition; the coefficient on the acquisition proxy captures the extent to which an acquisition is value-enhancing to bondholders without distraction. As discussed in Section 2, we do not predict the sign of the acquisition proxy. The coefficient on the interaction between distraction and the acquisition proxy indicates whether acquisitions attenuate or magnify the effect of distraction on the cost of debt. A positive (negative) coefficient implies that the acquisition is value-decreasing (-increasing) to bondholders when shareholders are distracted.

Models 1–3 provide results for all acquisitions, within-industry acquisitions, and diversifying acquisitions, respectively. All models include firm fixed effects and industry × quarter fixed effects. We continue to find that distraction is positively and significantly related to yield spreads. However, the coefficients on the interactions with distraction are insignificant for all acquisitions and for diversifying acquisitions, but marginally significant (at the 10% level) for within-industry deals. Because acquisitions, especially within-industry, occur infrequently (about 6.7% of our sample), bondholders are less likely to observe these actions continuously.

In Model 4, we examine another important corporate decision: dividend cuts. We measure dividend cuts as a dummy variable that equals 1 if the announced dividend in a given quarter is smaller than that announced in the previous quarter. As outlined in Section 2, we again do not predict the sign of the dividend cuts dummy because they may be advantageous (increase in future cash flows) or harmful (managers acting in their own self-interest) to bondholders. We find an insignificant interaction coefficient for the dividend cuts dummy in the distraction period.

Overall, these results suggest that while corporate actions are not necessarily value-destroying for bondholders, they could still signal that managers are maximizing their own private benefits. Because the effect of distraction is economically important even in quarters without any acquisitions or dividend cuts, bondholders may be pricing in the effects of these value-destroying managerial actions *ex ante* (i.e., before they occur) or only after they become public information.

4.3.3. Deterioration in Firm Credit Risk

In this section, we provide further evidence about the mechanisms through which shareholder distraction leads to a higher cost of debt. Building on the debt pricing literature (see, e.g., Mansi et al.

2004; Ashbaugh-Skaife et al. 2006; El Ghoul et al. 2016; Harford et al. 2018), we focus on the effect of distraction on corporate outcome variables that are relevant to bondholders. Prior literature suggests that shareholders can expropriate creditors by increasing firm risk (Myers 1977; Smith and Warner 1979). Accordingly, we consider the effects of distraction on three relevant proxies: credit ratings, default risk, and firm-specific risk.

Table 7 gives the results. All models include firm fixed effects and industry × quarter fixed effects. Panel A tests the effect of distraction on credit ratings. Rating agencies play a pivotal role in assessing firm credit risk and in providing information to investors (Opp et al. 2013). These agencies must update their forecasts using a myriad of financial information related to firm performance and management actions. Thus, we expect rating agencies to update their prior predictions about a firm's credit ratings for those with distracted institutional shareholders. We find a negative and significant coefficient on distraction, indicating that shareholder inattention is associated with lower credit ratings. Economically, a 1-standard deviation increase in the distraction measure lowers credit ratings by about 0.03 notches (0.336 × 0.08). These economically small effects suggest that the credit rating channel is less plausible because rating agencies are slow to update their ratings and a transitory distraction is unlikely to lead to downgrades.[13]

Panel B captures firms' default risk using Bharath and Shumway's (2008) commonly used measure of distance to default. This measure provides better out-of-sample performance for forecasting bankruptcies. We find an inverse relation between distraction and the distance to default, suggesting that higher inattention is associated with a higher likelihood of financial distress. Relative to the mean, a 1-standard deviation increase in the distraction measure increases the distance to default by about 1.5% (-1.019 × 0.08/5.496).

Panel C examines the effect of distraction on firm-level risk (Mansi et al. 2011) using the standard deviation of residuals from the Carhart (1997) four-factor model estimated over the quarter.[14] We find that distracted shareholders are associated with higher firm-level idiosyncratic risk. Relative to the mean, a 1-standard deviation increase in the distraction measure increases firm-level idiosyncratic risk

[13] Consistent with this view, we also test the effect of distraction on credit rating downgrades over the next four quarters to account for the relative timing of rating updates and the distraction quarters (Kecskés et al. 2013). We find no evidence that distraction is related to subsequent downgrades. We further test the impact on the cost of debt of the interaction between distraction and the downgrade dummy over the next four quarters. We find insignificant coefficients on these interactions. The results are provided in the Online Appendix.

[14] KMS (2017) find that firms with distracted shareholders are more likely to announce diversifying acquisitions. To mitigate the concern that these acquisitions may benefit bondholders, in unreported tests, we exclude firm-quarter observations with acquisitions. We continue to find that shareholder distraction increases firm idiosyncratic risk.

by about 3% (0.007 × 0.08/0.018). Collectively, these findings indicate that firms experience increased risk when shareholders are distracted, which reduces creditworthiness. They also lend support to the idea that bondholders price the consequences of adverse managerial decisions in response to a temporary relaxation of monitoring constraints due to shareholder distraction. Although distraction is statistically significant, we note that it explains only a small fraction of the observed changes in firms' credit ratings, distance to default, and firm-level idiosyncratic risk.

5. Conclusion

In this paper, we explore how investor inattention in the equity market affects security prices in the bond market. Drawing on a newly constructed measure of institutional shareholder distraction (Kempf et al. 2017), we examine the effect of exogenous changes in monitoring intensity on the cost of debt. We use a large sample of publicly traded bonds and find a positive and significant relation between institutional shareholder distraction and yield spreads. The effect of inattention on yield spreads continues to hold when we measure distraction using extreme positive and negative industry returns. It is also pronounced in both investment-grade and non-investment-grade bond samples. The inattention–cost of debt relation is also robust to controlling for retail investor inattention, advertising intensity, analyst coverage, and Big 4 auditors. Our results extend prior findings that managers are more likely to engage in value-destroying activities when institutional shareholders are distracted. More importantly, we show that the effect of distraction is not limited to equity valuation—it can also significantly negatively affect bond pricing.

In additional analyses, we examine how firm-level heterogeneity affects the relation between distraction and the cost of debt. We find that the effect of distraction on bond yield spreads is stronger for firms with more powerful CEOs, those with greater information asymmetry, and those facing weaker product market competition. Our results suggest that the effect of inattention on the cost of debt is primarily driven by dual holders directly observing shareholder distraction. Collectively, our findings indicate that a temporary loosening of monitoring constraints by institutional investors has a distinctly negative incremental effect on bondholders.

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Table 1. Variable Definitions

Variable	Description	Data Source(s)
Yield Spread	Difference between weighted average yield to maturity of the firm's outstanding publicly traded debt and yield to maturity on a duration-matched Treasury security. Weight is defined as the amount outstanding for each issue as a fraction of all outstanding traded debt for the firm.	LBFI, FISD, TRACE
Distraction	Measure of institutional shareholder distraction.	KMS (2017)
Distraction (Positive Shock)	Measure of institutional shareholder distraction using positive extreme industry returns.	13-F, Compustat, CRSP
Distraction (Negative Shock)	Measure of institutional shareholder distraction using negative extreme industry returns.	13-F, Compustat, CRSP
Retail Inattention	Measure of retail investor inattention, as per Da et al. (2011).	Google
	Firm-Specific Variables	
Firm Size	Natural logarithm of total assets.	Compustat
Leverage	Long-term debt plus debt in current liabilities, deflated by total assets.	Compustat
Performance	Operating income before depreciation deflated by total assets.	Compustat
Sales Growth	Sales growth rate, defined as the ratio of change in sales to lagged sales.	Compustat
Cash Flow Volatility	Standard deviation of performance over the past 10 years (*t*-1 to *t*-10).	Compustat
Market-to-Book	Market value of equity, computed as the number of common stocks outstanding multiplied by price divided by balance sheet book equity.	Compustat
Asset Intangibility	Following Almeida and Campello (2007), –(1) × [(0.715 × Receivables + 0.547 × Inventory + 0.535 × Capital) + Cash]/Assets.	Compustat
Organizational Complexity	Number of segments within a firm.	Compustat
	Bond-Specific Variables	
Credit Rating	Average of Moody's and S&P bond ratings, computed using a conversion process whereby AAA-rated bonds are assigned a value of 22, and D-rated bonds a value of 1.	LBFI, TRACE
Bond Maturity	Bond issue maturity remaining in years.	LBFI, TRACE
Bond Age	Number of years a bond has been outstanding.	LBFI, TRACE
High Yield	Indicator variable that equals 1 when the weighted average rating is below BBB.	LBFI, TRACE
Callability	Indicator variable that equals 1 when the bond is callable.	LBFI, TRACE
	Governance Variables	
Institutional Ownership	Ratio of shares owned by institutions divided by the total number of shares outstanding.	13-F
Dual Holder Distraction	Measure of institutional dual holder distraction.	13-F/DealScan, CRSP, Compustat
Non-DH Distraction	Measure of institutional non-dual holder distraction.	13-F/DealScan, CRSP, Compustat

Board Co-Option	Fraction of independent directors appointed after a CEO has assumed office.	Coles et al. (2014)
CEO Duality	Dummy variable that equals 1 if the CEO is also the chairperson of the board in a given year.	ISS
CEO Pay Slice	Fraction of the aggregate compensation of the top five executives captured by the CEO.	ExecuComp
CEO Tenure	Number of years the CEO has been employed by the firm.	ISS
CEO Power	Principal component of CEO pay slice, CEO tenure, CEO duality, and board co-option.	Computed
CEO Age	Natural logarithm of CEO age.	ISS
CEO Pay Mix	Top management pay mix, or the fraction of pay for the top five managers received in the form of stock and option grants (SOG), divided by the sum of SOG, salary, and bonus compensation.	ExecuComp
EIndex	Bebchuk, Cohen, and Ferrell (2009) entrenchment index. It varies from 1 to 6, and is constructed by subtracting 1 point from each anti-takeover provision in place (classified boards, golden parachutes, limits to amend charter, limits to amend bylaws, supermajority, and poison pill).	ISS
Dedicated IO	Dedicated institutional ownership following Bushee (1998).	13-F, Bushee (1998)
Quasi-Indexer IO	Quasi-indexer institutional ownership following Bushee (1998).	13-F, Bushee (1998)
Transient IO	Transient institutional ownership following Bushee (1998).	13-F, Bushee (1998)
Long-Term IO	Long-term institutional ownership following Gaspar et al. (2005).	13-F
Short-Term IO	Short-term institutional ownership following Gaspar et al. (2005).	13-F
	Other Variables	
Analyst Following	Number of analysts following the firm in a given year.	I/B/E/S
Analyst Forecast Dispersion	Dispersion in analysts' quarterly earnings per share forecasts, deflated by stock price.	I/B/E/S
High C4	Indicator variable that equals 1 if the firm is in the top tercile of the C4 distribution. We compute C4 by summing the share of sales revenue captured by the four largest firms in a given 3-digit SIC industry.	Compustat
Advertising Intensity	Advertising expenditures scaled by sales.	Compustat
Big 4 Auditor	Indicator variable that equals 1 if the firm is audited by a Big 4 auditor.	Compustat
All Acquisitions	Indicator variable that equals 1 if an acquisition deal took place in a given quarter.	SDC, Capital IQ
Within-Industry Acquisitions	Indicator variable that equals 1 if a within-industry acquisition deal involving an acquirer and a target operating in the same Fama–French 12-industry took place in a given quarter.	SDC, Capital IQ
Diversifying Acquisitions	Indicator variable that equals 1 if a diversifying acquisition deal involving an acquirer and a target operating in different Fama–French 12-industries took place in a given quarter.	SDC, Capital IQ
Dividend Cuts	Indicator variable that equals 1 if the announced dividend in a given quarter is smaller than the dividend in the previous quarter.	Capital IQ
Distance to Default	Measure of market-based default risk estimated using Bharath and Shumway's (2008) model. Higher values indicate lower probabilities of default.	CRSP, Compustat
Idiosyncratic Risk	Standard deviation of the residuals for a given quarter using Carhart's (1997) four-factor model.	CRSP

Notes: This table gives definitions for the variables used in the analysis, along with their data sources. LBFI is the Lehman Brothers Fixed Income database; TRACE is the Trade Reporting and Compliance Engine database provided by the National Association of Securities Dealers; KMS is the distraction data based on Kempf, Manconi, and Spalt (2017), and is provided by Elisabeth Kempf; 13-F is the Thomson Reuters Institutional Shareholder database; CRSP is the Center for Research in Security

Prices database; Compustat is the financial information database; FISD is the Mergent Fixed Income Securities Database; 13-F/DealScan is the correspondence table provided by Yongqiang Chu; Coles et al. (2014) is the co-option data based on Coles, Daniel, and Naveen (2014), and is provided by Lalitha Naveen; ISS is the Institutional Shareholder Services database; SDC is the Securities Data Company database; Capital IQ is the S&P Capital IQ database; ExecuComp is the executive compensation database; and I/B/E/S is the Institutional Brokers' Estimate System database.

Table 2. Descriptive Statistics

Panel A: Summary Statistics

	Mean	Median	Standard Deviation	25th Percentile	75th Percentile
Yield Spread (in basis points)	288	192	303	107	358
Distraction	0.157	0.141	0.080	0.095	0.216
Retail Inattention	3.653	3.827	0.638	3.321	4.116
Distraction (Positive Shock)	0.085	0.065	0.060	0.035	0.139
Distraction (Negative Shock)	0.076	0.060	0.057	0.032	0.105
Dual Holder Distraction	0.009	0.007	0.007	0.003	0.012
Non-DH Distraction	0.150	0.145	0.075	0.093	0.209
			Firm-Specific Variables		
Total Assets ($Million)	11,006	4,403	18,043	1,969	11,323
Leverage	0.330	0.300	0.167	0.214	0.410
Performance	0.036	0.035	0.021	0.024	0.047
Sales Growth	0.028	0.017	0.161	-0.040	0.082
Cash Flow Volatility	0.043	0.031	0.039	0.020	0.051
Market-to-Book	3.105	2.304	4.865	1.469	3.644
Institutional Ownership	0.713	0.733	0.188	0.608	0.839
High C4	0.318	0.000	0.466	0.000	1.000
Dividend Cuts	0.004	0.000	0.061	0.000	0.000
Distance to Default	5.496	5.268	3.496	3.199	7.685
Idiosyncratic Risk	0.018	0.015	0.011	0.011	0.022
All Acquisitions	0.186	0.000	0.389	0.000	0.000
Within-Industry Acquisitions	0.067	0.000	0.249	0.000	0.000
Diversifying Acquisitions	0.119	0.000	0.324	0.000	0.000
			Bond-Specific Variables		
Credit Rating	BB+	BBB-	A/B-	B+	A–
Bond Maturity	9.147	7.750	5.438	5.417	11.600
Bond Age	3.391	2.888	2.445	1.583	4.562
High Yield	0.420	0.000	0.494	0.000	1.000
Callability	0.726	1.000	0.446	0.000	1.000
			Standardized Interaction (Continuous) Variables		
CEO Power	0.000	-0.025	1.000	-0.729	0.775
Asset Intangibility	0.000	-0.104	1.000	-0.718	0.636
Organizational Complexity	0.000	-0.313	1.000	-0.989	0.363
Analyst Forecast Dispersion	0.000	-0.168	1.000	-0.231	-0.007

Notes: Variable definitions are provided in Table 1. Panel A provides descriptive statistics for the key variables used in our analyses. The overall sample contains 21,345 firm-quarter observations from 1,094 firms over the 1993–2015 period.

Panel B: Industry Classifications

FF 12	Description	Observations	Percentage (%)	Cumulative (%)
1	Consumer Non-Durables	2,066	9.68	9.68
2	Consumer Durables	332	1.56	11.23
3	Manufacturing	5,263	24.66	35.89
4	Energy	1,381	6.47	42.36
5	Chemicals and Allied Products	1,532	7.18	49.54
6	Business Equipment	1,957	9.17	58.71
7	Telecommunications	922	4.32	63.03
9	Wholesale, retail and Services	3,232	15.14	78.17
10	Healthcare	1,495	7.00	85.17
12	Other	3,165	14.83	100
Total		21,345	100	

Notes: Panel B reports descriptive statistics using Fama–French (FF) 12-industry classification codes. The overall sample contains 21,345 firm-quarter observations from 1,094 firms over the 1993–2015 period. Other industries include Mines, Construction, Building Material, Transportation, Hotels, Business Services, and Entertainment.

Panel C: Selected Correlations

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1. Yield Spread	**1.00**																			
2. Distraction	**0.05**	**1.00**																		
3. Dual Holder Distraction	**0.18**	**0.51**	**1.00**																	
4. Non-DH Distraction	**0.02**	**0.74**	**0.59**	**1.00**																
5. Firm Size	**-0.28**	**-0.04**	**-0.08**	**-0.04**	**1.00**															
6. Leverage	**0.29**	**0.05**	**0.24**	**0.04**	**-0.16**	**1.00**														
7. Performance	**-0.28**	0.00	**-0.11**	0.00	**0.02**	**-0.05**	**1.00**													
8. Sales Growth	-0.01	0.01	0.01	**0.02**	**-0.03**	**0.03**	**0.24**	**1.00**												
9. Cash Flow Volatility	**0.20**	**-0.02**	**-0.04**	**-0.02**	**-0.11**	**0.13**	-0.01	**0.04**	**1.00**											
10. Market-to-Book	**-0.14**	0.00	**-0.05**	0.00	**0.04**	**-0.02**	**0.16**	**0.02**	**0.05**	**1.00**										
11. Credit Rating	**-0.59**	**0.04**	**-0.10**	**0.06**	**0.38**	**-0.34**	**0.32**	**-0.04**	**-0.35**	**0.08**	**1.00**									
12. Bond Maturity	**-0.16**	**0.06**	0.00	**0.06**	**0.18**	**-0.11**	**0.03**	0.00	**-0.11**	-0.01	**0.24**	**1.00**								
13. Bond Age	**-0.05**	-0.01	**-0.04**	-0.01	**0.19**	**-0.16**	0.01	**-0.05**	**-0.13**	**0.03**	**0.19**	**0.12**	**1.00**							
14. High Yield	**0.61**	-0.02	**0.13**	**-0.03**	**-0.32**	**0.38**	**-0.25**	**0.04**	**0.25**	**-0.10**	**-0.81**	**-0.26**	**-0.19**	**1.00**						
15. Callability	**0.23**	**-0.10**	**-0.03**	**-0.12**	**0.11**	**0.09**	**-0.05**	-0.01	0.00	**-0.03**	**-0.15**	**-0.04**	**0.07**	**0.24**	**1.00**					
16. Inst Ownership	**0.12**	**-0.04**	**-0.05**	**-0.08**	**-0.12**	**-0.14**	**-0.06**	0.01	**0.06**	**-0.03**	**-0.22**	**-0.07**	**0.02**	**0.12**	**0.10**	**1.00**				
17. CEO Power	**0.04**	**0.05**	**0.03**	**0.03**	-0.01	**-0.06**	-0.01	0.01	0.01	**-0.05**	-0.02	-0.02	**-0.04**	**0.04**	**-0.05**	0.02	**1.00**			
18. Asset Intangibility	**-0.03**	0.01	**0.11**	-0.01	**0.11**	**0.10**	**-0.04**	**-0.03**	**-0.22**	**-0.03**	**0.07**	**-0.04**	**-0.04**	**-0.04**	**0.08**	**0.03**	-0.01	**1.00**		
19. Org Complexity	**-0.13**	**0.02**	0.01	0.00	**0.23**	**-0.16**	**-0.07**	**-0.04**	**-0.19**	-0.01	**0.24**	**0.06**	**0.17**	**-0.22**	0.00	**0.03**	0.00	**0.21**	**1.00**	
20. Analyst Forecast Disp.	**0.16**	0.00	**0.04**	0.00	**-0.04**	**0.11**	**-0.12**	-0.01	**0.10**	**-0.06**	**-0.16**	**-0.03**	-0.01	**0.15**	-0.01	**-0.03**	-0.02	**-0.08**	**-0.05**	**1.00**
21. High C4	**-0.05**	-0.01	-0.01	-0.01	**0.08**	**-0.04**	**0.04**	-0.01	**-0.13**	0.01	**0.13**	**0.04**	**0.11**	**-0.12**	**0.05**	0.00	**-0.05**	**0.09**	**0.19**	**-0.04**

Notes: Variable definitions are provided in Table 1. Panel C provides data on the correlations between select variables. The dataset consists of 21,345 quarter-year observations from 1,094 firms over the 1993–2015 period. Correlation coefficients in bold indicate significance at the 1% level.

Table 3. Inattention and the Cost of Debt

	Primary Specification	Extreme Positive Returns	Extreme Negative Returns	Investment-Grade	Non-Investment-Grade	Retail Investor Inattention
	(1)	(2)	(3)	(4)	(5)	(6)
Distraction	0.258***			0.274***	0.286**	
	(4.866)			(6.612)	(2.391)	
Distraction (Positive Shock)		0.159**				
		(2.319)				
Distraction (Negative Shock)			0.249***			
			(2.595)			
Retail Inattention						-0.001
						(-0.607)
Firm Size	-0.057**	-0.056**	-0.055**	-0.114***	0.075*	0.068
	(-2.207)	(-2.145)	(-2.091)	(-3.230)	(1.775)	(0.930)
Leverage	0.527***	0.523***	0.523***	0.247***	0.480***	0.666***
	(5.353)	(5.311)	(5.341)	(2.894)	(2.995)	(2.673)
Performance	-3.303***	-3.322***	-3.318***	-3.007***	-3.126***	-1.274
	(-7.685)	(-7.650)	(-7.608)	(-6.139)	(-4.736)	(-0.901)
Sales Growth	0.046**	0.045**	0.053**	0.039	0.030	-0.056
	(2.031)	(1.969)	(2.292)	(1.567)	(0.769)	(-0.605)
Cash Flow Volatility	0.294	0.273	0.363	-0.219	1.288	4.942**
	(0.531)	(0.488)	(0.646)	(-0.367)	(1.436)	(2.499)
Market-to-Book	-0.003**	-0.003**	-0.003***	-0.002**	-0.003*	-0.001
	(-2.541)	(-2.578)	(-2.726)	(-2.205)	(-1.722)	(-0.488)
Credit Rating	-0.034***	-0.034***	-0.034***	-0.101***	-0.015	-0.006
	(-3.470)	(-3.432)	(-3.475)	(-10.739)	(-1.311)	(-0.214)
Bond Maturity	0.009***	0.009***	0.009***	0.017***	-0.014	0.016**
	(3.276)	(3.275)	(3.352)	(8.502)	(-1.615)	(2.501)
Bond Age	0.031***	0.031***	0.030***	0.027***	0.030***	0.053***
	(6.898)	(6.947)	(6.850)	(5.795)	(2.811)	(3.771)
High Yield	0.367***	0.372***	0.368***			0.382***
	(9.203)	(9.307)	(9.161)			(5.046)
Callability	0.135***	0.135***	0.134***	0.143***	0.215***	0.170
	(4.441)	(4.394)	(4.402)	(3.617)	(2.982)	(1.589)
Institutional Ownership	-0.374***	-0.375***	-0.380***	-0.141	-0.550***	-0.220
	(-4.941)	(-4.918)	(-5.056)	(-1.592)	(-5.034)	(-0.907)
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,345	20,981	20,905	12,329	8,899	3,103
Adjusted R-squared	0.744	0.743	0.746	0.783	0.487	0.740

Notes: Variable definitions are provided in Table 1. This table provides coefficient estimates from regressing the log of corporate yield spreads on inattention (distraction, distraction (positive shock), distraction (negative shock), and retail inattention) and various firm- and debt-specific controls. The data cover the 1993–2015 period. *t*-statistics based on standard errors adjusted for clustering by firm are in parentheses. All specifications include firm and industry × quarter fixed effects. Industry dummies are based on Fama–French 12-industry classification codes.

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$

Table 4. Distraction, Firm Heterogeneity, and the Cost of Debt

	CEO Power	Information Asymmetry			Product Market Competition
	Principal Component	Asset Intangibility	Analyst Forecast Dispersion	Organizational Complexity	C4
	(1)	(2)	(3)	(4)	(5)
Distraction	0.016***	0.022***	0.021***	0.018***	0.016***
	(2.719)	(4.987)	(4.955)	(3.761)	(2.913)
CEO Power	-0.006				
	(-0.506)				
Distraction × CEO Power	0.011**				
	(2.484)				
Asset Intangibility		0.013			
		(0.813)			
Distraction × Asset Intangibility		0.011***			
		(2.735)			
Analyst Forecast Dispersion			0.024		
			(1.516)		
Distraction × Forecast Disp.			0.007**		
			(2.557)		
Organizational Complexity				0.026*	
				(1.725)	
Distraction × Org. Complexity				0.007**	
				(2.085)	
High C4					0.027
					(1.257)
Distraction × High C4					0.014**
					(2.058)
Firm Size	-0.024	-0.066**	-0.055**	-0.056*	-0.058**
	(-0.596)	(-2.476)	(-2.097)	(-1.847)	(-2.242)
Leverage	0.576***	0.515***	0.514***	0.528***	0.524***
	(4.080)	(5.118)	(5.096)	(4.853)	(5.335)
Performance	-3.138***	-3.253***	-3.165***	-3.164***	-3.311***
	(-5.372)	(-7.420)	(-7.317)	(-6.401)	(-7.711)
Sales Growth	0.059*	0.051**	0.041*	0.041	0.047**
	(1.833)	(2.235)	(1.777)	(1.624)	(2.055)

Cash Flow Volatility	0.362	0.385	0.320	0.540	0.307
	(0.423)	(0.672)	(0.570)	(0.864)	(0.555)
Market-to-Book	-0.002	-0.003**	-0.003***	-0.003**	-0.003**
	(-1.334)	(-2.350)	(-2.753)	(-2.567)	(-2.520)
Credit Rating	-0.023*	-0.035***	-0.035***	-0.028***	-0.034***
	(-1.729)	(-3.562)	(-3.560)	(-2.698)	(-3.475)
Bond Maturity	0.013***	0.009***	0.009***	0.009***	0.009***
	(3.658)	(3.395)	(3.384)	(3.143)	(3.299)
Bond Age	0.031***	0.030***	0.031***	0.031***	0.031***
	(4.664)	(6.759)	(6.978)	(6.463)	(6.913)
High Yield	0.389***	0.361***	0.366***	0.372***	0.368***
	(7.182)	(9.012)	(9.064)	(8.328)	(9.215)
Callability	0.087*	0.131***	0.134***	0.134***	0.135***
	(1.770)	(4.268)	(4.334)	(4.075)	(4.465)
Institutional Ownership	-0.038	-0.404***	-0.360***	-0.430***	-0.373***
	(-0.326)	(-5.342)	(-4.675)	(-5.184)	(-4.927)
CEO Age	-0.044*				
	(-1.803)				
Industry × Quarter FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	11,037	20,746	20,870	18,544	21,345
Adjusted R-Squared	0.717	0.747	0.743	0.738	0.744

Notes: Variable definitions are provided in Table 1. This table provides coefficient estimates from regressing the log of corporate yield spreads on shareholder distraction, its interactions with CEO power, information asymmetry, and product market competition, and various control variables. Interaction terms are standardized to have a mean of 0 and a standard deviation of 1. The data cover the 1993–2015 period. *t*-statistics based on standard errors adjusted for clustering by firm are in parentheses. All models include firm and industry × quarter fixed effects. Industry dummies are based on Fama–French 12-industry classification codes.

***p < 0.01, **p < 0.05, *p < 0.10

Table 5. Distracted Dual Holders, Distracted Non-Dual Holders, and the Cost of Debt

	Dual Holders	Non-Dual Holders	Dual and Non-Dual Holders
	(1)	(2)	(3)
Dual Holder Distraction	2.533***		2.554***
	(2.711)		(3.002)
Non-DH Distraction		0.159***	
		(2.768)	
Non-DH Distraction (Orthogonalized)			0.016
			(0.161)
Firm Size	-0.061**	-0.057**	-0.061**
	(-2.262)	(-2.205)	(-2.255)
Leverage	0.619***	0.528***	0.620***
	(6.613)	(5.366)	(6.596)
Performance	-3.377***	-3.303***	-3.378***
	(-8.427)	(-7.687)	(-8.414)
Sales Growth	0.058***	0.047**	0.058***
	(2.680)	(2.069)	(2.681)
Cash Flow Volatility	-0.040	0.297	-0.041
	(-0.083)	(0.535)	(-0.084)
Market-to-Book	-0.002*	-0.003**	-0.002*
	(-1.765)	(-2.539)	(-1.767)
Credit Rating	-0.039***	-0.034***	-0.039***
	(-3.795)	(-3.484)	(-3.791)
Maturity	0.009***	0.009***	0.009***
	(3.344)	(3.276)	(3.343)
Bond Age	0.029***	0.031***	0.030***
	(6.729)	(6.894)	(6.727)
High Yield	0.340***	0.367***	0.340***
	(8.099)	(9.208)	(8.118)
Callability	0.113***	0.135***	0.113***
	(4.076)	(4.443)	(4.082)
Institutional Ownership	-0.408***	-0.374***	-0.408***
	(-5.220)	(-4.930)	(-5.221)
Industry × Quarter FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	19,086	21,343	19,086
Adjusted R-Squared	0.764	0.743	0.764
t-test for difference between dual and non-dual holders		2.374**	
		(2.536)	

Notes: Variable definitions are provided in Table 1. This table provides coefficient estimates from regressing the log of yield spreads on institutional shareholder distraction for dual and non-dual holders. The data cover the 1993–2015 period. *t*-statistics based on standard errors adjusted for clustering by firm are in parentheses. All specifications include firm and industry × quarter fixed effects. Industry dummies are based on Fama–French 12-industry classification codes.

***p < 0.01, **p < 0.05, *p < 0.10

Table 6. Distraction and the Cost of Debt: Evidence from Corporate Actions

	All Acquisitions	Within-Industry Acquisitions	Diversifying Acquisitions	Dividend Cuts
	(1)	(2)	(3)	(4)
Distraction	0.019***	0.020***	0.021***	0.023***
	(4.432)	(4.510)	(4.892)	(4.671)
Acquisitions	-0.015*	-0.002	-0.020*	
	(-1.738)	(-0.156)	(-1.891)	
Distraction × Acquisitions	0.006	0.017*	-0.002	
	(0.771)	(1.735)	(-0.213)	
Dividend Cuts				0.175***
				(3.973)
Distraction × Dividend Cuts				0.037
				(1.165)
Firm Size	-0.057**	-0.057**	-0.057**	-0.024
	(-2.192)	(-2.212)	(-2.211)	(-0.756)
Leverage	0.525***	0.527***	0.525***	0.602***
	(5.333)	(5.353)	(5.326)	(4.831)
Performance	-3.305***	-3.303***	-3.303***	-2.672***
	(-7.686)	(-7.685)	(-7.682)	(-5.302)
Sales Growth	0.047**	0.046**	0.047**	0.036
	(2.051)	(2.036)	(2.055)	(1.278)
Cash Flow Volatility	0.291	0.292	0.294	0.316
	(0.524)	(0.526)	(0.530)	(0.451)
Market-to-Book	-0.003**	-0.003**	-0.003**	-0.003**
	(-2.550)	(-2.542)	(-2.536)	(-2.243)
Credit Rating	-0.034***	-0.034***	-0.034***	-0.018
	(-3.470)	(-3.468)	(-3.469)	(-1.568)
Bond Maturity	0.009***	0.009***	0.009***	0.008**
	(3.269)	(3.280)	(3.277)	(2.329)
Bond Age	0.031***	0.031***	0.031***	0.036***
	(6.896)	(6.898)	(6.894)	(6.562)
High Yield	0.367***	0.367***	0.367***	0.390***
	(9.194)	(9.203)	(9.202)	(8.546)
Callability	0.135***	0.135***	0.135***	0.087**
	(4.452)	(4.444)	(4.446)	(2.160)
Institutional Ownership	-0.375***	-0.375***	-0.374***	-0.256**
	(-4.948)	(-4.946)	(-4.943)	(-2.330)
Industry × Quarter FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	21,345	21,345	21,345	15,780
Adjusted R-Squared	0.744	0.744	0.744	0.703

Notes: Variable definitions are provided in Table 1. This table gives the coefficient estimates from regressing the log of corporate yield spreads on shareholder distraction, observable corporate actions (all acquisitions, within-industry acquisitions, diversifying acquisitions, dividend cuts), and various control variables. Continuous variables in interaction terms are standardized to have a mean of 0 and a standard deviation of 1. The data cover the 1993–2015 period. *t*-statistics based on standard errors adjusted for clustering by firm are in parentheses. All specifications include firm and industry × quarter fixed effects. Industry dummies are based on Fama–French 12-industry classification codes.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$

Table 7. Distraction and the Cost of Debt: Firms' Credit Risk

Panel A: Credit Ratings		Panel B: Distance to Default		Panel C: Idiosyncratic Risk	
Distraction	-0.336**	Distraction	-1.019***	Distraction	0.007***
	(-2.247)		(-5.163)		(8.592)
Firm Size	1.452***	Firm Size	-0.467***	Firm Size	-0.001**
	(8.501)		(-4.534)		(-2.526)
Leverage	-4.498***	Leverage	-4.244***	Leverage	0.008***
	(-8.041)		(-11.575)		(7.774)
Performance	15.770***	Performance	10.005***	Performance	-0.003***
	(6.697)		(4.067)		(-4.505)
Sales Growth	-0.718***	Market-to-Book	0.008	ROE Volatility	0.001**
	(-6.848)		(1.284)		(2.382)
CF Volatility	-5.868*	Operating Margin	0.225	Market-to-Book	-0.000
	(-1.819)		(0.550)		(-0.312)
Market-to-Book	-0.001	Coverage Ratio	0.027***	Dividend Dummy	-0.002***
	(-0.178)		(6.510)		(-4.303)
Inst. Ownership	-0.381	Loss Dummy	0.440**	Firm Age	-0.002**
	(-0.724)		(2.527)		(-2.478)
		Beta	-0.479***	Diversification	-0.000
			(-10.009)		(-0.207)
		Idiosyncratic Risk	-52.916***	Tangibility	-0.001
			(-14.485)		(-0.644)
Ind.×Quarter FE	Yes	Ind.×Quarter FE	Yes	Ind.×Quarter FE	Yes
Firm FE	Yes	Firm FE	Yes	Firm FE	Yes
Observations	21,345	Observations	20,874	Observations	20,675
Adj. R-squared	0.901	Adj. R-squared	0.787	Adj. R-squared	0.660

Notes: This table gives the coefficient estimates from regressing credit ratings, distance-to-default (higher values indicate lower probability of default), and idiosyncratic risk on institutional shareholder distraction and various controls motivated by prior research (e.g., Kaplan and Urwitz 1979; Blume, Lim, and MacKinlay 1998; Bhojraj and Sengupta 2003; Ferreira and Laux 2007; Hsu et al. 2015). Operating Margin is the ratio of operating income to sales; Coverage Ratio is operating income before depreciation divided by interest expense; Loss Dummy is an indicator that equals 1 if a firm reports a loss in a given quarter; Beta is the equity return beta; and Idiosyncratic Risk is the standard deviation of the residuals for a given quarter using Carhart's (1997) four-factor model. ROE volatility is the variance of quarterly return-on-equity over 3 years; Dividend Dummy is an indicator variable that equals 1 if the firm pays a dividend in a given quarter; Firm Age is the number of years since the stock's inclusion in the CRSP database; and Diversification is an indicator variable that equals 1 if a firm operates in multiple segments in a given quarter. The data cover the 1993–2015 period. *t*-statistics based on standard errors adjusted for clustering by firm are in parentheses. All specifications include firm and industry × quarter fixed effects. Industry dummies are based on Fama–French 12-industry classification codes.

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$