Do Firms Always Respond Strategically to Organized Labor?

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Abstract

We explore if religiosity influences the strategic dynamic between firms and organized labor. Our findings suggest that firms in more religious locations are more likely to achieve cooperative outcomes with labor: union shareholder activists are more likely to obtain a negotiated settlement with targeted firms in religious locations, and that religiosity moderates the positive impact of union power on work stoppages. In subsequent analyses, the negative union effect on CEO compensation documented in prior research diminishes for firm located in counties with greater religiosity. Consistently, religiosity significantly moderates corporate financial decisions identified by prior research as strategic responses to strong unions. In line with these findings, we find that religiosity significantly moderates the positive union effect on corporate bond yield spreads.

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1. Introduction

An extensive body of accounting and finance research provides evidence that managers attempt to improve their bargaining position over organized labor and shelter corporate resources by strategically employing corporate policies to paint a negative picture of the firm's financial outlook. These choices include lower executive pay (Huang, Jiang, Lie and Que, 2017), greater debt (Bronars and Deere, 1991; Matsa, 2010), lower cash holdings (Klasa, Maxwell and Ortiz-Molina, 2009), lower dividends (DeAngelo and DeAngelo, 1991; Chino, 2016), and selective information disclosure (Hilary, 2006; Bova, 2013) among others. However, a growing literature suggests that corporate decisions are also influenced by the social norms associated with the firm's environment. In particular, a rich stream of sociology and psychology research demonstrates that religiosity is associated with social norms that are expressed by sharing, donating, and helping others (e.g. Stamatoukalis, 2013). Religious affiliation affects individual decisions (e.g., Lehrer 2004) as well as macroeconomic development (e.g., Guiso, Sapienza, and Zingales, 2003; Barro and McCleary, 2003) through rules and standards that are understood by members of the religious group (Cialdini and Trost, 1998). Because social norms often relate to a perceived social pressure to engage or not engage in specific behaviors (Ajzen, 1991), it is plausible that the religiosity of the environment in which the firm operates plays a significant role in the strategic dynamic between management and its stakeholders including unions.

Religiosity can affect how managers engage with union stakeholders in several ways. First, religious social norms emphasize ethical behavior (Weaver and Agle, 2002), potentially reducing the incentive to mischaracterize the firm's underlying financial condition when faced with strong organized labor. An array of prior research reports greater transparency for firms in locations

where religiosity is higher. Dyreng, Mayew and Williams (2012) find that firms headquartered in counties with high religiosity are less likely to restate prior earnings and more likely to disclose negative news. Similarly, Grullon, Kanatas, and Weston (2010) and McGuire, Omer and Sharp (2012) report that companies are less likely to experience financial reporting irregularities when located in more religious communities. Consistent with the view that religiosity mitigates managers' incentives to hide bad news, Callen and Fang (2015) document that firms headquartered in counties with higher religiosity have lower stock price crash risk. Second, fairness is an integral part of ethical behavior. This religious social norm discourages managers to abuse their control over corporate resources to take advantage of other stakeholders (He and Hu, 2016). For example, Grullon et al. (2010) provide evidence that firms headquartered in religious locations are less likely to engage in option backdating and to grant excessive compensation package to their managers. Therefore, religiosity could reduce the tension between management and unions reducing the need to employ strategic corporate policy choices. Finally, religiosity fosters trust between firms and market participants. Although the ethical behaviors associated with religiosity contribute to this trust, honesty is also an important factor (Perrin, 2000). El Ghoul, Guedhami, Ni and Saadi (2012) argue that greater trust builds favorable perceptions of the firm among potential investors, and the resulting increase in the number of potential investors to finance the firm reduces the cost of equity capital. Therefore, it is plausible that trust built on religiosity extends to other stakeholders, thereby increasing the potential of cooperative outcomes between organized labor and management.

In initial analyses, we provide direct evidence that managers in more religious locations are likely to cooperatively engage with unions when there is a clear non-cooperative alternative. We investigate if union-sponsored shareholder resolutions are more likely to be withdrawn when the target firm is located in more religious locations. Our results demonstrate that the propensity

of a negotiated settlement resulting in a withdrawn proposal increases in local religiosity, particularly among proposals addressing executive compensation issues. In a similar vein, we find that religiosity significantly moderates the positive impact of union power on work stoppages. Next, we investigate the implications of these findings on the results of prior unionization research. We find that religiosity significantly moderates the negative association between the unionization rate and executive equity compensation, arguably the most discretionary component of executive pay. These results persist in series of robustness tests, including using the lack of state right-to-work (RTW) laws as a proxy for union bargaining strength. Relatedly, we also find that religiosity significantly moderates strategic corporate financing and investment decisions examined in prior unionization research, including leverage, inventories, cash holdings, and R&D expenditure. Consistent with these findings, we document that religiosity significantly moderates the positive union effect on the cost of corporate debt capital, providing evidence that the moderating effect of religiosity on the dynamic between unions and management extends to market valuation.

Our findings contribute to the organized labor and religiosity literatures. First, our results show that local religious characteristics play a role in how managers engage with unions. To the best of our knowledge, our study is the first to reveal that management response to the presence of a strong union varies with underlying local social norm characteristics. Further, our results contribute to a multidisciplinary literature on the effects of religiosity. Extending an array of findings in the psychology and sociology literatures demonstrating that religiosity moderates decision-making at the individual level, our findings provide evidence that religiosity likewise plays a significant moderating role at the corporate level, thereby providing insight on the role played by social norms in the choices made by managers as they engage with unions.

We organize the rest of the paper as follows. Section 2 surveys the unionization and religiosity literatures. Section 3 develops the hypotheses along with the discussion of data employed in this study. Sections 4-5 present our empirical results. Finally, Section 6 concludes.

2. Literature Review

2.1 Strategic response to organized labor

An established literature demonstrates that managers strategically employ corporate decisions to shelter corporate resources from the demands of organized labor. This stream of research identifies a host of corporate policies that are associated with union presence, including CEO compensation contracting, payout policy, cash holdings, and debt policy. These choices allow managers shelter corporate resources by providing credible evidence that firms are unable to meet union demands. For example, Huang et al. (2017, p. 557) surmise that "unions might interpret high executive compensation as a positive indicator of the firm's expected future financial performance and therefore demand wage increases", while Klasa et al. (2009, p. 423) argue that "firms facing stronger unions strategically maintain low cash balances to gain bargaining advantages over organized labor." In early work, DeAngelo and DeAngelo (1991) show that steel manufacturers significantly reduce dividends prior to their negotiations with unions, while Bronars and Deere (1991) show that firms credibly reduce funds potentially available to unions by issuing debt, thereby sheltering income from union demands. Recent work continues to provide corroborating evidence. For example, Klasa et al. (2009) provide evidence that firms in more unionized industries generally hold less cash, that managers adjust cash holdings downwards prior to negotiations with organized labor, and that higher cash holdings are associated with a greater probability of labor strikes. In a similar vein, Matsa (2010) provides evidence that managers

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strategically use debt financing when corporate liquidity is high to improve their bargaining position with workers. Chino (2016) finds that managers of highly profitable firms strategically employ dividend policy to shield the firm from rent extraction by unions, while Hamm, Jung, Lee, and Yang (2021) document that firms with strong organized labor are more likely to stockpile inventory as a protection against labor risk brought by labor strikes. Prior research also provides evidence that managers are reluctant to share information with unions, therefore resulting in higher information asymmetry (Hilary, 2006; Bova, 2013; Chung, Lee, Lee, and Sohn, 2016). Overall, these studies highlight that corporate financial decisions manifest the contentious relationship between management and organized labor.

2.2 Religiosity, culture, and corporate decisions

A rich stream of social science research supports the view that religion influences individual decision-making. Psychology and sociology research supports the view that the cognitive effects of religion are more broadly related to prosocial, or ethical, behaviors.[1] Priming is defined by "exposure to a stimulus [that] influences response to a later stimulus."[2] Prior research associates religious primes with greater prosociality, such as generosity and charity (Pichon, Boccato and Saroglou, 2007; Preston et al., 2013), cooperation (Ahmed and Salas, 2013), and nonretaliation (Saroglou, Corneille, and Van Cappellen, 2009). For example, Van Cappellen, Saroglou and Toth-Gauthier (2016) show that Sunday mass attendance enhances the relation between religion and prosocial behavior because such church attendance boosts one's religious primes. The effects of religiousness at the individual level extend to the broader macroeconomic environment. As Dyreng et al. (2012) point out, the notion that religion plays an underlying role

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[1] For example, see Preston, Salomon and Ritter (2013), Saroglou (2013), Norenzayan and Shariff (2008), and Shariff and Norenzayan (2007).
[2] For more detail, see https://explorable.com/priming.

in economic development dates to Weber (1905), who argues that Protestantism's emphasis on individual achievement played a role in fostering the capitalistic spirit. Barro and McCleary (2003) argue that religion fosters beliefs that affect personal traits such as work ethic.[3]

Extant research uses religiosity of the firm's headquarter county to proxy for the religious influence within the firm. To the extent the manager shares her communities' religiosity, it is plausible that she will be guided by the social norms of her community. However, this assumption raises a natural question: what if the manager is not religious? Social norm theory predicts that individuals conform to the perceived set of values, behaviors, and attitudes of their peers and other community members (Kohlberg, 1984), and as a result, social norms often associate with a perceived social pressure to engage or not engage in specific behaviors (Ajzen, 1991). Individuals look to social norms to assess how to understand and effectively respond to social situations particularly when there is greater uncertainty (Cialdini, 2001). Bicchieri (2006) posits that individuals perceive the need to apply (i.e. activate) a behavioral norm to a given social situation if they believe that many community members conform to the social norm and that the community expects compliance to that norm in similar situations. As such, Dyreng et al. (2012) argue that the religiousness of the community surrounding a firm's headquarters reliably measures the norms of the social environment in which the firm operates, and repeated interactions between the managers and community gives rise to behaviors associated with those norms regardless of the manager's own degree of religiousness.

There are two primary reasons why religiosity may affect corporate choices. First, highly religious individuals value ethical behaviors including fairness, honesty, and reciprocity (e.g.,

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[3] Other examples of individual decisions include marital choices (e.g., Lehrer and Chiswick, 1993), education, wages, and wealth (e.g., Lehrer, 2004), investors' risk-taking on investments (e.g, Kumar, Page and Spalt, 2011), and propensity to gamble (e.g., Diaz, 2000).

Weaver and Agle, 2002; Vitell and Paolillo, 2003; Perrin, 2000) and are less likely to be involved in inappropriate behaviors (e.g., Longenecker, McKinney, and Moore, 2004; Randolph-Seng and Nielsen, 2007). In the corporate context, Dyreng et al. (2012) find that firms in highly religious counties provide more transparent financial reporting which results in less likelihood of restatements. Similarly, McGuire et al. (2012) report that financial reporting irregularities are less likely for firms surrounded by religious populations. Because high quality financial reporting reduces information asymmetry, the likelihood of stock price crash risk should be lower for firms with higher quality financial reporting. Consistent with this view, Callen and Fang (2015) report a negative relationship between religiosity and stock price crash risk. Second, honesty and ethical behavior lead to greater trust. El Ghoul et al. (2012) argue that religion promotes trust between managers and market participants and report that the cost of equity capital is lower for firms in locations where religiosity is higher. In a similar vein, fairness is an integral part of the ethical behaviors espoused by most religions. Acting fairly discourages managers to use their power over corporate resources to exploit other stakeholders (He and Hu, 2016). In line with this view, Grullon et al. (2010) document that firms headquartered in counties with greater religiosity are less likely to engage in option backdating and to grant excessive executive compensation to their managers. The pricing of the firm's securities reflects the effects of religiosity. Jiang, John, Li and Qian (2018) provide evidence that firms in counties with greater religiosity have higher bond ratings and a lower cost of debt capital, with a pronounced association among firms that have greater information asymmetry and during recessions. Along the same lines, religious adherence is associated with lower interest rates on bank loans and better non-price terms including fewer covenant constraints and larger loan sizes (He and Hu, 2016).

3. Hypotheses and Data

3.1 Hypotheses

We explore two broad research questions. First, we explore if location-based religious adherence is directly associated with cooperative outcomes in situations where there is a clear non-cooperative alternative. To answer this question, we examine the outcomes of shareholder resolutions submitted by unions for targeted firms to change in their corporate governance structure. According to SEC's Rule 14a-8, shareholder proposals are a means for dispersed shareholders to communicate a consensus of their views to management. Unions have a long-standing history of shareholder activism with unique dual stakeholder roles of collective bargaining agents and shareholders through their pension funds. [4] While a multi-decade shareholder activism literature stemming to the 1990s analyzes the antecedents of activism, voting outcomes of resolutions at the annual meeting, and long term consequences of activism (e.g. Denes, Karpoff and McWilliams, 2017), much less attention has focused on proposals that are withdrawn prior to the meeting[5]. The sponsor's choice to withdraw typically follows successful private negotiations between the sponsor and the targeted firm's management (Matsusaka, Ozbas and Yi, 2021; Bauer, Moers and Viehs, 2015). To the extent that religiosity facilitates cooperation and altruism, union-sponsored resolutions may be more likely to be withdrawn if the targeted firm is located in environments with greater religiosity:

Hypothesis 1a: *Religiosity positively moderates the likelihood that union-sponsored shareholder resolutions are withdrawn.*

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[4] The AFL-CIO (https://aflcio.org/what-unions-do/social-economic-justice/shareholder-advocacy) frames its activism as "Working people are shareholders in corporations through their retirement plans and as individual investors. The submission of shareholder resolutions is an important right that investors have to communicate with each other and the companies that they own."

[5] Bauer et al. (2015) find that during the sample period of 1997-2009, more than 20 percent of US shareholder proposals were withdrawn, suggesting that withdrawn proposals are non-trivial.

In a similar vein, we investigate if religiosity plays a moderating role in union strikes. Unions legally strike for economic reasons (e.g. higher wages or benefits), to protest an unfair labor practice, or if the employer refuses to bargain with the union or other violation of the National Labor Relations Act.[6] Fundamentally, a union's potential gains from achieving its objectives from a strike, relative to its potential losses related to lost wages and possible replacement, are increasing in the proportion of represented workers at that firm. If religiosity fosters a spirit of cooperation with the firm's employee claimants that increases the likelihood of successful negotiation that averts a work stoppage, then religious observance should moderate the positive effect of the unionization rate on the likelihood of a strike:

Hypothesis 1b: *Religiosity negatively moderates the likelihood of a labor strike.*

Our second set of research questions explores if moderating effect of religious adherence has a bearing on prior empirical findings in the unionization literature. To investigate if religiosity affects the choices made by firms to gain concessions from unions, we begin our analyses with executive compensation which can be quickly modified in response to stakeholder pressure compared to other financial decisions such as balance sheet components. Huang et al. (2017) provide evidence of a significant negative empirical association between the unionization and CEO compensation, particularly with the equity component which they argue is the most discretionary form of compensation. Specifically, we expect firms in more religious locations are less likely to use top management compensation as a strategic response to union pressure:

Hypothesis 2a: *Religiosity positively moderates the negative association between the unionization rate and executive pay.*

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[6] For more detail, see https://www.nolo.com/legal-encyclopedia/strikes.html

We revisit the findings of Matsa (2010), who argues that firms strategically attempt to improve their negotiating position by reducing their financial flexibility when faced with strong unions. In Matsa's framework, profit variability is a key consideration as the incentive to gain bargaining advantage increases in the likelihood of financial distress. Matsa (2010) provides empirical evidence that firms with greater exposure to union bargaining power have higher leverage and use more near-term debt, and these effects increase in profit variability. Based on the premise that firms may increase inventories as a way to counteract workers' threats to withhold labor services by increasing the relative costs borne by workers in the event of a strike, Matsa (2010) likewise argues that the union effect on corporate policies should extend to inventory decisions:[7]

Hypothesis 2b: *Religiosity negatively moderates the positive associations between the unionization rate and leverage, proportion of short-term debt, and inventory.*

We reexamine the findings of Klasa et al. (2009), who argue firms have a strategic incentive to hold less cash when unionization is high. Klasa et al. (2009) document a significantly negative cross-sectional union effect on corporate cash holdings and show that this association is pronounced for firms that are likely to place more importance in improving their bargaining position over unions. We expect firms in more religious locations to significantly reduce the use of cash policy as a strategic response to union pressure:

Hypothesis 2c: *Religiosity positively moderates the negative association between the unionization rate and cash holdings.*

Prior research (e.g. Hirsch and Link, 1987; Bradley, Kim and Tian, 2017) documents that unions affect the innovation activities of firms. Managers may strategically use R&D expenditure

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[7] Similarly, Hamm et al. (2021) demonstrate that firms with strong organized labor are more likely to stockpile inventory strategically as a protection against the risk associated with labor strikes.

as a response to avoid sharing quasi-rents accruing from R&D investment with unions. Betts, Odgers and Wilson (2001) posit that the products of corporate innovation such as production processes or new products can be licensed to other firms, thereby reducing unions' ability to extract rents from R&D investment. However, Betts et al. (2001) argue there are factors that limit this ability, including the similarity of production processes across firms, the transferability of new product development, the cost efficiency of monitoring licensing agreements, and reluctance to disclose proprietary information to competitors. As a result, firms may strategically reduce R&D expenditure that a similar nonunion firm would undertake, and the extent of local religiosity may moderate this choice:

Hypothesis 2d: *Religiosity positively moderates the negative association between the unionization rate and R&D expenditure.*

Finally, uncertainty about corporate financial policy associated with strategic engagement with unions should have a positive association with firm-level idiosyncratic risk. To the extent that union pressure results in corporate financial policies that obscure the firm's financial prospects to outside market participants, we expect union presence to be positively associated with stock idiosyncratic risk. To the extent that religiosity reduces the incentive to use financial policies strategically, the effect should be decreasing in religious adherence:

Hypothesis 2e: *Religiosity positively moderates the negative association between the unionization rate and stock idiosyncratic risk.*

The effect of labor unions in their role as collective bargaining agents is ultimately reflected by the value of the firm's securities. While Chen, Kacperczyk and Ortiz-Molina (2011) show that the cost of equity of unionized firms is higher because unions inhibit operating flexibility, the effect of unionization on the pricing of corporate debt securities is ambiguous. Following the

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premise that labor unions share the incentives of the fixed income claimants and thus prefer conservative corporate policies, Chen, Kacperczyk and Ortiz-Molina (2012) hypothesize that the presence of a labor union benefits bondholders. Based on a sample of monthly bond return data from 1973-1998, they find that unionized firms invest in lower-risk projects and are less likely to be acquisition targets, leading to positive wealth effects for bondholders. Conversely, Chen, Chen and Liao (2011) argue that the cost of labor unions outweighs the benefits for bondholders. They provide evidence that unionization intensity *positively* affects bond yield spreads, indicating that the issue of labor unions and the cost of corporate debt is unresolved. However, prior research providing evidence that the unionization rate is significantly associated with higher leverage, excess inventories, and lower cash points to a positive association with corporate bond risk premia that we expect to be moderated by the level of religiosity:

Hypothesis 3: *Religiosity moderates the positive association between the unionization rate and the cost of corporate debt capital.*

3.2 Religiosity and unionization measures

We obtain county-level adherence data from the "Longitudinal Religious Congregations and Membership File, 1980-2010" from the American Religion Data Archive (ARDA), which provides the number of adherents for 302 religious groups.[8] We calculate the percentage of adherents for each county by aggregating religious group membership information and dividing by the total county population (e.g., Hilary and Hui, 2009; Shu, Sulaeman and Yeung, 2012; Callen and Fang, 2015; Jiang et al., 2018). Because religiosity information is available for four discrete years (1980, 1990, 2000, and 2010), we follow Hilary and Hui (2009) and related research by linearly interpolating the data to obtain missing values between 1990-2000 and 2000-2010.

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[8] Available at https://www.thearda.com/Archive/Files/Downloads/RCMSMGST_DL2.asp

Because our analyses extend to 2018, we use 2010 religiosity values for 2011-2018.[9] Following Abakah (2020), Jiang et al. (2018), and Hilary and Hui (2009) among others, we merge the religiosity data to the Compustat file by county and year using the Company Location Code data item for each firm. As a result, the religiosity value for each firm is the adherence percentage in the county its headquarters are located.

Following most prior unionization research (e.g. Klasa et al, 2009; Chen et al. 2011, 2012; Huang et al, 2017; Chino, 2016), we gauge union bargaining power with Census Industry Code- (CIC-) industry level unionization rates. The use of industry-level data is based on the premise that unionization rates are broadly similar across firms in a given industry. Prior research (e.g. Klasa et al. (2009) and Huang et al. (2017), among others) demonstrates that industry-level effects are robust to voluntarily-disclosed firm-level measures of union intensity obtained from 10-K reports and from quasi-experiments based on exogenous changes in union bargaining power including union contract renegotiations, labor strikes, union elections, and the adoption of state-level right-to-work (RTW) legislation. We obtain the Census Industry Classification-level union membership rate from the Union Membership and Coverage Database (www.unionstats.com) maintained by Barry Hirsch and David Macpherson using data based on the Bureau of Labor Statistics' monthly Current Population Survey beginning in 1983.[10]

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[9] Abakah (2020) demonstrates there is very low variation in county-level religiosity over time.
[10] The CIC-level unionization rate maps to the SIC or NAICS level (depending on the year) using crosswalks maintained by the US Census Bureau (https://www.census.gov/topics/employment/industry-occupation/guidance/code-lists.html). Prior to 2002, the CIC industry code maps to 2- or 3-digit SIC industry codes. In 2002, the crosswalk changed to NAICS industry codes with minor revisions to the industry definitions in 2007 and 2012.

4. Organized Labor, Religiosity, and Cooperative Outcomes: Direct Evidence

4.1. Evidence from shareholder resolutions

We explore if firms in more religious locations are more likely to accommodate union concerns as expressed in shareholder resolutions. Resolutions that are withdrawn are not included in the proxy statement and are typically removed at the request of the proponent prior to the proxy mailing date. As Jones (2022) states, "Productive dialogue between parties often results in an amicable and constructive resolution that frequently leads to withdrawal of the shareholder proposal..." Similarly, Matsusaka et al. (2021) note that withdrawn proposals often signify that the company has granted some concession to the proponent, who in exchange withdraw the proposal. To the extent that religiosity influences the outcomes of interactions with corporate stakeholders including its union shareholders, *Hypothesis 1a* predicts targeted firms in more religious locations may be more willing to negotiate with the union proponent to achieve a settlement.

We examine this premise using shareholder proposals obtained from the Institutional Shareholder Services (ISS) Shareholder Proposal database. Table 3 Panel A provides aggregated firm-level summary statistics and illustrates that the 6,404 targeted firm-years over 1997-2018 with a complete record of control variables receive an average of 2.33 proposals in a given firm-year. Among these proposals, an average of 0.252 are withdrawn. Panel B provides proposal-level summary statistics. Of the 14,912 individual proposals with a complete record of firm-level control variables, unions submit approximately 20 percent. The remaining proposals are sponsored by church-affiliated organizations, individuals, public funds, or unclassified shareholders. About 60 percent address governance-related issues (board, voting, antitakeover, and other proposals classified by ISS as governance-related), while the remainder address socially responsible investing ('SRI') issues.

In Table 1 Models 1-2, we examine if religiosity plays a direct role in the frequency of targeting and the proportion of withdrawn proposals. Model 1 uses the logged total number of proposals received by each firm-year as the dependent variable, while Model 2 uses the proportion of withdrawn proposals. The additional firm-level control variables are based on the specification of Karpoff, Malatesta and Walkling (1996) and include firm financial characteristics (firm size, leverage, profitability, and growth opportunities) and measures of board quality from the BoardEx database including board size, the proportion of busy directors, and the proportion of independent directors over age 69. We winsorize all explanatory variables at the 1 percent tails. The insignificance of the *Adherents* measure in Models 1-2 suggests that headquarter county religiosity does not directly affect the number of proposals received by a firm in a given year, or the proportion of proposals that are withdrawn. However, because union proponents may also be part of the local community with which managers interact, it is plausible that the likelihood of a negotiated outcome may be pronounced for resolutions sponsored by unions. In Models 3-4 we estimate probit models to investigate if the type of sponsor affects the probability that a given proposal is withdrawn, and if religiosity moderates the association. In Model 3, proposals sponsored by unions, church-affiliated organizations, and public pension funds are significantly more likely to be withdrawn. Conversely, proposals sponsored by individual shareholders are significantly less likely. In Model 4, we interact the sponsor indicators with the *Adherents* measure. Of the four sponsor types, only the *Union sponsor × Adherents* interaction is statistically significant, indicating that religiosity plays a primary role in how firms engage with unions.

In Table 1 Models 5-7, we restrict the sample to proposals sponsored by unions to test if *Adherents* systematically affects the probability a proposal is withdrawn. As Model 5 illustrates, the *Adherents* measure is positive and significant at the 5 percent level, illustrating that religiosity

significantly increases the likelihood of a withdrawn union-sponsored proposal. Unions have a longstanding history as prolific shareholder activists (e.g., Denes et al. 2017) and frequently use the proposal mechanism to express their views on CEO pay. To the extent that the level and composition of executive pay can be relatively quickly modified in response to stakeholder pressure (e.g. Huang et al., 2017), we examine if religiosity affects how firms respond to union-sponsored proposals addressing executive compensation issues (Model 6) and to proposals specifically addressing the equity component (Model 7). Model 6 demonstrates that while union-sponsored compensation proposals typically go to a vote (i.e., are not withdrawn), the probability is significantly moderated by the extent of religiosity as evidenced by the *Compensation ×* *Adherents* interaction. Finally, Model 7 provides evidence of a pronounced association when the proposal addresses the equity component: while equity compensation proposals are likely to go to a vote in lower religiosity environments, they are significantly more likely to be withdrawn when religiosity is higher. Overall, these results provide additional evidence that religiosity plays a significant role in the nature of targeted firms' engagement with union proponents, especially among those that concern executive compensation.

4.2. Evidence from work stoppages

Prior unionization research uses labor strikes to contextualize the strategic use of corporate policies. Klasa et al. (2009) argue that if cash holdings signal to unions that the firm is able to increase worker wages, then the union is more likely to initiate a labor strike. Based on an industry-matched sample of firms that did not contemporaneously experience a strike, their results demonstrate that raw cash holdings increase significantly over the fiscal year prior to the strike year, thus providing evidence that higher cash holdings provide a motive for unions to initiate a work stoppage. Similarly, Huang et al. (2017) argue that high CEO compensation is a contributing

factor to unions' choices to initiate strikes in response to negotiation breakdowns. Using Klasa et al.'s (2009) matched sample approach, their results show that higher prior year total CEO compensation is positively related to the likelihood that a firm subsequently experiences a strike.

A key determinant of the decision to strike is the proportion of a firm's unionized work force. A greater proportion of unionized workers strengthens the union's bargaining position and the likelihood that it can achieve its objectives, thereby increasing its expected benefit vs. the costs of lost wages and the risk of being replaced. Thus, to the extent that religious adherence is associated with successful negotiations that avert strikes, *Hypothesis 1b* predicts that religious adherence significantly moderates the positive *Unionization rate* effect on the likelihood of a strike.

We obtain labor strike data from the BNA Labor Plus database. Using the employer names, we merge the BNA strike data with the CRSP company name file. Following the method employed by Lee and Mas (2012), we exploit the similarity in names listed in the BNA strike file with the CRSP names. Specifically, we compare the employer names listed in the BNA strike file to the company names in the CRSP database using the SPEDIS function in SAS. When there are multiple matches, we keep the lowest SPEDIS score. When there is a tie in this score, we use the SPEDIS scores from the first three or two words of the name to choose the closest similarity in names. As noted in Lee and Mas (2012), this procedure can result in mismatches. Therefore, we manually clean this matched file to make sure the company names are matched correctly. In case the name in the BNA file is a subsidiary of a firm, we identify the parent firm.

Following Klasa et al. (2009), we restrict our sample to strikes that involve at least 1000 workers and match each labor strike observation by industry and year. To reduce the possibility that the industry definition affects the results, we alternatively match on SIC2, SIC3, and SIC4

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industries. The broadest SIC2-matching algorithm results in 83 strike observations and 2,724 matches over 1992-2018. We provide control variable summary statistics for this sample in Table 2 Panel A. In Panel B, we provide probit estimates using the control variable specifications of Klasa et al. (2009) and Huang et al. (2017). Model 1 provides estimates using the 2,724-observation SIC2-industry matched sample. The focal *Pre-strike year unionization rate × Adherents* estimate is negative and significant at the 5 percent level, providing evidence that the level of religiosity moderates the significant *Pre-strike year unionization rate* effect. In Model 2, we restrict the matched sample to SIC3 industry, and in Model 3 we further restrict the matched sample to SIC4 industry. The *Pre-strike year unionization rate × Adherents* estimates for all models are consistently statistically significant, providing continued empirical support for *Hypothesis 1b*.

5. Religiosity and Strategic Response to Unions: Implications for Prior Research

5.1. Executive compensation

We investigate *Hypothesis 2a*'s prediction of a moderating influence of religiosity on labor unions' effect on executive compensation. We specify the regression model as follows:

$$CEO\ (or\ Top-4)\ compensation\ _{i,t} = \alpha_0 + \alpha_1 Unionization\ rate_{i,t} + \alpha_2 Adherents_{i,t} + \alpha_3 Unionization\ rate\ \times Adherents_{i,t} + \gamma_1 Controls_{i,t} + State\ fixed\ effects_i + SIC2\ Industry\ fixed\ effects_i + Year\ fixed\ effects_t\ + \epsilon_{i,t} \tag{1}$$

Consistent with the premise that equity compensation is the most discretionary component of executive compensation, Huang et al. (2017) provide evidence that the equity component drives the negative union association with CEO total pay. Following Huang et al. (2017), we employ total pay (Execucomp data item TDC1), equity compensation (TDC1-TOTAL_CURR), salary (SALARY), and cash bonus (BONUS) as alternative dependent variables using the log of (1 plus) each item. The firm- and CEO-level explanatory variables provided in Table 3 Panel A follow the

specification used by Huang et al. (2017). To mitigate the potential that the unionization rate proxies for location-based differences in religiosity (e.g., the Southeastern states have higher religiosity and lower unionization rates), we include fixed effects for the state each firm is headquartered, along with SIC2 industry and year fixed effects to control for unobservable heterogeneity in industry and year. Following Coles, Daniel and Naveen (2006), we examine the union effect on total compensation and its components including equity, salary, and cash bonus for the CEO and for the cumulated four highest compensated non-CEO executives. We cluster the robust standard errors at the CIC industry level based on the *Unionization rate* measurement level, however the results are qualitatively similar to clustering at the firm level. We winsorize all continuous explanatory variables at the 1 percent tails.

Table 4 provides coefficient estimates for Equation (1). In Model 1, the *Unionization rate* has the expected negative effect on logged CEO total compensation. However, the *Unionization rate × Adherents* interaction is positive and significant at the 5 percent level, suggesting that the negative union effect declines in religiosity. The remaining control variable estimates are consistent with those reported by Huang et al. (2017). Turning to the equity component, Huang et al. (2017, p. 20) state, "Unlike base salary and to some extent bonuses (which are generally tied to various pre-determined performance metrics), equity grants represent a key component of discretionary compensation to executives. We therefore expect that the effect of unions on CEO compensation to be more pronounced for equity grants." As such, Huang et al. (2017) provide results demonstrating that the equity component drives the union effect on CEO total compensation. In Model 2, we find a similar result. The *Unionization rate* coefficient estimate on logged equity compensation drives the effect in Model 1. Additionally, consistent with our prediction that religiosity reduces the incentive to use compensation to improve bargaining

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position, the *Unionization rate × Adherents* interaction is positive and significant at the 5 percent level. In contrast, while Models 3-4 provide evidence of a weak union effect on the salary and bonus components of CEO pay, the *Adherents* interactions are insignificant. Models 5-8 repeat this process using the logged sum of the top-4 highest compensated non-CEO executives. Consistent with the CEO-based results, the *Adherents* measure has the strongest interactive effect on equity compensation.

To better understand the *Unionization rate × Adherents* estimates in Panel A, we estimate marginal *Unionization rate* estimates at low (mean minus two standard deviations) and high (mean plus two standard deviations) levels of the *Adherents* rate. In Panel B1, the results support the intuition that religiosity moderates the negative union effect on CEO equity compensation: the marginal *Unionization rate* effect on equity compensation is significantly negative at low levels of religiosity but insignificant at high levels. These marginal effects are significantly different at the 5 percent level, and are similar using the logged sum of top-4 executive equity compensation. Overall, these results provide evidence in support of *Hypothesis 1*.

We test if the magnitude of Table 4's estimates vary based on locations where union strength is higher vs. lower and if the CEO has more vs. less control over their own compensation arrangements. To the extent that unions hold more power in the labor markets of strong union states, it follows that managers have relatively less bargaining power and consequently have a greater incentive to improve their negotiating position through their compensation. As a result, there should be a pronounced religiosity moderating effect in these locations. We classify strong and weak union states using two alternative metrics. First, we obtain total (public plus private) unionization rates for each state-year beginning in 1997 from the US Bureau of Labor Statistics Geographic Profile of Employment and Unemployment data archive, which provides information

for each state-year beginning in 1997.[11] We use the cross-sectional median of the state-level total unionization rate for each year to create high and low union power subsets. Second, Calio, Frohlich and Hess (2014) identify the 10 states with the strongest and weakest union presence using data from the U.S. Bureau of Labor Statistics, the unionstats.com website, and the U.S. Census Bureau.[12]

CEOs who hold more influence over executive pay arrangements may be more likely to use their own compensation to improve their bargaining stance. Therefore, religiosity is likely to have a stronger moderating function for firms with more powerful CEOs. We measure CEO power with two metrics. First, prior research suggests dual CEO-board chairs have relatively more control over their own pay arrangements (e.g. Core, Holthausen and Larcker, 1999). Second, prior research argues that CEOs become more powerful the longer they stay in office (e.g. Hambrick and Fukutomi, 1991). We create two CEO tenure-based subsets above and below the cross-sectional median to designate firm-years with higher and lower CEO power. We report these results in Table 5. In Panel A, we use logged CEO equity compensation as the dependent variable, and in Panel B we use the logged sum of the top-4 executives' equity compensation. Consistent with our expectations, Models 1-2 and Models 3-4 demonstrate a strong negative (insignificant) union effect among firms located in states with strong (weak) labor environments, and a correspondingly strongly positive (insignificant) interaction effect with the religious adherence measure, respectively. Similarly, Models 5-6 and Models 7-8 provide evidence that the strategic use of equity compensation, and the moderating role of religiosity, is strongest when the CEO has more power. We document a similar pattern of results in Panel B. In the final row of each Panel, we test

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[11] https://www.bls.gov/opub/geographic-profile/archive.htm.
[12] These 10 strongest union states are Oregon, Rhode Island, Michigan, Connecticut, New Jersey, California, Washington, Hawaii, Arkansas, and New York. The 10 weakest states are South Carolina, North Carolina, Utah, Texas, Virginia, Idaho, Arkansas, Louisiana, Mississippi, and Georgia.

if the *Unionization rate × Adherents* estimate is significantly different across subsets. Consistent with the view that the CEO's compensation is the most likely to be impacted by bargaining considerations as the face of the organization, these results demonstrate that the interaction effects differ most strongly in Panel A using CEO equity compensation.

We provide further identification using the lack of state-level right-to-work (RTW) laws as a proxy for greater union bargaining strength. RTW laws restrict the ability of unions to require current or future employees to become members or pay dues as a condition for working at a firm where a union represents workers. In addition to reducing the threat of union organizing attempts at non-unionized companies, RTW laws are likely to decrease union bargaining power at unionized firms. Matsa (2010) exploits the adoption of state RTW laws as a source of geographic changes in union bargaining power. Based on the premise that firms with more variable profits are more exposed to union rent seeking, Matsa (2010, Table VI) provides panel regression estimates demonstrating that location in states with RTW laws negatively affects firm leverage that is pronounced for firms with greater profit variability. Huang et al. (2017) take a similar approach, arguing that boards are less likely to consider union pressure when setting CEO compensation when the firm is located in a RTW state where unions have a relatively weak bargaining position relative to the firm. They provide evidence that RTW locations significantly moderate the negative union effect on CEO compensation, suggesting unions enjoy greater union bargaining power in non-RTW states.

In Table 6, we replace the *Unionization rate* with the *non-RTW* indicator along with its interaction with the *Adherents* measure. While RTW states are broadly associated with lower union participation, not all RTW states have below-average union rates.[13] Therefore, we segment the

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[13] For example, Michigan and Nevada switched to RTW status in 2013 and 1952, respectively. However, their unionization rates in 2018 were 14.5 percent and 13.9 percent, respectively (Combs, 2019).

sample by high (above median) and low (below median) state-level unionization rate. To the extent that the lack of RTW laws systematically strengthens union bargaining, we expect to find a pronounced *non-RTW × Adherents* effect on CEO compensation in states that have higher union participation. Our results support this premise. In Models 1-4, we provide estimates for the above-median *State Unionization rate* subset. In Model 1, the *non-RTW* effect on total CEO compensation is significantly negative. However, the *Adherents* measure significantly moderates the effect as demonstrated by the significantly positive *non-RTW × Adherents* estimate. Consistent with Table 4's results, Model 2 demonstrates that CEO equity compensation drives the effect. Conversely, Models 5-8 provide evidence that the interactive effect loses significance for firms with low state unionization rates.

5.2. Corporate financial policies

Hypotheses 2b-2d collectively predict that religiosity moderates the union effect on corporate financial policies used to to gain bargaining position over unions, while *Hypothesis 2e* predicts that the moderating effect on financial policy risk should be reflected by stock idiosyncratic risk. To examine these predictions, we estimate the following model:

$$Financial\ policy_{i,t} = \alpha_0 + \alpha_1 Unionization\ rate_{i,t} + \alpha_2 Adherents_{i,t} + \alpha_3 Unionization\ rate \times Adherents_{i,t} + \alpha_4 Std.(ROA)_{i,t} + \alpha_5 Unionization\ rate \times Std.(ROA)_{i,t} + \alpha_6 Lagged\ CEO\ vega_{i,t} + \alpha_7 Lagged\ CEO\ delta_{i,t} + \gamma_1 financial\ control\ variables_{i,t} + State\ fixed\ effects_i + SIC2\ Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \epsilon_{i,t} \tag{2}$$

Following Matsa (2010), the dependent variables include long-term debt scaled by total assets and, alternatively, the market value of the firm's assets; the sum of debt maturing within three years scaled by the market value of the firm's assets, and total inventory scaled by total assets for *Hypothesis 2b*. To test *Hypothesis 2c*, we use cash holdings (cash scaled by total assets) as the dependent variable following Klasa et al. (2009). To test *Hypothesis 2d*, we measure R&D intensity as R&D expenditure scaled by total assets after setting missing R&D values to zero.

Finally, we measure stock idiosyncratic risk as the residual from a market model regression extending a maximum of three years beginning with the firm's fiscal year end date using daily returns and the CRSP value-weighted index to test *Hypothesis 2e,*.

We follow Matas's specification of financial control variables, including the proportion of fixed assets (*Net PPE*), market-to-book ratio, logged sales, Altman's Z-score, and return on assets (*ROA*). In addition, Coles et al. (2006) provide evidence that managerial effort ("delta") and risk ("vega") incentives are directly associated with risky corporate policies including R&D intensity and leverage, leading to a positive association with stock idiosyncratic risk. We follow the methodologies described by Core and Guay (2002) and Guay (1999) to calculate yearly portfolio delta and vega of equity grants, restricted stock grants, and exercisable, unexercisable, and current option awards. Following Coles et al. (2006), CEO delta is based on aggregate equity and option grants, while CEO vega is based only on options (i.e., the vega of equity is zero.)[14] As in Equation 1, we include fixed effects for state headquarter location, SIC2 industry, and year.

Table 7 provides coefficient estimates for Equation (2). Consistent with Matsa (2010), Models 1-2 show that the *Unionization rate* is significantly positively related to both *Book leverage* and *Market leverage*, respectively. As with Matsa (2010), we also find that the *Unionization rate × Std. (ROA)* interactions are positive and statistically significant. Additionally, the *Unionization rate × Adherents* interactions are negative and significant at the 1 percent level, suggesting that the negative union effect on debt policy declines in religiosity. Matsa argues that firms may also strategically increase the proportion of near-term debt due within 1-5 years. Model 3 uses the percentage of debt maturing within three years divided by total debt (*ST3*) as the dependent variable. As in Models 1-2, the *Unionization rate × Adherents* estimate is negative and

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[14] We use the "deltavega_2013" SAS code provided by Lalitha Naveen to calculate CEO delta, vega, and firm related wealth used in subsequent analysis (https://sites.temple.edu/lnaveen/files/2020/11/deltavega_2013.txt).

significant at the 5 percent level. Matsa (2010) maintains that inventory decisions can be used strategically ("stockpiling") in the presence of a strong union. In Model 4, we employ the proportion of total inventories divided by total assets as the dependent variable. Consistent with our results in Models 1-3, the *Adherents* measure significantly negatively moderates the *Unionization rate* effect.

In Table 7 Model 5, we examine the union effect on cash holdings conditioned on religiosity. Using the control variable specification in Models 1-4 for consistency, the *Unionization rate* estimate is negative and significant at the 10 percent level. However, the *Unionization rate* × *Adherents* estimate is positive and significant at the 5 percent level, providing evidence of a moderating effect. In Model 6, we examine the strategic use of R&D expenditure. While the *Unionization rate* is negatively associated with *R&D Intensity*, the *Adherents* measure effect significantly positively moderates the effect. Finally, in Model 7 we examine the union effect on stock idiosyncratic risk. To the extent that the strategic use of corporate policies may make valuation more difficult for market participants by creating uncertainty about the firm's financial prospects, the *Unionization rate* should be positively associated with idiosyncratic risk. Further, the *Adherents* measure should negatively moderate the effect. Consistent with this premise, Model 7 reports a positive *Unionization rate* that is significant at the 10 percent level, and a *Unionization rate* × *Adherents* estimate that is negative and significant at the 5 percent level.

Table 7 Panel B provides marginal *Unionization rate* estimates at low and high levels of the *Adherents* rate. As Panel B illustrates, the *Unionization rate* estimates at the low *Adherents* level are statistically significant at the 5 percent level or lower for all of the dependent variables aside from the *Cash ratio*, and are statistically insignificant when estimated at the high *Adherents*

level. The differences in these estimates are significant at the 5 percent level or lower. Overall, these results provide evidence in support of *Hypotheses 2a-2e*.

5.3. Employee wages

Our preceding results raise a natural question: does religiosity also affect management's approach to employees of unionized firms? To the extent religiosity is associated with a greater likelihood of cooperative negotiations and better relations with union stakeholders, employees of unionized firms should also benefit from greater religiosity. To answer this question, we examine employee wages in unionized firms conditioned on religiosity. We use labor and related Expense (*Compustat* data item XLR) to proxy for employee wages. XLR includes salaries, wages, pension costs, profit sharing and incentive compensation, as well as payroll taxes and other employee benefits. To control for firm size effects, we scale XLR by revenue (SALE). We adopt a simple univariate approach using the Execucomp-based dataset employed in the preceding analyses. First, we sort the sample on the religiosity measure (*Adherents*) by year and create four quartile subsets. Within each quartile, we sort on the unionization rate by year, thus creating variation in the unionization rate that is conditioned on religiosity. To control for secular effects related to industry and time on adjusted labor and related expense, we subtract the SIC2 industry mean (not including the focal firm) for each firm-year. We winsorize the adjusted labor expense measure by year. Finally, we statistically test the differences in means (medians) of the lowest and highest unionization quartiles within each religiosity quartile to examine if the unionization rate is associated with size-adjusted worker wages and benefits.

Table 8 presents the results. We obtain 2,527 firm-year observations with non-missing labor and related expense, religiosity, and unionization rate data over the 1992-2018 period.[15] The

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[15] Labor and related is disclosed on a discretionary basis for US firms, hence is thinly populated in our data.

firm-years represent 39 SIC2 industries, with low clustering based on frequencies varying from 0.04 percent in SIC2 53 (Retail Trade – General Merchandise Stores) and SIC2 83 (Services – Social Services) to 14.92 percent in SIC2 58 (Retail Trade - Eating and Drinking). Within the lowest religiosity quartile, employee wages do not significantly vary between the lowest and highest unionization rates. While mean and median revenue-adjusted labor expense generally decrease in the next two religiosity quartiles, the significance of these changes are not consistent. However, in the highest religiosity quartile, adjusted labor expense increases significantly in the unionization rate. The *p*-values in the last column show that the increase in mean (median) adjusted labor expense is statistically significant at the 1 percent level. Overall, these results suggest that religiosity not only plays a role in managements' strategic response to unions, but also in its relations with organized workers as gauged by wages and benefits.

5.4. Cost of corporate debt

Empirical support for *Hypotheses 1-2* collectively suggests a positive union effect on credit risk as gauged by the risk premia on risky corporate debt and a negative moderating effect associated with religiosity as predicted by *Hypothesis 3*. To examine this premise, we use transaction-level yield spreads from the Mergent Fixed Income Security Database (FISD) Transactions file for the 1994-2018 period based on the FISD starting year of 1994. We use the fiscal year-end (FYE) date of the sample firms as the reference point to associate yield spreads with the unionization rate and other annual-frequency control variables. For each firm-year, we use the yield spread associated with the closest trade-day within 180 days (plus or minus) of the firm's FYE date. We obtain constant-maturity Treasury bond indices from the Federal Reserve of St. Louis Economic Data (*FRED*). We calculate daily yield spreads as the difference between the trade-weighted daily yield to maturity and the corresponding interpolated yield to maturity with

the same time to maturity from the Treasury constant-maturity yield curve. Table 1 Panel C provides descriptive statistics for these variables and we provide additional details about the construction of these measures in the Appendix. We estimate the following regression model using transaction-level yield spreads for bond *j* issued by firm *i* in year *t* over the 1994-2018 period:

$$
\begin{aligned}
Yield\ spread_{j,t} = {} & \alpha_0 + \alpha_1 Unionization\ rate_{i,t} + \alpha_2 Adherents_{i,t} + \alpha_3 Unionization\ rate \times \\
& Adherents_{i,t} + \alpha_4 Bond\ rating\ residual_{j,t} + \gamma_1 Bond-level\ controls_{j,t} + \gamma_1 Firm-level\ controls_{i,t} + \\
& State\ fixed\ effects_i + SIC2\ Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \epsilon_{i,t}
\end{aligned} \tag{3}
$$

The additional control variables in Equation (3) are at the bond, firm, and macroeconomic levels. Because the credit rating partially captures the information contained in the remaining bond- and firm-level control variables (e.g. Mansi, Maxwell and Miller, 2011), we substitute the Moody's bond rating with *Bond rating residual*, defined as the residual from regressing the Moody's rating on all other independent variables. Among the remaining bond-level control variables, the binary variable *FPC* control for reinvestment risk associated with fixed-price call provisions debt while *MWC* controls for the effect of make-whole call provisions. Logged *Bond age* and *No. trades* alternatively control for trading liquidity, and we control for interest rate risk with log (*Time to maturity*). Logged *Issue amount* controls for information, as the market is likely to know more about large bond issues. *Subordinate* is an indicator variable equal to one if the bond is subordinate to other debt issues.

At the firm level, the control variables represent aspects of profitability and cash flow risk from an extensive literature that examines determinants of the cost of corporate debt (e.g. Bhojraj and Sengupta, 2003; Klock et al., 2005; Ortiz-Molina, 2006; Mansi et al., 2011). Based on the findings of Acharya, Davydenko and Strebulaev (2012), who argue that a conservative cash policy is more likely to be pursued by firms that are closer to distress, we expect *Cash ratio* to be positively related to yield spread. *Firm size* gauges liquidity: larger issuers generally have greater market presence and are therefore of more interest to institutional investors. The proportion of

long-term debt in the capital structure (*Leverage*) measures default risk. *Market-book ratio* and *Sales growth* measure realized growth and cash flow growth opportunities, respectively, while *Adjusted 1-year stock return* and *ROA* measure profitability, respectively. The standard deviation of *Profitability* measures cash flow risk. Based on a line of research demonstrating that information asymmetry is a dimension of risk to bondholders (e.g. Lu, Chen and Liao, 2010), we control for the quality of the information environment with *Stock bid-ask spread* using the method of Corwin and Schulz (2012). Finally, we include the *Baa-Aaa spread* to control for the macroeconomic interest rate environment. Further details about the construction of these measures are provided in the Appendix.

Table 9 presents the results. We employ all available bonds issued by firm j that trade in year t. Consistent with our prior findings, and in line with the findings of Chen et al. (2011), Model 1 demonstrates a significantly positive *Unionization rate* effect on the yield spread. Also consistent with our prior findings, the *Unionization rate* × *Adherents* estimate is negative and significant at the 5 percent level. To determine the drivers of the full sample result, we separate the sample into subsets based on maturity (Models 2-3) and credit risk (Models 4-5). To the extent that credit yield curves are upward sloping in time to maturity (e.g. Helwege and Turner, 1999), it follows that the long-term bond yield spread should be more sensitive to the impact of policy uncertainty associated with union presence. We define short-term (long-term) debt as less (greater) than 5-year (10-year) maturities, respectively. Consistent with this premise, in Model 2 the *Unionization rate* and its interaction with the *Adherents* measure become statistically insignificant, while in Model 3 these measures retain their significance at the 5 percent level. Models 4-5 segment the long-term maturity subset into high yield (Moody's rating ≤ Ba) and investment grade (Moody's rating ≥ Baa) debt. The results support the intuition that speculative grade debt most strongly

reflects the positive impact of the *Unionization rate*, as well as the negative moderating effect of the *Adherents* religiosity measure. The representative bond sample in Panel B provides similar results. Overall, these findings are consistent with the prediction of *Hypothesis 3* as well as our prior results.

6. Conclusions

Previous unionization research provides evidence of a contentious relationship between management and labor unions, where managers seek to gain bargaining position using executive compensation and other financial policies. Motivated by an emerging literature illustrating how social norms embedded in the firm's environment influence corporate actions, we examine if local religious adherence affects this dynamic. Based on the view that religiosity is associated with characteristics including fairness, honesty, and trust, and following the prediction of social norm theory that individuals conform to the local religious values, we postulate that higher levels of local religiosity reduce the friction between management and labor unions.

Our results robustly support this conjecture. Consistent with extant findings, we identify a significant negative association between union strength and CEO total compensation. The equity component drives this result, consistent with evidence reported by Huang et al. (2017). However, religious adherence significantly moderates this effect, where the effect disappears in locations with greater religiosity. Additional analyses provide corroborating evidence of a strong positive moderating association, including location in states that lack RTW laws as a proxy for union bargaining strength, difference-in-difference analyses using union contract re-negotiations, and the propensity for unions to withdraw proposals addressing compensation issues. We extend this line of analysis to corporate financial decisions that prior research associates as strategic responses to

union presence, including debt policy, cash holdings, inventory, and R&D expenditure. Consistently, we find evidence of a significant religiosity moderating effect on the strategic use of these policies. Following the view that the strategic use of corporate policies may make valuation more difficult for market participants by creating uncertainty about the firm's financial prospects, we find that religiosity significantly negatively moderates the positive union effect on stock idiosyncratic risk.

We examine the implication of these findings on the cost of corporate debt. Prior research presents conflicting evidence on the association between unionization and the cost of debt. On one hand, union presence may be beneficial to bondholders as the interests of organized labor align with those of bondholders. On the other, creditors should negatively view the use of corporate policies to shelter corporate resources from union demands, as manifested by a higher cost of corporate debt. Our empirical findings result support the latter view. Our evidence suggests that while the unionization rate positively affects the cost of debt capital, the extent of local religiosity significantly moderates the effect. Overall, our results suggest a nuanced interpretation of the strategic response to union presence, thereby casting new insight on previously documented findings in the union literature.

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Table 1

Religiosity and Management Negotiating Incentive: Evidence from Shareholder Proposals

Table 1 Panel A provides descriptive statistics for a sample of shareholder resolutions drawn from the Institutional Shareholder Services Shareholder Proposal Database with a complete record of financial and board-level control variables over the 1997-2018 period. Panel B provides least squares and probit estimates where the dependent variable equals one if the proposal is withdrawn and zero otherwise. We adjust the robust standard errors for clustering at the firm level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: Summary statistics

	No. Obs.	Mean	St. Dev.	25th Quartile	Median	75th Quartile
Panel A: Firm-level measures (Models 1-2)						
Total proposals per firm-year	6,404	2.329	2.346	1.000	1.000	3.000
Percentage withdrawn proposals	6,404	0.252	0.379	0.000	0.000	0.500
Adherents	6,404	0.525	0.099	0.441	0.530	0.593
Sale ($MM)	6,404	19,768	39742	2,319	6,794	18,762
Leverage	6,404	0.229	0.173	0.098	0.209	0.324
Market-book ratio	6,404	1.862	1.138	1.142	1.473	2.139
ROA	6,404	0.043	0.082	0.014	0.043	0.082
Three-year sales growth	6,404	0.073	0.142	-0.001	0.053	0.125
Three-year stock return	6,404	0.357	0.548	0.067	0.367	0.657
Log (board size)	6,404	2.347	0.238	2.197	2.398	2.485
Independent directors (%)	6,404	0.861	0.077	0.833	0.889	0.909
Busy independent directors (%)	6,404	0.609	0.245	0.455	0.636	0.800
Gr 69 independent directors (%)	6,404	0.226	0.187	0.100	0.200	0.333
Panel B: Proposal-level measures (Models 3-7)						
Withdrawn	14,912	0.214	0.410	0.000	0.000	0.000
Adherents	14,912	0.527	0.096	0.441	0.530	0.594
Union sponsor	14,912	0.198	0.399	0	0	0
Church sponsor	14,912	0.082	0.274	0	0	0
Individual sponsor	14,912	0.148	0.355	0	0	0
Public fund sponsor	14,912	0.092	0.289	0	0	0
Governance proposal	14,912	0.597	0.491	0	1	1
SRI proposal	14,912	0.334	0.472	0	0	1

Table 1 (cont'd)

Panel B: Multivariate regression estimates

	Ordinary least squares estimates (Firm level)		Probit estimates (Proposal level)				
	Dep. variable = total proposals per firm-year	Dep. variable = percentage withdrawn proposals	All proposals (Withdrawn = 1 / Not withdrawn=0)		Union-sponsored proposals (Withdrawn = 1 / Not withdrawn=0)		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Adherents	-0.0071	-0.0210	0.1274	0.0107	0.8083**	0.1977	0.4935
	(0.959)	(0.745)	(0.521)	(0.967)	(0.020)	(0.634)	(0.167)
Union sponsor			0.5494***	0.0696			
			(0.000)	(0.750)			
Church sponsor			0.3925***	0.8129***			
			(0.000)	(0.008)			
Individual sponsor			-0.7541***	-0.4812			
			(0.000)	(0.116)			
Public fund sponsor			0.4367***	0.4393			
			(0.000)	(0.139)			
Union sponsor × Adherents				0.9078**			
				(0.023)			
Church sponsor × Adherents				-0.7793			
				(0.171)			
Individual sponsor × Adherents				-0.5070			
				(0.379)			
Public fund sponsor × Adherents				-0.0048			
				(0.993)			
Compensation						-1.0560***	
						(0.001)	
Compensation × Adherents						1.6766***	
						(0.008)	
Equity compensation							-1.3592***
							(0.002)
Equity compensation × Adherents							1.8741**
							(0.021)
Governance proposal			0.1182*	0.1192*	0.2816	0.3769*	0.3775*
			(0.065)	(0.064)	(0.205)	(0.086)	(0.087)
SRI proposal			0.5632***	0.5668***	0.1338	0.1540	0.1760
			(0.000)	(0.000)	(0.564)	(0.504)	(0.445)
Firm size (log Sales)	0.2264***	-0.0055	-0.0582***	-0.0582***	-0.1213***	-0.1183***	-0.1236***
	(0.000)	(0.288)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.2973***	0.0439	0.1423	0.1376	0.0874	0.1034	0.0660
	(0.000)	(0.323)	(0.287)	(0.304)	(0.754)	(0.711)	(0.815)
Market-book ratio	0.0404***	0.0033	0.0085	0.0106	-0.0060	-0.0016	0.0013
	(0.002)	(0.642)	(0.704)	(0.636)	(0.892)	(0.970)	(0.976)
ROA	-0.8090***	0.0705	0.4103*	0.3953	-0.6619	-0.6678	-0.6695
	(0.000)	(0.383)	(0.094)	(0.106)	(0.217)	(0.211)	(0.213)
Three-year sales growth	-0.3069***	0.1425***	0.2724***	0.2701***	-0.0342	-0.0342	-0.0031
	(0.000)	(0.000)	(0.009)	(0.009)	(0.874)	(0.875)	(0.989)
Three-year stock return	-0.0970***	-0.0080	-0.0095	-0.0105	0.0094	0.0110	0.0190
	(0.000)	(0.500)	(0.788)	(0.767)	(0.890)	(0.873)	(0.781)
Log (board size)	-0.0008	0.0154	0.0348	0.0347	0.3015*	0.3015*	0.2991
	(0.991)	(0.603)	(0.687)	(0.690)	(0.098)	(0.099)	(0.101)
Independent directors (%)	-0.0011	0.1302	0.6804**	0.6829**	0.4098	0.4724	0.4908
	(0.995)	(0.133)	(0.016)	(0.016)	(0.396)	(0.329)	(0.313)
Busy independent directors (%)	0.0314	0.0182	0.0006	0.0023	0.2063	0.2124	0.2076
	(0.562)	(0.545)	(0.995)	(0.980)	(0.270)	(0.258)	(0.266)
Gr 69 independent directors (%)	-0.1135*	0.0029	0.0561	0.0608	-0.0551	-0.0439	-0.0615
	(0.082)	(0.935)	(0.591)	(0.558)	(0.777)	(0.822)	(0.752)
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	6,404	6,404	14,912	14,912	2,951	2,951	2,951
R-squared	0.345	0.052	0.108	0.109	0.109	0.113	0.116

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Table 2
Religiosity and Management Negotiating Incentive: Evidence from Labor Strikes

Table 2 Panel A provides summary statistics for 83 labor strike observations over 1992-2018 and 2,724 control firms using the broadest SIC2 matching algorithm. Panel B provides probit estimates for alternative matching algorithms using a binary variable equal to one for the firms that experienced a labor strike as the dependent variable. We adjust the robust standard errors for clustering at the firm level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: Pooled summary statistics

	Mean	St. Dev.	25th Quartile	Median	75th Quartile
Labor strike	0.030	0.169	0.000	0.000	0.000
Pre-strike adherents	0.532	0.116	0.440	0.530	0.604
Pre-strike unionization rate	0.128	0.117	0.045	0.092	0.177
Pre-strike year CEO total compensation	7.843	1.101	7.090	7.792	8.554
Pre-strike year change in CEO total compensation	0.098	0.758	-0.225	0.070	0.407
Pre-strike year change in cash holdings	0.001	0.085	-0.024	0.001	0.028
Right to work state	0.221	0.415	0.000	0.000	0.000
Logged real market value of assets	7.816	1.662	6.649	7.659	8.811
Pre-strike year change in total leverage	0.005	0.088	-0.027	-0.000	0.023
Pre-strike year change in OIBDP / assets	-0.006	0.085	-0.027	-0.001	0.021
Pre-strike year change in net working capital / assets	-0.006	0.114	-0.049	-0.005	0.038
Pre-strike year change in Altman's Z-score	-0.389	9.062	-0.587	0.027	0.571
Pre-strike year change in market-book ratio	-0.017	1.712	-0.232	0.019	0.287

Panel B: Probit estimates

	Matched on Strike Year and SIC2 Industry	Matched on Strike Year and SIC3 Industry	Matched on Strike Year and SIC4 Industry
	Model (1)	Model (2)	Model (3)
Pre-strike year adherents	1.6600*	2.3920**	1.8625
	(0.068)	(0.037)	(0.282)
Pre-strike year unionization rate × adherents	-10.3821**	-19.4290***	-13.9376*
	(0.014)	(0.003)	(0.058)
Pre-strike year unionization rate	9.0050***	15.1455***	9.1008*
	(0.001)	(0.000)	(0.051)
Pre-strike year CEO total compensation	0.0506	0.0569	0.1294
	(0.540)	(0.590)	(0.377)
Pre-strike year change in CEO total compensation	0.0225	0.0249	0.0728
	(0.780)	(0.745)	(0.627)
Pre-strike year change in cash holdings	4.6978***	4.5722**	5.5629*
	(0.005)	(0.037)	(0.066)
Right to work state	-0.0068	0.0172	-0.4436
	(0.973)	(0.944)	(0.110)
Logged real market value of assets	0.3480***	0.4382***	0.5764***
	(0.000)	(0.001)	(0.000)
Pre-strike year change in total leverage	0.8512	1.3433	0.7861
	(0.232)	(0.160)	(0.637)
Pre-strike year change in OIBDP / assets	0.5896	0.6970	-1.4584
	(0.263)	(0.169)	(0.685)
Pre-strike year change in net working capital / assets	2.9828**	2.9538	1.9493
	(0.033)	(0.101)	(0.313)
Pre-strike year change in Altman's Z-score	0.0038	0.0090*	0.0608
	(0.444)	(0.094)	(0.437)
Pre-strike year change in market-book ratio	-0.0262	-0.0370	0.4227
	(0.401)	(0.265)	(0.206)
SIC2 fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
No. Obs.	2,807	761	369
Pseudo *R*-squared	0.258	0.255	0.368

Table 3
Summary Statistics for Variables Used in Cross-sectional Analyses

Table 3 provides descriptive statistics for variables used in the cross-sectional analyses. Panel A summarizes compensation components for the CEO and top-4 executives and associated control variables based on the specification of Huang et al. (2017). Panel B provides descriptive statistics for the financial policy measures and associated control variables based on the specification of Matsa (2010). Panel C summarizes corporate bond yield spreads and associated control variables. We provide additional details about the construction of these measures in the Appendix.

	No. Obs.	Mean	St. Dev.	25th Quartile	Median	75th Quartile
Unionization rate	23,303	0.101	0.022	0.053	0.118	0.119
Adherents	23,303	0.107	0.441	0.531	0.599	0.599
Panel A: CEO and Top-4 executive compensation components ($M) and control variables (Table 4)						
CEO total compensation	23,303	5,166	9,007	1.393	3.060	6.213
CEO equity compensation	23,303	4,048	8,645	586	2.035	4.974
CEO salary compensation	23,303	727	413	460	665	930
CEO bonus compensation	23,303	391	1,142	0	0	425
Top-4 total compensation	14,391	7,238	11,169	2375	4275	8,252
Top-4 equity compensation	14,391	4,892	10,067	853	2245	5,459
Top-4 salary compensation	14,391	1,382	801	897	1227	1,679
Top-4 bonus compensation	14,391	964	2,336	200	511	1,124
Firm size (log Sales)	23,303	7.202	1.668	6.128	7.135	8.248
Stock return	23,303	0.163	0.446	-0.066	0.156	0.374
Lagged stock return	23,303	0.174	0.447	-0.060	0.163	0.385
ROA	23,303	0.037	0.125	0.016	0.053	0.092
Lagged ROA	23,303	0.038	0.125	0.016	0.053	0.093
Lagged leverage	23,303	0.217	0.190	0.041	0.198	0.330
Lagged book-to-market	23,303	0.609	0.269	0.406	0.593	0.792
Lagged cash flow volatility	23,303	0.048	0.053	0.018	0.031	0.056
Lagged capital expenditure	23,303	0.056	0.054	0.021	0.040	0.071
Lagged tangibility	23,303	0.270	0.216	0.101	0.207	0.384
Lagged sales growth	23,303	0.092	0.231	-0.003	0.076	0.173
Lagged R&D expenditure	23,303	0.036	0.064	0.000	0.004	0.047
CEO tenure (years)	23,303	7.307	7.180	2.000	5.000	10.000
CEO chair	23,303	0.573	0.495	0.000	1.000	1.000
Industry capital-labor ratio	23,303	424.159	1426.120	74.188	108.970	212.272
Industry age (years)	23,303	23.038	6.405	18.604	22.775	26.988
Industry R&D-to-assets	23,303	0.038	0.039	0.003	0.023	0.071
Panel B: Financial policies, stock idiosyncratic risk, and control variables (Table 7)						
Book leverage	23,346	0.224	0.191	0.056	0.207	0.334
Market leverage	23,346	0.197	0.200	0.030	0.146	0.293
ST3	23,346	0.048	0.084	0.000	0.015	0.058
Total inventory	23,346	0.118	0.120	0.017	0.092	0.173
Cash ratio	23,346	0.264	0.270	0.054	0.170	0.392
R&D to assets	23,346	0.035	0.061	0.000	0.005	0.045
Stock idiosyncratic risk	22,457	0.026	0.022	0.015	0.021	0.030
Std. (ROA)	23,346	0.068	0.096	0.020	0.037	0.075
Lagged vega ($000)	23,346	119	214	10	42	128
Lagged delta ($000)	23,346	696	1807	78	204	564
Net PPE	23,346	0.273	0.217	0.104	0.210	0.384
Market-book ratio	23,346	2.071	1.412	1.247	1.650	2.367
Firm size (log Sales)	23,346	7.269	1.658	6.203	7.204	8.324
ROA	23,346	0.034	0.129	0.014	0.052	0.091
Z-score	23,346	4.525	3.579	2.282	3.570	5.542

Table 3 (cont'd)

Panel C: Yield spreads and control variables (Table 8)

Yield spread	37,794	0.037	0.066	0.013	0.021	0.039
Moody's rating	37,794	12.544	3.738	10	13	15
FPC	37,794	0.204	0.403	0	0	0
MWC	37,794	0.568	0.495	0	1	1
Bond age (years)	37,794	4.195	4.283	1.107	2.999	5.868
No. trades / year	37,794	32.563	44.868	6	14	37
Time to maturity (years)	37,794	10.202	10.976	3.997	7.016	10.055
Issue amount ($M)	37,794	12.781	0.832	12.206	12.766	13.305
Subordinate	37,794	0.070	0.255	0	0	0
Cash ratio	37,794	0.147	0.150	0.037	0.096	0.209
Firm size (log Sales)	37,794	9.080	1.568	8.048	9.140	10.070
Debt ratio	37,794	0.353	0.167	0.238	0.326	0.440
Market-book ratio	37,794	1.775	0.832	1.219	1.535	2.065
Adjusted 1-year stock return	37,794	0.033	0.343	-0.141	0.026	0.195
Three-year sales growth	37,794	0.049	0.125	-0.005	0.034	0.081
ROA	37,794	0.043	0.081	0.019	0.051	0.081
Std. (ROA)	37,794	0.038	0.048	0.013	0.023	0.042
Stock bid-ask spread $\times$ 100	37,794	0.432	0.900	0.024	0.072	0.429
Baa-Aaa spread	37,794	1.002	0.442	0.710	0.930	1.110

Table 4
Religiosity, Unionization Intensity, and Executive Compensation

Table 4 provides regression estimates of logged (1 plus) CEO (alternatively, the top-4 most highly paid non-CEO executives) compensation components regressed on the *Unionization rate*, the *Adherents* measure, and their interaction along with additional control variables specified by Equation (1). We adjust the robust standard errors for clustering at the CIC industry level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: Executive compensation components

	Logged (1+CEO Pay)				Logged (1+Sum Top-Four Non-CEO Executive Pay)			
	Total Pay	Equity	Salary	Bonus	Total Pay	Equity	Salary	Bonus
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Unionization rate	-1.5595***	-2.5810**	-1.5036**	-1.4450	-1.2332***	-3.1577***	-0.4779	0.6603
	(0.001)	(0.013)	(0.041)	(0.342)	(0.001)	(0.000)	(0.150)	(0.399)
Unionization rate × Adherents	1.8945**	4.1340**	1.8704	2.0666	0.8983	3.7346***	0.1264	-2.1837
	(0.012)	(0.010)	(0.151)	(0.442)	(0.172)	(0.008)	(0.825)	(0.106)
Adherents	0.0365	-0.0334	0.1660	1.2180**	-0.0981	-0.6113**	0.1138	0.5028*
	(0.842)	(0.896)	(0.400)	(0.034)	(0.458)	(0.018)	(0.188)	(0.073)
Firm size (log Sales)	0.4343***	0.5940***	0.2000***	0.1757**	0.4307***	0.5821***	0.2231***	0.4383***
	(0.000)	(0.000)	(0.000)	(0.015)	(0.000)	(0.000)	(0.000)	(0.000)
Stock return	0.2302***	0.3190***	-0.0160	0.7830***	0.1864***	0.2320***	-0.0123**	0.3860***
	(0.000)	(0.000)	(0.150)	(0.000)	(0.000)	(0.000)	(0.044)	(0.000)
Lagged stock return	0.1529***	0.1788***	0.0468***	0.3562***	0.0927***	0.1173***	-0.0138*	0.1723***
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.074)	(0.000)
ROA	-0.2685**	-0.6222***	0.0205	1.7084***	-0.6840***	-1.2694***	-0.2585***	0.3453**
	(0.027)	(0.003)	(0.837)	(0.000)	(0.000)	(0.000)	(0.000)	(0.044)
Lagged ROA	0.0550	0.2667*	0.0307	-0.0672	-0.0157	0.1161	-0.0825**	-0.2386**
	(0.477)	(0.089)	(0.599)	(0.739)	(0.795)	(0.298)	(0.012)	(0.018)
Lagged leverage	0.2806***	0.4517***	0.2305***	-0.2563*	0.1317***	0.2238***	0.1089***	0.1125
	(0.000)	(0.000)	(0.000)	(0.088)	(0.009)	(0.005)	(0.000)	(0.196)
Lagged book to market	-0.4542***	-0.8171***	0.1601***	-0.0039	-0.6310***	-1.1366***	-0.0675**	-0.2192**
	(0.000)	(0.000)	(0.001)	(0.982)	(0.000)	(0.000)	(0.017)	(0.036)
Lagged volatility	-0.1111	-0.9856*	-0.4166**	-0.6185	0.6234***	0.9170***	-0.0510	0.7657**
	(0.714)	(0.053)	(0.038)	(0.407)	(0.002)	(0.007)	(0.509)	(0.042)
Lagged investment	0.0173	-0.1856	-0.3191	-0.8769	0.3604	0.7666	-0.0172	0.3908
	(0.943)	(0.701)	(0.254)	(0.503)	(0.145)	(0.108)	(0.875)	(0.503)
Lagged tangibility	-0.3126***	-0.2835	0.0135	0.1132	-0.4167***	-0.5092***	-0.1382***	-0.5654***
	(0.001)	(0.111)	(0.892)	(0.631)	(0.000)	(0.002)	(0.006)	(0.000)
Lagged sales growth	0.0371	0.0329	-0.1143***	0.0876	0.1280***	0.1734***	-0.0724***	0.0342
	(0.381)	(0.693)	(0.001)	(0.611)	(0.000)	(0.005)	(0.000)	(0.607)
Lagged R&D	1.7825***	3.1926***	0.8034***	1.1900	1.5554***	2.9423***	0.6162***	-0.1005
	(0.000)	(0.000)	(0.001)	(0.180)	(0.000)	(0.000)	(0.000)	(0.851)
CEO tenure	-0.0405**	-0.2091***	0.0670***	-0.0684*	-0.0511***	-0.1674***	0.0099*	0.0133
	(0.013)	(0.000)	(0.000)	(0.057)	(0.000)	(0.000)	(0.070)	(0.487)
CEO-Chair dummy	0.0715***	0.1572***	-0.0059	0.0346	0.0512***	0.1181***	0.0181*	0.0519*
	(0.006)	(0.003)	(0.766)	(0.557)	(0.004)	(0.003)	(0.086)	(0.091)
Log (industry capital labor)	0.1356**	0.1394	0.0788*	0.4377**	0.1375**	0.2111**	0.0689***	0.1831
	(0.032)	(0.182)	(0.093)	(0.020)	(0.026)	(0.023)	(0.003)	(0.116)
Log (industry age)	0.0067	0.2133	0.0078	1.0876***	-0.1082*	-0.0974	-0.0037	-0.2100
	(0.939)	(0.253)	(0.931)	(0.000)	(0.085)	(0.479)	(0.933)	(0.181)
Industry R&D	0.9559	1.4346	-0.0464	1.3748	-0.0743	0.4422	-0.3402	-0.0328
	(0.205)	(0.346)	(0.932)	(0.450)	(0.908)	(0.786)	(0.326)	(0.974)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	23,303	23,303	23,303	23,303	14,391	14,391	14,391	14,391
R-squared	0.464	0.352	0.253	0.435	0.622	0.445	0.646	0.382

Panel B: Marginal *Unionization Rate* estimates at low and high levels of *Adherents*

Dependent variable	*Unionization Rate* estimate for Mean (*Adherents*) – 2 SD	*Unionization Rate* estimate for Mean (*Adherents*) + 2 SD	Difference in *Unionization Rate* estimates	*P*-value
Panel B1: CEO compensation				
Log (1+Total pay)	-0.9654***	-0.1565	0.8089**	0.018
	(0.000)	(0.470)		
Log (1+Equity)	-1.2846**	0.4805	1.7651**	0.021
	(0.037)	(0.285)		
Log (1+Salary)	-0.9170**	-0.1184	0.7986	0.165
	(0.012)	(0.696)		
Log (1+Bonus)	-0.7969	0.0854	0.8824	0.424
	(0.316)	(0.908)		
Panel B2: Top-Four Non-CEO Executive Compensation				
Log (1+Sum total pay)	-0.9581***	-0.5526***	0.4055	0.158
	(0.000)	(0.009)		
Log (1+Sum equity)	-1.9927***	-0.3366	1.6561***	0.006
	(0.000)	(0.369)		
Log (1+Sum salary)	-0.4413**	-0.3769**	0.0644	0.810
	(0.019)	(0.031)		
Log (1+Sum bonus)	-0.0335	-0.9806**	-0.9472	0.110
	(0.942)	(0.023)		

Table 5
State-level Unionization Environment and CEO Control-based Subsets

Table 5 provides regression estimates of logged (1 plus) CEO compensation components (Panel A) and the logged (1 plus) sum of the components of the top-4 executives (Panel B) regressed on the *Unionization rate*, the *Adherents* measure, and their interaction along with additional control variables specified by Equation (1). The *Labor strength index* is calculated as the sum of the ranks of the percentages of non-white workers, blue collar workers, male workers, and the percentage of all unemployed workers for each state-year based on each firm's headquarter location. We sort the *Labor strength index* and create subsets of firm-years in the top and bottom terciles, respectively. We adjust the robust standard errors for clustering at the CIC industry level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: CEO Equity Pay

	State Unionization Rate > Median	State Unionization Rate ≤ Median	Strong Union State	Weak Union State	CEO-Board Chair=1	CEO-Board Chair=0	CEO Tenure > Median	CEO Tenure ≤ Median
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Unionization rate	-4.6945***	-1.0938	-5.9496***	-0.8543	-4.3558***	-1.2736	-4.9496***	-0.9634
	(0.000)	(0.493)	(0.001)	(0.654)	(0.001)	(0.409)	(0.002)	(0.385)
Unionization rate × Adherents	6.6912***	2.6674	10.2859***	0.0172	6.9008***	1.0644	7.8793***	1.3850
	(0.003)	(0.307)	(0.003)	(0.996)	(0.004)	(0.712)	(0.005)	(0.430)
Adherents	-0.4013	0.0321	-0.5353	0.5452	-0.3029	0.4715*	-0.1030	0.0320
	(0.368)	(0.935)	(0.344)	(0.347)	(0.537)	(0.068)	(0.842)	(0.925)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,182	10,845	7,639	4,620	11,561	9,466	9,886	11,141
R-squared	0.324	0.377	0.322	0.390	0.349	0.351	0.352	0.349
Difference in Coefficients χ2		2.64		8.58		5.07		7.47
(*p*-value)		(0.104)		(0.003)		(0.024)		(0.006)

Panel B: Top-Four Non-CEO Equity Pay

	State Unionization Rate > Median	State Unionization Rate ≤ Median	Strong Union State	Weak Union State	CEO-Board Chair=1	CEO-Board Chair=0	Sum Top 4 Tenure > Median	Sum Top 4 Tenure ≤ Median
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Unionization rate	-4.4463***	-1.9369*	-5.6906***	-3.3746	-4.5276***	-1.7086	-5.4404***	-3.2379**
	(0.002)	(0.089)	(0.000)	(0.143)	(0.000)	(0.260)	(0.003)	(0.026)
Unionization rate × Adherents	5.6425**	1.7487	9.1250***	3.7746	5.5056***	0.6884	7.3094**	4.2674
	(0.020)	(0.330)	(0.002)	(0.275)	(0.006)	(0.775)	(0.013)	(0.132)
Adherents	-0.8338**	-0.5321	-1.2282**	-0.2625	-1.0783**	0.0847	-0.8760	-0.7382**
	(0.039)	(0.197)	(0.029)	(0.688)	(0.015)	(0.789)	(0.113)	(0.018)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,141	6,211	4,602	2,693	7,360	4,992	3,571	3,571
R-squared	0.451	0.450	0.460	0.481	0.446	0.472	0.467	0.453
Difference in Coefficients χ2		3.37		3.16		3.45		1.18
(*p*-value)		(0.066)		(0.075)		(0.063)		(0.278)

Table 6
Religiosity, Unionization Intensity, and Executive Compensation:
Right-to-work Effect

Table 6 provides regression estimates of logged (1 plus) CEO compensation components regressed on the *Non-RTW* headquarter location indicator, the *Adherents* measure, and their interaction along with additional control variables specified by Equation (1). We adjust the robust standard errors for clustering at the CIC industry level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

	State Unionization Rate > Median				State Unionization Rate ≤ Median			
	Total pay	Equity	Salary	Bonus	Total pay	Equity	Salary	Bonus
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Non-RTW	-0.4443*	-0.9472*	0.2845	0.1948	0.0516	0.2699	-0.0782	-0.6736
	(0.055)	(0.060)	(0.211)	(0.893)	(0.824)	(0.542)	(0.654)	(0.226)
Non-RTW × Adherents	1.1271**	2.2628**	-0.3399	-0.5013	0.0369	-0.3127	0.3383	2.0116*
	(0.028)	(0.012)	(0.490)	(0.874)	(0.936)	(0.734)	(0.315)	(0.076)
Adherents	1.4386***	2.3721***	0.2038	1.9940	-0.0609	0.1986	0.1763	0.7228
	(0.004)	(0.004)	(0.681)	(0.493)	(0.829)	(0.695)	(0.451)	(0.314)
Firm size (log Sales)	0.4294***	0.5870***	0.1904***	0.1411*	0.4522***	0.6138***	0.2064***	0.1021
	(0.000)	(0.000)	(0.000)	(0.067)	(0.000)	(0.000)	(0.000)	(0.181)
Stock return	0.2630***	0.4158***	-0.0206	0.7452***	0.2020***	0.2237***	-0.0036	0.6307***
	(0.000)	(0.000)	(0.231)	(0.000)	(0.000)	(0.001)	(0.836)	(0.000)
Lagged stock return	0.1477***	0.1434**	0.0539**	0.3032***	0.1559***	0.2021***	0.0400	0.2970***
	(0.000)	(0.018)	(0.019)	(0.000)	(0.000)	(0.000)	(0.147)	(0.003)
ROA	-0.2549*	-0.5621**	0.0795	1.5174***	-0.2403*	-0.4440**	-0.0552	1.7302***
	(0.054)	(0.016)	(0.572)	(0.004)	(0.059)	(0.039)	(0.511)	(0.000)
Lagged ROA	-0.0704	0.1802	-0.0280	-0.0538	0.2051	0.4799*	0.1142*	-0.0452
	(0.285)	(0.377)	(0.759)	(0.879)	(0.101)	(0.050)	(0.096)	(0.859)
Lagged leverage	0.1622*	0.2603	0.2831***	-0.0796	0.3898***	0.6059***	0.2273***	-0.2558
	(0.090)	(0.113)	(0.001)	(0.692)	(0.000)	(0.000)	(0.001)	(0.321)
Lagged book to market	-0.6861***	-1.2035***	0.1905**	-0.2858	-0.2679***	-0.5112***	0.1601**	0.2450
	(0.000)	(0.015)	(0.207)	(0.207)	(0.000)	(0.000)	(0.010)	(0.297)
Lagged volatility	-0.6682	-1.5153**	-0.8864**	-0.4928	0.1845	-0.6915	0.0400	-1.3307*
	(0.178)	(0.042)	(0.047)	(0.633)	(0.533)	(0.267)	(0.862)	(0.083)
Lagged investment	-0.2600	-0.1563	-0.4327	-2.9069**	0.1863	-0.0937	-0.1305	1.2766
	(0.528)	(0.864)	(0.300)	(0.016)	(0.565)	(0.881)	(0.728)	(0.502)
Lagged tangibility	-0.4571***	-0.4858*	0.1704	-0.0529	-0.2396*	-0.0762	-0.2229**	0.0173
	(0.002)	(0.055)	(0.435)	(0.862)	(0.080)	(0.760)	(0.019)	(0.958)
Lagged sales growth	0.0304	0.0762	-0.0806	0.1534	0.0053	-0.0661	-0.1424***	0.1491
	(0.650)	(0.467)	(0.121)	(0.540)	(0.912)	(0.491)	(0.000)	(0.386)
Lagged R&D	1.8557***	3.0634***	1.1737***	1.3186	1.7190***	3.0049***	0.5186	0.4262
	(0.000)	(0.000)	(0.000)	(0.265)	(0.003)	(0.001)	(0.307)	(0.600)
CEO tenure	-0.0466**	-0.2372***	0.0703***	-0.0228	-0.0390	-0.1598***	0.0568*	-0.1747***
	(0.011)	(0.000)	(0.000)	(0.684)	(0.123)	(0.001)	(0.051)	(0.000)
CEO-Chair dummy	0.0439	0.1073	-0.0051	0.0027	0.0870**	0.1799**	-0.0220	0.1313*
	(0.217)	(0.126)	(0.867)	(0.979)	(0.034)	(0.017)	(0.537)	(0.086)
Log (industry capital labor)	0.2346***	0.2852	0.1613*	0.3761*	0.0458	0.0193	0.0144	0.1650
	(0.007)	(0.169)	(0.065)	(0.055)	(0.517)	(0.873)	(0.774)	(0.404)
Log (industry age)	0.0731	0.2054	0.0670	1.2975***	-0.0929	0.1943	-0.1256	0.7994**
	(0.593)	(0.480)	(0.696)	(0.001)	(0.471)	(0.400)	(0.237)	(0.015)
Industry R&D	1.7864	3.9504	0.3721	4.0154**	-0.3749	-2.6790	-0.5344	-2.3284
	(0.105)	(0.104)	(0.406)	(0.027)	(0.527)	(0.118)	(0.512)	(0.486)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	10,182	10,182	10,182	10,182	10,845	10,845	10,845	10,845
R-squared	0.462	0.323	0.252	0.432	0.454	0.376	0.241	0.425

Table 7
Religiosity, Unionization Intensity, and Corporate Policy Choices

Table 7 provides regression estimates of alternative financial policy variables and stock idiosyncratic risk regressed on the *Unionization rate*, the *Adherents* measure, and their interaction along with additional bond- and firm-level control variables. We adjust the robust standard errors for clustering at the CIC industry level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: Least squares estimates

	Book Leverage	Market Leverage	ST3	Total Inventory	Cash ratio	R&D Intensity	Idiosyncratic Risk
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
Unionization rate	0.3907***	0.5192***	0.1805**	0.2121***	-0.3495*	-0.2055***	0.0408*
	(0.001)	(0.000)	(0.021)	(0.000)	(0.057)	(0.000)	(0.073)
Unionization rate × Adherents	-0.5832***	-0.6034***	-0.2881**	-0.2873***	0.6013**	0.2636***	-0.0670*
	(0.002)	(0.010)	(0.023)	(0.001)	(0.016)	(0.000)	(0.055)
Adherents	0.0614*	0.0656*	0.0272	0.0573***	-0.0692	-0.0465***	0.0083
	(0.079)	(0.095)	(0.150)	(0.006)	(0.162)	(0.000)	(0.138)
Unionization rate × Std. (ROA)	0.8725**	0.8471***	0.3358**	0.1938**	-0.9355**	-0.3605***	-0.0056
	(0.015)	(0.005)	(0.018)	(0.029)	(0.013)	(0.000)	(0.884)
Std. (ROA)	-0.0866***	-0.1026***	-0.0304*	-0.0320***	0.2776***	0.0601***	0.0073
	(0.002)	(0.000)	(0.059)	(0.003)	(0.000)	(0.000)	(0.134)
Lagged (CEO vega)	0.0005	-0.0034**	-0.0002	-0.0049***	0.0047**	0.0029***	-0.0005***
	(0.711)	(0.010)	(0.648)	(0.000)	(0.015)	(0.000)	(0.001)
Lagged (CEO delta)	-0.0010	-0.0147***	-0.0053***	-0.0039***	0.0048*	0.0004	-0.0008***
	(0.553)	(0.000)	(0.000)	(0.000)	(0.097)	(0.485)	(0.002)
Net PPE	0.0306	0.0626***	0.0152*	-0.0524***	-0.3314***	-0.0219***	0.0040
	(0.133)	(0.006)	(0.062)	(0.002)	(0.000)	(0.000)	(0.116)
Market-book ratio	0.0512***	0.0011	-0.0002	-0.0070***	0.0133**	0.0101***	-0.0003
	(0.000)	(0.745)	(0.845)	(0.000)	(0.027)	(0.000)	(0.300)
Firm size (log Sale)	0.0089***	0.0206***	0.0034***	0.0024	-0.0455***	-0.0066***	-0.0024***
	(0.000)	(0.000)	(0.000)	(0.187)	(0.000)	(0.000)	(0.000)
ROA	-0.0350	-0.2457***	-0.0840***	0.0001	-0.0437	-0.1036***	-0.0331***
	(0.233)	(0.000)	(0.000)	(0.996)	(0.224)	(0.000)	(0.000)
Z-Score	-0.0380***	-0.0222***	-0.0050***	0.0017**	0.0164***	-0.0008*	-0.0002
	(0.000)	(0.000)	(0.000)	(0.045)	(0.000)	(0.096)	(0.118)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	23,346	23,346	23,346	23,346	23,346	23,346	22,457
R-squared	0.471	0.477	0.181	0.610	0.493	0.538	0.223

Panel B: Marginal *Unionization Rate* estimates at low and high *Adherents* levels

Dependent variable	*Unionization Rate* estimate for Mean (*Adherents*) – 2 SD	*Unionization Rate* estimate for Mean (*Adherents*) + 2 SD	Difference in *Unionization Rate* estimates	*P*-value
Book leverage	0.2059***	-0.0427	-0.2486***	0.003
	(0.004)	(0.518)		
Market leverage	0.3280***	0.0708	-0.2572**	0.014
	(0.000)	(0.388)		
ST3	0.08993**	-0.0335	-0.1228**	0.024
	(0.027)	(0.279)		
Total Inventory	0.1211***	-0.0014	-0.1225***	0.003
	(0.005)	(0.972)		
Cash ratio	-0.1590	0.0973	0.2563**	0.019
	(0.194)	(0.331)		
R&D Intensity	-0.1220***	-0.0096	0.1124***	0.000
	(0.000)	(0.666)		
Idiosyncratic Risk	0.0196	-0.0090	-0.0285*	0.059
	(0.105))	(0.294)		

Table 8
Religiosity, Unionization Intensity, and Employee Wages

Table 8 provides mean (median) values of industry-adjusted labor and related expense divided by revenue for two-way sorts on the religiosity measure and the unionization rate, based on a total of 2,527 firm-year observations over the 1992-2018 period. The number of observations for each subset is provided below the median. ***, **, and * correspond to significance at the 1, 5, and 10 percent level, respectively.

	Unionization rate Q1	Unionization rate Q2	Unionization rate Q3	Unionization rate Q4	Difference (Q4-Q1)	*P*-value
Adherents Q1	-0.098	-0.167	0.030	0.000	0.098	0.123
	(-0.027)	(-0.057)	(-0.005)	(-0.022)	(0.005)	(0.168)
	[157]	[178]	[84]	[129]		
Adherents Q2	0.093	0.870	0.274	-0.027	-0.120*	0.057
	(0.001)	(-0.026)	(-0.015)	(-0.021)	(-0.022)**	(0.017)
	[167]	[134]	[164]	[130]		
Adherents Q3	-0.046	-0.151	-0.014	0.005	0.051***	0.001
	(-0.005)	(0.010)	(-0.030)	(-0.005)	(-0.000)	(0.116)
	[191]	[120]	[137]	[132]		
Adherents Q4	-0.258	-0.444	-0.009	0.016	0.237***	0.003
	(-0.036)	(-0.042)	(-0.023)	(0.022)	(0.058)***	(0.000)
	[148]	[166]	[115]	[123]		

Table 9
Religiosity, Unionization Intensity, and the Cost of Corporate Debt

Table 9 provides regression estimates of secondary market corporate bond yield spreads regressed on the *Unionization rate*, the *Adherents* measure, and their interaction along with additional bond- and firm-level control variables. We adjust the robust standard errors for clustering at the CIC industry level and provide *p*-values in parentheses. *, **, and *** denotes significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Panel A: Least squares estimates

	Model (1) Full Sample	Model (2) ST maturity	Model (3) LT maturity	Model (4) LT High Yield	Model (5) LT Inv. Grade
Unionization rate	0.0008***	0.0009	0.0005**	0.0021**	0.0003**
	(0.004)	(0.320)	(0.015)	(0.010)	(0.039)
Unionization rate × Adherents	-0.0010**	-0.0009	-0.0007**	-0.0034**	-0.0003
	(0.041)	(0.538)	(0.044)	(0.025)	(0.136)
Adherents	0.0112	0.0111	0.0124**	0.0382**	0.0071**
	(0.112)	(0.496)	(0.012)	(0.023)	(0.039)
Residual Moody's rating	-0.0039***	-0.0056***	-0.0043***	-0.0085***	-0.0017***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fixed price call$_t$	0.0105***	0.0361***	-0.0004	-0.0114**	-0.0007
	(0.000)	(0.000)	(0.838)	(0.032)	(0.710)
Make whole call	-0.0067***	-0.0106**	-0.0013	-0.0105**	0.0011
	(0.001)	(0.012)	(0.137)	(0.038)	(0.111)
Log (bond age)$_t$	0.0024***	-0.0006	0.0020***	0.0009	0.0018***
	(0.006)	(0.840)	(0.000)	(0.593)	(0.000)
Log (No. trades)$_t$	-0.0024***	0.0086***	-0.0005	-0.0008	-0.0002
	(0.000)	(0.000)	(0.237)	(0.459)	(0.497)
Log (time to maturity)$_t$	-0.0215***	-0.0779***	-0.0008	-0.0026	0.0005
	(0.000)	(0.000)	(0.278)	(0.437)	(0.404)
Log (issue amount)$_t$	-0.0009	-0.0098**	-0.0012*	-0.0062***	-0.0015***
	(0.616)	(0.048)	(0.061)	(0.002)	(0.000)
Negative equity	0.0217***	0.0412**	0.0279***	0.0112	0.0013
	(0.000)	(0.013)	(0.001)	(0.232)	(0.554)
Cash ratio$_t$	0.0100**	-0.0063	0.0016	-0.0184	0.0018
	(0.029)	(0.641)	(0.653)	(0.110)	(0.380)
Firm size	-0.0012	-0.0054***	-0.0015***	-0.0006	-0.0007*
	(0.190)	(0.008)	(0.002)	(0.299)	(0.080)
Debt ratio$_t$	0.0141***	0.0048	0.0154***	0.0209***	0.0046*
	(0.003)	(0.622)	(0.000)	(0.004)	(0.067)
Market-book ratio$_t$	0.0000	0.0009	-0.0011	0.0024	-0.0018***
	(0.955)	(0.622)	(0.249)	(0.392)	(0.002)
Adjusted 1-year stock return$_t$	-0.0168***	-0.0194***	-0.0065*	-0.0139**	-0.0020*
	(0.000)	(0.002)	(0.054)	(0.016)	(0.078)
Three-year sales growth$_t$	0.0147**	0.0264*	-0.0015	0.0137	-0.0054***
	(0.027)	(0.090)	(0.697)	(0.150)	(0.004)
ROA$_t$	-0.1365***	-0.1699***	-0.0576***	-0.0881***	-0.0146***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Std. (ROA)$_t$	0.0659***	0.0972**	0.0227	0.0258	0.0068
	(0.000)	(0.023)	(0.112)	(0.296)	(0.305)
Stock bid-ask spread$_t$ × 100	0.0077***	0.0170***	0.0049***	0.0069***	-0.0000
	(0.001)	(0.001)	(0.002)	(0.007)	(0.990)
Baa-Aaa spread$_t$	0.0181***	0.0179	0.0173***	0.0625***	0.0094***
	(0.000)	(0.122)	(0.000)	(0.005)	(0.000)
State fixed effects	Yes	Yes	Yes	Yes	Yes
SIC2 fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
No. Obs.	38,203	6,662	10,467	1,630	8,837
R-squared	0.343	0.545	0.21	0.499	0.346
Difference in *Unionization rate × Adherents* χ^2			0.49		5.03
(*p*-value)			(0.689)		(0.025)

Panel B: Marginal *Unionization Rate* estimates at low and high *Adherents* levels

	Unionization Rate estimate for Mean (*Adherents*) – 2 SD	*Unionization Rate* estimate for Mean (*Adherents*) + 2 SD	Difference in *Unionization Rate* estimates	*P*-value
Full sample	0.0005***	0.0001	-0.0004**	0.023
	(0.001)	(0.482)		
ST maturity	0.0006	0.0001	-0.0005	0.303
	(0.161)	(0.828)		
LT maturity	0.0003*	-0.0000	-0.0003**	0.047
	(0.064)	(0.949)		
LT High Yield	0.0010**	-0.0005	-0.0016***	0.001
	(0.012)	(0.204)		
LT Inv. Grade	0.0002*	0.0000	-0.0002*	0.092
	(0.075)	(0.765)		

Appendix
Description of Explanatory Variables

Variable Name	Description and Source
Unionization rate	CIC-level unionization membership rate. *Source*: www.unionstats.com
Adherents	County-level percentage of religious adherents. *Source*: https://www.thearda.com/Archive/Files/Downloads/RCMSMGST_DL2.asp issue_name (FISD Issues)
Panel A: Financial control variables (Tables 2-7)	
Firm size	Log (Sale). *Source*: Compustat
Stock return	Total stock return measured over the 225 days prior to the FYE date. *Source*: CRSP
ROA	Return on assets (NI / AT). *Source*: Compustat
Leverage	Interest-bearing debt (sum of DLC and DLTT) divided by total assets (AT). *Source*: Compustat
Book-market	Total assets divided by (assets minus book equity plus market capitalization AT - CEQ + (PRCC_F * CSHO)). *Source*: Compustat
Cash flow volatility	Standard deviation of (EBITDA scaled by total assets) measured over the five prior years. *Source*: Compustat
Capital expenditure	Capital expenditure (CAPX) divided by total assets. *Source*: Compustat
Tangibility	Net property, plant and equipment (PPENT) scaled by total assets. *Source*: Compustat
Sales growth	Logged SALE divided by prior SALE. *Source*: Compustat
R&D Expenditure	XRD divided by total assets. *Source*: Compustat
CEO Tenure	CEO tenure in years (Fiscal year – year(BECAMECEO)). *Source*: Execucomp
CEO Chair	Dummy variable equal to one if the CEO is also the board chair. *Source*: Execucomp
Industry capital-labor ratio	Mean of gross property plant and equipment (PPEGT) divided by total assets for all firms in a given SIC2 industry code. *Source*: Compustat
Industry age	Mean of firm age (fiscal year minus year of CRSP listing date) for all firms in a given SIC2 industry code. *Source*: CRSP Header File
Industry R&D-to-assets	Mean of R&D Expenditure (XRD) divided by total assets for all firms in a given SIC2 industry code. *Source*: Compustat
Delta	Sensitivity of CEO incentives (previously granted exercisable and unexercisable options plus current option awards plus equity grants) to a 1% change in stock price, using the method of Core and Guay (2002). *Source:* ExecuComp, CRSP.
Vega	Sensitivity of CEO incentives (previously granted exercisable and unexercisable options plus current option awards plus equity grants) to a 1% change in stock return standard deviation, using the method of Guay (1999). *Source:* ExecuComp, CRSP
Panel A: Bond-, firm-, and macroeconomic level control variables (Table 8)	
Moody's bond rating	Moody's bond rating, where the letter ratings are coded using numbers from 1 ("C") to 21 ("Aaa"). *Source*: Mergent FISD
Fixed price call	A dummy variable equal to 1 if the bond has a call provision and 0 otherwise. *Source*: Mergent FISD
Make whole call	A dummy variable equal to 1 if the bond has a make-whole call provision and 0 otherwise. *Source*: Mergent FISD
Bond age	Fractional number of years between the transaction date and offering date. Source: Mergent FISD Issues
No. Trades	Logged number of trades over the calendar year relevant to the bond transaction date. *Source*: Mergent FISD
Time to maturity	Fractional number of years to final maturity. *Source*: Mergent FISD
Issue amount	Principal issued on the issue date: *Source:* Mergent FISD
Subordinate	Dummy variable equal to one if the bond is subordinated. *Source:* Parsed from security_level='SUB'. *Source*: Mergent FISD
Cash ratio	Cash (CHE) divided by total assets (AT). *Source:* Compustat
Debt ratio	Interest-bearing debt (sum of DLC and DLTT) divided by total assets (AT). *Source*: Compustat
Market-book ratio	Total liabilities plus market capitalization of equity divided by total assets (AT-CEQ + (PRCCF×CSHO) / AT). *Source:* Compustat
Adjusted 1-year stock return	Cumulated one-year abnormal return ending the month prior to the issue date using a single market model and the CRSP value-weighted index. *Source*: CRSP
Three-year sales growth	Three-year geometric growth in sales ending on the year of the issue. *Source*: Compustat
Stock bid-ask spread	Average of daily bid-ask spread for the prior 225 days using the method of Corwin and Schultz (2012). *Source* of inputs: CRSP
Baa-Aaa index spread	Moody's Seasoned Baa Corporate Bond Yield minus the Aaa Corporate Bond Yield. *Source*: FRED