LABOR UNION AND LINGUISTIC ATTRIBUTES IN FIRM DISCLOSURE

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致悠悠之求学岁月：

公元 2020 年，这一年世界上发生了许多事情。作为茫茫宇宙中的一粒微尘，我算是比较幸运的。少年时我急于奔向远方，不懂得世间团圆中相互谅解的温柔，也没想过未来日子里家人无言地宽宥我的遥远和缺席。回首往昔，对我人生影响最大的事是什么呢？是在家自学、跳级，还是到美国留学，抑或是恰巧订了一张在入境禁令生效前降落美国的机票？日子向着出人意料的方向继续着。我们预测不到哪个人哪件事会改变人生的轨迹或带来生活中的小确幸，能做的只有不停脚步，碰撞出一个接一个的可能性。靠着混乱勃郁的生命力，努力向外推动自己的边界，也试着推动世界一点点。我即将离开这个连接着星辰与大海的岛屿。那些经过漫长时间抵达地球的星光、金色的暖阳、细密的沙滩及流淌在其间的青春梦想都承载了一段不可复制的记忆。但毕竟，怀念的并非只是城市本身。虽然我们这个星球表面发生了很多不尽人意的事情，但太阳仍然升起，天体的运行也将延续下去。总之，未来可期，美丽人生才刚刚开始。

“You know how everyone’s always saying seize the moment?”
“I don’t know, I’m kind of thinking it’s the other way around, you know, like the moment seizes us.”

—于世间二十五载，聊以为记。

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ABSTRACT

Little research examines managers' language itself in the presence of labor unions, especially using a rich communication channel such as earnings conference calls. By disentangling the two latent components of linguistic complexity (i.e. information and obfuscation) using conference call transcripts, I find that firms with stronger labor unions tend to disclose less information and, surprisingly, employ less obfuscation. However, the negative relation between obfuscation and union strength is driven by the loss firms subsample, indicating that the strategic obfuscation of negative news is less likely for firms with a powerful labor union in order to be forthcoming about negative information to gain bargaining power. Furthermore, I document that unionized firms tend to provide more non-factual language to add noise to disclosure, reveal less forward-looking information, and use more negative words in their narratives. This study provides a comprehensive view on the nuanced linguistic styles and contents via which firms react to labor unions.

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CHAPTER 1. INTRODUCTION

Labor unions have more influence on corporate decisions and stronger negotiation power compared to their non-unionized counterparts, because of their ability to withdraw contribution through strikes and equity ownership (e.g. Faleye et al. 2006; Prevost et al. 2012). In 2018, there were at least 20 major strikes involving 485,000 workers in the United States.[1] Since 1986, the year 2018 has the most workers that engaged in work stoppages and other disputes to demand higher pay and better working conditions. Public approval of unions also reaches a new high point in the decades.[2] Organized labor has notched some significant victories. Specifically, unions have prompted California, Massachusetts, and cities such as Seattle to increase their minimum wage over the past years. Previous studies on labor unions show whether, when, and how frequently managers disclose information (e.g. Bova 2013; Bova et al. 2015; Chung et al. 2015). However, few studies examine the effect of unions on the language of corporate disclosure, especially in a rich communication channel such as conference calls.

Firms' reporting incentives are not obvious to outsiders. In this paper, I use textual properties of conference call disclosures and investigate a previously unexplored link between labor unions and subtle linguistic elements of managerial disclosures. I aim to solve the puzzle of how employees, as powerful stakeholders, affect disclosure strategy and language. Stated differently, I examine how managers adjust their linguistic attributes and intentions (i.e. information vs. obfuscation) in the face of powerful labor unions. In addition, I take a closer look at the specific disclosure content – factual language (jargon) and forward-looking information. Lastly, I investigate another important linguistic attribute on earnings conference calls – tone. In

[1] For more details, see http://time.com/5525512/american-workers-strikes-bureau-labor-statistics/.
[2] https://news.gallup.com/poll/265916/labor-day-turns-125-union-approval-near-year-high.aspx.

terms of the association between labor unions and managers' linguistic attributes, little research exists that speaks directly to my line of inquiry. This paper aims to fill the void on the textual properties of disclosures in unionized firms, and to shed light on their information environment by indicating not only a specific disclosure channel, but also the linguistic mechanisms via which information asymmetry of unionized firms can be influenced.

This paper is motivated by two studies – Hilary (2006) and Bushee et al. (2018). Hilary (2006) argues that firms facing powerful labor unions tend to increase information asymmetry to gain bargaining leverage against unions. Consistent with his prediction, he finds that unionized firms are associated with high information asymmetry. In another line of research, Bushee et al. (2018) examine linguistic complexity in firm disclosures. They illustrate that linguistic complexity commingles two latent components, information and obfuscation. These two components are associated with information environment in opposite directions. Specifically, they find that the information level of linguistic complexity is negatively related to information asymmetry while the obfuscation level of linguistic complexity is positively related to information asymmetry.

Recent literature indicates that qualitative characteristics of disclosures can imply managerial incentives or actions beyond quantitative information. Some scholars interpret high disclosure complexity as an intentional strategy by managers to obfuscate (e.g. Bova et al. 2015; Li 2008). These studies often use the Fog measure to examine the complexity or readability[3] of 10-K filings (e.g. De Franco et al. 2015; Li 2008). The idea behind this measure is that corporate filings should be easy to understand in order to decrease information processing costs for users. Thus, high value of the Fog measure suggests low reporting quality. Consistent with this

[3] Readability and complexity are often used interchangeably in this line of research.

assumption, Leuz and Wysocki (2016) show that managers strategically inform and obfuscate to balance the benefits of enhanced disclosure with the costs of transferring information to competitors. However, complex language could also represent necessary information regarding firms' complex business environments (Bloomfield 2008; Bushee et al. 2018). Christopher Cox, former Chairman of the SEC, said "we may soon be looking to the Gunning-Fog and Flesch-Kincaid models to judge the level of compliance with the plain English rules" (Cox 2007). To properly evaluate reporting quality and managerial intentions behind disclosures, it is critical to identify the underlying information element and obfuscation element out of the existing complexity measure (i.e. Fog index).

Using linguistic features of managerial narratives on conference calls offers a great way to understand why and how managers structure their language in the presence of labor unions. Public earnings conference calls are one of the most important channels for communicating firm information (e.g. Brown et al. 2018). Over the past decade, researchers have employed this disclosure channel because of its unique characteristics. First, unlike mandatory or written disclosures, the language on conference calls reflects less boilerplate information, and is more likely to show managers' disclosure intentions (e.g. Bushee et al. 2018). Further, conference calls provide additional cues (e.g. interaction and verbal cues) and more complex information (e.g. forward-looking information) compared to other disclosure channels (Kimrough and Louis 2011; Matsumoto et al. 2011; Skinner 2019). Moreover, the high degree of visibility and timeliness of a conference call make it a powerful setting to observe disclosure incentives.

Despite the benefits for firms from voluntary disclosures, such as high firm value and low cost of capital (e.g. Dye 1985; Jovanovic 1982), managers have an incentive to disclose less since they know that labor unions actively seek firms' information to enhance their negotiation

ability and extract rents from companies (e.g. Chung et al. 2015; Hamm et al. 2018). Unions require information to act effectively but they do not possess all the firms' detailed data (Leap 1991). Revealing information weakens firms' positions in gaining bargaining power (e.g. Chung et al. 2015) while possessing more information enables labor unions to receive more resources (Kleiner and Bouillon 1988). Consequently, firms often hide or misrepresent their true positions in labor negotiations (Reynolds et al. 1998). Based on these arguments, I predict that, as the influence of unions and their ability to extract profits increase, managers should have stronger incentive to disclose less information.

While it is reasonable to extend the above arguments and predict that managers of unionized firms employ more obfuscation in order to maintain information advantage, there could exist an opposite conjecture: firms with stronger unions tend to present less obfuscation. Specifically, the obfuscation hypothesis (Courtis 1998) suggests that management mainly uses confusing languages to obscure bad news (e.g. Li 2008; Smith and Taffler 1992; Subramanian et al. 1993). However, Chung et al. (2015) show that managers facing strong labor unions are motivated to disclose negative information in a timely manner in order to gain bargaining power and discourage employees' demands. Thus, I expect that firms with powerful labor unions might have fewer incentives to obfuscate (bad news).

I find that unionized firms tend to present a lower information level and a lower obfuscation level of linguistic complexity on earnings conference calls. I further show that the negative association between the obfuscation component and union strength is much stronger in the loss firms subsample, whereas the negative relation is weaker in the profit firms subsample. Consistent with the obfuscation hypothesis, the results indicate that strategic obfuscation (mainly

of negative news) is more likely to be used by firms with a weak labor union, since strong unionized firms use negative information to gain bargaining power and reserve resources.

To alleviate the concern that unionized firms and non-unionized ones are inherently different from each other, I further construct a propensity score matched sample to test my hypotheses. In addition, I use the state-level staggered adoption of right-to-work laws as an exogenous shock to unions' bargaining power to circumvent the endogeneity problem (e.g. Chava et al. 2019; Matsa 2010). The results still hold in these robustness tests.

To provide a comprehensive understanding on how managers of unionized firms manipulate disclosure language to gain bargaining power, I investigate other linguistic properties. First, I explore the usage of non-factual language (the absence of jargon) in these firms since it is perceived as less informative (Barth et al. 2020). The results indicate that unionized firms are motivated to provide more noises in disclosures by using non-factual language. Second, I examine forward-looking information since it is most desired by unions and hidden by managers (Kleiner and Bouillon 1988; Palmer 1977). Conference calls provide a powerful setting to examine this disclosure content since managers are willing to disclose incremental forward-looking information in a less-constrained fashion (Matsumoto et al. 2011). I find that unionized firms are less likely to provide forward-looking information, especially during periods of poor performance. Lastly, building on the prior findings that unionized firms are more likely to send out negative outlooks to discourage employees' demands (Bova 2013; Chung et al. 2015), I show that managers of firms with stronger labor unions tend to use more negative tone on conference calls.

Jensen and Meckling (1976) emphasize that corporate decisions are the outcome of a bargaining process among all stakeholders. In this regard, my paper contributes to the literature

by being an attempt to foster a deeper understanding on how powerful stakeholders (i.e. unionized workers) affect managerial language and disclosure incentives through directly looking at the language itself using a less boilerplate and richer channel (i.e. earnings conference calls). The present study adds to a growing stream of empirical research on using textual disclosure patterns to explore managerial intentions. Moreover, this paper extends the literature that shows firms react to unions' rent extraction by hiding information and resources. By examining various linguistic features, this study illustrates how managers make the most of disclosure language to maximize their interests in the presence of powerful labor unions. Lastly, this paper offers fresh insights into how labor unions affect firms' information asymmetry by indicating not only a specific disclosure channel, but also the underlying linguistic mechanisms that could influence the information environment of unionized firms.

The remainder of this paper proceeds as follows. Section 2 reviews the background and develops the hypotheses. Section 3 discusses the sample, key variables, and descriptive statistics. Section 4 provides the research design and main empirical results. Section 5 displays the additional analyses, and Section 6 concludes.

CHAPTER 2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1. Conference call and linguistic attributes

There exists a long stream of literature on earnings conference calls which become increasingly popular in recent years. Conference call is one of the most important tools firms employ to convey financial and non-financial messages (e.g. Brown et al. 2018).

Conference calls normally include two parts: managers' presentation and Q&A. This disclosure channel provides incremental information beyond that is presented in the corresponding quarterly report or press release for several reasons. First, conference calls offer spontaneity and additional cues (e.g. natural language, verbal cues, and interaction opportunity). Chafe and Tannen (1987) argue that spoken word presents tone, emotion, and greater language variety relative to written languages. Second, existing literature suggests that conference calls contain more complex information (Kimrough and Louis 2011; Matsumoto et al. 2011; Skinner 2019). A recent study documents that managers place complex information in rich disclosure channels, such as conference calls, to achieve maximum communication efficiency (Skinner 2019). In addition, conference calls are subject to lower risk of legal liability (Frankel et al. 1999), making statements less formal and less boilerplate.[4] Consequently, managers are willing to provide incremental information, such as more forward-looking statements and detailed segment data, during conference calls rather than to include them in the press release directly, especially when managers are unsure of the market's informational demand (Frankel et al. 1999; Jung et al. 2018; Miller and Skinner 2015). Because of these unique features of conference calls, analysts, individual investors, employees, and suppliers are interested in conference call disclosures to acquire corporate news, strategic positions, and other incremental information (e.g.

[4] In contrast, earnings press releases often include a disclaimer about forward-looking statements.

Bushee et al. 2003; Bushee et al. 2018). Thus, the high degree of visibility and timeliness of the conference call provide managers with substantial benefits and motivations of manipulating disclosures on calls. In sum, conference call is a powerful setting to observe disclosure incentives.

Recent literature examines topics (Gomez et al. 2018) and nuanced linguistic features during conference calls, such as tone (Chen et al. 2018), non-plain English (Brochet et al. 2016), contrastive words (Palmon et al. 2016), and spontaneity (Lee 2015). Using textual analysis, Matsumoto et al. (2011) find that managers provide less financial information and more forward-looking disclosures when firm performance is unsatisfactory. Brochet et al. (2018) show that managers from ethnic groups that have a more individualistic culture often talk optimistically, present greater self-reference, and offer fewer apologies in their disclosures. Moreover, Blau et al. (2015) and Price et al. (2012) document that linguistic tones can predict abnormal returns and trading volume.

The SEC formed the Task Force on Disclosure Simplification and adopted "plain English" rules which intends to address the complexity of SEC filings (SEC 1998). As a response, long-standing literature has examined financial reports to measure their complexity. These studies mainly focus on annual reports (i.e. 10-K filings) and use the Fog measure to proxy for narrative readability (e.g. De Franco et al. 2015; Li 2008).[5] The idea behind this readability measure is that regulators argue that corporate reports should be easy to understand for users in order to decrease information processing costs. Building on this assumption, researchers have widely used the Fog measure to capture reporting quality and find that more

[5] Although the majority of research examines the Fog of corporate disclosures, some studies focus on the Fog of disclosures by other parties such as analyst reports (De Franco et al. 2015), and media coverage (Dougal et al. 2012).

complex disclosure is related to greater analyst forecast dispersion and lower accuracy (Lehavy et al. 2011).

However, this complexity measure has also caused controversy and concern about its construct validity. On the one hand, high disclosure complexity has been perceived as intentional obfuscation (Li 2008). Li (2008) indicates that managers purposefully convey messages in a complex manner in order to hide bad news. Leuz and Wysocki (2016) also show that managers use discretion both to inform and to obfuscate since they need to strike a balance between the benefits of enhanced disclosure and the costs of sending information to competitors. In addition, they suggest that managers obfuscate to engage in self-interested activities. To manipulate the complexity of corporate reports strategically and mislead investors' understanding of firm's value, managers often legally obscure information by burying the awkward revelation in an overwhelming amount of uninformative text and data (e.g. Leuz and Wysochi 2016; Lo et al. 2017; Loughran and McDonald 2016).

On the other hand, complex language could represent necessary information regarding firms' complex business environments and informative technical details (Bloomfield 2008; Bushee et al. 2018). Firms with advanced technologies or sophisticated lines of operation tend to involve more complex disclosures because of the fundamental nature. For example, one of the complex words defined by the Fog measure that occurs in 10-Ks is "telecommunication", which is not likely to confuse readers (Loughran and McDonald 2014). Thus, high complexity (i.e. complex words or longer sentences) can be used by managers simply for better comprehension.

Since the Fog index commingles informative portion with uninformative portion, prior literature finds mixed results on the relation between the Fog index and information environment (Loughran and McDonald 2014). Therefore, it is important to identify the underlying information

element and obfuscation element from the existing complexity measure (i.e. Fog) in order to properly evaluate reporting quality and capture managerial intentions behind firm disclosures.[6] To solve this problem and improve the construct validity of the linguistic complexity measure, Bushee et al. (2018) use conference call transcripts and take the linguistic complexity of analysts as a benchmark to identify the portion of managerial linguistic complexity caused by obfuscation and the portion caused by information. The obfuscation component means linguistic complexity that is aimed to reduce the informativeness of the disclosure. The information component represents linguistic complexity that contributes to informative technical disclosure of the firm. Unlike mandatory disclosures (e.g. 10-Ks) that have been identified as problematic because of the use of "boilerplate" (e.g. Hoogervorst 2013), the disclosure on conference calls reflects less boilerplate language and presents managers' disclosure strategies more directly (e.g. Bushee et al. 2018). Using these unique features of conference calls, Bushee et al. (2018) show that the information element of managerial narratives is negatively related to information asymmetry, while the obfuscation element is positively related to information asymmetry.

2.2. Labor union and information disclosure

Labor union strength is widely used as a proxy for the influence of workers on firm decisions, since unions are better able to organize group actions (e.g. strikes) and exert pressure on management (e.g. Faleye et al. 2006; Freeman and Medoff 1984; Prevost et al. 2012).[7] Because unions can use the threat of a strike to extract profits from firms, they are perceived as rent-seekers (Baldwin 1983; Grout 1984). As a result, managers facing a strong labor union

[6] Appendix B provides examples of intentional obfuscation and informative disclosure.
[7] Labor unions mainly engage in two kinds of activities. One is collective bargaining, negotiating compensation and work conditions with employers. Another is union member recruiting. Both kinds of activities can lead to conflicts between employers and unions. When conflicts cannot be resolved, one of the party may file a complaint with the US National Labor Relations Boards (NLRB).

employ various strategies to shelter firm resources and gain an advantage during collective bargaining. For example, Bronars and Deere (1991) suggest that firms improve their bargaining power over unions by issuing more debt. These firms also tend to hold less cash (Klasa et al. 2009), cut dividends (DeAngelo and DeAngelo 1991), report larger losses during negotiation periods (DeAngelo and DeAngelo 1991), and strategically choose accounting methods (Bowen et al. 1995). Relatedly, D'Souza et al. (2001) indicate that unionized firms engage in earnings management to gain bargaining advantages. In a similar vein, Hamm et al. (2018) find that managers smooth earnings to obtain a balance between sheltering resources from employees' profit-sharing demands and catering to employees' aversion to downside risks. They show that union strength is positively associated with earnings smoothing activities through both accruals and R&D expenditures.

Another stream of research explores whether firms' information disclosures reflect unions' existence. In the absence of costs or uncertainty, firms should fully disclose their information to the public. However, managers face competing incentives to disclose or conceal information (Healy and Palepu 2001; Verrecchia 2001). Low information asymmetry can benefit a firm in various ways, such as increasing firm value (Diamond and Verrecchia 1991; Verrecchia 2001). Yet, such benefits from voluntary revelation of information come at a cost that arises from the proprietary nature of information, thus preventing full disclosure (Verrecchia 2001). One example of such costs that eventually lead to firms' incentive to preserve information asymmetry is that stakeholders (e.g. employees) use disclosures to gain bargaining power and extract rents from firms. In other words, potential bargaining from organized labor is a form of proprietary costs of disclosure.

Employees are very important stakeholders of a firm. Labor unions represent individual employees so that they can increase their bargaining power. Unions can bargain more effectively if they are more informed (Kleiner and Bouillon 1988), especially regarding employers' future expectations. Thus, acquiring information is one of the most important factors for unions to achieve favorable results (Frost 2000). Prior research supports this view by showing that disclosing a firm's financial statements, forecasted sales and production costs, wages, future business strategies and investment plans, and productivity can lead to higher levels of employee wages (Kleiner and Bouillon 1988). However, even though employees work within the firm, they do not possess all of the employers' information regarding production, personnel, and financial situations (Brown 2000; Leap 1991). In the US, union representation on corporate boards is extremely rare (Cheng 2017; Summers 1982). Unions can request additional financial information during collective bargaining if they can prove that requested information is highly relevant to the negotiation. But firms are under no obligation to provide such information, unless unions can provide a plea of poverty (inability to pay) (Carrell and Heavrin 2004).[8] Thus, unions rely very heavily on employers' publicly available information, including information disclosed on earnings conference calls. Although employees might not directly participate in these calls (e.g. asking questions), they can benefit by consuming the calls (i.e. listening to calls, reading

[8] Labor unions can file a complaint with the NLRB when employers refuse to provide information (Cheng 2017; Robbins 1994). Nielsen Lithographing Co., 305 NLRB 697 [1991] is an influential case since it addresses employers' inability to pay and provides anecdotal evidence that banks can have proprietary information that employers hide from unions. Specifically, the union demanded the documents provided by Nielsen (the employer) to banks, such as projected financial statements. Nielsen declined to provide the information. Eventually, the NLRB ruled that Nielsen has no obligation to provide such information because the employer claimed "competitive disadvantage" rather than "inability to pay." Firms have to provide financial information only when they reject unions' demands by claiming that they are not able to afford the cost of the demands. In sum, Nielsen case makes it more difficult for unions to receive additional information from employers since many subsequent rulings are based on this case (Hexter 1992).

transcripts and information provided by information intermediaries) as part of a broader investigation of the firm.

Labor pressure is an imperative determinant of reporting behavior. Throughout history, unions have been actively seeking firms' information and business records upon which corporate strategic decisions are based on. Unions hire full-time researchers to analyze corporate disclosures and develop strategic plans (e.g. Voss and Hserman 2000). Consequently, managers consider very carefully the potential reactions of powerful stakeholders (e.g. employees) to firm disclosures. For example, during the 3-month strike at General Motors Corp., the United Auto Workers demanded to "see the books" to determine if the company was able to increase the wage. As a response, General Motors Corp. suspended its earnings guidance as a strategy to gain more leverage in its negotiation with the labor union. Overall, withholding or misrepresenting a firm's true position is an inevitable choice during labor negotiations (Reynolds et al. 1998). To achieve this, unionized firms adopt various strategies regarding whether, when, and how much information to disclose.

Corroborative findings have been shown in academic research. Scott (1994) illustrates that Canadian firms with a high likelihood of work stoppages tend to provide less pension-related disclosure. Relatedly, Hilary (2006) argues that unionized firms are more likely to increase information asymmetry, measured by higher bid-ask spread, higher probability of informed trading, lower trading volume, and lower analyst coverage. Bova et al. (2015) confirm that managers provide less disclosure when negotiating with employees. In a similar spirit, Chung et al. (2015) use data from South Korea and demonstrate that the management's disclosure frequency is negatively related to the firm's labor union strength. My study adds to these papers in a number of important ways. First, this paper is exploring various nuanced linguistic styles

and contents (i.e. information, obfuscation, non-factual language, forward-looking, and tone) to provide a better understanding on how labor unions affect managerial language. Second, instead of analyzing written statements, this research uses the conference call setting, a powerful platform to observe managerial disclosure incentives. These conference calls are timely, less boilerplate, and highly visible. They also subject to a lower standard of legal liability and involve more cues.

2.3. Hypotheses development

Labor unions impose additional costs on firms' full disclosure by their rent-seeking behaviors, providing firms with an incentive to withhold information. As the influence of unions and their ability to extract profits increase, managers are expected to have stronger incentive to hide information. Based on the preceding findings and arguments, I formulate the following hypothesis:

H1: Managers of firms with stronger labor unions present a lower information level of linguistic complexity on earnings conference calls.

In hypothesizing about the relation between labor union strength and the obfuscation level in voluntary disclosure, although unions may obfuscate more to gain bargaining power, I also consider another scenario that leads to an opposite prediction. Specifically, the obfuscation hypothesis (e.g. Courtis 1998) suggests that managers mainly use ambiguous language to obscure bad news (e.g. Bloomfield 2008; Brennan et al. 2009; Li 2008; Smith and Taffler 1992; Subramanian et al. 1993). However, Bova (2013) and Chung et al. (2015) find that managers facing strong labor unions are motivated to be forthcoming about bad news and tend to release such information in a timely manner in order to discourage employees' demands. These firms even deliberately create negative signals (e.g. miss analyst forecasts) by not walking forecasts downward when analysts' estimates are too high and by managing earnings downward when

estimates are too low (Bova 2013). Given these arguments, it is possible that firms with stronger labor unions have fewer incentives to obfuscate, leading to the second hypothesis:

H2: Managers of firms with stronger labor unions present a lower obfuscation level of linguistic complexity on earnings conference calls.

CHAPTER 3. SAMPLE, KEY VARIABLES AND DESCRIPTIVE STATISTICS

3.1. Sample selection

Table 1 provides details regarding sample selection. The linguistic data is constructed using conference call transcripts retrieved from Thomson Reuters StreetEvents. The main labor union measure (*Union*) use the data from the Union Membership and Coverage Database. In the additional tests, I employ other labor union proxies, *UnionDummy* and *UnionIndustry.*[9] I also construct my sample using the information on stock returns from CRSP and accounting items from Compustat. The sample period runs from 2002 to 2017, consisting of 25,858 firm-years.[10] I begin the sample in 2002 because it is the first year that conference call transcripts became available in StreetEvents. All continuous variables are winsorized at their top and bottom 1% distributions.

[Insert Table 1 here]

3.2. Key variables

3.2.1 Linguistic measures

I follow Bushee et al. (2018) to measure the information component and obfuscation component of disclosure language, which have been used in recent studies (e.g. Bushee and Huang 2019; Wu 2019). First, I use Gunning (1952) Fog index[11] to estimate linguistic complexity. This index involves two factors – the number of words and the percent of complex words[12].

[9] I gratefully acknowledge the conference call database and the labor union measure (*UnionDummy*) from Bushee et al. (2018) and Hamm et al. (2018), respectively.
[10] In order to match the firm-year union measures, I transform quarterly conference call linguistic data into firm-year data. The results are very similar when using firm-quarter level of linguistic data.
[11] Bonsall et al. (2017) develop another measure, the Bog index. This measure is generally not applicable to spoken language, since it takes grammatical features of written language into account while these attributes are omitted in the Fog index.
[12] Complex words refer to those with more than two syllables.

Fog = 0.4 × (average number of words per sentence + percent of complex words)

Higher value of *Fog* indicates more complex text. This index refers to the hypothetical years of education needed to fully understand the text. Using this Fog index, managerial linguistic complexity (i.e. *Fog(Manager)*) is measured for the presentation and Q&A sessions of conference calls. *Fog(Analyst)* refers to the complexity of analysts' language during the Q&A sessions. Bushee et al. (2018) show that a manager's linguistic complexity is determined by two factors – the intrinsic amount of information and intentional obfuscation. Thus, managerial linguistic complexity (i.e. *Fog(Manager)*) is represented as follows:

$$Fog(Manager) = \beta_0 + \beta_1 Info + \beta_2 Obfu + \varepsilon \quad (1)$$

Using the linguistic complexity of analysts on conference calls, I then estimate the latent variables of *Fog(Manager)* – information (*Info*) and obfuscation (*Obfu*). Underlying this methodology developed by Bushee et al. (2018) is the assumption that managers have incentives to obscure information while analysts do not have such incentives since they aim to uncover relevant and essential information on the calls (Matsumoto et al. 2011; Mayew 2008; Twedt and Rees 2012). Thus, the linguistic complexity of analysts serves as a complexity benchmark when there is no obfuscation force involved. This methodology is presented as follows:

$$Fog(Manager) = \beta_0 + \beta_1 Fog(Analyst) + \varepsilon \quad (2)$$

The fitted value of model (2) is the estimated information component (*Info*) and the residual is the estimated obfuscation component (*Obfu*). Bushee et al. (2018) indicate that these two components affect information asymmetry in different directions. Stated differently, the latent information element is negatively related to information asymmetry whereas the latent obfuscation element is positively related to information asymmetry.

Following Bushee et al. (2018), I add control variables regarding firm complexity to model (2) and use the following empirical model to estimate the latent components (i.e. *Obfu* and *Info*) that will be used in my study. *Fog(Pres)* and *Fog(QA)* refer to managers' linguistic complexity during the presentation session and Q&A session, respectively. I include variables regarding firm complexity such as firm size (*Size*) that is related to disclosure practices (e.g. Lang and Lundholm 1996), book-to-market ratio (*BM*) that captures firms' growth potentials (e.g. Brochet et al. 2016; Bushee et al. 2003), and leverage (*Leverage*) that controls for managerial incentives when firms have high levels of debt and agency costs (Frankel et al. 1999). I also include stock returns (*Returns*), capital intensity (*CapIntensity*), research and development (*R&D*), acquisitions (*Acquisitions*), capital expenditure (*Capex*), debt and equity issuance (*Financing*), cash flow volatility (σCFO), goodwill impairments (*Goodwill*), and restructuring charge (*Restructure*).

$$\begin{aligned} Fog(Pres) \text{ (or } Fog(QA)) = {} & \beta_0 + \beta_1 Fog(Analyst) + \beta_2 Size + \beta_3 Leverage + \beta_4 BM \\ & + \beta_5 Returns + \beta_6 Acquisitions + \beta_7 CapIntensity + \beta_8 Capex \\ & + \beta_9 R\&D + \beta_{10} Financing + \beta_{11} \sigma CFO + \beta_{12} Goodwill \\ & + \beta_{13} Restructure + \varepsilon \end{aligned} \quad (3)$$

The fitted values are used as the estimated values of the latent information components (i.e. *Info(Pres)* and *Info(QA)*), and the residual values are the estimated values of the latent obfuscation components (i.e. *Obfu(Pres)* and *Obfu(QA)*). The results are reported in Appendix C. Following Bushee et al. (2018), each of these variables is ranked into deciles and scaled to range from zero to one. The table in Appendix C shows that analysts' linguistic complexity (*Fog(Analyst)*) is positively and significantly related to managers' linguistic complexity in both the presentation (*Fog(Pres)*) and Q&A (*Fog(QA)*) sessions. The coefficient on *Fog(Analyst)* is smaller in the *Fog(Pres)* regression compared to the coefficient in the *Fog(QA)* regression (0.19 vs. 0.51), supported by the fact that managerial presentation is prepared well in advance and

offered at the beginning of the call while *Fog(Analyst)* is more important in determining managers' linguistic complexity in the response. The results are similar with Bushee et al. (2018).[13]

3.2.2. Labor union measures

Following Hilary (2006), the union measure (*Union*) is the product of labor intensity (i.e. the number of employees scaled by total assets) and unionization rate (i.e. the percentage of unionized employees in the industry)[14] that is retrieved from the Union Membership and Coverage Database. This database provides information on labor union membership and coverage by industry. Prior accounting and finance research has used this proxy extensively (e.g. Chen et al. 2011; Chung et al. 2015; Hamm et al. 2018; Hilary 2006; Klasa et al. 2009). Since the unionization rate can be used as a proxy for the degree of bargaining, such pressure from labor unions brings threats to not only the corresponding firms, but also all other firms in the industry. Even though all firms in the same industry are under a comparable pressure from labor unions, the impact on a specific firm is determined by firm characteristics. Thus, I interact the industry-level unionization rate with the firm-level labor intensity which measures whether employees have significant effects on managers' decisions. This proxy of union strength is for every firm-year since the data is updated annually.

I use two alternative proxies (i.e. *UnionIndustry* and *UnionDummy*) to measure union strength in the additional tests. *UnionIndustry* is the industry-level unionization rate from the Union Membership and Coverage Database (e.g. Chen et al. 2012; Cheng 2017). Following

[13] The adjusted R-squared of the model for managers' response (18.8%) is larger than the one for presentation (7.7%), consistent with the fact that analyst language has more influence on managerial language in the Q&A session. Similar with prior studies on textual analysis, the adjusted R-squareds are relatively low. For example, Bushee et al. (2018) present adjusted R-squareds of 2% to 14%. Li (2008) shows adjusted R-squareds of 6% to 8%.
[14] Only industry-level unionization data is available in the US.

Hamm et al. (2018), I also use a firm-level unionization proxy (*UnionDummy*) that suggests the existence of labor unions based on textual analysis of 10-K filings. It is constructed using keywords and phrases regarding the existence or non-existence of a labor union, such as "union", "collective(ly) bargain", and "labor/employee/worker organization". First, all these keywords and phrases are collected by randomly reading items 1 and 1A in 10-K filings. Then, these search terms are applied to the full sample. Specifically, *UnionDummy* equals zero for those firm-years with no keywords in 10-K filings. For those contain the search terms, further examination is conducted to identify expressions that explicitly indicate non-existence of a labor union.[15] These firm-years are set to zero. If these non-existence expressions are accompanied by a specific location, they will not be counted as non-existence.[16] For the remaining subsample, which contains union expressions but no non-existence indicators, *UnionDummy* is set to one. This procedure yields 14,881 firm-year observations.

3.3. Descriptive statistics

Panel A of Table 2 displays descriptive statistics of the variables that are used to test the main hypotheses. Since the obfuscation measures are regression residuals, their means are near zero by construction. The information components are larger because the intercepts are included in these components. The main proxy for union strength, *Union*, has a mean value of 0.04. For the alternative union measures, *UnionIndustry* has a mean value of 0.09, and *UnionDummy* has a mean of 0.39 which suggests that about 39 percent of the sample firms have labor unions. Moreover, the sample firms have a mean size of 6.81, a mean book-to-market ratio of 0.51, and a

[15] Examples are as follows: 1) No current US-based employees are unionized; 2) None of our labor force is covered by a collective bargaining agreement.
[16] Examples are as follows: 1) We have no unionized employees in Europe; 2) None of our employees in Mexico are unionized.

mean leverage of 23% of total assets. Furthermore, these firms have an average age of 22.05. The descriptive statistics are consistent with prior literature (e.g. Bushee et al. 2018; Hamm et al. 2018; Hilary 2006).

Panel B of Table 2 reports correlations among variables. Pearson (Spearman) correlations appear below (above) the diagonal. These results are also similar with previous literature (Bushee et al. 2018; Hamm et al. 2018). Specifically, the Pearson correlation between *Obfu(Pres)* and *Obfu(QA)* is 0.39, indicating that managers adopt different strategies to obfuscate in the presentation and the response. The Pearson correlation between *Info(Pres)* and *Info(QA)* is 0.66, consistent with the fact that the information components are mainly determined by the fundamental nature of firm complexity. As expected, there are no significant correlations between *Info(.)* and *Obfu(.)* by construction. Panel B also shows significant and positive correlations among the three union measures, suggesting that these union proxies represent related but different constructs. As for the relations between the linguistic measures (i.e. *Obfu(.)* and *Info(.)*) and *Union*, the table shows that they are negatively and significantly correlated with each other. For instance, the correlation between *Obfu(Pres)* and *Union* is -0.08, whereas the correlation between *Info(Pres)* and *Union* is -0.15. The negative correlations between the latent linguistic components and union variables provide preliminary support for *H1* and *H2*. In addition, the differences in these correlations may suggest that labor union strength represents much of the variation in the information component, compared to the obfuscation component.

[Insert Table 2 here]

CHAPTER 4. RESEARCH DESIGN AND MAIN RESULTS

4.1. Test of H1 (information component of linguistic complexity)

H1 predicts that managers of firms with stronger labor unions tend to present a lower information level of linguistic complexity on conference calls. I regress the firm-year level of *Info(Pres)* and *Info(QA)* separately on the firm-year labor union variable (*Union*), controlling for firm complexity: stock return volatility (*ReturnSD*), special items (*SpecItem*), firm size (*Size*), book-to-market ratio (*BM*), leverage (*Leverage*), return on assets ratio (*ROA*), earnings volatility (*EarnSD*), firm age (*Age*), number of business segments (*BusSeg*), and number of geographic segments (*GeoSeg*). These control variables are used in prior literature to capture firm nature and disclosure complexity (e.g. Li 2008; Skinner 2019). In addition, industry fixed effects and year fixed effects are added to control for industry- and year- specific characteristics, respectively. Standard errors are clustered at the firm-level to control for serial-dependence due to repeated firms in the sample.

$$\begin{aligned} \textit{Info(Pres)} \text{ (or } \textit{Info(QA)}) = {} & \beta_0 + \beta_1 \textit{Union} + \beta_2 \textit{ReturnSD} + \beta_3 \textit{SpecItem} + \beta_4 \textit{Size} + \beta_5 \textit{BM} \\ & + \beta_6 \textit{Leverage} + \beta_7 \textit{ROA} + \beta_8 \textit{EarnSD} + \beta_9 \textit{Age} + \beta_{10} \textit{BusSeg} \\ & + \beta_{11} \textit{GeoSeg} + \varepsilon, \end{aligned} \tag{4}$$

where all the variables are defined in Appendix A. If stronger labor unions are associated with a lower information level in managerial disclosures (*H1*), then β_1 will be negative and significant.

Table 3 reports the results from model (4). I estimate regressions separately for the presentation and Q&A sessions of conference calls. The union measure shows a negative and significant coefficient on the information component of linguistic complexity for both the presentation and Q&A sessions of the call. The results suggest that unionized firms tend to disclose less information component. For the control variables, the coefficients are mainly consistent with the correlation results and indicate that the information component is higher for

firms with high volatility and uncertainty. Overall, *H1* is supported by the findings, showing that firms with stronger labor unions tend to disclose a lower information level of linguistic complexity. Bushee et al. (2018) indicate that information components contribute to better information environment. Thus, my results suggest that higher information asymmetry of unionized firms (e.g. Hilary 2006) could be contributed by the lower information level in managerial narratives.

[Insert Table 3 here]

4.2. Test of H2 (obfuscation component of linguistic complexity)

H2 suggests that managers of unionized firms tend to utilize a lower obfuscation level of linguistic complexity on earnings conference calls. OLS regression for *H2* is similar with model (4), with *Obfu(Pres)* and *Obfu(QA)* in place of *Info(Pres)* and *Info(QA)*, respectively. *H2* predicts that β_1 is negative and significant.

$$\begin{aligned} \textit{Obfu(Pres)} \text{ (or } \textit{Obfu(QA)}) = {} & \beta_0 + \beta_1 \textit{Union} + \beta_2 \textit{ReturnSD} + \beta_3 \textit{SpecItem} + \beta_4 \textit{Size} + \beta_5 \textit{BM} \\ & + \beta_6 \textit{Leverage} + \beta_7 \textit{ROA} + \beta_8 \textit{EarnSD} + \beta_9 \textit{Age} + \beta_{10} \textit{BusSeg} \\ & + \beta_{11} \textit{GeoSeg} + \varepsilon \end{aligned} \quad (5)$$

Table 4 reports the results of model (5). It shows that *Union* is negatively related to the obfuscation level of linguistic complexity in both the presentation and Q&A portions of the call, while the coefficient is statistically significant for the presentation sessions. These results are potentially because of the fact that the presentation scripts on conference calls are carefully constructed (Jensen and Meckling 1976), while the managers' response in the Q&A sessions is mainly driven by analysts' language and questions. Managers often strategically employ the interactive nature of conference calls through biasing the participant selection (e.g. only allowing favorable analysts to ask questions) (Mayew 2008) or intentionally ignoring sensitive questions

(Hollander et al. 2010). Overall, the results in Table 4 support *H2*, suggesting that unionized firms both inform less and obfuscate less at the same time.[17]

[Insert Table 4 here]

[17] It is feasible for firms to inform less and obfuscate less at the same time. Bushee et al. (2018) find that loss firms have greater information and obfuscation components. In other words, the high complexity of narratives in loss firms is due not only to greater information or to greater obfuscation, both forces exist during conference calls.

CHAPTER 5. ADDITIONAL TESTS

5.1. Loss firms vs. profit firms

Managers have incentives to hide certain kinds of information (i.e. asymmetric disclosure). If such incentives are from career or compensation concerns, managers often tend to withhold bad news (Graham et al. 2005). The obfuscation hypothesis (Bloomfield 2008; Courtis 1998) suggests that managers mainly use misleading or ambiguous language to diffuse bad news (e.g. Brennan et al. 2009; Li 2008). Compared to the ample evidence regarding incentives to delay or obfuscate negative information, little research addresses the opposite behavior (i.e. promote negative information). Labor union strength is one of the factors that can motivate managers to prompt bad news (Chung et al. 2015).[18]

Prior research shows that unionized firms are more upfront about bad news in order to discourage profit-sharing demands of unions and preserve bargaining power in labor negotiations (Bova 2013; Chung et al. 2015). Thus, *H2* hinges on the notion that unionized firms should have fewer incentives to obfuscate since obfuscation is used for covering bad news. To pin down this inference, I conduct analysis to test whether labor unions influence the managers' obfuscation level in their narratives differently in the loss firms subsample versus the profit firms subsample. Specifically, I divide the sample by *Loss*, an indicator that takes the value of one if the firm reports a loss this year, zero otherwise. I expect to observe that the negative association between *Obfu(.)* and union measure (i.e. *Union*) is stronger in the loss firms subsample, whereas it is weaker in the profit firms subsample. In other words, I predict that managers' tendency to not obfuscate is more pronounced in loss firms compared to profit firms, assuming that loss firms have more bad news.

[18] Other factors include litigation risk (Baginski et al. 2002) and influencing the exercise price of stock options (Aboody and Kasznik 2000).

The results of the subsample tests are presented in Table 5. Panel A shows the results when the dependent variable is the obfuscation level during presentation portions (i.e. *Obfu(Pres)*). *Union* is negatively and significantly related to *Obfu(Pres)* in loss firms, while *Union* is insignificantly related to *Obfu(Pres)* in profit firms. Test of the difference in the coefficients on *Union* between the loss firms group and the profit firms group indicates that the negative relation between union strength and the obfuscation level is significantly stronger in the loss firms group compared to that in the profit firms group. Panel B shows similar results when using the obfuscation level during Q&A portions (i.e. *Obfu(QA*)) as the dependent variable. Specifically, *Union* is still negatively and significantly related to *Obfu(QA)* in loss firms, while *Union* is insignificantly related to *Obfu(QA)* in profit firms. Overall, these findings support my expectation that the negative association between obfuscation and union strength is stronger in the loss firms subsample. The results provide consistent evidence that strategic obfuscation of negative news is more frequently used by firms with a weaker labor union since strong unionized firms tend to be forthcoming about negative information to gain bargaining power. The results also offer a deeper explanation for the obfuscation hypothesis and suggest that firms could have different strategies when disclosing negative information, instead of simply obscuring or hiding bad news.

[Insert Table 5 here]

5.2 Alternative union measures

In this section, I employ two alternative measures to capture union strength. First, I use *UnionDummy*, which is a firm-level unionization proxy that suggests the existence of labor unions based on textual analysis of 10-K filings (Hamm et al. 2018). Since the validity of *Union*

weakens to the extent that firm-level union rate diverges from the industry-level union rate, I use *UnionDummy* as an alternative measure of firm-level unionization.

In addition, I adopt an industry-level union measure (*UnionIndustry*). The firm-level union measure (i.e. *Union*) that is used in the previous tests is the product of firm-level labor intensity (i.e. the number of employees divided by total assets) and industry-level unionization rate. Thus, it is possible that the results are driven by firm-level labor intensity instead of union strength. Using industry-level union proxy can also measure the underlying construct of labor strength and generate less measurement error (Cheng 2017). This industry-level union measure (i.e. *UnionIndustry*) and the firm-level union measure (i.e. *Union*) are both used in prior accounting and finance literature (e.g. Chen et al. 2012; Cheng 2017).

Table 6 presents the results regarding *H1* and *H2* using alternative union proxies. Panel A shows the results of re-estimating model (4) and model (5) using *UnionDummy*. The first two columns document the relation between *UnionDummy* and the information level of disclosure, while the latter two columns present the relation between *UnionDummy* and the obfuscation level of disclosure. All the coefficients of *UnionDummy* across these columns are negative and significant, supporting *H1* and *H2*. Panel B shows the results using *UnionIndustry*. All the coefficients on *UnionIndustry* are negative and significant, with one exception. In sum, Panel B provides similar results and the main hypotheses still hold.

[Insert Table 6 here]

5.3. Propensity score matched sample

To alleviate the concern that unionized firms and non-unionized firms are fundamentally different and that firm characteristics and union strength may be endogenously related, I create a

propensity score matched sample, including a unionized group and a non-unionized group. Specifically, each unionized firm is matched (without replacement) to a non-unionized firm similar along relevant firm characteristics, using a maximum distance in propensity scores (caliper) of 0.01. The propensity score matching algorithm generates 4,268 matched pairs with required variables. Using the propensity score matched sample, Table 7 presents the results of re-estimating model (4) and model (5), which are consistent with previous tests and support my hypotheses.

[Insert Table 7 here]

5.4. Right-to-work law

In the right-to-work (RTW) states, workers can be employed in a unionized firm without being union members and unions are not able to require fees as a condition for employment. All employees, no matter they are union members or not, are protected by the collective bargaining agreement negotiated by the union. In these states, employers are easier to hire non-unionized employees and unions' power is weakened because of their decreased resources. However, prior literature finds that RTW laws affect unions' bargaining power substantially only in the first several years (i.e. a decade) after passage of RTW laws (e.g. Ellwood and Fine 1987; Hunt and White 1983). In later years, the effects of RTW laws on unions are relatively small since unions could adjust strategy or even recover from such changes. In the long run, labor unions in RTW states tend to develop new mechanisms or pursue other strategies (e.g. adjust levels of expenditures) that can surmount the RTW effects and strengthen unions' power. These adjustments are proved to be effective in dealing with the politics of union destruction (e.g. Ellwood and Fine 1987; Hunt and White 1983).

By the end of my sample period, 27 states have introduced the RTW laws. Among these, 22 states adopted the RTW laws long before my sample period (i.e. most states adopted the RTW laws in the 1940s and 1950s) and five states[19] adopted the RTW laws during my sample period. Since the RTW adoption has small impact on unions' bargaining power in the long run, while it significantly reduces unions' power around the adoption period (e.g. Ellwood and Fine 1987; Hunt and White 1983), the effects of organized labor on firm disclosures may vary within these RTW states.

To test this argument, I re-estimate my main hypotheses by comparing the states that introduced RTW laws during my sample period (i.e. Newly Adopted Group) and those adopted RTW laws before my sample period (i.e. Previously Adopted Group). I conjecture that firms in the Previously Adopted Group (Newly Adopted Group) have stronger (weaker) union strength since unions in these states have a long period of time (have little time) to revise their strategy and recover from union destruction. Therefore, in the Previously Adopted Group (Newly Adopted Group), the relation between union strength (i.e. *Union*) and linguistic measures (i.e. *Obfu(.)* and *Info(.)*) should be more pronounced (less pronounced).

This approach helps control for factors that drive to the adoption of RTW laws (e.g. attitude and preference to labor unions) in these RTW states. Table 8 Panel A shows the results when the dependent variable is the information level during presentation portions (i.e. *Info(Pres)*). During the presentation session, test of the difference of the coefficients on *Union* between the Newly Adopted Group and the Previously Adopted Group indicates that the negative relation between union strength and information level is significantly stronger in the

[19] Indiana (adopted in 2012), Michigan (adopted in 2013), Wisconsin (adopted in 2015), West Virginia (adopted in 2016), and Kentucky (adopted in 2017).

Previously Adopted Group compared to that in the Newly Adopted Group. Panel B shows similar results when using the obfuscation level (i.e. *Obfu(Pres)*) as the dependent variable. Untabulated results show that such relations are not significantly different between these two groups during Q&A portions, potentially explained by the fact that managers' language during Q&A is mainly driven by audience. Overall, these findings support my expectation that the newly adopted RTW laws are more likely to substantially reduce unions' bargaining power, leading to a much weaker relation between labor strength and managerial narratives.

To further circumvent the endogeneity problem that there could be omitted factors that drive both labor union strength and managerial disclosure strategy, I use the state-level staggered adoption of RTW laws as an exogenous shock to unions' bargaining power (e.g. Chava et al. 2019; Matsa 2010). Specifically, my identification strategy exploits the adoption of RTW laws across four states during my sample period: Indiana (2012), Michigan (2013), Wisconsin (2015), and West Virginia (2016).[20] Following prior literature (e.g. Chava et al. 2019), I create an indicator variable, *PostRTW*, which takes a value of one for observations in which RTW laws are in effect. Each dependent variable (i.e. *Info(.)* and *Obfu(.)*) is regressed on *PostRTW*. Panel C of Table 8 presents the results. The coefficients on *PostRTW* are mostly positive and significant across all columns. The results suggest that, after the RTW adoption which strengthens firms' bargaining power (weakens unions' power), the firms inform and obfuscate to a greater extent.

[Insert Table 8 here]

[20] Kentucky (adopted in 2017) is excluded since my sample period ends in 2017.

5.5. Cross-sectional tests

5.5.1 Managerial ability

Managerial ability has significant influence on firm decisions, including disclosure strategy and how to cope with labor unions. Prior literature indicates that more able managers have more incentives to create a better information environment and signal their superior performance (e.g. Baik et al. 2018). Thus, I expect that the negative relation between information component and labor union strength will be weaker when a firm has a more able manager. Furthermore, more able managers have a better understanding of the firm and industry, leading to superior firm performance. Therefore, they tend to obfuscate less because of less bad news they need to hide. Based on prior studies (Bloomfield 2008; Courtis 1998) and my previous results, unionized firms have fewer incentives to obfuscate since obfuscation is used for covering bad news and unionized firms are forthcoming about such news. Given the fact that firms with more able managers have less bad news to obfuscate, the negative relation between union strength and obfuscation component should be weaker when a firm has a more able manager. To test my predictions, I use the managerial ability score (*MAscore*) created by Demerjian et al. (2012).[21] Then, I interact this variable with *Union*. A negative coefficient on the interaction term will support my predictions that the negative relations between *Union* and the linguistic measures (i.e. *Info(.)* and *Obfu(.)*) will be weaker when managers have higher ability.

Table 9 Panel A shows the results of this cross-sectional analysis. The first two columns document the relation between *Union* and the information component, while the latter two columns present the relation between *Union* and the obfuscation component. Across all these four columns, the coefficients on the interaction terms between *Union* and *MAscore* are negative,

[21] Available at https://faculty.washington.edu/pdemerj/data.html.

especially during the presentation sessions. The results support my expectations that the negative relations between union strength and the linguistic measures (i.e. *Info(.)* and *Obfu(.)*) are weaker when a firm has a more able manager.

5.5.2 Debt ratio

Firms use various strategies to reduce the impact of unions' rent-seeking behaviors (e.g. Hilary 2006; Matsa 2010). Prior literature shows that unionized firms tend to reduce their financial flexibility by adopting additional debt which increases the demands on cash flow in order to gain bargaining power against labor unions (Cheng 2017; Matsa 2010). Using more debt in the capital structure to hide liquidity from employees, firms can influence labor union strength and negotiations. Thus, I aim to examine whether deliberately hiding resources (e.g. increasing the debt ratio to reduce financial flexibility) complements or substitutes strategically manipulating disclosures (e.g. withholding information) in unionized firms to gain bargaining power and cope with employees' demands. Specifically, to test the effect of debt ratio on the negative relation between *Union* and the linguistic measures (i.e. *Info(.)* and *Obfu(.)*), I create *DebtRatio*, defined as the ratio of debt financing to the external financing. Again, I interact *DebtRatio* with *Union*. A positive coefficient on the interaction term will indicate a complementary relation between the two strategies (i.e. hiding resources and manipulating disclosure language), while a negative coefficient on the interaction term will suggest that these two strategies substitute for each other.

Results presented in Panel B show that the coefficients on the interaction terms between *DebtRatio* and *Union* are positive across all the columns, with one exception. Especially, the coefficients on the interaction terms are positive and significant when the dependent variable is the information component. The results suggest that unionized firms both increase debt ratio and

hide information to gain bargaining power. In other words, hiding firm resources (reducing financial flexibility) and manipulating disclosure language (withholding the information component) are complements to each other for unionized firms to discourage unions' demands.

[Insert Table 9 here]

5.6. Non-factual language and labor union

While information content studies have formed the nucleus of research (Ball and Brown 1968; Dhaliwal et al. 2013; Kothari 2001), little is known regarding the specific disclosure content of unionized firms. Prior literature indicates that the market perceives non-factual language (the absence of jargon) as noise, which increases information asymmetry (Barth et al. 2020). Barth et al. (2020) develop a novel measure based on the prevalence of jargon in managers' language during conference calls and argue that jargon refers to factual language which could be interpreted as willingness to disclose information. In other words, using non-factual language (the absence of jargon) means the information is noisier. Therefore, unionized firms should have more incentives to use more non-factual language (less jargon) in their disclosures to withhold information and gain bargaining power against labor unions. To test how firms react to labor unions by adjusting the usage of non-factual language, I create a proxy that captures non-factual language (*Nfactual*), defined as one minus the prevalence of jargon[22] (e.g. Barth et al. 2020; Bushee et al. 2018). A high non-factual score indicates the absence of jargon in the disclosure. I predict that firms that face powerful labor unions tend to use more non-factual language to make information noisier.

[22] Jargon is the number of words with more than two syllables that are industry jargon. Industry jargon means the 100 most common words among firms in the same two-digit SIC code (Bushee et al. 2018).

$$Nfactual(Pres) \text{ (or } Nfactual(QA)) = \beta_0 + \beta_1 Union + \beta_2 ReturnSD + \beta_3 SpecItem + \beta_4 Size + \beta_5 BM + \beta_6 Leverage + \beta_7 ROA + \beta_8 EarnSD + \beta_9 Age + \beta_{10} BusSeg + \beta_{11} GeoSeg + \varepsilon \quad (6)$$

Table 10 reports the results of model (6). I include industry and year fixed effects as well as firm clustering. I find that unionized firms provide noisier information on conference calls, especially during presentation portions. Specifically, the positive coefficients on *Union* in both columns indicate that unionized firms employ more non-factual language (less jargon) on conference calls. The results are consistent with the fact that managers' presentations are carefully prepared by considering various parties, such as organized labor, to minimize the proprietary cost. Overall, my prediction is supported by the results that unionized firms are motivated to provide more noises in disclosures by using non-factual language. The results contribute to the literature regarding why managers have an incentive to "beat around the bush" and indicate that unionized firms manipulate the disclosure language during conference calls to minimize costs when facing organized labor.

[Insert Table 10 here]

5.7. Forward-looking disclosure and labor union

Prior literature points out that information that is most desired by unions and hidden by managers is the information regarding future expectations (Palmer 1977). Surveys provide consistent notion that firms are least likely to share forward-looking information with employees, especially regarding forecasted sales and income (e.g. Kleiner and Bouillon 1988).[23]

[23] The survey conducted by Kleiner and Bouillon (1988) explores the extent of information to employees in both unionized and non-unionized firms. The most common type of information possessed by employees is productivity data. The least common information available is future production costs and budgeted income statements. The paper argues that the more sensitive firms perceive the information to be, the less likely such information will be made available.

Furthermore, recent NLRB rulings make it more difficult for unions to gain forward-looking information (Cheng 2017). Thus, this section will shed light on how labor unions influence the content of managerial narratives, specifically, forward-looking information.

I conduct a set of analyses to show that labor union affects the content of disclosures using the conference call setting. One of the main reasons that conference calls provide a powerful setting is that these calls offer incremental information over earnings release since managers are willing to disclose forward-looking information in a less-constrained fashion, whereas earnings release focuses on backward-looking information (Matsumoto et al. 2011). Prior literature finds that managers provide more forward-looking disclosures on conference calls, especially when firm performance is poor because managers try to show that poor performance cannot persist indefinitely and address the poor performance going forward (Matsumoto et al. 2011).

My measure of forward-looking information is based on the proportion of forward-looking sentences during conference call presentation and Q&A sessions (*Forward(.)*) (Brochet et al. 2015; Bushee et al. 2018; Li 2010). First, I examine whether managers provide more or less forward-looking information when facing strong labor unions using model (7). If unionized firms attempt to provide less informative disclosure, they might try to achieve this by providing less forward-looking information. Thus, I expect to capture a negative and significant relation between union strength (*Union*) and forward-looking information (*Forward(.)*). Second, I partition the sample by firm performance using a loss indicator variable (*Loss*) to examine how this relation varies with a firm's earnings. If forward-looking disclosure is more informative when firm performance is poor (Matsumoto et al. 2011), then unionized firms should be motivated to provide even less future-oriented information in periods of poor performance,

instead of emphasizing the future to provide a rosy picture. Thus, I would expect the negative relation between union strength and forward-looking information is stronger in the loss firms subsample.

$$\begin{aligned} \textit{Forward(Pres)} \text{ (or } \textit{Forward(QA)}) = {} & \beta_0 + \beta_1 \textit{Union} + \beta_2 \textit{ReturnSD} + \beta_3 \textit{SpecItem} + \beta_4 \textit{Size} \\ & + \beta_5 \textit{BM} + \beta_6 \textit{Leverage} + \beta_7 \textit{ROA} + \beta_8 \textit{EarnSD} + \beta_9 \textit{Age} \\ & + \beta_{10} \textit{BusSeg} + \beta_{11} \textit{GeoSeg} + \varepsilon \end{aligned} \quad (7)$$

Table 11 reports the results of model (7). I account for industry and year fixed effects which capture the variations over time and across industries, as well as firm clustering. Panel A shows the results using the full sample. The first column presents how union strength affects forward-looking disclosure on conference call presentation sessions, and the second column shows the results on Q&A sessions. I find that unionized firms provide less future-oriented information on conference calls, especially during presentation portions. The results are consistent with the fact that managers' presentation scripts are carefully vetted to minimize costs when facing various parties, such as organized labor.

Panel B of Table 11 presents results of the subsample tests. I find that unionized firms tend to provide less future-oriented information when firm performance is poor (i.e. loss firms) on both conference call presentation and Q&A portions. Specifically, the coefficients on *Union* are negative and highly significant in the loss firms subsample during both conference call sessions, while they are not significant in the profit firms subsample. In addition, the negative relation between union strength and forward-looking information is significantly stronger in the loss firms subsample throughout conference calls. Overall, my expectations are supported by these findings that unionized firms are motivated to provide less forward-looking information, especially during periods of poor performance. These results add to the prior literature regarding

managerial incentives of disclosing future-oriented information, and support the notion that unionized firms manipulate the specific type of disclosure content during the conference call.

[Insert Table 11 here]

5.8. Tone and labor union

Qualitative properties of corporate disclosures can imply managerial incentives through tone (Huang et al. 2014). The old adage states, "It's not what you say; it's how you say it." Huang et al. (2014) examine the tone of analyst reports and find that investors respond more to tone, than to the recommendations. The use of extreme words can influence investors (Bochkay et al. 2017; Hales et al. 2011; Tan et al. 2014). The tone of disclosures is a crucial component of language and can be used as a tool to achieve certain firm objectives by being excessively positive or negative relative to firm fundamentals. Frequently, negative situations can be masked with innocuous positive language. Building on the arguments suggested by prior studies that firms with strong labor unions are more likely to send negative signals to gain negotiation advantage over labor unions (e.g. Bova 2013), I investigate whether managers of unionized firms tend to use negative tone on conference calls.

Prior research shows that unionized employers actively project a negative picture to discourage employees' demands and gain bargaining power. Specifically, managers facing stronger labor unions tend to withhold positive news but release negative news in a timely manner (Chung et al. 2015), and convey a less optimistic image on earnings press releases (Arslan-Ayaydin et al. 2020). Similarly, Bova (2013) documents that unionized firms tend to miss earnings forecasts deliberately to signal negative outlooks about the ability of meeting employees' demands. Unionized firms are also more willing to employ conservative accounting

methods and deflate earnings intentionally (Bowen et al. 1995; Chyz et al. 2013; D'Souza et al. 2001; DeAngelo and DeAngelo 1991). For example, Bowen et al. (1995) show that unionized firms tend to employ income-decreasing accounting methods for inventory valuation and asset depreciation.

Following the established findings above, I examine the relation between labor union strength and linguistic tone in this section using the conference call setting, instead of analyzing written statements, since it subjects to a lower standard of legal liability, involves more cues, and is less boilerplate. *Positive(.)* (*Negative(.)*) refers to the number of positive (negative) tone words in the respective session of the conference call (Loughran and McDonald 2011). The word lists used to extract the number of tone words from conference call transcripts are developed by Loughran and McDonald (2011). These word lists are designed specifically for financial disclosures and have been commonly used in both accounting and finance research (e.g. Bushee et al. 2018; Davis et al. 2015).[24] I analyze the effect of labor unions on managers' tones during conference calls using the following regression. Each tone variable (i.e. *Positive (.)* and *Negative (.)*) is regressed on industry and year fixed effects as well as firm clustering, while adding control variables that have been used in prior literature (e.g. Davis et al. 2015; Huang et al. 2014). I predict that managers of strong unionized firms have incentives to use more negative tone in the narratives.

$$\begin{aligned} \textit{Positive (.)} \text{ (or } \textit{Negative (.)}) = {} & \beta_0 + \beta_1 \textit{Union} + \beta_2 \textit{Earnings} + \beta_3 \textit{Capex} + \beta_4 \textit{HHI} + \beta_5 \textit{Size} \\ & + \beta_6 \textit{BM} + \beta_7 \textit{ReturnSD} + \beta_8 \textit{EarnSD} + \beta_9 \textit{Loss} + \beta_{10} \textit{Growth} \\ & + \beta_{11} \textit{BusSeg} + \beta_{12} \textit{GeoSeg} + \beta_{13} \textit{Rating} + \varepsilon \end{aligned} \quad (8)$$

Panel A of Table 12 shows that *Union* has no statistically significant relation with *Positive (.)*, in both the presentation and Q&A sessions. These results suggest that union strength

[24] The word lists are from the authors' website (http://www.nd.edu/*mcdonald/Word_Lists.html).

has no effect on managers to strategically use positive words on conference calls. Panel B presents the relation between union strength and negative tone. The coefficients on union strength are all positive and significant. In other words, these results indicate that managers of strong unionized firms tend to use more negative words on conference calls during both presentations and Q&A sessions. Prior literature shows that negative tone contributes to higher information asymmetry (e.g. Bushee et al. 2018). Thus, higher information asymmetry of unionized firms (e.g. Hilary 2006) is not only contributed by the lower information level in managerial narratives, but also contributed by the more negative tone in their disclosures.

[Insert Table 12 here]

5.9. Information environment and labor union

To prove the validity of my data, I reconcile my results with Hilary (2006) which shows the positive relation between labor union strength and information asymmetry. I use three proxies of information asymmetry – bid-ask spread (*Spread*), trading volume (*Volume*), and illiquidity (*Illiquidity*). I include a list of control variables in the regression specifications: earnings volatility (*EarnSD*), sales growth (*Growth*), number of business segments (*BusSeg*), number of geographic segments (*GeoSeg*), special items (*SpecItem*), loss indicator (*Loss*), return volatility (*ReturnSD*), book-to-market ratio (*BM*), firm leverage (*Leverage*), and industry concentration (*HHI*). Also, I account for industry and year fixed effects which capture the variations over time and across industries, as well as firm clustering. Consistent with prior literature (Bova et al. 2015; Hilary 2006), I expect to find that labor unions are positively related to these information asymmetry measures – positively related to bid-ask spread (*Spread*) and illiquidity (*Illiquidity*) while negatively related to trading volume (*Volume*).

$$Spread = \beta_0 + \beta_1 Union + \beta_2 EarnSD + \beta_3 Growth + \beta_4 BusSeg + \beta_5 GeoSeg + \beta_6 SpecItem + \beta_7 Loss + \beta_8 ReturnSD + \beta_9 BM + \beta_{10} Leverage + \beta_{11} HHI + \varepsilon \quad (9)$$

$$Volume = \beta_0 + \beta_1 Union + \beta_2 EarnSD + \beta_3 Growth + \beta_4 BusSeg + \beta_5 GeoSeg + \beta_6 SpecItem + \beta_7 Loss + \beta_8 ReturnSD + \beta_9 BM + \beta_{10} Leverage + \beta_{11} HHI + \varepsilon \quad (10)$$

$$Illiquidity = \beta_0 + \beta_1 Union + \beta_2 EarnSD + \beta_3 Growth + \beta_4 BusSeg + \beta_5 GeoSeg + \beta_6 SpecItem + \beta_7 Loss + \beta_8 ReturnSD + \beta_9 BM + \beta_{10} Leverage + \beta_{11} HHI + \varepsilon \quad (11)$$

The results of estimating these models are presented in Table 13. When the dependent variable is *Spread* and *Illiquidity*, the coefficients on *Union* are positive and significant. The results suggest that firms with stronger labor unions tend to have higher bid-ask spread and higher illiquidity, in other words, higher information asymmetry. When the dependent variable is *Volume,* the coefficient on *Union* is negative and significant, suggesting that firms with stronger labor unions have lower trading volume which is a proxy for higher information asymmetry. Overall, using the dataset of firms with conference call transcripts available, the results in Table 13 are consistent with prior studies, confirming that unionized firms tend to have higher information asymmetry.

[Insert Table 13 here]

CHAPTER 6. CONCLUSION

In this paper, I use the conference call setting to observe managers' linguistic styles and contents in relation to their labor union strength. By disentangling the two latent components of linguistic complexity (i.e. information and obfuscation), I examine how firms organize their language to maximize their interests under the influence of labor unions. I find that managers of firms with stronger labor unions tend to present a lower information level as well as a lower obfuscation level of linguistic complexity on earnings conference calls. I also show that the negative association between the obfuscation component and union strength varies with a firm's earnings. The negative relation is mainly driven by the loss firms subsample, offering a deeper understanding regarding the obfuscation hypothesis and indicating that the strategic obfuscation of negative news is more likely for firms with a weaker labor union since strong unionized firms are forthcoming about negative information to gain bargaining power.

In addition, I document that the negative relation between union strength and information (obfuscation) component is weaker when a firm has a more able manager. I also find that hiding resources (i.e. reducing financial flexibility) and adjusting disclosure language (i.e. withholding information) are complements to each other for unionized firms.

Moreover, I show that unionized firms are motivated to provide more noises in disclosure by using non-factual language. They also tend to provide less forward-looking information, especially during periods of poor performance. My findings contribute to the literature regarding why managers have an incentive to "beat around the bush" and hide future-oriented information. Lastly, I show that unionized firms are more likely to use negative tone, consistent with previous studies that argue unionized firms tend to send negative outlooks to discourage employees' demands (e.g. Bova 2013; Chung et al. 2015).

This study takes a closer look at the disclosure language itself and analyzes the nuanced linguistic attributes using a rich communication channel – earnings conference calls. It contributes to the literature in several ways. First, this paper investigates disclosures from the linguistic perspective. Unlike previous studies (e.g. Bova 2013; Chung et al. 2015), this research highlights the language itself as a reflection of the influence from labor unions by using a less boilerplate and richer disclosure channel (i.e. earnings conference call). It disentangles the latent components of reporting complexity (i.e. information and obfuscation) and analyzes the linguistic contents (i.e. non-factual language, forwarding-looking, and tone), as opposed to measuring the disclosure quality in a broad way. This paper aims to properly evaluate the disclosure quality and capture managers' disclosure strategies in the presence of labor unions. It also responds to a call for research in textual analysis of disclosures (e.g. Li 2008) and adds to a growing stream of literature on using textual properties to explore managerial intentions.

Second, this paper extends the literature on how managers respond rationally to unions' rent extraction behaviors (e.g. Chyz et al. 2013; Faleye et al. 2006). It contributes to this line of research by fostering a comprehensive understanding of how managers formulate tactics and construct their disclosure language when facing strong labor unions.

Lastly, this study offers fresh insights into how labor unions affect firms' information environment. Despite prior literature that argues the positive association between labor strength and information asymmetry (e.g. Chung et al. 2015; Hilary 2006), it is still less understood how managers exploit their language to achieve high information asymmetry in the presence of strong labor unions. This study explores deeply into the relation between labor union strength and information asymmetry by indicating not only a specific disclosure channel, but also the

underlying linguistic mechanisms that could influence the information environment of unionized firms.

APPENDIX A

Variable Definitions

Variable	Description
Labor union proxies	
Union	Firm-level union membership measure based on the Current Population Survey, calculated as the industry-level percentage of union membership times the number of employees scaled by the beginning total assets.
UnionDummy	Firm-level union dummy variable that takes the value of one if a union exists at the firm level, zero otherwise.
UnionIndustry	Industry-level unionization rate based on the Current Population Survey.
Linguistic attributes	
Obfu(.)	*Obfu(.)* is the residual from model (3). Estimated latent obfuscation component, derived from *Fog(.)*. *Obfu(Pres)* indicates the obfuscation level of managers during the presentation session of the call. *Obfu(QA)* refers to the obfuscation level of managers during the Q&A session of the call.
Info(.)	*Info(.)* is the fitted value from model (3). Estimated latent information component, derived from *Fog(.)*. *Info(Pres)* indicates the information level of managers during the presentation session of the call. *Info(QA)* refers to the information level of managers during the Q&A session of the call.
Nfactual(.)	The proportion of non-factual language in the respective portion of the call, defined as one minus the prevalence of jargon. Jargon is the number of words with more than two syllables that are industry jargon. Industry jargon means the 100 most common words with more than two syllables among firms in the same two-digit SIC code (Bushee et al. 2018).
Forward(.)	The proportion of forward-looking sentences in the respective portion of the call (Brochet et al. 2015; Li 2010).
Positive(.)	The number of positive tone words in the respective portion of the call (Loughran and McDonald 2011).

Negative(.)	The number of negative tone words in the respective portion of the call (Loughran and McDonald 2011).
Firm characteristics	
Age	Log of one plus the number of years of data in Compustat.
BM	Book value of equity scaled by market value of equity of the prior year.
BusSeg	The logarithm of the number of business segments.
Capex	Capital expenditures scaled by total assets of the prior year.
DebtRatio	The ratio of debt financing to the external financing.
Earnings	Earnings before extraordinary items scaled by total asset of the prior year.
EarnSD	Standard deviation of earnings scaled by total assets over the prior five years.
GeoSeg	The logarithm of the number of geographic segments.
Growth	Sales growth, calculated as the change in total sales relative to the prior year, scaled by the total sales of the prior year.
HHI	Sales-based Herfindahl-Hirschman index within each SIC 2-digit industry. A higher value indicates a higher concentration, or less competition.
Illiquidity	Decile ranks of daily return scaled by dollar volume.
Leverage	The sum of long term and short term debts scaled by total assets of the prior year.
Loss	Indicator variable that takes the value of one if the firm reports a loss, zero otherwise.
MAscore	The managerial ability score created by Demerjian et al. (2012).
PostRTW	Indicator variable that takes the value of one for observations in which RTW laws are in effect, zero otherwise.
Rating	Indicator variable that takes the value of one if there is a bond rating by Standard and Poor's, zero otherwise.

ReturnSD	Standard deviation of the daily returns.
ROA	Return on assets.
Size	Log of market value of equity.
SpecItem	Special items scaled by market value of equity of the prior year.
Spread	Median of monthly bid-ask spread.
Volume	Median of monthly trading volume.

Note: All continuous variables are winsorized at 1% and 99%.

APPENDIX B

Examples of Obfuscation and Information (Barth et al. 2020)

Obfuscation

Q: “So, Walter, just in terms of that $1.5 billion | all right, so you're not going to give me how much the plus is, but how much do you need to keep? Do you need to keep $500 million sitting there, do you need to keep $1 billion of it sitting there and never use it? How much do you need to keep?"

A: “Listen, it's a great question. It's about situation driven and you evaluate it. As a definitional issue, you would say that you technically use the excess but you will assess it as you evaluate situation review at that particular time. On this particular-the way we look at it today, the excess is getting, as we moved out of the OD, certainly that will put less pressure on having any sort of contingent element within it. So, we are { we evaluate it. At this stage I would say technically it's all usable. Then depending on when we go to use it, we will assess the environment and assess the best use of the shareholder and how quickly we can replenish. I think you know where the earnings are coming from, it's less capital intense. So that gives us capability and that all goes into the evaluation of it. That's why we talk about the plus, because you really do have-it changes the circumstances but certainly within our definitions, we have excess that is usable."

Information

Q: “Good morning. I just wanted to follow up in regards to some of the questions around capital. Your CET1 ratio obviously appears to have very healthy and plenty of excess capital to be deployed over time, but it seems like your TCE ratio is relatively low compared to the peer group. Are you comfortable bringing down the TCE ratio below 7% as long as you have the CET1 ratio well above an 8% ratio?"

A: “Kevin, it's Mac. So we are focused on CET1, and we do have an operating range of 9% to 10% for CET1. As you see, the 9.5% which is where we are today calibrates, translates to a 7.2% TCE. We do monitor the tangible common ratio. It is something that we pay close attention to. I'm not sure I see it going below 7%, but it certainly is calibrated to CET1 and that's the ratio that ratio that we're really focused on.”

APPENDIX C

Estimating the Latent Components of Managers' Linguistic Complexity

	(1) *Fog(Pres)*	(2) *Fog(QA)*
Fog(Analyst)	**0.188*** **	**0.508*** **
	(25.373)	**(41.947)**
Size	-0.686***	-0.006
	(-8.944)	(-0.101)
Leverage	0.375***	0.028
	(5.509)	(0.539)
BM	-0.125*	-0.210***
	(-1.952)	(-4.311)
Returns	-0.126***	-0.004
	(-3.145)	(-0.244)
Acquisitions	0.018	0.002
	(0.457)	(0.092)
CapIntensity	-0.484***	-0.584***
	(-5.028)	(-8.922)
Capex	-0.057	0.093*
	(-0.633)	(1.658)
R&D	0.408***	0.216***
	(7.086)	(5.010)
Financing	0.220***	0.065*
	(4.643)	(1.816)
σCFO	0.273***	0.136***
	(3.977)	(2.759)
Goodwill	0.054	0.010
	(1.265)	(0.347)
Restructure	-0.069	0.017
	(-1.457)	(0.468)
Firm & Time cluster	Yes	Yes
adj. R-sq	0.077	0.188

Note: This table presents results from model (3) that estimates the latent components of managers' linguistic complexity during the respective session of the earnings conference call. *Fog(Pres)* indicates the linguistic complexity of managers during the presentation of the call. *Fog(QA)* indicates the linguistic complexity of managers during the Q&A of the call. *Fog(Analyst)* indicates the linguistic complexity of analysts.

***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Table 1

Sample Selection

	Firm-year
Conference call data	44,452
After merge with:	
Labor union	43,805
CRSP	36,459
Compustat	36,038
Less: missing key controls	(10,180)
Final Sample	25,858

Table 2

Panel A: Summary statistics

Variable	N	Mean	Std. Dev	P25	P50	P75
Info(Pres)	25,858	15.56	0.40	15.27	15.54	15.83
Info(QA)	25,858	11.98	0.54	11.61	11.95	12.31
Obfu(Pres)	25,858	-0.02	1.35	-0.91	-0.01	0.88
Obfu(QA)	25,858	-0.01	1.18	-0.82	-0.07	0.74
Union	25,858	0.04	0.06	0.01	0.02	0.04
UnionDummy	14,881	0.39	0.49	0.00	0.00	1.00
UnionIndustry	25,858	0.09	0.09	0.03	0.05	0.12
ReturnSD	25,858	0.12	0.07	0.07	0.11	0.15
SpecItem	25,858	-0.02	0.08	-0.02	0.00	0.00
Size	25,858	6.81	1.90	5.53	6.79	8.07
BM	25,858	0.51	0.46	0.24	0.43	0.68
Leverage	25,858	0.23	0.25	0.01	0.18	0.36
ROA	25,858	-0.01	0.22	-0.03	0.04	0.09
EarnSD	25,858	0.11	0.18	0.02	0.04	0.11
Age	25,858	22.05	16.96	9.00	16.00	30.00
BusSeg	25,858	1.65	0.85	1.00	1.00	2.40
GeoSeg	25,858	0.94	0.26	1.00	1.00	1.10

Table 2 (continued)

Panel B: Pearson and Spearman correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1)	***Info(Pres)***		**0.62**	**0.07**	**0.03**	**-0.27**	**-0.35**	**-0.31**	**0.43**	**-0.02**	**-0.56**	**-0.19**	**-0.17**	**-0.36**	**0.56**	**-0.35**	**-0.09**	**-0.05**
(2)	***Info(QA)***	**0.66**		**0.08**	**0.07**	**-0.22**	**-0.19**	**-0.20**	**0.06**	**-0.01**	**0.06**	**-0.29**	**-0.15**	**-0.05**	**0.21**	**-0.11**	**-0.03**	**0.02**
(3)	***Obfu(Pres)***	0.07	0.07		**0.38**	**-0.12**	**-0.08**	**-0.02**	**0.06**	**-0.06**	**-0.05**	**-0.02**	**-0.04**	**-0.16**	**0.09**	**-0.08**	**0.06**	**-0.03**
(4)	***Obfu(QA)***	0.03	0.05	**0.39**		**-0.04**	**-0.07**	**-0.02**	**0.05**	**-0.05**	0.00	**-0.02**	**0.02**	**-0.10**	**0.04**	**-0.08**	0.01	-0.01
(5)	***Union***	**-0.15**	**-0.11**	**-0.08**	**-0.03**		**0.25**	**0.65**	**-0.05**	-0.01	0.01	**0.06**	**0.12**	**0.15**	**-0.16**	**0.14**	**-0.05**	-0.01
(6)	***UnionDummy***	**-0.34**	**-0.19**	**-0.09**	**-0.06**	**0.16**		**0.29**	**-0.17**	**-0.07**	**0.23**	**0.13**	**0.27**	**0.09**	**-0.27**	**0.22**	**-0.07**	-0.01
(7)	***UnionIndustry***	**-0.37**	**-0.24**	-0.01	**-0.02**	**0.40**	**0.30**		**-0.12**	-0.01	**0.16**	**0.07**	**0.25**	**0.02**	**-0.17**	**0.19**	-0.01	**-0.07**
(8)	***ReturnSD***	**0.40**	**0.06**	**0.05**	**0.04**	**-0.02**	**-0.15**	**-0.15**		**-0.08**	**-0.52**	-0.01	**-0.15**	**-0.37**	**0.50**	**-0.35**	**-0.19**	**-0.12**
(9)	***SpecItem***	**-0.05**	**0.02**	**-0.04**	**-0.03**	-0.01	**-0.05**	0.01	**-0.20**		0.01	**-0.06**	**-0.14**	**0.30**	-0.01	**-0.05**	**-0.06**	**-0.07**
(10)	***Size***	**-0.53**	**0.08**	**-0.05**	0.00	**-0.04**	**0.21**	**0.19**	**-0.47**	**0.15**		**-0.15**	**0.27**	**0.45**	**-0.46**	**0.32**	**0.13**	**0.12**
(11)	***BM***	**-0.15**	**-0.24**	-0.01	-0.01	0.01	**0.08**	**0.07**	**0.08**	**-0.05**	**-0.16**		**-0.02**	**-0.05**	**-0.15**	**0.09**	**0.06**	**0.05**
(12)	***Leverage***	**-0.05**	**-0.10**	-0.02	**0.03**	**0.03**	**0.20**	**0.18**	**-0.04**	**-0.07**	**0.17**	**-0.10**		**-0.03**	**-0.28**	**0.16**	**0.04**	**-0.02**
(13)	***ROA***	**-0.46**	**-0.15**	**-0.15**	**-0.09**	**0.12**	**0.15**	**0.11**	**-0.40**	**0.25**	**0.39**	**0.12**	**-0.02**		**-0.32**	**0.16**	**0.05**	**0.09**
(14)	***EarnSD***	**0.46**	**0.20**	**0.08**	**0.03**	**-0.07**	**-0.20**	**-0.13**	**0.36**	-0.02	**-0.31**	**-0.11**	**-0.07**	**-0.45**		**-0.36**	**-0.03**	**-0.05**
(15)	***Age***	**-0.39**	**-0.11**	**-0.07**	**-0.08**	**0.06**	**0.25**	**0.30**	**-0.31**	0.01	**0.39**	0.01	**0.08**	**0.18**	**-0.25**		**0.12**	**0.08**
(16)	***BusSeg***	**-0.13**	**-0.05**	**0.04**	0.00	**-0.05**	**-0.06**	-0.01	**-0.20**	0.01	**0.17**	**0.04**	**0.04**	**0.09**	**-0.08**	**0.14**		**0.51**
(17)	***GeoSeg***	**-0.08**	-0.01	**-0.08**	-0.02	0.01	**0.06**	**-0.02**	**-0.05**	-0.01	**0.09**	**0.03**	**-0.05**	**0.14**	**-0.12**	**0.05**	**0.11**	

Note: Panel A presents descriptive statistics for the variables used to test the main hypotheses. Panel B shows the correlation coefficients.
Pearson correlations are presented below the diagonal; Spearman correlations are presented above the diagonal. Boldface indicates significance at the 5% level.
I winsorize all the continuous variables at the 1st and 99th percentiles. All variables are defined in Appendix A.

Table 3

Labor union and managerial information component (*H1*)

	(1) *Info(Pres)*	(2) *Info(QA)*
Union	**-0.535*** **	**-0.486*** **
	(-8.340)	**(-5.220)**
ReturnSD	0.448***	0.359***
	(11.361)	(5.156)
SpecItem	0.221***	0.070
	(7.826)	(1.348)
Size	-0.074***	0.062***
	(-29.297)	(15.558)
BM	-0.094***	-0.151***
	(-13.463)	(-13.139)
Leverage	0.176***	-0.142***
	(12.617)	(-7.064)
ROA	-0.228***	-0.244***
	(-13.824)	(-8.830)
EarnSD	0.274***	0.297***
	(15.055)	(10.459)
Age	-0.002***	-0.001***
	(-7.044)	(-2.827)
BusSeg	-0.040***	-0.049***
	(-5.710)	(-4.179)
GeoSeg	0.023*	0.029
	(1.800)	(1.371)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	25,858	25,858
adj. R-sq	0.619	0.240

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 4

Labor union and managerial obfuscation component (*H2*)

	(1) *Obfu(Pres)*	(2) *Obfu(QA)*
Union	**-1.100*** **	**-0.170**
	(-3.057)	**(-0.513)**
ReturnSD	0.330	0.315*
	(1.511)	(1.726)
SpecItem	-0.521***	-0.226*
	(-3.658)	(-1.854)
Size	0.029**	0.047***
	(2.147)	(4.585)
BM	0.012	0.053*
	(0.325)	(1.801)
Leverage	-0.193***	-0.010
	(-2.694)	(-0.167)
ROA	-0.534***	-0.466***
	(-6.211)	(-6.587)
EarnSD	0.078	-0.064
	(0.838)	(-0.795)
Age	-0.006***	-0.005***
	(-4.080)	(-4.530)
BusSeg	0.032	0.046
	(0.815)	(1.426)
GeoSeg	-0.068	0.071
	(-0.923)	(1.236)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	25,858	25,858
adj. R-sq	0.116	0.059

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 5

Loss firms vs. profit firms

Panel A: Managerial obfuscation component during presentations

	Obfu(Pres)		*Difference P-value*
	(1) Loss Firms	**(2) Profit Firms**	**(1) - (2)**
Union	**-1.855*** **	**-0.556**	**[<0.001]**
	(-3.716)	**(-1.383)**	
ReturnSD	-0.008	0.740**	
	(-0.034)	(2.076)	
SpecItem	-0.444***	-0.838*	
	(-2.878)	(-1.862)	
Size	0.015	0.055***	
	(0.924)	(3.015)	
BM	0.050	-0.051	
	(1.205)	(-1.081)	
Leverage	-0.303***	-0.116	
	(-3.693)	(-1.220)	
ROA	-0.144	-1.148***	
	(-1.431)	(-4.367)	
EarnSD	-0.007	0.373**	
	(-0.068)	(2.485)	
Age	-0.005**	-0.006***	
	(-2.343)	(-3.616)	
BusSeg	0.094	-0.033	
	(1.639)	(-0.674)	
GeoSeg	-0.035	-0.092	
	(-0.346)	(-0.958)	
Industry F.E.	Yes	Yes	
Year F.E.	Yes	Yes	
N	8,061	17,797	
adj. R-sq	0.120	0.110	

Panel B: Managerial obfuscation component during Q&A sessions

	Obfu(QA)		*Difference P-value*
	(1) Loss Firms	**(2) Profit Firms**	**(1) - (2)**
Union	**-1.724*** **	**0.455**	**[<0.001]**
	(-4.138)	**(1.229)**	
ReturnSD	0.003	0.537*	
	(0.013)	(1.934)	
SpecItem	-0.109	-0.936**	
	(-0.780)	(-2.470)	
Size	0.042***	0.055***	
	(3.246)	(4.122)	
BM	0.091**	0.006	
	(2.482)	(0.148)	
Leverage	-0.061	0.033	
	(-0.873)	(0.434)	
ROA	-0.255***	-0.695***	
	(-2.883)	(-3.384)	
EarnSD	-0.135	0.070	
	(-1.474)	(0.537)	
Age	-0.004**	-0.005***	
	(-2.395)	(-3.919)	
BusSeg	0.065	0.040	
	(1.208)	(1.066)	
GeoSeg	0.034	0.115	
	(0.395)	(1.570)	
Industry F.E.	Yes	Yes	
Year F.E.	Yes	Yes	
N	8,061	17,797	
adj. R-sq	0.070	0.055	

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 6

Alternative union measures
Panel A: *UnionDummy*

	(1) *Info(Pres)*	(2) *Info(QA)*	(3) *Obfu(Pres)*	(4) *Obfu(QA)*
UnionDummy	**-0.088*** **	**-0.093*** **	**-0.094***	**-0.106** **
	(-9.744)	**(-6.703)**	**(-1.816)**	**(-2.572)**
ReturnSD	0.419***	0.350***	0.093	0.226
	(8.623)	(4.022)	(0.357)	(1.001)
SpecItem	0.167***	-0.019	-0.525***	-0.291*
	(4.886)	(-0.292)	(-3.012)	(-1.935)
Size	-0.071***	0.070***	0.026	0.044***
	(-23.567)	(14.042)	(1.611)	(3.520)
BM	-0.091***	-0.145***	0.038	0.060*
	(-11.317)	(-10.694)	(0.936)	(1.671)
Leverage	0.172***	-0.165***	-0.210**	0.048
	(10.188)	(-6.490)	(-2.354)	(0.654)
ROA	-0.230***	-0.247***	-0.650***	-0.501***
	(-11.303)	(-7.299)	(-6.128)	(-5.504)
EarnSD	0.286***	0.309***	0.053	-0.177*
	(11.708)	(8.238)	(0.411)	(-1.660)
Age	-0.002***	-0.001	-0.006***	-0.005***
	(-5.690)	(-1.640)	(-3.652)	(-3.568)
BusSeg	-0.032***	-0.029*	0.062	0.085**
	(-3.523)	(-1.939)	(1.256)	(1.963)
GeoSeg	0.018	0.019	-0.123	0.022
	(1.073)	(0.672)	(-1.344)	(0.294)
Industry F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	14,881	14,881	14,881	14,881
adj. R-sq	0.600	0.238	0.112	0.060

Panel B: *UnionIndustry*

	(1) *Info(Pres)*	(2) *Info(QA)*	(3) *Obfu(Pres)*	(4) *Obfu(QA)*
UnionIndustry	**-0.332*** **	**-0.403*** **	**-1.170*** **	**-0.440**
	(-4.598)	**(-4.026)**	**(-3.094)**	**(-1.544)**
ReturnSD	0.448***	0.359***	0.330	0.315*
	(11.389)	(5.159)	(1.511)	(1.723)
SpecItem	0.212***	0.062	-0.541***	-0.231*
	(7.541)	(1.190)	(-3.793)	(-1.898)
Size	-0.072***	0.064***	0.034**	0.048***
	(-28.162)	(16.130)	(2.520)	(4.727)
BM	-0.093***	-0.149***	0.017	0.055*
	(-13.292)	(-12.995)	(0.477)	(1.866)
Leverage	0.176***	-0.141***	-0.187***	-0.006
	(12.671)	(-7.007)	(-2.615)	(-0.110)
ROA	-0.237***	-0.252***	-0.549***	-0.466***
	(-14.260)	(-9.094)	(-6.368)	(-6.613)
EarnSD	0.273***	0.295***	0.073	-0.066
	(15.085)	(10.443)	(0.777)	(-0.820)
Age	-0.002***	-0.001***	-0.006***	-0.005***
	(-7.442)	(-3.049)	(-4.193)	(-4.554)
BusSeg	-0.040***	-0.049***	0.029	0.044
	(-5.687)	(-4.247)	(0.727)	(1.349)
GeoSeg	0.023*	0.030	-0.063	0.074
	(1.833)	(1.428)	(-0.853)	(1.283)
Industry F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	25,858	25,858	25,858	25,858
adj. R-sq	0.617	0.240	0.116	0.060

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 7

Propensity score matched sample

	(1) *Info(Pres)*	(2) *Info(QA)*	(3) *Obfu(Pres)*	(4) *Obfu(QA)*
Union	**-0.622*** **	**-0.558*** **	**-1.073** **	**-0.516**
	(-7.772)	**(-4.342)**	**(-2.162)**	**(-1.032)**
ReturnSD	0.374***	0.301**	0.213	0.549*
	(5.285)	(2.493)	(0.594)	(1.758)
SpecItem	0.211***	0.018	-0.430*	-0.038
	(4.678)	(0.215)	(-1.867)	(-0.200)
Size	-0.074***	0.076***	0.021	0.045***
	(-18.358)	(12.126)	(1.039)	(2.765)
BM	-0.095***	-0.146***	0.054	0.031
	(-9.259)	(-8.617)	(1.046)	(0.704)
Leverage	0.215***	-0.129***	-0.131	0.008
	(10.081)	(-4.201)	(-1.162)	(0.090)
ROA	-0.262***	-0.332***	-0.741***	-0.607***
	(-7.558)	(-6.091)	(-4.397)	(-4.356)
EarnSD	0.370***	0.388***	0.263	0.075
	(7.908)	(6.227)	(1.203)	(0.472)
Age	-0.001***	-0.001	-0.004**	-0.004**
	(-3.813)	(-0.954)	(-2.190)	(-2.330)
BusSeg	-0.036***	-0.031*	-0.024	0.053
	(-3.281)	(-1.768)	(-0.393)	(1.003)
GeoSeg	0.023	0.021	-0.115	0.098
	(1.017)	(0.543)	(-0.925)	(0.997)
Industry F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	8,535	8,535	8,535	8,535
adj. R-sq	0.536	0.243	0.095	0.057

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 8

Right-to-work laws

Panel A: Managerial information component during presentations (Newly Adopted Group vs. Previously Adopted Group)

	Info(Pres)		***Difference P-value***
	(1) Newly Adopted	**(2) Previously Adopted**	**(1) - (2)**
Union	**-0.338****	**-0.379*****	**[<0.05]**
	(-2.272)	**(-3.119)**	
ReturnSD	0.244	0.434***	
	(1.206)	(5.216)	
SpecItem	0.140	0.260***	
	(1.158)	(4.685)	
Size	-0.086***	-0.087***	
	(-6.673)	(-17.810)	
BM	-0.055**	-0.080***	
	(-1.979)	(-6.654)	
Leverage	0.358***	0.180***	
	(5.461)	(7.544)	
ROA	-0.207	-0.241***	
	(-1.202)	(-5.454)	
EarnSD	0.480***	0.269***	
	(4.905)	(6.520)	
Age	-0.001	-0.001***	
	(-1.353)	(-2.986)	
BusSeg	-0.008	-0.041***	
	(-0.263)	(-2.977)	
GeoSeg	0.010	0.029	
	(0.194)	(1.140)	
Industry F.E.	Yes	Yes	
Year F.E.	Yes	Yes	
N	1,271	6,567	
adj. R-sq	0.618	0.594	

Panel B: Managerial obfuscation component during presentations (Newly Adopted Group vs. Previously Adopted Group)

	Obfu(Pres)		***Difference P-value***
	(1) Newly Adopted	**(2) Previously Adopted**	**(1) - (2)**
Union	**0.456**	**-2.450*** **	**[<0.05]**
	(0.413)	**(-3.410)**	
ReturnSD	-0.156	0.706	
	(-0.173)	(1.564)	
SpecItem	-0.561	-0.495*	
	(-1.018)	(-1.746)	
Size	0.082	0.124***	
	(1.204)	(4.487)	
BM	0.088	0.135**	
	(0.634)	(2.194)	
Leverage	0.576	-0.153	
	(1.583)	(-1.135)	
ROA	-1.034*	-0.755***	
	(-1.830)	(-4.317)	
EarnSD	-0.752	0.161	
	(-1.015)	(0.846)	
Age	-0.011	-0.006**	
	(-1.564)	(-2.233)	
BusSeg	-0.392**	0.038	
	(-2.383)	(0.515)	
GeoSeg	-0.312	0.111	
	(-0.723)	(0.862)	
Industry F.E.	Yes	Yes	
Year F.E.	Yes	Yes	
N	1,271	6,567	
adj. R-sq	0.293	0.163	

Panel C: State-level staggered adoption of right-to-work laws

	(1) ***Info(Pres)***	**(2)** ***Info(QA)***	**(3)** ***Obfu(Pres)***	**(4)** ***Obfu(QA)***
PostRTW	**0.021***	**0.049***	**0.120****	**-0.009**
	(1.658)	**(1.715)**	**(2.088)**	**(-0.149)**
F.E.	Yes	Yes	Yes	Yes
N	25,858	25,858	25,858	25,858
adj. R-sq	0.809	0.436	0.643	0.454

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 9

Cross-sectional analyses
Panel A: Managerial ability

	(1) *Info(Pres)*	(2) *Info(QA)*	(3) *Obfu(Pres)*	(4) *Obfu(QA)*
Union	**-0.543*** **	**-0.490*** **	**-1.051*** **	**-0.172**
	(-8.547)	**(-5.260)**	**(-2.899)**	**(-0.516)**
MAscore	**0.316*** **	**0.304*** **	**-0.048**	**0.033**
	(10.726)	**(7.239)**	**(-0.353)**	**(0.291)**
Union*MAscore	**-0.949*** **	**-0.632**	**-3.037***	**-0.805**
	(-2.854)	**(-1.217)**	**(-1.714)**	**(-0.540)**
ReturnSD	0.412***	0.306***	0.416*	0.386**
	(10.204)	(4.273)	(1.800)	(1.988)
SpecItem	0.219***	0.060	-0.557***	-0.287**
	(7.495)	(1.120)	(-3.703)	(-2.254)
Size	-0.080***	0.058***	0.032**	0.052***
	(-31.161)	(13.876)	(2.213)	(4.784)
BM	-0.088***	-0.142***	0.004	0.047
	(-11.904)	(-11.963)	(0.115)	(1.508)
Leverage	0.192***	-0.136***	-0.193**	-0.002
	(12.669)	(-6.496)	(-2.517)	(-0.035)
ROA	-0.261***	-0.276***	-0.525***	-0.447***
	(-14.304)	(-9.151)	(-5.230)	(-5.525)
EarnSD	0.278***	0.294***	0.073	-0.088
	(13.517)	(9.531)	(0.684)	(-1.015)
Age	-0.001***	-0.000	-0.006***	-0.005***
	(-5.418)	(-1.088)	(-3.992)	(-4.014)
BusSeg	-0.039***	-0.047***	0.025	0.043
	(-5.239)	(-3.979)	(0.602)	(1.254)
GeoSeg	0.026*	0.036	-0.086	0.059
	(1.781)	(1.508)	(-1.061)	(0.903)
Industry F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	23,146	23,146	23,146	23,146
adj. R-sq	0.557	0.209	0.101	0.049

Panel B: Debt ratio

	(1) *Info(Pres)*	(2) *Info(QA)*	(3) *Obfu(Pres)*	(4) *Obfu(QA)*
Union	**-0.733*** **	**-0.703*** **	**-1.224*** **	**0.043**
	(-10.167)	**(-6.369)**	**(-2.948)**	**(0.112)**
DebtRatio	**-0.263*** **	**-0.257*** **	**0.059**	**0.247** **
	(-10.656)	**(-6.415)**	**(0.455)**	**(2.232)**
Union*DebtRatio	**0.918*** **	**1.047*** **	**0.884**	**-1.039**
	(3.988)	**(2.825)**	**(0.688)**	**(-0.887)**
ReturnSD	0.501***	0.410***	0.311	0.266
	(12.801)	(5.892)	(1.427)	(1.465)
SpecItem	0.112***	-0.033	-0.473***	-0.127
	(3.917)	(-0.623)	(-3.337)	(-1.021)
Size	-0.078***	0.058***	0.031**	0.051***
	(-29.925)	(14.191)	(2.196)	(4.746)
BM	-0.083***	-0.140***	0.007	0.043
	(-12.474)	(-12.535)	(0.212)	(1.468)
Leverage	0.296***	-0.027	-0.242***	-0.119*
	(20.499)	(-1.148)	(-3.016)	(-1.746)
ROA	-0.220***	-0.236***	-0.535***	-0.474***
	(-13.454)	(-8.555)	(-6.189)	(-6.678)
EarnSD	0.248***	0.272***	0.088	-0.040
	(13.919)	(9.642)	(0.939)	(-0.492)
Age	-0.002***	-0.001**	-0.006***	-0.005***
	(-5.954)	(-2.139)	(-4.133)	(-4.726)
BusSeg	-0.036***	-0.045***	0.031	0.042
	(-5.151)	(-3.835)	(0.791)	(1.305)
GeoSeg	0.020	0.026	-0.068	0.074
	(1.593)	(1.243)	(-0.918)	(1.283)
Industry F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	25,858	25,858	25,858	25,858
adj. R-sq	0.624	0.243	0.116	0.060

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 10

Non-factual language and labor union

	(1) *Nfactual(Pres)*	(2) *Nfactual(QA)*
Union	**0.007***	**0.003**
	(1.864)	**(1.329)**
ReturnSD	0.003*	0.001
	(1.678)	(0.544)
SpecItem	0.003**	0.002**
	(2.545)	(1.978)
Size	0.000	0.000
	(0.449)	(0.279)
BM	-0.001**	-0.001***
	(-2.398)	(-2.640)
Leverage	0.001	0.001**
	(1.391)	(2.323)
ROA	-0.002**	-0.001**
	(-2.472)	(-2.358)
EarnSD	0.001	0.000
	(1.130)	(0.232)
Age	0.000	-0.000
	(0.157)	(-0.062)
BusSeg	-0.001**	-0.000**
	(-2.335)	(-2.132)
GeoSeg	-0.001	-0.001***
	(-1.003)	(-3.190)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	24,992	24,992
adj. R-sq	0.118	0.095

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 11

Forward-looking disclosure and labor union
Panel A: Full sample

	(1) *Forward(Pres)*	(2) *Forward(QA)*
Union	**-0.044***	**-0.006**
	(-1.921)	**(-0.467)**
ReturnSD	0.058***	0.040***
	(5.655)	(4.771)
SpecItem	0.001	0.017***
	(0.203)	(3.195)
Size	0.002***	0.001
	(2.875)	(1.509)
BM	-0.004***	0.002**
	(-2.672)	(2.044)
Leverage	-0.002	0.000
	(-0.628)	(0.020)
ROA	-0.049***	-0.021***
	(-10.742)	(-6.358)
EarnSD	0.007	0.000
	(1.473)	(0.079)
Age	-0.000***	-0.000***
	(-4.402)	(-3.844)
BusSeg	0.003	0.006***
	(1.360)	(3.970)
GeoSeg	-0.005	-0.004*
	(-1.460)	(-1.778)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	25,858	25,858
adj. R-sq	0.173	0.111

Panel B: Subsample tests

	Forward(Pres)		*Difference P-value*	*Forward(QA)*		*Difference P-value*
	(1) Loss	**(2) Profit**	**(1) - (2)**	**(1) Loss**	**(2) Profit**	**(1) - (2)**
Union	**-0.115*** **	**-0.008**	**[<0.001]**	**-0.056*** **	**0.011**	**[<0.001]**
	(-4.662)	**(-0.293)**		**(-3.023)**	**(0.774)**	
ReturnSD	0.031***	0.076***		0.017	0.057***	
	(2.794)	(4.493)		(1.609)	(4.465)	
SpecItem	0.012*	-0.021		0.016**	0.024	
	(1.665)	(-0.942)		(2.575)	(1.412)	
Size	0.002**	0.003***		0.001	0.001*	
	(2.217)	(3.502)		(0.986)	(1.675)	
BM	-0.004**	-0.005**		0.002	0.004***	
	(-2.090)	(-2.352)		(1.070)	(2.690)	
Leverage	-0.014***	0.008*		0.001	0.000	
	(-3.428)	(1.735)		(0.331)	(0.088)	
ROA	-0.033***	-0.052***		-0.023***	0.001	
	(-6.200)	(-3.645)		(-5.459)	(0.137)	
EarnSD	-0.007	0.032***		-0.007*	0.006	
	(-1.508)	(3.665)		(-1.699)	(1.005)	
Age	-0.000	-0.000***		0.000	-0.000***	
	(-1.345)	(-3.774)		(0.007)	(-3.332)	
BusSeg	0.009***	-0.001		0.012***	0.003*	
	(3.304)	(-0.394)		(4.872)	(1.960)	
GeoSeg	-0.013***	0.000		-0.011***	0.000	
	(-2.722)	(0.067)		(-2.983)	(0.104)	
Industry F.E.	Yes	Yes		Yes	Yes	
Year F.E.	Yes	Yes		Yes	Yes	
N	8,061	17,797		8,061	17,797	
adj. R-sq	0.218	0.130		0.149	0.081	

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 12

Tone and labor union

Panel A: Managerial positive tone and union

	(1) *Positive(Pres)*	(2) *Positive(QA)*
Union	**3.076**	**7.088**
	(0.333)	**(1.546)**
Earnings	-0.640	-4.143***
	(-0.338)	(-2.779)
Capex	-21.436***	-6.000
	(-2.778)	(-1.462)
HHI	-3.239	3.192
	(-0.473)	(0.672)
Size	4.947***	5.860***
	(16.291)	(32.242)
BM	0.081	-1.726***
	(0.106)	(-3.874)
ReturnSD	15.518***	3.406
	(3.591)	(1.253)
EarnSD	3.249*	-0.724
	(1.734)	(-0.490)
Loss	4.647***	-0.241
	(6.592)	(-0.493)
Growth	-1.342**	0.905**
	(-2.417)	(2.221)
BusSeg	1.323*	0.844
	(1.745)	(1.587)
GeoSeg	1.789	0.230
	(1.217)	(0.230)
Rating	6.850***	3.708***
	(6.077)	(5.666)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	21,349	21,349
adj. R-sq	0.200	0.413

Panel B: Managerial negative tone and union

	(1) *Negative(Pres)*	(2) *Negative(QA)*
Union	**9.635***	**6.136****
	(1.866)	**(2.220)**
Earnings	-1.013	-1.894**
	(-1.020)	(-2.119)
Capex	-13.034***	1.606
	(-3.713)	(0.606)
HHI	-0.286	1.222
	(-0.079)	(0.408)
Size	1.186***	3.072***
	(8.241)	(27.626)
BM	0.421	-0.785***
	(1.051)	(-2.820)
ReturnSD	12.043***	6.253***
	(5.312)	(3.734)
EarnSD	-1.122	-0.935
	(-1.083)	(-1.021)
Loss	6.407***	0.840***
	(16.432)	(2.789)
Growth	-5.653***	-0.679***
	(-15.393)	(-2.653)
BusSeg	1.380***	-0.047
	(3.709)	(-0.158)
GeoSeg	0.764	-0.366
	(1.209)	(-0.620)
Rating	5.183***	2.942***
	(9.641)	(7.349)
Industry F.E.	Yes	Yes
Year F.E.	Yes	Yes
N	21,349	21,349
adj. R-sq	0.187	0.294

Note: ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

Table 13

Information environment and labor union

	(1) *Spread*	(2) *Volume*	(3) *Illiquidity*
Union	**0.635*** **	**-4.135*** **	**4.157*** **
	(3.692)	**(-7.697)**	**(5.563)**
EarnSD	0.434***	-0.165	1.775***
	(8.695)	(-1.408)	(9.134)
Growth	-0.089***	0.205***	-0.420***
	(-7.378)	(6.225)	(-7.150)
BusSeg	-0.057***	0.337***	-0.574***
	(-5.095)	(7.100)	(-8.496)
GeoSeg	-0.043*	0.188**	-0.180
	(-1.710)	(2.125)	(-1.415)
SpecItem	0.224***	-0.758***	1.069***
	(3.213)	(-3.973)	(3.656)
Loss	0.207***	-0.336***	1.419***
	(13.220)	(-7.715)	(21.922)
ReturnSD	1.087***	-2.435***	11.687***
	(12.033)	(-8.566)	(26.536)
BM	0.145***	-0.642***	1.148***
	(8.667)	(-12.251)	(15.725)
Leverage	-0.117***	0.637***	-0.920***
	(-5.359)	(7.259)	(-6.800)
HHI	-0.147	0.234	0.451
	(-1.161)	(0.730)	(0.790)
Industry F.E.	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes
N	23,717	23,700	23,717
adj. R-sq	0.209	0.186	0.364

Note: ∗∗∗, ∗∗, and ∗ denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively. T statistics in parentheses.

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