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Do Managers Withhold Good News from Labor Unions?

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With scarce empirical support, prior literature argues that managers tend to withhold good news and promote bad news to preserve their bargaining power against labor unions. This paper provides empirical evidence of this rarely supported argument. Using comprehensive firm-level data from South Korea, where labor unions have a long tradition of making credible threats, we find that overall disclosure frequency is negatively related to labor union strength, and that this relation is more pronounced in firms with good news. We also find that firms with strong labor unions withhold good news during the labor negotiation period and release it in a gradual fashion afterward and that this pattern is more prominent than that of firms with weak or no unions, implying that managers time news disclosures according to bargaining schedules to achieve better outcomes in labor negotiations. These results are robust to various sensitivity tests.

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1. Introduction

Managers facing organized labor often take strategic actions to lower a firm's perceived ability to meet a wage demand. Such managers tend to hold less cash (Klasa et al. 2009), cut dividends (DeAngelo and DeAngelo 1991), manage earnings downward (DeAngelo and DeAngelo 1991), miss analysts' forecasts (Bova 2013), and strategically choose accounting methods (Bowen et al. 1995, Cullinan and Bline 2003, D'Souza et al. 2000) to project a negative picture and, as a result, better cope with labor's wage demands. In a similar vein, earlier research argues that such managers are reluctant to share information on firms' prospects with labor so as to preserve bargaining power (Kleiner and Bouillon 1988, Leap 1991, Hilary 2006). Surprisingly, however, empirical evidence to support the claim that management strategically shares information with labor unions is scarce. This paper aims to fill this gap by exploring strategic disclosures of unionized firms.

We posit that managers facing organized labor tend to disclose less on average, and that they withhold good news and promote bad news to paint a pessimistic picture about the firms' prospects. We also predict that this asymmetric news disclosure is more prominent during the collective bargaining process than it is during other periods of the year.

Consistent with the prediction, we find strong evidence that labor union strength is negatively associated with disclosure frequency using a large sample of Korean listed firms for the 2003–2007 period. Furthermore, we report that this negative association between union strength and disclosure frequency is mainly driven by good news firms. We also find that managers time news disclosure by withholding good news during a labor bargaining period and then releasing it in a gradual fashion when the bargaining season is over. Withholding good news during a labor negotiation period stems from managers' strategic disclosure policy, which is intended to reduce the excessive surrender of company resources to the unions. Our main findings are robust to controls for management compensation structure, Korean corporate culture, the endogeneity of union strength,

different variable specifications, and other sensitivity tests.

In establishing the empirical association between labor union and disclosure activities, we benefit from Korean contexts for the following reasons. First, Hilary (2006) argues that using raw disclosure may not capture the whole information flow because management can reveal information to financial markets through various alternative channels. However, all Korean listed companies are required to disclose their material information to the public simultaneously or before they provide the information to some selected market participants such as financial analysts, institutional investors, foreign investors, etc. This is known as Regulation Fair Disclosure (Reg FD) (Korea Exchange 2002a, b). In so doing, disclosing firms have to file details of their disclosure on the Korean Investor's Network for Disclosure (KIND) System, which is operated by the Korea Exchange (KRX), as well as on the Data Analysis, Retrieval and Transfer (DART) System, which is operated by the Financial Supervisory Service (FSS).[1] As a result of Reg FD, firms are required to disclose all the material information in a fair and timely manner. This naturally enables us to address Hilary's (2006) concern because the Reg FD rules preclude that other sources of information flow from Korean firms to the public and thereby make fair disclosures the only outcome of firms' strategic disclosure policy.

Besides the advantage of an empirical proxy for disclosure quality, we also have good reasons to pay attention to Korean companies. In the United States, empirical evidence concerning labor unions has been scarce because no comprehensive firm-level measure of the unionization rate is yet available. In contrast, Korean listed firms are required to report the number of union workers in their annual reports from which we can retrieve a comprehensive firm-level unionization rate for each firm in a given year. This study thus exploits a unique disclosure requirement in South Korea.

Furthermore and more importantly, the labor union plays a significant role as a nonfinancial stakeholder in South Korea. In an annual report published by the World Economic Forum (2010), the global business competitiveness of South Korea fell by six ranks, landing 19th. The World Economic Forum attributed this change in part to the difficulty of hiring and

firing workforces, which leads employers to rely more on temporary employment contracts. On the World Economic Forum's labor–management relations list, South Korea ranks third from the bottom. With their proud and long tradition of furious protests harking back to their resistance against the military dictatorships of the 1970s and 1980s, labor unions in South Korea still remain radical and often militant (see *The Economist* 2010). Accordingly, labor unions' threats are perceived as highly credible in South Korea, which provides sufficient incentives for management to initiate actions against such threats. To the extent that the unionization rate validly acts as proxy for the magnitude of these threats, we expect that a Korean sample would provide us with a more powerful test.

Our findings add to the disclosure literature in several ways. Healy and Palepu (2001) note the absence of evidence in the literature about the effect of agency problems on corporate disclosures. We contribute by showing how agency problems, attributable to the informational dynamics between management and employees, affect disclosure strategy. In a recent paper, Bova (2013) documents that, in the face of an organized labor force, managers tend to miss analysts' consensus forecasts by taking less action to guide forecasts downward when estimates are too high, but more action to deflate earnings when expectations are too low. By focusing on fair disclosures, this paper expands the scope of managerial information policy against unions to a broader period of time, even before managers communicate with analysts.

Our paper also complements Hilary's (2006) findings on the positive association between labor union strength and information asymmetry by suggesting a specific channel via which information asymmetry of unionized firms becomes more severe in financial markets. We also contribute to the literature on disclosure costs. Apart from the potential benefits of disclosures (e.g., reduced cost of capital), there are also costs if the disclosures reveal proprietary information about the firm's prospects to related parties such as business competitors (Verrecchia 2001). We contribute to this stream of research by identifying employees as other important information users especially when they exhibit excessive rent-seeking behavior. Recognizing the incentives and behaviors of management and labor unions is important for both parties in the labor negotiation process.

We also contribute to the research stream on managers' "timing" of information flow. DeAngelo and DeAngelo (1991) document that firms report lower income and cut dividends during union negotiations. According to Chen and Mohan (1994), managers are more likely to change earnings announcement dates when earnings are less than expected. In contrast,

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[1] FSS is the regulatory body of South Korea that is similar to the Securities and Exchange Commission (SEC) in the United States (http://englishdart.fss.or.kr/). The major differences between Korean and U.S. Reg FD include the following: (1) the types of corporate information subject to Reg FD are specified by law and stock market regulations only in South Korea, and (2) foreign governments and foreign private issuers are exempt from the regulation of Reg FD only in the United States.

Liberty and Zimmerman (1986) do not find evidence that managers conduct income-decreasing earnings management during labor negotiations. Bova (2013) finds that unionized firms are more likely to miss mean consensus analysts' earnings forecasts to signal a negative outlook to their unions, but this tendency is not restricted to the period just before the labor negotiation process. We add a piece of evidence supporting managerial timing of disclosure in the context of labor relations by showing that managers in unionized firms withhold good news during the collective bargaining process and then release it in a smooth fashion.

More importantly, we propose asymmetric disclosure behaviors to withhold good news and promote bad news in unionized firms. Although various incentives can motivate management to release or withhold their private information (Healy and Palepu 2001, Verrecchia 2001), the incentive to withhold good news and promote bad news has not been frequently discussed in the literature. The only exception is that managers do so in the period immediately preceding option grant dates to lower the exercise price of their options (Yermack 1997, Aboody and Kasznik 2000). On the other hand, there is abundant evidence that management has incentives to withhold bad news for various reasons, such as career concerns (Nagar et al. 2003, Kothari et al. 2009). By focusing on their incentives to gain favorable terms in the labor negotiation process, we add a new piece of evidence to this literature on rare cases in which management withholds good news and promotes bad news.

2. Institutional Background

2.1. Labor Negotiations

Labor negotiations in South Korea have several unique characteristics. Despite a lack of clear rationale, it has been a long tradition for the management and labor unions to do the annual wage negotiations in spring in South Korea.[2] The collective bargaining is done once a year in the second calendar quarter for most Korean firms. Most firms start wage negotiations in April because management and labor unions can start the negotiation three months in advance of the calendar month of the previous year's negotiation settlement, which is usually June. That is, most Korean firms do not finish their collective bargaining in the early part of the second quarter but, instead, use the whole second quarter.

Typical labor negotiations in South Korea take the form of collective bargaining in which all topics

including wage increases, improvements to work conditions, and compensation packages for the union leaders are dealt with at the same time without any sequence. Once the labor contract is signed by the manager and the labor union, it is not generally subject to renegotiation. Thus, newly revealed good news after the wage negotiation process does not provoke renegotiations, but it may be considered by the labor union in the subsequent period wage bargaining.

2.2. Corporate Structure

The corporate structure and culture are also unique in South Korea. Many firms are affiliated to a business group called a "chaebol." This business group provides internal funding and support to its member firms. For example, Samsung Life Insurance has functioned as an internal funding source for Samsung Group's member firms since a chaebol is prohibited by Korean law from holding a bank. The performance of each individual legal entity, not the collective performance of chaebol member firms, is the basis for incentive pay determination. The corporate culture of South Korea is not the same as that of either Japan or the United States. Sometimes the benefit of the whole business group can predominate the benefit of individual firms, as with Japanese firms. However, labor negotiations are primarily performed on an individual firm basis, as with U.S. firms. Unlike U.S. conglomerates, chaebol firms are under the absolute influence of the controlling owner despite their independent legal status (Black and Kim 2012).

The group firm structure may affect management compensation, which in turn can influence managerial disclosure strategy. For example, the pay level is higher for chaebol firms than it is for nonchaebol firms on average. Managers of Korean firms are also granted incentive pay such as stock options, but this is not as prevalent as in U.S. firms. Chaebol firms are more likely to use stock options in their executive compensation packages. Cash bonuses and stock options are usually based on accounting performance rather than on stock prices (Kim et al. 1999). This supports our premise in the following section that managers have incentives to withhold good news from labor unions because mitigating excessive wage increases can enhance accounting profits.

In South Korea, labor negotiations are conducted on the firm level. Sometimes labor unions in the same industry take joint and simultaneous industrial actions to maximize their bargaining power against their management, or they conduct wage negotiations under the implicit guidance of upper-level union associations. However, it is unlikely that the labor unions within the same chaebol firms conduct their negotiations on the business group level.

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[2] This collective bargaining is called "spring labor offensive" or "*shunto*" because it falls in spring every year (see *The Economist* 1999).

Korean firms usually disclose their own individual firm's news through the KIND system,[3] from which we extract the disclosure data, and this tendency is the same for a business group such as a chaebol. Therefore, it is rare for a chaebol to disclose either group-wide news or its member firms' news. Of course, a chaebol can disclose group-wide or member firm-specific non–Reg FD news more frequently through other channels such as press releases, but this is outside the scope of our study.

3. Related Literature and Hypotheses Development

3.1. Labor Unions and Disclosure

There is a stream of research that focuses on the unions' role in diverse corporate decisions concerning operating, financing, and investing activities. Empirical research on the effect of labor unions on firm performance typically addresses the related operating productivity or costs. Previous findings suggest a trade-off between the costs and benefits of a labor union with regard to its effect on firms' operating profitability. A labor union typically has a positive effect on the productivity of a firm (Bronars and Deere 1994, Hirsch 1991). However, the effect of unions on the improvement of productivity is offset by escalated labor compensation costs, which eventually leads to reduced profitability (Bronars and Deere 1994).

Managers' strategic incentives arising from considerations for favorable bargaining positions against labor unions also have a substantial impact on corporate financing decisions. Because maintaining a high level of corporate liquidity can encourage workers to raise their wage demands, a firm with external finance constraints has an incentive to use the cash flow demands of debt service to improve its bargaining position with workers (Matsa 2010). Such liquidity concerns also motivate managers to hold less cash in order to shelter corporate income from labors' demands (Klasa et al. 2009).

The research also consistently shows that labor unions influence investment decisions. For example, unions limit the level and riskiness of firms' investments (Bronars et al. 1994). The rationale for this empirical regularity is that, because they are rent-seekers, unions use the threat of a strike to appropriate quasi-rents that would otherwise flow to investments (Hirsch 1992), thus reducing management's incentives to make risky investments.

Hilary (2006) investigates the effect of labor union strength in terms of its capital market consequences.

Using several proxies for information asymmetry, he documents a positive association between labor union strength and information asymmetry. However, he does not investigate the direct channel through which managers facing strong labor unions bring about information asymmetry in the financial market. In sum, labor unions play a significant role in key aspects of corporate decisions and give rise to important capital market consequences.

Despite labor's impact on diverse corporate decisions and market consequences, much less is known about its impact on firms' disclosure policy. Various incentives can motivate managers to disclose or withhold their private information (Healy and Palepu 2001, Verrecchia 2001). Managerial commitment to quickly and fully disclose private information, good or bad, can reduce information asymmetry, which in turn increases firm value (Glosten and Milgrom 1985, Diamond and Verrecchia 1991, Verrecchia 2001, Healy and Palepu 2001). However, existing theories suggest that disclosure costs that arise from the proprietary nature of information may sometimes prevent full disclosure (Verrecchia 2001). When disclosure is costly to the firm, a manager attempting to maximize firm value will disclose information only if it is favorable (e.g., Verrecchia 1990). Managers know that the labor unions actively collect and use firms' information concerning operating, financing, and investing activities to enhance their wage negotiation ability. Therefore, labor unions impose costs on managers' full disclosure. As a result, managers facing organized labor take strategic actions when deciding whether and how much information to disclose.[4] The preceding discussions lead to our first testable hypothesis (in alternative form):

HYPOTHESIS 1 (H1). *Managers' disclosure frequency decreases with the strength of the labor union*, *ceteris paribus*.

3.2. Labor Unions and Asymmetric Disclosure

Related studies document several incentives to withhold a certain type of news (i.e., asymmetric disclosure behaviors). Managers have incentives to withhold *bad* news relative to *good* news under a standard agency problem where managerial disclosure preferences are not aligned with those of shareholders (Healy and Palepu 2001, Verrecchia 2001, Kothari et al. 2009). This differential disclosure incentive stems from a variety of factors, including formal compensation

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[3] More specifically, Korean firms submit fair disclosures to KIND first, which are then shared with DART. On the other hand, they file annual reports to DART first, which are then shared with KIND.

[4] In contrast to the standpoint viewing labor unions as rent-seekers, some studies suggest a monitoring role of labor unions. For example, Chen et al. (2012) find that the cost of debt decreases with union strength because union workers' contractual wages and benefits are similar to the payoff on risky debt, creating unions' monitoring incentives.

contracts, career concerns, reputation concerns, and empire building (Ball 2009, Graham et al. 2005, Khan and Watts 2009, LaFond and Watts 2008). For these reasons, managers often delay bad news disclosures in practice (Graham et al. 2005).

Relative to the abundant evidence for incentives to withhold bad news, evidence for the opposite (i.e., incentives to withhold good news or promote bad news) remains scant. There are two exceptions: First, litigation risk can motivate managers to quickly reveal bad news because they face a greater loss function with bad news (Kasznik and Lev 1995; Skinner 1994, 1997; Baginski et al. 2002). Second, managers do so in hope of influencing the exercise price of their options (Yermack 1997, Aboody and Kasznik 2000).

We propose labor union strength as the third motive that induces managers to delay good news and prompts bad news disclosures. Hilary (2006) cites evidence that suggests that revealing information in a unionized environment weakens management's position during the collective bargaining process. This is true if a firm generates a sufficient surplus because labor unions are quasi-rent-seekers. We thus expect that managers' tendency not to reveal private information is more pronounced in firms with good news, leading to cross-sectional differences in disclosure activities across good versus bad news firms. Based on this reasoning, we formalize our second hypothesis (in alternative form):

HYPOTHESIS 2 (H2). *Managers' disclosure of good (bad) news decreases (increases) with the strength of the labor union, ceteris paribus.*

3.3. Labor Unions and Disclosure Timing

Prior literature examines managerial timing in various arenas. For example, DeAngelo and DeAngelo (1991) document that firms report lower income and cut dividends during the labor negotiation process. In contrast, Liberty and Zimmerman (1986) do not find evidence that managers conduct income-decreasing earnings management during labor negotiations. Chen and Mohan (1994) document that managers are more likely to change earnings announcement dates when earnings are less than expected, and that this tendency is more pronounced in small firms. More closely related papers to our study are Yermack (1997) and Aboody and Kasznik (2000). They report that managers withhold good news and promote bad news in the period immediately preceding option grant dates to lower the exercise price of their options. However, prior studies on disclosure timing, especially in terms of labor relations, are relatively scant. Bova (2013) finds that unionized firms are more likely to miss analysts' earnings forecasts using both earnings management and expectations management

to signal a negative outlook to their unions, but this tendency is not restricted to the period just before the labor negotiation process. Although his paper focuses on firms' meet-or-beat forecast strategy rather than on comprehensive news disclosures, it motivates us to make another interesting prediction.

In previous sections, we have considered the effect of union strength on the average level of news disclosure throughout the year. However, managers not only reduce (increase) the annual level of good (bad) news disclosures when facing strong labor unions, but they can also time when to intensify and relax such asymmetric news disclosures, taking labor negotiation schedules into account. In other words, managers withhold good news and promote bad news during the collective bargaining process to a greater extent than they do during other periods of the year. However, managers cannot withhold good news forever (if it is subject to mandatory disclosure) and release it to the market when the bargaining process is over. Similarly, the accelerated announcement of bad news during the bargaining process subsequently causes an abnormal decrease in the number of bad news disclosures. We expect that this temporal pattern of asymmetric disclosure within a year is more prominent for firms with stronger labor unions. Unlike U.S. firms, Korean firms engage in yearly collective bargaining. Since the vast majority of Korean firms bargain in the second calendar quarter of the year, this within-year temporal pattern of the asymmetric disclosure is tested in the spirit of an event study. We formalize this test as our third hypothesis (in alternative form):

HYPOTHESIS 3 (H3). *Managers' disclosure of good (bad) news decreases (increases) during the collective bargaining process with subsequent reversals, and this timing of asymmetric news disclosure is more pronounced for firms with stronger labor unions, ceteris paribus.*

4. Research Design

To test our main hypotheses, we follow prior studies for regression specification. As recognized by Larcker and Rusticus (2010), however, a complete structural determinant model of disclosure quality has not been developed. Healy and Palepu (2001) suggest various motives for voluntary disclosure such as capital market transactions, corporate control, stock compensation, litigation, management talent signaling, and proprietary cost. We adopt an equity offer dummy to control for capital market transaction motives (Lang and Lundholm 1993). We include return on assets (ROA), loss dummy, and contemporaneous stock return to control for managers' concerns about firm performance because of corporate control problems (Warner et al. 1988, Morck et al. 1990, DeAngelo 1988)

and firm size, and an industry dummy to control for their concerns about takeover threats (Brennan 1999). We also control for managers' concerns about the proprietary cost by including the Herfindahl–Hirschman index (HHI) on the rationale that the proprietary cost incurred by disclosures is larger when industry competition is intense (Verrecchia 2001, Dye 2001).

We also include the control variables adopted in Larcker and Rusticus (2010), which are the natural logarithm of the number of shareholders, length of operating cycle, the presence of a Big Four auditor, the book-to-market ratio, the number of analysts following the firm, and leverage. We add a chaebol dummy and foreign ownership because they may be important factors affecting the corporate governance of Korean firms. Specifically, we estimate the following regression to test our main hypotheses:

$$
\begin{aligned}
DEP_{it} = {} & a_0 + a_1\, Union_{it} + a_2\, Log(\#Owners)_{it} + a_3\, Offer_{it} \\
& + a_4\, RET_{it} + a_5\, Loss_{it} + a_6\, HHI_{it} + a_7\, OpCycle_{it} \\
& + a_8\, BigAudit_{it} + a_9\, Size_{it} + a_{10}\, BM_{it} \\
& + a_{11}\, Log(\#Analysts)_{it} + a_{12}\, LEV_{it} + a_{13}\, ROA_{it} \\
& + a_{14}\, Chaebol_{it} + a_{15}\, ForOwn_{it} \\
& + \sum Year + \sum Ind + \varepsilon_{it},
\end{aligned}
\tag{1}
$$

where $DEP = Log(\#Disclosures)$ is the natural logarithm of one plus the number of disclosures for firm i in year t in testing H1. To gauge labor union strength ($Union$), which is the variable of our main interest, we define two measures: union existence and unionization rates. $Union$, thus, equals either the unionization rate (which is the proportion of the number of union members to the number of total employees) or the union existence (which equals one if some employees are union members, and zero otherwise).[5] The definitions of the variables are summarized in Appendix A. We estimate Equation (1), which includes year and industry fixed effects, using pooled regressions with standard errors clustered at the firm level (Petersen 2009).[6,7] Hypothesis 1 predicts that coefficient a_1 is negative.

To test H2 and H3, we read the content of each piece of news and classify it as good, bad, or neutral news. See Appendix B for the criteria of news classifications and the examples of good, bad, and neutral news. We redefine $DEP = Log(\#News\ Disclosures)$ as $Log(\#Good\ News\ Disclosures)$ or $Log(\#Bad\ News\ Disclosures)$, which are the natural logarithms of one plus the number of good or bad news disclosures for firm i in year t, respectively, and regress Equation (1) for the whole sample. Hypothesis 2 predicts that coefficient a_1 is negative (positive) for the good (bad) news disclosure.

To test H3, we redefine $DEP = Log(\#News\ Disclosures)$ as $Log(\#Good\ News\ Disclosures)$ or $Log(\#Bad\ News\ Disclosures)$, which are the natural logarithms of one plus the number of good or bad news disclosures for firm i in "month m," respectively, and then construct quarter indicator variables $Q1$, $Q2$, and $Q3$ or month indicator variables from January to November, which takes the value of one if the news is disclosed in the corresponding quarter or month, and zero otherwise. We then interact each of these timing indicators with $Union$ to see whether the impact of $Union$ on good and bad news disclosures is different in the second calendar quarter (or in the months from April to June) compared to other quarters (or months) of the year. Hypothesis 3 predicts that the coefficients on $Union * Q2$, $Union * April$, $Union * May$, and $Union * June$ are negative (positive) for the good (bad) news disclosure.

5. Empirical Results

5.1. Data Description

Our sample covers nonfinancial companies listed on the Korean Stock Exchange from 2003 to 2007. In our sample period, all listed firms are required to report the number of union members and the number of total employees in the electronic corporate filing services of the Financial Supervisory Service (FSS). We hand-collect the data to construct the firm-year level unionization rate measures (the number of union members divided by the number of total employees).[8] In addition to the union data, we retract the

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[5] Litigation risk also influences the incentive for corporate disclosure (Skinner 1994). We expect stock returns, loss indicators, ROA, firm size, and industry dummies to sufficiently capture the litigation risk of a firm as in prior studies (Simunic 1980). However, it should be noted that South Korea is a code law country with a strong German law origin, and Korean firms are therefore rarely exposed to shareholder litigation (La Porta et al. 2006).

[6] For industry classification, we rely on a three-digit Korean Standard Industrial Classification (KSIC) code, which is similar to Standard Industrial Classification (SIC), defined by the U.S. Bureau of Labor Statistics. We then construct 29 industry dummies to capture industry-specific effects on disclosure activities.

[7] We adjust the standard errors by clustering observations across years for a given company because we are mainly concerned that

the residuals are correlated across time as a result of their possibly sticky nature over time. However, our inferences are unaffected by the use of different adjustment techniques. For example, we repeat all the regressions in this paper using the Fama and MacBeth (1973) method after correcting serial correlations and find that the main implications are unaltered. Double-clustered standard errors (i.e., by firm and year) do not change the tenor of our results.

[8] U.S. empirical studies on the effect of labor unions have been scarce because no comprehensive firm-level measure of the unionization rate is yet available. Some recent papers have employed industry-level measures of a unionization rate based on survey data for U.S. firms and converted them into firm-level proxies

annual frequency of disclosure data from the KIND System, and financial data and ownership data from the TS2000 and KIS-VALUE data sets, which were developed by the Korea Listed Companies Association (KLCA) and the Korea Investors Service (KIS), respectively. We also read the individual news disclosed by our sample firms from the KIND System and classify them as good, bad, or neutral news.

We collect 5,486 pieces of disclosure data and 1,839 pieces of unionization rate data from KIND.[9] When they are merged with those TS2000 and KIS-VALUE data sets having financial variables, the missing values for the disclosure numbers and the unionization rates are set to zero. We also delete observations with missing data for the additional control variables used in our analyses. To alleviate concerns over potential problems arising from the existence of extreme outliers, we "winsorize'' observations that fall within the top and bottom 1% of the annual empirical distributions of our major research variables. We follow the standard procedure of dropping financial institutions from our sample. After applying these sample selection criteria, we have a final sample of 2,084 firm-years and 372 unique firms during our sample period.

Panel A of Table 1 shows that the average unionization rate is 34.3% in our sample, whereas the average number of disclosures is 2.34 per year.[10] This indicates that material news disclosure is not a daily management activity for Korean firms. However, its standard deviation is 3.48, indicating that the variation of disclosure frequency across firms is fairly large. The average number of good, bad, and neutral news disclosures is 1.22, 0.39, and 0.73 per year, respectively. One notable observation is the book-to-market ratio (*BM*). Its mean value is 1.846, which is well known as the "Korea discount,'' meaning that the market value is lower than the book value of equity. As shown in many papers (e.g., Black and Kim 2012), this is a characteristic of the entire sample of Korean listed firms.

Panel B compares firm characteristics across the high versus low unionization subsamples. We divide samples into two using the sample median of unionization rates. This shows that firms with a high

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Table 1   Descriptive Statistics

Panel A. Summary statistics (*N* = 2,084)

Variables	Mean	SD	25th pctl.	Median	75th pctl.
Union Existence	0.716	0.451	0.000	1.000	1.000
Unionization Rate	0.343	0.281	0.000	0.381	0.592
#Disclosures	2.337	3.484	0.000	1.000	4.000
#Good News	1.223	2.108	0.000	0.000	2.000
#Bad News	0.385	1.036	0.000	0.000	0.000
Log(*#Owners*)	8.096	1.165	7.270	7.913	8.733
Offer	0.096	0.295	0.000	0.000	0.000
RET	0.334	1.199	−0.127	0.108	0.509
Loss	0.180	0.385	0.000	0.000	0.000
HHI	0.104	0.053	0.080	0.085	0.111
OpCycle	0.385	0.209	0.250	0.330	0.453
BigAudit	0.581	0.494	0.000	1.000	1.000
Size	25.156	1.678	23.968	24.831	26.031
BM	1.846	1.400	0.834	1.480	2.425
Log(*#Analysts*)	2.252	2.414	0.000	1.242	4.644
LEV	1.085	1.624	0.126	0.509	1.267
ROA	0.030	0.086	0.009	0.039	0.071
Chaebol	0.188	0.391	0.000	0.000	0.000
ForOwn	0.100	0.149	0.002	0.021	0.149

Panel B. High vs. low unionization rates samples

Variables	High unionization		Low unionization		Difference
	Mean	SD	Mean	SD	*p*-value
Unionization Rate	0.596	0.121	0.091	0.126	<0.01
#Disclosures	1.844	3.328	2.349	3.064	<0.01
#Good News	1.099	2.049	1.347	2.160	<0.01
#Bad News	0.436	1.175	0.335	0.874	0.03
Log(*#Owners*)	8.132	1.182	8.060	1.147	0.16
Offer	0.103	0.304	0.090	0.287	0.34
RET	0.340	0.949	0.328	1.405	0.82
Loss	0.192	0.394	0.169	0.375	0.17
HHI	0.105	0.040	0.102	0.064	0.20
OpCycle	0.354	0.184	0.417	0.228	<0.01
BigAudit	0.587	0.493	0.574	0.495	0.53
Size	25.321	1.741	24.991	1.597	<0.01
BM	1.982	1.509	1.711	1.268	<0.01
Log(*#Analysts*)	2.398	2.490	2.107	2.327	<0.01
LEV	1.276	1.825	0.893	1.367	<0.01
ROA	0.031	0.079	0.029	0.092	0.65
Chaebol	0.230	0.421	0.145	0.352	<0.01
ForOwn	0.111	0.161	0.089	0.136	<0.01

Notes. This table presents the descriptive statistics for the main variables. Panel A describes the summary statistics of the variables, and panel B compares simple statistics of the key variables across high and low unionization subsamples. The firm-year observations are classified as the high (low) unionization subsample if the unionization rate falls above (below) the sample median. All variables are defined in Appendix A.

unionization rate make fewer disclosures than their counterparts, consistent with H1. They also disclose less good news and more bad news (the difference is statistically significant), consistent with H2. They are larger, followed by more analysts, owned by more foreign investors, and are also more likely to be chaebol firms. Their book-to-market ratio and leverage are also higher and their operating cycle is

shorter. Firms with both high and low unionization rates are similar in terms of number of shareholders (Log(#*Owners*)), equity offer activity (*Offer*), stock return (*RET*), loss reporting propensity (*Loss*), market competition (*HHI*), ROA, and Big Four auditor employment. However, these univariate comparisons do not control for other factors affecting disclosure frequency or asymmetric disclosure of good versus bad news. We address this issue in the multivariate regression analyses in the following subsections.

5.2. Do Managers Reduce Disclosures When Facing Strong Labor Unions?

We investigate the effect of labor union strength on managers' choice of disclosure frequency using Equation (1) and report the empirical results in Table 2. Column (1) shows that the coefficient on the union existence dummy is negative and significant at the 1% level (−0.182, *p*-value < 0.01). The result is similar when the continuous variable, unionization rate, is used in column (2). Its coefficient is negative and significant at the 1% level (−0.200, *p*-value < 0.01). The effect of a labor union on the decrease in disclosures is also economically significant. The number of disclosures decreases by 23.8% when a labor union emerges in a firm, and by 7.8% when the unionization rate increases by one standard deviation of its distribution, holding other variables at their means.[11] The adjusted R^2 is approximately 40%, indicating that Equation (1) is well specified to explain managers' decisions regarding disclosure frequency.

We use clustered OLS regressions for columns (1) and (2) after taking a natural logarithm of #*Disclosures*. However, #*Disclosures* is the left-side-censored variable at zero, which violates the assumption of a normal distribution of the dependent variable for OLS. To address this concern, we use negative binominal regressions with the same specifications in columns (3) and (4).[12] The results are qualitatively similar except that the statistical significance declines to the 6% level when the unionization rate is used

[11] The mean of the number of disclosures is 2.337, so its log value equals $\log(1 + 2.337) = 1.205$. When a union emerges, this log value decreases by 0.182 (the coefficient on the union existence dummy), making a new log value of $1.205 - 0.182 = 1.023$. Its raw value equals $\exp(1.023) = 2.782$, which becomes 1.782 after subtracting 1. So the percentage change is $(1.782 - 2.337)/2.337 = -23.8\%$. In a similar way, $\exp(1.205 - 0.200 \cdot 0.281) - 1 = 2.155$, $(2.155 - 2.337)/2.337 = -7.8\%$, where −0.200 is the coefficient on unionization rate and 0.281 is the standard deviation of the unionization rate.

[12] The negative binomial specification is preferred when the dependent variable ranges among nonnegative integers (Rock et al. 2000). We also redo Equation (1) using Poisson regressions with raw disclosure frequency data and find that the results of Table 2 hold robust. Using these alternatives does not change the tenor of our findings in subsequent analyses.

Table 2 **The Effect of Union Strength on Disclosure Frequency**

Dep. var.:	Log(#*Disclosures*)		#*Disclosures*	
	OLS		Negative binomial	
	(1)	(2)	(3)	(4)
Union:	Union Existence	Unionization Rate	Union Existence	Unionization Rate
Intercept	−3.500***	−3.257***	−4.087**	−3.607**
	(<0.01)	(<0.01)	(0.01)	(0.02)
Union	−0.182***	−0.200***	−0.258***	−0.216*
	(<0.01)	(<0.01)	(<0.01)	(0.06)
Log(#*Owners*)	0.208***	0.211***	0.293***	0.298***
	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Offer	0.161**	0.170***	0.389***	0.405***
	(0.01)	(<0.01)	(<0.01)	(<0.01)
RET	0.006	0.006	0.027	0.027
	(0.58)	(0.60)	(0.31)	(0.30)
Loss	−0.071	−0.058	−0.069	−0.047
	(0.18)	(0.27)	(0.53)	(0.66)
HHI	0.879	0.951	1.031	1.107
	(0.33)	(0.29)	(0.57)	(0.54)
OperCycle	0.023	0.019	0.122	0.121
	(0.81)	(0.85)	(0.53)	(0.53)
BigAudit	0.055*	0.058*	0.165**	0.173**
	(0.09)	(0.08)	(0.01)	(0.01)
Size	0.080***	0.068***	0.053	0.030
	(<0.01)	(<0.01)	(0.22)	(0.48)
BM	−0.061***	−0.065***	−0.153***	−0.159***
	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Log(#*Analysts*)	0.032***	0.036***	0.093***	0.100***
	(<0.01)	(<0.01)	(<0.01)	(<0.01)
LEV	0.013	0.011	0.029	0.024
	(0.24)	(0.33)	(0.21)	(0.30)
ROA	−0.160	−0.110	−0.248	−0.150
	(0.56)	(0.68)	(0.59)	(0.74)
Chaebol	0.135**	0.137**	0.055	0.060
	(0.01)	(0.01)	(0.55)	(0.52)
ForOwn	0.087	0.076	0.310	0.315
	(0.56)	(0.61)	(0.22)	(0.22)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	2,084	2,084	2,084	2,084
Adj. R^2/log likelihood	0.387	0.383	1,724.14	1,719.19

Notes. This table presents the results of regressing disclosure frequency on firm union strength with control variables. Columns (1) and (2) are based on the OLS regression estimation using the natural logarithm of one plus disclosure frequency as the dependent variable. Columns (3) and (4) are based on the negative binomial regression estimation in which the raw values of disclosure frequency are used as the dependent variables. Regressions include year and industry fixed effects. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. Numbers in parentheses indicate *p*-values. All variables are defined in Appendix A.

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

as the main test variable in column (4). In sum, the results in Table 2 are consistent with H1: managers for firms with stronger labor unions are less likely to make contemporaneous disclosures, possibly to increase their bargaining power during the labor negotiation process.

Turning to the control variables, we find that managers' disclosure propensity increases with the number of shareholders, equity offer dummy, firm size, and analyst coverage and decreases with the book-to-market ratio. Disclosure frequency also increases for the client firms of Big Four auditors. This is generally consistent with prior studies (Lang and Lundholm 1993, Larcker and Rusticus 2010). The coefficient on the chaebol dummy is positive and significant in columns (1) and (2) but insignificant in columns (3) and (4). The coefficients on the stock return, loss dummy, Herfindahl–Hirschman index (HHI), operating cycle, leverage, ROA, and foreign ownership are insignificant.

5.3. Are Managers More Likely to Withhold Good News Disclosures?

Next, we examine the possibility of the asymmetric effect of union strength on managers' good versus bad news disclosure propensity. We read the individual disclosures of our sample firms and classify them as good, bad, or neutral news. Panel A of Table 3 shows that, on average, 45.0% (18.8%) of the sample firms disclose good (bad) news at least once during the sample period.[13] Similar to earlier findings based on U.S. firms, Korean firms disclose good news more often than bad news (e.g., Lev and Penman 1990).

The regression results using these data are reported in panel B of Table 3. For brevity, we only report the results using the unionization rate, but the results using the union existence dummy are qualitatively the same. As shown in column (1), when the dependent variable is Log(#*Good News Disclosures*), the coefficient on *Union* is negative and significant at the 1% level (-0.183, p-value $= 0.01$). In contrast, it is positive (although insignificant) in column (2) (0.013, p-value $= 0.78$), when the dependent variable is Log(#*Bad News Disclosures*). We find a similar result using the negative binominal approach in columns (3) and (4). In sum, the results in panel B of Table 3 support H2: managers withhold good news (and promote bad news) to a greater extent when their labor unions are stronger. We omit the explanations for the coefficients on control variables in this and the following tables since they are qualitatively similar to those reported in Table 2.

5.4. Do Managers Time Good vs. Bad News Disclosures According to Labor Negotiation Schedules?

Our analyses thus far have examined the average disclosure behavior of firms throughout the year.

In doing so, we posit that managers can withhold some news (e.g., good news) permanently from labor unions. However, managers can also withhold some news temporarily to weather a collective bargaining schedule, given the number of annual disclosures. It may be more interesting and important to test whether managers constrain (promote) good (bad) news disclosures during the labor negotiation process to a greater extent than they do during other periods of the year when their labor unions are strong, because we claim that managers withhold good news and promote bad news primarily to preserve better positions during the collective bargaining process to cope with labor unions' rent-seeking behavior.

The results of this analysis are summarized in Table 4. For brevity, we report the results using the unionization rate only, but the results using the union existence dummy are qualitatively similar. For economy's sake, we report only the results using the negative binominal approach, which is more conservative, but the results using OLS are almost identical. Columns (1) and (2) report the results for good news disclosures. We first regress Equation (1) after adding three quarter-indicator variables, $Q1$, $Q2$, and $Q3$, and their interactions with *Union* in column (1). In this firm-month data analysis, the coefficient on *Union*, which can be interpreted as the effect of union strength on good news disclosures in the fourth quarter, is insignificantly negative. More importantly, the coefficient on *Union* ∗ $Q2$ is significantly negative (-0.435, p-value $= 0.02$). This indicates that the results reported in Table 3 on managers' withholding good news from strong unions is concentrated in the second quarter.

In column (2), we replace quarter indicators with month indicators and repeat the analysis. The coefficient on *Union* is negative and significant (-0.437, p-value $= 0.04$), implying that managers withhold good news from labor unions in December. More importantly, the coefficient on *Union* ∗ *Month* is negative for April and June and significantly so for June (-0.621, p-value $= 0.08$), implying that managers' good news withholding is more pronounced in April and June. In contrast, the coefficients on the interaction variables are more positive in July, August, October, November, January (in subsequent year), and February (in subsequent year) than those in December. This means that managers withhold good news in the second quarter, especially in June during the collective bargaining process, and then gradually disclose part of it in the subsequent months, after the bargaining season is over. The results of a similar analysis for bad news disclosures are shown in columns (3) and (4). We find no significant seasonal pattern in this analysis. Overall, the results in Table 4 partially support H3: managers' asymmetric news disclosure

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[13] Of 2,084 firm-years, 938 firm-years contain at least one piece of good news per year. Thus, the percentage of good news firm-years is 938/2,084 = 45.0%. Using this same method, the percentage of bad news firm-years is 391/2,084 = 18.8%.

Table 3   The Effect of Union Strength on Asymmetric Disclosures for Good vs. Bad News

Panel A. Number of firms disclosing good news or bad news

	Total		Good news		Bad news	
Year	#Firm-years	Average #disclosures	#Firm-years	Average #disclosures	#Firm-years	Average #disclosures
2003	410	2.621	206	1.790	64	0.225
2004	403	2.080	193	1.572	42	0.245
2005	415	2.028	178	1.097	79	0.578
2006	421	2.241	173	1.073	99	0.625
2007	435	2.127	188	1.197	107	0.658
Total	2,084	2.337	938	1.223	391	0.385

Panel B. Regression results

	Log(#*Disclosures*)		#*Disclosures*	
Dep. var.:	OLS		Negative binomial regressions	
	(1)	(2)	(3)	(4)
News type:	Good news	Bad news	Good news	Bad news
Intercept	−2.932***	−1.004*	−4.465*	−28.699***
	(<0.01)	(0.08)	(0.04)	(<0.01)
Union	−0.183***	0.013	−0.335**	0.029
	(0.01)	(0.78)	(0.03)	(0.90)
Log(#*Owners*)	0.199***	0.099***	0.413***	0.350***
	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Offer	0.070	0.012	0.285**	0.115
	(0.26)	(0.74)	(0.03)	(0.61)
RET	0.001	−0.020*	−0.003	−0.058
	(0.94)	(0.07)	(0.95)	(0.40)
Loss	−0.029	0.029	0.040	0.147
	(0.61)	(0.46)	(0.78)	(0.51)
HHI	0.545	−1.315*	1.353	0.418
	(0.55)	(0.05)	(0.57)	(0.91)
OperCycle	−0.003	−0.078	0.357	−0.520
	(0.98)	(0.15)	(0.15)	(0.26)
BigAudit	0.001	0.057**	0.045	0.323**
	(0.99)	(0.01)	(0.59)	(0.02)
Size	0.077***	0.051***	0.044	0.067
	(<0.01)	(<0.01)	(0.45)	(0.45)
BM	−0.057***	0.027***	−0.200***	0.122
	(<0.01)	(<0.01)	(<0.01)	(0.12)
Log(#*Analysts*)	0.010	0.056***	0.040	0.332***
	(0.40)	(<0.01)	(0.12)	(<0.01)
LEV	0.018	0.004	0.045	−0.075
	(0.10)	(0.49)	(0.17)	(0.29)
ROA	0.604**	0.111	1.513**	1.072
	(0.04)	(0.49)	(0.01)	(0.37)
Chaebol	0.057	0.036	0.116	−0.430**
	(0.32)	(0.40)	(0.36)	(0.02)
ForOwn	−0.014	0.097	−0.124	0.588
	(0.92)	(0.43)	(0.72)	(0.23)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	2,084	2,084	2,084	2,084
Adj. R^2/log likelihood	0.315	0.324	2,204.10	−58.20

Notes. This table presents the impact of union strength on good and bad news disclosures. In this table, we read all disclosures to identify good, bad, or neutral news using the criteria introduced in Appendix B. Panel A shows the proportions of good and bad news disclosures relative to total disclosures. Panel B presents the results of regressing good or bad news disclosure frequency on firm union strength with control variables. Columns (1) and (2) are based on the OLS regression estimation using the natural logarithm of one plus good or bad news disclosure frequency as the dependent variable. Columns (3) and (4) are based on the negative binomial regression estimation in which the raw values of disclosure frequency are used as the dependent variables. Regressions include year and industry fixed effects. Standard errors are Heteroscedasticity and serial correlation robust, clustered at the firm level. Numbers in parentheses indicate *p*-values. All variables are defined in Appendix A.

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

Table 4   **Labor Union Strength and Managers' Timing of Asymmetric Disclosures**

Dep. var.:	#Good News Disclosures		#Bad News Disclosures	
	Negative binomial regressions		Negative binomial regressions	
	(1)	(2)	(3)	(4)
Union	−0.131	−0.437**	0.110	1.218
	(0.34)	(0.04)	(0.63)	(0.10)
Union ∗ Q1	−0.049		0.197	
	(0.76)		(0.42)	
Union ∗ Q2	−0.435**		−0.202	
	(0.02)		(0.49)	
Union ∗ Q3	−0.152		−0.110	
	(0.44)		(0.73)	
Union ∗ January		0.527**		−0.555
		(0.02)		(0.47)
Union ∗ February		0.035		−1.457*
		(0.88)		(0.06)
Union ∗ March		−0.362		−0.854
		(0.19)		(0.30)
Union ∗ April		−0.220		−1.482
		(0.42)		(0.10)
Union ∗ May		0.158		−1.237
		(0.58)		(0.13)
Union ∗ June		−0.621*		1.428
		(0.08)		(0.34)
Union ∗ July		0.142		−1.858**
		(0.62)		(0.03)
Union ∗ August		0.208		−1.121
		(0.49)		(0.17)
Union ∗ September		−0.138		1.731
		(0.70)		(0.25)
Union ∗ October		0.243		−1.023
		(0.44)		(0.20)
Union ∗ November		0.500*		−1.475*
		(0.06)		(0.070)
Quarter dummies	Yes	No	Yes	No
Month dummies	No	Yes	No	Yes
Intercept/controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	3,432	3,432	3,432	3,432
Log likelihood	−2,357.07	−2,324.13	−1,908.68	−1,779.25

Notes. This table presents timing of good and bad news disclosures in relation to labor unions' bargaining schedule using firm-month data. In this table, we read all disclosures to identify good, bad, or neutral news using the criteria introduced in Appendix B. We further identify months when a firm makes a good or bad news disclosure and construct firm-month samples. Then we create three calendar quarter dummies from the first to the third quarters (Q1–Q3). We further create 11 month dummies from January to November. We give the value of one if the date of a disclosure belongs to the corresponding quarter (or month), and zero otherwise. We interact this timing variable with *Union* and include these interaction variables (and main effect variables for quarter or month indicators) in the regression. We report the negative binomial regression results in which the raw values of good or bad news disclosure frequency are used as the dependent variables. The intercept as well as the coefficients on control variables are omitted for brevity. Regressions also include year and industry fixed effects. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. Numbers in parentheses indicate *p*-values. All variables are defined in Appendix A.

* and ** denote statistical significance at the 10% and 5% levels, respectively (two-tailed).
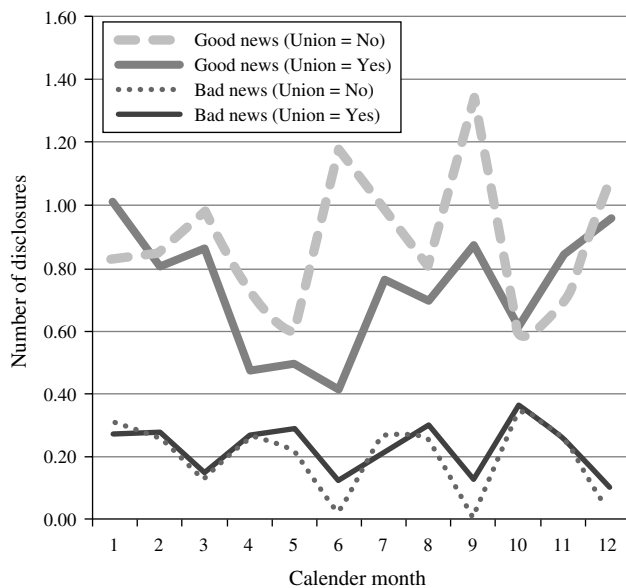
when facing strong labor unions is more pronounced during the collective bargaining process and reversed subsequently.[14]

Figure 1 plots the number of monthly good and bad news disclosures by unionized and nonunionized firms. The frequency of good news disclosure decreases significantly during the second calendar quarter (i.e., April to June). Even though this pattern is common for both groups, the decrease of good news disclosure during the second quarter is more prominent for unionized firms, which is statistically tested by the significantly negative coefficient on *Union* ∗ Q2 in column (1) of Table 4. The frequency of good news disclosure returns to its original level after the second quarter, showing a pattern of reversal as posited in H3. This is consistent with positive coefficients on the interaction variables between *Union* and month indicators for July, August, October, November, January, and February in column (2) of Table 4. In contrast, there is no distinct seasonal pattern in bad news disclosures for either unionized or nonunionized firms, which is confirmed by the bad news results in Table 4.

One would argue that managers' strategic timing of news disclosures might not be effective in constraining wage increases in repeated games with unions in a multiperiod setting. Unions may not be deceived repeatedly by the same tactic if they can learn from their past experiences in collective bargaining.[15]

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[14] In contrast with our findings, Bova (2013) documents that managers' behavior of missing analysts' forecasts is not concentrated just before the collective bargaining process only but observed at a similar level throughout the remaining period. He suggests several reasons: (i) it is difficult to specify which period's earnings need to be manipulated since wages are also positively correlated with profitability changes from several previous years; (ii) missing analysts' forecasts just before the negotiation process becomes less credible over time because labor negotiations are repeated games; and (iii) it is also important for managers to keep sending bad earnings signals until the bargaining is over, not just before it, because it takes time to set mutually agreeable provisions. We think that these concerns are less critical in our setting. Specifically, unlike accounting earnings, news is not a summary measure of a firm's profitability in a specific period but can affect firm value for the unspecified present and future periods. Repeatedly missing analysts' forecasts just before the bargaining process hardly seems unintentional, but good news, especially "soft talks," can be withheld during the bargaining process repeatedly as a result of either managerial discretion or a lack of good news. Thus, its credibility as a signal decreases over time to a lesser extent than the meet-or-beat signal. Finally, we include not only the period just before the negotiation process (i.e., early April) but also the whole period of the process (i.e., mid-April to June).

[15] This is consistent with Pope and Peel (1981), who suggest that full disclosure is the equilibrium in the collective bargaining between the management and labor unions, assuming no information processing costs, because unions, if they are rational, can form unbiased expectations themselves about the real status of firm performance even without managerial disclosures.

Figure 1   **Monthly Average of Disclosure Frequency**

Notes. This figure illustrates the monthly pattern of disclosure frequency for good and bad news. We count the number of good or bad news disclosures in each month from January to December for all the firms in the sample and then plot the monthly frequency for unionized firms and nonunionized firms separately. Good news disclosures decrease significantly during the second calendar quarter (i.e., April to June) and rebound afterward for both unionized and nonunionized firms, and this pattern is more prominent for unionized firms. Bad news disclosures do not have a distinct pattern for both unionized and nonunionized firms, although the tendency of disclosing bad news in the second calendar quarter seems to be slightly stronger for unionized firms.

However, the strategic timing of disclosures can be effective in a repeated game setting. First, unions' learning under uncertainty may not be comprehensive enough to form unbiased expectations.[16] Unions may adjust their expectations toward the true amount of good news as the game is repeated. However, this learning process requires time, and managers can still exploit this time lag until the complete adjustment, if possible, is reached. In this sense, withholding good news is still beneficial to some managers, if not to all. Our argument is consistent with Kennan (2001), who shows through an analytical model in a repeated game setting that buyers have a strong incentive to withhold their private information about the true amount of good news to prevent sellers from learning about it. Pope and Peel (1981) also acknowledge that managers can introduce forecast errors in unions' expectations by withholding information.

Second, voluntary disclosure by nature does not impose any substantial regulatory cost in terms of disclosure timing. It is purely at the discretion of

managers whether they disclose the withheld good news after the bargaining process is over. They do so only when they believe that the cost of such strategic behavior exceeds the benefit.

Third, the withheld good news can be gradually released after wage bargaining. If managers withhold good news to constrain excessive wage increases during collective bargaining, it is not desirable for them to frustrate unions by disclosing it as soon as the bargaining period is over. Instead, they will disclose it in a smoother way, as if the news being disclosed had newly arrived. As shown in Table 4, the reversal of a good news disclosure is most significant in November and January, not in July and August.

Fourth, managers are more likely to withhold information if it is more difficult to verify. That is, managers tend to withhold qualitative news to a greater extent than they do quantitative news because it is more difficult for unions to verify the truthfulness of the former. To empirically explore this point, we count the number of words contained in each qualitative disclosure, total them for all disclosures made by the same firm per year, and then transform one plus this total into a natural logarithm to construct a new disclosure variable (Log(#*Words*)). We regress Equation (1) after replacing the dependent variable with this variable. The results are reported in column (1) of Table 5. The coefficient on *Union* is negative and significant (-0.328, *p*-value $= 0.04$) indicating that the amount of information contained in a firm's annual disclosures is smaller when unions are stronger. This confirms that managers use qualitative news to manipulate information flows to unions. To see whether managers also manipulate the information content of quantitative news, we compare management forecast accuracy between weak and strong union firms.[17] We regress management forecast errors (for both sales and earnings forecasts) on *Union* and the same control variables in Equation (1). Forecast errors are measured as forecasts minus actual values, divided by fiscal year-end stock prices. As shown in columns (2) and (3) of Table 5, the coefficient on *Union* is insignificant. This implies that managers do not sacrifice the quality of quantitative news as much as that of qualitative news to deter excessive wage increases because the former can be easily verified by unions. Rather, managers reduce the amount and clarity of qualitative news during the collective bargaining period because it is more difficult for unions to

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[16] This uncertainty argument is supported by prior studies such as Dye (1985) and Jung and Kwon (1988). Unions are not certain about whether managers do not disclose information or whether they do not have any information.

[17] Due to data characteristics (i.e., management forecasts are issued in a predetermined format), we could not measure the amount of quantitative news using word count as we did for the qualitative news. Since quantitative news, such as quarterly sales or earnings forecasts, is mainly numerical, it is not meaningful to count its number of words.

Table 5   **The Effect of Union Strength on Quantitative and Qualitative Disclosures**

Dep. var.:	Qualitative disclosures	Quantitative disclosures (forecast −actual)/price	
	(1) Log(#Words)	(2) Sales Forecast Accuracy	(3) Earnings Forecast Accuracy
Intercept	−6.2911***	0.0505	0.0019
	(<0.01)	(0.20)	(0.81)
Union	−0.3281**	0.0014	0.0002
	(0.04)	(0.65)	(0.64)
Log(#Owners)	0.2896***	0.0008	0.0001
	(<0.01)	(0.37)	(0.49)
Offer	0.4148**	0.0001	−0.0003
	(0.01)	(0.99)	(0.22)
RET	0.0124	0.0000	0.0001
	(0.69)	(0.98)	(0.27)
Loss	0.0443	−0.0006	0.0003
	(0.76)	(0.87)	(0.56)
HHI	−0.6950	−0.0495	−0.0095
	(0.76)	(0.32)	(0.32)
OperCycle	−0.0729	0.0068	0.0013
	(0.78)	(0.19)	(0.33)
BigAudit	−0.0963	0.0037**	0.0007**
	(0.26)	(0.02)	(0.01)
Size	0.2295***	−0.0011	0.0001
	(<0.01)	(0.31)	(0.32)
BM	−0.0165	−0.0002	0.0001
	(0.68)	(0.84)	(0.41)
Log(#Analysts)	−0.0219	0.0005	0.0000
	(0.45)	(0.29)	(0.81)
LEV	0.0594**	−0.0005	−0.0003*
	(0.04)	(0.50)	(0.05)
ROA	−0.1545	−0.0120	−0.0016
	(0.84)	(0.29)	(0.60)
Chaebol	0.1008	0.0010	−0.0008**
	(0.45)	(0.76)	(0.01)
ForOwn	−0.0945	0.0029	−0.0008
	(0.80)	(0.65)	(0.29)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Observations	2,084	651	569
Adj. R^2/log likelihood	0.315	2,204.10	−58.20

Notes. This table presents the impact of union strength on the number of qualitative disclosures and on the quality of quantitative disclosures. We count the number of words contained in each qualitative disclosure, sum across all disclosures made by the same firm per year, and transform one plus this sum into a natural logarithm to construct the dependent variable in column (1) (Log(#Words)). We compute management forecast errors for sales and earnings forecasts to be used for the dependent variables in columns (2) and (3), respectively, where forecast error = (forecast − actual value)/fiscal year-end stock price. Regressions include year and industry fixed effects. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. Numbers in parentheses indicate *p*-values. All variables are defined in Appendix A.

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

verify the implications of withheld and subsequently revealed qualitative news. Thus, we conclude that our findings on the managers' strategic timing of news disclosures reported in Table 4 are mainly driven by firms' suppressing soft talks containing good news (Hutton et al. 2003).

6. Additional Analyses and Sensitivity Tests

6.1. Verification Difficulty and Unions' Learning

We further investigate how and to what extent the relation between managerial news disclosures and union strength is affected by the degree of difficulty of the unions in verifying the credibility of the disclosures. Managers would not decrease disclosures (especially good news disclosures) if unions could easily assess the credibility of the disclosure by learning.

We adopt various proxies for unions' verification difficulty and learning. In so doing, we refer to the relevant prior studies and also utilize the unique features of Korean data. The first proxy is Rogers and Stocken's (2005) *Difficulty*, which is the first principal component from a factor analysis using six variables on the market's ability to assess the credibility of management forecast–analyst forecast dispersion, variability of analyst forecast errors, indicator for lagged loss, indicator for loss forecast, volatility of daily stock returns, and bid–ask spread.[18] The second proxy is *Unfaithful Disclosure*, which is an indicator variable that takes the value of one if a firm's disclosure has been deemed unfaithful at least once in previous sample years and zero otherwise.[19] The third proxy is *Disclosure Quality Index*, which is the

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[18] We follow Rogers and Stocken (2005) and apply factor analysis in estimating *Difficulty* with some adjustments. First, we do not include the width of range management forecasts as a component of *Difficulty* because all of the management forecasts in our sample are point forecasts. Second, because of the lack of trading data critical for calculating the bid–ask spread, we instead estimate it using daily stock prices, as suggested in Corwin and Schultz (2012). The characteristics of, and relations among, the components of *Difficulty* are different from those of U.S. data. In untabulated results, we find that the correlations among six *Difficulty* components are very low except the correlation between the two loss variables (Pearson correlation = 60.8%, *p*-value < 0.01). Based on the factor loadings, we also find that *Difficulty* is mainly driven by the two loss variables. We conjecture that the limited sample coverage of Korean data is responsible for this difference.

[19] When a Korean listed firm does not sincerely perform its duty of disclosure as stipulated by the Capital Market Regulation Law or the Securities Market Disclosure Act by, for example, omitting required disclosures, denying previous disclosures, or changing previous disclosures, the Korea Exchange (KRX) can designate the respective firm as an "unfaithful disclosure firm" in that year. We retrieve these data from the KIND System, which is operated by the KRX.

corporate governance score on firms' disclosure quality. We collect these data from the annual surveys conducted by the Korea Corporate Governance Service (KCGS). The fourth and fifth proxies are analysts' coverage and firm size, respectively, which are deemed the most important information environment measures that may affect corporate stakeholders' ability to assess the quality of disclosures.

The results for the effect of these variables on the negative relation between disclosure frequency and union strength are reported in panel A of Table 6, with the results for total disclosures in column (1) and those for good news disclosures in column (2). We repeat the analyses in Tables 2 and 3 after including each of the five verification difficulty variables and the interaction between each of these variables and the unionization rate. The first cell shows the results using *Difficulty*.[20] The coefficient on *Union* ∗ *Difficulty* is negative and significant for total and good news disclosures (coefficient = −0.503 and −0.445, *p*-value = 0.03 and 0.08), respectively. This means that management's withholding of (good) news in the face of stronger unions is more prominent when it is more difficult for unions to verify the truthfulness of managerial disclosures, and thus unions' learning is slower in the repeated games. The second cell displays the results using *Unfaithful Disclosure*. The coefficient on *Union* ∗ *Unfaithful Disclosure* is positive and significant at less the 10% level in both columns. After a firm is designated as an unfaithful discloser, the firm's labor union becomes more suspicious about the quality of disclosures, which in turn makes management's strategic disclosure policy less effective.

The third cell reports the results using *Disclosure Quality Index*.[21] The coefficient on *Union* ∗ *Disclosure Quality Index* is positive in both columns and significant at the 1% level in column (1). Similar results are summarized in the fourth and fifth cells, where Log(#*Analysts*) and S*ize* are interacted with *Union*. The coefficients on these interaction variables are positive and significant at a conventional level in three of four cases. Thus, we can see that managers' incentives to withhold news (and, particularly, good news) from the unions are weaker when unions can verify the credibility of such a strategy and learn more easily

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[20] We lose a significant number of observations because the management forecasts necessary to construct the predicted loss variable are rare in South Korea. According to Radhakrishnan et al. (2012), only 3.11% of Korean firms (i.e., 281 of 9,029 firm-years in their sample period starting from 2004) issue management forecasts.

[21] The disclosure quality index is constructed based on 18 survey questions and covers various aspects of corporate disclosure. For example, the survey considers the number of investor relations meetings, the provision of management forecasts, the disclosure of audit committee activities, compensation disclosure, etc. More details about the survey can be provided upon request.

Table 6   The Effect of Verification Difficulty and Unions' Learning

Panel A. On the relation between union strength and disclosure frequency

Dep. var.:	(1) Log(#*Disclosures*)	(2) Log(#*Good News Disclosures*)
(1) VAR = Difficulty based on Rogers and Stocken (2005)		
Union	0.270*	0.263
	(0.08)	(0.17)
Union ∗ VAR	−0.503**	−0.445*
	(0.03)	(0.08)
VAR	0.156	0.074
	(0.17)	(0.59)
Observations	297	297
Adj. R^2	0.379	0.177
(2) VAR = Unfaithful Disclosure detected by Korea Exchange (KRX)		
Union	−0.197***	−0.170***
	(<0.01)	(<0.01)
Union ∗ VAR	0.446*	0.363*
	(0.06)	(0.06)
VAR	−0.224	−0.115
	(0.02)	(0.16)
Observations	2,084	2,084
Adj. R^2	0.353	0.321
(3) VAR = Disclosure Quality Index constructed by Korea Corporate Governance Service (KCGS)		
Union	−0.466***	−0.327***
	(<0.01)	(<0.01)
Union ∗ VAR	0.504***	0.253
	(0.01)	(0.16)
VAR	0.114	0.164*
	(0.22)	(0.05)
Observations	1,277	1,277
Adj. R^2	0.386	0.325
(4) VAR = Log(#Analysts)		
Union	−0.327***	−0.126***
	(<0.01)	(<0.01)
Union ∗ VAR	0.059**	−0.001
	(0.01)	(0.99)
VAR	0.015	−0.051
	(0.28)	(0.41)
Observations	2,084	2,084
Adj. R^2	0.385	0.288
(5) VAR = Size		
Union	−2.872***	−1.362*
	(<0.01)	(0.07)
Union ∗ VAR	0.107***	0.049*
	(<0.01)	(0.09)
VAR	0.029	0.015
	(0.22)	(0.50)
Observations	2,084	2,084
Adj. R^2	0.386	0.289

Panel B. On the relation between union strength and disclosure timing

Dep. var.:	Log(#*Good News Disclosures*)	
	(1) Low VAR sample	(2) High VAR sample
(1) VAR = Difficulty based on Rogers and Stocken (2005)		
Union ∗ Q1	−0.126	−0.075
	(0.36)	(0.43)

Table 6   (Continued)

Panel B. On the relation between union strength and disclosure timing

Dep. var.:	Log(#*Good News Disclosures*)	
	(1) Low VAR sample	(2) High VAR sample
(1) *VAR = Difficulty* based on Rogers and Stocken (2005)		
Union ∗ *Q*2	−0.182	−0.224*
	(0.11)	(0.09)
Union ∗ *Q*3	−0.046	0.073
	(0.68)	(0.53)
Observations	776	770
Adj. R^2	0.304	0.262
(2) *VAR = Unfaithful Disclosure* detected by Korea Exchange (KRX)		
Union ∗ *Q*1	−0.128	0.177
	(0.16)	(0.61)
Union ∗ *Q*2	−0.174**	−0.296
	(0.01)	(0.25)
Union ∗ *Q*3	−0.036	−0.217
	(0.59)	(0.37)
Observations	3,181	251
Adj. R^2	0.216	0.348
(3) *VAR = Disclosure Quality Index* constructed by Korea Corporate Governance Service (KCGS)		
Union ∗ *Q*1	−0.349**	−0.206
	(0.02)	(0.18)
Union ∗ *Q*2	−0.022	−0.186
	(0.85)	(0.12)
Union ∗ *Q*3	−0.121	−0.013
	(0.31)	(0.90)
Observations	1,080	1,259
Adj. R^2	0.232	0.237
(4) *VAR =* Log(#*Analysts*)		
Union ∗ *Q*1	−0.104	−0.239**
	(0.31)	(0.02)
Union ∗ *Q*2	−0.144*	−0.137
	(0.07)	(0.15)
Union ∗ *Q*3	−0.020	−0.038
	(0.81)	(0.68)
Observations	1,696	1,736
Adj. R^2	0.275	0.198
(5) *VAR = Size*		
Union ∗ *Q*1	−0.282***	−0.062
	(<0.01)	(0.56)
Union ∗ *Q*2	−0.135	−0.129
	(0.16)	(0.15)
Union ∗ *Q*3	−0.140	0.075
	(0.13)	(0.35)
Observations	1,715	1,717
Adj. R^2	0.206	0.238

Notes. Panel A presents the results of regressing the total and good news disclosure frequencies on *Union* and its interaction with various proxies for verification difficulty using firm-year data. Panel B presents the results for timing good news disclosures in relation to labor unions' bargaining schedules and the variation of good news timing across various proxies for verification difficulty using firm-quarter data. In panel B, we split the sample into two groups based on the sample medians of partitioning variables (except *Unfaithful Disclosure* analyses). Regressions include intercept, each timing indicator, control variables, and year and industry fixed effects. Numbers in parentheses indicate *p*-values. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. All variables are defined in Appendix A.

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

owing to their firms' better disclosure quality or better information environment.

The results for the effect of verification difficulty on managerial timing of good news to better cope with wage negotiations are reported in panel B of Table 6. We repeat the analyses of Table 4 after partitioning the sample observations into low (column (1)) and high (column (2)) subsamples based on the median value of each verification difficulty variable (except in the second cell, where low is for *Unfaithful Disclosure* = 0, high is for *Unfaithful Disclosure* = 1). In the first cell, the coefficient on *Union* ∗ *Q*2 is negative in both low and high *Difficulty* subsamples but significant in the high *Difficulty* subsample only (coefficient = −0.224, *p*-value = 0.09). This means that managers withhold good news from unions in the second calendar quarter when the collective bargaining is in progress, and this timing strategy is more pronounced for the firms whose unions face more difficulty in assessing the quality of disclosures.

In the second cell, the coefficient on *Union* ∗ *Q*2 is negative in both columns but significant in low *Unfaithful Disclosure* only. This suggests that when unions are more suspicious of the credibility of previous disclosures, management's incentives to withhold good news in the second quarter are substantially weakened because such a timing strategy is not effective as a result of unions' learning from experience. The results using subsamples partitioned by *Disclosure Quality Index*, Log(#*Analysts*), and *Size* are reported in the third, fourth, and fifth cells, respectively. As expected, managerial timing strategy is less effective in the high than in the low *Analysts* coverage subsample in the fourth cell, but the results for *Disclosure Quality Index* and *Size* are not significant.

Overall, the results in Table 6 show that unions' learning about the quality of disclosures varies across firms, and our main results are driven by the firms in which it is more difficult for unions to assess the credibility of the management's disclosure policy.

6.2. Addressing the Endogeneity Issue

Our findings can have an alternative explanation. Firms are usually less profitable, more financially distressed, and have lower growth potential in the United States when their labor unions are stronger (DeAngelo and DeAngelo 1991, Liberty and Zimmerman 1986). Thus they have less good news and more bad news to disclose. That is, the lower (higher) disclosure frequency of good (bad) news is not necessarily due to managerial discretion to cope with wage demands but may be due to poorer company fundamentals. As we see in panel B of Table 1, Korean firms are also more leveraged (*LEV*) and have lower growth potential (i.e., higher *BM*) when they have a union or when their unionization rate

is higher. However, they are both more profitable (although the difference is statistically insignificant) and more likely to be chaebol member firms, which implies that the fundamentals of strong union firms are not the same as those of U.S. firms. We also include in Equation (1) *RET*, *Loss*, and *ROA* to control for the effect of firm profitability on both union strength and disclosure; *LEV* to control for the effect of financial distress; and *BM* to control for the effect of growth.

Nevertheless, we try to control for the possible endogeneity of union strength more formally using two-stage least squares (2SLS) regressions. It is not easy to find a good instrumental variable for this method. Fortunately, however, we do have it for Korean data, which is the ratio of the number of female employees to the number of total employees (*Female*). When the number of female employees in a firm is larger, its union tends to be weaker. That is, the firm is less likely to have a union and, if it does, its unionization rate is lower (e.g., Antos et al. 1980, Hirsch 1980). In contrast, there is no theoretical or empirical evidence that can establish a relation between the female worker ratio and disclosure frequency. In short, the female worker ratio is strongly correlated with union strength but minimally correlated with managerial disclosure.

We regress the union existence dummy or unionization rate on *Female* and other explanatory variables such as firm size, leverage, ROA, loss, female CEO, and chaebol dummies and year and industry fixed effects in the first stage regression and report the results in panel A of Table 7. We include *Female* and industry dummy following Antos et al. (1980) and Hirsch (1980) with other common firm characteristics that potentially affect the degree of unionization. As expected, the coefficient on *Female* is significantly negative. Specifically, it is −0.769 and −0.194 in column (1) for union existence and column (2) for unionization rate, respectively, both significant at the 1% level. As for control variables, larger, higher-leveraged firms are more likely to be strongly unionized. Profitability is marginally negatively related to union existence.

Using the fitted value of *Union*, we repeat our main analyses in Tables 2 and 3 and summarize the results in panels B and C of Table 7, respectively. The coefficient on the fitted value of *Union* is still negative and significant for both columns (1) and (2) in panel B, consistent with H1. Its magnitude is even larger than that of the corresponding coefficient in Table 2. This indicates that managers' general tendency of reducing disclosures when their unions are stronger is maintained after controlling for the endogeneity of union strength. The second-stage regression results using good news are similar in panel C. When we use

Table 7   Endogeneity Tests: Two-Stage Regression

Panel A. First-stage regression		
Dep. var.:	(1) Union Existence	(2) Unionization Rate
Intercept	−12.774 (0.99)	−0.691*** (<0.01)
% *Female Workers* (exogenous)	−0.769*** (0.01)	−0.194*** (<0.01)
Female CEO	6.283 (0.99)	−0.041 (0.58)
Chaebol	−0.130 (0.27)	−0.014 (0.43)
Size	0.248*** (<0.01)	0.027*** (<0.01)
LEV	0.168*** (<0.01)	0.024*** (<0.01)
ROA	−0.923* (0.09)	0.055 (0.56)
Loss	−0.206* (0.08)	0.025 (0.21)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	2,084	2,084
Log likelihood/adj. R^2	−1,000.40	0.232

Panel B. Second-stage regression: The relation between disclosure frequency and union strength		
Dep. var.:	Log(#*Disclosures*)	
Union:	(1) Union Existence	(2) Unionization Rate
Fitted Value of Union	−1.312*** (<0.01)	−1.877** (<0.01)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	2,084	2,084
Adj. R^2	0.385	0.382

Panel C. Second-stage regression: The relation between good news disclosures and union strength		
Dep. var.:	Log(#*Good News Disclosures*)	
Union:	(1) Union Existence	(2) Unionization Rate
Fitted Value of Union	−1.053*** (<0.01)	−1.195** (0.03)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	2,084	2,084
Adj. R^2	0.310	0.306

Notes. This table presents the results of 2SLS regressions to control for the possible endogeneity of union strength. Panel A provides the result of the first-stage regression in which *Union* is the dependent variable and *Female* is an instrumental variable. Panel B presents the result of regressing disclosure frequency on *Union*, and panel C presents the result of regressing *Good News Disclosure* frequency on *Union*, where *Union* is the fitted value in the first-stage regression in Panel A. Regressions include intercept, control variables, and year and industry fixed effects. Numbers in parentheses indicate *p*-values. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. All variables are defined in Appendix A.

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

Log(#*Good News Disclosures*) as the dependent variable, the coefficients on the fitted value of *Union* are significantly negative in both columns, which is consistent with Table 3 and H2.

One possible concern about the validity of the female worker ratio as the instrumental variable for *Union* in Equation (1) is that it can affect disclosure level resulting from the existence of a female CEO. Francis et al. (2014) document that female CFOs are more conservative in their financial reporting. Extending this logic, female CEOs also can be more conservative and thus disclose less (more) good (bad) news. The female worker ratio tends to be higher in firms run by female CEOs. To further address this concern, we hand-collect the female CEO indicator information for each firm-year and additionally control for it in the second-stage regression.[22] As expected, the coefficient on the female CEO indicator is negative and significant (untabulated). More importantly, the main inference in this study is not affected by this control—the fitted value of *Union* maintains its negative sign and significance. In short, the results of the robustness tests in this subsection alleviate the concern that our previously reported main results might be driven by the endogenous feature of union strength.

Another candidate for the endogeneity or correlated–omitted variable problem is product market competition. If firms' investment strategies are more interdependent with their rivals in highly concentrated product markets, they prefer a less informative disclosure policy because the proprietary information can be used strategically by their potential competitors (Clarke 1983, Gal-Or 1985, Bhattacharya and Ritter 1983, Brander and Eaton 1984, Ali et al. 2009). In contrast, firms can also reduce their disclosures when products are good substitutes in highly competitive markets (Darrough 1993). If firms operating in the oligopolistic industry have stronger unions than those in a standardized consumer product industry, their reduced disclosures may not result from their union strength but from their fear of proprietary information being used by their competitors. However, the level of market concentration for which *HHI* serves as proxy does not differ between high and low unionization firms, as shown in panel B of Table 1, and we already control for *HHI* in our regression analyses. To address this concern more formally, we partition the total sample into (i) high and low *HHI* firms and (ii) consumer product industry and the other industries and then repeat our main analyses in Tables 2, 3, and 4. We also interact *HHI* with our *Union* variable

and repeat the main analyses. Unreported results confirm that the main findings in previous analyses are universal across subsamples of differing levels of *HHI* or two sets of industries, and that the coefficient on *Union* * *HHI* is insignificant. This indicates that the negative relation between union strength and disclosure and the effect of union strength on the asymmetric disclosure pattern are not driven by product market competition.[23]

One may also argue that laborers are more likely to be organized in more opaque firms. To address this reverse-causality concern, we include the natural logarithm of the number of analysts following a firm in the first stage model regressing *Union* against its determinants, and take the residual values for a new proxy for unionization rates. We suppose that the residual values are orthogonal to firms' information environment. We find that our main implications are unaltered when the *Union* variables are replaced with these residuals.

6.3. Other Sensitivity Tests
We conduct other sensitivity tests to check the robustness of our main findings. First, we repeat our main analyses in Tables 2 and 3 using the change specification to further alleviate causality concerns. The results are reported in Table 8. In column (1), we examine whether changes in union existence (i.e., union initiation or union termination) are related to changes in disclosure frequency. We also test whether changes in the unionization rate can explain changes in disclosure frequency in column (2). Note that, in the change specification, we also convert all control variables into change variables. Such first-difference analyses naturally control for firm-specific characteristics that are constant over time, therefore reducing the possibility of a correlated–omitted variable bias.

We use $\Pr(\Delta\#Disclosures < 0)$ as the dependent variable, which is an indicator variable that takes the value of one if the number of disclosures decreases from the previous year, and zero otherwise. The coefficient on $\Delta Union\ Existence$ is positive and significant (2.055, p-value < 0.01) in column (1), suggesting that union emergence (termination) leads to managers' less (more) frequent disclosures. In column (2), changes in unionization rates significantly explain changes in disclosure frequency. The coefficient on $\Delta Unionization\ Rate$ is 5.133 and significant at less than the 5% level. We conduct this change specification test using the good news data and report the

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[22] We already include it in the first-stage regression to account for its possible effect on union strength. Its coefficient is not significant (see panel A of Table 7).

[23] We also partition our sample into eight industries based on single-digit KSIC codes and repeat the main analyses. Our main findings are observed in most of the industry subsamples, indicating that the negative relation between union strength and disclosure frequency and the asymmetric disclosure pattern are not industry-specific problems.

Table 8   Change Specifications

Dep. var.:	Pr(Δ#*Disclosures* < 0)		Pr(Δ#*Good News Disclosures* < 0)	
	(1)	(2)	(3)	(4)
Δ*Union*:	Δ*Union Existence*	Δ*Unionization Rate*	Δ*Union Existence*	Δ*Unionization Rate*
Δ*Union*	2.055***	5.133**	2.220***	4.747***
	(<0.01)	(0.02)	(<0.01)	(<0.01)
Intercept, Δcontrol variables	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	2,084	2,084	2,084	2,084
Pseudo R^2	0.094	0.093	0.233	0.238

Notes. This table presents the results of change specifications. It presents the logistic regression estimation results regressing an indicator variable for the decrease in total news disclosure frequency in columns (1) and (2) and for the decrease in good news disclosure frequency in columns (3) and (4) on the change in firm union strength and control variables. Regressions include year and industry fixed effects. Numbers in parentheses indicate *p*-values. Standard errors are heteroscedasticity and serial correlation robust, clustered at the firm level. All variables are defined in Appendix A.

*** denotes statistical significance at the 1% level (two-tailed).

results in columns (3) and (4). Here the dependent variable is Pr(Δ#*Good News Disclosures* < 0), which is an indicator variable that takes the value of one if the number of good news disclosures decreases from the previous year, and zero otherwise. The implications in these columns are similar to those of Table 3: that is, managers reduce good news disclosures when the union becomes stronger. In sum, the results using the change specification are consistent with the previous results based on level specification and mitigate possible concerns about correlated–omitted variable or weak causality problems.

The observed seasonal pattern that the average level of news (especially good news) disclosures is lower in the second quarter documented in Table 4 can be related to reasons other than managers' withholding good news from unions to preserve better bargaining positions. Customers and business counterparties may want to postpone their purchase orders or contracts until the wage negotiations are settled when each party can have a better idea about the costs of the products and operations for the coming year. In this case, the lower level of good news disclosure is not because managers withhold good news but because they do not have good news in the second quarter. To address this concern, we compute quarterly sales changes and examine their pattern across four quarters.[24] If the above alternative scenario is

correct, sales should decrease in the second quarter and then increase in the third quarter abnormally. We find no such evidence (result unreported for brevity). Contrary to the alternative scenario, sales changes are significantly positive in the second quarter and negative in the third quarter. Therefore, the lower level of good news disclosure in the second quarter is not driven by the lack of good news to the extent that sales data capture the correct level of good news from overall business operations.

Management's compensation structure can affect its incentives in the labor negotiation process. Although granting stock options as incentive pay is not as prevalent in Korean firms as it is in U.S. firms, they can be granted to managers in some Korean firms. Since their cash bonuses and stock options are determined mostly based on their firms' accounting performance, they have an incentive to withhold good news during collective bargaining because constraining excessive wage increases is helpful to maximizing earnings. On the other hand, they may have a counterincentive to promote good news to boost their firms' stock prices because higher stock prices lead to increases in their option value. To investigate the effect of the management compensation structure on our main findings, we divide our sample into option granting and nongranting firms and repeat the main analysis (result not reported). The negative effect of union strength on Log(#*Disclosures*) and Log(#*Good News Disclosures*) is observed only in option nongranting firms. For option granting firms, the coefficient on the unionization rate is positive and significant. This means that managers' incentives to withhold good news from labor unions are significantly mitigated when they receive stock options because they have a counterincentive to release more good news

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[24] Although sales data do not encompass all types of good news such as signing long-term contracts or building vital strategic alliances with a firm's business counterparties, they do mirror a firm's overall good news because they represent the ongoing core business activities. Note that these sales figures are available to outsiders (including labor unions) only two to three months after each quarter-end, so that labor unions cannot infer the withheld news content by referring to a firm's sales amount during the labor negotiation period.

to boost firms' stock prices and their option values. We also measure a continuous variable (%*Option*) for the prevalence of option usage as an incentive pay by dividing the number of total options granted to employees by the number of shares outstanding and then interact it with *Union* (result not reported). The coefficient on *Union* ∗ %*Option* is positive as expected, although not statistically significant.[25] However, these results should be interpreted with caution because the sample size of option granting firms is too small.[26]

Korean corporate culture is unique: a number of firms in South Korea belong to a chaebol, a business group that provides internal funding and support to its member firms. The information environment and union structure of these chaebol firms can differ from that of nonchaebol firms, and thus the effect of union strength on management's information disclosures may differ between the two. To investigate the effect of chaebol membership on our main findings, we conduct our main regressions for chaebol and nonchaebol firms separately. We find that the negative relation between union strength and disclosure is observed only in nonchaebol firms (result not tabulated). We conjecture that the reasons are as follows: (i) chaebol firms are more likely to grant their managers stock options, thereby providing them with counterincentives to promote good news;[27] (ii) chaebol firms are larger and followed by more analysts, and thus their information environment is better than that of nonchaebol firms. Therefore, their managers have weaker incentives to distort information transmissions to the market and unions because the benefit of withholding news is expected to be smaller. In short, this analysis shows that our main findings on the negative relation between union strength and news disclosures are more pronounced for nonchaebol firms.

Most labor unions in South Korea are affiliated with at least one of two upper-level union associations. They are the Federation of Korean Trade Unions (FKTU, *Hankuk Nochong* in Korean) and the Korean Confederation of Trade Unions (KCTU, *Minjoo Nochong* in Korean). These associations set the general guidelines for the direction of union activities and assist in the specific bargaining processes for individual unions. Our sample contains a subset of 1,097

and 274 member firms for FKTU and KCTU, respectively. Because most of the unionized firms in our sample are affiliated with one or both of these associations, we conjecture that the previously reported effect of union strength on disclosure is mainly driven by these affiliated unions.[28] That is, the labor unions that are not affiliated with these associations may have unique and different characteristics compared to affiliated unions in terms of their attitudes on firms' policies. Thus, we repeat the analyses in Tables 2, 3, and 4 after excluding these 122 nonaffiliated union observations. Unreported results show that all the main implications are robust to this change, indicating that our main results presented in previous tables are mainly driven by firms with association-affiliated unions.

In sum, the results of various sensitivity tests corroborate our main findings that managers reduce good news disclosure (and, to a lesser extent, promote bad news disclosure) when their labor unions are stronger to curtail excessive wage demands, and this tendency is more pronounced during the collective bargaining process.

7. Conclusions

Using a large sample of Korean listed firms for which firm-year level unionization rates and voluntary disclosure frequency data are available, we find that management's overall disclosure frequency is negatively related to the firm's labor union strength. We also report that this tendency for managers to withhold information from strong unions is mainly driven by good news firms. Finally, we find that managers "time" news disclosure by withholding good news during the collective bargaining process and then subsequently gradually releasing it, and that this tendency is more pronounced for the firms with stronger labor unions. Taken together, we provide evidence that managers tend to hide news, especially when it is good, to preserve their bargaining power in labor negotiations when their firms have stronger unions.

This paper provides managerial implications for managers, employees, and investors. Our findings on the role of labor unions suggest that employees can be a group that incurs another form of agency costs by distorting corporate activities such as disclosures, thereby exacerbating information asymmetry and return volatility. Employees need to understand that managers can react strategically to their rent-seeking wage demands by exercising discretion on the amount of corporate information to be disclosed and the timing of the disclosure. Since these distortions

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[25] The lack of significance may result from measurement errors in %*Option*. Because the number of options granted is not separately reported for the top management and for the rank-and-file workers in firms' business reports, we cannot precisely measure managers' incentives influenced by stock options granted to the management.

[26] The number of option granting firms is 129, whereas that of option nongranting firms is 1,955.

[27] The Pearson correlation between the indicators for stock option granting and chaebol membership is 0.137 (*p*-value < 0.01).

[28] Only 8% (122 of 1,371) observations of the unionized firms are not affiliated with any of these associations.

in managerial activities create costs, excessive wage demands can be detrimental to both parties. Investors can get a helpful tip for their portfolio selections by recognizing that, given the same cash flows, a firm with a stronger labor union can exhibit a different level of risk due to the intensified information asymmetry resulting from the management disclosure strategy, which may influence its stock price.

Supplemental Material

Acknowledgments

Appendix A. Variable Definitions

Log(#*Disclosures*)	The natural logarithm of one plus the number of disclosures
Log(#*Good News Disclosures*)	The natural logarithm of one plus the number of good news disclosures, either for a given year or month
Log(#*Bad News Disclosures*)	The natural logarithm of one plus the number of bad news disclosures, either for a given year or month
Log(#*Words*)	The natural logarithm of one plus the number of total words contained in all qualitative disclosures made by the same firm in year t
Unionization Rate	The proportion of the number of union members to the total number of employees
*Q*1, *Q*2, *Q*3	An indicator variable that equals one if the individual news is disclosed in the first, second, or third quarter of year t, respectively, and zero otherwise
Offer	An indicator variable that equals one if a firm issues new equity during a year, and zero otherwise
RET	Contemporaneous buy-and-hold annual returns for the one-year period starting from the fourth month after fiscal year-end $t-1$
Loss	An indicator variable that equals one if a firm reports negative net income, and zero otherwise
HHI	The Herfindahl–Hirschman index based on sales, computed as the sum of squared market shares within the same industry in year t
OpCycle	Operating cycle, measured as the average receivables divided by sales plus the average inventory divided by the cost of goods sold
BigAudit	Big auditor dummy, which equals one if the firm is audited by PwC, KPMG, Deloitte, or Ernst & Young (or their affiliated Korean auditing firms), and zero otherwise
Size	The natural logarithm of fiscal year-end market capitalization
BM	Book value of equity divided by market value of equity
Log(#*Analysts*)	The natural logarithm of one plus the number of analysts following the firm
Log(#*Owners*)	The natural logarithm of the number of shareholders
LEV	Leverage, measured as the total debt divided by market value of equity
ROA	Return on assets, defined as the net income divided by total assets
Chaebol	A dummy variable that equals one if the firm belongs to a chaebol, and zero otherwise. The Korean Fair Trade Commission (KFTC) defines a chaebol as a group of companies for which more than 30% of shares are owned by controlling shareholders and/or their affiliated companies.
ForOwn	Foreign ownership, measured as the ratio of the number of shares owned by foreign investors to the number of total shares outstanding
Female	The ratio of the number of female employees to the number of total employees
Female CEO	A dummy variable that equals one if a firm is run by a female CEO in year t, and zero otherwise
Difficulty	Market participants' ability to assess the credibility of a manager's forecast. Extending the work of Rogers and Stocken (2005) with available data in South Korea, we measure forecasting difficulty using six variables: the standard deviation of analyst forecasts of the year; the standard deviation of previous analyst forecast errors scaled by price for three years before the forecast release; the indicator for lagged loss, which equals one when a firm reports negative net income in prior year and zero otherwise; the indicator that equals one when the management forecast of earnings is negative and zero otherwise; the standard deviation of daily stock returns in the prior year; and the bid–ask spread estimate based on Corwin and Schultz (2012). *Difficulty* summarizes the above six variables and represents the score of a single factor extracted from a factor analysis.
Unfaithful Disclosure	An indicator variable that equals one if a firm's disclosure has been determined by the Korea Exchange (KRX) to be unfaithful at least once in previous years, and zero otherwise
Disclosure Quality Index	Index on a firm's disclosure quality, constructed from the annual surveys conducted by the Korea Corporate Governance Service (KCGS)

Appendix B. News Classification Criteria and Examples of News

B.1. News Classification Criteria

The corporate disclosure data used in this study are hand-collected from the Korean Investor's Network for Disclosure (KIND) System. The corporate information subject to Reg FD in South Korea includes "Future Business and Management Plan," "Forecasts of Sales, Operating Income, Continuing Business Income Before Tax (or Ordinary Income), or Net Income," "Preannouncement of Sales, Operating Income, Continuing Business Income Before Tax (or Ordinary Income), or Net Income," and "Major Managerial Issues" (Korea Exchange 2002a, b). To identify the characteristics of disclosure information, we follow several different criteria used in prior literature. First, we determine whether earnings forecasts (preannouncements) are positive or negative by comparing them with analysts' forecasts. If they exceed the most recently announced financial analysts' consensus forecasts before the disclosure, they are classified as positive news. Otherwise, they are classified as negative. If there is no analyst following, they are compared with the earnings performance for the prior year's corresponding period (e.g., month, quarter, or year). However, in some situations, they may not be classified into only one category. For example, a quarterly earnings forecast may be positive when compared with a prior quarter's performance but negative when compared with the same quarter's performance in the previous year. In such a case, it is classified as neutral. On the other hand, we characterize qualitative corporate information such as "Future Business and Management Plan" and "Major Managerial Issues" by judging the sentiment or tone of disclosures (Busse and Green 2002). This classification criterion may appear subjective, but the sentiments and tones of disclosure information are quite straightforward (as shown in the examples below). In many cases, "Future Business and Management Plans" and "Major Managerial Issues" deliver positive news such as new businesses, new markets, new products, new technologies, strategic alliances with other domestic or foreign companies, or a dividend distribution. Negative disclosure contains news such as the cancellation of contracts, discontinuation of unprofitable business, or withdrawal from foreign markets. If it is not clear whether it has a positive or negative effect on firm value, it is classified as neutral. For example, news about a change in pricing policy is classified as neutral unless it accompanies an expected positive or negative effect on firms' business prospects. Companies sometimes disclose both earnings news and business plans or managerial issues together. In such cases, the disclosure is classified as positive (or negative) when both types of news are consistently characterized as positive (or negative). Otherwise, it is classified as neutral.

B.2. Examples of News

1. "Forecasts of Sales, Operating Income, Continuing Business Income Before Tax (or Ordinary Income), or Net Income" or "Preannouncement of Sales, Operating Income, Continuing Business Income Before Tax (or Ordinary Income), or Net Income."

Good news: SK Co., Ltd. disclosed the following news on January 27, 2005:

"Sales, Operating Income, Ordinary Income, and Net Income for the 4th quarter of 2005 are 4,962, 452, 832, and 612 billion Korean won, respectively, and all these numbers have increased both from the 3rd quarter of 2005 and the 4th quarter of 2004 (detailed past period numbers and ratios of changes included)."

Bad news: Samsung Electronics Co., Ltd. disclosed the following news on April 13, 2007:

"Sales, Operating Income, Ordinary Income, and Net Income for the 1st quarter of 2007 are 144, 12, 18, and 16 billion Korean won, respectively, and all these numbers have decreased from the 4th quarter of 2006. They also have decreased from the 1st quarter of 2006 except Sales, which has increased (detailed past period numbers and ratios of changes included)."

Neutral news: Korean Air Co., Ltd. disclosed the following news on February 1, 2006:

"Sales in the passenger division for December 2005 were 3,912 million Korean won, which have increased from November 2005 but decreased from December 2004. Sales in the cargo division for December 2005 were 659 million Korean won, which have decreased both from November 2005 and December 2004. The capacity utilization rate in the passenger division for December 2005 was 68.8%, which has increased both from November 2005 and December 2004, while the capacity utilization rate in the cargo division for December 2005 was 75.6%, which has decreased both from November 2005 and December 2004 (detailed past period numbers and ratios of changes included)."

2. "Future Business and Management Plan" or "Major Managerial Issues"

Good news: KT Inc. disclosed the following news on January 5, 2005:

"We signed MOU on the extension of strategic alliances with Microsoft. Major contents include: (1) Establishing an R&BD (Research and Business Development) Center under a co-investment scheme, (2) Building this R&BD Center in South Korea, (3) Establishing a matching fund to utilize the external contents, technologies, and human resources of this R&BD Center, and (4) Setting up a human resource exchange program that includes seminars, educations, and exchanges of personnel in various business areas."

Bad news: LS Co., Ltd. disclosed the following news on January 4, 2005:

"At the preliminary decision made in June 2004, the Chinese Ministry of Commerce levied 7% of anti-dumping tariff on our company for our exported optical fibers. The Chinese Ministry of Commerce has conducted additional investigations since then, and sent the formal letter of final decision to our company today. Based on No. 25 of Anti-Dumping Act of the People's Republic of China, the final decision confirmed the 7% tariff set at the preliminary decision."

Neutral news: Korea Gas Corporation disclosed the following news on June 29, 2006:

"The wholesale prices of natural gas sold to households, industries, and power plants have increased effective on 00:00 A.M. July 1, 2006. This adjustment is due to the increase of oil price in the market (detailed current and adjusted wholesale prices and ratios of changes included)."

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