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Wonseok Choi
University of North Texas Health Science Center

Monika K. Rabarison
The University of Texas Rio Grande Valley

Bin Wang
Marquette University, bin.wang@marquette.edu

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Wonseok Choi
University of North Texas Health Science Center, Department of Health Behavior and Health Systems
Monika K. Rabarison
The University of Texas Rio Grande Valley, Department of Economics and Finance
Bin Wang
Marquette University, College of Business Administration

Abstract

Using a novel dataset of independent directors' voting activities on items proposed by managers of Korean firms, we investigate whether independent directors' dissension in board meetings plays an effective role in enhancing firm value through improved corporate governance. Our results indicate that dissension improves firm value. This finding is robust to different measures of firm value and alternative model specifications including subsample, propensity score matching, and instrumental variable analyses. Overall, we contribute to the understanding of the relation between corporate governance and firm value. Specifically, we provide new evidence that the monitoring by independent directors enhances firm value.

Keywords

Corporate governance, Independent, Board of directors, Dissension, Firm value

1. Introduction

Several studies discuss the role of corporate governance in monitoring firm management and improving firm performance (e.g., Brickley & James, 1987; Weisbach, 1988; Yermack, 2004). For example, using a sample of large Korean firms, Black, Jang, and Kim (2006)) show that greater board independence predicts higher firm value. More recently, using independent directors' voting activities from Chinese public firms, Jiang, Wan, and Zhao (2016)) find that career-conscious directors' dissension in board meetings improves corporate governance and market transparency. The literature has shown that independent directors add value by playing their monitoring and advising roles (e.g., Nguyen & Nielsen, 2010; Schwartz-Ziv & Weisbach, 2013). However, evidence on how they enhance firm value remains scarce.

In this paper, by focusing on their voting activities, we investigate how independent directors enhance firm value. Fama and Jensen (1983) categorize the corporate decision-making process into "initiation", "ratification", "implementation", and "monitoring", and attribute the role of boards of directors to consist of taking part in the ratification and monitoring process. Independent directors have the fiduciary duty to act in the best interest of both the company and its shareholders, and thus, to reduce agency issues. Any decision by the board of directors is a collective decision. Only directors who dissents officially (i.e., as recorded in the meeting minutes) would be considered as not liable for the board decision. On one hand, a dissension might be considered as just a blunt obstructionist opinion that may lead to the rejection of good projects. However, since it is not easy for independent directors to dissent, for example, due to their potential relationship with management (Shivdasani & Yermack, 1999), and since dissenting affects their career reputation (Jiang et al., 2016), a more plausible reason for disagreeing with managers' proposals would be to invoke an independent opinion in the interests of the shareholders and the success of the company. Therefore, we expect directors to dissent in board meetings only if they view such proposals as detrimental, value-destructing ones.

We use a novel hand-collected dataset representing board of directors' voting activities for Korean public firms, which are required to publish the voting results of board meetings.[1] Specifically, we create a sample that includes individual independent directors' votes on each item discussed in every single board meeting to observe the occurrences of independent directors' dissensions. It is noteworthy that although all board members are elected by shareholders, most elected independent members are nominated by controlling shareholders and top managers. Under such circumstance, it is difficult for individual independent directors to say "No" to management proposals. As Ma and Khama (2016) report from their study of Chinese firms, a dissension is a rare event and it more likely occurs only when the dissenting director or the board chair who appointed the director is leaving the board. Nonetheless, we still find a significant number of cases with independent directors' dissension during board meetings in our sample of Korean firms.

To capture independent directors' dissension, we define *Dissension* as the action of independent directors who disagree with a proposal, withdraw their vote, hold their vote, or present additional opinions (e.g., agree with condition or agree after changes) rather than just vote to agree with managers' proposals during board meetings. Following the literature (e.g., Yermack, 1996; Joh, 2003; Black et al., 2006a), we employ Tobin's Q as a measure of firm value. Our empirical results show that there is a positive effect of independent directors' dissension on firm value, supporting the notion that these outsiders align themselves with shareholders rather than with management, and enhance firm value when they stand up to management.

Next, we examine whether the level of dissension matters. To do so, we break down dissension into strong dissension (hereafter referred as *Disagreement*) and relatively mild dissension (hereafter referred as *Other Dissensions*). We classify a dissension as *Disagreement* only if it is a disagreement with a proposal and as *Other Dissensions* if it represents a vote withdrawal, a vote holding, or an agreement with additional opinions.

Considering these two levels of dissension separately, we find that *Disagreement* consistently and significantly relates to enhanced firm value while the effects of the other (relatively mild) dissensions are mixed. When considering both levels of dissension together, we find that it is a disagreement with a proposal that is consistently the channel through which a dissenting independent director enhances firm value.

We acknowledge that there could be alternative stories explaining our findings. For example, the effect of independent directors' dissension may be driven by firms with lower profitability in previous period or firms having more independent directors, because those firms may have higher chance to face directors' dissension. Therefore, we run some subsample analyses as robustness tests to confirm that our results are not explained by such alternative stories. Our results could be also driven by the possibility that firms with higher Tobin's Q are more likely to appoint more responsible independent directors to further improve corporate governance and transparency. To address such endogeneity concerns, we take two additional steps by using propensity score matching and instrumental-variable (IV) methods. We continue to find that dissension positively affects firm value.

Our study contributes to the literature in the following ways. First, our study enriches and extends the strand of literature that investigates what boards of directors actually do. For instance, Schwartz-Ziv and Weisbach (2013) who analyze the minutes from board meetings and board-committee meetings of Israeli firms find that board can be active monitors. Jiang et al. (2016) suggest that dissension is a valuable form of "passive monitoring" to mitigate agency issues in Chinese listed firms. They find that although dissension is a rare event, it creates information transmission and eventually improves corporate governance. We find that independent directors in Korean firms also act as monitors by dissenting with management. Moreover, we extend the literature by showing how independent directors contribute to firm value. For example, Cotter, Shivdasani, and Zenner (1997) find that independent directors enhance target shareholder wealth during tender offers; Armstrong, Core, and Guay (2014) find that independent directors cause improvements in firm transparency. We study the actual behaviors of independent directors and quantify the effect of their behaviors on firm value. We find that independent directors' disagreement with management proposals is one channel for increasing firm value. Last, our findings suggest that dissension, defined by directors' opinions rather than directors' connections or board composition, could be another governance mechanism.

Different from Jiang et al. (2016) who find that, in China, dissenting independent directors are those more concerned about their reputation and career opportunities and act as "passive monitors" by disseminating value-relevant information to stakeholders, we find that, in Korea, this voting behavior directly affects the firms. Specifically, we show that independent directors are more active in their monitoring role because director dissension results in enhanced value for Korean firms. Moreover, we document that it is the disagreement with managers' proposals rather than the other relatively mild dissensions that more consistently affects positively the firm value.

The remainder of this paper is organized as follows. We present some theoretical background and develop our hypotheses in Section 2. We describe the data sources, sample formation, and empirical analyses in Section 3. We report the results in Section 4 and conclude the study in Section 5.

2. Theoretical background and hypotheses

Prior studies mainly examine the effect of boards structure and characteristics. For example, Hermalin and Weisbach (1998) show that the firm's performance reflects the ability of the CEO and that CEO turnover is more sensitive to performance when the board structure is more independent. Mishra and Nielsen (1999) show that board characteristics, such as prior work experience, remuneration, and gender, play a

significant role in monitoring corporate management. Ghouma, Ben-Nasr, and Yan (2018) report that bondholders highly value independent boards, which can mitigate the asymmetric information. More recently, the literature provides more granular evidence on whether boards are active monitors. For example, Schwartz-Ziv and Weisbach (2013) consider the minutes of board meetings and board-committee meetings of 11 Israeli firms to show that boards can be active monitors. They find that boards spend approximately two-thirds of their time monitoring managers and disagree with the CEO only 2.5 % of the time. Ma and Khanna (2016) use independent directors' voting data of Chinese public firms and directors' characteristics such as age, interlocking, education, gender, and work experience to investigate the voting behaviors of directors. They find that an independent director is more likely to dissent when social ties within the board end or are about to end. Jiang et al. (2016) find that independent directors have a strong incentive to protect their reputation and consider the public reaction when results of overall voting and individual voting are open to the public. They also show that director dissension improves corporate governance and market transparency primarily through the responses of stakeholders (shareholders, creditors, and regulators), to whom dissension disseminates information. Lin, Chen, and Yen (2014) find that the presence of independent directors is likely to lower the bank loan spread. Moreover, prior studies also show a positive correlation between independent directors and firm value (e.g., Byrd & Hickman, 1992; Subrahmanyam, Rangan, & Rosenstein, 1997; Rosenstein & Wyatt, 1990; Alexander, Barnhart, & Rosenstein, 2007).

Korean firms are required by government to have more outside directors sitting on their boards. Starting in 1998, all listed Korean firms are required to have at least 25 % of board members as outside directors, and starting in 2001, large public firms with total assets of about US$ 2 billion or more must appoint outside directors as at least half of the total board members. These outside directors are non-executive members independent from management. A number of studies find that the Korean government's new regulations after the Asian financial crisis have a positive impact on corporate governance. For example, Black et al. (2006a, 2006b) show that there is a strong connection between stock performance and board independence. They also find that better governed firms have a lower cost of capital.

Based on the corporate governance literature, independent directors play a key role to enhance shareholders' value by monitoring inside managers, Considering such prior studies that provide evidence on the role of independent directors and specifically the finding of Jiang et al. (2016) that career-conscious directors are more likely to dissent to build reputation, we infer that independent directors dissent with their votes only when they think doing so is for the best of the company and its shareholders. By doing so, they refrain managers from engaging in suboptimal projects. Therefore, we conjecture that dissension by independent directors has a positive effect on firm value and make the following hypothesis:

H1 Independent directors' dissensions enhance firm value.

The extent of the positive relation could vary across the levels of dissension. We classify dissensions as *Disagreement* when independent directors express their strong opinion by disagreeing with managers' proposals and as *Other Dissensions* when independent directors agree with the proposals with conditions or after changes, hold their votes, or withdraw their votes. We also examine whether each type of other dissensions (withdraw, hold, and conditional agreement) affects significantly firm value. Concurring with Fama and Jensen (1983) who report that the role of independent directors is to ratify and monitor managerial decisions, we expect that all of their opinions have a positive effect on firm value. Thus, we conjecture that all levels of dissension have a positive effect on firm value and also make the following hypothesis:

H2 All levels of dissension enhance firm value.

3. Empirical analyses

3.1. Data and sample selection

We hand-collect the board member voting data for Korean public firms during the period 2010 through 2014 from the Data Analysis, Retrieval and Transfer System (DART).[2] This novel data shows each individual director's vote by discussion item. According to the Korean Commercial Act, Article 542-4(3), and its enforcement, Article 31(4), public firms in Korea must disclose the board meeting attendance records and voting activities of independent directors starting in fiscal year 2010, the beginning of our study period.[3] . The dataset has information not only on the dissension of each independent director, but also the type of dissension of each director with items proposed by top managers. The voting results span from agreement to disagreement with the proposals as follows: Agree; Agree with additional opinions, agree with condition and agree after change; Hold; Withdraw; and Disagree. Thus, we can observe which firms experience dissension, how strong the dissension is, and which types of items trigger more dissensions. This dataset allows us to directly examine the marginal effect of dissension on firm value.

We obtain data on firm characteristics from Compustat Global, which covers a total of 1579 Korean firms in our sample period. Financial firms are excluded because they are highly regulated by the government. We use FactSet database to obtain institutional ownership information. Observations with missing information on directors' voting activities and firm characteristics are excluded. All continuous variables are winsorized at one percent at both tails to mitigate the potential effects of outliers. The final sample includes 2666 firm-year observations from 766 unique firms from 2010 to 2014.

We observe a total of 81 firm-year dissensions, including 40 strong dissensions (i.e., *Disagreement*) representing 49.4 % of the observations and 47 relatively mild dissensions (i.e., *Other Dissensions) including* 9 withdrawals, 19 holds, and 27 conditional agreements. Only 6 firms have both *Disagreement* and *Other Dissensions* in the same fiscal year. Although there are 117 dissensions during the sampling period (see Table A1, Table B1 in Appendix A and B), the sample of this study includes 81 firm-year dissensions because we generate annual indicator of independent directors' dissension. For example, if a firm has three dissensions on item X in its January meeting and these are the only dissensions of the year, these three dissensions are counted just as one firm-year dissension. If a firm has one dissension in February and another one dissension in March for the year, these two separate dissensions are also recorded as one firm-year dissension. We find that the most frequent dissensions (34.2 % of the dissensions) are reported over investment decisions, such as mergers and acquisitions, launching new business, expanding overseas operations, or increasing stake holdings of affiliated firms. About 18 % of the dissension occurrences are related to financing decisions, specifically on providing additional credit to sister firms by using the firm's own credit line. Internal governance issue is also one of the most frequent items representing 11.1 % of the occurrences. In addition to these three most frequent items that trigger dissensions, appointment of directors, annual shareholders' meetings, general business planning, and legal disputes also stir up disagreements (see Table A1 in Appendix A). However, only 16 firms encountered consecutive independent directors' activism over more than two fiscal years (see Table B1 in Appendix B). Thus, consecutive dissensions appear not to be typical.

Table 1 reports the sample descriptive statistics. All variables are defined in Table C1 in Appendix C. *Dissension* represents 3.0 % of firm-year observations, and *Disagreement*, the proxy for aggressive monitoring activity, and *Other Dissensions*, the proxy for relatively less aggressive monitoring activity, represent 1.5 % and 1.8 %, respectively. As discussed above, we generate a firm-year binary variable for each dissension; the sum of *Disagreement* and *Other Dissensions* is greater than the mean value of *Dissension*. There are three firms with three dissensions in a given year, which is the maximum number of *Cumulative*

Dissensions, but most of the firms do not experience any dissension; not tabulated, the 75th percentile of *Cumulative Dissensions* is 0.000. This is not surprising given that many studies report that CEOs are involved in the appointment process of independent directors (Shivdasani & Yermack, 1999), and that top managers and independent directors are not purely independent (Hwang & Kim, 2009). In Korea, although shareholders elect board members, top managers and employees nominate most outside members. In comparison, Ma and Khanna (2016) show that the annual rate of dissension is also between 2.8 % and 0.0 %.

Table 1. Descriptive Statistics.

Variable Names	N	Mean	Median	Std. Dev.	Min	Max
Key Independent variables:						
Dissension	2666	0.030	0.000	0.172	0.000	1.000
Disagreement	2666	0.015	0.000	0.122	0.000	1.000
Other Dissensions	2666	0.018	0.000	0.132	0.000	1.000
Withdraw	2666	0.003	0.000	0.058	0.000	1.000
Hold	2666	0.007	0.000	0.084	0.000	1.000
Conditional agreement	2666	0.010	0.000	0.100	0.000	1.000
Cumulative Dissensions	2666	0.036	0.000	0.217	0.000	3.000
Dependent variables:						
ln(Tobin's Q)	2666	0.715	0.608	0.500	−0.603	5.781
Market-to-Book	2666	1.734	0.837	8.656	−0.453	323.223
Market-to- Sales	2666	−0.770	−0.791	1.219	−9.000	6.273
Control variables:						
ln(Total Assets)	2666	12.957	12.609	1.708	8.970	19.255
ROA	2666	0.034	0.038	0.075	−0.745	0.318
Leverage	2666	0.258	0.250	0.179	0.000	1.064
R&D	2666	0.013	0.002	0.026	0.000	0.296
Dividend	2666	0.644	1.000	0.479	0.000	1.000
Institutional Own	2666	0.048	0.034	0.055	0.000	0.434
Top5 Institutional Own	2666	0.034	0.027	0.034	0.000	0.333
Independent Director Ratio	2666	0.374	0.333	0.131	0.167	0.900
Board Size	2666	5.762	5.000	2.079	3.000	16.000
Number of independent	2666	2.273	2.000	1.424	1.000	9.000
Number of Meetings	2666	15.410	12.000	11.830	1.000	129.000
All Attendance	2666	0.332	0.000	0.471	0.000	1.000

This table exhibits descriptive statistics of the sample that includes 2666 firm-year observations from 766 Korean public firms (from KOREX and KOSDAQ) from 2010 to 2014. *Dissension, Disagreement,* and *Other Dissensions* are binary variables with the value of one if the firm encounters dissension, disagreement, and other type of dissensions, respectively, and zero otherwise. Detailed definitions of all variables are in Table C1 in Appendix C.

Table 1 shows that on average, a firm has a total of six board members (*Board Size*) including two independent directors (*Number of Independent*). The average proportion of independent directors is 37.4 % (*Independent Director Ratio*), the smallest ratio is 16.7 %, and the largest ratio is 90.0 %. The largest board size is 16 and the largest number of independent directors is 9. The number of board meetings (*Number of Meetings*) ranges between only one meeting and 129 meetings. On average, the board meets 15 times in a fiscal year. In addition, the average institutional ownership of Korean firms is 4.8 % and the five largest institutional ownership is 3.4 % during the sample period. These statistics are consistent with those reported in the

literature covering institutional ownership and corporate social responsibility (Dyck, Lins, Roth, & Wagner, 2019).

Table 2 presents the Pearson correlation matrix. As shown in the table, *Dissension* has a positive correlation with board size and independent director ratio, which are consistent with results in prior studies (e.g., Hermalin & Weisbach, 1998; Yermack, 1996). *Disagreement* is also positively correlated with *Other Dissensions*, board size and independent director ratio, but none of these correlations is significantly large enough to drive multicollinearity. *Independent Director Ratio* is positively correlated with firm size, which is also consistent with the findings in prior studies (e.g., Yermack, 1996; Jiang et al., 2016; Ma & Khanna, 2016).

3.2. Methodology

To study the relation between independent directors' dissension and firm value, we estimate the following baseline model:

(1)

$$FirmValue_{it} = \beta_0 + \beta_1 \bullet IndependentDirectorDissension_{it} + \beta_2 \bullet FirmChar_{it} + \beta_3 \cdot OwnershipChar_{it} + \beta_4 \bullet BoardChar_{it} + \varepsilon_{it}$$

In Eq. (1), for each firm *i* in year *t*, *Firm Value* represents the natural logarithm of *Tobin's Q*. *Independent Director Dissension* represents our variable of interest *Dissension*, *Disagreement, Other Dissensions*, or each type of dissension. Following prior studies (e.g., Yermack, 1996; Black, Kim, Jang, & Park, 2015; Jiang et al., 2016), we include the three sets of controls variables (*Firm Char*,[4] *Ownership Char*, and *Board Char)* indicating firm characteristics, institutional ownership, and board characteristics that are documented to be related to firm value. *Firm Char* includes firm size, ROA, leverage, R&D, and a binary variable indicator for dividend payer. *Ownership Char* includes the percentage of institutional ownership and the percentage of ownership by the top five institutional investors. *Board Char* includes board size, the ratio of independent director, the number of board meetings, and a binary variable indicating whether all independent directors attend all meetings. We provide the definition of each variable in Table C1 in Appendix C.

Table 2. Correlation matrix.

	Dissension	**Disagreement**	**Other Dissensions**	**Size**	**ROA**	**Leverage**	**R&D**	**Dividend**	**Institutional Own**	**Top5 Institutional Own**	**Board Size**	**Independent Director Ratio**	**Number of Meetings**	**All Attendance**
Dissension	1.000													
Disagreement	0.697a	1.000												
Other Dissensions	0.757a	0.124a	1.000											
Size= ln(Total Assets)	0.205a	0.088a	0.211a	1.000										
ROA	0.008	0.004	0.015	0.208a	1.000									
Leverage	0.046b	0.029	0.036c	0.163a	−0.294a	1.000								
R&D	0.019	0.022	0.003	−0.092a	−0.060a	−0.052a	1.000							
Dividend	0.050b	0.034c	0.040b	0.340a	0.450a	−0.246a	−0.113a	1.000						
Institutional Own	0.105a	0.026	0.141a	0.414a	0.211a	−0.168a	0.001	0.176a	1.000					
Top5 Institutional Own	0.050b	0.009	0.070a	0.260a	0.199a	−0.200a	−0.012	0.196a	0.897a	1.000				
Board Size	0.161a	0.078a	0.165a	0.502a	0.087a	0.052a	−0.015	0.112a	0.267a	0.184a	1.000			
Independent Director Ratio	0.190a	0.093a	0.194a	0.539a	−0.010	0.116a	0.023	0.053a	0.294a	0.158a	0.432a	1.000		
Number of Meetings	−0.016	0.011	−0.028	0.027	−0.093a	0.305a	−0.081a	−0.073a	−0.078a	−0.068a	−0.002	−0.017	1.000	
All Attendance	−0.018	−0.015	−0.016	−0.057a	0.036c	−0.093a	−0.019	−0.097a	−0.039b	0.007	−0.237a	−0.195a	−0.165a	1.000

This table shows the correlation matrix of variables used in this study. Pearson's correlation coefficients from two-tailed tests are reported. The letters a, b, and c denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively. Detailed definitions of variables are in the Table C1 in Appendix C.

4. Results

4.1. Univariate tests

Univariate test results are reported in Table 3. On average, firms having dissensions have 1.08 (= exp(0.078)) higher Tobin's Q than firms with no dissensions. Compared with firms having no dissensions, firms with dissensions also have larger size, higher leverage, higher tendency to pay out dividends, larger institutional ownership, larger board size and more independent directors, on average.

Table 3. Univariate tests.

	With Dissension	**No Dissension**	**Differences (With - No)**	**t-statistics**
Observations	81	2,585		
ln(Tobin's Q)	**0.791**	**0.712**	**0.078***	***1.446***
ln(Total Assets)	14.934	12.892	2.041***	*9.748*
ROA	0.038	0.034	0.003	*0.309*
Leverage	0.305	0.256	0.048**	*2.196*
R&D	0.016	0.013	0.003	*0.790*
Dividend	0.778	0.639	0.138***	*2.916*
Institutional Own	0.081	0.047	0.034***	*3.122*
Top5 Institutional Own	0.044	0.034	0.010**	*2.034*
Board Size	2.004	1.681	0.323***	*8.232*
Independent Director Ratio	0.515	0.370	0.145***	*8.619*
Number of meetings	2.454	2.515	−0.061	*−1.125*
All attendance	0.284	0.334	−0.050	*−0.981*

This table exhibits univariate results indicating differences in means of sample characteristics by group of dissension occurrence. The *With Dissension* group consists of individual firms incurring dissension during the given fiscal year. The *No Dissension* group represents the firms without dissension during the fiscal year. Detailed definitions of all variables are in Table C1 in Appendix C. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively.

4.2. Multivariate tests

4.2.1. Baseline results

Table 4 reports results from the baseline model using multiple OLS regressions. All regressions include year and industry fixed effects, and standard errors are robust to heteroskedasticity. In Model (1), *Dissension* has a positive and statistically significant coefficient (0.177 at the 1 % level), implying that, for firms having dissension from independent directors, the predicted Tobin's Q is higher by 1.93 (= exp (0.177) than for firms not having dissension on average. This finding supports our first hypothesis. Categorizing the dissensions into *Disagreement* and *Other dissensions* in Models (2) and (3), we find that the coefficients of *Disagreement* and *Other Dissensions are* also positive and statistically significant at the 1 % and 10 % levels, respectively. A strong dissension (*Disagreement*) tends to increase Tobin's Q by 1.24 (= exp(0.218)) while with relatively mild dissensions (*Other Dissensions*), Tobin's Q tends to increase by 1.12 (= exp(0.112). Model (4) shows that when the latter variables are considered together, only *Disagreement* is significantly related to an increase in Tobin's Q. When considering individually each type of dissensions other than a disagreement in Models (5) to (7), all the coefficients are positive but only the coefficient of *Hold* is statistically significant. Model (8) shows that *Cumulative Dissensions* which is the proxy for the intensity of independent directors' dissensions has a strong positive effect on firm value. Overall, we find that dissension enhances firm value, but the effect depends on the level of dissension, supporting both our hypotheses.

The coefficients of the firm characteristics control variables in Model (1) through Model (8) are consistent with those in prior studies of firm value. For example, the coefficients of *Size* are positive and significant, which suggests that larger Korean firms have lower firm value (consistent with Black et al., 2006a; Black, Jang, & Kim, 2006). Current profitability measured by ROA is associated positively with Tobin's Q (consistent with Yermack, 1996). Higher leverage is associated with higher firm value (consistent with Black et al., 2006a). Future investment opportunities, proxied with R&D, is also associated positively with Tobin's Q (consistent with Black et al., 2006a). The empirical evidence provided in the literature as to whether dividend affects firm value is mixed. For instance, in contrast to the irrelevance of dividend to firm value documented by Miller and Modigliani (1961); Baker and Wurgler (2004) suggest that dividends are highly relevant, but in different directions at different times. Our Model (1) through Model (8) show that dividend payers are associated with lower firm value than non-payers are.

Similarly, the coefficients of the ownership characteristics and board characteristics control variables are overall consistent with those from related studies. Our results show that larger institutional ownership relates to higher firm value (consistent with Elyasiani & Jia, 2010; Chemmanur, He, & Hu, 2009?), but larger ownership by the top five institutional investors tends to decrease value. While Yermack (1996) provides earlier evidence that smaller boards are better boards, Coles, Daniel, and Naveen (2008) suggest that for certain types of firms, larger boards enhance firm value. We find that board size has a positive and significant relation with firm value. Model (1) though Model (8) show that the attendance of all directors to all meetings tend to decrease firm value. These results appear counterintuitive as frequent attendance of independent directors to board meetings should provide them valuable information in exercising their monitoring role. However, since the occurrence of dissension is rare, we interpret these results as supporting our finding that dissenting independent directors enhance value.

Overall, our findings imply that dissension by independent directors increases firm value by mitigating managers' opportunistic behaviors. Specifically, we find that disagreement (a stronger dissension) rather than the other dissensions (relatively mild dissensions) is the channel through which independent directors enhance firm value by standing up to managers' proposals that they believe to be detrimental to the company and the shareholders. By disagreeing with such proposals, with everything else held the same, independent directors enhance Tobin's Q by 1.44 on average.

4.2.2. Robustness tests

First, following Black et al. (2006a), we consider two alternative measures of firm value: *Market-to-Book* and *Market-to-Sales*. The results in Table 5 Panel A and Panel B show that our findings continue to hold.

Table 4. Baseline regressions.

Dependent variable: *ln(Tobin's Q)*								
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dissension	**0.177*** **							
	(0.050)							
Disagreement		**0.218*** **		**0.210*** **				
		(0.074)		**(0.075)**				

Other Dissensions			**0.112***	**0.096**				
			(0.058)	**(0.059)**				
Withdraw					**0.111**			
					(0.116)			
Hold						**0.205*** **		
						(0.072)		
Conditional agreement							**0.012**	
							(0.073)	
Cumulative Dissensions								**0.118*** **
								(0.038)
ln(Total Assets)	−0.079***	−0.077***	−0.077***	−0.078***	−0.076***	−0.077***	−0.076***	−0.078***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
ROA	0.522***	0.515***	0.519***	0.518***	0.513***	0.522***	0.515***	0.520***
	(0.170)	(0.171)	(0.170)	(0.171)	(0.170)	(0.170)	(0.170)	(0.170)
Leverage	0.191***	0.193***	0.196***	0.191***	0.198***	0.201***	0.198***	0.194***
	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
R&D	2.140***	2.165***	2.182***	2.146***	2.196***	2.204***	2.204***	2.150***
	(0.406)	(0.405)	(0.409)	(0.405)	(0.408)	(0.408)	(0.409)	(0.407)
Dividend	−0.136***	−0.137***	−0.135***	−0.137***	−0.135***	−0.134***	−0.135***	−0.135***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Institutional Own	3.070***	3.102***	3.033***	3.078***	3.053***	3.104***	3.055***	3.057***
	(0.500)	(0.500)	(0.500)	(0.499)	(0.501)	(0.501)	(0.502)	(0.500)
Top5 Institutional Own	−3.019***	−3.048***	−2.993***	−3.021***	−3.010***	−3.072***	−3.018***	−3.002***
	(0.711)	(0.714)	(0.713)	(0.712)	(0.716)	(0.716)	(0.716)	(0.711)
Board Size	0.133***	0.137***	0.136***	0.134***	0.138***	0.137***	0.139***	0.134***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Independent Director Ratio	0.037	0.040	0.044	0.037	0.047	0.043	0.047	0.038
	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)
Number of meetings	0.014	0.013	0.014	0.013	0.013	0.014	0.013	0.013
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
All attendance	−0.033**	−0.032**	−0.032**	−0.032**	−0.032**	−0.031**	−0.031**	−0.032**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)

Constant	1.394***	1.371***	1.368***	1.385***	1.353***	1.364***	1.352***	1.384***
	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2666	2666	2666	2666	2666	2666	2666	2666
Adj. R-Squared	0.216	0.215	0.213	0.216	0.212	0.213	0.211	0.215

This table reports OLS results showing the relation between firm value and independent directors' dissension. Firm value is *ln(Tobin's Q)*. Independent directors' dissension is *Dissension*, *Disagreement*, *Other Dissensions*, *Withdraw*, *Hold*, *Conditional agreement*, and/or *Cumulative Dissensions*. Detailed definitions of all variables are in Table C1 in Appendix C. All models include year and industry fixed effects. Numbers in parentheses are heteroskedasticity robust (i.e., White-Huber) standard errors. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively.

Table 5. Other firm value measures.

Panel A – Market-to-Book								
Dependent variable: Market-to-Book								
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dissension	**0.477*** **							
	(0.146)							
Disagreement		**0.642*** **		**0.626*** **				
		(0.224)		**(0.227)**				
Other Dissensions			**0.244**	**0.194**				
			(0.151)	**(0.155)**				
Withdraw					**0.200**			
					(0.288)			
Hold						**0.475** **		
						(0.207)		
Conditional agreement							**−0.020**	
							(0.183)	
Cumulative Dissensions								**0.306*** **
								(0.108)
ln(Total Assets)	−0.238***	−0.235***	−0.234***	−0.236***	−0.232***	−0.234***	−0.231***	−0.237***
	(0.031)	(0.030)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
ROA	0.025	0.005	0.015	0.012	0.003	0.022	0.006	0.018
	(0.676)	(0.677)	(0.676)	(0.677)	(0.676)	(0.676)	(0.676)	(0.676)
Leverage	0.449**	0.454**	0.463**	0.449**	0.468**	0.474**	0.469**	0.458**
	(0.216)	(0.216)	(0.216)	(0.217)	(0.216)	(0.216)	(0.216)	(0.216)
R&D	5.813***	5.869***	5.938***	5.831***	5.972***	5.986***	5.994***	5.845***
	(1.637)	(1.631)	(1.644)	(1.635)	(1.641)	(1.640)	(1.644)	(1.639)
Dividend	−0.393***	−0.395***	−0.391***	−0.394***	−0.391***	−0.388***	−0.391***	−0.390***

	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)	(0.077)
Institutional Own	9.552***	9.649***	9.467***	9.600***	9.512***	9.628***	9.532***	9.517***
	(1.655)	(1.656)	(1.657)	(1.655)	(1.659)	(1.659)	(1.661)	(1.656)
Top5 Institutional Own	−9.824***	−9.909***	−9.769***	−9.854***	−9.811***	−9.948***	−9.844***	−9.781***
	(2.289)	(2.296)	(2.294)	(2.292)	(2.300)	(2.300)	(2.301)	(2.290)
Board Size	0.414***	0.423***	0.423***	0.418***	0.428***	0.426***	0.429***	0.417***
	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.103)
Independent Director Ratio	−0.083	−0.075	−0.062	−0.081	−0.054	−0.065	−0.053	−0.079
	(0.288)	(0.288)	(0.289)	(0.288)	(0.289)	(0.289)	(0.289)	(0.288)
Number of meetings	0.024	0.021	0.023	0.022	0.022	0.023	0.022	0.023
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
All attendance	−0.151***	−0.147***	−0.149***	−0.149***	−0.147***	−0.147***	−0.147***	−0.149***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
Constant	3.614***	3.558***	3.536***	3.587***	3.501***	3.527***	3.495***	3.584***
	(0.380)	(0.378)	(0.380)	(0.380)	(0.378)	(0.379)	(0.380)	(0.380)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2666	2666	2666	2666	2666	2666	2666	2666
Adj. R-Squared	0.137	0.137	0.135	0.137	0.134	0.135	0.134	0.136
Panel B – Market-to-Sales								
Dependent variable: Market-to-Sales								
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dissension	**0.264****							
	(0.118)							
Disagreement		**0.376****		**0.366****				
		(0.156)		**(0.157)**				
Other Dissensions			**0.157**	**0.128**				
			(0.155)	**(0.154)**				
Withdraw					**0.506****			
					(0.229)			
Hold						**0.115**		
						(0.183)		
Conditional agreement							**0.023**	
							(0.221)	
Cumulative Dissensions								**0.192****
								(0.091)

ln(Total Assets)	−0.203***	−0.201***	−0.200***	−0.202***	−0.200***	−0.200***	−0.199***	−0.202***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
ROA	0.076	0.065	0.071	0.070	0.058	0.069	0.066	0.073
	(0.354)	(0.355)	(0.354)	(0.355)	(0.354)	(0.355)	(0.354)	(0.354)
Leverage	−1.362***	−1.360***	−1.355***	−1.363***	−1.352***	−1.350***	−1.352***	−1.358***
	(0.137)	(0.137)	(0.137)	(0.137)	(0.137)	(0.137)	(0.137)	(0.137)
R&D	5.847***	5.874***	5.912***	5.849***	5.899***	5.944***	5.941***	5.854***
	(0.908)	(0.903)	(0.910)	(0.906)	(0.908)	(0.908)	(0.910)	(0.908)
Dividend	−0.238***	−0.239***	−0.237***	−0.239***	−0.236***	−0.236***	−0.237***	−0.236***
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)
Institutional Own	5.624***	5.682***	5.572***	5.650***	5.579***	5.633***	5.600***	5.604***
	(1.339)	(1.335)	(1.336)	(1.334)	(1.335)	(1.338)	(1.336)	(1.337)
Top5 Institutional Own	−4.265**	−4.315**	−4.229**	−4.279**	−4.210**	−4.299**	−4.262**	−4.238**
	(1.907)	(1.907)	(1.908)	(1.905)	(1.909)	(1.912)	(1.910)	(1.906)
Board Size	0.372***	0.376***	0.376***	0.373***	0.377***	0.379***	0.379***	0.372***
	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)
Independent Director Ratio	−0.090	−0.086	−0.079	−0.090	−0.074	−0.076	−0.074	−0.090
	(0.184)	(0.183)	(0.184)	(0.184)	(0.184)	(0.184)	(0.184)	(0.184)
Number of meetings	0.012	0.010	0.011	0.010	0.011	0.011	0.010	0.011
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
All attendance	−0.081**	−0.079**	−0.080**	−0.080**	−0.080**	−0.079**	−0.079**	−0.080**
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
Constant	1.473***	1.444***	1.434***	1.463***	1.418***	1.416***	1.412***	1.463***
	(0.222)	(0.222)	(0.221)	(0.222)	(0.221)	(0.221)	(0.221)	(0.222)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2666	2666	2666	2666	2666	2666	2666	2666
Adj. R-Squared	0.308	0.308	0.307	0.308	0.307	0.307	0.307	0.308

This table reports OLS results showing the relation between market-to-book and independent director dissension (Panel A) and market-to-sales and independent director dissension (Panel B). *Market-to-book* is *(cshoi × prccd)/(at-lt). Market-to-Sales* is *(cshoi × prccd)/sale*. Independent directors' dissension is *Dissension*, *Disagreement*, *Other Dissensions*, *Withdraw*, *Hold*, *Conditional agreement*, and/or *Cumulative Dissensions*. Detailed definitions of all variables are in Table C1 in Appendix C. All models include year and industry fixed effects. Numbers in parentheses are heteroskedasticity robust (i.e., White-Huber) standard errors. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively.

Table 6. Subsample analyses.

Panel A - Profitability									
Dependent variable: ln(Tobin's Q)									
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Profitability	High	Low	Interaction	High	Low	Interaction	High	Low	Interaction
Dissension	**0.158***	**0.178***	**0.186****						
	(0.068)	**(0.071)**	**(0.070)**						
Disagreement				**0.153**	**0.236****	**0.231****			
				(0.096)	**(0.120)**	**(0.113)**			
Other Dissensions							**0.146***	**0.100***	**0.054**
							(0.086)	**(0.055)**	**(0.054)**
Dissension × Profitable			**−0.024**						
			(0.094)						
Disagreement × Profitable						**−0.028**			
						(0.150)			
Other Dissensions × Profitable									**0.135**
									(0.113)
Dummy (Profitable)			**0.080****			**0.107****			**0.106****
			(0.021)			**(0.021)**			**(0.021)**
ln(Total Assets)	**−0.046*****	−0.081***	−0.074***	−0.046***	−0.078***	−0.076***	−0.045***	−0.078***	−0.076***
	(0.009)	(0.012)	(0.010)	(0.009)	(0.012)	(0.008)	(0.009)	(0.012)	(0.008)
ROA	2.268***	−0.848***	−0.045	2.262***	−0.856***	0.041	2.281***	−0.857***	0.046
	(0.264)	(0.321)	(0.213)	(0.264)	(0.322)	(0.217)	(0.265)	(0.319)	(0.216)
Leverage	0.215***	0.257***	0.186***	0.217***	0.259***	0.201***	0.221***	0.260***	0.203***
	(0.074)	(0.084)	(0.063)	(0.074)	(0.085)	(0.056)	(0.074)	(0.084)	(0.056)
R&D	1.626***	2.278***	2.224***	1.674***	2.270***	2.142***	1.639***	2.345***	2.151***
	(0.458)	(0.615)	(0.412)	(0.456)	(0.615)	(0.392)	(0.467)	(0.619)	(0.397)
Dividend	−0.076***	−0.168***	−0.116***	−0.074***	−0.171***	−0.148***	−0.074***	−0.169***	−0.147***
	(0.027)	(0.031)	(0.023)	(0.027)	(0.031)	(0.020)	(0.027)	(0.031)	(0.020)
Institutional Own	1.569***	4.070***	3.072***	1.572***	4.334***	3.005***	1.502***	4.219***	2.915***
	(0.559)	(0.902)	(0.535)	(0.559)	(0.860)	(0.503)	(0.558)	(0.875)	(0.504)
Top5 Institutional Own	−1.038	−6.073***	−3.374***	−1.037	−6.386***	−2.973***	−0.953	−6.357***	−2.894***
	(0.796)	(1.288)	(0.731)	(0.799)	(1.243)	(0.714)	(0.795)	(1.267)	(0.712)
Board Size	0.127***	0.126***	0.095***	0.129***	0.130***	0.138***	0.128***	0.128***	0.137***
	(0.033)	(0.046)	(0.030)	(0.033)	(0.046)	(0.028)	(0.033)	(0.046)	(0.028)

Independent Director Ratio	0.071	−0.011	−0.009	0.076	−0.011	0.046	0.076	−0.007	0.049
	(0.088)	(0.127)	(0.089)	(0.088)	(0.127)	(0.078)	(0.089)	(0.128)	(0.079)
Number of meetings	0.056***	−0.025	0.018	0.056***	−0.028	0.015	0.055***	−0.025	0.016
	(0.016)	(0.021)	(0.014)	(0.016)	(0.021)	(0.013)	(0.016)	(0.021)	(0.013)
All attendance	−0.034*	−0.026	−0.043***	−0.032*	−0.024	−0.029*	−0.034*	−0.024	−0.031*
	(0.019)	(0.026)	(0.016)	(0.019)	(0.026)	(0.016)	(0.019)	(0.026)	(0.016)
Intercept	0.712***	1.553***	1.394***	0.693***	1.526***	1.321***	0.694***	1.521***	1.316***
	(0.127)	(0.139)	(0.121)	(0.127)	(0.139)	(0.094)	(0.127)	(0.141)	(0.095)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1,444	1,222	2666	1,444	1,222	2666	1,444	1,222	2666
Adj. R-Squared	0.270	0.274	0.315	0.268	0.273	0.223	0.268	0.271	0.221

Panel B - Independent Director Ratio									
Dependent variable: ln(Tobin's Q)									
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Majority	Non-Majority	Interaction	Majority	Non-Majority	Interaction	Majority	Non-Majority	Interaction
Dissension	**0.140***	**0.241****	**0.241****						
	(0.055)	**(0.093)**	**(0.095)**						
Disagreement				**0.165***	**0.282****	**0.284****			
				(0.090)	**(0.117)**	**(0.119)**			
Other Dissensions							**0.100***	**0.152**	**0.139**
							(0.056)	**(0.117)**	**(0.127)**
Dissension × Independent majority			**−0.100**						
			(0.110)						
Disagreement × Independent majority						**−0.123**			
						(0.150)			
Other Dissensions × Independent majority									**−0.039**
									(0.142)
Dummy (Independent majority)			**−0.057***			**−0.058****			**−0.060****
			(0.029)			**(0.029)**			**(0.029)**
ln(Total Assets)	−0.069***	−0.091***	−0.080***	−0.067***	−0.091***	−0.078***	−0.068***	−0.089***	−0.078***
	(0.011)	(0.012)	(0.008)	(0.010)	(0.012)	(0.008)	(0.011)	(0.012)	(0.008)
ROA	0.871***	0.294	0.516***	0.851***	0.303	0.513***	0.865***	0.297	0.515***
	(0.252)	(0.224)	(0.170)	(0.253)	(0.224)	(0.170)	(0.252)	(0.224)	(0.170)

Leverage	0.139*	0.193**	0.188***	0.140*	0.195**	0.189***	0.144*	0.197**	0.191***
	(0.082)	(0.078)	(0.057)	(0.083)	(0.078)	(0.057)	(0.083)	(0.078)	(0.057)
R&D	2.301***	2.138***	2.163***	2.337***	2.148***	2.187***	2.381***	2.128***	2.196***
	(0.594)	(0.553)	(0.408)	(0.591)	(0.553)	(0.407)	(0.603)	(0.554)	(0.410)
Dividend	−0.157***	−0.127***	−0.135***	−0.159***	−0.128***	−0.136***	−0.158***	−0.125***	−0.134***
	(0.034)	(0.026)	(0.021)	(0.034)	(0.026)	(0.021)	(0.034)	(0.027)	(0.021)
Institutional Own	1.670***	5.305***	3.056***	1.682***	5.256***	3.072***	1.644***	5.245***	3.004***
	(0.574)	(0.797)	(0.498)	(0.575)	(0.803)	(0.499)	(0.573)	(0.797)	(0.499)
Top5 Institutional Own	−0.939	−6.046***	−3.015***	−0.941	−5.986***	−3.027***	−0.933	−5.992***	−2.973***
	(0.910)	(1.038)	(0.710)	(0.913)	(1.044)	(0.713)	(0.910)	(1.037)	(0.711)
Board Size	0.035	0.169***	0.137***	0.045	0.169***	0.141***	0.041	0.169***	0.140***
	(0.051)	(0.035)	(0.028)	(0.050)	(0.035)	(0.028)	(0.051)	(0.035)	(0.028)
Independent Director Ratio	0.184	0.198	0.241*	0.181	0.217	0.250*	0.196	0.213	0.254*
	(0.174)	(0.232)	(0.132)	(0.174)	(0.232)	(0.132)	(0.175)	(0.230)	(0.132)
Number of meetings	−0.000	0.025	0.015	−0.001	0.024	0.014	−0.000	0.025	0.015
	(0.022)	(0.017)	(0.013)	(0.022)	(0.017)	(0.013)	(0.022)	(0.017)	(0.013)
All attendance	−0.016	−0.045**	−0.031**	−0.013	−0.044**	−0.030*	−0.014	−0.045**	−0.031**
	(0.026)	(0.021)	(0.016)	(0.026)	(0.021)	(0.016)	(0.026)	(0.021)	(0.016)
Intercept	1.415***	1.427***	1.341***	1.383***	1.423***	1.321***	1.393***	1.398***	1.316***
	(0.148)	(0.149)	(0.094)	(0.147)	(0.149)	(0.093)	(0.148)	(0.149)	(0.094)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1,060	1,606	2666	1,060	1,606	2666	1,060	1,606	2666
Adj. R-Squared	0.224	0.244	0.217	0.223	0.243	0.216	0.221	0.240	0.213

This table reports OLS results showing the relation between *Firm Value* and *Dissension*, *Disagreement*, or *Other Dissensions*, respectively for a group of firms having higher profitability and a group of firms having lower profitability (Panel A), and for a group of firms where independent directors are majority and a group of firms where independent directors are not majority (Panel B). The dependent variable in each model is *ln(Tobin's Q)*. Detailed definitions of all variables are in Table C1 in Appendix C. Numbers in parentheses are heteroskedasticity robust (i.e., White-Huber) standard errors. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively.

Next, we report in Table 6. Panel A and Panel B the results from subsample analyses. Prior empirical studies show that independent directors' dissension is a function of firm characteristics as well as director characteristics (Jiang et al., 2016; Ma & Khanna, 2016). Thus, we attempt to address the concern that firms having specific characteristics may drive the main result. To do so, first, we generate two subsamples based on firm profitability measured by ROA. Firms that are less profitable in their prior year may have higher propensity of dissension and could change their profit momentum dramatically in the subsequent period. These firms might change their performance a lot in the subsequent year, which might drive the main result in this study. Moreover, board composition can be endogenously selected according to firm characteristics (Hermalin & Weisbach, 1998). Firms having a board of directors dominated by independent directors could have more dissensions. Namely, our results could be driven by firms with more independent board. Thus, we

also divide the sample into two sub-samples based on the board composition measured by the ratio of independent directors.

Table 6 Panel A shows the results from OLS regressions for the group of firms (High) with above-average annual ROA in a same industry and the group of firms (Low) with below-average annual ROA in a same industry (Models (1), (2), (4), (5), (7), and (8)),[5] as well as the results from the regressions including the interaction with *Dissension*, *Disagreement*, and *Other Dissensions* of the binary variable *Profitable* in Models (3), (5), and (9), respectively. Across these latter models, the coefficients on the interaction terms are not significant, implying that the concern we brought up that less profitable firms might drive our main finding does not matter.

Similarly, Table 6 Panel B shows the OLS regression results for the group of firms (Majority) having independent board of directors as a majority of board members and the group of firms (Non-Majority) having independent board of directors as minority board members, respectively. The coefficients on the interaction terms between the dissension variables and binary variable *Independent Majority* are not significant. These results from Models (3), (6) and (9) suggest that our findings are not driven by firms with more independent directors either.

Next, as another robustness test, we build a propensity-score matched sample using firm characteristics to examine the marginal effect of independent directors' dissension on firm value. This approach addresses whether firms having specific characteristics have better chance to obtain higher firm value. Specifically, we consider two groups of firms by dissension occurrence and generate a sample of matched firms based on firm size, profitability, and capital structure. As shown in Table 7, most firm characteristics, ownership characteristics, and governance characteristics are different between the group having dissensions (treatment group) and the group not having dissensions (control group) before the matching. In contrast, for the matched sample, there is no statistical difference in the characteristics of the two groups.[6] Results from the OLS regressions show that the marginal effect of *Dissension* and *Disagreement* are still positive and statistically significant. *Other Dissensions* is not significant on firm value with the matched sample analysis. However, in Model (4), we find *Other Dissensions* is also significant with *Disagreement*, which is consistent with some of the results in Table 4, Table 5, Table 6. Therefore, we conduct another robustness test to investigate the real effect of *Other Dissensions* on firm value.

Table 7. Propensity Score Matching.

	Before Matching			**After Matching** [a]			**OLS**			
	Treat [b]	Control	Diff	Treat [b]	Control	Diff	(1)	(2)	(3)	(4)
Dissension							**0.187*** **			
							(0.065)			
Disagreement								**0.159****		**0.182****
								(0.076)		**(0.076)**
Other Dissensions									**0.095**	**0.132****
									(0.065)	**(0.065)**
ln(Total Assets)	14.934	12.892	2.041***	14.934	15.020	−0.087	−0.074**	−0.069**	−0.076**	−0.069**

							(0.032)	(0.032)	(0.033)	(0.032)
ROA	0.038	0.034	0.003	0.038	0.041	−0.004	2.079***	2.005***	2.132***	2.055***
							(0.734)	(0.751)	(0.761)	(0.745)
Leverage	0.305	0.256	0.048**	0.305	0.288	0.017	−0.551**	−0.558**	−0.486*	−0.551**
							(0.259)	(0.265)	(0.273)	(0.263)
R&D	0.016	0.013	0.003	0.016	0.014	0.001	−0.585	−0.289	−0.365	−0.495
							(1.737)	(1.764)	(1.757)	(1.740)
Dividend	0.778	0.639	0.138***	0.778	0.753	0.025	−0.159	−0.161	−0.149	−0.160
							(0.101)	(0.103)	(0.105)	(0.101)
Institutional Own	0.081	0.047	0.034***	0.081	0.090	−0.009	−0.353	−0.466	−0.495	−0.441
							(1.196)	(1.200)	(1.227)	(1.200)
Top5 Institutional Own	0.044	0.034	0.010**	0.044	0.050	−0.006	−1.347	−1.049	−1.628	−1.181
							(2.249)	(2.259)	(2.337)	(2.261)
Board Size	2.004	1.681	0.323***	2.004	1.942	0.061	−0.071	−0.046	−0.082	−0.071
							(0.160)	(0.158)	(0.167)	(0.160)
Independent Director Ratio	0.515	0.370	0.145***	0.515	0.481	0.035	1.086**	1.068**	1.102**	1.060**
							(0.516)	(0.527)	(0.528)	(0.522)
Number of meetings	2.454	2.515	−0.061	2.454	2.495	0.041	0.097	0.071	0.093	0.084
							(0.083)	(0.082)	(0.086)	(0.083)
All attendance	0.284	0.334	−0.050	0.284	0.259	0.025	0.027	0.021	−0.003	0.021
							(0.083)	(0.081)	(0.082)	(0.082)
Constant							1.364***	1.341***	1.463***	1.341***
							(0.419)	(0.433)	(0.453)	(0.425)
Year/Industry FE							Yes	Yes	Yes	Yes
Observations	81	2,591		81	81		162	162	162	162
Adj. R-Squared							0.407	0.391	0.374	0.400

This table reports propensity score matching analyses of the effect of *Dissension*, *Disagreement* or *Other Dissensions* on *Firm Value*. The dependent variable in each model is *ln(Tobin's Q)*. Detailed definitions of all variables are in Table C1 in Appendix C. Numbers in parentheses are heteroskedasticity robust (i.e., White-Huber) standard errors. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively.
a Sample Matched based on firm characteristics: *Size*, *ROA*, and *Leverage*.
b Treatment: *Dissension*.

We employ instrumental variables and 2-stage least squared (IV-2SLS) regression analysis to find the effect of dissensions on firm value. We instrument the percent of dissension of a specific firm measured by the mean value of percent of dissension of other firms in the same industry in the same fiscal year, and the dummy

variable of asset value of 2 trillion KRW (about USD 2 billion) taking the value of one if the firm has a value of 2 trillion KRW total assets or higher in a given fiscal year, and zero otherwise. Although independent directors use dissension as a monitoring tool in the board meeting, and they consider their reputation and future career when they use dissension (Jiang et al., 2016), directors' dissensions are likely correlated with industry peers due to similar board composition. Also, larger public firms are subject to the new regulation on public release of directors' voting activities and government monitoring. Thus, directors in larger firms likely use their monitoring tool to protect their reputation and career. However, these IVs are unlikely to have direct influence on firm value. The validity of the two instruments is tested after IV-2SLS estimation. To test whether our additional instruments have explanatory power, we compute the F-statistics and find our instruments are not weak instruments. We employ the Durbain and Wu-Hausman tests to examine whether the instruments are exogenous and find two variables are exogenous. In addition, we test for overidentifying restrictions using Wooldridge's score, and the test result suggests that our structural model is specified correctly. Table 8 reports the first and second stage regression results of the IV-2SLS analyses. Although we previously find mixed results on the effect of *Other Dissensions*, the three models in Table 8 show that independent directors' dissension (*Dissension)* and both levels of dissension (*Disagreement* and *Other Dissensions)*, have a positive and significant marginal effect on firm value. These findings support both our first and second hypotheses.

Table 8. IV-2SLS estimation.

	1st stage	**2nd stage**	**1st stage**	**2nd stage**	**1st stage**	**2nd stage**
Dependent variable:		*ln(Tobin Q)*		*ln(Tobin Q)*		*ln(Tobin Q)*
	Dissension		*Disagreement*		*Other Dissensions*	
Dissension		**0.159***				
		(0.086)				
Disagreement				**0.475***		
				(0.259)		
Other Dissensions						**0.210***
						(0.115)
Mean (Dissension)	**0.963*****		**0.327*****		**0.727*****	
	(0.060)		**(0.079)**		**(0.066)**	
Dummy (Large firms)	**−0.019**		**0.007**		**−0.020**	
	(0.016)		**(0.013)**		**(0.012)**	
ln(Total Assets)	0.011***	−0.078***	0.003	−0.079***	0.007**	−0.078***
	(0.004)	(0.008)	(0.003)	(0.008)	(0.003)	(0.008)
ROA	−0.023	0.532***	0.003	0.529***	−0.013	0.531***
	(0.047)	(0.172)	(0.042)	(0.172)	(0.031)	(0.172)
Leverage	0.027	0.204***	0.015	0.200***	0.015	0.205***
	(0.017)	(0.056)	(0.014)	(0.057)	(0.014)	(0.056)
R&D	0.300*	2.180***	0.190	2.138***	0.122	2.202***
	(0.166)	(0.413)	(0.146)	(0.411)	(0.103)	(0.417)
Dividend	0.003	−0.142***	0.005	−0.144***	−0.002	−0.142***
	(0.007)	(0.021)	(0.006)	(0.021)	(0.005)	(0.021)
Institutional Own	−0.203	3.058***	−0.289**	3.153***	0.152	2.996***
	(0.229)	(0.508)	(0.136)	(0.510)	(0.210)	(0.510)
Top5 Institutional Own	0.248	−2.939***	0.244	−3.005***	−0.071	−2.886***
	(0.312)	(0.723)	(0.200)	(0.726)	(0.262)	(0.724)

Board Size	0.007	0.135***	−0.000	0.136***	0.009	0.134***
	(0.010)	(0.028)	(0.008)	(0.028)	(0.007)	(0.028)
Independent Director Ratio	**0.043**	0.047	0.014	0.043	0.025	0.049
	(0.032)	(0.078)	(0.027)	(0.078)	(0.021)	(0.078)
Number of meetings	−0.004	0.015	0.002	0.014	−0.005	0.015
	(0.004)	(0.013)	(0.002)	(0.013)	(0.003)	(0.013)
All attendance	0.002	−0.032**	−0.000	−0.031**	0.004	−0.032**
	(0.006)	(0.016)	(0.005)	(0.016)	(0.005)	(0.016)
Constant	−0.172***	1.393***	−0.060	1.407***	−0.097***	1.384***
	(0.046)	(0.108)	(0.038)	(0.110)	(0.036)	(0.107)
Year/Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
F-test of instruments	127.732		8.627		60.552	
p-value	0.000		0.000		0.000	
Wald Chi-squared		31,839.14		33,118.16		32,467.75
p-value		0.000		0.000		0.000
Number of Observations	2666	2666	2666	2666	2666	2666
Adj. R-Squared (%)		0.200		0.196		0.196
Endogeneity test Durbin Chi^2 test:	p = 0.550		p = 0.411		p = 0.477	
Wu-Hausman F test:	p = 0.570		p = 0.416		p = 0.490	
Overidentifying test						
Wooldridge's score test	p = 0.742		p = 0.880		p = 0.716	

This table reports IV-2SLS results showing the relation between firm value and independent directors' dissension. Firm value is *ln(Tobin's Q)* and independent directors' dissension is *Dissension*, *Disagreement*, or *Other Dissensions*. *Mean (Dissension)* is the industry average of *Dissension*. *Dummy (Large firms)* has a value of one if the asset size is greater than $2 million (USD), otherwise zero. Detailed definitions of the variables are in Table C1 in Appendix C. All models include year and industry fixed effects. Numbers in parentheses are heteroskedasticity robust (i.e., White-Huber) standard errors. The symbols ***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % levels, respectively. After IV-2SLS estimation, F-test and Wald Chi-square tests for weak instrument, the Durbin and Wu–Hausman statistics for endogeneity, and Wooldridge statistics for overidentifying restriction test are reported.

5. Conclusion

This study re-investigates the benefits of corporate governance practices as a protection tool for shareholders' wealth. Prior studies suggest that better corporate governance is positively associated with fewer agency problems and greater principals' wealth. Most public firms have a board of director system as one of corporate governance mechanisms, which enable them to protect principals and reduce agency problems. Although there is a rationale that independent board of directors would monitor managers well, it is difficult to empirically test whether independent directors play the role of monitor because most information in the board meeting room is not publicly available. Only few countries (e.g., China and Korea) make board voting activities public. To challenge this difficulty, we hand-collect board-meeting data for Korean public firms from 2010 through 2014.

By directly observing independent directors' voting activities, we provide evidence that independent directors who can stand up against managers are better monitors. Specifically, we use independent director's dissension with management's proposals as a proxy for monitoring. Our findings reveal that although independent directors' dissensions are rare events, such dissension provides positive impact on firm value by limiting management to undergo projects they believe to be detrimental to the company and its shareholders. We also find that although all types of dissensions collectively enhance firm value, the effect might depend on the dissension strength. Our results show that a disagreement is a more effective channel than the other relatively mild dissension for adding value to the firm.

We contribute to the literature that discusses corporate governance, agency issues, and firm value, and open up for future research by using independent directors' dissension in board meetings as a novel measure of corporate monitoring. Jiang et al. (2016) consider director dissension as "passive monitoring" and document that, in China, director dissension improves corporate governance by disseminating information to the market and results in favorable career opportunities. In contrast, we show that independent directors are active monitors by showing that this behavior of independent directors affects the firms directly. Specifically, we find that director dissension results in enhanced value for Korean firms.

Declaration of Competing Interest

The authors reported no declarations of interest.

Appendix A

Table A1. Distribution on dissented proposals.

Panel A. Dissension by Agenda		
Type of Agenda	Number of Dissensions	Percentage of Dissensions
Investments	40	34.2 %
Financing	21	17.9 %
Personnel Appointment	4	3.4 %
Internal Governance	13	11.1 %
Financial Reporting	1	0.9 %
Legal	5	4.3 %
Shareholder Meeting	3	2.6 %
Budgeting	3	2.6 %
Strategy	8	6.8 %
Related Party Transaction	4	3.4 %
Contracting	5	4.3 %
Other	10	8.5 %
Total	117	100.0 %
Panel B. Dissension by Agenda		
Year	Number of Dissensions	Percentage of Dissensions
2010	21	17.9 %
2011	31	26.5 %
2012	28	23.9 %
2013	19	16.2 %
2014	18	15.4 %
Total	117	100.0 %

Appendix B

Table B1. List of firms with dissension.

Firm Name	Year of Dissension	Number of Dissensions
AHNLAB CO LTD	2012	1
AHNLAB CO LTD	2013	1
CELLTRION PHARM INC	2012	1
CHUNGDAHM LEARNING INC	2011	1
DAELIM INDUSTRIAL CO LTD	2013	1
DAEWOO INTERNATIONAL CORP	2010	1
DAEWOO INTERNATIONAL CORP	2011	1
DAEWOO INTERNATIONAL CORP	2012	1
DAEWOO INTERNATIONAL CORP	2013	1
DAEWOO INTERNATIONAL CORP	2014	2
DAEWOO SHIPBUILDING & MARINE	2011	1
DAEWOO SHIPBUILDING & MARINE	2013	1
DAEWOO SHIPBUILDING & MARINE	2014	3
DAUM KAKAO CORP	2013	1
DONGKUK STEEL MILL CO LTD	2011	1
DONGYANG EXPRESS CORP	2011	2
E TEC E&C CO LTD	2014	1
HANDSOME CORP	2014	1
HUSTEEL CO LTD	2012	1
HYUNDAI CORP	2010	1
HYUNDAI ENGR & CONSTR CO	2012	1
HYUNDAI ENGR & CONSTR CO	2014	1
HYUNDAI HEAVY INDS CO LTD	2012	1
HYUNDAI HYSCO CO LTD	2013	1
INSUN ENVIRONMENTAL NEW TECH	2012	2
INTERGIS CO LTD	2014	1
KOREA AEROSPACE IND LTD	2013	1
KOREA DISTRICT HEATING CORP	2010	3
KOREA DISTRICT HEATING CORP	2011	2
KOREA ELECTRIC POWER IND DEV	2012	2
KOREA ELECTRIC POWER IND DEV	2013	1
KOREA GAS CORP	2010	5
KOREA GAS CORP	2011	3
KOREA GAS CORP	2012	2
KOREA LINE CORP	2011	1
KOREA PETRO CHEMICAL IND CO	2012	1
KT CORP	2010	1
KT CORP	2011	1
KT CORP	2012	2
KT CORP	2014	1
KT SKYLIFE CO LTD	2012	1
KT SKYLIFE CO LTD	2013	1
KT SKYLIFE CO LTD	2014	3

KT&G CORP	2010	5
KT&G CORP	2014	1
KUMHO PETROCHEMICAL CO LTD	2010	1
KUMHO PETROCHEMICAL CO LTD	2011	1
LG ELECTRONICS INC	2013	1
LG INNOTEK CO LTD	2013	1
LOTTE HIMART CO LTD	2012	1
LOTTE SHOPPING CO	2013	1
MEGASTUDY CO LTD	2014	1
NEPES CORPORATION LTD	2012	1
OCI CO LTD	2012	1
PHARMICELL CO LTD	2012	1
POSCO	2012	1
POSCO	2013	2
POSCO ICT CO LTD	2010	1
POSCO ICT CO LTD	2011	3
POSCO ICT CO LTD	2012	1
POSCO ICT CO LTD	2013	1
SAMYANG FOODS CO LTD	2011	1
SAMYANG FOODS CO LTD	2014	1
SEOUL BROADCASTING SYSTEM CO	2011	2
SK HYNIX INC	2010	2
SK HYNIX INC	2011	4
SK HYNIX INC	2012	1
SK INNOVATION CO LTD	2011	1
Firm Name	**Year of Dissension**	**Number of Dissensions**
SK NETWORKS CO LTD	2010	1
SK NETWORKS CO LTD	2012	1
SK NETWORKS CO LTD	2013	1
SK TELECOM CO LTD	2011	1
S-OIL CORP	2012	1
SPORTS SEOUL CO LTD	2011	1
SSANGYONG MOTOR CO LTD	2011	4
SSANGYONG MOTOR CO LTD	2012	3
SSANGYONG MOTOR CO LTD	2013	1
SSANGYONG MOTOR CO LTD	2014	1
STX CORP CO LTD	2013	1
TLI INC	2014	1
TONGYANG CEMENT & ENERGY COR	2013	1
Total Number of Dissensions		117

Appendix C

Table C1. Definition of variables.

Panel A. Dissension variables	**Definition**
Dissension	A binary variable equal to one if the firm has a dissension from outside director(s), and zero otherwise.

	Dissension indicates one of disagree, withdraw, or hold in outside directors' vote, or one of additional opinions, such as agreement with condition or agreement after changes, rather than just agree.
Disagreement	A binary variable equal to one if the firm has a disagreement from independent director(s), and zero otherwise.
Other Dissension	A binary variable equal to one if the firm has any dissension from independent director(s), and zero otherwise. *Other Dissensions* indicates one of *Withdraw*, *Hold*, or *Conditional agreement*, but not opposition.
Withdraw	A binary variable equal to one if the firm has a withdrawal from independent director(s), and zero otherwise.
Hold	A binary variable equal to one if the firm has a hold from independent director(s), and zero otherwise.
Conditional agreement	A binary variable equal to one if the firm has a conditional agreement, agreement with condition(s) and/or agreement after change(s), from independent director(s), and zero otherwise.
Cumulative Dissensions	Total number of all types of dissensions in a given fiscal year
Panel B. Firm performance	***Definition***
Firm value = ln(Tobin's Q)	Natural logarithm of Tobin's Q where Tobin's Q is the ratio of the sum of market value of common stock, book value of preferred stock, and debt to book value of total assets
Market-to- Book	Market value to book asset value
Market-to-Sales	Market value to sale
Panel C. Control variables	***Definition***
Size = ln(Total Assets)	Natural logarithm of the book value of total assets
ROA	Net income divided by total assets
Leverage	Debt in current liabilities plus long-term debt, divided by total assets
R&D	Research and development expense divided by total assets
Dividend	A binary variable equal to one if total dividends payout is greater than zero, and zero otherwise
Institutional Own	Total institutional ownership scaled by total shares outstanding
Top5 Institutional Own	Total ownership of largest five institutional investors
Board Size	Natural logarithm of the total number of directors on the board
Independent Director Ratio	Number of independent directors divided by the total number of directors
Number of Meetings	Natural logarithm of the total number of board meetings
All Attendance	A binary variable equal to one if all outside directors attend all meetings, and zero otherwise

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Notes

1 Boards members in Korean public firms consist of inside (i.e., executive) mem-bers and outside (i.e., non-executive) members independent from management and controlling shareholders. Hereafter, we refer to outside directors and independentdirectors without distinction.

2 DART (http://englishdart.fss.or.kr/about/engAbout1.do) is an electronic systemthat allows companies to file disclosures online and a repository of these companyfilings, provided by the South Korean Government and made available to investorsand other users.

3 The request for disclosure was introduced in March 2001 but was enforced onlystaring in fiscal year 2010.

4 Following previous studies (e.g., Black et al., 2006b; Yermack, 1996) and not tolose too many observations, we consider the contemporaneous firm characteristicsin all analyses. In unreported tests, we also run the regressions with previous-yearfirm characteristics and the results hold.

5 The positive coefficients of Other Dissensions that are statistically significantbut only at the 10% level are consistent with its coefficient in Model (3) of Table 4(Baseline Regressions) when Other Dissensions is considered separately.

6 The matched sample is generated with the nearest neighbor matching methodand all required conditions are satisfied.