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What do outside directors really do? Evidence from their voting activities

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ABSTRACT

Prior studies on the monitoring role of outside directors tend to be based on the assumption of interest differences between agents and principals and adhere to arbitrary definitions of board independence or quality. Using a unique dataset of individual outside directors' voting activities on items proposed by managers of Korean public firms between FY2010 and FY2014, we investigate whether outside directors play an effective role in mitigating agency problems, without such assumption and arbitrary definitions. We find that outside directors can provide effective monitoring by expressing strong dissension, such as disagreeing, withdrawing their votes, or holding their votes on managers' proposals. Specifically, such dissension tends to relate to higher firm performance, and this finding is robust to alternative measures of performance and estimation methods.

Keywords: Korea, Corporate Governance, Outside Board of Directors, Dissension, Activism, Firm Performance

JEL Classification: G30, G38

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1. Introduction

Academics and market participants have long studied whether corporate governance creates market value. A common topic in corporate governance studies is the monitoring role of outside board members. Nonetheless, the importance of outside boards of directors in empirical studies depends on a number of conditions, such as the definitions of board independence, CEO power, or directors' characteristics as well as the implicit assumption that managers and directors have different interests. For instance, early studies report that outside boards of directors monitor well and their presence positively relates to fewer agency problems (Brickley and James, 1987; Weisbach, 1988). However, Byrd and Hickman (1992) point out that too many outside board members may impede efficient firm decision-making because outsiders may take a more conservative position and have less information than insiders. Implicit assumptions may obscure results and different definitions of a particular construct may lead to different or conflicting findings. Thus, we investigate the monitoring role of outside board members by looking into what outside directors really do in board meetings.

In this study, we generate a dataset that represents individual outside board members' votes on each item discussed in every single board meeting from Korean public firms from FY2010 through FY2014. According to the Korean Securities and Exchange Act, all public firms are required to have at least 25% of the board as outside members and public firms with asset value of about US\$2 billion or more have to appoint at least three outside directors, and enough to make up the majority of the board. These regulations are to create an ideal environment for the outside board of directors to monitor and actively advise firm management. However, many outside directors are former top government officials or former (or current) top managers at affiliated firms. Although these directors are characterized as independent and outside directors

by regulations, their behaviors might not necessarily be those of independent directors or good monitors. Under such circumstances, it is difficult for an individual outside director to say “No” to the managers’ proposals. Nonetheless, we find significant cases of outside directors’ dissension during board meetings.

In order to investigate the benefits of outside board of directors’ dissension, we look at firm performance measured by Tobin’s Q and Market-to-Book ratio. Some managers have incentives to take as much private benefits from their managerial decisions as possible. However, if outside directors play the active role of monitor, managers are less likely to engage in such opportunistic behaviors. Based on the monitoring role of outside board of directors and managers’ potential opportunistic behaviors, we conjecture that outside board of directors’ dissension to managers’ proposals is more likely to monitor managers effectively and improve firm performance. It is difficult for outside board members to express opposing opinions during meetings, not just because CEOs are involved in their appointments, but also because both managers and outside directors might be connected through other channels, such as work experience, education, social activities, hometown, or military service. Therefore, we do not employ the strong assumption of interest differences between outside directors and managers or arbitrary definitions of outside board of directors’ characteristics and board independence seen in related studies. Moreover, a firm usually chooses the board structure, thus the board structure could be endogenous to other firm characteristics. Instead, we only consider outside board of directors’ dissension as an event. By doing so, we can investigate on the clear effect of outside board of directors’ activities on agency issues without the need to know whether insiders and outsiders have different interests or whether the definitions of directors’ characteristics are valid.

This study contributes to the finance literature that discusses the agency problem from the separation of ownership and management and explores how corporate governance relates to firm value. We find that outside directors' active monitoring role can reduce agency cost. In particular, we generate a unique dataset representing individual directors' real votes and test whether outside directors' dissension can create value. In contrast, most related studies have to assume that a director who is outsider will monitor and advise well, mainly because data showing directors' real activities in the boardroom are generally not available publicly.¹ Many previous studies shed light on activism of outsiders, i.e., ordinary shareholders having small amount of ownership, to mitigate agency problems. However, our results imply that it is possible to find evidence that internal activism can also mitigate agency issues and effectively monitor managers' opportunistic behaviors. As an inside activity, outside director's dissension, can be understood as an internal activism. In addition, we suggest another type of corporate monitoring proxy, dissension, based on directors' opinions rather than directors' connections or board composition.² This new proxy allows us to provide a more tangible dimension of outside directors' activities.

2. Literature review and hypotheses development

Many prior studies point out the benefits of independent board of directors. For example, Hermalin and Weisbach (1998) indicate that board structure is one important factor of monitoring activity. They show that CEO turnover is more sensitive to performance when the

¹ Recently, only a few studies enriched the discussion of real activities in the board meeting room. 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.

² Jiang et al. (2016) consider director dissension as an information dissemination tool rather than a monitoring device.

board structure is more independent because independent outsiders can monitor managers' opportunistic behaviors and protect owners' wealth. Outsiders can also contribute their expertise and objective evaluation to managers' day-to-day decision-making. However, the definition of an independent board of directors is controversial. Hwang and Kim (2009) state that the conventional definition of an independent director does not clearly distinguish connections between managers and outside directors. They find that 87% of board members are conventionally independent, but only 62% of directors are conventionally and socially independent. Thus, the board composition highly depends on the definition of independence. Another attribute of a board's effectiveness is the size of the board. Yet related findings are not conclusive and some results are contradicting. For instance, Yermack (1996) finds that a smaller board is more efficient; there is an inverse relation between board's size and firm value (measured by Tobin's Q) as well as board's size and compensation sensitivity to shareholder wealth. However, Harris and Raviv (2008) propose a model showing that additional monitoring from a larger board is more beneficial than problems from the larger board, such as free-riding behavior.

Board effectiveness studies also include discussions on busy board or interlocking board. Although there are inconclusive empirical results, a board interlocking has an important role as a channel of information transmission. Fama and Jensen (1983) claim that the number of outside directors shows the quality of a board. Large outside board membership implies better ability to provide advising and monitoring activities based on members' experiences and knowledge. Several studies also report positive influences of busy board members. Executives sitting on outside boards can generate their own networks and share information among them to monitor and advise managerial board members (Rosenstein and Wyatt, 1990; Loderer and Peyer, 2002).

In addition, busy boards can obtain new management skills and strategies from other managers, and transmit them to the other firm (Booth and Deli, 1996; Carpenter and Westphal, 2001). More recent findings (e.g., Cohen et al., 2008; Bizjak et al., 2009; Stuart and Yim, 2010) argue that several types of managerial behaviors, such as investment choices, mergers and acquisitions, IPO, and tax policy, spread through the social networks and multiple directorships. According to Bouwman (2011), the directors' influence on firm decision-making is a "familiarity effect" (page 2358) that generates an "influence effect" (page 2391). These studies have shown that board members have several roles in the board meeting room and they carry some information through their social networks, regardless of their perception and whether they have good or bad information quality.

Responding to the 1997 financial crisis, the Korean government introduced a series of regulations to reform Korean firms because it believed weak corporate governance to be one of the main factors that caused the Korean financial crisis. 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 have to appoint outside directors as at least half of the total board members. Several studies reveal that the Korean government's new regulations after the financial crisis have a positive impact on corporate governance. Black et al. (2006a, 2006b) use Korean firm data and report that there is a strong connection between share price and board with 50% outside board of directors. They also find that better-governed firms have a lower cost of capital. Joh (2003) and Bae et al. (2002) show there is a Korean discount because *chaebol*, Korean conglomerates, have lower profitability and *chaebol's* controlling shareholders enjoy excessive private benefits from control. Baek et al. (2004) report that firms with greater external ownerships experienced smaller share price

reductions during the financial crisis. Therefore, corporate governance in a Korean firm is an important driver in protecting its ordinary shareholders' rights and improving its financial transparency.

Dunn (1987) and Vance (1983) suggest that outside directors are arguably in a better position to monitor and control managers and bring a greater breadth of experience to the firm. Furthermore, a number of studies show a positive correlation between the number of outside directors on a board and increased shareholder wealth (Byrd and Hickman, 1992; Subrahmanyam et al., 1997; Rosenstein and Wyatt, 1990). Consequently, if the presence of active outside directors enhances the monitoring of managerial decisions, such presence should also be associated with higher firm performance. Managers have discretion in making decisions, but they may hesitate to engage in opportunistic decision-making when outside directors stand against their proposals. Therefore, considering outside director dissension as proxy for director's activism, we hypothesize that the presence of such dissension relates to better firm performance:

***Hypothesis 1.** Firms incurring outside directors' dissension are more likely to have higher performance.*

We define *Dissension* as the action of outside directors who disagree with a proposal, withdraw or hold their vote, or present additional opinions such as agreeing with condition or agreeing after change, rather than just voting to agree with managers' proposals during board meetings. However, it could be the case that the relation between dissension and firm performance depends on the level of dissension. Thus, we consider two layers of outside directors' internal activism. We categorize a firm to have *Strong Dissension* when the firm incurs outside directors' strong oppositions such as disagreeing, withdrawing, or holding in their voting, and a firm to have *Mild Dissension* when the firm has outside directors who agree with conditions or agree after changes.

It is difficult for outside directors to express explicit opposition. This is due not only to the involvement of the CEO and top managers in outside directors' appointments, but also to relationships encountered among top managers and outside directors.³ However, once top managers face strong dissension, not just additional opinions, from outside directors, they are more likely to change their behaviors. Therefore, we make the following hypothesis:

***Hypothesis 2.** Firms incurring outside directors' strong dissension are more likely to have higher performance.*

A potential concern is that a higher increase in firm performance from the less profitable firms may dominate and influence the overall empirical results. Whether less profitable firms incurred dissensions or not, these firms would more likely try to improve their performance in the subsequent year. Thus, outside directors' dissension in more profitable firms may relate to firm performance differently:

***Hypothesis 3.** Outside directors' dissension in firms having higher profitability has a positive marginal effect on firm performance.*

We directly observe the real activities of outside directors in corporate monitoring, thus avoiding the issue of potential endogeneity of board structure to other firm characteristics, such as the firm performance. However, we cannot ignore that firms having outside directors as majority in the board may feel more comfortable to express opposition and additional opinions, which may drive the positive relationship between dissension and firm performance. This is because most larger firms not only are required to have a majority of outside members in their boards of directors, but also have a larger potential improvement in firm performance because of their market power.

Therefore, we make an additional hypothesis as follows:

³ Although the SEC 54-5, 191-160 states that outside directors may not have a special relationship with the largest shareholder or an "important business relationship" with a competitor company, it is common for outside directors and top managers to have social ties (see Hwang and Kim, 2009).

Hypothesis 4. Outside board of directors' dissension in firms having outside directors as a minority board has a positive marginal effect on firm performance.

3. Data and methodology

3.1. Data and sample

We hand-collected data representing Korean public firms' outside board of directors' voting activities during the period FY2010 through FY2014 from the Data Analysis, Retrieval and Transfer System (DART).⁴ In addition to the Korean Securities and Exchange Act, Article 54-4, that requires larger Korean public firms to appoint outside directors as a majority in the boards, the Korean Commercial Act, Article 542-4(3), and its enforcement, Article 31(4), mandate firms to disclose the attendance records and voting activities of outside directors to improve overall corporate governance. Thus, managers have to consider the market reactions when the voting items and results are delivered to the public. Outside directors also have some pressure to show their sound decision-making and monitoring activities to the market. While these new regulations were introduced partially in 2001, they were mandated in 2009, and we can observe the most comprehensive data from FY2010, the beginning of our sample. The dataset has information not only on the dissension of each outside director, but also the level 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 condition*, *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 stimulate more dissension.

⁴ DART (<http://englishdart.fss.or.kr/about/engAbout1.do>) is an electronic system that allows companies to file disclosures online and a repository of these company filings, provided by the South Korean Government and made available to investors and other users.

Using this dataset, this study is free from the strong assumption of the difference in interests between agents and principals and arbitrary definitions of board independence.

We obtained accounting and financial data from Compustat Global. For 2010, the World Bank reports a total number of 1,781 of Korean public firms while Compustat Global provides only 874 firms; between FY2010 and FY2014 there are 1,579 firms. We exclude financial institutions because they are highly regulated by the government, so their outside boards of directors may have less room to actively monitor managers than those of other firms. In addition, some firms have missing or no information of directors' voting activities in the given period, so we also exclude firm-year observations with partial information. All accounting and financial variables are winsorized at the extreme one percentiles to mitigate the potential effects of outliers. The final sample includes 2,680 firm-year observations from 780 unique firms observed during the period FY2010 to FY2014.

In this sample, a total of 81 dissensions are observed, including 64 strong dissensions and 27 mild dissensions; among the 81 firms, most firms have either one of *Strong Dissension* or *Mild Dissension* and only 10 firms have both *Strong Dissension* and *Mild Dissension* in the same fiscal year. The largest case of dissensions, 34.2%, is over investment decisions, such as mergers and acquisitions, launching new business, expanding overseas operations, or increasing stake holdings of affiliated firms. The second most frequent occurrence of dissensions, 18.0%, is 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 incurring dissensions, 11.1%. In addition to these three most frequent items that spark dissensions, appointment of directors, annual shareholders' meetings, general business planning, and legal disputes also stir up disagreements (see Appendix A). However, only 16 firms

encountered consecutive outside directors' activism over more than two fiscal years (see Appendix B). Thus, consecutive dissensions appear not to be typical, implying that either managers avoid to present consecutive proposals that outside directors may object to or outside directors avoid to make consecutive dissensions.

3.2. Methodology

To study the relation between outside board of directors' dissension and firm performance, we estimate the following baseline model:

$$\begin{aligned}
 \text{Firm Performance}_{it} = & \beta_0 + \beta_1 \cdot \text{Outside Director Dissension}_{it} + \beta_2 \cdot \text{Attributes}_{i(t-1)} \\
 & + \beta_3 \cdot \text{Governance}_{it} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

In Eq. (1), for each firm i in year t , Firm Performance represents *Tobin's Q* or *Market-to-Book ratio*. Outside Director Dissension is *Dissension*, *Strong Dissension*, and/or *Mild Dissension*, shown with a binary variable representing outside directors' monitoring activity. Attributes are variables commonly used to control for firm attributes in studies investigating the relation between board of directors and firm performance (e.g., Yermack, 1996; Black et al., 2015). Governance represents variables to control for overall governance level such as the board size and the ratio of outside directors. In addition, we control for year and industry fixed effects. All variables are defined in Table 1.

4. Empirical results

4.1. Univariate tests

Results from univariate tests of mean differences between firms incurring dissensions and firms not incurring dissensions are presented in Table 2; the sub-samples are unequally

distributed by presence of directors' dissension. There are 81 cases of general dissensions of outside directors among 2,680 observations, which are very rare. This finding is not surprising because many studies report that CEOs are involved in the appointment process of outside board of directors (Shivdasani and Yermack, 1999), and top managers and outsiders are not purely independent (Hwang and Kim, 2009). Although the vast majority of outside directors are not standing against the agendas proposed by managers, this very small number of directors who dissent makes it important in this study to test whether outside directors are active in corporate governance and encourage managers to convey better governance to owners. Both the Tobin's Q and Market-to-Book ratio of firms with dissension are greater than those of firms without dissension, respectively, and the differences between the two groups are statistically significant. Thus, we would like to test whether this difference is led by the presence of the dissension from outside directors. Firms with dissensions have also on average larger size, higher leverage, larger board size, and higher ratio of outside directors; firm size, leverage, board size, and outside director ratio differences are positive and statistically significant, respectively.

4.2. Multivariate tests

4.2.1. Baseline tests

Table 3 reports results from multiple OLS regressions using *Dissension*, *Strong Dissension*, and/or *Mild Dissension* as main independent variable(s). The dependent variable is firm performance represented with *Tobin's Q* in Models (1) to (4) and *Market-to-Book ratio* in Models (5) to (8). Models (1) and (5) report the results from regressions of firm performance on *Dissension* with control for firm attributes and governance variables. All regressions include year and industry fixed effects and standard errors are robust to heteroskedasticity. *Dissension* has a

positive and statistically significant association with *Tobin's Q* and *Market-to-Book ratio*.⁵ *Board Size* and *Outside Director Ratio* have a positive and significant relation with firm performance, which is consistent with supporting evidence from all related previous studies. Firm performance is inversely related with firm size and past profitability in this regression, which is also consistent with prior studies using Korean data (Black et al., 2006a, 2006b). These results support our first hypothesis that firm having an outside board of director's dissension is more likely to have higher performance. This is supportive evidence that outside board of directors can mitigate manager's incentive to increase private benefits rather than principals' wealth.

Models (2) and (6) show the results from OLS regressions of firm performance on strong dissension by outside board of directors. *Strong Dissension* is significantly and positively associated with firm performance at the 1% significance level. This result is expected because 80% of outside directors' dissensions in the sample are strong dissensions by definition. In order to test the marginal effect of non-strong dissensions such as of agreement with condition or/and agreement after changes, we run Models (3) and (7) with *Mild Dissension* as main independent variable. Unlike from the previous two analyses, *Mild Dissension* does not have any statistical significance at all, although the relations of all other control variables on firm performance are consistent. In Models (4) and (8), we include both types of dissensions, *Strong Dissension* and *Mild Dissension* in order to confirm the positive and significant relation of *Strong Dissension* with *Firm Value* while controlling for *Mild Dissension*.⁶ The findings are consistent and support our second hypothesis, implying that only strong dissension from outside directors has a

⁵ Clustering the standard errors at the firm level also lead to a positive and statistically significant relation between dissension and firm performance.

⁶ Although *Strong Dissension* and *Mild Dissension* are correlated, their Pearson's correlation coefficient is relatively low at 0.229. Thus, we include them in the same regression.

statistically significant and positive relation with firm performance. All other variables have similar coefficients and statistical significances as in all previous results.

Overall, outside board of directors can mitigate managers' opportunistic behaviors with monitoring and advising activities. However, outside board of directors' gentle monitoring activity appears not to be enough to mitigate managers' opportunistic incentives because only strong dissension is positively associated with firm performance. This result is novel evidence that categorizes and shows another layer of dissension and its impact on both our measures of firm performance. Therefore, in our further investigations, we focus only on *Strong Dissension* and its relationship with *Tobin's Q*.

4.2.2. Robustness tests

Table 4 reports the results from sub-sample analyses as robustness tests. Prior empirical studies show that outside board of directors' dissension is a function of firm characteristics (Jiang et al., 2016; Ma and Khanna, 2015). Thus, we address the concern that firms having specific characteristics may drive the main result that outside board of directors' dissension is related to firm performance. To do so, we generate two sub-samples based on firm profitability measured by ROA and two sub-samples based on board composition. Firms that are less profitable may have higher propensity of dissension and could change their profit momentum dramatically in the subsequent year. These firms might change their performance a lot and distort the main result in this study. Firms having a board of directors dominated by outsiders could have more dissensions and their performance changes may be larger, because in general, larger firms have more outside board of directors and larger market power.

Models (1) and (2) of Table 4 show the OLS regressions results for the group of firms with above-median annual ROA and the group of firms with below-median annual ROA, respectively. Models (3) and (4) show OLS regression results for the group of firms having outside board of directors as a majority of board members and the group of firms having outside board of directors as minority board members, respectively. Across all models, *Strong Dissension* has a positive and statistically significant coefficient. The results from Models (1) and (2) imply that the concern we brought up that less profitable firms might dominate the main result of this study is not valid. Similarly, the results from Models (3) and (4) confirm that it is not possible to argue that only a firm having outside board of directors as a majority member has more chance to have better firm performance.

As another robustness test, we analyze the relation between dissension and firm performance after matching the firms using Propensity Score Matching. This approach addresses whether firms having specific characteristics have more chance to receive outside directors' dissension that leads to higher firm performance. We consider two groups of firms by dissension occurrence and generate a sample of matched firms considering firm characteristics including firm size, profitability, and capital structure. As shown in Table 5, most firm characteristics and governance characteristics are different between the group having dissensions (i.e., treatment group) and the group not having dissensions (i.e., control group) before the matching; firm size, leverage, board size, and the ratio of outside board of directors are statistically different. In contrast, for the sample of matched firms, there is no statistical difference in the characteristics between the treatment group and the control group. Results from OLS regression show that the marginal effect of outside board of directors' dissension is still positive and statistically significant on Tobin's Q. This latter result confirms that the main findings of this study are

consistent, and conclude that outside board of directors' dissension has a positive marginal effect on firm performance.

5. Summary and discussion

This study 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. However, there is a weakness in the rationale that outside board of directors would monitor managers well. This rationale is based on the assumption that independent boards of directors are likely to have different interests from managers. Thus, the empirical results from these prior studies rely on both making such an assumption and a particular definition of board independence. As pointed in previous studies, the definition of independence is truly arbitrary and possibly changes empirical results (Hwang and Kim, 2009). These two major weaknesses of previous empirical studies are basically due to a lack or restricted access to directors' real activity information. In general, directors' activities in the board meeting room are not public. Furthermore, it is impossible in practice to measure individual directors' interests or utility, and categorize them into groups of "independent" and "not independent." To the best of our knowledge, only a few countries (e.g., Korea and China) make boards of directors' real activities public. We hand-collected board-meeting data from Korean public firms between FY2010 and FY2014 to use in this study. By doing so, we can avoid these two major challenges encountered in corporate governance empirical studies.

This study provides evidence that outside directors play a monitoring role using their votes; results from the main and robustness regressions reveal that outside directors' dissension is associated with higher firm performance. Not only do this study find supportive evidence of the outside directors' monitoring role without assuming that they have conflicting interests with managers, they are independent, or they are expert in finance or accounting, but results in this study also show the effectiveness of the monitoring activities. This study compares and contrasts the aggressiveness of monitoring activities of outside board of directors, strong dissension vs. mild dissension. We report that dissension is a very rare event and strong dissension tends to have a meaningful positive impact on firm performance, implying that it is difficult for an outside director to vote against proposals and suggesting that only strong dissension can mitigate agency problems. Our empirical finding supports why firms should have outside directors on the board, which is consistent with the recent policy makers' directions.

We contribute to the financial management literature that discusses agency issues and corporate governance and open up for future research. All the empirical results point out that outside board of directors' monitoring activity plays an important role in corporate governance, which is consistent with prior theoretical and empirical studies. We show that it is possible to provide such evidence without the previously mentioned strong assumption and arbitrary definitions of independence because the sample represents real voting activities of outside board of directors toward managers' proposals. Another value of this sample is that it provides a spectrum of outside board of directors' voting activities ranging from clear approval to clear disapproval with a six-level scale of *Agree*, *Agree with condition*, *Agree after change*, *Hold*, *Withdraw*, or *Disagree* on each item proposed by managerial directors on every agenda. Using outside directors' dissension, a new opinion-based proxy for outside board of directors'

monitoring activity, is an important approach for corporate governance empirical studies in two respects. First, it allows to show the effect of outside board of directors' decision-making on each agenda, which is not possible using the traditional binary variables representing directors' characteristics, such as financial or/and accounting expertise, education, work experience, and/or social activities. Second, this proxy contains dynamic changes; individual directors can cast a dissenting vote on a specific agenda in a specific period. However, directors might not make the same decision on a similar agenda in a different period; under the traditional binary variables, it is not possible to account for such real changes. We consider these two features of the new opinion-based proxy as valuable for future research when more years of data will be available.

Appendix A

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

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 HYSKO 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

(continued on next page)

Firm Name	Year of Dissension	Number of Dissensions
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

(continued on next page)

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

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Table 1

Definition of variables

<i>Panel A. Dissension variables</i>	<i>Definition</i>
<i>Dissension</i>	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, hold in outside directors' vote, or one of additional opinions, such as agreement with condition or agreement after changes, rather than just agree.
<i>Strong Dissension</i>	A binary variable equal to one if the firm has a strong dissension from outside director(s), and zero otherwise. Strong dissension indicates one of disagree, withdraw, or hold in outside directors' vote.
<i>Mild Dissension</i>	A binary variable equal to one if the firm has a mild dissension from outside director(s), and zero otherwise. Mild dissension indicates one of agreement with condition or agreement after changes, but not opposition.
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<i>Panel B. Firm performance</i>	<i>Definition</i>
<i>Tobin's Q</i>	Market value of common stock and book value of preferred stock and debt, divided by book value of assets
<i>Market-to-Book ratio</i>	Market value of equity divided by book value of equity
<hr/>	
<i>Panel C. Control variables</i>	<i>Definition</i>
<i>Size</i>	Natural logarithm of the book value of total assets
<i>ROA</i>	Net income divided by total assets
<i>Leverage</i>	Debt in current liabilities plus long-term debt, divided by total assets
<i>Board Size</i>	The number of all board directors
<i>Outside Director Ratio</i>	Number of outsiders divided by the number of directors

Table 2

Univariate tests

	<i>With Dissension</i>	<i>No Dissension</i>	<i>Differences (With - No)</i>	<i>t-statistics</i>
<i>Observations</i>	81	2,599		
<i>Tobin Q</i>	2.478	2.268	0.210*	1.476
<i>Market to Book</i>	1.478	1.243	0.235**	1.663
<i>Size = ln(Total Assets)</i>	14.883	12.845	2.038***	9.619
<i>ROA</i>	0.019	0.013	0.006	0.792
<i>Leverage</i>	0.302	0.255	0.047**	2.279
<i>Board Size</i>	7.852	5.697	2.155***	7.433
<i>Outside Director Ratio</i>	0.515	0.370	0.145***	8.599

Table 2 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 1. The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3

Outside director dissension and firm performance

Dependent variable:	Tobin's Q				Market-to-Book ratio			
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Dissension</i>	0.476*** (0.132)				0.473*** (0.131)			
<i>Strong Dissension</i>		0.530*** (0.152)		0.524*** (0.159)		0.536*** (0.151)		0.533*** (0.156)
<i>Mild Dissension</i>			0.197 (0.129)	0.051 (0.141)			0.173 (0.127)	0.025 (0.139)
<i>Size_{t-1}</i>	-0.226*** (0.029)	-0.224*** (0.029)	-0.221*** (0.030)	-0.224*** (0.029)	-0.200*** (0.024)	-0.198*** (0.025)	-0.195*** (0.025)	-0.198*** (0.025)
<i>ROA_{t-1}</i>	-0.779* (0.466)	-0.776* (0.466)	-0.799* (0.467)	-0.776* (0.466)	-0.690 (0.424)	-0.687 (0.425)	-0.710* (0.425)	-0.687 (0.425)
<i>Leverage_{t-1}</i>	0.358* (0.208)	0.364** (0.208)	0.371* (0.208)	0.363* (0.208)	0.365* (0.187)	0.371** (0.187)	0.378** (0.187)	0.370** (0.187)
<i>Board Size</i>	0.555*** (0.114)	0.558*** (0.114)	0.564*** (0.114)	0.558*** (0.114)	0.499*** (0.098)	0.502*** (0.098)	0.509*** (0.098)	0.502*** (0.098)
<i>Outside Director Ratio</i>	0.480 (0.292)	0.488* (0.292)	0.500* (0.293)	0.486* (0.292)	0.436* (0.262)	0.445* (0.262)	0.457* (0.263)	0.444* (0.262)
<i>Constant</i>	3.904*** (0.310)	3.861*** (0.306)	3.813*** (0.309)	3.867*** (0.310)	2.651*** (0.265)	2.609*** (0.262)	2.557*** (0.264)	2.612*** (0.246)
<i>Year/Industry FE</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Number of Observations</i>	2,680	2,680	2,680	2,680	2,680	2,680	2,680	2,680
<i>Adj. R-Squared (%)</i>	9.43	9.44	9.18	9.41	11.01	11.03	10.69	11.00

Table 3 reports OLS results showing the relation between firm performance and outside director dissension. Firm performance is *Tobin's Q* for Models (1) to (4) and *Market-to-Book ratio* for Models (5) to (8). Outside director dissension is *Dissension*, *Strong Dissension*, or *Mild Dissension*. Detailed definitions of all variables are in Table 1. 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 4

Sub-sample analyses

Dependent variable:	Tobin's Q			
Model:	(1)	(2)	(3)	(4)
	Profitability		Outside Director	
	High	Low	Majority	Non-Majority
<i>Strong Dissension</i>	0.707*** (0.223)	0.485** (0.227)	0.382** (0.183)	0.757** (0.304)
<i>Mild Dissension</i>	-0.057 (0.244)	0.191 (0.187)	-0.001 (0.146)	0.863*** (0.271)
<i>Size_{t-1}</i>	-0.092*** (0.033)	-0.328*** (0.047)	-0.146*** (0.036)	-0.323*** (0.047)
<i>ROA_{t-1}</i>	1.969** (0.899)	-2.000*** (0.626)	0.812 (0.864)	-1.103** (0.541)
<i>Leverage_{t-1}</i>	0.681** (0.273)	0.670** (0.313)	0.564* (0.381)	0.481** (0.242)
<i>Board Size</i>	0.474*** (0.118)	0.518*** (0.178)	-0.124 (0.200)	0.699*** (0.135)
<i>Outside Director Ratio</i>	0.043 (0.352)	0.827* (0.458)	1.134 (1.162)	-0.421 (0.574)
<i>Intercept</i>	2.458*** (0.398)	4.801*** (0.479)	3.657*** (0.740)	5.110*** (0.560)
<i>Year/Industry FE</i>	Yes	Yes	Yes	Yes
<i>Number of Observations</i>	1,338	1,342	685	1,995
<i>Adj. R-Squared (%)</i>	10.28	13.06	11.79	11.13

Table 4 reports OLS results showing the relation between *Strong Dissension* and *Firm Performance* for a group of firms having higher profitability and a group of firms having lower profitability in Models (1) and (2), and for a group of firms where outside directors are majority and a group of firms where outside directors are minority in Models (3) and (4). The dependent variable is Tobin's Q. Detailed definitions of all variables are in Table 1. 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

Propensity Score Matching

	Before Matching			After Matching ^a			OLS
	Treatment ^b	Control	Differences	Treatment ^b	Control	Differences	
<i>Strong Dissension</i>							0.372* (0.201)
<i>Mild Dissension</i>							0.132 (0.300)
<i>Size_{t-1}</i>	14.398	12.872	1.526***	14.398	14.417	-0.019	-0.156 (0.100)
<i>ROA_{t-1}</i>	0.016	0.013	0.003	0.016	0.019	-0.003	-0.089 (3.160)
<i>Leverage_{t-1}</i>	0.292	0.256	0.037**	0.292	0.306	-0.014	-0.921 (0.909)
<i>Board Size</i>	7.393	5.724	1.669***	7.393	6.984	-0.410	-0.091 (0.469)
<i>Outside Director Ratio</i>	0.487	0.372	0.115***	0.487	0.463	0.024	0.078 (1.336)
<i>Constant</i>							5.114*** (1.177)
<i>Year/Industry FE</i>							Yes
<i>Number of Observations</i>	61	2,619		61	61		122
<i>Adj. R-Squared (%)</i>							39.70

Table 5 reports propensity score matching analyses of the effect of *Strong Dissension* on *Firm Performance*. The dependent variable of the OLS regression is Tobin's Q. Detailed definitions of all variables are in Table 1. 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: *Strong Dissension*.