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Audit committees, corporate governance, and shareholder wealth: Evidence from Korea



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A B S T R A C T

This paper examines the effect of audit committee appointments on shareholder wealth in Korea after the Asian financial crisis. We find that stock prices generally increase with audit committee appointments. In contrast, chaebol (business group) affiliates and firms switching audit committee membership are associated with significantly lower stock returns, probably due to the management's opportunistic behavior. However, the independence and financial literacy of the audit committee members appear to mitigate the opportunistic behavior. Therefore, our result confirms that the characteristics of the audit committee strengthen or weaken the existing corporate governance. We discuss the implications of our results obtained under Korea's unique corporate governance structure.

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1. Introduction

Following the Asian financial crisis, many emerging economies have attempted to improve corporate governance to protect shareholder wealth, since poor governance has been regarded as one of the main reasons for the massive decline in shareholder value during the crisis (Johnson et al., 2000; Mitton, 2002; Lemmon and Lins, 2003; Baek et al., 2004; Nam and Nam, 2004). Many Asian governments have made efforts to reform their corporate governance by introducing a number of governance devices from developed economies. The audit committee is one of these key governance devices.

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Around the time when the Sarbanes–Oxley Act (SOX hereafter) was introduced in the U.S. to help strengthen the role of the audit committee system among others, a number of emerging countries suffering from the financial crisis (e.g., Singapore, Thailand, Malaysia, Hong Kong, and Korea) also mandated the audit committee system to help protect shareholders' wealth.

This paper investigates the effect of audit committee characteristics in Korea by examining the announcement effect of audit committee member appointments on shareholder wealth. Specifically, we study how the market reacts to important characteristics of appointed members. We examine the effect of financial expertise and member switches in particular because existing literature recognizes the importance of financial/accounting expertise of audit committee members (e.g., Davidson et al., 2004; Defond et al., 2005; Coates et al., 2007). Also, there is evidence that changes of auditors have a significant negative market impact (e.g., Fried and Schiff, 1981; Klock, 1994; Knechel et al., 2007). More importantly, we examine whether the impact of these individual characteristics of audit committee members on shareholder wealth depends on the existing governance structures such as membership of business group (e.g., chaebol affiliations), characterized by strong management control, and independence of the audit committees (e.g., Xie et al., 2003; Pomeroy and Thornton, 2008).

An effective audit committee system in the U.S. may not be as effective in an emerging market because of its unique characteristics of the audit committee, corporate governance and legal environment. Nevertheless, few studies examine the effect of the audit committee characteristics in emerging markets after their extensive mandated regulatory reforms. Our study explores unique characteristics of Korean audit committees and corporate structure – business group (known as chaebol). First, Kim (2007) emphasizes that the role of Korean audit committees is more comprehensive than that of the U.S. counterparts. Korean audit committees are expected to perform *operational* audits as well as *financial/accounting* audits, for example. Therefore, we can examine whether the documented importance of financial expertise extends to the case in which the function of audit committees is more comprehensive than *financial/accounting* audits. Second, it is believed that these regulatory changes of Securities and Exchange Act (SEA hereafter) may have targeted large industrial groups (i.e., chaebols) prominent in Korea. Given the strong control by management in chaebols, it is interesting to examine whether the market response to member appointments is dependent upon firms' chaebol affiliations.¹ The two results above observed in Korea provide important implications for the relation between the characteristics of audit committee members and firms' governance structures.

Overall, our results suggest that the corporate governance reform regarding audit committees in Korea appears to be effective in general.² More specifically, we find significantly positive cumulative abnormal returns (CARs) around 182 audit committee appointment announcements in Korea. Therefore, we conclude that the choice of audit committee members on average is expected to improve shareholder wealth. We show that chaebol-affiliated firms are associated with significantly lower abnormal announcement stock returns than non-chaebol firms. This suggests that the market does not value the appointment of audit committee members in chaebol firms as much as in non-chaebol ones. More importantly, we find that chaebol affiliation (relative to non-chaebol) is associated with negative market responses only when the audit committee is not independent. That is, when the audit committee is independent, the announcement effect is about the same for both chaebol and non-chaebol firms. The implication is that the market perceives independent audit committees to be equally effective regardless of chaebol affiliation.

We also find that announcement stock returns are significantly higher for the appointment of financially literate members when the company has an independent audit committee. This finding is consistent with Defond et al. (2005), who argue that firms with better governance have more positive stock price reactions to the appointment of financial experts. An interesting observation is that the impact of financial literacy in Korea is quite apparent even though 'financial literacy' is defined very broadly in our sample. This is likely due to the distinct nature of Korean audit committees in performing *operational* audits as well as *accounting* audits, which will be discussed in more detail. Furthermore,

¹ For the costs and benefits of Korean chaebols, refer to Ferris et al. (2003). Other relevant references for chaebols are Joh (2003), Lee et al. (2009), and Baek et al. (2004, 2006). For corporate governance in Asian-Pacific countries, refer to Friedman et al. (2003) and Lemmon and Lins (2003).

² This view is consistent with Choi et al. (2007) who document the positive effects of board independence on firm performance in Korea after the crisis. They show that firm performance measured by Tobin's Q and family holdings are negatively related.

financial literacy appears to be more effective in diversified firms and in firms with mandatorily established audit committees.

Regarding member switches, we find that firms adopting committee member changes experience significantly lower stock returns at the time of the appointment announcement than firms that extend the term of office of their existing members. We argue that switching audit committee members can be interpreted as the opportunistic behavior of management in 'opinion shopping'.³ Interestingly, the independence of the audit committee appears to mitigate the negative effect of these factors such as chaebol affiliation and member switching.

This research contributes to the literature in several ways. First, this study contributes to the existing literature on the role of audit committees not only by exploring unique aspects of the Korean audit committee and corporate structures but also by providing implications for a broader setting. That is, characteristics of audit committees (e.g., financial literacy and member switching) may interact with an existing governance mechanism (e.g., independence of the committee and chaebol structure) to strengthen or weaken the overall governance.

The second contribution relates to broad data issues on potential endogeneity and sample selection in estimating the impact of governance (e.g., audit committees) on firm value.⁴ Endogeneity issues may arise when past firm performance determines the adoption and nature of audit committees. This potential problem is alleviated for two reasons in our approach. The first reason is that audit committees in Korea have been established for large firms as a regulatory requirement such that the adoption of the audit committee system in our sample is exogenous (refer to Black et al., 2006). The second reason is that we assess how the stock price responds to the announcement of the appointments of audit committee members. That is, we evaluate how the exogenous changes in the nature of the audit committee affect shareholder wealth.

Third, our data on chaebol affiliation provide a promising research venue regarding the role of corporate governance mechanism for firms under strong owner-manager's control (e.g., in chaebol) in comparison with that for firms under weak control of the owner-manager (e.g. non-chaebol firm). We show that the impact of certain characteristics of audit committees as effective monitoring devices depends on chaebol affiliation. Importantly, this result provides policy implications for corporate governance mechanism not only for chaebol firms but also for firms under strong owner-managers' control.

Finally, as mentioned earlier, Kim (2007) emphasizes that the role of audit committees in Korea is more extensive than that of the counterpart in the U.S., including *operational* audits as well as *accounting* audits. We believe that our paper is the first to examine the impact of financial literacy and its implication for *operational* audits in Korea. Our result implies that audit committee members' experience in general business operation, not necessarily in accounting or finance specifically, may help strengthen the monitoring function of the Korean audit committee.

The paper proceeds as follows. Section 2 provides a literature review on audit committees as part of corporate governance and the regulatory changes in corporate governance in Korea, deriving our hypotheses. Section 3 presents our sample and details descriptive statistics. Section 4 presents our basic empirical results, while Section 5 provides a detailed analysis of independence and financial literacy of audit committees and robustness checks for our models. Section 6 concludes.

2. Literature review and hypotheses: regulations and audit committees

2.1. Audit committees and chaebols in Korea

The Korean government introduced its audit committee system with the Commercial Law revision in 1999. The revision requires firms listed on the Korea Stock Exchange (KSE hereafter) to set up an

³ Klock (1994) argues that if the stock market treats the switching of the certifying accountant as the opportunistic behavior of management, there should be a negative share price reaction to the appointment.

⁴ When one examines firm performance as a function of the board (or audit committee) composition, we may face the potential endogeneity problem because firm performance may affect the board composition. Refer to Hermalin and Weisbach (2003) and Bhagat and Black (2002) for the general discussion of the endogeneity issues and Choi et al. (2007) and Klein (1998) for the specific econometric treatment of the issue.

Table 1

Governance reforms in Korea.

Year.Month	Regulation	Regulatory change
<i>Panel A. Introduction of audit committee by governance reforms in Korea</i>		
1999.12	Commercial Law	Introduced the audit committee system by law
2000.1	Securities and Exchange Act	Mandated audit committee to the firms with assets of two trillion or more KRW Mandated at least two-thirds of the audit committee members to be outside directors Enabled voluntary establishment of audit committee for the firms with assets less than two trillion KRW
<i>Panel B. Criteria for outside directors in Korean Commercial Law</i>		
1. One who is not hired by the firm as of now		
2. One who quit the firm more than two years ago		
3. One who is not related to the dominant owner, director, or auditor of the firm		
4. One who is not the director or auditor of the firm's mother (or child) firm		
5. One who is not the director or auditor of the partner (transacting) firm		
6. One who is not the director or auditor of the other firm where the firm's other director or auditor is in charge of the same position		

audit committee and further mandates the audit committee for firms with assets of two trillion or more Korean Won (KRW) by the SEA revision in 2000 as it is summarized in Panel A of Table 1.⁵ This regulation dramatically has changed certain dimensions of the corporate governance system in most firms. For example, audit committee requirements in Korea generally have resulted in an increase in the number of outside directors because the Act now requires the audit committee to consist of three or more directors, with at least two-thirds as outside directors. Outside directors are defined by Korean commercial law as directors who are not currently enrolled for a full-time position in the firm and have not violated the criteria presented in Panel B of Table 1.

Another distinctive feature of Korean audit committees is its emphasis on *operational* as well as *financial* audits (Kim, 2007). The objective of operational audits is to monitor almost all ranges of business operations by requesting business reports from directors and subsidiary firms, investigating operational and financial statuses of the firm and its subsidiary, attending board meetings, reviewing directors' proposals and documents, reporting directors' violations of law or articles of the company to the board, filing law suits against directors, auditing financial statements, and submitting audit reports.

Korean audit committee characteristics interact with the characteristics of the chaebol corporate system, which is arguably one of the most critical corporate structures in Korea. In the chaebol structure, the owner-manager yields substantial control over all affiliates through reciprocal shareholding and debt agreement among affiliates (Chang and Hong, 2000). Korean chaebols, as large diversified conglomerates, are believed to have been instrumental in contributing to strong economic growth in Korea (Yoo and Lee, 1987), especially in the early two decades since the Second World War (also see Chang and Chang, 1994).⁶ There are a few main characteristics of chaebol firms worth mentioning. First, they are well-diversified in many different industries.⁷ Similar to U.S. conglomerates, they allocate internal funds among individual member firms within the group. Second, chaebol insiders exert dominant control over member firms through cross-shareholding structure. This unique structure cuts

⁵ Since 1999, it is required for all public firms that at least 25% of the board be composed of outside directors. Refer to Choi et al. (2007) for further details on the regulatory changes regarding outside directors.

⁶ Although there are similarities between Japanese business groups, known as keiretsu, and Korean chaebols, there are important differences too (Ferris et al., 2003). Korean chaebols exercise more centralized monitoring and control than keiretsu. In addition, while Japanese keiretsu system is built around a main bank, chaebols are not. Thus, by using Korean chaebol data we can examine the corporate governance issue without the effect of a main bank. Recently, the business press and private shareholder activist groups in Korea demand a major restructuring among chaebol firms to address these governance issues (see Campbell and Keys, 2002).

⁷ According to the Financial Times, the Korean government attempts to protect small and mid-sized enterprises (i.e., SMEs) from chaebols by restricting them from operating in traditional industries such as tofu and red-pepper paste businesses. Chaebol groups such as Samsung, Hyundai, SK, and LG are criticized for dominating over SMEs that account for 90% of jobs in the country (see Oliver, 2011).

both ways in terms of the benefits and costs. On the one hand, it allows the insiders to expropriate minority shareholders by maximizing the management's self-interest (for example, see [Bae et al., 2002](#); [Baek et al., 2004, 2006](#)). [Bae et al. \(2002\)](#) find evidence of tunneling with acquisition announcements by Korean chaebols, while [Baek et al. \(2006\)](#) confirm similar evidence using private securities offering samples. [Joh \(2003\)](#) also suggests that when a chaebol undertook internal resource transactions in the pre-crisis period, resources were often wasted. Moreover, [Baek et al. \(2004\)](#) show that chaebol firms' stock prices significantly decreased more than other firms during the crisis. Recently, the business press and private shareholder activist groups in Korea have demanded a major restructuring among chaebol firms to address these governance issues (see [Campbell and Keys, 2002](#)).

On the other hand, chaebol firms may benefit from efficient internal capital allocation and risk reduction through diversification ([Stein, 1997](#)). [Friedman et al. \(2003\)](#) also find that the controlling shareholder utilizes propping in emerging markets especially during financial crises. [Bae et al. \(2008\)](#) show evidence of propping in Korea using earnings announcements. [Kalinowski \(2009\)](#) recently provides evidence that many new regulations and the social activist movement against chaebol firms after the financial crisis in 1997 may have strengthened the governance structure of chaebols, at least during our sample period.⁸ [Ferris et al. \(2003\)](#) recognize the benefits and costs of Korean chaebols. The benefits accrue due to greater debt capacity and lower tax burdens, while the costs arise due to profit stability, over-investment, and cross-subsidization among members. They conclude that the costs exceed the benefits.

The new audit committee system adopted in Korea can improve shareholder wealth by enhancing the benefits or reducing the costs of the chaebol structure we discussed above. At the same time, the audit committee may unnecessarily restrict chaebol's or non-chaebol's governance mechanism, which may decrease shareholder wealth. It is important and interesting to assess the impact of the audit committee system on the benefits and costs of chaebol, separately. We discuss our empirical results for the implications for the benefits and costs of the audit committee system, if applicable. However, a full analysis of such impact is beyond the scope of our paper, since we employ the event study methodology which measures only the *net* impact of audit committee member appointments on the *net* benefit of chaebol, based on the market response to the appointment announcements.

2.2. Literature review and hypotheses

Audit committees as a governance device are widely studied following implementation of the SOX in the United States.⁹ These studies investigate the impact of the audit committee characteristics such as independence and financial literacy on shareholder wealth, firm performance, and financial reporting quality. As emphasized in the introduction, it is worthwhile to examine the same characteristics in the Korean case due to the exogenous nature of the audit committee system mandated by government, the different requirements for financial expertise and independence, and the unique corporate and governance structures – chaebols and non-chaebol structures.

2.2.1. Financial literacy and audit committee independence

The financial literacy of the audit committee recently becomes an important issue since SOX requires firms to include at least one member who has accounting or financial management expertise, while the NASDAQ, the New York Stock Exchange, and the American Stock Exchange requires all audit committee members to be financially literate. The rationale is that financial expertise of the audit committee is crucial in monitoring the quality of financial reporting ([SEC, 2003](#)). Recent literature supports this SOX requirement of financial expertise. For example, [Davidson et al. \(2004\)](#), [Defond](#)

⁸ [Kalinowski \(2009\)](#) argues that the crisis and subsequent pressure from the International Monetary Fund set the initial stage for the government's implementation of the reforms that had been opposed by chaebols and labor unions in the past. One of the main aims of these reforms was to curb the power of chaebols with both pressure and incentives. They became more transparent, focused and less indebted with weaker ties between subsidiaries within the same chaebol.

⁹ A few studies examine audit committees before the SOX ([Pincus et al., 1989](#); [Bradbury, 1990](#)). However, these primarily focus on the determinants of voluntary audit committee formation. For financial expertise requirements, refer to [Davidson et al. \(2004\)](#), [Defond et al. \(2005\)](#), [Coates et al. \(2007\)](#), and [Pomeroy and Thornton \(2008\)](#) for audit committee independence.

et al. (2005), and Coates et al. (2007) find that the financial literacy of audit committee members positively impacts shareholder wealth surrounding the appointment.

Korean regulation also requires that firms include at least one financial expert on their committees. However, the impact of financial expertise in the audit committee is not straightforward in Korea. On the one hand, Korean financial expertise in our sample is very broadly defined. For example, a degree in general business, economics, or a management experience in government and firms is regarded as 'financial literacy'.¹⁰ Furthermore, Defond et al. (2005) argue that *accounting*, rather than *non-accounting*, financial expertise is important in promoting the quality of financial reporting and thus enhancing shareholder wealth. Therefore, the impact of financial literacy in Korean audit committees may be weak in general, as compared to that in U.S. audit committees. On the other hand, one of the major functions of the audit committee in Korea, unlike that in U.S., is its focus on *operational* audits in addition to *financial* audits. Therefore, an accounting or finance-specific background may not be as important in Korea as in the U.S. because of the more general nature of the audit required of the committee in Korea. In sum, the market response to the announcement of new audit committee member appointments will be positive when the market expects financial literacy in the audit committee to help improve its effectiveness. Therefore, we test the following hypothesis regarding financial literacy in Korean audit committees.

Hypothesis 1. The market responds more positively to the appointment announcement when the newly-appointed audit committee member is financially literate than when the audit committee member is not.

Prior studies suggest that the independence of the audit committee is a key factor in its monitoring performance. Recently, Pomeroy and Thornton (2008) review 27 recent studies on audit committee independence and conclude that most studies consistently show that independence and performance (such as the quality of financial reporting) are positively related. Further, Bronson et al. (2009) reaffirm the importance of audit committee independence, supporting the SOX's requirement of fully independent audit committees. In the Korean market, Choi et al. (2007) find that board independence positively influences firm performance, using a sample of Korean Stock Exchange (KSE) firms. They suggest that board independence is a critical issue particularly in emerging markets, while it is less pronounced for developed countries with greater market liquidity and good corporate governance. Therefore, we test the following hypothesis.

Hypothesis 2. The market responds more positively to the announcement of audit committee member appointments when the audit committee is independent than when the audit committee is not.

2.2.2. Chaebols vs. non-chaebol firms

As mentioned before, the market recognizes that the controlling manager in chaebols can override an existing governance mechanism for his private benefit. The tunneling literature shows evidence of the self-interested behavior of the management and the controlling family owners. As a result, the market may be skeptical about chaebol's motivation regarding any change in governance environment (e.g., audit committee member change). It is conceivable that the owner-manager may attempt to prevent the audit committee from playing an effective monitoring role, for example, by appointing (or switching to) management-friendly directors (even outsiders) to the committee.

At the same time, the owner-manager also recognizes the importance of an effective governance structure among the affiliates for internal and external market purposes. Internally, the controlling owners face a tremendous task to monitor the large diversified affiliates in various industries, while they understand the external market values an effective governance mechanism in his business group.¹¹ Therefore, the owner-manager has an incentive to establish an effective governance mechanism

¹⁰ SEA defines former employees of government and Korean Financial Supervisory Service (FSS) with at least five years of experience in related activities as financial experts. Kim (2007) argues that this provision is problematic because such qualification does not guarantee the former government employees' expertise on the audit committee activities.

¹¹ Bae et al. (2008) report that the average number of affiliates is about 27 for the top thirty business groups, ranging from 13 (Kohap) to 62 (Hyundai) in 1998.

in affiliates. Indeed, we find in our sample that the number of independent audit committees (81% among chaebols) of chaebol groups is greater than that of non-chaebol firms (36% among non-chaebol firms). Of course, it is an empirical issue whether chaebols have more independent audit committees strategically or not. Thus, we test how the market reacts to the appointment of new audit committee members for chaebols compared with that of non-chaebol firms. Here, we focus on the first view that audit committee appointments are generally influenced by self-interested controlling managers in chaebols as most of the previous studies suggest. If the first view is not supported by the empirical evidence, then we consider the second view as a feasible one. The announcement effect will be greater for non-chaebols than for chaebols, if the first view is generally accepted by the market. Thus, we test the following hypothesis.

Hypothesis 3. The market responds more positively to the announcements of the appointment of audit committee members by non-chaebol firms than to those by chaebol firms.

2.2.3. Member switching

Management can also influence the audit committee by removing members who are deemed unfavorable to management. If an audit committee member works against management's private interests by fulfilling his duty as an effective monitor, management can simply replace the member and appoint a new committee member whose interests align better with its own. This replacement further jeopardizes the efficiency of the audit committee by posing a threat of dismissal to the remaining committee members.

Although we lack existing evidence relating to audit committee member switches, several studies report negative stock price returns surrounding changes in firms' auditors. For instance, [Fried and Schiff \(1981\)](#) find that there are negative market reactions around the switching of Certified Public Accounts. [Klock \(1994\)](#) also argues that the market in general seems to treat the switching of the certified accountant as an indication of the opportunistic behavior of management. Finally, [Knechel et al. \(2007\)](#) argue that changes in the type of auditor affect market returns and conclude that there is a negative return when a firm switches auditors out of a specialized Big-4 accounting firm. Compared to those of the U.S. firms, owner-managers of Korean firms, especially those of chaebol-affiliated firms, have more power through the pyramid ownership structure and execute voting rights exceeding their actual cash flow rights. Under such an environment, owner-managers of Korean firms may switch audit committee members more easily than those of U.S. firms to maximize their self-interested benefits. Therefore, we test the following hypothesis.

Hypothesis 4. The market responds negatively to the announcement of a switch in audit committee membership, while the market responds positively to the announcement of the retention or addition of audit committee members.

2.2.4. Interaction between audit committee member characteristics and governance

The effect of the audit committee's function on shareholder wealth is complex and depends on existing governance systems and corporate or market structure.¹² [Defond et al. \(2005\)](#) argue that the audit committee with financial expertise is more likely to be successful under strong governance. That is, financial expertise in audit committees may further strong governance to enhance shareholder wealth. Alternatively, financial expertise may strengthen weak governance. Therefore, we may observe favorable market response to financial expertise in the case of both strong and weak governance (e.g., independence).

[Defond et al. \(2005\)](#) observe a favorable market response only for firms with strong governance and conclude that financial expertise complements strong governance to enhance shareholder wealth. [Xie et al. \(2003\)](#) find that self-interested behavior such as earnings management is less likely when firms are comprised of more independent outside directors with financial expertise. Thus, we attempt to examine any interaction effect among different corporate governance structures and/or the

¹² [Vafeas and Waagelein \(2007\)](#) investigate how the characteristics of the audit committee, including its size, member expertise, and independence, affect the level of firms' audit fees, while [Turley and Zaman \(2004\)](#) survey the literature on identifying the effects of corporate governance on audit committees.

characteristics of the audit committee. First, we examine how the independence of the audit committee affects the impact of chaebol affiliation, financial literacy, and switching members on shareholder wealth. We expect that the audit committee's independence exerts positive influence on the impact of the three aforementioned aspects of governance variables – chaebol affiliation, financial literacy, and member switch – because independent committees provide a more effective monitoring role than dependent committees. Specifically, we examine the following hypotheses.

Hypothesis 5. The market responds less negatively to chaebol affiliation and switching membership when the audit committees are independent.

Hypothesis 6. The market responds more positively to financial literacy of committee members when the audit committees are independent.

Finally, we investigate the effect of financial literacy on the monitoring capability of the audit committee. This investigation is particularly interesting because of the *operational* audit function which is unique to audit committees in Korea. We can derive the hypothesis below only because we have Korean sample data. The monitoring power of Korean audit committees may be relatively weak in promoting the quality of financial reporting due to the limitation of independent financial auditing by Korean audit committees (Kim, 2007). Especially, in our sample, we define financial literacy broadly which does not require an accounting background. Still, the Korean audit committee may be effective in monitoring management's business operations as part of the committee's duties of *operational* audits. In fact, the market may expect the monitoring benefits to be greater when the business operations are more complex. Therefore, we expect that financial literacy becomes more important as a monitoring device when firms operate in a more complex organization (e.g., diversified chaebol firms) as summarized in the following hypothesis.

Hypothesis 7. The market responds more positively to financial literacy in Korea if business/organizations are more complex.

3. Sample selection and summary statistics

The Korean government introduced the audit committee system through the Commercial Law revision in 1999 after the Asian financial crisis and mandated the committee for firms with assets greater than or equal to two trillion KRW by the SEA revision in 2000. Refer to Table 1 for important times and events regarding audit committee requirements. Historically, the auditing system was not independent from the influence of management because most of the auditors were appointed by inside managers. Therefore, the Act has required the audit committee to consist of three or more directors, with at least two-thirds as outside directors. Outside directors are defined by Korean commercial law as directors who are not currently enrolled for a full-time position in the firm and have not violated the criteria presented in Panel B of Table 1.

Panel A of Table 2 describes the sample selection process. We collect announcement data on audit committee appointments for KSE-listed, non-financial firms from the Data Analysis, Retrieval, and Transfer (DART hereafter) system.¹³ The Korean Financial Supervisory Service (FSS hereafter) compiles the DART system, where all listed Korean firms are required to post their appointment announcements.¹⁴

¹³ The examination of the initial establishment is also interesting. However, we focus on the re-appointment announcement effect for a couple of reasons. First, timely information of the characteristics of audit committees and announcement dates of initial establishments of audit committees is not available. Second, we can examine the announcement effect of the SEA that includes requirements of audit committees for certain large firms (e.g., firms with more than two trillion Korean Won in total assets). We can identify only 64 firms that meet the size criteria. We find a strong positive market response with CARs $[-1, 1]$ at 2.4%. However, this only conveys the market's sentiment toward the government-announced reforms in general, regarding governance and disclosure, not necessarily for initial establishments of audit committees specifically.

¹⁴ Press release announcements of audit committee members are uncommon. Moreover, FSS requires that firms post their decisions immediately, which makes the DART announcement reliable enough for our event study. FSS charges a penalty for the firms that do not post their announcements in a timely manner, which increases the credibility of our samples for the study.

Table 2
Sample description.

					Number of events
<i>Panel A. Sample selection procedure</i>					
Initial sample					479
Duplicated announcements					(231)
No audit committee at the announcement date					(2)
Lack of data for CAR calculations					(22)
Contaminated events					(42)
Final sample					182
Event year	2001	2002	2003	2004	
<i>Panel B. Annual distribution of sample</i>					
Number of observations (% of total sample)	20 (10.99%)	43 (23.63%)	64 (35.16%)	55 (30.22%)	
Independent audit committees	11 (55%)	23 (53.49%)	45 (70.31%)	39 (70.91%)	
Financial literacy of appointed members	17 (85%)	31 (72.09%)	44 (68.75%)	38 (69.10%)	
Audit committee member switches	14 (70%)	30 (69.77%)	42 (65.63%)	38 (69.10%)	
Chaebol-affiliated firms	14 (70%)	29 (67.44%)	39 (60.94%)	34 (61.82%)	
Firms voluntarily establish audit committee	4 (20%)	14 (32.56%)	22 (34.38%)	20 (36.36%)	
Diversified firms	12 (60%)	28 (65.11%)	47 (73.44%)	35 (63.64%)	
ADR-listed firms	4 (20%)	10 (23.26%)	15 (23.42%)	10 (18.18%)	

We collect data on firms' announcements of audit committee appointments from the DART database provided by FSS for the period 2001–2004. Panel A describes our sample selection procedure. Initially, we find 479 announcements of audit committee appointments for non-financial KSE-listed companies. We consider more than two appointment announcements of the one company on the same day as a single event, and this reduces the sample to 231 events. Because we use end of year accounting data from the KIS-Value database, we remove two firms whose fiscal year end is not December. We remove another two companies, Tongbu Electronics and Pacific Glass, because they have no audit committee at the announcement date. Because we require stock return data for the previous year for our cumulative abnormal return (CAR) calculations, we remove 22 firms where this data is not available. Finally, we remove 42 events contaminated by some other news, i.e. earnings surprises, around the announcement date by searching the DART and Lexis-Nexis database. These procedures leave 182 events in our sample for analysis. Panel B describes the annual frequency distribution of the 182 events. The event year denotes the year of the announcement. The values in parentheses (except for the number of observations) are the percentage of events for the year.

Most Korean audit committees were established around 2000, so we find all available announcements for audit committee appointments after this year in the DART system. Unfortunately, DART does not provide the audit committee appointment announcement data from year 2005. Therefore, we collect four years of announcement data, from January 2001 to December 2004. To measure firm characteristics obtained from annual financial statements and to eliminate any effect of different fiscal year ends, we only use firms with a fiscal end of year in December.¹⁵

We initially collect 479 appointment announcement events. We consider multiple announcements by one firm on the same date as a single event, removing 231 events. This generally takes place when the company announces the appointment of two or more members on the same date. We exclude two events because in its annual report of the event year the announcing firm reports that there is no audit committee operating. We also remove 22 events where we lack data for calculating the CARs because the event date is less than one year after public listing.¹⁶ We search DART and the LexisNexis database for three days (–1, 0, and +1) around the announcement date to eliminate from the pure audit committee appointment announcement effect any contamination from other news (such as earnings announcements). Finally, we obtain 182 events for our empirical study. Panel B in Table 2 details the annual frequency distribution of the appointment sample.

We gather stock returns and accounting data information from the Korea Investors Service–Value (KIS-Value) database and the DART system when the data are not available. We distinguish between chaebol and non-chaebol affiliated firms using the Korea Fair Trade Commission's Annual Statistics that tables the top-30 chaebol groups and their affiliated companies. We consider an audit committee

¹⁵ We find that a firm whose fiscal end of year is not December makes only two announcements. Hence, differences in fiscal year-end only have a minor influence on our findings.

¹⁶ We use return data of 249 days [–258 to –10] in the regression for calculating expected return on the event date. We collect data from 258 days before the event date because this is the number of trading days in a year.

independent when it is fully comprised of outside directors. Audit committee independence is determined with the data from one-year lagged annual report of the appointing firm. Examining situations in which independence may have changed after an appointment, we find only three appointments which make the independent audit committees to non-independent ones, but these cases do not affect our test results.

We obtain data about financial literacy and audit committee member switches from the announcement data posted on DART. We classify a member as financially literate if he or she has a degree in business or economics, or work experience in a financial institution. We recognize that this term is very broadly defined in our analysis. First, the DART system does not disclose whether the appointed audit committee members are financial experts, which implies that investors may not be aware of the detailed information of the financial literacy of the audit committee members around announcements. Second, this broadly-defined category may be sufficient in its potential effect due to a unique nature of the Korean audit committee that is responsible for *operational* audits as well as *accounting* audits, as we discussed earlier.

We classify an appointment as “switch” (i.e., SWCH = 1) if the appointment replaces existing audit committee members. So, “non-switch” appointments (i.e., SWCH = 0) involve two cases. The first and the most common situation is where existing member(s) is re-appointed (i.e., the size of audit committee is the same), but the second case includes four events where the newly appointed member(s) is an addition to the committee (i.e., audit committee increased in size).¹⁷ We collect segment sales data from the Worldscope database for identifying single segment companies; otherwise, we collect these data from DART segment reports. Finally, we collect the list of ADR cross-listed Korean companies from the ADR website.

Table 3 provides descriptive statistics and other characteristics of the 182 audit committee appointments. As shown, 63.73% of all announcements are by chaebol companies, and 64.84% are by companies with independent audit committees. In addition, 71.42% of announcements represent the appointment of financially literate members, and 68.13% relate to audit committee member switches. Finally, 21.14% of all announcements are by American Depository Receipt (ADR) cross-listed companies. We divide the full sample into two subsamples based on a firm’s chaebol affiliation (Panel A of Table 3) and a firm’s audit committee independence (Panel B of Table 3).

In Panel A, we compare chaebol and non-chaebol firms and report statistics of the two groups based on the percentage of audit committee independence, the percentage of financial expert appointment, the percentage of member switches, the percentage of voluntarily established audit committees, the percentage of diversified firms, the logarithm of total assets, and the liquidity ratios. Specifically, chaebol firms tend to have more independent audit committees, while they have less audit committee member switches than the non-chaebol firms.¹⁸ Naturally, diversified companies which are likely to be large firms tend to have more independent audit committees. Both chaebol and non-chaebol firms appoint financially literate members in an almost equal proportion in our sample. In Panel B, we decompose the sample into two subsamples with independent and non-independent audit committees. Interestingly, the governance and firm characteristics are almost the same as in the sample grouped by chaebol affiliation, probably because of the high correlation between chaebol affiliation and audit committee independence.

4. Audit committee appointments and shareholder wealth

4.1. Univariate analysis

Our full-sample test rejects the null hypothesis that the CARs $[-1, 0]$ of audit committee appointments is equal to zero at the 5% level of significance. This suggests that on average there are significant

¹⁷ Since there are only four samples related to an increase in audit committee size, i.e. the appointment of additional members, SWCH = 0 mostly reflects the reappointments of existing members. Our result is robust when we exclude those four samples of additional member appointments. We expect that the stable audit committee sizes are largely a result of the regulation that requires the minimum number of members of audit committees to be three.

¹⁸ This higher percentage of independent committees in chaebols may be a direct result of mandating the minimum requirement of outside directors in audit committees for larger firms which most likely include most of chaebol firms.

Table 3
Descriptive statistics of announcement characteristics.

	Total (N = 182)	Panel A. By chaebol affiliation			Panel B. By audit committee (AC) independence		
		Chaebol (N = 116)	Non- chaebol (N = 66)	Mean diff. (p-value)	Indep. AC (N = 118)	Non- indep AC (N = 64)	Mean diff. (p-value)
% of chaebol-affiliated firms	63.7%	100%	–	–	79.7%	34.4%	–
% of firms with an independent audit committee	64.8%	81%	36.4%	–	100%	–	–
% of financial expert appointments	71.4%	71.6%	71.2%	–	71.2%	71.9%	–
% of audit committee member switches	68.1%	61.2%	80.3%	–	65.3%	73.4%	–
% of voluntary audit committee establishments	33%	12.9%	68.2%	–	15.3%	65.6%	–
% of diversified firms	67%	75.9%	51.5%	–	73.7%	54.7%	–
% of ADR-listed firms	21.4%	21.6%	21.2%	–	24.6%	15.6%	–
Board independence of the firms ^a	46.9%	49.6%	42.1%	7.5%*** (0.000)	51.6%	38.2%	13.5%*** (0.000)
Board size ^a	8.33	8.47	8.09	0.37 (0.381)	8.54	7.94	0.61 (0.160)
Logarithm of total assets ^a	21.297	21.766	20.471	1.295*** (0.000)	21.763	20.437	1.325*** (0.000)
Return on equity ^a	0.009	0.068	–0.095	0.163 (0.235)	–0.033	0.085	–0.118 (0.394)
Liquidity ratio ^a	0.307	0.285	0.346	–0.060** (0.015)	0.302	0.318	–0.016 (0.510)

We collect the firm's chaebol affiliation from the annual report of Korea Fair Trade Commission (KFTC) and audit committee-related data (independence of the committee, financial literacy of the appointed member, and member switches) from DART announcements and annual reports. We use KIS-Value for the control variables (total assets, return on equity measured as net income divided by total equity, and the liquidity ratio measured as current assets divided by current debt) and DART annual reports when the data is not available from the KIS-Value database. We define board independence as the number of outside directors on board divided by board size, where the board size is total number of registered directors on the board. We consider an audit committee member financially literate if it has an educational background in business (including finance, accounting, and management) or experience in a financial institution. We define a firm as having a mandatorily established audit committee if it has total assets in excess of 2 trillion KRW (Korean won) in 2000 when required by Korean commercial law. We assume all other firms have voluntarily established audit committees. We identify stand-alone firms using [Berger and Ofek's \(1995\)](#) definition that a firm is stand-alone when its main line of business accounts for more than 90% of total sales. We collect segment sale information from the [Worldscope](#) database and DART annual reports when data is not available from the [Worldscope](#). Panel A distinguishes between chaebol and non-chaebol firms and examine differences between the groups using a two-sample *t*-test assuming equal variances. Panel B separates independent and non-independent audit committees (we consider an audit committee independent if it is fully composed of outside directors and non-independent if the committee has one or more insiders) and test the differences using the same method as for Panel A.

^a The values are the means and asterisks denote significance at the 10% (*), 5% (**), and 1% (***) level, respectively.

positive effects of audit committee appointments on shareholder wealth (the mean CAR is 1.03% with a *p*-value of 0.027, as shown in [Table 4](#)). This is consistent with [Rosenstein and Wyatt's \(1990\)](#) finding of a positive wealth effect surrounding the announcement of outside director appointments. However, our abnormal return is higher than [Rosenstein and Wyatt's \(1990\)](#) return of 0.13%; this may suggest differences in the governance environments of developed and emerging countries, or the stronger effect of audit committee appointment than outside director appointment on shareholder wealth. However, [Mak et al. \(2003\)](#) find an insignificant market reaction to the appointment of directors in Singapore (an economy which also suffered from the financial crisis and has a corporate governance environment similar to Korea's). The significant wealth effect of the audit committee appointments documented here affirms [Klein's \(2002\)](#) argument that the impact of directors is manifested more clearly in the way the directorship is utilized in audit committees than in its mere existence.

[Table 4](#) presents our findings from the univariate comparison of the four main governance dummy variables including chaebol affiliation dummy (CHB); which we set to one if a firm belongs to a chaebol

Table 4

Cumulative abnormal returns [CARs [-1, 0]] for audit committee appointments around the announcement date: Univariate analysis.

Dummy variables	Dummy = 1 (A)		Dummy = 0 (B)		A-B
	N	Mean (p-value)	N	Mean (p-value)	Mean diff. (p-value)
Full sample	182	0.0103*** (0.027)	-	-	-
Chaebol affiliation (CHB)	116	0.004 (0.433)	66	0.022** (0.023)	-0.018* (0.064)
Financial literacy of appointed member (FIN)	130	0.010** (0.047)	52	0.011 (0.290)	-0.001 (0.918)
Audit committee Member switch (SWCH)	124	0.005 (0.339)	58	0.022** (0.021)	-0.017* (0.095)
Independence of audit committee (ACIND)	118	0.006 (0.154)	64	0.017* (0.092)	-0.011 (0.260)

The sample consists of 182 non-financial KSE-listed firms during the period 2001–2004. The dummy variables for our study are CHB = Chaebol affiliation; FIN = financial literacy of appointed audit committee member; SWCH = audit committee member switch; and ACIND = firm with independent audit committee. In the case of multiple appointments, we define the FIN dummy variable to be 1 if one or more of the appointed audit committee members are financially literate. Detailed definition of financial literacy is presented in Table 3. Similarly, we define the SWCH dummy to be 1 if one or more of the appointed audit committee members replace the old audit committee members. The definitions of the remaining variables are in Table 3. We calculate the mean CARs of the samples divided into two categories according to the given dummy variables and test them with null hypothesis that CARs = 0. Mean differences are calculated with a two-sample *t*-test assuming equal variances. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) level.

group; the audit committee independence dummy (ACIND), which is one if the firm has an independent audit committee; the financial literacy dummy (FIN), which is one if the new member is financially literate; and the audit committee member switch dummy (SWCH), which is one when there is a replacement of existing members, while it is zero otherwise.¹⁹ Our result suggests that firms which appoint financially literate members produce significant positive shareholder wealth, while other cases show insignificant results. This finding supports Hypothesis 1 that the appointment of financial experts on average is expected to bring about greater shareholder benefits, while investors do not expect much from the appointment of non-financial experts. Our result in Table 4 is similar to those of many previous studies (see Davidson et al., 2004; Defond et al., 2005) regarding the importance of financial expertise in the audit committee. However, we cannot find a statistically significant difference between the samples of financial and non-financial experts. The univariate results show no evidence of supporting Hypothesis 2. There is no significant overall market response to the announcement of the appointments for independent audit committees, while we observe positive but weak market's response for dependent audit committees.

For the firm's chaebol affiliation, our results suggest that audit committee appointments by non-chaebol firms have significant positive stock returns around the date of the announcement. The mean difference between the two groups (chaebol and non-chaebol firms) is significant (at the 10% significance level), showing that audit committee appointments by chaebol firms have a significantly lower effect on shareholder wealth. These findings are consistent with Hypothesis 3 and previous research that chaebol-affiliated firms may expropriate wealth from minority shareholders and use resources inefficiently (see Bae et al., 2002; Joh, 2003; Baek et al., 2004, 2006). We can at least partially attribute the weak shareholder wealth effects surrounding the announcement of audit member appointments for chaebol firms to the market's perception of self-interested behavior by strong controlling owner groups. These results are also similar to the finding in Choi et al. (2007) that strong chaebols dominate over market discipline functions in Korea.²⁰

We also find that member switches (e.g., replacements) in the audit committee are associated with insignificant CARs, while retention of a previous committee member or new additions produces

¹⁹ For the case of multiple appointments, the FIN (SWCH) dummy is coded as 1 when at least one of them is financially literate (switched), respectively.

²⁰ We consider possible data contamination issues particularly regarding chaebol firms. For example, chaebols may strategically release other news in order to preempt audit committee member appointments, leading to weak market response. Another possibility is delayed announcements. However, after a closer examination of our data, this potential problem is not warranted. First, the KRX (Korea Exchange) penalizes delayed announcements and reports cases on the same day (or within a day of the firm's announcement) when they occur. We do not find any such cases in our sample. Second, it is unlikely that there is any systematic difference between chaebols and non-chaebols in the strategic announcements. We appreciate this input from an anonymous referee.

significantly positive shareholder wealth. Thus this result supports Hypothesis 4. The mean difference in CARs between the two groups is significant, suggesting that the retention of an existing audit committee member has greater benefits for shareholders than a member switch. Similar to the argument suggested by Klock (1994), our result supports Hypothesis 4 in the sense that investors are not favorable to switching audit committee members since the change may arise from the opportunistic behavior of management (replacing problematic members as well as providing an implied threat of dismissal to the other committee members). Finally, while we do not observe any significant return upon the appointment by firms with independent audit committees, we find significantly positive CARs for appointment announcements by non-independent firms. This suggests that the apparently advantageous nature of the appointments (e.g., financial literacy and member retention) may not add as much for the independent committee as for the dependent committee. We need to examine this issue more closely, given the result in Defond et al. (2005) that there seems a strong interaction effect (complimentary or substitutionary) between financial expertise and governance.

4.2. Multivariate cross-sectional analysis

In order to explore the impact of various aspects of the audit committee on shareholder wealth, we construct several multiple regression models. To test the effects of audit committee appointments on shareholder wealth, we specify CARs around the date of announcement as our dependent variable. We use the chaebol affiliation (CHB), financial literacy of appointed audit committee member (FIN), member switches (SWCH), and independent audit committees (ACIND) as independent variables defined in univariate analysis section.²¹ For multiple appointments, the FIN dummy becomes one when there are one or more financially literate members appointed on a single event day. This means that the FIN dummy is zero only when there is absolutely no appointment of financially literate member on the announcement day. When we use a dummy variable for the multiple appointments, we found similar results.

We include several corporate governance-related, firm-specific characteristics to control for the effects of other factors relating to the announcement effect of audit committee member appointments. First, Bradbury (1990) and Firth and Rui (2007) view the voluntary formation of audit committees as a signal of strong corporate governance. We control for this by including an indicator variable for voluntary audit committee formation (VOL). Second, we control for firm transparency with an ADR cross-listing dummy variable since recent studies consider international firms that are cross-listed on U.S. stock exchanges as more transparent (Charitou et al., 2007). Moreover, Mitton (2002) and Baek et al. (2004) report significantly higher stock returns for Asian firms during the financial crisis when the firm has issued a listed ADR. Furthermore, as much of the literature on diversification discount suggests, diversified conglomerates may have unique governance problems.²² We also control for this effect using dummy variables for diversified firms (DIV). For firm-specific financial characteristics, we control for the size effect with the natural logarithm of total assets (LNTA), profitability as measured by the return on equity (ROE: net income divided by total equity) and liquidity (LIQ: current assets divided by current liabilities).²³ Table 5 provides the results of our multivariate cross-sectional analysis.

In model (1), we put all variables related to the types of the appointments (FIN and SWCH) and audit committee (ACIND), while in models (2), (3), and (4), we run the regressions with each of the three variables separately. In any case, the results are almost the same in terms of the coefficient estimates and their significance levels, implying that the three governance variables are independent (or very weakly correlated). This point is worth emphasizing because this result resolves our concern about a potential confounding effect of FIN and SWCH on the shareholder wealth. Suppose that in general the impact of FIN is positive, while that of SWCH is negative. When an event consists of a member change and the new member is financially literate, the impact of SWCH can be weakened (underestimated) by FIN if

²¹ Thus, “SWCH = 0” includes most cases of re-appointing existing members (i.e., retention) and four cases in which the appointment had increased the size of the audit committee (i.e., new additional appointments).

²² See Berger and Ofek (1995) and Lins and Servaes (1999).

²³ When we control for industries and years in addition, we still obtain similar qualitative results. However, we lose significance in some cases probably due to insufficient degree of freedom, especially for industry dummies, because we use 21 industry dummies. We discuss the details in a footnote to each corresponding table.

Table 5Determinants of cumulative abnormal returns, CARs $[-1, 0]$, for the announcement of audit committee appointments.

Independent variables	(1)	(2)	(3)	(4)
FIN	0.001 (0.932)	0.000 (0.999)		
SWCH	-0.022** (0.028)		-0.022** (0.026)	
ACIND	-0.004 (0.703)			-0.005 (0.670)
CHB	-0.033*** (0.008)	-0.030** (0.013)	-0.034*** (0.005)	-0.029** (0.019)
SSEG	-0.002 (0.870)	-0.000 (0.988)	-0.001 (0.897)	-0.001 (0.956)
ADR	-0.020 (0.127)	-0.018 (0.179)	-0.020 (0.129)	-0.018 (0.174)
MDT	0.014 (0.398)	0.013 (0.410)	0.012 (0.430)	0.014 (0.371)
LIQ	-0.042 (0.159)	-0.041 (0.167)	-0.043 (0.140)	-0.040 (0.182)
ROE	0.008 (0.124)	0.009* (0.098)	0.008 (0.111)	0.009 (0.109)
LNTA	0.001 (0.801)	0.001 (0.839)	0.001 (0.834)	0.002 (0.780)
Intercept	0.041 (0.737)	0.013 (0.906)	0.033 (0.763)	0.006 (0.960)
Adjusted R ²	0.033	0.016	0.044	0.017
F-statistic	1.62	1.36	2.03	1.39
Number of obs.	182	182	182	182

We use 182 non-financial KSE-listed firms during the period 2001–2004 for the OLS regression analysis. The variables used in the regression models are CHB = chaebol affiliation; FIN = financial literacy of appointed audit committee member; SWCH = audit committee member switching; ACIND = firm with independent audit committee; SSEG = single segment firm; ADR = firm cross-listed on ADR; MDT = firm with mandatorily established audit committee; LIQ = firm's liquidity ratio; ROE = firm's return on equity; LNTA = log of total assets. The numbers in parentheses below the estimated coefficient are *p*-values. We use LIQ, ROE, and LNTA as control variables. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) level.

this combination is prevalent in our sample. The opposite is true in that the impact of SWCH may be amplified (overestimated) when the member change represents a financially illiterate member in our sample. However, the fact that we do not observe any over- or under-estimation in Table 5 confirms that our sample does not face the above correlation problem between SWCH and FIN.

The results show significant negative effects of firm's chaebol affiliation and audit committee member switches on shareholder wealth. The estimated coefficient for CHB is -0.033 , significant at the 1% level. These are consistent with our hypothesis and the results of the univariate analysis. The market seems to expect the audit committee to better monitor non-chaebol firms than chaebol-affiliated firms, increasing shareholder wealth. The negative estimated coefficient (-0.022 , significant at the 5% level) of the audit committee member switch dummy suggests that the Korean market generally perceives member switches as indicative of the opportunistic behavior of management. This is also consistent with [Fried and Schiff \(1981\)](#) who find negative market reactions to CPA changes in the US market. These multivariate results also support Hypotheses 3 and 4. However, we fail to find significant effects for financial literacy of the appointed member (Hypothesis 1) or the independence of the audit committee (Hypothesis 2) in this analysis.²⁴ Because some previous studies (for example, [Davidson et al., 2004](#); [Defond et al., 2005](#); [Pomeroy and Thornton, 2008](#)) argue for the importance of these factors, we further investigate these effects with more in-depth analyses in the following section.

5. Audit committee independence and financial literacy

In contrast to our earlier hypotheses, our results in the multivariate analyses provide no evidence of the direct effect of audit committee independence and financial literacy on shareholder wealth. Therefore, we explore the possibility of an indirect effect of these features on shareholder wealth.

5.1. Effect of audit committee independence on its monitoring function

Although we fail to show the direct effect of audit committee independence on shareholder wealth, previous literature suggests that the independence of audit committee matters for corporate governance. Hence, we investigate the possibility of the interaction effects of audit committee

²⁴ [Choi et al. \(2007\)](#) find that board independence in Korea positively influences firm performance. We have a similar result when we tried board independence in the regression models.

independence and its monitoring function and shareholder wealth through indirect effects. For this purpose, we disaggregate the sample into two, based on the independence of the audit committee and run the regressions using the two separate subsamples. Furthermore, we attempt to uncover any indirect effects of the independent audit committee on shareholder wealth using interaction terms in the regression with switches ($ACIND * SWCH$), chaebol affiliation ($ACIND * CHB$), and financial literacy ($ACIND * FIN$).

Table 6 details the clearly different interaction effects of the CHB, FIN, and SWCH variables on shareholder wealth as a function of the independence of the firm's audit committee.²⁵ Interestingly, the negative effects of the firm's chaebol affiliation (relative to non-affiliated firms) on the stock price now become insignificant when the firm holds an independent audit committee (Models (1), (2), and (3)), while chaebol firms with non-independent audit committees experience significantly lower stock returns in the magnitude of 7% than do non-chaebol firms (Models (4), (5) and (6)). This result supports Hypothesis 5 that the independence of the audit committees properly functions to help mitigate the negative effects of chaebol affiliation on shareholder wealth. This evidence is confirmed by the interaction term coefficient estimates in Models (7) through (9).

Our findings also imply that the negative effects of audit committee member switches become insignificant when firms have independent audit committees, while firms with non-independent audit committees still report significantly negative returns of about 6% (see Models (4) and (6) of Table 6). The interaction coefficients on the switch dummy variable ($ACIND * SWCH$) in Models (7) and (9) also show that audit committee independence acts against the firm's negative stock performance around the announcement of audit committee member switches. These suggest that the independence of the audit committee can actually be effective in monitoring the opportunistic behavior of management – for example, by discouraging management-friendly member appointments on the committee, thus supporting Hypothesis 5.

Moreover, consistent with Defond et al. (2005), who argue that firms with better governance have more positive stock price reactions to the appointment of financial experts, we find that announcement stock returns are about 4% higher on the appointment of financially literate members when the company has an independent audit committee, as suggested by the coefficient estimate of the interaction term, $ACIND * FIN$ in Model (8), consistent with Hypothesis 6.²⁶ Similarly, Models (1) and (2) indicate positive market response on the appointment of financially literate members. This implies that with an independent audit committee, financial literacy plays a *complementary* monitoring role through *operational* audits, as consistent with Defond et al. (2005). On the other hand, Models (4), (5), (7), and (8) indicate negative stock returns on the appointment of financially literate members when the firm has a dependent audit committee. We expect that management influence is stronger in dependent committees than in independent ones. Thus, it seems that the market perceives the appointment of financially literate members as a potential cover-up for management's self-interested behavior for firms with dependent audit committees.

In sum, audit committee independence mitigates the negative effects of a firm's chaebol affiliation and audit committee member switches on shareholder wealth, likely to occur through management's self-interested behavior, while it improves shareholder wealth from the appointment of financially literate members on the audit committee. This suggests that audit committee independence can improve the committee's monitoring function and hence weaken management's incentive to undertake self-interested, opportunistic behavior that reduces shareholder wealth.

Lastly, we observe strong negative estimates on $ACIND$ in models (7)–(9) in Table 6. That is, the coefficient of the dummy variable of -10.8% represents the difference in the market response between the independent committee and dependent committee for the case of non-chaebol ($CHB = 0$), no financial literacy ($FIN = 0$), and no switch ($SWCH = 0$). That is, the combined benefit from the decision to

²⁵ Controlling for industries, we lose significance for CHB in model (4) and (6), FIN in model (5), $ACIND * FIN$ in Model (7), and FIN in Model (8). But we lose significance only for FIN in model (5), controlling for years only. Note that in the case of non-independent committees, we have only 64 sample observations in the regression, and thus adding industry dummies can reduce the degree of freedom in estimation significantly.

²⁶ Because the G-index used in Defond et al. (2005) in part reflects audit committee independence, we expect our results to be similar.

Table 6The effect of audit committee independence on cumulative stock returns [CARs $[-1, 0]$] of the announcement of audit committee appointment.

Independent variables	AC independence = 1			AC independence = 0			Full Sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CHB	0.001 (0.971)	0.001 (0.932)	0.002 (0.898)	-0.074*** (0.002)	-0.069*** (0.005)	-0.073*** (0.002)	-0.060*** (0.000)	-0.055*** (0.001)	-0.060*** (0.000)
FIN	0.020** (0.049)	0.020** (0.048)		-0.036 (0.103)	-0.045** (0.049)		-0.031* (0.063)	-0.040** (0.018)	
SWCH	-0.003 (0.774)		-0.003 (0.742)	-0.054** (0.016)		-0.060*** (0.008)	-0.053*** (0.002)		-0.058*** (0.001)
ACIND							-0.108*** (0.000)	-0.073*** (0.001)	-0.074*** (0.002)
ACIND * CHB							0.048** (0.026)	0.045** (0.040)	0.051** (0.020)
ACIND * FIN							0.052** (0.012)	0.061*** (0.004)	
ACIND * SWCH							0.053** (0.012)		0.058*** (0.006)
SSEG	-0.001 (0.906)	-0.001 (0.931)	-0.001 (0.932)	0.004 (0.847)	0.004 (0.866)	0.005 (0.824)	0.001 (0.956)	0.000 (0.967)	0.002 (0.855)
ADR	-0.012 (0.331)	-0.011 (0.339)	-0.009 (0.444)	-0.034 (0.307)	-0.027 (0.433)	-0.033 (0.327)	-0.018 (0.156)	-0.016 (0.203)	-0.016 (0.204)
MDT	-0.009 (0.609)	-0.009 (0.631)	-0.015 (0.419)	0.039 (0.170)	0.033 (0.265)	0.045 (0.125)	0.017 (0.255)	0.014 (0.362)	0.015 (0.315)
LIQ	-0.043 (0.147)	-0.043 (0.148)	-0.049* (0.100)	-0.034 (0.590)	-0.040 (0.540)	-0.034 (0.596)	-0.044 (0.131)	-0.045 (0.129)	-0.047 (0.104)
ROE	0.008* (0.055)	0.008* (0.051)	0.008 (0.071)	-0.049 (0.339)	-0.059 (0.271)	-0.046 (0.375)	0.008 (0.107)	0.008 (0.121)	0.008 (0.141)
LNTA	0.001 (0.884)	0.001 (0.887)	0.003 (0.634)	0.009 (0.514)	0.008 (0.552)	0.003 (0.803)	0.002 (0.766)	0.002 (0.755)	0.001 (0.799)
Intercept	0.001 (0.995)	-0.002 (0.984)	-0.019 (0.865)	-0.061 (0.816)	-0.084 (0.761)	0.023 (0.930)	0.076 (0.483)	0.041 (0.711)	0.064 (0.559)
F-statistic	1.29	1.45	0.93	2.35	1.70	2.23	2.78	2.29	2.62
Adjusted R ²	0.022	0.030	-0.005	0.161	0.081	0.135	0.114	0.073	0.090
Number of obs.	118	118	118	64	64	64	182	182	182

The dependent variable for the OLS regressions is cumulative abnormal returns around the announcement date, CARs $[-1, 0]$. The CARs and all independent variables are described in Tables 2–4. We introduce three new variables for testing the coefficient differences for the two groups. These interaction terms are ACIND * CHB (multiplication of audit committee independence dummy and chaebol affiliation dummy), ACIND * FIN (multiplication of audit committee independence dummy and financial literacy of appointed audit committee member dummy), and ACIND * SWCH (multiplication of audit committee independence dummy and audit committee member switching dummy). Models (1) through (6) are estimated with the subsample based on the independence of the audit committee, while models (7) through (9) are estimated using full sample with interaction terms for the audit independence dummy and other relevant variables. The numbers in parentheses below the estimated coefficient are p -values. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) level.

retain existing members by non-chaebol firms with no financially literate appointments is significantly greater when the audit committee is not independent than when the audit committee is independent. We conjecture a couple of reasons for the relative benefits for dependent audit committees. The decision to retain existing members may signal very positive message to the market even when the audit committee is dependent. Also for non-chaebol firms, the market may perceive that independent audit committees may be costly because the audit committee consists of outside members only. In fact, Klein (1998) argues that the costs of independent outside directors may arise from lack of the operating expertise of insiders.

5.2. Audit committee financial literacy, operating audits, and operating complexity

Similar to the effect of the independence of the audit committee, we explore the indirect effect of audit committee financial literacy on the monitoring capability of the audit committee. According to our findings in Table 5, we have no evidence of a direct relationship between the financial literacy of the appointed audit committee members and changes in shareholder wealth in our sample. However, as in Davidson et al. (2004) and Defond et al. (2005), we expect a more efficient governance structure in firms appointing financial experts to their audit committees. Since the results in Table 6 already show strong evidence of the effectiveness of financial literacy when the appointing firm has an independent audit committee, we investigate a possibility that the effect of financial literacy shows up in relation to other firm-specific factors. We mainly focus on those factors related to the complexity of business operations in addition to chaebol affiliation.

We support Hypothesis 7 that financial literacy becomes more important as a monitoring device via *operational* audits when firms operate in a more complex organization. Here we measure the organizational complexity in terms of the degree of diversification (SSEG) and the number of business segments (NSEG) within an organization. Using several tests, we find statistically significant effects of financial literacy (a) for appointed audit committee members with respect to the factors – chaebol affiliation (b), diversification (c), the number of business segments (d), and audit committee mandatory dummy (e) listed in 7.²⁷

The estimated coefficients on the interaction terms with financial literacy are significant and positive for all variables in models (1), (3) and (4), and significant and negative for SSEG in model (2). This indicates the positive impact of financial literacy of appointed audit committee members. Model (1) in Table 7 suggests that the expected benefits for shareholders from the appointment of financially literate audit committee members are greater for chaebol-affiliated firms, as shown in the positive significant coefficient estimate of the interaction term, $a * b$. Due to the complex ownership structures and power of the controlling groups in chaebol firms, the market appears to value financial literacy more in chaebol-affiliated firms. It is consistent with the argument that the financial literacy of the audit committee can be effective in alleviating the problem of the self-interested behavior of chaebol-affiliated management, possibly through effective *operational* audits.

Regarding the impact of financial literacy under a different operation complexity scenario, as shown in Model (2) of Table 7, the market highly values the appointment of financially literate members to the audit committee when firms are diversified across several business segments. Also, as we can see in Model (3), the expected value of the financial literacy of a given audit committee member increases with the number of segments that the diversified firm holds. Complementing the work of numerous studies on the inefficiency of diversified conglomerates, including Berger and Ofek (1995) and Lins and Servaes (1999), this provides evidence that financial literacy may increase the shareholder wealth of diversified firms otherwise to be discounted by the market.²⁸

Finally, we examine the effectiveness of financial literacy on firms with mandatorily established audit committees compared to that of voluntarily established committees in order to assess whether the regulatory requirements for mandatory audit committee formation are effective following the

²⁷ Adding industry dummies only, we lose statistical significance for all the interaction terms except for $a * e$ in model (4). But using year dummies, we lose statistical significance only for the interaction term $a * d$ in model (3).

²⁸ Lins and Servaes (2002) conclude that the corporate governance of a firm, as measured by industrial group affiliation or ownership concentration, reduces its market value.

Table 7

The effect of the financial literacy of appointed audit committee members on cumulative stock returns [CARs [-1, 0]].

Independent variables	(1)	(2)	(3)	(4)
FIN (a)	-0.029 (0.089)*	-0.038 (0.038)**	-0.056 (0.163)	-0.042 (0.019)**
CHB (b)	-0.058 (0.004)***			
SSEG (c)		0.042 (0.029)**		
NSEG (d)			-0.009 (0.097)*	
MDT (e)				-0.044 (0.045)**
a * b	0.043 (0.043)**			
a * c		-0.055 (0.013)**		
a * d			0.010 (0.099)*	
a * e				0.063 (0.004)***
ACIND	-0.005 (0.688)	-0.001 (0.418)	-0.008 (0.501)	-0.010 (0.361)
ADR	-0.018 (0.151)	-0.014 (0.263)	-0.013 (0.293)	-0.014 (.237)
ROE	0.008 (0.112)	0.006 (0.223)	0.007 (0.200)	0.007 (0.172)
LIQ	-0.040 (0.179)	-0.032 (0.283)	-0.033 (0.270)	-0.023 (0.441)
LNTA	0.006 (0.212)	0.001 (0.751)	0.001 (0.783)	0.002 (0.764)
Intercept	-0.060 (0.530)	0.028 (0.761)	0.024 (0.801)	0.020 (0.857)
Adjusted R ²	0.0355	0.0209	0.0024	0.0330
F-statistic	1.83	1.48	1.05	1.77
Number of obs.	182	182	182	182

The dependent variable for all OLS regressions is cumulative abnormal return around the announcement date, CARs [-1, 0]. The main independent variables including CHB, SSEG, NSEG, and MDT are used as proxies for complexity of business operations. All of the independent variables are defined in Tables 4–6, except for NSEG which is the number of segments. We also conduct tests on the interaction terms between these proxy variables and the appointed member's financial literacy dummy. The numbers in parentheses below the estimated coefficient are p-values. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) level.

Asian financial crisis. Our evidence shows in Model (4) of Table 7 that shareholders of firms with mandatorily established audit committees benefit more from the appointment of financially literate members (e.g., statistically significant and positive coefficient estimate on the interaction term, a * e). In fact, this outcome mirrors the result with the other cases in Models (1)–(3), which is not surprising given that the mandatory regulation applied to large firms including diversified chaebol-affiliated firms.²⁹ In sum, the financial literacy of appointed audit committee members seems helpful in strengthening the monitoring function of audit committees and thus in mitigating potential management entrenchment.³⁰

6. Summary and conclusion

In this paper, we examine the effects of audit committee appointments on shareholder wealth in Korea. Our results generally support the positive effect of government-mandated audit committees, enhancing shareholder wealth even in an emerging market where corporate governance is typically weak. We recognize unique features of Korean audit committees and corporate structures – business groups (e.g., chaebols). Korean audit committees conduct *operational* audits as well as *accounting* audits. Therefore, it is important to consider membership requirements accordingly when firms appoint audit committee members. Interestingly, we find a strong impact of financial literacy of audit committee members on shareholder wealth, even though financial literacy does not require any accounting background.

²⁹ We also investigate the interaction effect between the mandatory establishment of audit committees and other major variables such as switching and independence of audit committees. We obtain a similar result with respect to switching dummy interaction. Our result shows that the member switch is associated with positive (negative) announcement effects for mandatorily (voluntarily) established firms. Thus, it is interesting that the same member switch draws different market reactions according to the mandatory regulation. We do not find any interesting significant results with respect to the independence of audit committees. We thank an anonymous referee for this interesting result.

³⁰ There is considerable research that suggests larger auditors do a better job of controlling earnings management than do smaller auditors. Announcements made by firms using smaller auditors may have a larger impact, either positive or negative, because the audit committee may be more important in this situation. We thank Wallace Davidson III for this insight. Our analysis indicates (not shown here) that the size of the independent auditor does not affect our results in any significant way.

We also find that firms with chaebol affiliation and those that switch audit committee members experience significantly lower stock returns around the time of the appointment's announcement. This indicates that strong indigenous factors that act against the interests of shareholders still exist and weaken the effect of these newly adopted governance devices in Korea. Fortunately, our evidence shows that financial literacy as well as the independence of the audit committee can be effective in discouraging such self-interested behavior to some degree. Our evidence also shows that these two characteristics – financial literacy and independence – complement each other in improving the effectiveness of the audit committee.

Finally, we emphasize that implications from our results can be extended beyond Korea to a broader setting in implementing effective audit committees under existing corporate governance structures. That is, characteristics of audit committees (e.g., the nature of financial literacy and member switching) should be considered in the context of an existing governance (e.g., independence of the committee and owner-manager's control), so as to optimize the overall corporate governance mechanism.

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