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Does Audit Quality Affect Outside Directors' Monitoring Performance?

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Abstract

This study aims to delve into whether audit quality alters outside directors' monitoring performance.Using a sample of firms listed in the Ho Chi Minh stock market, the empiricalresultsshow that the impact of board independence on firm performance is conditional on audit quality. Moreover, this studydemonstrates that the impact of board independence on firm performance occurs only in situations where firms are audited byBig Four accounting firms. Based on such findings, we suggest that firms in emerging economies or in weak legal systemspay attention to the proportion of outside directors as well as auditor quality.

Keywords: audit quality, board independence, firm performance, emerging economy

Introduction

Good corporate governance is widely believed to play an essential role in improving the value of a firm and board independence is perceived as one of the most fundamental mechanisms constructing corporate governance.Such a theoretic linkageattracts many researchersto examine the relationship between board independence and firm performance. As suggested by theoretical literature, outside directors may contribute to firm performance in various ways. For example, agency theory, which concentrates on the control function, predicts that higher independent boards are more likely to produce effective monitoring since they are less likely to be affected by managers(e.g.,Brown et al., 2011; Min &Smyth, 2014). Advocates of resource dependence theory contend that outside directors may contribute to the firm'svalue through introducing valuable resources from outside the company(e.g.,Muniandy &Hiller, 2015).

Despite the theoretical arguments, empirical evidence concerning the role of outside directors in improving corporate performance reaches equivocal results. Dehaene et al.(2001), for instance, find that the number of outside directors is significantly and positively related to return on equity(ROE). Nonetheless, Agralwal &Knoeber(1996) detect a negative relationship between board independence and financial outcomes, leading them to conclude that boards seem to have too many outsiders. Wang's(2014) literature review, based on 30Chinese empirical studies, shows that 63.33% of the selected studies detect a positive relationship, 30% a negative relationship and the rest 6.67% no significant relationship. Brown et al.(2011), in a similar vein, point out that US studies provide no conclusive evidence on whether higher board independence can lead to better financial outcomes.

To resolve the mixedresultspresented in prior studies, we examine the issue of whether the impact of outside directors on firm performanceisconditional on audit quality. As noted in Park et al.(2007), there may be a possibility that the influence of outside directors on firm performance is situation-bound.We propose that audit quality may play a role in improving outside directors' monitoring performance for two reasons. One is that, as the auditor is the only monitoring force authorized by the government, they should and can scrutinize internal control mechanisms and managerial procedures of the firm to ensure rule compliance. We thus speculate that high-quality auditingmay pose pressure on outsidedirectors and thus help improve firm performance.The other is that,high-quality auditing may promote the firms' information qualityand usefulness and therefore help outside directorsform better advice.

To examine this issue, we dichotomizeaudit quality and classifyfirms audited by Big Four as higher audit-quality and by non-Big Four as lower audit-quality since auditor size is frequently considered to be commensurate with audit quality in the literature and practice.Our findingsdemonstrate that the impact of outside directors on corporate performance is contingenton audit quality.Furthermore we find that the effectiveness of board independence on firm performance is statistically and economically significant only for companies audited by Big Four accounting firms. Such results indicate that, without the availability of high-quality financial information, outside directors will encounter difficulties in performing monitoring task. We thus suggestthat,for the sake of sustainable development, firms in emerging countries pay attention to board independence and auditor selection.

The rest of this paper is organized as follows. Section twodescribes Vietnam's institutional environment in corporate governance, reviews relevant literature and then specifiesour hypothesis. Section three presents the data and analysis models. Section fourreports and discusses empirical results. The final section draws conclusionsderived from the findings and provides some suggestions for policy makers.

Literature Review And Hypothesis Development

Corporate governance in Vietnam

Corporate governance issues have received attentionworldwide over the past two decades. It's believed that an effective corporate governance framework can mitigate agency costs resulting from the separation of ownership and control and thus boost firm value (e.g.,Bhagat &Bolton, 2008; Lin &Liu,2010).Despiteits importance, the corporate governance frameworkunder the Vietnameseregime is still in an initial stage of development (see,Vo & Nguyen, 2014).

The 2005 Law on Enterprises, introduced in July 2006, marked the first introduction of a formal legal framework on corporate governance. Listed firms are now subject to the following principal laws and regulations: (1)the 2014 Law on Enterprises, (2)the Law on Securities of 2006, (3)the 2007 Corporate Governance Code and 2012 Amendments, (4)the 2012 Disclosure Rules, and (5)the Listing Rules of the Ho Chi Minh and Hanoi Stock Exchanges.Vietnam's corporate governance practicesare expected to experiencesweeping changes when the 2014 LOE came into effect on the first day of July 2015. The LOE seeks to advance board independence and eliminate conflicts of interest of different stakeholders, as part of the Vietnamese government's drive to ensure better corporate governance (see, IFC, 2015).

In theory, corporate governance mechanisms are often categorized into external and internal forms (Gillan, 2006; Al-Ajmi, 2009). External governance mechanisms are ones from outside the firmand can be observed through regulatory or contractual requirements (Gompers et al.,2003). Baber &Liang (2008), for instance, describe external governance asinstitutional environment that specifies the costs of outside stakeholders to interfere in managers' deliberations and actions. If the environment makesoutsiders' cost of participation relatively high (low), then the external governance is considered weak (strong).Under a weak regime of corporate governance,entrenched managersare more likely to pursue their own benefits at the expense of shareholders'interests.

In Vietnam, the State Securities Commission (SSC) isthe securities regulator. The Ho Chi Minh Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX)are responsible for providing the trading platform. While the SSC, HOSE and HNXall have roles in monitoring over share trading, nevertheless, theirresponsibilities are not clearly divided and enforcement actionstaken by regulators have been very rare (see, The World Bank, 2006; IFC, 2015).

Thus, in terms of law and regulations, the firm'sexternal governance in Vietnam is rated relatively weak. This may suggest that auditors are expected to play a crucialrole in monitoring the firms' financial information.

As to internal corporate governance, it mainly involves managers and the board of directors. Internal governance mechanisms include, such as, the requirementthat the remuneration committee exclude management.Board independenceamong others is frequently viewed as the core internal governance mechanism. Baber &Liang(2008), for example, argue that active and independent boardsmay restrict or at least discourage managers from benefiting themselves at the expense of their stakeholders.

Under the Vietnamese regime, the firm's internal corporate governance structure mainly comprises the general stockholders meeting, board of directors (locally called board of management) and supervisory board. The board of directors appoints one person to be general director, who represents the firm. Listedcompanies are encouraged to appoint at least three outside directors to the boardand set up subcommittees, such as audit committee, remuneration committee. In reality, however, many companies do not have outside board members in the Vietnamese regime(see, Oguchi et al.,2013).

With the expansion of the stock markets, the importance of corporate governance has received wide recognition,whereas the concept of corporate governance is still foreign to many Vietnamese businesses. According to a survey on large enterprises in Vietnam by the International Finance Corporation (IFC), only 23% of respondents agreed that Vietnam's entrepreneurs understood the concept and basic principles of corporate governance (see, Berglof &Claessens, 2006). This investigation report points out that many business leaders confuse corporate governancewith operational management.

Board independence and firm performance

The theoretical literature suggests that board independence is one of the most important corporate governancemechanisms(e.g., Adams et al., 2010; Gillan, 2006).Outside directors arguably are expected to protect stakeholder interestsvia monitoring the firm against managerial opportunism(e.g., Brown et al., 2011; Park, 2018)and enhance firm value by advising managers in designing and executing corporate strategy(e.g.,Anderson &Reeb, 2004; Min &Smyth, 2014; Sanchez-Bueno &Usero, 2014). Based on this theoretical argument, firms having a greater independent board may result in better financial outcomes.Nevertheless, empirical findings in either developed or emerging countries produce mixed results on the relationship of board independence with corporate performance.

Some support a positive relationship between board independence and firm performance. For example, Dahya &McConnell(2002),in a UK-based study, find that firms of having higher percentages of outside directors are linked to better decisions. Dehaene et al.(2001), in the context of Belgian,detect a positive relationship between the number of outside directors and return on equity.Li et al.(2015),in a China-based study,conclude that board independence is significantly related to corporate performance.

Some find that strong board independenceis not in favour of shareholders' interests.For instance, Agralwal &Knoeber(1996) report a significant negative relationship between board independence and financial outcomes. Such a finding leads them to conclude that boards seem to have too many outsiders. Erickson et al.(2005),in the context of Canada, also support a negative relationship between board independence and firm value.

In addition, many other studies find no relationship between the proportion of outside directors and firm performance. For example, Hermalin &Weisbach's(1991) findings do not support the association between the proportion of outside directors and same-year financial performance. Yammeesri &Herath(2010), in a Thailand-based study,do not find that the presence or absence of outside directors is associated with firm value. Bhagat &Black(2002) also do not support the relationship of board independence with Tobin's Q, ROA, market-adjusted returns or the ratio of sales to assets.Rashid(2018),in a Bangladesh-based study,finds no evidence to support that board independence affects firm economic performance (ROA).Fauzi& Locke(2012), in the context of New Zealand, find a non-linear positive relationship between the proportion of non-executive (outside) directors on the boardand ROA, while they find a non-linear negative relationship between the percentage of outside directors and Tobin'sQ.

Wang(2014) reviews thirty China-basedstudies which examine the relationship of board independence with corporate performance. 63.33% of the selected studies report a positive relationship, 30% a negative relationship and the rest 6.67% no significant relationship.Based on this finding, Wang(2014) points out that there is need for more focused and in-depth studies in this research area.

Audit quality, board independence and firm performance

Auditors may play an external corporate governance role in monitoring firms' financial reporting. Their audits are expected to mitigate agency costs related to the contractual relationships between shareholders and firm managers or among various groups of stakeholders. However, it should be noted that the utility of the auditing function is determined by the quality of auditing(Francis, 2004).

Audit quality is frequently considered to be commensurate with thesizeof audit firms(e.g.,De Angelo, 1981; Dye, 1993; Lennox, 1999; Krishnan&Schauer, 2000; Fuerman, 2004; Lin &Liu, 2010). Prior literature supports that larger accounting firms are being more professional and independent and provide better auditing services. Ferguson &Strokes'(2002) study,for example, lends support to the above notion. They find that Big Four auditors have higher reputation capital, compared with non-brand nameauditors. Many other studies also demonstrate that brand-name auditors are more prudent in audit engagement (e.g.,Francis &Krishnan, 1999) and more likely to give qualified or other unclean audit opinions to their clients (e.g.,Lee et al., 2004; Lennox, 2005).

The role of audit quality in corporate governance leads to the investigation of the relationship between audit quality and firm performance.Many studies prove the positive effect of hiring high-quality auditors on market performance (e.g.,Balvers et al., 1988; Beatty, 1989; Menon &William, 1991; Jusoh &Ahmad, 2014). For example, Jusoh &Ahmad(2014), using 730 Malaysian listed firms, find that audit quality (Big Four vs. Non-Big Four auditors)is positively related to the market return measure Tobin's Q. Healy &Palepu(2001), based on the signalling framework, argue that, to boost firm value, managers have an incentive to voluntarily disclose inside information and, to convince the public of the good news, they tend to select high-quality auditors.

Many other studies also find that audit quality contribute to accounting performance. Bouaziz(2012), in the Tunisian context, examines the relationship of auditor sizewith firms' financial performance. The finding shows that auditor size significantly affects accounting performance measured by either ROA orROE.Fooladi&Shukor(2012), using 400 Malaysian firms trading on the Kuala Lumpur stock market, find that auditor size is positively associated with corporate performance measured using either ROA or Tobin's Q.Al-Ani&Mohammed(2015), based on 112 companies traded on the Muscat stock market, demonstrate apositive relationship between audit quality (Big Four vs. non-Big Four auditors)and corporate performancemeasured by either ROE or ROA. Lee&Lin(2016), using 752 US firms and 3,760 firm-year observations from 2002 to 2006, also conclude that firms audited by Big Fourauditors outperform those by non-Big Four auditors.

Hiring high-quality auditors might be able to create spillover effects. As stated in the previous section, empirical studies in connection with the role of outside directors in improving corporate performance reach ambiguous results.Park et al.(2007) note that there may be a possibility that the influence of outside directors on firm performance is situation-bound.Based on the following reasons, we speculate that outside directors' success in discharging their fiduciary duties and monitoring roles may depend on audit quality.

Firstly, as pointed out by Weir et al.(2002), a proper connection between internal and external mechanisms is essential to the success of corporate governance. In practice, the auditor is the only external monitoring force authorized by the government. Auditors are responsible for investigating and assessing internal control procedures of the firm and ensuring their clients to comply with the rules and to disclose reliable information (see, Lin &Liu, 2010). To fulfil this required task, they need to check on both the management and the board's performance. Auditors' monitoring thus may pose pressure on management as well as on board directors, especially outside directors, since they are expected to take on more monitoring responsibility. Hopt(2002) points out that, in the aftermath of Enron, an improvement of corporate governance in Europe requires the involvement of intermediaries such as external auditors. Hopt specifically emphasizes that the control of the board by auditors is not only 'the most common,' but also the 'most prominent mechanism.' Thus, higher-quality auditing may impose more pressure on the monitoring behavior of outside directors and end up leading to better financial outcomes.

Secondly, as argued by agency theorists, inherent information asymmetry exists between managers and other stakeholders (including outside directors). Outside directorsmay demand quality information to make better advice to the management, according to the resource dependency contention. Since, as discussed earlier, high-quality audit firmsare more likely to detect and report irregularities in financial statements and to discipline other sources of information (see, Watts, 2003; Lin &Liu, 2010), thus they may improve the firms' information quality and therefore help outside directors facilitate the firm's performance. On this basis, we set up the following hypothesis to examine the issue of whether audit quality can alter outside directors' performance.

Hypothesis: The effectiveness ofboard independence on firm performance is conditional on audit quality.

Research Methods

Sample Selection

Table 1 presents the sample selection. Our sample consists of non-financial firms trading on the Ho Chi Minh stock marketduring the years from 2010 to 2013. We began with 272companies and 1,088 firm-year observations. After excluding firm-year observations which lacked information in calculating variables used in the regression model, our final sample comprises169 firms with 515 firm-year observations (unbalanced panel data).The board characteristics data are hand-collected from annual reports or from company handbooks. All the financial data are collected from the website finance.vietstock.vn.

Table 1Sample selection

Firm-year observations for the research period		1,088
Less: firm-years without ROA and ROE data	(4)	
Less: firm-years without outside director data	(385)	
Less: firm-years without necessary control variable data	(184)	(573)
Final sample		515

Empirical Model

Our pooledOrdinary LeastSquare (OLS)regression model with the dependent variable PERFORMANCE is described as follows.

$$PERFORMANCE_{i,t} = \beta_0 + \beta_1 OUT_{i,t} + \beta_2 AUDQUAL_{i,t} + \beta_3 OUT_{i,t} \times AUDQUAL_{i,t} + \beta_4 DUALITY_{i,t} + \beta_5 HOD_{i,t} + \beta_6 HOC_{i,t} + \beta_7 HOS_{i,t} + \beta_8 BOARDSIZE_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} DTE_{i,t} + \varepsilon_{i,t}$$

Where

i	=	the i-th firm;
t	=	the i-th year;
PERFORMANCE	=	firm performance (ROA/ ROE);
OUT	=	the proportion of outside directors on the board;
AUDQUAL	=	an indicator variable measuring audit quality, which takesthe value of one if the firm is audited bya Big Four auditor(representingrelatively high audit quality),zero otherwise(representing relatively lowauditquality);
DUALITY	=	a dummy variable taking the value of oneif the CEO chairs the board, zero otherwise;
HOD	=	the proportion of directors' shareholdings;
HOC	=	the proportion of the CEO's shareholdings;
HOS	=	the proportion of supervisors' shareholdings;
BOARDSIZE	=	the natural log of the number of directors on the board;
BETA	=	market systematic risk;
DTE	=	the ratio of debt to equity;
ε	=	error term assumed to be distributed $N(0,\sigma^2)$.

Following prior studies, we use ROA and ROE to measure the dependent variable PERFORMANCE. ROA is computed as net income divided by total assets. ROE is measured as net income divided by total equity. OUT, measuring the extent of board independence, is the proportion of outside directors on the board. AUDQUALis a dichotomousvariable for audit quality, which takesthe value of one if the firm is audited by a Big Fourauditor (i.e.,higher audit quality), zero otherwise(i.e., lower audit quality). If the hypothesis is supported, the coefficient on OUT×AUDQUAL will be positive and significant.

The control variables included in the model are commonly used in prior studies. DUALITY is a dummy variable which takesthe value of one if the CEO chairs the board, zero otherwise. The coefficient on DUALITY is unclearеither in theory or from empirical results. According to agency theory, CEOscurrently serving as chairperson of the board is detrimental to the checks and balances needed in corporate governance, which may lead to lower performance(see, Finkelstein &D'Aveni, 1994). On the contrary, stewardship theorists contend thatCEOs are firms' stewards. Their pro-organizational actions can be best facilitated when the corporate governance structure gives them high authority and discretion (see, Donaldson &Davis, 1991). As pointed out by Davis et al.(1997), such a situation can be attained more readily if the CEO chairs the board. Empirically, results in this strand of research also reachconflicting results. Some studies support the agency argument that CEO duality is linked to underperformance(e.g. Mallette&Fowler, 1992; Booth et al., 2002; Brick et al., 2006), while some lend support to the stewardship theory contention that CEO duality can improve firmperformance(e.g.,Weir &Laing, 2001; Wade et al., 2006; Fahlenbrach, 2009; Li &Qian, 2011).

BOARDSIZE is the natural log of the number of directors on the board. Some argue that boards with more members are less efficient in decision-making due to the difficulties of coordinating(see, Jensen, 1993; Cheng, 2008).Moreover, larger boards can be easier for CEOs to dominate the board(see, Jensen, 1993).Taking a different theory but the same argument, studies such as Hermalin and Weisban(2003)propose that larger boards may suffer from 'free-rider' problems because each board member can be more dependent on the other members in monitoring management. However, empirical studies yield inconclusive results. Some studies such as Jensen(1993) and Yermack(1996) detect a negative relationship of board size with corporate performance, while Arslan et al.(2010) and Hearn(2011)finda positive link between the two. Other studies such as Fooladi &Shukor(2012) report that board size is irrelevant to firm performance. Thus the predicted sign on BOARDSIZE is unclear.

BETA, a proxy for systemic risk, is computed as the covariance between the given stock return and the market return divided by the variance of the market return. We expect a negative relationshipeither based on theory or previous findings (e.g.,Bae&Sami,2005; Abdullah et al., 2012; Adams,2011). DTEis the ratio of debt to equity. In theory,a higher leverage not only can amplify firms' earnings level but also may increase the variability of earnings(see, Li et al., 2015). However, most empirical studies find leverage level is negatively associated with accounting-based performance measures(e.g.,Fooladi &Shukor, 2012; Elhabib et al., 2014; Li et al., 2015; Han et al.,2016).Thus, weexpect a negative relationship of DTE with firm performance.

HOCis the proportion of the CEO's shareholding. According to convergence theory, the owner-manager conflict can be mitigated by increasing managers' ownership(see, Jensen &Meckling, 1976). That is, managers are more likely to maximize owners' benefits when their ownership is higher. However, empirically no consensus has been reached. For example, Gu &Kim(2001)detect a positive relationship of managerial ownership with financial performance, while Jusoh & Ahmad(2014) discover a negative relationship. Other studies, such as Demsetz &Villalonga(2001) and Himmelberg et al.(1999), report that managerial shareholding is irrelevant to firm performance. We thus do not predict the sign of HOC.

HOD is the proportion of directors' shareholding and HOS the proportion of supervisors' shareholding. In Vietnam, the corporate governance structure of listed companies is categorized as two-tier. The board of directors is to manage business operations of the company. The board of directors is empowered to hire and fire managers, determine managers' remuneration, and approve key decisions. However, the supervisory board is primarily in charge of supervising the management by the board of directors and the CEO(see, Oguchi et al., 2013). Although directors and supervisors are assigned such important tasks, however, according to prior research, they might not have strong incentives to monitor or advise managers if they do not have significant shareholdings.

In this regard, empirical results do not consistently show that board ownership has a significant impact on financial outcomes. Vo &Nguyen(2014),for instance, find a positive relationshipof board ownership with corporate performance, while studies such as Arslan et al.(2010) do not detect such a relationship. We thus do not predict the signs of HOD and HOS.

Empirical Results And Discussions

Descriptive statistics

Table 2 provides descriptive statistics. Panel A reports continuous variables and Panel B dummy variables.The mean ROA is 5.229% and the mean ROE 9.608%. The mean OUT is only 0.142, indicating the proportion of outside directors on the board is still very low in Vietnameselistied companies. The average percentage of director shareholdings (HOD) is 1.509%, the average percentage of supervisor shareholdings (HOS) is 3.364%, and the mean CEO ownership (HOC) is 2.366%. The mean BOARDSIZE is 1.997. The mean firm risk (BETA) is 0.788 and the average ratio of debt to equity (DTE) is 106.211%.

The mean AUDQUAL is 0.29, showing that a very low proportion of listed companies is audited by Big Four accounting firms. This appears to be a common practice in emerging economies.The mean DUALITY is 0.400, indicating 40%of the sample companieswiththeirCEOs concurrently servingas board chair.

Table 2 Descriptive statistics

Panel A: continuous variables	Mean	Median	Std. Dev.	Min.	Max.
ROA (%)	5.229	3.000	7.596	-19.000	43.000
ROE (%)	9.608	9.000	15.400	-129.000	66.000
OUT	0.142	0.000	0.893	0.000	9.091
HOD (%)	1.509	0.500	2.391	0.000	9.800
HOS (%)	3.364	2.700	2.743	0.000	9.900
HOC (%)	2.366	1.000	2.849	0.000	9.800
BOARDSIZE	1.997	1.946	0.992	0.693	2.944
BETA	0.788	1.000	0.663	-5.000	7.000
DTE (%)	106.210	69.000	122.590	0.000	1294.220
Panel B：dummy variables					
AUDQUAL	0.290				
DUALITY	0.400				

[a]ROA=return on assets. ROE=return on equity. OUT= the proportion of outside directors on the board. AUDQUAL=audit quality (=1, if the firm is audited by a Big Four auditor; =0 otherwise). DUALITY=CEO/Chair duality (=1,if the CEO chairs the board, =0 otherwise). HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

Table 3 provides Pearson and Spearman correlations among variables used in the regression analysis. The Pearson correlation matrixdisplays that, without controlling for other variables, the variable AUDQUAL (audit quality) is significantly and positively related to the two measures of firm performance (ROA: r=0.128; ROE: r=0.136). BOARDSIZE (the natural log of the number of directors on the board) and DTE (financial leverage) are significantly and negatively associated with both performance measures. As to Spearman correlation analysis, OUT (board independence) and AUDQUAL (audit quality) are significantly and positively related to both performancemeasures. Consistent with the Pearson analysis, BOARDSIZE and DTE are significantly and negatively associated with the two tested performance measures.

Table 3 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)
ROA (1)		0.849***	0.041	0.128***	-0.006	0.012
ROE (2)	0.934***		0.049	0.136***	0.022	0.016
OUT (3)	0.119***	0.076*		0.041	-0.012	-0.055
AUDQUAL (4)	0.134***	0.138***	0.028		-0.032	0.004
DUALITY (5)	-0.051	-0.029	0.068	-0.032		-0.071
HOD (6)	0.069	0.047	-0.032	0.007	-0.176***	
HOS (7)	-0.037	-0.006	-0.059	0.057	-0.057	-0.008
HOC (8)	0.044	0.033	0.043	-0.114***	-0.146***	0.133***
BOARDSIZE (9)	-0.154***	-0.092**	0.171***	0.266***	-0.245***	-0.080
BETA (10)	-0.075*	-0.079*	0.018	0.077*	-0.068	-0.008

DTE (11)	-0.495 ***	-0.285 ***	-0.135 ***	-0.037	0.098 **	-0.099 **
	(7)	(8)	(9)	(10)	(11)	
ROA (1)	-0.012	-0.024	-0.333 ***	-0.041	-0.425 ***	
ROE (2)	0.027	-0.007	-0.136 **	-0.018	-0.447 ***	
OUT (3)	-0.058	0.060	0.220 ***	0.060	-0.011	
AUDQUAL (4)	0.079 *	-0.087 **	0.296 ***	0.058	-0.082 *	
DUALITY (5)	-0.071	-0.206 ***	-0.152 ***	-0.067	0.062	
HOD (6)	-0.008	0.180 ***	-0.074 *	0.028	-0.107 **	
HOS (7)		0.069	0.072 *	-0.056	0.034	
HOC (8)	0.123 ***		0.127 **	0.049	-0.019	
BOARDSIZE (9)	0.113 **	0.077 *		0.010	0.085 *	
BETA (10)	-0.016	-0.001	-0.023		-0.049	
DTE (11)	0.102 **	-0.012	0.123 **	0.048		

[a]ROA=return on assets. ROE=Return on Equity. OUT= the proportion of outside directors on the board. AUDQUAL=audit quality (=1, if the firm is audited by a Big Four auditor; =0 otherwise). DUALITY=CEO/Chair duality (=1, if the CEO chairs the board, =0 otherwise). HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

[b]Pearson (Spearman) correlation coefficients are presented above (below) the diagonal.

[c] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Difference tests

Table 4compares means and medians of the variables used in the regression modelsbetween higher audit-quality firms (151 firm-year observations) and lower audit-quality firms (364 firm-year observations). The univariate analysis indicates that the mean (median) ROA for the higher audit-quality group is 6.72% (5%) and for the lower audit-quality group 4.602% (3%). Both the parametric t-test and non-parametric Wilcoxon test shows that the differences in means and medians are statistically significant at the 1% level.

The mean (median) ROE for the higher audit-quality group is 12.868% (13%) and for the lower audit-quality group 8.255% (7%). Both the t-test and Wilcoxon test show that the differences are significant at the 1% level.

The mean (median) CEO ownership (HOC) for the lower audit-quality group is 2.526% (1.2%) compared to1.980% (0.4%) for the higher audit-quality group, which is statistically significant at the 5% (1%) level.Such findingsappear to imply that more powerful managers in Vietnamese companieshave a tendencyto reduce external monitoring pressure by hiring a lower quality auditor (non-Big Four auditor). Such findings are in line with the contention that strong-power CEOsare more likely to switch to smaller auditors in order to sustain the opaqueness gains derived from weak corporate governance(see, Lin and Liu, 2010, p.117). The mean (median) BOARDSIZE is 2.100 (2.080) for the higher audit-quality group compared to 1.950 (1.946) for the lower audit-quality group, which is statistically significant at the 1% (1%) level. Such resultsappear to indicate that larger boards prefer to hire higher-quality auditors.

While supervisors' ownership for the higher audit-quality group appears to be higher than that for thelower audit-quality group, however, the difference is only at the 10% level and only under the use of t-test. Firm risk (BETA) for the higher audit-quality group, under the Wilcoxon test, is significantly higher than that for the lower audit-quality group at the 1% level.The ratio of debt to equity (DTE) for the higher audit-quality groupis significantly lower than that for the lower audit-quality group at the 5% level under the t-test. As to variables OUT, DUALITY and HOD, we do not find significant differences between the two groups at the 10% level in either test.

Table 4 Tests of differences in basic characteristics between higher audit-quality and lower audit-quality groups

	higher audit-quality group (n=151)			lower audit-quality group (n=364)			Difference tests	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	t-stat.	Wilcoxon Z
ROA (%)	6.742	5.000	8.245	4.602	3.000	7.229	2.932 ***	3.034 **
ROE (%)	12.868	13.000	13.993	8.255	7.000	15.768	3.120 ***	3.126 ***
OUT	0.199	0.000	1.081	0.118	0.000	0.803	0.941	0.644

DUALITY	0.380	0.000	0.486	0.410	0.000	0.493	-0.728	-0.728
HOD (%)	1.525	0.500	2.494	1.502	0.500	2.350	0.097	0.151
HOS (%)	3.699	3.100	2.985	3.225	2.500	2.627	1.700 *	1.296
HOC (%)	1.980	0.400	2.746	2.526	1.200	2.880	-2.023 **	-2.594 ***
BOARDSIZE	2.100	2.080	1.778	1.950	1.946	0.851	3.925 ***	5.862 ***
BETA	0.848	1.000	0.513	0.764	1.000	0.715	1.309	1.735 *
DTE (%)	90.689	67.000	88.406	112.649	72.000	133.835	-2.186 **	-0.830

[a] ROA=return on assets. ROE=return on equity. OUT=the proportion of outside directors on the board. AUDQUAL=audit quality (=1, if the firm is audited by a Big Four auditor; =0 otherwise). DUALITY=CEO/Chair duality (=1,if the CEO chairs the board, =0 otherwise). HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

[b] The significance of means and medians is evaluated based on the t-test and Wilcoxon test, respectively (two-tailed).

[c] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Multivariate regression analysis

While most empirical studies in the area of accounting directly use fixed-effects models to test theirhypotheses, we started with model choice tests to locate a better one. The Redundant fixed-effects F-test reports that the regression model with fixed-effects outperforms the pooled OLS model. Also the Hausman test shows that the null hypothesis is rejected (H_0: Random effects; H_1: fixed effects) for the ROA and ROE models, pointing out that the fixed-effects model should be used in the estimations.

Table 5reports regression results for the tests of the hypothesis. Column one(ROA model) shows that the coefficient on AUDQUAL (audit quality)is positive and significant at the 1% level (coef.=1.971,t=3.107). Column two (ROE model) shows that AUDQUA is positively related to ROE with statistical significance at the 5% level (coef.=3.275, t=2.452).As expected, these results support prior findings, suggesting that firms audited by higher-quality accounting firms are more likely to produce better operating performance. Such findings not only confirm the existence of agency problems in the Vietnamese corporate system, but also imply that firms in emerging countries should hire high-quality auditors.

Columns one and twoshow that the coefficient on OUT (board independence) is insignificant, which is consistent with the recent Vietnamese study conducted by Vo & Nguyen (2014).Specifically, they base a sample of firms trading in the Ho Chi Minh stock market and find that board independence is irrelevant to firm performance measured either by ROA orROE. Nonetheless, our results show that the coefficient on the interaction variableOUT×AUDQUALfor the ROA model is significantly positive at the 5% level(coef.=1.473,t=2.417) and, for the ROE model, positive and significant at the 5% level (coef.=2.867, t=2.236).These resultslend support to the hypothesis, suggesting that hiring higher-quality auditors can strengthen the effectivenessof boardindependence on firm performance.

As to control variables, BETA (systemic risk) is negatively associated with firm performance for both models but only significantly at the 5% level for the ROA model(coef.=-0.963, t=-2.315), in line with previous findings (e.g.,Bae& Sami,2005; Abdullah et al,. 2012; Adams, 2011). DTE (debt to equity) is significantly and negatively related to firm performance for both performance models, consistent with most findings in this area(e.g.,Elhabib et al., 2014; Li et al., 2015; Han et al.,2016).

Table 5Interaction effects of board independence and audit quality on firm performance

	Predicted sign	ROA		ROE	
		Coef.	t-stat.	Coef.	t-stat.
Intercept		12.906	9.266 ***	25.265	8.616 ***
OUT	+/-	-0.194	-0.484	-0.377	-0.446
AUDQUAL	+	1.971	3.107 ***	3.275	2.452 **
OUT×AUDQUAL	+	**1.473**	**2.417** **	**2.867**	**2.236** **
DUALITY	+/-	-0.123	-0.212	0.687	0.563
HOD	+/-	-0.042	-0.358	-0.141	-0.569
HOS	+/-	-0.034	-0.334	0.139	0.656
HOC	+/-	-0.045	-0.449	0.025	0.121
BOARDSIZE	+/-	-0.205	-0.402	0.381	0.692

BETA	–	-0.963	-2.315 **	-1.307	-1.492
DTE	–	-0.024	-10.510 ***	-0.057	-11.634 ***
Year fixed effects		(yes)		(yes)	
Industry fixed effects		(yes)		(yes)	
No. of observations		515		515	
F-stat.		13.560***		11.089***	
R^2		0.399		0.352	
AdjustedR^2		0.370		0.320	

[a]ROA=return on assets. ROE=return on equity. OUT= the proportion of outside directors on the board. AUDQUAL=audit quality (=1, if the firm is audited by a Big Four auditor; =0 otherwise). DUALITY=CEO/Chair duality (=1,if the CEO chairs the board, =0 otherwise). HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

[b] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively (two-tailed).

In an attempt to find out how audit quality influences outside directors' monitoring performance, we further separate higher audit-quality companies from lower audit-quality ones, and examine the impact of board independence on corporate performance, respectively. The empirical results are provided in Table 6. For the higher audit-quality group, our test reveals that OUT (board independence) is positively associated with ROA (coef.=1.339, t=2.726) as well as ROE (coef.=2.550, t=2.748) at the 1% level. However, for the lower audit-quality group, the coefficient on OUT is insignificant in either the ROA or ROE model. In summary, our results provide a novel perspective that outside directors' monitoring performance is conditional on audit quality.

Table 6Effects of board independence on firm performance by audit quality

	ROA				ROE			
	higher audit-quality group		lower audit-quality group		higher audit-quality group		lower audit-quality group	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Intercept	19.985	8.539***	13.546	3.012***	36.502	8.261***	44.075	4.264***
OUT	**1.339**	**2.726*** **	**-0.008**	**-0.020**	**2.550**	**2.748*** **	**-0.206**	**-0.235**
DUALITY	0.755	0.640	0.227	0.356	-0.137	-0.062	1.575	1.077
HOD	0.011	0.049	-0.114	-0.856	0.191	0.447	-0.322	-1.056
HOS	0.035	0.197	0.004	0.033	0.228	0.681	0.123	0.448
HOC	-0.179	-0.870	0.114	1.030	0.038	0.097	0.214	0.843
BOARDSIZE	0.356	1.520	-0.434	-2.665***	0.496	1.262	-0.234	-0.626
BETA	-2.366	-2.309**	-0.403	-0.933	-4.118	-2.128**	-0.673	-0.679
DTE	-0.048	-7.615***	-0.020	-8.155***	-0.055	-4.653***	-0.055	-10.026***
Year fixed effects	(yes)		(yes)		(yes)		(yes)	
Industry fixed effects	(yes)		(yes)		(yes)		(yes)	
No. of observations	151		364		151		364	
F-stat.	8.127***		12.402***		5.272***		9.426***	
R^2	0.539		0.420		0.431		0.354	
AdjustedR^2	0.473		0.386		0.350		0.316	

[a]ROA=return on assets. ROE=return on equity. OUT= the proportion of outside directors on the board. AUDQUAL=audit quality (=1, if the firm is audited by a Big Four auditor; =0 otherwise). DUALITY=CEO/Chair duality (=1,if the CEO chairs the board, =0 otherwise). HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural of log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

[b] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively (two-tailed).

Robustness test

Prior empirical work suggests that endogeneityis likely to be present between corporate governanceand firmperformance. The risk of endogeneity includes spurious correlation and reverse causality. Panel regressions help control for spurious correlation, whereas the use of instrument variables in a 2SLS framework helps address reverse causality.Since firms of better financial performance may be able to hire higher-quality auditors, firm financial performance might have an impact on audit quality. To mitigate the possibility of threats to validity relating to the potential endogeneity concerns, we run a 2SLS panel regression. In the first stage, we predict audit quality using two instrumental variables, INDEPSUP (the ratio of outside supervisors) and MTB (market capitalization divided by book value). We also include LISTYEAR (the number of years since the firm was first listed on the Ho Chi Minh Exchange), company size (the natural log of total assets) and LEV (total liabilities divided by total assets) in predicting audit quality, given the prior findings that these variables can explain why firms hire Big Four auditors. In the secondstage, we replace AUDQUAL with PREAUDQUAL(predicted value from the first stage) and re-run the regression model.

Table 7 presents the results, which are qualitativelysimilar with the previous findings. Columns one and two show that the coefficients on OUT (board independence) remain insignificant. The coefficients on PREAUDQUAL (audit quality) are positive and significant at the 1% level for the ROA and ROE models. The coefficient on the interaction variable OUT×PREAUDQUAL for the ROA model is significantly positive (coef.=1.474, t=1.702) at the 10% level (two-tailed). For the ROE model, the coefficient is positive (coef.=2.925, t=1.591) but only significant at the 10% level (one-tailed). In general, the results still support the hypothesis, suggesting that high-quality auditing can strengthen the positive effect of board independence on firm performance.

Table 72SLS tests of audit quality's relationship with firm performance

	Predicted sign	ROA		ROE	
		Coef.	t-stat.	Coef.	t-stat.
Intercept		9.193	6.655 ***	12.901	4.400 ***
OUT	+/-	-0.482	-0.864	-0.962	-0.813
PREAUDQUAL	+	8.034	6.317 ***	13.679	5.068 ***
OUT×PREAUDQUAL	**+**	**1.474**	**1.702** *	**2.925**	**1.591**
DUALITY	+/-	-0.217	-0.374	0.551	0.447
HOD	+/-	-0.057	-0.486	-0.165	-0.658
HOS	+/-	-0.016	-0.162	0.128	0.601
HOC	+/-	-0.071	-0.716	-0.048	-0.226
BOARDSIZE	+/-	-0.423	-1.734 *	0.120	0.026
BETA	–	-1.910	-4.234 ***	-2.662	-2.781 ***
DTE	–	-0.025	-10.830 ***	-0.058	-11.910 ***
Year fixed effects		(yes)		(yes)	
Industry fixed effects		(yes)		(yes)	
No. of observations		502		502	
F-stat.		14.259***		11.550***	
R^2		0.418		0.368	
AdjustedR^2		0.388		0.336	

[a] ROA=return on assets. ROE=return on equity. OUT= the proportion of outside directors on the board. PREAUDQUAL=predicted value of AUDQUAL. DUALITY=CEO/Chair duality. HOD=the proportion of directors' shareholdings. HOS=the proportion of supervisors' shareholdings. HOC=the proportion of the CEO's shareholdings. BOARDSIZE=the natural of log of the number of directors on the board. BETA=market systematic risk. DTE=the ratio of debt to equity.

[b] ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively (two-tailed).

Conclusion And Suggestions

The empirical resultsdo not show that board independence alone canaffect firm performance, while audit quality has a positive impact on firm performance. Our findings also reveal that there is an interaction effect between audit quality and outside directors. The impact of outside directors on firm performance is strengthened as audit quality rises.

Further examinations demonstrate that the positive effectiveness of board independence on corporate performance occurs only in situations where firms are subject to high-quality auditing (firms audited by Big Four accounting firms in this study). Such results indicate that external and internal corporate governance mechanisms may act on each other and create synergies.

In General, this study demonstrates that audit quality plays a crucial role in maximizing shareholders' value. The impact of audit quality on firm performance is twofold.It not only can make a direct impact on firm performance but also can indirectly impact firm performance via outside directors.

The findingsare particularly important for emerging economies where companies are seeking to gain credibility among global investors but not many show interest in hiring high-quality auditors. For example, our study shows that less than 30% of the Vietnamese listed companies hire Big Four auditors. This is probably because higher audit fees are charged by higher-quality auditors, as prior studies have indicated the existence of brand-name fee premium (see, Defond et al., 1999).

We stress the evidence that external and internal corporate governance mechanisms have complementary effects, partly because some presume that external and internal governance mechanisms are alternative or substitutive in achieving the goal of sound corporate governance (see, Agrawal &Knoeber, 1996; Almanzan &Suarez, 2003). As we may know, under the substitution presumption, stronger external governance measures will reduce the net benefit of internal governance mechanisms. Accordingly, companies having high-quality external monitoring (hiring a Big Four auditor in our case) can feel at ease to relax their internal monitoring mechanisms (to lower board independence in our case). However, given our results, this doing may lead to the ineffectiveness of individual corporate governance mechanisms. Taken together, we suggest that firms in emerging economies or in a weak legal system not only increase the proportion of outside directors on the board but also pay attention to auditor quality.

It is worth noting that audit quality in this study is measuredusing auditor size. Companies audited by Big Four accounting firms are classified as higher audit quality and by non-Big Four as lower audit-quality. Such dichotomous classification is clear but somewhat too broad. Future researchers may replace it with a better indicator if the data is available.

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