Audit committee accounting expertise, CEO power, and audit pricing

Hyungtae Kim, Byungjin Kwak, Youngdeok Lim & Jaeyoon Yu

Published online: 03 Nov 2015.

Submit your article to this journal

Article views: 58

View related articles

View Crossmark data

Routledge
Taylor & Francis Group

Audit committee accounting expertise, CEO power, and audit pricing

Hyungtae Kim[a], Byungjin Kwak[c], Youngdeok Lim[b] and Jaeyoon Yu[c]

[a]College of Business, Arkansas State University, AR, USA; [b]The University of New South Wales, NSW, Australia; [c]Graduate School of Finance and Accounting, Korea Advanced Institute of Science and Technology (KAIST), South Korea

ABSTRACT

The Sarbanes–Oxley Act of 2002 (SOX) mandates that all listed firms disclose whether they have a financial expert on the audit committee, highlighting the committee's expertise. However, some argue that non-accounting financial experts, compared to accounting financial experts, are not sufficient to ensure audit committee effectiveness because the former lack accounting knowledge. Accounting experts on audit committees may require higher audit efforts, while auditors may assess audit committees with accounting financial experts as effective, decreasing audit efforts. This paper first inspects the effect of audit committee accounting expertise on audit fees as a proxy for audit efforts, and then investigates whether the effect is moderated by powerful CEOs. Using post-SOX period data, our results show that, on average, firms with accounting experts on audit committees are more likely to pay higher audit fees, and the effect is less pronounced when a powerful CEO manages a firm.

1. Introduction

Responding to the wake of accounting scandals (e.g. Enron, WorldCom, Tyco International), legislative and regulatory bodies imposed new regulations on audit committees to ensure their *expertise* and *independence*. Specifically, the Sarbanes–Oxley Act (SOX) and the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Securities Dealers Automated Quotation (NASDAQ) listing requirements oblige listed firms to establish a wholly independent audit committee with at least one financial expert.[1,2] The purpose of this paper is to examine the relationship between the presence of accounting experts on the audit committee and audit efforts. We further explore whether powerful CEOs subsume the effect of audit committee accounting expertise on audit fees.

Regarding the requisite expertise, the Securities and Exchange Commission (SEC) initially narrowly defined an audit committee member with experience in accounting as a *financial expert*. Thus, the definition included only audit committee members with accounting experience, such as the chief financial officer (CFO), chief accounting officer (CAO), controller, comptroller, certified public accountant (CPA), or auditor. However, there was a debate regarding whether the definition should include non-accounting financial experts who are expected to understand financial statements, based indirectly on their work experience

---

(even if they have not had a career path or experience in accounting). Opponents of the narrow definition complained that it was too restrictive and that it was difficult to find and appoint accounting experts as audit committee members; they argued that non-accounting financial experts could perform these duties effectively and noted that neither Alan Greenspan nor Warren Buffet is an accounting expert according to the narrow definition (American Association of Bank Directors 2002). Eventually, the SEC compromised by adopting a broader definition of a financial expert as someone simply able to assess or understand financial statements. Thus, companies can now designate one of the following as their financial expert on the audit committee: chief executive officer (CEO), president, chairman, investment banker, venture capitalist, consultant, professor, financial analyst, or attorney.[3]

However, accounting processes and production of accounting information are sophisticated. Understanding accounting numbers on financial statements is one thing; understanding the process of producing accounting information is another. Thus, the monitoring and oversight of the auditing process by non-accounting financial experts can be quite different from that provided by accounting experts. Some studies indirectly show that members who are qualified as non-accounting financial experts lack understanding of the financial reporting process (Mensah, Song, and Ho 2004; Coates, Marais, and Weil 2007; Jiang, Petroni, and Wang 2010), casting doubt on whether financial expertise, per the SEC definition, is an appropriate dimension to ensure audit committee effectiveness.

To investigate the association between audit committee accounting expertise and audit efforts, we use audit fees as a proxy for audit efforts. Due to a better understanding of auditing work, accounting experts are likely to be regarded as more liable parties; their reputations would be at risk in the case of financial reporting failure (Srinivasan 2005). Therefore, they have greater incentive to demand higher quality audit services.

On the other hand, auditors relatively decrease audit efforts for firms with accounting experts on the audit committee because accounting experts provide a more effective internal control system. In this matter, audit fees may be lower for firms with audit committee accounting expertise. Thus, we do not make a prediction regarding the association between audit committee accounting expertise and audit fees, and we empirically explore whether accounting experts increase or decrease audit fees.

Although the effectiveness of audit committees has improved following enactment of SOX (Cohen, Krishnamoorthy, and Wright 2010), powerful CEOs still appear to weaken the audit committee's or board's effectiveness by intruding in the board selection process, decreasing the intensity of audit committee monitoring, and supplying lower quality accounting information (Ryan, Wang, and Wiggins 2009; Tuggle et al. 2010; Carcello et al. 2011). Thus, we investigate whether the effect of accounting experts is dependent on CEO power.

Using data from the post-SOX era, our results show that the presence of an accounting expert on the audit committee leads to higher audit fees. However, this effect is not present when CEOs are powerful. Our findings indicate that accounting experts induce auditors to provide greater assurance but that CEOs still deter audit committee effectiveness, even in the recently improved corporate governance and regulatory environment. Our results are robust for Fama–MacBeth regression and two-stage least square regression.

Consistent with our main findings, we also show that audit committee accounting expertise is significantly associated with the likelihood of employing a high-quality auditor such as a Big 4 auditor or an industry specialist auditor. This lends credence to our evidence of accounting experts on audit committee demanding high-quality audit services.

Finally, we reanalyze the association between audit committee accounting expertise and audit fees, using pre-SOX data. Because SOX is aimed at improving audit committee effectiveness, the effect of accounting experts on audit fees would be different in the pre-SOX period.[4] We report a negative association between audit committee accounting expertise and audit fees, consistent with risk-control perspective that auditors require audit fee premiums for clients with weak corporate governance. These findings help us to reconcile with Krishnan and Visvanathan (2009).

This paper contributes to the existing literature as follows: first, two aspects – expertise and independence – differentiate this paper from Krishnan and Visvanathan (2009), who support the

risk-control perspective of accounting experts. Using pre-SOX data, they argue that accounting financial experts lower audit fees, the proxy for audit risk. However, since our sample period is taken from the post-SOX period, every firm should have at least one broadly defined financial expert. Hence, we compare the accounting experts with non-accounting financial experts, which is different from Krishnan and Visvanathan (2009), who compare the accounting experts with non-accounting experts (i.e. accounting experts vs. non-accounting financial experts or non-experts). Our paper focuses on outside accounting experts by restricting the sample period to post-SOX. In their sample, a financial or accounting expert might be an inside director; hence, it is difficult to capture the pure effect of such expertise on audit fees. Specifically, firms might nominate inside directors with accounting experience to the audit committee to appeal to the market, but the directors might not try to increase external auditors' efforts. Thus, in Krishnan and Visvanathan (2009), the effects of accounting expertise on audit fees are mixed from those of inside and outside accounting expertise, while we address only the latter. Given that inside board members have quite different incentives from outside board members, our study contributes beyond Krishnan and Visvanathan (2009).

Further, we generalize the analyses with 11,684 observations, taking into consideration the Erkens and Bonner (2013) argument that firm size is one of the most important factors affecting the decision of appointing accounting experts, which might induce endogeneity problems. They focus on 801 observations from S&P 500. When we reexamine our analyses with pre-SOX data, our results are consistent with Krishnan and Visvanathan (2009); our sensitivity tests explain the results.

Second, this paper controls for SOX effect and tests the association between an accounting financial expert in audit committee and audit fees in the audit pricing model so that it shows incremental contributions to prior literature. Cohen et al. (2014) argue that audit committee industry knowledge is valuable and find that audit committee members who are both accounting and industry experts are better in financial reporting quality and external auditor oversight. They focus on audit committee industry expertise rather than accounting expertise itself. Their sample period is 2001–2007; thus, the effect of SOX is not well controlled for. Erkens and Bonner (2013) use S&P 1500 firms and document that the presence of an accounting financial expert on an audit committee is positively associated with external audit fees as one of firm status, but the association is not clearly tested in the audit pricing model.

Finally, this paper explores the detrimental effect of CEO power on the association between audit committee accounting expertise and audit fees. Although the CEO and audit committee are two key bodies that influence a firm's audit scope and hence audit fees, there is a lack of research incorporating CEO characteristics in audit fee pricing.[5] It is necessary to consider these two factors together; by doing so, we extend the existing literature. More important, given that SOX requires that audit committees be solely responsible for auditor-related decisions such as auditor hiring, firing, and compensation, CEOs have not been supposed to influence audit fee decisions. However, our results imply that CEOs still have a say in audit fees. This may imply that audit committees are not independent of managers, even after the adoption of SOX.

The rest of the paper is as follows: in Section 2, we discuss prior literature and develop hypotheses. Section 3 presents the research design. Section 4 describes the sample selection and data description. Section 5 documents the findings, followed by results of sensitivity tests in Section 6. In Section 7, we summarize our findings and discuss the respective policy implications.

2. Related literature and hypotheses development

Subsequent to the controversy regarding the definition of financial expert as described in the previous section, some literature has investigated the accounting expert's role on the audit committee. Initially, Davidson, Xie, and Xu (2004) show a positive market reaction when firms appoint directors with financial expertise, in particular in the area of accounting, to their audit committees. Defond, Hann, and Hu (2005) find that the market responds positively to the appointment of accounting financial experts to the audit committee but that there is no such reaction to the appointment of non-accounting

financial experts. However, these papers do not imply that accounting financial experts improve financial reporting quality more than non-accounting financial experts.[6]

Krishnan (2005), Zhang, Zhou, and Zhou (2007), and Hoitash, Hoitash, and Bedard (2009) demonstrate that firms with accounting experts on their audit committees are less likely to have internal control problems, suggesting that accounting experts effectively improve internal control mechanisms. More recently, researchers have investigated whether accounting experts improve financial reporting quality. For example, Krishnan and Visvanathan (2008) show that firms with accounting financial experts are prone to high levels of accounting conservatism. Dhaliwal, Naiker, and Navissi (2010) investigate whether accounting experts on the audit committee are likely to improve accruals quality. Carcello et al. (2011) find that financial experts on the audit committee are negatively associated with accounting restatements and that they are more likely to keep managers from exercising earnings management.[7] In sum, the previous literature has consistently shown that accounting financial experts on the audit committee improve financial reporting quality.

Nevertheless, it is quite difficult to predict clearly whether the presence of an accounting financial expert on the audit committee is associated with higher or lower audit fees due to two opposite perspectives: demand-based perspective and risk-based perspective, as in Krishnan and Visvanathan (2009). According to the demand-based perspective, strongly governed firms require auditors to increase audit efforts, leading to higher audit fees. In contrast, the risk-based perspective argues that weakly governed firms are more likely to pay higher audit fees because auditors assess that these firms have higher control risks. These two arguments co-exist in practice but have conflicting effects on audit fees.

Based on the demand-based perspective, an audit committee with an accounting expert would require high-quality audit services from an external auditor. Prior research argues that audit committee members' incentives to improve financial reporting quality are reflected in the audit pricing decision (Carcello et al. 2002; Abbott et al. 2003; Knechel and Willekens 2006; Zaman, Hudaib, and Haniffa 2011). That is, effective audit committees are more likely to demand greater audit efforts from better auditors in order to enhance the quality of financial reporting. Abbott et al. (2003) focus on the association between audit committee characteristics and audit fees. They document that audit committee independence increases audit fees, implying that independent audit committees have strong incentives to reduce the likelihood of a misstatement. However, they find weak evidence for an association between audit committee financial expertise and audit fees. Carcello et al. (2002) show that firms with strong corporate governance (i.e. board independence, board activities, and board financial expertise) have higher audit fees.[8] Further, they find that audit fees are positively associated with audit committee independence and audit committee financial expertise.[9] Data for listed companies in Belgium, Knechel and Willekens (2006) show that independent boards of directors tend to pay higher audit fees. More recently, Zaman, Hudaib, and Haniffa (2011) find that independent and diligent audit committees increase audit fees, although they fail to find a significant relationship between audit committee financial expertise, and audit fees based on the broad definition of financial expert. Overall, prior studies argue that firms with effective audit committees are willing to pay higher audit fees to require more work from auditors, supporting the demand-based perspective. Similarly, we might expect the presence of accounting experts on the audit committee to be positively associated with audit fees.

Contrary to the demand-based perspective, the risk-control perspective posits that, if clients have high control risks with weak corporate governance, auditors rationally charge high fees. For example, Tsui, Jaggi, and Gul (2001) find a negative association between audit committee independence and audit fees in Hong Kong companies, which is inconsistent with the findings by Abbott et al. (2003). Bedard and Johnstone (2004) argue that auditors increase the audit scope and billing rates for firms with earnings management risk and that the tendency is more pronounced for firms with weak corporate governance. This implies that the auditor's pricing decision is dependent on corporate governance risk. More recently, Krishnan and Visvanathan (2009) find that firms with accounting experts on the audit committee pay lower audit fees, consistent with the risk-control perspective. From this perspective, it is possible that the presence of accounting experts on the audit committee is negatively associated with audit fees.

As summarized above, there are two perspectives regarding the effect of audit committee accounting expertise on audit fees: the demand-based perspective and the risk-control perspective. Since it is difficult to predict which one is dominant, we present a hypothesis in a null form:

H1: The presence of an accounting expert on the audit committee is not statistically associated with audit fees.[10]

Recent studies have found that CEO power weakens the monitoring effectiveness of the audit committee and/or the full board (Adams and Ferreira 2007; Beasley et al. 2009; Ryan, Wang, and Wiggins 2009; Tuggle et al. 2010; Carcello et al. 2011; Cohen, Frazzini, and Malloy 2012), even after the adoption of SOX. For example, Carcello et al. (2011) and Cohen, Frazzini, and Malloy (2012) explain that the CEO might exercise power through involvement in the board selection process and nominate management-friendly independent directors. In this case, audit committee effectiveness can be lessened and the likelihood of accounting restatements will be higher. Adams and Ferreira (2007) also argue that CEOs hesitate to share information that the board of directors could use to monitor and intervene in management. Tsui, Jaggi, and Gul (2001) examine the effect of CEO domination on audit pricing and find that audit fees are higher when the CEO takes the position of chairman. Finally, inferring from Beasley et al. (2009), we claim that powerful CEOs intervene in setting the audit committee agenda.

In the context of this paper, we could expect the effect to be less pronounced when the CEO has greater power, regardless of the direction of the association between the audit committee accounting expertise and audit fees. On the one hand, according to the demand perspective, accounting experts are more likely to demand audit services from the auditor. If the CEO is powerful, he/she is likely to hinder the audit committee's efforts to pursue high-quality audit services. Accordingly, a powerful CEO moderates the positive effect of audit committee accounting expertise on audit fees. On the other hand, if the risk-control perspective is dominant, the association between audit committee accounting expertise and audit fees would be negative because auditors assess these firms as having low control risks. However, when the CEO is powerful, auditors are not likely to regard control risk of these firms as low because the CEO would hinder audit committee effectiveness. For these reasons, we expect the effect of audit committee accounting expertise on the audit fee decision to be moderated by the power of the CEO. Thus, our second hypothesis is directionally stated:

H2: The effect of audit committee accounting expertise on audit fees is likely to be moderated for firms with powerful CEOs.

3. Research design

3.1. Empirical model for H1

We test the effect of audit committee accounting expertise on audit fees by using the following ordinary least square (OLS) regression model (omitting the firm and year subscripts):

$$
\begin{aligned}
LogAuditFees = {} & \alpha_0 + \alpha_1 DumAccExp + \alpha_2 LogTA + \alpha_3 LogSale + \alpha_4 ROA + \alpha_5 NBS \\
& + \alpha_6 NGS + \alpha_7 InvRec + \alpha_8 SqrtEmploy + \alpha_9 AbsLagAccr \\
& + \alpha_{10} ChgSale + \alpha_{11} Issue + \alpha_{12} Exord + \alpha_{13} Loss + \alpha_{14} Leverage \\
& + \alpha_{15} Quick + \alpha_{16} BTM + \alpha_{17} Big4 + \alpha_{18} MSALead + \alpha_{19} Tenure \\
& + \alpha_{20} Busy + \alpha_{21} BDIndep + \alpha_{22} BDSize + \alpha_{23} AttendProb \\
& + \alpha_{24} AuditSize + Industrydummies + Yeardummies + \varepsilon
\end{aligned}
\tag{1}
$$

where *LogAuditFees* is the natural log of audit fees in thousands of US dollars and *DumAccExp* is 1 if there is at least one accounting expert on the audit committee and 0 otherwise. The other variables are defined in Appendix 1. Since audit fees and several determinants of audit fees are likely to be consistent over multiple years, the use of panel data could cause intertemporal correlations in error terms. On the other hand, since the adoption of SOX affects the audit fee structure of the listed firms simultaneously

(Charles, Glover, and Sharp 2010), audit fees would be cross-sectionally correlated among distinct firms. To address these concerns, we use a firm cluster-robust regression model accounting for year-fixed effects.[11] If the demand-based perspective is more dominant, α_1 would be positive; if the risk-based perspective is more dominant, α_1 would be negative.

To capture firm characteristics, we include control variables following previous studies (Carcello et al. 2002; Choi et al. 2008, 2009, 2010). We control *LogTA*, *LogSale*, and *SqrtEmploy* for firm size, and *NBS*, *NGS*, *InvRec*, and *Exord* for firm complexity. To control for firm risk, we include *ROA*, *AbsLagAccr*, *ChgSale*, *Loss*, *Leverage*, and *Quick* in the regression model (1). We also control *Issue* for increasing audit demand surrounding external financing and include *BTM* accounts for client growth potential. With respect to auditor characteristics, we include *Big4* and *MSALead* for fee premium,[12] auditor tenure with current client for fee discount due to the low-balling effect or a lack of client knowledge when tenure is short, and a dummy variable for firms with a December fiscal-period-end for auditors' fee premium (*Busy*). Following Carcello et al. (2002), to control for the effect of governance characteristics on audit fees, we include board-related variables: *BDIndep*, *BDSize*, *AttendProb*, and *AuditSize*.[13]

3.2. Empirical model for H2

We test the effect of CEO power on the relationship between accounting experts and audit fees by using the following OLS regression model (omitting firm and year subscripts):

$$
\begin{aligned}
LogAuditFees = {} & \beta_0 + \beta_1 DumAccExp + \beta_2 DumAccExp^*CEOPow + \beta_3 CEOPow \\
& + \beta_4 LogTA + \beta_5 LogSale + \beta_6 ROA + \beta_7 NBS + \beta_8 NGS + \beta_9 InvRec \\
& + \beta_{10} SqrtEmploy + \beta_{11} AbsLagAccr + \beta_{12} ChgSale + \beta_{13} Issue \\
& + \beta_{14} Exord + \beta_{15} Loss + \beta_{16} Leverage + \beta_{17} Quick \\
& + \beta_{18} BTM + \beta_{19} Big4 + \beta_{20} MSALead + \beta_{21} Tenure + \beta_{22} Busy \\
& + \beta_{23} BDIndep + \beta_{24} BDSize + \beta_{25} AttendProb + \beta_{26} AuditSize \\
& + Industry dummies + Year dummies + \varepsilon
\end{aligned}
\tag{2}
$$

where *CEOPow* is equal to 1 if CEO tenure is greater than the median value in our sample and the CEO is also the chairman of the board of directors and 0 otherwise. The other variables are defined in Appendix 1. Ryan, Wang, and Wiggins (2009), Tuggle et al. (2010), and Carcello et al. (2011) motivate our definition of *CEOPow*. A powerful CEO with longer tenure or chairmanship can reduce the influence of the audit committee, not to mention the full board, through experience and expertise on the firm, or exercisable power over committee members' activities.

4. Sample and data

4.1. Sample selection

Our sample period spans 2003–2010 (SOX was enacted in 2002[14]). Table 1 presents the sample selection procedures. We collect 21,316 observations available from *Audit Analytics* and *Corporate Library*. We gather information about the director profile from *Corporate Library* and proxy statements. Based on *Corporate Library* and firms' proxy statements, we identify audit committee members who have been employed as CFOs, CAOs, controllers, comptrollers, or CPAs and define these members as the accounting experts. Since biographical information on audit committee members is not complete in the above-mentioned databases, some members may be incorrectly coded as not having accounting expertise. This would likely induce a bias against our prediction. We exclude firms unmatched with *Compustat* database and firms in the financial services industry (SIC 6000–6999), following Carcello et al. (2002). Finally, with requirements for all variables to test H1, the final sample comprises 11,684 firm-year observations from the intersection of *Audit Analytics*, *Compustat*, and *Corporate Library*.

Table 1. Sample selection.

Number of observations available from Audit Analytics and Corporate Library over 2003–2010	21,316
Less: firm-year observations unmatched with *Compustat*	(1878)
Less: firm-year observations in financial services industries (SIC codes 6000–6999)	(1520)
Less: firm-year observations with missing variables	(6234)
Number of observations used to test H1	11,684
Less: firm-year observations with *CEOPow*	(5214)
Number of observations used to test H2	6470

For the test of H2, the final sample is comprised of 6470 firms because the limited availability of *Risk Metrics* and *ExecuComp* restricts the sample number for *CEOPow*.

4.2. Data description

Table 2 shows the descriptive statistics on dependent and independent variables with the results of univariate tests. Panel A shows the mean, standard deviation, and distribution of the variables. The mean (median) of our dependent variable, *LogAuditFee*, is 14.239 (14.160), consistent with Gotti et al. (2012). In our sample, roughly three out of four firms have at least one accounting expert. The summary statistics of the control variables are also consistent with prior research (Choi et al., 2008, 2009, 2010; Gotti et al. 2012). For example, the average (median) auditor tenure is 10.6 (8.0) years, and 69% of the firms have December fiscal-year-ends. We also find that Big 4 (city-level industry specialist) auditors audit 89% (43%) of the firms. Regarding board characteristics, the median company has a board of directors composed of 12 members including about seven (12 * 0.61) independent directors. The median audit committee has four members. Finally, 45.3% of our sample is operated by powerful CEOs.

In Panel B, we simply examine whether audit fees of firms with accounting experts on the audit committee are statistically different from those without such experts. First, using the full sample, we document that the former is statistically greater than the latter, consistent with our first hypothesis. Further, we reexamine the association after dividing our sample into two groups depending on *CEOPow*. As suggested by our second hypothesis, we anticipate that the association is stronger for firms with less-powerful CEOs. Our findings describe that, for both samples, firms with accounting experts on the audit committee pay higher audit fees, but the magnitude of the difference is similar. Since our findings are not independent of other factors (including firm, auditor, board of director, and industry characteristics), we need to employ a multiple regression model, and we report the results in the next section.

5. Results

5.1. Results for H1

Table 3 reports the results of our audit fee regression model. In Model 1, we replicate the literature, excluding our variable of interest after controlling for the industry-fixed effect based on Fama–French 48 industry classifications (Carcello et al. 2002; Choi et al., 2008, 2009, 2010). *LogTA*, *LogSale*, and *SqrtEmploy*, for client size, are positively associated with audit fees. *NBS* and *NGS*, *InvRec* and *Exord*, for client complexity, are also positively related to audit fees, suggesting that auditors require risk premiums for auditing more complex clients. Proxies for client risk, *ROA*, *Loss*, *Leverage*, and *Quick* generally support that riskier firms spend larger amounts on audit fees. We show that firms with growth potential (Lower *BTM*) pay higher audit fees. Regarding auditor characteristics, Big 4 and industry specialist auditors claim fee premiums. In addition, the coefficients of governance variables are consistent with our prediction.

In Model 2, we add *DumAccExp* to test H1. We find a statistically positive coefficient α_1, suggesting that accounting experts are more likely to demand high-quality audit services. From an economic perspective, the audit fees of median firms with accounting experts are greater by 4.9% than those

Table 2. Descriptive statistics.

Variable	Mean	SD	p25	p50	p75
Panel A: Variables used in regression analyses					
LogAuditFees	14.239	1.012	13.530	14.160	14.880
DumAccExp	0.774	0.417	1	1	1
LogTA	7.061	1.636	5.850	6.931	8.117
LogSale	6.825	1.752	5.698	6.810	7.958
ROA	0.025	0.141	0.001	0.046	0.091
NBS	2.138	1.803	1	1	3
NGS	2.341	2.249	1	2	3
InvRec	0.228	0.156	0.100	0.203	0.321
SqrtEmploy	82.747	79.866	30.000	57.324	103.817
AbsLagAccr	0.093	0.151	0.034	0.064	0.112
ChgSale	0.116	0.293	−0.010	0.081	0.193
Issue	0.716	0.450	0	1	1
Exord	0.243	0.429	0	0	0
Loss	0.247	0.431	0	0	0
Leverage	0.172	0.169	0.001	0.143	0.283
Quick	2.158	2.000	1.004	1.496	2.484
BTM	0.554	0.502	0.278	0.452	0.687
Big4	0.885	0.317	1	1	1
MSALead	0.429	0.495	0	0	1
Tenure	10.668	8.292	5	8	14
Busy	0.687	0.463	0	1	1
BDIndep	0.611	0.144	0.500	0.615	0.714
BDSize	13.536	5.633	9	12	17
AttendProb	0.156	0.363	0	0	0
AuditSize	4.601	1.865	3	4	5
CEOPow	0.453	0.497	0	0	1
Panel B: Univariate test					
	DumAccExp = 1		DumAccExp = 0	Difference (t-stat.)	
Full sample (n=11,684)					
Number of observations	9055		2629		
LogAuditFees	14.26		14.15	0.11 (4.47)***	
CEOPow = 1 (n = 2936)					
Number of observations	2157		779		
LogAuditFees	14.63		14.49	0.14 (3.23)***	
CEOPow = 0 (n = 3534)					
Number of observations	2788		746		
LogAuditFees	14.50		14.35	0.15 (3.80)***	

Notes: In Panel A, the sample size of all variables is 11,684 with the exception of *CEOPow*. The sample size of *CEOPow* is 6470. The limited availability of *Risk Metrics* and *ExecuComp* restricts the sample size for *CEOPow*. Variable definitions are included in Appendix 1.

without experts in Model 2. Therefore, our results are statistically and economically significant, suggesting that, as a matter of the effect of accounting experts, the demand-based perspective is more dominant than the risk-control perspective.

5.2. Results for H2

To test H2, we continue our analysis conditional on CEO power. We calculate CEO tenure from *ExecuComp* and CEO/chairman duality from *Risk Metrics*, reducing the number of observations to 6470. As Table 4 shows, the coefficient on *DumAccExp*, β_1 is significantly positive. The sum of coefficients on *DumAccExp* and *DumAccExp * CEOPow* ($\beta_1 + \beta_2$) in Table 4 is insignificant in Wald tests. This result indicates that the relationship between audit committee accounting experts and audit fees disappears when the CEO is powerful, which is consistent with our prediction. From the results, we

Table 3. Multivariate regression of audit fees.

| | Dep: Log of audit fees | | | |
| | Model 1 | | Model 2 | |
Var.	Est.	t-stat.	Est.	t-stat.
Intercept	5.925	16.73***	10.218	73.40***
DumAccExp			0.049	2.41**
LogTA	0.314	15.03***	0.316	15.17***
LogSale	0.137	7.20***	0.135	7.21***
ROA	−0.582	−8.76***	−0.578	−8.80***
NBS	0.027	5.12***	0.027	5.16***
NGS	0.058	12.67***	0.058	12.66***
InvRec	0.258	2.78***	0.258	2.79***
SqrtEmploy	0.001	4.68***	0.001	4.66***
AbsLagAccr	0.044	1.62	0.043	1.57
ChgSale	−0.041	−2.31**	−0.042	−2.37**
Issue	0.010	0.55	0.008	0.47
Exord	0.144	8.86***	0.143	8.80***
Loss	0.105	5.50***	0.105	5.59***
Leverage	−0.008	−0.14	−0.017	−0.29
Quick	−0.013	−2.48**	−0.013	−2.44**
BTM	−0.037	−2.49**	−0.039	−2.64***
Big4	0.180	6.10***	0.176	6.03***
MSALead	0.069	3.99***	0.070	4.08***
Tenure	−0.002	−1.63	−0.002	−1.49
Busy	0.081	3.76***	0.084	3.90***
BDIndep	0.116	1.79	0.114	1.75*
BDSize	0.010	4.26***	0.011	4.30***
AttendProb	−0.004	−0.23	−0.005	−0.27
AuditSize	−0.016	−2.06**	−0.011	−2.05**
Year dummies	Included		Included	
Industry dummies	Included		Included	
Number of observations		11,684		
Adj-R^2	0.779		0.780	

Notes: The t statistics are calculated using firm-clustered standard errors. Variable definitions are included in Appendix 1.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

economically interpret that, when CEO power is weak, audit fees of median firms with accounting experts are greater by 9.3%. Accounting experts demand a higher quality of audit service only in firms with weak CEO power.

Results reported in Table 3 show that accounting experts on the audit committee demand high-quality audit services. Table 4 shows that this phenomenon is valid only when CEOs cannot exercise power over the audit committee; otherwise, powerful CEOs may diminish the committee's monitoring effectiveness (Ryan, Wang, and Wiggins 2009; Tuggle et al. 2010; Carcello et al. 2011). In line with recent literature, our results suggest that CEOs can influence audit committee members and auditors, even under SOX (Cohen, Krishnamoorthy, and Wright 2010).

6. Sensitivity tests

6.1. Demand-based perspective versus risk-control perspective

Demand-based perspective and risk-control perspective are not mutually exclusive. Rather, both effects co-exist but cancel out. Given this relationship, the association between accounting expertise and audit fees could be naturally affected by the relative prevalence of demand-based versus control-based perspectives. Even though our results generally support the demand-based perspective, there could be some circumstances in which the risk-control perspective is more pervasive, such as in firms operated

Table 4. Multivariate regression of audit fees conditional on CEO power.

Var.	Dep: log of audit fees	
	Est.	t-stat.
Intercept	9.931	53.36***
DumAccExp	0.093	2.84***
DumAccExp * CEOPow	−0.095	−2.44**
CEOPow	0.044	1.28
LogTA	0.375	11.53***
LogSale	0.089	2.85***
ROA	−0.751	−4.81***
NBS	0.023	3.68***
NGS	0.056	9.34***
InvRec	0.538	4.00***
SqrtEmploy	0.001	4.28***
AbsLagAccr	0.059	0.56
ChgSale	−0.030	−0.90
Issue	0.008	0.36
Exord	0.150	7.88***
Loss	0.088	3.23***
Leverage	−0.008	−0.09
Quick	−0.017	−1.77*
BTM	−0.070	−2.10**
Big4	0.046	0.91
MSALead	0.063	2.91***
Tenure	0.000	−0.20
Busy	0.116	4.25***
BDIndep	0.301	3.57***
BDSize	0.012	3.68***
AttendProb	−0.030	−1.24
AuditSize	−0.010	−1.42
Year dummies	Included	
Industry dummies	Included	
Number of observations	6470	
Adj-R^2	0.802	
Wald statistics: DumAccExp + DumAccExp * CEOPow	−0.002 ($p = 0.9414$)	

Notes: The t-statistics are calculated using firm-clustered standard errors. Variable definitions are included in Appendix 1.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

by powerful CEOs. In this section, we cross-sectionally identify some factors making demand-based perspective either (1) more or (2) less dominant and report the results in Table 5. First, when companies receive going-concern opinions in the prior year, accounting experts could require more audit efforts and require higher audit fees, supporting the demand-based perspective. Consistent with our prediction, we find that the positive effect of audit committee accounting expertise on audit fees is more pronounced for firms having received the going-concern opinions (Panel A). On the other hand, accounting experts need not demand additional audit services when companies hire city-level industry specialist auditors because they could provide high-quality auditors without exerted additional effort (Reichelt and Wang 2010), weakening the demand-based perspective. Our results (Panel B) show that the positive effect of accounting expertise on audit fees is moderated when firms hire city-level industry specialist auditors, supporting the risk-control perspective.

6.2. Fama–Macbeth analysis

For robustness, we reexamine our hypotheses using yearly regression and Fama–Macbeth statistics (Fama and MacBeth 1973). After enactment of SOX, the audit fee structure has changed over time. Thus, we could infer a substantial time effect on audit fees. Although Petersen (2009) recommends that researchers use clustering standard errors, his argument does not necessarily mean that clustering is a

Table 5. Cross-sectional analyses: demand-based versus risk-control perspective.

Var.	Dep: log of audit fees	
	Est.	*t*-stat.
Panel A: Demand-based perspective		
DumAccExp	0.046	2.25**
*DumAccExp*GC*	0.473	2.94***
Controls, year and industry dummies	Included	
Number of observations	11,684	
Adj-*R*^{2}	0.782	
Wald statistics: *DumAccExp + DumAccExp * GC*	0.519	3.24***
Panel B: Risk-control perspective		
DumAccExp	0.099	3.67***
*DumAccExp*MSALead*	−0.095	−2.69***
Controls, year and industry dummies	Included	
Number of observations	11,684	
Adj-*R*^{2}	0.781	
Wald statistics: *DumAccExp + DumAccExp * MSALead*	0.004	0.16

Notes: The *t* statistics are calculated using firm-clustered standard errors. Variable definitions are included in Appendix 1.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

Table 6. Fama–Macbeth regression.

	Model 1		Model 2	
	DumAccExp		*DumAccExp * CEOPow*	
	Est.	*t*-stat.	Est.	*t*-stat.
2003	0.020	0.58	−0.046	−0.61
2004	0.089	2.65	−0.117	−1.55
2005	0.041	1.18	−0.111	−1.43
2006	0.026	0.93	−0.086	−1.18
2007	0.022	0.78	−0.107	−1.31
2008	0.053	1.56	−0.107	−1.15
2009	0.094	3.01	−0.183	−2.01
2010	0.058	1.66	−0.077	−0.74
FM-stat.	0.050	4.97***	−0.104	−7.49***

Notes: Variable definitions are included in Appendix 1. Each model is estimated following models in Tables 3 and 4, separately.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

better method than Fama–Macbeth statistics. According to Petersen (2009), Fama–Macbeth estimates are better when there is only a time effect.[15] Moreover, results of yearly regression are noteworthy because they allow us to check whether our findings are derived from a specific year.

Table 6 summarizes the results. We first replicate Equation (1) by year. In Model 1, we find that every coefficient on *DumAccExp* for each year is positive. Moreover, Fama–Macbeth statistics of the coefficients on *DumAccExp* are significantly positive (*t* = 4.97), indicating that accounting experts demand more audit services, consistent with H1. Model 2 includes *CEOPow* as a proxy for CEO power, its interaction variable with *DumAccExp*, and all control variables in Model 1. Consistent with our prediction, in Model 2 all yearly coefficients are negative and the Fama–Macbeth statistics are significant. The overall results suggest that, while accounting experts demand high-quality audit services from their auditors, the influence of powerful CEOs hampers audit committee effectiveness, consistent with our main findings.

Table 7. Logistic regression: auditor choice.

Var.	Model 1 (Dep: Big4)		Model 2 (Dep: MSALead)		Model 3 (Dep: Big4)	
	Est.	Chi sq.	Est.	Chi sq.	Est.	Chi sq.
Intercept	−4.994	95.08***	−3.083	119.19***	−14.732	167.82***
DumAccExp	0.391	6.66***	0.169	3.87**	−0.055	0.08
DumAccExp*Post-SOX					0.473	4.36**
LogTA	0.974	131.59***	0.342	92.26***	0.766	154.65***
ROA	−1.673	17.76***	−0.493	2.88*	−0.868	9.94***
NBS	−0.036	0.69	0.032	1.83	−0.044	1.54
AbsLagAccr	0.447	2.48	−0.116	0.73	0.511	3.50**
ChgSale	0.003	0.00	0.123	2.21	0.015	0.84
Issue	0.012	0.01	0.051	0.51	0.093	0.94
Loss	−0.083	0.42	0.057	0.46	−0.128	1.61
Leverage	−0.212	0.26	−0.301	1.40	−0.027	0.01
BTM	−0.403	26.32***	−0.147	4.42**	0.001	4.95**
BDIndep	2.421	28.15***	0.884	9.81***	1.703	24.06***
BDSize	0.025	1.33	0.012	1.11	0.061	13.72***
AttendProb	0.167	0.99	−0.096	1.26	0.054	0.16
AuditSize	0.099	3.89**	0.031	1.39	0.036	0.42
Year dummies	Included		Included		Included	
Industry dummies	Included		Included		Included	
Number of observations	11,684		11,684		16,222	
Likelihood-ratio	1994.015***		1974.120***		1994.015***	
Pseudo R^2	0.274		0.104		0.274	

Notes: The *t* statistics are calculated using clustered standard errors. Variable definitions are included in Appendix 1. In Model 1 (Model 2), the dependent variable is *Big4* (*MSALead*).
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

6.3. Auditor choice

An effective audit committee demands high-quality audit services with wider scope and greater assurance, not only by requiring more effort (hours) from the auditors but also by hiring or retaining better auditors (e.g. Big 4 or industry specialist auditors). If accounting experts on the audit committee indeed demand high-quality audit services, we can expect that the accounting experts will be more likely to employ or retain high-quality auditors to improve financial reporting quality. Thus, we also investigate whether the presence of accounting experts on the audit committee is positively associated with the likelihood of employing high-quality auditors. Table 7 reports the results of the logistic regression. In Table 7 Model 1, we employ *Big4* as the dependent variable. (See Appendix 1 for definitions of the independent variables.) We find that the presence of an accounting expert on the audit committee (*DumAccExp*) is significantly and positively associated with the probability of employing high-quality auditors (Big 4 auditors). In Model 2, we rerun the logistic regression using an alternative dependent variable, *MSALead,* which is equal to 1 if a firm's auditor is a Metropolitan Statistical Area (MSA)-level industry specialist auditor and 0 otherwise. The result shows that audit committees with accounting experts are more likely to employ industry specialist auditors.

In Table 7 Model 3, we find that the interaction variable between *DumAccExp* and *Post-SOX* in the period 2000–2010 is positive and significant, which suggests that the demand for higher audit quality with effective audit committee through accounting expertise increases in the post-SOX period. This finding supports the notion that demand-based incentives are greater in the post-SOX period, helping to reconcile with Krishnan and Visvanathan (2009).

We also check whether the association between audit committee accounting expertise and the likelihood of employing high-quality auditors is contingent on CEO power. Untabulated results, albeit insignificant, show that the association is moderated when CEO power is high.

Table 8. Multivariate regression using Heckman 2SLS.

Var.	First stage Logistic Regression of Accounting Expertise		Second stage Regression of audit fees			
	Est.	Chi-square	Est.	t-stat.	Est.	t-stat.
Intercept	0.708	1.77***	5.924	16.67***	4.809	9.03***
OverLap b/w AC and NC	0.086	8.55				
DumAccExp			0.051	2.46**	0.089	2.72***
DumAccExp*CEOPow					−0.092	−2.36**
CEOPow					0.041	1.17
InverseMillsRatio			−0.230	−1.67*	−0.078	−0.45
LogTA	−0.086	6.59**	0.323	15.59***	0.376	11.40***
LogSale	0.019	0.31	0.134	7.07***	0.090	2.86***
ROA	−0.219	1.83	−0.557	−8.36***	−0.776	−4.87***
NBS	−0.018	4.05**	0.029	5.27***	0.024	3.57***
NGS	0.027	13.98***	0.055	11.58***	0.054	8.78***
InvRec	−0.049	0.11	0.252	2.74***	0.514	3.77***
SqrtEmploy	−0.001	6.62**	0.001	4.90***	0.002	4.38***
AbsLagAccr	0.144	1.35	0.035	1.19	0.023	0.22
ChgSale	0.069	1.72	−0.053	−2.92***	−0.033	−1.00
Issue	0.098	9.82***	−0.005	−0.32	0.005	0.24
Exord	−0.083	6.12**	0.145	8.26***	0.158	7.80***
Loss	0.006	0.01	0.095	4.81***	0.085	3.10***
Leverage	0.278	7.26***	−0.034	−0.55	−0.004	−0.04
Quick	−0.002	0.05	−0.013	−2.48**	−0.019	−1.94*
BTM	0.085	4.48**	−0.043	−2.84***	−0.071	−2.04**
Big4	0.340	50.40	0.145	4.22***	0.031	0.56
MSALead	0.105	12.25***	0.059	3.15***	0.055	2.37**
Tenure	−0.012	45.59	−0.001	−0.62	0.000	0.18
Busy	0.090	8.03***	0.077	3.50***	0.109	3.91***
BDIndep	0.399	14.33***	0.082	1.18	0.290	3.21***
BDSize	0.056	136.73	0.004	1.37	0.009	2.15**
AttendProb	0.053	1.72	−0.009	−0.46	−0.029	−1.17
AuditSize	0.055	11.01***	−0.022	−2.46**	−0.013	−1.18
Year dummies	Included		Included		Included	
Industry dummies	Included		Included		Included	
Number of observations	11,684		11,684		6470	
Adj-R^2	0.109		0.782		0.802	
Wald statistics: *DumAccExp + DumAccExp * CEOPow*					−0.003 ($p = 0.7317$)	

Notes: The *t* statistics are calculated using firm-clustered standard errors. Variable definitions are included in Appendix 1.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

6.4. Endogeneity concern

The audit committee composition might not be exogenously determined. Following a set of papers, a firm's decision to nominate a member with accounting expertise is associated with firm characteristics, raising endogeneity concerns. For example, Erkens and Bonner (2013) argue that large firms hesitate to employ accounting experts on their audit committee, while much of the auditing literature shows that firm size is the most important factor in determining audit fees. Thus, some client characteristics, including firm size, would affect both our dependent and independent variables, which motivates us to further consider endogeneity problems.

To address these concerns, we use a two-stage least square regression model (2SLS) to handle the possible endogeneity problem implicit in the appointment of an audit committee member with accounting expertise. Our instrumental variable, *Overlaps b/w AC and NC*, is equal to 1 if at least one audit committee member sits on the nominating committee and 0 otherwise. Given that the nominating

committee is responsible for the selection of board members and the composition of subcommittees, if one member sits on both the nominating and audit committees, he/she would have incentive to improve audit committee effectiveness because an ineffective audit committee could harm his/her reputation as an outside director. To enhance audit committee effectiveness, he/she is more likely to place an accounting expert on the audit committee. Thus, our instrumental variable is linked to the appointment of an accounting expert on the audit committee. On the other hand, there is no reason that the presence of a board member on both audit and nominating committees is related to audit fees through other paths. In the first stage model where the dependent variable is *DumAccExp*, we keep not only the instrumental variable, *Overlap b/w AC and NC*, but also all control variables that are included in the audit fee regression. In Table 8 first stage, we obtain a positive coefficient on *Overlap b/w AC and NC*, suggesting that firms with a director on both audit committee and nominating committee are more likely to hire an accounting expert on the audit committee. This is consistent with our reason to use *Overlap b/w AC and NC* as an instrumental variable. In the second stage model, we also control Inverse Mills Ratio (IMR), which is calculated from the first stage regression. The second stage in Table 8 shows that IMR is statistically significant in the audit fee regression, implying that 2SLS regression is more relevant than OLS regression. In addition, the table shows that firms with accounting expertise are more likely to pay higher audit fees and that the effect is moderated by strong CEOs, implying that our findings are robust for the endogeneity nature of the appointment of accounting expertise.

6.5. *Audit fee analysis using pre-SOX data: 2000–2002*

Despite our predictions and findings on the positive effects of accounting experts on audit fees, the question arose whether the results are applicable to pre-SOX data. Cohen, Krishnamoorthy, and Wright (2010) find that audit committees are considerably more active and diligent after SOX. They explain why SOX makes changes in audit committees' motivation or demand for higher accounting quality. In terms of accounting experts, Srinivasan (2005) mentions the reputational risk of accounting experts in the case of financial reporting failure. Further, Cost and Miller (2005) imply that, if a firm faces serious accounting failure, financial experts with accounting experience would be at greater risk of a lawsuit under state laws than would be other members of the audit committee, due to their fiduciary obligation.

Thus, the effect of accounting experts on audit fees can be different after SOX compared to the pre-SOX period. In other words, accounting experts' incentives to increase audit efforts are expected to be higher post-SOX than pre-SOX, implying that the effect of accounting experts on audit fees is more positive post-SOX. We expect our results to be meaningfully weaker or even negative using pre-SOX data.

Table 9 shows that, contrary to our main findings, the presence of accounting experts on the audit committee reduces audit fees before the adoption of SOX.[16] Given that SOX has significantly altered audit environments and corporate governance mechanisms, the discrepancy in our findings between pre-SOX and post-SOX samples might be compatible rather than conflicting. In addition, this analysis helps to reconcile our main findings with those by Krishnan and Visvanathan (2009).

6.6. *Other issues*

If the presence of one accounting expert can enhance audit committee effectiveness, we expect the number or proportion of accounting experts on the audit committee to be associated with audit fees. When we use the number or proportion-based measures, our (untabulated) results are unchanged.

As alternative definitions of our dependent variable, we employ a log of the sum of audit and audit-related fees, following Gotti et al. (2012); our results are quantitatively similar to those reported. Further, we reanalyze our findings using the audit fee ratio, which is audit fees deflated by total fees, and this does not change our findings.

Table 9. Multivariate regression of audit fees using pre-SOX data.

	Dep: log of audit fees	
Var.	Est.	t-stat.
Intercept	2.486	3.42***
DumAccExp	−0.076	−2.29**
LogTA	0.453	9.67***
LogSale	0.081	1.80*
ROA	−0.441	−2.99***
NBS	0.021	2.19**
NGS	0.064	7.11***
InvRec	0.632	3.68***
SqrtEmploy	0.001	2.07**
AbsLagAccr	0.075	1.28
ChgSale	−0.170	−3.36***
Issue	0.006	0.17
Exord	0.145	4.76***
Loss	0.100	2.60***
Leverage	0.022	0.20
Quick	−0.025	−3.32***
BTM	0.000	−6.18***
Big4	0.118	2.75***
MSALead	0.117	3.63***
Tenure	−0.001	−0.34
Busy	0.106	3.02***
BDIndep	0.244	2.62***
BDSize	0.017	2.04**
AttendProb	0.064	1.65*
AuditSize	−0.006	−0.34
Year dummies		Included
Industry dummies		Included
Number of observations		1818
Adj-R^2		0.793

Notes: The t statistics are calculated using firm-clustered standard errors. Variable definitions are included in Appendix 1.
*Statistically different from zero (two-tailed) at the <0.10 levels.
**Statistically different from zero (two-tailed) at the <0.05 levels.
***Statistically different from zero (two-tailed) at the <0.01 levels.

Some might argue that the effects of control variables on audit fees are not the same between firms with accounting experts and firms without such experts. Despite this concern, our main analysis assumes that the coefficients for these two groups are the same. Relaxing the restriction, we reanalyze our tests for H2 after dividing the sample into two groups: High-CEO-Power group and Low-CEO-Power group. Untabulated results show that accounting experts effectively increase audit fees only in the Low-CEO-Power group. For robustness with respect to the CEO power measure, we separately employ the CEO/chairman duality variable and the high-CEO-tenure dummy, which is equal to 1 if CEO tenure is greater than the median and 0 otherwise, instead of *CEOPow*. When we use each of these to measure CEO power, our results are quantitatively similar.

We acknowledge the traditional concern in audit research that our findings might be prompted by our sample's heterogeneity. To address this concern, we replicate our findings after restricting the sample to clients of Big 4 accounting firms. Our results are robust to the restriction.

A former audit partner might leave the auditing firm and join the client firm's audit committee, possibly threatening auditor independence. In this case, higher audit fees are the result of auditor favoritism rather than of demand for high-quality audit services. Although this practice is prevented by a 3-year cooling-off period (Naiker and Sharma 2009), the connection might still exist after 3 years. Thus, we exclude firms with an accounting expert who worked for any of the audit firms and reexamine our hypotheses. The results are qualitatively and quantitatively similar.

To check whether our findings depend on treatment of outliers, we replicate our analyses after truncation instead of winsorization. We also replicate them without any outlier treatments. Our results are robust to outlier treatments.

7. Conclusion

Following a wave of accounting scandals such as Enron executives' misdeeds, audit committees' expertise has received unprecedented attention, but with controversy over how the respective expertise is defined. While the current definition embraces not only accounting expertise but also non-accounting financial expertise, previous research has argued that accounting expertise is more relevant with respect to the committee's oversight role. However, the way in which accounting experts improve financial reporting quality has been neglected. This paper examines the effect of audit committee accounting expertise on audit fees and explores the conditions under which the effect is weakened. Our results suggest that accounting experts demand a more thorough audit process. However, CEOs can hinder audit committee activities, even in the recently strengthened corporate governance and regulatory environments.

Our findings have several implications for policy-makers and regulators who initially required a stricter definition of financial expert (accounting experts only) but later broadened the definition. By showing that financial experts with accounting experience have a positive effect on audit fees, this paper raises doubt regarding whether the definition's expansion was appropriate. In addition, our paper simultaneously incorporates audit committee and CEO characteristics in audit fee setting. Regulatory bodies and exchange markets have designed policies to curb CEO influence on financial reporting. However, our results raise public awareness of the continuing risk of the CEO's potential influence on the audit committee by warning that audit committee effectiveness may still potentially be impaired by the CEO.

Acknowledgements

Notes

1. In detail, SOX Section 301 mandates that the audit committee be composed entirely of independent outside directors. SOX Section 407 also requires that all listed firms disclose whether they have a financial expert on the audit committee or, if not, to explain why they do not. In line with SOX, NYSE, AMEX, and NASDAQ have proposed even stricter requirements, insisting that listed firms have at least one financial expert on the audit committee.
2. There is an exemption in the independence rule (SOX 301(C) EXEMPTION AUTHORITY). Thus, we observe that a small number of firms still do not have fully independent audit committees.
3. For details, refer to Defond, Hann, and Hu (2005), Krishnan and Visvanathan (2008), and Dhaliwal, Naiker, and Navissi (2010).
4. According to Cohen, Krishnamoorthy, and Wright (2010), the adoption of SOX has led audit committees to be more active and diligent. Especially, this phenomenon is more pronounced for accounting experts because they have greater litigation and reputation risks relative to other audit committee members (Cost and Miller 2005; Srinivasan 2005). We discuss this result in Section 6.5 later.
5. Gotti et al. (2012) also examine the relationship between CEO ownership and audit fees. However, they do not simultaneously consider the characteristics of the audit committee, the most responsible party in the audit fee decision.
6. Singhvi, Raghunandan, and Mishra (2013) revisit this research question. They show that findings by Davidson, Xie, and Xu (2004) and Defond, Hann, and Hu (2005) are not valid post-SOX.
7. They define a *financial expert* as a member with experience in the role of either CPA, CFO, controller, treasurer, vice president for finance, investment banker, or venture capitalist. We think that their definition is closer to the conventional accounting expert definition.

8. Carcello et al. (2002) and Abbott et al. (2003) use the broad definition of financial expert, not the narrow one.
9. Findings by Carcello et al. (2002) on the association between audit committee characteristics and audit fees are not robust. The significant results disappear when they concurrently control for board and audit committee characteristics.
10. Throughout the paper, we examine the difference between independent accounting experts and independent non-accounting financial experts. Major stock exchanges such as NYSE/AMEX and NASDAQ require all listed firms to have at least one financial expert on fully independent audit committees. Using hand-collected data in 2003, Williams (2005) confirms that about 99% of large firms have a financial expert. On the other hand, Krishnan and Visvanathan (2009) compare accounting experts and non-accounting experts, including non-accounting financial experts and non-experts, regardless of their independence.
11. Petersen (2009) remarks that, if the number of firm clusters is much greater than the number of year clusters, it is enough to use one-way clustered standard errors in the firm dimension.
12. Following Reichelt and Wang (2010), we define a binary choice variable *MSALead* with a value of 1 if the audit market leader's market share exceeds that of the second-largest market share auditor by 10%, within a two-digit SIC category in a particular year, and in a particular Metropolitan Statistical Area (MSA).
13. One might doubt whether multicollinearity problems would result from closely related control variables. In an untabulated correlation table, we check that our correlation matrix is similar to one in previous literature (Collier and Gregory 1996; Carcello et al. 2002; Choi et al. 2010).
14. When we extend the sample period to commence from 2000, our results are not changed.
15. Petersen (2009) remarks that Fama–Macbeth statistics are not designed to address time-series correlation (i.e. firm effect). Thus, if there are severe firm effects as well as time effects, Fama–Macbeth statistics are not better than *t* statistics based on cluster-adjusted standard errors. Thus, we admit that Fama–Macbeth statistics may not be "more robust" than the statistics shown in Table 3 and Table 4.
16. Our analysis is based on samples from years 2000 to 2002 because companies must comply with SOX section 407 in their financial statements starting with fiscal year ending 15 July 2003.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Abbott, L. J., S. Parker, G. F. Peters, and K. Raghunandan. 2003. "The Association between Audit Committee Characteristics and Audit Fees." *Auditing: A Journal of Practice & Theory* 22 (2): 17–32.

Adams, R. B., and D. Ferreira. 2007. "A Theory of Friendly Boards." *The Journal of Finance* 62 (1): 217–250.

American Association of Bank Directors. 2002. "Letter to the SEC – RE: The Sarbanes Oxley Act of 2002." December 9.

Beasley, M. S., J. V. Carcello, D. R. Hermanson, and T. L. Neal. 2009. "The Audit Committee Oversight Process." *Contemporary Accounting Research* 26 (1): 65–122.

Bedard, J. C., and K. M. Johnstone. 2004. "Earnings Manipulation Risk, Corporate Governance Risk, and Auditors' Planning and Pricing Decisions." *The Accounting Review* 79 (2): 277–304.

Carcello, J. V., D. R. Hermanson, T. L. Neal, and R. Riley. 2002. "Board Characteristics and Audit Fees." *Contemporary Accounting Research* 19 (3): 365–384.

Carcello, J. V., T. L. Neal, Zoe-Vonna Palmrose, and S. Scholz. 2011. "CEO Involvement in Selecting Board Members, Audit Committee Effectiveness, and Restatements." *Contemporary Accounting Research* 28 (2): 396–430.

Charles, S. L., S. M. Glover, and N. Y. Sharp. 2010. "The Association between Financial Reporting Risk and Audit Fees before and after the Historic Events Surrounding SOX." *Auditing: A Journal of Practice and Theory* 29 (1): 15–39.

Choi, J., J. Kim, X. Liu, and D. A. Simunic. 2008. "Audit Pricing, Legal Liability Regimes, and Big 4 Premiums: Theory and Cross-Country Evidence." *Contemporary Accounting Research* 25 (1): 55–99.

Choi, J., J. Kim, X. Liu, and D. A. Simunic. 2009. "Cross-Listing Audit Fee Premiums: Theory and Evidence." *The Accounting Review* 84 (5): 1429–1463.

Choi, J., C. Kim, J. Kim, and Y. Zang. 2010. "Audit Office Size, Audit Quality, and Audit Pricing." *Auditing: A Journal of Practice and Theory* 29 (1): 73–97.

Coates, D. J., M. L. Marais, and R. L. Weil. 2007. "Audit Committee Financial Literacy: A Work in Progress." *Journal of Accounting, Auditing and Finance* 22 (2): 175–194.

Cohen, J., G. Krishnamoorthy, and A. Wright. 2010. "Corporate Governance in the Post-Sarbanes Oxley Era: Auditors' Experiences." *Contemporary Accounting Research* 27 (3): 751–786.

Cohen, L., A. Frazzini, and Christopher J. Malloy. 2012. "Hiring Cheerleaders: Board Appointments of "Independent" Directors." *Management Science* 58 (6): 1039–1058.

Cohen, J., U. Hoitash, G. Krishnamoorthy, and A. Wright. 2014. "The Effect of Audit Committee Industry Expertise on Monitoring the Financial Reporting Process." *The Accounting Review* 89 (1): 243–273.

Collier, P., and A. Gregory. 1996. "Audit Committee Effectiveness and the Audit Fee." *European Accounting Review* 5 (2): 177–198.

Cost, B., and D. Miller. 2005. "Emerging Communications: Enhanced Director Liability for Experts." *Metropolitan Corporate Counsel.* http://www.metrocorpcounsel.com/articles/3617/emerging-communications-enhanced-director-liability-experts

Davidson, W. N., III, B. Xie, and W. Xu. 2004. "Market Reaction to Voluntary Announcements of Audit Committee Appointments: The Effect of Financial Expertise." *Journal of Accounting and Public Policy* 23 (4): 279–293.

Defond, M., R. H. Hann, and X. Hu. 2005. "Does the Market Value Financial Expertise on Audit Committees of Boards of Directors?" *Journal of Accounting Research* 43 (2): 153–193.

Dhaliwal, D. S., V. Naiker, and F. Navissi. 2010. "The Association Between Accrual Quality and the Characteristics of Accounting Experts and Mix of Expertise on Audit Committees." *Contemporary Accounting Research* 27 (3): 787–827.

Erkens, D. H., and S. E. Bonner. 2013. "The Role of Firm Status in Appointments of Accounting Financial Experts to Audit Committees." *The Accounting Review* 88 (1): 107–136.

Fama, E., and J. MacBeth. 1973. "Risk, Return, and Equilibrium: Empirical Tests." *Journal of Political Economy* 81 (3): 607–636.

Gotti, G., S. Han, J. Higgs, and T. Kang. 2012. "Managerial Stock Ownership, Analyst Coverage, and Audit Fee." *Journal of Accounting, Auditing and Finance* 27 (3): 412–437.

Hoitash, Udi, Rani Hoitash, and J. C. Bedard. 2009. "Corporate Governance and Internal Control over Financial Reporting: A Comparison of Regulatory Regimes." *The Accounting Review* 84 (3): 839–867.

Jiang, J., K. Petroni, and I. Wang. 2010. "CFOs and CEOs: Who Have the Most Influence on Earnings Management?." *Journal of Financial Economics* 96 (3): 513–526.

Knechel, W. R., and M. Willekens. 2006. "The Role of Risk Management and Governance in Determining Audit Demand." *Journal of Business Finance and Accounting* 33 (9–10): 1344–1367.

Krishnan, J. 2005. "Audit Committee Quality and Internal Control: An Empirical Analysis." *The Accounting Review* 80 (2): 649–675.

Krishnan, G., and G. Visvanathan. 2008. "Does the SOX Definition of an Accounting Expert Matter? The Association between Audit Committee Directors' Accounting Expertise and Accounting Conservatism." *Contemporary Accounting Research* 25 (3): 827–858.

Krishnan, G., and G. Visvanathan. 2009. "Do Auditors Price Audit Committee's Expertise? The Case of Accounting versus Nonaccounting Financial Experts." *Journal of Accounting, Auditing and Finance* 24 (1): 115–144.

Mensah, Y. M., X. Song, and S. S. Ho. 2004. "The Effect of Conservatism on Analysts' Annual Earnings Forecast Accuracy and Dispersion." *Journal of Accounting, Auditing and Finance* 19 (2): 159–183.

Naiker, V., and D. S. Sharma. 2009. "Former Audit Partners on the Audit Committee and Internal Control Deficiencies." *The Accounting Review* 84 (2): 559–587.

Petersen, M. 2009. "Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches." *Review of Financial Studies* 22 (1): 435–480.

Reichelt, K., and D. Wang. 2010. "National and Office-Specific Measures of Auditor Industry Expertise and Effects on Audit Quality." *Journal of Accounting and Research* 48 (3): 647–686.

Ryan, H. E., L. Wang, and R. A. Wiggins. 2009. "Board-of-Director Monitoring and CEO Tenure." Unpublished manuscript.

Singhvi, M., K. Raghunandan, and S. Mishra. 2013. "Market Reactions to Appointment of Audit Committee Directors Post-SOX: A Note." *Journal of Accounting and Public Policy* 32 (1): 84–89.

Srinivasan, S. 2005. "Consequences of Financial Reporting Failure for outside Directors: Evidence from Accounting Restatements and Audit Committee Members." *Journal of Accounting Research* 43 (2): 291–334.

Tsui, J. S., B. Jaggi, and F. A. Gul. 2001. "CEO Domination, Growth Opportunities, and Their Impact on Audit Fees." *Journal of Accounting, Auditing and Finance* 16 (3): 189–208.

Tuggle, C. S., D. G. Sirmon, C. R. Reutzel, and L. Bierman. 2010. "Commanding Board of Director Attention: Investigating How Organizational Performance and CEO Duality Affect Board Members' Attention to Monitoring." *Strategic Management Journal* 31 (9): 946–968.

Williams, S. P. 2005. "Meet the Experts." *Accounting Horizons* 19 (4): 255–265.

Zaman, M., M. Hudaib, and R. Haniffa. 2011. "Corporate Governance Quality, Audit Fees and Non-Audit Services Fees." *Journal of Business Finance and Accounting* 38 (1–2): 165–197.

Zhang, Y., J. Zhou, and N. Zhou. 2007. "Audit Committee Quality, Auditor Independence and Internal Control Weaknesses." *Journal of Accounting and Public Policy* 26 (3): 300–327.

Appendix 1. Description of the variables

Variable	Description
LogAuditFees	Natural log of audit fees paid to the auditors
DumAccExp	1 if audit committee has at least one accounting expert, 0 otherwise
LogTA	Natural log of total assets (in millions)
LogSale	Natural log of total sales (in millions)
ROA	Return on assets
NBS	Number of business segments
NGS	Number of geographic segments
InvRec	Sum of inventory and accounts receivable divided by total assets
SqrtEmploy	Square root of number of employees
AbsLagAccr	Absolute value of lagged total accruals
ChgSale	Change in sales divided by lagged total assets
Issue	1 if sum of equity or debt issued during the most recent three years is greater than 5% of total assets, 0 otherwise
Exord	1 if the firm reports any extraordinary gains or losses, 0 otherwise
Loss	1 if a firm reports a net loss, 0 otherwise
Leverage	Long-term debt divided by total assets
Quick	Current assets minus inventories divided by current liabilities
BTM	Ratio of book to market value of equity
Big4	1 if a firm's auditor is one of the Big 4 auditors, 0 otherwise
MSALead	1 if a firm's auditor is the MSA industry specialist auditor following Reichelt and Wang (2010)
Tenure	Auditor tenure with current client
Busy	1 if fiscal-year-end of a firm is December, 0 otherwise
BDIndep	Proportion of independent directors on the board
BDSize	Number of board members
AttendProb	1 if there is at least one director with an attendance rate less than 75%, 0 otherwise
AuditSize	Number of audit committee members
CEOPow	1 if CEO tenure is greater than the median value in our sample and the CEO holds the position of chairman of the board of directors, 0 otherwise
GC	1 if the firm received a going-concern audit opinion in the previous year, 0 otherwise