

AUDIT COMMITTEE EFFECTIVENESS CHARACTERISTICS AND AUDITOR SWITCHES INVOLVING INDUSTRY SPECIALISTS

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Abstract

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The aim of this study is to investigate the association between audit committee effectiveness characteristics and auditor switches to or from an industry specialist audit firm. This study uses data on auditor changes from Audit Analytics, financial data from North American Compustat, and hand-collected data including audit committee characteristics (such as audit committee chair tenure, the proportion of auditing experts on the audit committee, etc.), the number of audit committee meetings and stock ownership from proxy statements between 2005 and 2011. The results reveal that firms with audit committees that have a large proportion of auditing experts are more likely to choose an industry specialist auditor when the firm switches its auditor. Furthermore, the results also show that the longer the tenure of the audit committee chair is, the more likely that the firm switches from a non-specialist to a specialist auditor. This study adds to the literature by exploring the association between audit committee effectiveness characteristics and auditor switches involving industry specialists. The findings inform regulators regarding the impact that audit committee effectiveness characteristics have on auditor switches involving specialists.

Keywords: Audit Committee Characteristics, Auditor Industry Specialization, Auditor Switches, External Auditor, Auditing, Audit Committee Effectiveness

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1. INTRODUCTION

Audit committees assume an important monitoring role in corporate governance protecting the interests of shareholders and mitigating agency conflicts (Jensen & Meckling, 1976; Abbott & Parker, 2000). Gorshunov, Armenakis, Harris, and Walker (2021) suggest that the presence of a qualified audit committee director reduces the likelihood of financial corruption by 72% and acts as an effective overseer over financial reporting. Similarly, in a meta-analysis of 90 studies, Bilal, Chen, and Komal (2018) report that there is a positive relationship between audit committee financial expertise and earnings quality. According to Section 301 of the Sarbanes Oxley Act (SOX) of 2002, audit committees are responsible for the “appointment, compensation, and oversight of the work of any registered accounting firm”. Choosing a high-quality auditor can help audit committees to fulfill their monitoring role. Using a sample of U.S. firms in 1994, Abbott and Parker (2000) find that audit committees that consist entirely of independent directors and meet at least twice a year are more likely to use specialist auditors. Chen, Moroney, and Houghton (2005) use an Australian sample to investigate audit committee composition and audit quality. They report that the proportion of non-executive directors in the audit committee significantly influences whether a firm chooses a specialist, while the proportion of financial experts in the audit committee and meeting frequency are insignificant in the decision of choosing a specialist. They point out that “mixed results for the effectiveness of audit committees indicate that the audit committee [effectiveness] measures need to be applied with more precision” (Chen et al., 2005, p. 236). Chen and Zhou (2007) document that the greater financial expertise and independence the audit committee has, the sooner the firm dismisses Arthur Andersen. Thus, the findings on the impacts that audit committee effectiveness characteristics have on auditor choice are mixed. Furthermore, no prior studies have investigated the association between audit committee effectiveness characteristics and auditor switches to or from audit firms that are considered to be industry specialists. In this study, we intend to fill this literature gap by answering the following research question:

RQ1: Is the likelihood that a firm switches to an industry specialist associated with a comprehensive set of audit committee effectiveness characteristics, such as the proportions of financial and auditing experts, directorships of committee members, tenure and expertise of the audit committee chair, meeting frequency, and audit committee size?

After several recent corporate scandals and amid increased regulations, such as SEC (the U.S. Securities and Exchange Commission) enforcement actions and public scrutiny, more focus is placed on the role of the audit committee in ensuring the credibility of financial reports¹. In 2008, the General Accounting Office (GAO, 2008) reports that out of the 600 surveyed audit committee chairs in U.S. public companies, 67 percent cited a “need for industry specialization” as being of “great” or “very great importance” when the firm selects its

external auditor. It is, therefore, relevant and timely to explore whether audit committee effectiveness characteristics affect the likelihood that a firm switches to an industry specialist auditor because industry specialists possess the resources, knowledge base, and training in industry and thus provide high-quality audits (Solomon, Shields, & Whittington, 1999).

Using a sample of U.S. listed firms that switched auditors from 2005 to 2011, we estimate the multinomial logistic regression and choose the lateral switch group as the reference group to compare with the upward switch group (i.e., firms switch from non-specialists to specialists) and the downward switch group (i.e., firms switch from specialists to non-specialists). After controlling for corporate governance and financial performance, we find that firms with audit committees that have a greater proportion of auditing experts are more likely to switch from non-specialist auditors to industry specialist auditors than switch to other non-specialists. Our main results also show that the longer the tenure of audit committee chair is, the more likely that the firm switches from a non-specialist to a specialist than has a lateral switch. In contrast, when we compare the downward switches with lateral switches, neither of these audit committee characteristics play a significant role in making either a downward or lateral switch. Our findings suggest that having more auditing experts in the audit committee and a committee chair that has a longer association with the firm motivates firms to seek high-quality audit work that is performed by industry specialists.

This paper contributes to the literature in the following ways: first, to our knowledge, our study is the first one to examine the association between audit committee effectiveness characteristics and switches involving specialists. Industry specialist auditors are considered to provide high-quality audits, and the market reacts positively to switches to specialists (Knechel, Naiker, & Pacheco, 2007). Many regulatory reforms since SOX have made audit committees increasingly accountable in executing their monitoring role, which includes auditor selection. Choosing an industry specialist could be one important way that audit committees utilize to fulfill their monitoring duties. This study extends prior studies such as Abbott and Parker (2000) and Chen and Zhou (2007) by looking into the impact that audit committee effectiveness characteristics have on switches involving specialist auditors. Second, this study uses a more comprehensive set of audit committee effectiveness characteristics in analyses. For instance, we specifically examine whether having auditing experts in audit committee influences a firm’s auditor selection during auditor switches while most of the prior studies examine the impacts of having financial experts (e.g., Chen & Zhou, 2007; Cohen, Hoitash, Krishnamoorthy, & Wright, 2013). Having auditing experts, compared to having financial experts, in audit committees, should have more direct effects on auditor choice when a firm switches its auditor because an audit committee with more auditing experts are more knowledgeable about the auditing industry and thus more inclined to switch upward to specialists for quality purpose. We also investigate the effects of other audit committee effectiveness characteristics such as tenure and expertise of audit committee chair, directorships of audit committee members,

¹ Several corporate accounting scandals got exposed between 2000 and 2005. Enron and WorldCom were two most well-known cases.

audit committee size, and committee meeting frequencies, etc.

The remainder of this paper is organized as follows. The next section presents a literature review on auditor industry specialization and its association with audit committee characteristics and our hypothesis development. Section 3 discusses the model and variables. Section 4 presents empirical results, and the last section provides a summary.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Auditor industry specialization

Academic research uses various metrics to identify an industry specialist. One stream of literature considers the audit firm which has a large market share of assets or sales audited in a particular industry to be specialists (Palmrose, 1986; Balsam, Krishnan, & Yang, 2003; Carcello & Nagy, 2004). A similar approach is to consider the firm with a large weighted market share (weighted by its portfolio share) within an industry as a specialist (Neal & Riley, 2004). Recently, city-level measures of specialization have also come to light (e.g., Cenker & Nagy, 2008; Fung, Gul, & Krishnan, 2012; Bills, Jeter, & Stein, 2015)². Regardless of various ways of identifying industry specialists, auditing research also shows that industry specialists are associated with a variety of quality measures. For instance, specialist auditors provide better risk assessments (Low, 2004), clients of specialist auditors are associated with lower earnings management (Zhou & Elder, 2001; Krishnan, 2003), fewer SEC enforcement actions (Carcello & Nagy, 2004), fewer incidences of financial fraud (Carcello & Nagy, 2004), more accurate analyst earnings forecasts (Behn, Choi, & Kang, 2008), more timely recognition of bad news regarding cash flows (Krishnan & Ye, 2005), lower discretionary accruals, greater likelihood of reporting internal control weaknesses (Rose-Green, Huang, & Lee, 2011), and higher earnings response coefficients (Balsam et al., 2003).

2.2. Audit committee effectiveness characteristics and auditor industry specialization

In 1999, The Blue Ribbon Committee (BRC) released a report offering guiding principles and recommendations to strengthen the effectiveness of the audit committee³. Extant literature has since sought evidence of what constitutes an effective audit committee and if effective audit committees are associated with positive outcomes. For instance, Cohen et al. (2013) report that audit committee financial expertise and industry knowledge improves the financial reporting process. In a meta-analysis study, Bilal et al. (2018) find that audit committee

members' financial expertise has a positive relationship with the earnings quality of a firm. In addition, Bedard, Chtourou, and Curteau (2004) find that audit committee independence and financial expertise are associated with constraining aggressive earnings management. A couple of other studies provide evidence of the negative impact of ineffective audit committees. For example, Carcello and Neal (2003) have documented that the presence of affiliated directors (which includes primarily current or former officers or employees of the company or any related entity) among audit committee members lowers the probability of the auditor going-concern opinions. In another study, Archambeault and DeZoort (2001) find that audit committees that possess a smaller percentage of independent members, less financial expertise, meet less frequently, and that are smaller have higher incidences of suspicious auditor switches.

There are only two studies that demonstrate an association between audit committee characteristics and auditor industry specialization. Abbott and Parker (2000) use a sample of 500 publicly listed U.S. firms in the year 1994 and find that audit committees that 1) consist entirely of independent directors and 2) meet at least twice a year, demand higher quality audits and thus are more likely to use specialist auditors. However, Abbott and Parker (2000) do not investigate the financial or accounting expertise of the audit committee and their sample was limited to the pre-SOX period. Using a sample of Australian listed companies, Chen et al. (2005) have extended Abbott and Parker's (2000) study to explore whether certain other audit committee characteristics, such as 1) the proportion of non-executive directors, 2) the proportion of directors with financial qualifications and 3) the frequency of audit committee meetings, affect the use of an industry specialist audit firm. Chen et al. (2005) find that only one of the aforementioned factors, the proportion of non-executive directors, was significant in determining the choice of a specialist.

Other studies have examined the role of audit committees in pursuing a better quality auditor. Chen and Zhou (2007) examined the effect of governance characteristics, such as greater financial expertise and independence of audit committee members, on the decision to dismiss Arthur Andersen sooner and find supporting evidence of the positive association between audit committee characteristics and the timeliness of dismissing Arthur Andersen.

Although previous studies, such as Abbott and Parker (2000) and Chen and Zhou (2007), investigate the relationship between audit committees' characteristics and auditor changes, none of these studies have investigated the relationship between audit committee characteristics and switches involving specialist auditors. The rapidly changing regulatory reform during the post-SOX era makes audit committees increasingly accountable in terms of their monitoring role. Switching from a non-specialist to an industry specialist can help an audit committee to enhance its effectiveness as the specialists are considered to provide higher quality audit work. In light of the increased responsibilities of audit committees in the post-SOX period, we expect that audit committee effectiveness characteristics positively affect a firm's choice of a specialist when the firm switches its auditor. In contrast, we expect that committee effectiveness characteristics deter a firm to make a downward switch (i.e., from a specialist to a non-industry

² City-level specialists are defined as audit firms that have the largest market share or the maximum clients in a city-industry group (Francis, Reichelt, & Wang, 2005). City is defined as a Metropolitan Statistical Area and specialists are those with more than 10 percent greater market share than the closest competitor (Francis et al., 2005; Fung et al., 2012).

³ In 1998, The Blue Ribbon Committee (BRC) was created by the New York Stock Exchange (NYSE) and the National Association of Corporate Directors (NASD) in response to concerns expressed by SEC Chairman Arthur Levitt referring to the "noticeable erosion in the quality of financial reporting". Specifically, the BRC report suggested that independence, expertise and size of the audit committees were important characteristics that could foster effective audit committees. Pursuant to the BRC report, all publicly listed companies on the U.S. stock exchanges were required to form audit committees in accordance with the guidelines laid out by the BRC.

specialist). Based on the above discussion, we have the following hypothesis:

H1: Ceteris paribus, audit committee effectiveness characteristics are positively (negatively) associated with the switches to industry specialist (non-industry specialist) auditors.

3. RESEARCH DESIGN

3.1. Model specification

As primary tests of hypothesis, we employ the following multinomial logistic regression model:

$$\begin{aligned} \text{Switch_Type} = & \beta_0 + \beta_1 \text{LogMeet} + \beta_2 \text{AC_Size} + \\ & \beta_3 \text{Prop_Audit} + \beta_4 \text{Prop_FinExp} + \\ & \beta_5 \text{ACChair_Expert} + \beta_6 \text{AC_ChairTenure} + \\ & \beta_7 \text{Avg_BusyBody} + \beta_8 \text{CEOCHR} + \\ & \beta_9 \text{Seek_Ratification} + \beta_{10} \text{Loss} + \beta_{11} \text{LogSale} + \\ & \beta_{12} \text{POwn} + \beta_{13} \text{ROA} + \beta_{14} \text{LITI} + \\ & \beta_{15} \text{Auditor_Resigned} + \beta_{16} \text{Pct_ChangeAF} + \\ & \beta_{17} \text{ICW} + \beta_{18} \text{Restate} + \varphi \end{aligned} \quad (1)$$

where,

Switch_Type = a categorical dependent variable for types of auditor switch:

1) *lateral switch*: industry specialist audit firm to another industry specialist (*S*->*S*) or non-industry-specialist to another non-industry-specialist (*NS*->*NS*);

2) *downward switch*: industry specialist auditor to a non-industry-specialist (*S*->*NS*);

3) *upward switch*: non-industry specialist auditor to an industry-specialist auditor (*NS*->*S*).

This variable is discussed further in sub-section 3.2, independent variables are defined in Table 1 and are explained further in sub-section 3.2.2.

3.2. Variable definitions

3.2.1. Dependent variable

As we discussed above, we define the dependent variable *Switch_Type* based on the auditor switches related to industry specialists. We use North American Compustat data to determine an industry specialist auditor⁴. Consistent with prior research (Huang, Liu, Raghnanandan, & Rama, 2007; Knechel et al., 2007; Romanus, Maher, & Fleming, 2008) each audit firm's share of sales in the two-digit SIC (Standard Industrial Classification) codes in each year is computed. The auditor with the largest market share (in industry sales) or over a cut-off of 30% market share in a two-digit SIC industry-year was designated as the specialist auditor⁵. We then use Audit Analytics to assess which dyad the firm-year belongs to⁶.

⁴ We use North American Compustat to determine the industry specialist auditor consistent with prior research (Krishnan, 2003; Knechel et al., 2007; Huang et al., 2007). North American Compustat provides firm level sales which we use to determine the auditor's proportion of market share.

⁵ Research has examined numerous ways of determining auditor industry specialization. Market share measure is where an auditor that has the largest share of client sales. Palmrose (1986) posited that auditors are specialists if they audit at least 20% of the industry assets and to audit a larger market share, each firm should audit more than $\frac{1}{4} = 0.25$ percent of the assets in an industry in a given year. Therefore, $1.20 * 0.25 = 0.30$ is the cut-off used in this study. This measure is most commonly used in prior studies (Krishnan, 2003; Knechel et al., 2007; Huang et al., 2007).

⁶ We use publicly available data from Audit Analytics Auditor Change database to analyze auditor switches between industry specialists as used by studies like Chen and Zhou (2007), Romanus et al. (2008), and Francis, Hunter, Robinson, Robinson, and Yuan (2017).

3.2.2. Independent variables

We use the audit committee characteristics that have been used in prior work (Abbott, Park, & Parker, 2000; Chen et al., 2005; Sharma & Iselin, 2012) as the variables of interest in our model. Specifically, *LogMeet*, *AC_Size*, *Prop_Audit*, *ACChair_Expert*, and *Prop_FinExp* are used to measure the diligence, financial expertise, and effectiveness of the audit committee. In addition, *AC_ChairTenure*, and *Avg_BusyBody* are used to observe the monitoring capabilities of the audit committee members (Sharma & Iselin, 2012).

LogMeet is a measure of the number of times that an audit committee meets in the year prior to the switch. *AC_Size* is the number of members in an audit committee. These variables are a proxy to show whether an audit committee is active or not (Abbott et al., 2000). We hand collect the data element from DEF 14A proxy statements downloaded from the EDGAR database.

Prop_Audit captures how many members on the audit committee have auditing expertise. We read the profiles of audit committee directors and assign "1" to each member that has acquired audit-related experience such as certified public accountants, auditors, principals, and partners. We then calculate the percentage of audit committee members with auditing experience. The higher the proportion, the better may be the monitoring by the audit committee (Sharma & Iselin, 2012).

Prop_FinExp is a measure of the number of financial experts on the audit committee. A financial expert is defined as a member that has accounting or related financial expertise. We control for this because the audit committee is tasked with the responsibility to hire the auditor. The presence of more financial experts on the audit committee has been shown to result in the appointment of a higher-quality audit firm (Chen et al., 2005). Therefore, this variable is expected to have a positive coefficient.

CEOCHR is a measure of role duality in the organization. If the CEO is also the chairman of the board, there may be a lack of objectivity in the organization leading to poor financial reporting quality (Skousen & Wright, 2008). However, Archambeault, DeZoort, and Holt (2008) do not support this relationship. Therefore, we do not form any expectations about the association between duality and the choice of a specialist auditor.

Seek_Ratification is a dichotomous variable taking the value of 1 if the firm plans to seek ratification of the incumbent auditor. Krishnan and Ye (2005) show that firms are less likely to seek ratification when they engage a non-Big 4 auditor.

LogSale is the log of sales and is a measure of the size of the company. Larger companies may be more likely to use a specialist auditor because of agency issues (Francis & Wilson, 1988; Firth & Smith, 1992), therefore we expect that the coefficient of *LogSale* to be positive.

POwn is the percentage of outstanding shares owned by company directors. Agency theory posits that managers holding an equity interest will be better aligned with the interests of investors (Jensen & Meckling, 1976). On the other hand, Abbott and Parker (2000) do not find any significance for this

variable, and Chen et al. (2005) find that the presence of directors on audit committees, with a higher percentage of shares, makes it less likely for the firm to hire an industry specialist auditor. Therefore, we do not make a directional prediction for this variable.

ROA measures the return on assets and is a proxy for risk. Both these variables are expected to positively influence the use of an industry specialist firm (Chen et al., 2005).

LITI equals 1 if the company is in a litigious industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374, and 8731-8734). Firms from more litigious industries may be less likely to downgrade to a lower quality auditor (Krishnan & Lee, 2009).

Auditor_Resigned is a dichotomous variable to indicate whether the auditor change was due to the resignation of the current auditor.

PctChange_AF measures the percentage change in audit fees from the year prior to the switch to the year immediately following the switch. Auditor changes may be related to audit fees as typically firms do “opinion shopping” to reduce their audit fees.

ICW is a dichotomous measure coded as 1 if the firm receives an adverse opinion on internal controls and 0 otherwise. Firms with material weaknesses would be less likely to switch to a higher quality auditor.

Restate is an indicator variable coded as 1 if the firm restated financial statements in the year prior to the switch, 0 otherwise.

3.3. Sample selection

We obtained the data for auditor changes from the Audit Analytics database between 2005 and 2011. We then eliminated those companies that lack financial data in North American Compustat. This yielded a total of 1,293 firm years that involve an auditor change. Of these: 179 observations were characterized as a switch from a non-industry-specialist to an industry specialist (*NS*->*S*); 189 were

industry specialist to a non-industry-specialist (*S*->*NS*) switches, 136 as switches from specialist auditor to other specialist auditors (*S*->*S*) switches, and 789 were non-industry-specialist to non-industry-specialist (*NS*->*NS*) switches. We then hand collected the following information from the proxy filings: 1) a number of members on the audit committee, 2) a number of meetings, and 3) percentage of stock owned by directors as a group. We also read through the proxy filings (DEF 14A) to obtain the biography of the audit committee members and note the following attributes:

1. A number of financial experts on the audit committee.

2. Experience as the partner of an accounting firm or obtained other auditing experience.

3. Tenure of the audit committee chairman as a director of the company and whether the audit committee chairman is a financial expert or not.

4. An average number of outside directorships held by the audit committee members.

In addition, directors' stock ownership in the firm was collected from its DEF 14-A and 10-K. Consistent with prior work on auditor switches, we obtained governance and company-related information for the year immediately preceding the switch. We begin by collecting information for the three categories of switches, industry-specialist auditor to another industry specialist auditor (*S*->*S*), industry specialist auditor to a non-industry specialist auditor (*S*->*NS*), non-specialist auditor to an industry specialist auditor (*NS*->*S*). Of these, we find information for *S*->*S* (58), *S*->*NS* (98), and *NS*->*S* (75). Our sample selection process yielded a total of 789 *NS*->*NS* switches. Given we had to do hand-collection of data and it would be too tedious to collect data for all 789 observations, we created a matched sample of *NS*->*NS* firms with comparable industry, year, and size (measured by total assets) as *NS*->*S* firms. Once we found a pool of matched firms, we collected information for 175 *NS*->*NS* switches. This group is therefore comparable to other firms in our sample. Our final sample consists of 406 firm-year observations.

Table 1. The operational definition of variables

Variable	Definition
Dependent variable	
<i>Switch_Type</i>	Multinomial logistic regression: categorical - upward (1), downward (2), and lateral (3).
Independent variables	
<i>LogMeet</i>	Natural logarithm of the number of audit committee meetings.
<i>AC_Size</i>	The number of audit committee members.
<i>Prop_Audit</i>	Proportion of audit committee members with auditing/accounting expertise.
<i>Prop_FinExp</i>	Proportion of audit committee members that are designated “financial experts”.
<i>AC_ChairExpert</i>	1 if the chair of the audit committee is also the financial expert, 0 otherwise.
<i>AC_ChairTenure</i>	Number of years the audit committee chair has served as a director of the company.
<i>Avg_BusyBody</i>	Average number of other directorships held by the audit committee members.
<i>CEOCHR</i>	1 if the chair of the board of directors is also the CEO, 0 otherwise.
<i>Seek_Ratification</i>	1 if the firm seeks ratification for the incumbent auditor, 0 otherwise.
<i>Loss</i>	1 if the firm has reported an annual loss in the year prior to the switch.
<i>LogSale</i>	Natural logarithm of the sales in the year prior to the switch.
<i>POwn</i>	Proportion of shares held by officers and directors.
<i>ROA</i>	Return on assets at the end of the year.
<i>LITI</i>	1 if SIC code is 2833-2836, 3570-3577, 7370-7374, 3600-3674, 5200-5961 and 0 otherwise.
<i>Auditor_Resigned</i>	1 if the prior auditor resigned, 0 otherwise.
<i>Pct_ChgAF</i>	Percentage change in audit fees.
<i>ICW</i>	1 if the firm reports any internal control weaknesses prior to the switch, 0 otherwise.
<i>Restate</i>	1 if the firm restated financial statements in the year prior to the switch, 0 otherwise.

4. EMPIRICAL RESULTS

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for variables used in the main models, segregated by categories of audit switches and for the full sample. On average the sample firms have three members on an audit committee that meets eight times during the year. Upward switches, i.e., specialist to non-specialist, are characterized by the highest mean audit committees (mean *AC_Size* = 3.44), the highest proportion of audit experts on the audit committee (mean *Prop_Audit* = 14.3). It is interesting to note that companies that have made downward switches (S->NS) have the most number of meetings (mean = 8.949 versus 8.621), the lowest proportion of auditing experts (mean *Prop_Audit* = 0.078), and

a mean 20.2 percent insider stock ownership, higher than any other category of the switch. These downward switchers are also characterized by a shorter tenure of the audit committee chair (mean *AC_ChairTenure* = 5.61) a lower proportion of auditing experts on the audit committee (mean *Prop_Audit* = 0.077) and 49 percent (mean *Loss* = 0.49) of these switchers incurred a loss in the year prior to the switch.

On average, about 47 percent of the sample firms have a CEO who also serves as the chairman of the board. The average percentage of insider ownership is 16.7, while the median of insider ownership is 8.5 percent. The mean percentage of audit committee members who have audit-related experience is about 9 percent. The auditor resigned from the engagement in 15.8 percent of the cases.

Table 2. Descriptive statistics: Type of switch - mean (median)

Variable	Full sample N = 406	Lateral S->S NS->NS N = 233	Downward S->NS N = 98	Upward NS->S N = 75
<i>AC_Meetings</i>	8.621(8.000)	8.567(7.000)	8.949(8.000)	8.360(8.000)
<i>AC_Size</i>	3.379(3.000)	3.399(3.000)	3.286(3.000)	3.440(3.000)
<i>Prop_Audit</i>	0.099(0.000)	0.094(0.000)	0.078(0.000)	0.143(0.000)
<i>Prop_FinExp</i>	0.058(0.000)	0.053(0.000)	0.071(0.000)	0.058(0.000)
<i>AC_ChairExpert</i>	0.773(1.000)	0.760(1.000)	0.827(1.000)	0.747(1.000)
<i>AC_ChairTenure</i>	6.382(4.000)	6.116(4.000)	5.612(4.000)	8.213(6.000)
<i>Avg_BusyBody</i>	1.253(1.000)	1.276(1.000)	1.306(1.100)	1.115(1.000)
<i>CEOCHR</i>	0.470(0.000)	0.476(1.000)	0.469(0.000)	0.453(0.000)
<i>Seek_Ratification</i>	0.599(1.000)	0.605(1.000)	0.561(1.000)	0.627(1.000)
<i>Loss</i>	0.441(0.000)	0.455(0.000)	0.490(0.000)	0.333(0.000)
<i>LogSale</i>	2.456(2.460)	2.431(2.419)	2.432(2.501)	2.566(2.496)
<i>POwn</i>	0.167(0.085)	0.169(0.086)	0.202(0.124)	0.114(0.043)
<i>ROA</i>	0.019(0.002)	0.020(0.001)	0.004(0.001)	0.032(0.005)
<i>LTI</i>	0.340(0.000)	0.330(0.000)	0.378(0.000)	0.320(0.000)
<i>Auditor_Resigned</i>	0.158(0.000)	0.189(0.000)	0.112(0.000)	0.120(0.000)
<i>Pct_ChgAF</i>	-0.190(0.100)	-0.206(0.098)	-0.051(0.202)	-0.325(-0.046)
<i>ICW</i>	0.325(0.000)	0.262(0.000)	0.398(0.000)	0.427(0.000)
<i>Restate</i>	0.113(0.000)	0.077(0.000)	0.194(0.000)	0.120(0.000)

Note: All variables are defined in Table 1.

4.2. Multinomial logistic regression analyses

In Section 2, we hypothesize that audit committee effectiveness characteristics are positively associated with a switch to an industry specialist auditor. To test the hypothesis, we employ a multinomial logit regression model. Table 3 presents the results for the multinomial logistic regression. Multinomial logistic regressions allow the simultaneous comparison of multiple contrasts. We categorize switches into three categories: 1) lateral switch: S->S and NS->NS, 2) downward switch: S->NS, and 3) upward switch: NS->S. We designate lateral switch as the reference category for the multinomial logistic model. Table 3, column (1) compares upward versus lateral. The coefficient of *Prop_Audit* is positive and significant (*Prop_Audit* = 1.771, $p = 0.04$), indicating that in the presence of a larger proportion of audit experts, audit committees are more likely to switch to an auditor of higher expertise versus seeking a similar quality auditor. The coefficients of *AC_ChairTenure* and *ICW* are positive and significant

for upward switches, relative to lateral switches. This shows that when firms have weaknesses in internal controls, they are more likely to move upward than lateral. Further, the longer the chair of the audit committee has been the director of the company, the greater the likelihood of an upward switch (*AC_ChairTenure* = 0.053, $p = 0.016$). However, the presence of large insider stock ownership (*POwn* = -1.771, $p = 0.058$) deters the firm from making an upward switch.

Table 3 column (2) shows the results of multinomial logistic regression comparing downward to lateral switchers. Results show audit committee characteristics are not statistically significant when comparing downward switches versus lateral switches. It is noteworthy, that in the event that the auditor resigns from the engagement, firms are less likely to downgrade to a lower quality auditor (*Auditor_Resigned* = -0.944, $p = 0.018$). There is also evidence that restatements lead to a greater likelihood of a downward switch (*Restate* = 0.846, $p = 0.049$).

Table 3. Multinomial logistic regression analysis: Probability of type of auditor change using lateral switches as the reference category (Dependent variable = Switch_Type)

Variable	Upward versus lateral Coefficient (Pr > ChiSq) N = 406	Downward versus lateral Coefficient (Pr > ChiSq) N = 406
Intercept	-0.896(0.438)	-1.169(0.284)
LogMeet	0.027(0.941)	0.342(0.293)
AC_Size	-0.102(0.636)	-0.260(0.223)
Prop_Audit	1.771*(0.041)	-0.819(0.351)
Prop_FinExp	-0.138(0.896)	1.058(0.242)
AC_ChairExpert	-0.009(0.979)	0.354(0.283)
AC_ChairTenure	0.053*(0.016)	-0.004(0.867)
Avg_BusyBody	-0.249(0.118)	0.018(0.892)
CEOCHR	-0.195(0.498)	-0.031(0.905)
Seek_Ratification	0.102(0.741)	-0.060(0.821)
Loss	-0.308(0.354)	-0.119(0.692)
LogSale	-0.027(0.903)	0.012(0.946)
POwn	-1.771(0.058)	0.766(0.237)
ROA	0.557(0.747)	-2.283(0.267)
LTTI	0.080(0.799)	0.144(0.604)
Auditor_Resigned	-0.556(0.197)	-0.944*(0.018)
Pct_ChgAF	-0.092(0.388)	0.123(0.373)
ICW	0.717*(0.029)	0.345(0.258)
Restate	0.229(0.651)	0.846*(0.051)
AIC (Intercepts & Covariates) = 804.388		
Likelihood Ratio (Pr > ChiSq) = 62.3101(0.0042)		

Notes: *, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively. All variables are defined in Table 1.

In summary, consistent with our expectations, we find that the larger proportion of audit experts on the audit committee, and the longer the chair of the audit committee has been on the audit committee, the more likely that the firms will seek a higher quality auditor. However, when comparing downward to lateral switches, none of the audit committee characteristics were statistically significant. Our findings suggest that having audit experts in the audit committee enhances a firm's auditor selection for quality purpose but may not play a significant role if the firm is not particularly seeking a high-quality auditor such as an industry specialist.

4.3. Supplementary analysis of Big 4 dismissals

We further investigate Big 4 dismissals by using the subsample of those firms that dismissed a Big 4 auditor. It yields a sample of 332 observations.

We model the probability of hiring a specialist auditor after dismissing a Big 4 audit firm. Table 4 presents the results of these additional analyses. Consistent with our expectation, the coefficient of *Prop_Audit* is positive and significant (*Prop_Audit* = 1.847, $p = 0.0022$), suggesting that a greater proportion of audit experts on the audit committee increases the likelihood of a firm hiring a specialist auditor after dismissing a Big 4 firm. The evidence is consistent with the inference drawn from our main analysis. If the firm seeks shareholder ratification, it is also likely to switch to a specialist auditor. However, if insider stock ownership is high, there is a lesser probability of hiring a specialist auditor (*POwn* = -1.645, $p = 0.035$).

Table 4. Logistic regression analysis: Probability of choice of specialist auditor pursuant to a Big 4 dismissal (Dependent variable = Switch_Type)

Variable	Coefficient (Pr > ChiSq) N = 332
Intercept	-2.297*(0.037)
LogMeet	-0.081(0.812)
AC_Size	0.246(0.190)
Prop_Audit	1.847*(0.023)
Prop_FinExp	-0.311(0.720)
AC_ChairExpert	-0.229(0.462)
AC_ChairTenure	0.026(0.283)
Avg_BusyBody	-0.070(0.607)
CEOCHR	0.222(0.383)
Seek_Ratification	0.559*(0.043)
Loss	-0.178(0.557)
LogSale	0.271(0.160)
POwn	-1.645*(0.035)
ROA	1.513(0.355)
LTTI	-0.012(0.965)
Auditor_Resigned	0.115(0.463)
Pct_ChgAF	-0.576(0.210)
ICW	0.269(0.361)
Restate	-0.098(0.821)
Adjusted R ²	0.1828
Likelihood Ratio (Pr > ChiSq)	47.1784*** (p < 0.001)

Notes: *, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively. "N" denotes the number of firm-year observations. Data covers years from 2005-2011. All variables are defined in Table 1.

5. CONCLUSION

Audit committees have been the subject of scrutiny by regulators for several decades. While audit committees have the sole authority to select auditors, their impacts could be limited by their expertise and experience. This study explores the association between audit committee effectiveness and the use of an industry specialist audit firm. The results support the hypothesis that audit committees with a larger proportion of auditing experts are more likely to select an industry specialist auditor. We corroborate the findings from prior literature (Chen et al., 2005) that the number of meetings does not relate to the likelihood of recruiting an industry specialist auditor.

Our paper has a couple of limitations. First, audit firm industry expertise continues to be a concerning factor for researchers. Auditing tools

and techniques may be overlapping in certain industries producing better quality audits by those audit firms who were not designated specialists by my measure. There may be certain audit committee characteristics that are unobservable in proxy filings and may largely influence auditor selection decisions. Second, currently, information on audit committee communications with the external auditor is not disclosed in public filings, it limits research to use other less representative proxies of the effectiveness of audit committees.

Future research could examine how audit committee communications are relevant to auditor selection. As long as auditors are reliant on their clients for revenues and still liable to the stakeholders for providing good quality audits, the power imbalance in this nebulous relationship will continue to be of interest to researchers and regulators.

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