An Examination of the Effects of Change in Committee Chair on Audit Quality

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Abstract

This study uses GMI Ratings directorship data from 2008 to 2013 along with associated Compustat financial data to determine if there is a relationship between the change in audit committee chair and audit quality. Using the Jones model for discretionary accruals and ordinary least-squares, our results indicate a change in audit committee chair is positively associated with deviations in discretionary accruals. Specifically, absolute discretionary accruals are significantly higher when there is a change audit committee chair, and consistent with prior research, deviations from predicted values of discretionary accruals is an indicator of "poor" audit quality. An additional finding of this paper is that when there is a change in audit committee chair, the new chair is likely to be younger than 60 and therefore will have less experience and contacts than the outgoing chair. An important implication of these results is that audit committee chair change can have a significant impact on audit quality and therefore the quality of the company financial statements as well.

Keywords: Audit committee, Audit quality, Audit committee chair

1. Introduction

Thirty years ago the Treadway Commission investigation made recommendations to improve audit quality and thereby improve financial reporting. Then fifteen years ago the Sarbanes-Oxley Act (SOX, U.S. House of Representatives, 2002) was passed to improve audit quality and financial reporting. In response to both of these actions as well as interest in this area by investors and policymakers, researchers have sought to study corporate governance and identify factors that point to audit quality and thus better financial reporting. Therefore, this research is of interest to academics, investors, regulators, and society in general.

Research in this area focuses on the viewpoint that effective governance by the board of directors and the audit committee, leads to improved financial reporting and audit quality (Carcello et al., 2011). Abbott et al. (2004) examines the relations between audit committee characteristics and accounting restatements, finding that audit committee independence and activity level are negatively associated with restatements. Srinivasan (2005) finds that when there is a restatement, audit committee members' reputation is negatively affected. Zhao and Chen (2008) find that audit committee independence and a staggered board of directors are negatively related to fraudulent reporting. Beasley et al. (2010) finds firms considered to be fraudulent have no audit committee or an audit committee with a minimum of three members. An underlying theory for this research is that the job of the audit committee is to look out for the best interests of the shareholders. Governance and agency theory. As the shareholders' agent, the audit committee is expected to interact with auditors and management to help ensure the financial integrity of the company as reflected in the quality of the financial statements and measured by the quality of the audit.

To the best of our knowledge there is only one other paper that investigates the relationship between a turnover in audit committee chair and audit quality, however that paper uses data from 2004 to 2008 (Tanyi and Smith, 2015). We evaluate whether audit quality, is positively associated with audit committee chair turnover from 2008 to 2013. Consistent with prior literature, we use the deviation in discretionary accruals as indirect evidence of audit quality (Zhao and Chen, 2008). A positive relationship between audit chair turnover and the absolute value of deviations in discretionary accruals would indicate that audit quality decreases with a change in audit committee chair. Discovery of such a finding would provide an externally accessible signal of audit quality for investors and other stakeholders.

The necessity for repeated legislative attempts to improve audit and financial statement quality over the last 30 years is evidence that the problem continues. Since laws alone cannot eliminate the shortcomings in audit and financial statement quality, stakeholders will continue to experience financial losses unless they can identify alternative variables to confirm the quality of financial reporting within companies. This research provides such a variable for government, investors and others to consider when evaluating company financial information.

Our sample consists of 4835 observations including 823 audit committee chair turnovers. We divide the sample into firm observations with audit committee chair change and observations without chair change. Using multivariate tests we find that absolute discretionary accruals are higher when the firms change audit committee chair and indicating lower audit quality. Additionally, we find firms with audit committee chair turnover have fewer board members, smaller audit committees and are less likely to appoint an industry expert auditor.

The remainder of this paper is organized as follows: 2) literature review and hypothesis development related audit committee chair turnover and audit quality, 3) methodology and sample selection, 4) empirical results, and 5) summary and conclusion.

2. Literature Review

2.1 Corporate Governance and Audit Committees

In publicly traded corporations, the board of directors, acting on behalf of shareholders, has the primary responsibility of oversight and compensation of senior management as well as oversight of the financial reporting process (Jensen and Meckling, 1976; Fama and Jensen, 1983). The audit committee is selected by the board of directors from its membership to manage the relationship with the external auditors (hiring, firing, and settling disagreements with management over accounting decisions) as well as provide oversight of the financial reporting process. The rise of management equity incentives in the last thirty years has created a greater possibility of earnings management to meet investor expectations (Batov and Mohanran 2004; Cheng and Warfield, 2005; Mergenthaler et al., 2008; Caskey et al, 2010).

The responsibilities of audit committees have expanded over the last thirty years. Initially the primary responsibility of the audit committee was to function as a liaison between the board of directors of a company and its auditors. With the passage of the Foreign Corrupt Practices Act in 1977, ensuring an effective system of internal controls was added to the responsibility of the audit committee. After the Enron and WorldCom scandals, Congress passed the Sarbanes-Oxley Act in 2002, which established specific requirements for audit committees that include direct responsibility for the appointment, compensation, and oversight of the outside auditors. Also, under Sarbanes-Oxley each member of the audit committee of publicly traded companies must be independent. Since audit committees have direct responsibility for the financial reporting process, agency theory requires the audit committee provide oversight on financial reporting quality in order to reduce agency costs (Archambeault et al., 2008; Beasley et al., 2009; Engel et al., 2009; Bromilow and Keller, 2011). Higher agency costs arise when improper financial accounting prevents investors and creditors from seeing the real performance of the company and diminishes their ability to make informed decisions (Xie et al. 2003).

The expanding responsibilities of the audit committee have given rise to academic research that focuses on the role of the audit committee in the financial reporting process. Given that there is a large body of research on corporate governance and the quality of the financial statements, research on audit committees and the quality of the financial statements would be expected as the audit committees have become increasingly more active and responsible for the financial reporting of a company (Agrawal and Chadha, 2005 Zhang et al., 2007; Ward, 2009, Pomeroy, 2010, NACD, 2012).

Audit committee effectiveness can be assessed along the following four dimensions: Composition, Authority, Resources, and Diligence (DeZoort et al 2002). Audit committee composition has been the focus of a number of papers in the past primarily because of the availability of publicly available data. Independence of the audit committee members has been examined by a number of researchers (Vicknair et al., 1993; McMullen and Raghunandan, 1996; Beasley, 1996; Wright, 1996; Abbott at al., 2003; Raghunandan and Rama, 2007) as well as size of the committee (Beasley, 2001; Wright 1996) and prior experience (DeZoort, 1998). Other elements of audit committee composition have included financial expertise (DeFond et al., 2005; Krishnan and Lee, 2009), tenure and "busy boarding" (Barua et al., 2010).

Prior research has looked at variables such as independence, committee size, experience and financial expertise as indications of audit committee effectiveness. All are important considerations in evaluating audit committees and the potential effectiveness of this group; however, three of the four variables are difficult to determine and are subjective in nature. Therefore, a more readily available variable that may also indirectly include components related to

independence, experience and financial expertise, without any subjective evaluation, is a change in audit committee chair. When visualizing the leader (chair) of such an important committee within a company, their independence, experience and financial expertise would logically influence the committee. So a change in chair may provide an easily determinable variable to assist in the evaluation of audit committee effectiveness

2.2 Audit Quality and Discretionary Accruals

The long-held view of the SEC and legislators is that an effective audit committee is an important element in the corporate governance and financial reporting framework. Additionally, both regulatory and legislative actions during the past two decades reflect the view that the composition of the audit committee can be expected to influence the quality of financial reporting. Hence, it is not surprising that many prior studies have sought to examine if indeed there is an association between different dimensions of audit committee composition and various proxies for financial reporting quality. Given that the objective of financial audits is to ensure that financial statements are free from material misstatements and omissions, audit quality is one common way to measure financial reporting quality.

Audit quality is a construct that can be operationalized in multiple ways. While there is no one single measure that best captures this construct, prior studies have used discretionary accruals as one proxy for audit quality. Audit quality is inferred by examining client earnings properties and implied earnings management behavior with respect to abnormal accruals (e.g., Becker et al., 1998). A large abnormal or discretionary component of accruals is indirect evidence of lower earnings quality (e.g., Frankel et al., 2002) and subject to audit scrutiny (Chang, Cheng, and Reichelt, 2010). Therefore, audit procedures are designed to detect misstatements in accruals. This study uses the absolute value of abnormal accruals to measure audit quality.

2.3 Audit Committees and Audit Quality

Many studies have examined if various audit committee composition related measures are associated with abnormal accruals. For example, Klein (2002) uses a sample of S&P 500 firms and examines accruals for 1991-1993. She finds that in companies that did not have audit committees with solely independent directors the companies had higher abnormal accruals (when compared to companies with solely independent 53 directors on the committee). Bedard et al. (2004) examine data from 1996 and use a matched sample design; they find that the presence of a financial expert is negatively associated with discretionary accruals. In addition, they find that earnings management is lower in those companies that had audit committees comprised of independent members. Yang and Krishnan (2005) examine the association between earnings management and several audit committee characteristics, using data from 896 observations from the years 1996-2000. They find that the following audit committee director characteristics are associated with earnings management: number of outside directorships held by audit committee directors, extent of stock ownership, and average tenure of the audit committee directors.

The Enron and Worldcom accounting scandals brought increased focus by legislators and regulators in the role of audit committees in monitoring the quality of financial reports (Ruder 2002). The Sarbanes-Oxley Act of 2002 (SOX, U.S. House of Representatives 2002) as well as new policies by stock exchanges resulted in changes to corporate board composition, structure, and activities (Linck et al., 2009). While previous studies used data from the pre-SOX period, other studies have examined the post-SOX period. In post SOX, the preservation of accruals quality was found to be an important responsibility of the audit committee (Cohen et al., 2007). Accounting research found audit committees to have increased focus on factors that can affect accruals quality such as accounting policies and management's judgements, estimates, and valuations (HassabElnaby et al., 2007).

The magnitude of audit committee activity has dramatically increased after SOX as established by the significant increase in the number of audit committee meetings (Spencer, 2006; Burke et al., 2008). A number of post-SOX studies have focused on evaluating different types of experts as they relate to the effectiveness of the audit committee since variations in independence are less likely in the post-SOX period (given the requirements of SOX for audit committees to have solely independent directors). Dhaliwal et al. (2010) use a sample of 770 firms with available data during 2004–2006, and find that the presence of accounting experts on the audit is positively associated with accruals quality. Further, accruals quality is positively related to accounting experts who (a) are independent from the firm, (b) hold low levels of multiple directorships, and (c) have a lower tenure in their firms. Jayanthi et al (2011) focused on the effect of legal expertise of audit committee members as it relates to financial reporting quality. While Chen et al. (2014) analyzed how investors perceive reported earnings when companies with interlocking audit committee members are audited by the same audit firm.

Although a great deal of accounting research has focused on specific characteristics of audit committee members as it relates to financial reporting quality, no research was found on the effect of audit committee chair change on financial reporting quality. We believe that a change in audit chair can have a significant effect on earnings quality.

Our paper expands on prior research by expanding on the use of agency and resource dependence theory to evaluate the role of the audit committee chair in the oversight of financial reports (Hillman and Dalziel, 2003). While agency theory defines the role of audit committee members as agents working on behalf of shareholders, resource dependence explains that audit committee members do more than reduce uncertainty by applying their knowledge and expertise in their role (Hillman et al., 2000).

2.4 Hypothesis

The evolution of corporations from inception to modern entities that are critical components of world economies and capital markets gave rise to the concept of corporate governance and the associated role of the board of directors' role in monitoring management (Davies 2006). A number of theories have been developed to explain the relationship between management, owners, and board of directors in the context of corporate governance. These theories include agency theory, stewardship theory, stakeholder theory, resource dependency theory, political theory, legitimacy theory, and social contract theory. Within the context of this paper, we will focus on agency theory and resource dependency theory in the development of the hypothesis.

Research on the agency theory goes back to the 1930's and focuses on the principal/agent relationship between the owners and managers of a corporation (Berle and Means 1932). Under this theory, the board of directors serves as the monitoring mechanism of management on behalf of the owners (Mallin, 2004). Agency theory provides a framework for predicting that those three parties will act in their own self-interest to maximize the value of the organization and thereby reduce agency costs (Deegan 2004). A large body of academic research has focused on the role of the board of directors in monitoring and ratifying the decisions of management (Fama and Jensen 1983; Baysinger and Butler 1985; Lorsch and MacIver 1989; Baysinger and Hoskisson, 1990; Pearce and Zahra, 1992; Barnhart et al., 1994; Daily and Dalton, 1994; Gales and Kesner, 1994; Bhagat and Black, 1998; Kiel and Nicholson, 2003; Day, 2008). Information asymmetry between management and shareholders creates the opportunity for management to use their knowledge and expertise to take actions to maximize their own wealth rather than the wealth of the shareholders (Deegan 2004). Thus accounting plays a significant role in reducing agency costs not only by safe-guarding the assets of an organization, but also in ensuring that management is not violating generally accepted accounting principles to artificially inflate profits in an effort to maximize their performance based compensation. The board of directors' function of accounting and auditing oversight is the responsibility of the audit committee. So while agency theory provides a framework for the monitoring role of audit committees, it does not provide insight into the impact that a change in audit committee chair could have on audit quality. Although one could argue that a change in audit committee chair could impair the ability of the audit committee to fulfill its monitoring function using agency theory, that theory does not explain why the monitoring function is impaired.

Resource dependency theory provides a different perspective to the role of the board of directors within an organization and provides a framework as to why a change in the audit committee chair can impact the ability of the audit committee to fulfill its monitoring role within the organization. While the resource dependence role is different from the agency role, both of those roles can occur at the same time (Johnson et al. 1996). One function of the resource dependence role played by directors is to reduce uncertainty for the organization by linking it to its external environment (Alchian,1950; Thompson, 1967; Pfeffer and Salancik, 1978). However, in addition to reducing uncertainly, an additional resource dependence role played by directors is to bring resources to the organization (skills, information, and access) (Gales and Kesner, 1994; Fahlenbrach et al., 2010, Schmidt and Wilkins, 2013; Srinidhi et al., 2013). Some academic research has established the effectiveness of the board to acquire resources (Zald, 1969; Goodstein and Boeker, 1991) while other research has found that directors may enhance reputation and credibility to their organization (Hambrick and D' Aveni, 1992; Daily and Schwenk, 1996). Thus resource dependence theory establishes that each director brings a unique mix of attributes to their organization (Kesner, 1988; Kosnik, 1990). Given that the audit committee members bring accounting expertise to the organization, a change in membership of the committee would result in the change in the resources available to the organization. In the case of the audit committee chair, resource dependency is especially important because the audit committee chair sets the agenda, direction, and focus of the audit committee. A change in the audit committee chair would have an impact on audit quality because of the change in the expertise, knowledge, and experience of the new chair would be different from the out-going chair, at least for the short-term as the new audit committee chair is able to relate his or her expertise and knowledge to the role.

Both theories are important in understanding the role of the audit committee and any change in the audit committee chair because board members monitor and provide knowledge resources (Korn/Ferry 1999). Research has found that experience, knowledge, and expertise of board members affect the effectiveness of their monitoring role (Carpenter

and Westphal 2001). Thus the resource limitation of board members can impact their ability to perform their monitoring function or even lack the ability to make decisions between different courses of action (Zald 1969).

Agency theory takes a static view of the ability of committee members to execute their monitoring functions on behalf of the shareholder's. While the resource dependence theory factors in both the human capital required to perform the monitoring function as well as the skill and resources of the committee members to enhance management performance, and align their actions with the interests of the shareholders. Therefore integrating agency theory with resource dependence theory provides a superior framework with which to evaluate the function performed by board members (Hillman and Dalziel, 2003).As noted by Carcello et al. (2011), the audit committee chair plays an important role in monitoring corporate financial reporting, and as noted in the above section, prior research related to audit committee composition has focused primarily on audit committee director independence and financial expertise. In addition, some studies have also examined other constructs such as audit committee director tenure and busyness. The chair of the audit committee plays an important role in setting the overall tone of monitoring by the committee. The chair controls the agenda and, as such, has a significant influence over the functioning of the committee. Yet, there is little empirical evidence about the association between changes in the chair of the audit committee and discretionary accruals.

Agency theory predicts that information asymmetry creates an opportunity for management to use their knowledge and expertise to take actions to maximize their own wealth at the expense of the shareholders. Resource dependence theory provides a framework to evaluate the impact that the audit committee chair change will have on the role to the audit committee in monitoring management's role in the financial reporting process. The knowledge, expertise, and relationships that the out-going audit committee chair developed over time would not be available to the new audit committee chair upon taking on the new role. Resource dependence theory predicts that audit quality will decrease with the change in the audit committee chair because of the change in the resources of the new audit committee chair compared to the out-going audit committee chair. Hence, we frame the research question in the null form as follows:

H_0: There is an association between abnormal discretionary accruals (indicating lower audit quality) and the change in audit committee chair.

H_1: There is not an association between abnormal discretionary accruals (indicating lower audit quality) and the change in audit committee chair.

3. Methods

3.1 Measure of Audit Quality

Deviation from the predicted level of accruals is an indicator of "poor" audit quality (Zhao and Chen, 2008). Given that both positive and negative values of discretionary accruals are indicative of earnings management, we use the absolute value as a proxy for audit quality. (Note 1)

To measure audit quality, we use ordinary least-squares (OLS) to estimate the Jones model proposed by Dechow and Sloan (1995). We use the full Compustat sample by fiscal year and two-digit industry SIC code, and controlling for current firm performance:

$$TACC_{i,t}/TA_{i,t-1} = \gamma_0 + \gamma_1[1/TA_{i,t-1}] + \gamma_2[(\Delta REV_{i,t} - \Delta REC_{i,t})/TA_{i,t-1}] + \gamma_3[PPE_{i,t}/TA_{i,t-1}] + \gamma_4[ROA_{i,t}] + \varepsilon_{i,t} \quad (1)$$

Discretionary accruals are estimated as a function of the changes in sales and receivables, the level of property, plant and equipment, and the level of return on assets as follows: where, for client *i* and fiscal year-end *t*: *TACC* is total accruals, defined as the difference between income before extraordinary items minus cash flow from operations, deflated by lagged total assets $TA_{i,t-1}$. ΔREV is the change in net sales and ΔREC is the change in net receivables, deflated by lagged total assets. *PPE* is the level of gross property, plant, and equipment for each year deflated by total assets.

Kothari, Leone, and Wasley (2005) argue that the discretionary accruals model may be misstated when applied to samples of firms with extreme performance, and suggest using ROA to control for current firm performance and to increase the power of the Jones model. Thus, we include a measure of firm performance (*ROA*) in the estimation equation. *ROA* is the end-of-year return on assets, estimated using net income over total assets. The absolute value of residuals from Equation (1) is used to measure discretionary accruals.

3.2 Audit Quality Model

Our focus is examining the association between audit committee chair turnover and audit quality. In addition, we follow prior literature (e.g., DeFond, Hann, and Hu 2005; Larcker, Richardson, and Tuna 2007; Bowen, Rajgopal, and Venkatachalam 2008; Zhao and Chen 2008; Dhaliwal, Naiker, and Navissi 2010) in measuring an extensive

number of control variables for alternative reasons for audit quality to differ. In all, we identify 20 control variables. Table 1 provides the variables and their definitions that are used for this study. To test our hypotheses, the model we use for the tests is:

$$|DACC| = \alpha + \beta_1 CHAIR\_TURNOVER + \beta_2 NUMBD + \beta_3 RINDBD + \beta_4 RACBD + \beta_5 RINDAC + \beta_6 SIZE + \beta_7 ROA + \beta_8 MNA + \beta_9 GROWTH + \beta_{10} FRGN + \beta_{11} SEG + \beta_{12} ZSCORE + \beta_{13} LOSS + \beta_{14} LEVERAGE + \beta_{15} BIG4 + \beta_{16} EXPERT + \beta_{17} LNAF + \beta_{18} LAG + \beta_{19} STTEN + \beta_{20} LTTEN + \beta_{21} CHANGE + YEAR\_INDICATOR + INDUSTRY\_INDICATOR + \varepsilon \quad (2)$$

To test our hypotheses, our interest variable is the turnover of audit committee chair (*CHAIR_TURNOVER*). If there is an association between audit quality and the change in audit committee chair, we predict the coefficient on *CHAIR_TURNOVER* to be positive. The control variables consist of three categories. The first category of control variables pertains to corporate governance features that are likely to have an effect on the magnitude of discretionary accruals. Following DeFond et al. (2005), we control for the board size (*NUMBD*), ratio of independent to full board members (*RINDBD*), ratio of audit committee to full board members (*RACBD*), ratio of independent audit committee members to total audit commit members (*RINDAC*).

The second category comprises financial and market-based variables that may affect audit quality: firm size (*SIZE*), financial performance (*ROA*), whether the firm is involved in a merger or acquisition during the two previous years (*MNA*) (Erickson et al. 2006), firms growth (*GROWTH*), the ratio of foreign sales to total sales (*FRGN*), the number of reportable segments (*SEG*), financial distress (*ZSCORE* and *LOSS*), firm leverage (*LEVERAGE*).

To control the effect of auditor's characteristics on the audit quality, we also include the following control variables: auditor brand (*BIG4*), auditor industry expertise (*EXPERT*), audit fees (*LNAF*), audit report lag (*LAG*), audit tenure (*STTEN* and *LTTEN*), and auditor switch (*CHANGE*). Finally, year and industry dummies are included as controls in the model.

Table 1. Definitions of Variables Used in our Main Tests Definition

Variable		Definition
Main Variables		
|DACC|	=	absolute value of performance-matched discretionary accruals.
CHAIR_TURNOVER	=	1 if the firm changes the audit committee chair, and 0 otherwise.
Control Variables		
NUMBD	=	number of board members.
RINDBD	=	ratio of independent to full board members.
RACBD	=	ratio of audit committee to full board members.
RINDAC	=	ratio of independent audit committee members to total audit committee members.
BIG4	=	dummy variable that equals 1 if the firm is audited by a Big 4 auditor, and 0 otherwise.
CHANGE	=	1 if the firm hires a new auditor, 0 otherwise.
EXPERT	=	1 for auditors if the auditor is an industry specialist, 0 otherwise.
EXTRAORD	=	1 if the firm reports extraordinary items, 0 otherwise.
FRGN	=	ratio of foreign sales to total sales.
GROWTH	=	percentage changes in sales.
LAG	=	natural logarithm of the number of days between fiscal year-end and the date of the audit report.
LEVERAGE	=	leverage ratio, calculated as short-term debt (DLC) plus long-term debt (DLTT) in year t, scaled by total assets (AT) in year t-1.
LNAF	=	natural logarithm of audit fees for the current year reported in Audit Analytics.
LOSS	=	dichotomous variable with value of 1 if the client has a negative net income before extraordinary items in year t, and 0 otherwise.
LTTEN	=	1 if the auditor tenure is longer than eight years, and 0 otherwise.
MNA	=	1 if the client had a merger or acquisition in the two previous years, and 0 otherwise.
PPE	=	level of gross property, plant, and equipment.
ΔREC	=	change in net receivables.
ΔREV	=	change in net sales.
ROA	=	net income before extraordinary items and cumulative effect of accounting changes deflated by total assets.
SEG	=	number of segments reported in Compustat segment file.
SIZE	=	natural logarithm of total assets (in $million).
STTEN	=	1 if the auditor tenure is less than four years, and 0 otherwise.
TA	=	total assets.
TACC	=	total accruals scaled by total assets ((IBC - OANCF + XIDOC)/AT).
UNDER_60	=	1 if the new audit committee chair is younger than 60; and 0 otherwise.
ZSCORE	=	Z score is calculated following modified version of Altman's (1968) Z-score that proxies for firm's financial condition. Higher Z-Score means lower probability of bankruptcy. Specifically, Z-score = 3.3(Net Income/Assets) + 1.0(Sales/Assets) + 1.4(Retained Earnings/Assets) + 1.2(Working Capital/Assets) + 0.6(Stock Price × Shares Outstanding)/Total Liabilities.

3.4 Sample Selection and Data

Table 2 summarizes the sample selection process. The initial sample consists of all active firms on Compustat during 2008—2013 (75,297 firm year observations). We then eliminate firms that: (1) lack audit fee information in Audit Analytics, (2) lack corporate governance information in Risk Metrics, (3) lack audit committee information in GMI Ratings Governance, (4) belong to the financial services (SIC codes 6000-6999) and regulated (4900-4999) industries, (5) lack financial data required for our tests. Our final sample has 4,835 observations. We winsorize the top and bottom 1% of all independent variables to control for potential outliers.

Table 2. Sample Selection

Procedure	Observations Remaining
Data available on Compustat database (2008-2013)	75,297
Firms also available on Audit Analytics file	23,867
Firms also available on Risk Metrics file	7,558
Firms not in financial or utility industries	5,741
Firms with control variables needed for our tests	4,835
Full sample (2008-2013)	4,835

The full sample includes 823 audit committee chair turnovers. Panel A of Table 3 reports the sample distribution by two-digit Standard Industrial Classification (SIC) industry code. The sample represents a fairly wide range of industries. For the audit committee chair turnover subsample, the most represented industry is Business Services, which comprises 14.09 percent of the audit committee chair change sample. Electronic & Other Electrical Equip Manufacturers comprise 9.60 percent, followed by Chemicals and Allied Products Manufacturers at 9.11 percent. On average, 17.00 percent of the sample firms experience an audit committee chair change (Panel B of Table 3). Audit committee chair turnover is higher in 2008 (20 percent), 2009 (17 percent), and 2011 (18 percent).

Table 3. Sample Description

Panel A: Distribution of Audit Committee Chair Turnover by Industry

Industry	Two-Digit SIC Code	CHAIR_TURNOVER = 1		CHAIR_TURNOVER = 0	
		# Obs.	% Sample	# Obs.	% Sample
Agricultural Production-Crops	1	0	0.00%	5	0.12%
Metal Mining	10	1	0.12%	11	0.27%
Coal Mining	12	2	0.24%	8	0.20%
Oil & Gas Extraction	13	31	3.77%	167	4.16%
Mining & Quarrying-Nonmetallic Minerals	14	5	0.61%	14	0.35%
Construction - General Contractors & Operative Builders	15	4	0.49%	40	1.00%
Heavy Construction Except Building	16	2	0.24%	31	0.77%
Construction-Special Trade Contractors	17	2	0.24%	17	0.42%
Food & Kindred Products Mfrs	20	28	3.40%	135	3.36%
Textile Mill Products Mfrs	22	3	0.36%	12	0.30%
Apparel & Other Finished Products-Mfrs	23	6	0.73%	40	1.00%
Lumber & Wood Prods Except Furntr Mfrs	24	3	0.36%	35	0.87%
Furniture & Fixtures Mfrs	25	8	0.97%	39	0.97%
Paper & Allied Products Mfrs	26	14	1.70%	71	1.77%
Printing Publishing & Allied Industries	27	5	0.61%	36	0.90%
Chemicals & Allied Products Mfrs	28	75	9.11%	317	7.90%

Petroleum Refining & Related Inds Mfrs	29	9	1.09%	50	1.25%
Rubber & Miscellaneous Plastics Mfrs	30	7	0.85%	49	1.22%
Leather & Leather Products Mfrs	31	4	0.49%	23	0.57%
Stone Clay Glass & Concrete Prods Mfrs	32	5	0.61%	23	0.57%
Primary Metal Industries Mfrs	33	26	3.16%	84	2.09%
Fabricated Metal Products Mfrs	34	14	1.70%	75	1.87%
Industrial & Commercial Machinery Mfrs	35	59	7.17%	301	7.50%
Electronic & Other Electrical Equip Mfr	36	79	9.60%	341	8.50%
Transportation Equipment Mfrs	37	31	3.77%	130	3.24%
Measuring & Analyzing Instruments-Mfrs	38	53	6.44%	267	6.66%
Miscellaneous Manufacturing Inds Mfrs	39	9	1.09%	37	0.92%
Railroad Transportation	40	2	0.24%	11	0.27%
Motor Freight Transportation/Warehouse	42	4	0.49%	44	1.10%
Electric Gas & Sanitary Services	49	54	6.56%	320	7.98%
Wholesale Trade-Durable Goods	50	23	2.79%	116	2.89%
Wholesale Trade-Nondurable Goods	51	15	1.82%	49	1.22%
General Merchandise Stores	53	7	0.85%	43	1.07%
Food Stores	54	4	0.49%	15	0.37%
Automotive Dealers & Service Stations	55	5	0.61%	46	1.15%
Apparel & Accessory Stores	56	12	1.46%	65	1.62%
Home Furniture & Furnishings Stores	57	0	0.00%	13	0.32%
Eating & Drinking Places	58	14	1.70%	92	2.29%
Miscellaneous Retail	59	21	2.55%	60	1.50%
Hotels Rooming Houses & Camps	70	1	0.12%	9	0.22%
Personal Services	72	3	0.36%	12	0.30%
Business Services	73	116	14.09%	485	12.09%
Auto Repair Services & Parking	75	0	0.00%	4	0.10%
Motion Pictures	78	7	0.85%	9	0.22%
Amusement & Recreation Services	79	5	0.61%	23	0.57%
Health Services	80	20	2.43%	104	2.59%
Educational Services	82	10	1.22%	30	0.75%
Engineering & Accounting & Mgmt Svcs	87	13	1.58%	91	2.27%
Nonclassified Establishments	99	2	0.24%	13	0.32%
Total		823	100.00%	4,012	100.00%

Panel B: Distribution of Sample by Year

	Audit Committee Chair Change =1		Audit Committee Chair Change =0	
Year	**# Obs.**	**% Sample**	**# Obs.**	**% Sample**
2008	166	20%	603	15%
2009	138	17%	635	16%
2010	119	14%	667	17%
2011	147	18%	712	18%
2012	122	15%	705	18%
2013	131	16%	690	17%
Total	823	100%	4,012	100%

4. Empirical Results

4.1 Univariate Results

4.1.1 Descriptive Statistics.

In multivariate tests, we control for a number of firm characteristics that could influence the extent of earnings management. In Table 4, Panel A presents the descriptive statistics of the variables used in our main analysis. We divide the sample into firm observations with audit committee chair changed and audit committee chair unchanged. Next we examine if there are any differences in audit quality and other variables depending on the turnover of audit committee chair. For each variable, we conduct parametric *t*-tests for means and non-parametric Wilcoxon rank sum tests for medians. The results show that mean (median) absolute discretionary accruals for the audit committee chair change subsample is 0.0766 (0.0517) and 0.0651 (0.0452) for audit committee chair unchanged subsample. This suggests that the absolute discretionary accruals are higher when the firms change audit committee chair. More specifically, the mean (median) of the absolute discretionary accruals is 0.0114 (0.0065) higher when the firm changes the audit committee chair, and the difference is significant at 1 percent level. Additionally, the results show that firm observations with audit committee chair turnover have fewer board members and are smaller size than observations with unchanged audit committee chair, although the difference is marginally significant. The summary statistics further reveal that firm-years with audit committee chair turnover are less likely to appoint an industry expert auditor, and the tenure of their auditor is shorter.

4.1.2 Correlation Analysis.

In Table 4, Panel B presents the correlation among the variables used in our analysis. The results show that the correlation between |*DACC*| and *CHAIR_TURNOVER* is positive (coefficient = 0.060). This indicates that auditors provide lower audit quality when clients have a new audit committee chair. Consistent with prior studies, we find absolute discretionary accruals to be negatively associated with *NUMBD* (coefficient = -0.047), *SIZE* (coefficient = -0.086), *ROA* (coefficient = -0.107), *BIG4* (coefficient = -0.032), *EXPERT* (coefficient = -0.065) *LNAF* (coefficient = -0.039), and positively associated with *GROWTH* (coefficient = 0.038), *ZSCORE* (coefficient = 0.068), *LOSS* (coefficient = 0.147), and *CHANGE* (coefficient = 0.031). In addition, we find *CHAIR_TURNOVER* to be negatively and significantly associated with *LTTEN* (coefficient = -0.060), thus indicating that the relationship between client and auditor is shorter when the client changes the audit committee chair.

Table 4. Univariate Results

Panel A: Descriptive Statistics for Variables Used In our main analysis

	CHAIR_TURNOVER = 1 (n = 823)		*CHAIR_TURNOVER* = 0 (n = 4,012)		Difference			
Variable	Mean	Median	Mean	Median	Mean		Median	
|DACC|	0.0766	0.0517	0.0651	0.0452	0.0114	***	0.0065	***
NUMBD	9.0960	9.0000	9.2493	9.0000	-0.1533	*	0.0000	
RINDBD	0.8003	0.8333	0.7969	0.8182	0.0034		0.0152	
RACBD	0.4237	0.4286	0.4287	0.4286	-0.0050		0.0000	
RINDAC	0.9926	1.0000	0.9933	1.0000	-0.0007		0.0000	
SIZE	7.7582	7.6295	7.8673	7.7276	-0.1090	*	-0.0981	
ROA	0.0530	0.0573	0.0532	0.0544	-0.0002		0.0029	
MNA	0.3378	0.0000	0.3457	0.0000	-0.0079		0.0000	
GROWTH	0.0734	0.0648	0.0628	0.0573	0.0107		0.0075	
FRGN	0.2306	0.0781	0.2401	0.1238	-0.0096		-0.0457	
SEG	1.9988	1.0000	2.0015	1.0000	-0.0027		0.0000	
ZSCORE	0.0156	0.0000	0.0148	0.0000	0.0008		0.0000	
LOSS	0.1288	0.0000	0.1259	0.0000	0.0029		0.0000	
LEVERAGE	0.1774	0.1668	0.1773	0.1674	0.0001		-0.0006	
BIG4	0.9259	1.0000	0.9397	1.0000	-0.0138		0.0000	
EXPERT	0.2989	0.0000	0.3337	0.0000	-0.0348	*	0.0000	*
LNAF	14.6025	14.4582	14.5996	14.4868	0.0030		-0.0286	
LAG	4.0207	4.0431	4.0127	4.0254	0.0080		0.0177	
STTEN	0.1021	0.0000	0.0581	0.0000	0.0440	***	0.0000	***
LTTEN	0.6671	1.0000	0.7383	1.0000	-0.0712	***	0.0000	
CHANGE	0.0158	0.0000	0.0147	0.0000	0.0011		0.0000	

See Table 1 for variable definitions. ***(**)[*] imply two-tailed significance at 1%(5%)[10%] level.

Table 4. (Continued)

Panel B: Correlations

		1	2	3	4	5	6	7	8	9	10	11
1	*CHAIR_TURNOVER*	1										
2	*|DACC|*	**0.060**	1									
3	*NUMBD*	-0.028	**-0.047**	1								
4	*RINDBD*	0.012	-0.017	**0.228**	1							
5	*RACBD*	-0.017	0.008	**-0.445**	**0.041**	1						
6	*RINDAC*	-0.006	-0.024	**0.046**	**0.219**	**-0.047**	1					
7	*SIZE*	-0.027	**-0.086**	**0.614**	**0.283**	**-0.208**	**0.087**	1				
8	*ROA*	-0.001	**-0.107**	**0.033**	-0.018	0.018	0.006	**0.032**	1			
9	*MNA*	-0.006	0.022	**-0.032**	0.004	-0.020	0.011	0.008	**-0.068**	1		
10	*GROWTH*	0.023	**0.038**	**-0.058**	**-0.049**	0.001	0.002	-0.025	**0.326**	**0.168**	1	
11	*FRGN*	-0.013	**0.033**	**0.042**	**0.145**	**-0.058**	0.007	**0.130**	**0.094**	**0.057**	-0.017	1
12	*SEG*	0.000	**-0.033**	**0.102**	**0.087**	-0.002	0.006	**0.158**	-0.002	**0.061**	**-0.067**	**0.225**
13	*ZSCORE*	0.004	**0.068**	**0.051**	**-0.030**	0.016	-0.014	**0.095**	**-0.139**	**-0.045**	**-0.061**	**-0.086**
14	*LOSS*	0.003	**0.147**	**-0.091**	**-0.029**	0.003	-0.026	**-0.134**	**-0.689**	-0.010	**-0.259**	-0.025
15	*LEVERAGE*	0.000	**-0.064**	**0.277**	**0.163**	**-0.064**	**0.081**	**0.378**	**-0.186**	**0.053**	**-0.067**	**-0.141**
16	*BIG4*	-0.021	**-0.032**	**0.251**	**0.145**	**-0.131**	-0.001	**0.293**	**-0.029**	0.028	**-0.048**	0.005
17	*EXPERT*	-0.028	**-0.065**	**0.178**	**0.086**	**-0.044**	-0.023	**0.149**	-0.017	**-0.042**	**-0.068**	0.002
18	*LNAF*	0.001	**-0.039**	**0.559**	**0.306**	**-0.217**	**0.072**	**0.835**	-0.015	**0.088**	**-0.072**	**0.309**
19	*LAG*	0.020	**0.034**	**-0.244**	**-0.171**	**0.112**	**-0.081**	**-0.419**	**-0.145**	0.010	**-0.047**	**-0.137**
20	*STTEN*	**0.067**	**0.046**	**-0.083**	**-0.045**	-0.003	-0.005	**-0.077**	-0.020	-0.013	**0.029**	**-0.029**
21	*LTTEN*	**-0.060**	**-0.058**	**0.165**	**0.075**	**-0.051**	0.020	**0.175**	**0.030**	-0.003	-0.017	**0.071**
22	*CHANGE*	0.003	**0.031**	**-0.050**	-0.018	0.001	-0.020	**-0.061**	-0.021	0.008	-0.003	-0.025

Variables in bold is statistically significant at least 5 percent.
See Table 1 for variable definitions.

Table 4. Correlations (Continued)

Panel B: Correlations											
		12	13	14	15	16	17	18	19	20	21	22
12	*SEG*	1										
13	*ZSCORE*	-0.015	1									
14	*LOSS*	**-0.041**	**0.101**	1								
15	*LEVERAGE*	**0.046**	**0.228**	**0.054**	1							
16	*BIG4*	**0.055**	0.009	-0.012	**0.180**	1						
17	*EXPERT*	**0.052**	**0.030**	0.005	**0.087**	**0.181**	1					
18	*LNAF*	**0.187**	0.025	**-0.051**	**0.258**	**0.269**	**0.152**	1				
19	*LAG*	**-0.080**	**-0.045**	**0.135**	**-0.086**	**-0.159**	**-0.030**	**-0.340**	1			
20	*STTEN*	-0.017	0.016	0.023	**-0.050**	**-0.221**	**-0.082**	**-0.088**	**0.042**	1		
21	*LTTEN*	**0.091**	0.012	**-0.062**	**0.044**	**0.299**	**0.115**	**0.151**	**-0.100**	**-0.431**	1	
22	*CHANGE*	-0.021	0.023	0.020	**-0.056**	**-0.095**	**-0.035**	**-0.080**	**0.048**	**0.464**	**-0.200**	1

Variables in bold is statistically significant at least 5 percent.

See Table 1 for variable definitions.

4.2 Multivariate Analysis

4.2.1 Audit Quality and Audit Committee Chair Turnover.

Table 5 provides the results from the regressions with the absolute discretionary accruals as the dependent variable. For the sake of brevity, the coefficients for industry and year dummy variables are not reported. As predicted, our interest variable, *CHAIR_TURNOVER*, is positively (β = 0.0089; p < 0.01) associated with |*DACC*|. The result indicates that, on average, the absolute discretionary accruals of firms with audit committee turnover are higher by approximately 0.89 percent of lagged total assets. The coefficients on corporate governance-specific variables—such as *NUMBD*, *RINDBD*, *RACBD*, and *RINDAC*—are insignificant however. The sign on the coefficients of other control variables are consistent with existing literature. Specifically, we find that absolute discretionary accruals increase with sales growth and financial distress factors, suggesting that the firms with fast growth or in a financial distress situation are more likely to manipulate earnings. Additionally, we find that absolute discretionary accruals are significantly and negatively associated with *SIZE* and *ROA*, suggesting that large firms receive better audit quality service from their auditors, and the firms with better performance are less likely to manage earnings. We also find negative coefficient on *EXPERT* (p < 0.01), suggesting that industry specialist auditors provide higher audit quality in terms of constraining earnings management. Overall, the results indicate that firms with audit committee turnover report higher performance-matched absolute discretionary accruals (|*DACC*|) than do firms without the turnover. Therefore, our results reject Hypothesis 1.

Table 5. Absolute Discretionary Accruals Analysis

Variable	*Coefficient*	*t-stat*	*p-value*
Constant	0.2343	4.70	0.000
CHAIR_TURNOVER	0.0089	3.44	0.001
NUMBD	0.0011	1.61	0.108
RINDBD	0.0133	1.28	0.200
RACBD	0.0027	0.26	0.793
RINDAC	-0.0269	-1.16	0.246
SIZE	-0.0039	-2.48	0.013
ROA	-0.0660	-3.44	0.001
MNA	-0.0009	-0.41	0.685
GROWTH	0.0458	7.12	0.000
FRGN	-0.0019	-0.40	0.687
SEG	-0.0014	-2.24	0.025
ZSCORE	0.0669	4.57	0.000
LOSS	0.0205	4.91	0.000
LEVERAGE	-0.0276	-3.59	0.000
BIG4	0.0055	1.23	0.221
EXPERT	-0.0070	-3.17	0.002
LNAF	0.0018	0.81	0.419
LAG	-0.0046	-0.64	0.525
STTEN	0.0048	0.98	0.325
LTTEN	-0.0026	-1.04	0.300
CHANGE	0.0051	0.56	0.573
Observations	4,835		
Adjusted R square	0.0878		
Industry Indicator	Yes		
Year Indicator	Yes		

See Table 1 for variable definitions.

4.2.2 Treatment Effects-Propensity Score Matching

It is possible the results on audit committee chair turnover are a consequence of those firms with a chair change having other potential characteristics. In other words, if a firm with audit committee chair turnover has a lower ex ante likelihood of earnings management, then the negative coefficient on our interest variable may simply reflect an effect of the firm's omitted characteristic rather than the effect of chair turnover. To assess this alternative explanation, we undertake a "matched propensity score" methodology to control for ex ante innate firm's earnings management risk (Doyle, Ge, and McVay 2007; Lawrence, Minutte-Meza, and Zhang 2011). More specifically, we estimate a first-stage probit model by year and industry: the dependent variable is coded 1 if an observation has a change of audit committee chair (0 otherwise), and the independent variables are lag *GROWTH*, lag *ROA*, lag *LEVERAGE*, and *UNDER_60* (i.e., 1 if the new audit committee chair is younger than 60, 0 otherwise). This estimation generates the probability of switching audit committee chair for each observation, and this probability estimate is called the "propensity score". We use the propensity score to develop a sample of matched pairs.

Next, we select a matched pair of observations having a similar ex ante probability of switching audit committee chair based on innate characteristics reflected in the matched propensity score. That is, we match one observation that had a chair turnover with an observation which did not have a chair turnover. Matching is based on the closest probability score (rounded to two decimal places). This procedure generates 823 match pairs (n = 1,646). Overall, the test results are comparable when using the full sample. Table 6, panel A presents mean and median values for absolute discretionary accruals of the matched sample, with tests of differences in means (medians) using a *t*-test (rank-sum) test for values of chair turnover firms compared to their matched firms. Results show that the mean and

median values of chair turnover firms are greater than those of matched firms, although the difference is marginally significant. It suggests that the propensity score matching procedure is successfully matching the treatment group (firms with audit committee chair changed) with the non-treatment group (firms with audit committee chair unchanged). More specifically, our sample of matched firms is very similar to our interest observation sample of firms with audit committee chair switch, thus mitigating the potential that firm's omitted factors are influencing our results.

Table 6. Propensity

Propensity Score Matching Sample

Panel A: Observations with Audit Committee Turnover versus Matching Sample of Observations without Audit Committee Chair Turnover

	CHAIR_TURNOVER = 1 (n = 823)		*CHAIR_TURNOVER* = 0 (n = 823)		Difference			
Variable	Mean	Median	Mean	Median	Mean		Median	
|*DACC*|	0.0767	0.0517	0.0696	0.0457	0.0071	*	0.0060	*

See Table 1 for variable definitions.

Table 6. Propensity Score Matching

Panel B: Absolute Discretionary Accruals Analysis

Variable	*Coefficient*	*t-stat*	*p-value*
Constant	0.2316	2.59	0.010
CHAIR_TURNOVER	0.0078	2.09	0.037
NUMBD	0.0015	1.18	0.236
RINDBD	0.0454	2.33	0.020
RACBD	0.0035	0.19	0.851
RINDAC	0.0226	0.53	0.594
SIZE	-0.0076	-2.72	0.007
ROA	-0.1271	-3.81	0.000
MNA	-0.0077	-1.89	0.059
GROWTH	0.0597	5.72	0.000
FRGN	-0.0082	-0.97	0.331
SEG	-0.0027	-2.34	0.019
ZSCORE	0.1269	4.90	0.000
LOSS	0.0058	0.75	0.456
LEVERAGE	-0.0479	-3.47	0.001
BIG4	0.0056	0.71	0.480
EXPERT	-0.0066	-1.56	0.119
LNAF	0.0038	0.89	0.372
LAG	-0.0155	-1.18	0.239
STTEN	0.0063	0.79	0.427
LTTEN	-0.0033	-0.71	0.480
CHANGE	0.0074	0.46	0.648
Observations	1,646		
Adjusted R square	0.1021		
Industry Indicator	Yes		
Year Indicator	Yes		

See Table 1 for variable definitions.

Results for the regression model using the propensity-score-matched sample are reported in Table 6, panel B. The coefficient of *CHAIR_TURNOVER* is 0.0078 and the *t*-statistic is significant at $p < 0.05$, which is similar to the coefficient value of 0.0089 in Table 5. The matched propensity score analysis provides compelling evidence based on a matched control sample that firms replacing the audit committee chair have greater absolute discretionary accruals, after controlling for the systematic innate risk of earnings management.

4.2.3 Controlling for Endogeneity-2SLS

Our analysis thus far assumes that a firm's change of audit committee chair is exogenously given. However, the impact of audit committee chair turnover on discretionary accruals might be conditional on the firm's situation and choice of the new committee chair. This suggests that audit quality and the turnover of audit committee chair can be endogenously determined, which could bias the regression analysis (Maddala 1983). To address the endogeneity issue, we employ the Two-Stage Least Squares (2SLS) model by incorporating the audit committee chair turnover decision to control for endogeneity. In the first stage, we regress committee chair turnover on selected instrumental variables—the new chair's age and all other control variables in equation (3)

$$CHAIR\_TURNOVER = \alpha + \beta_1 UNDER\_60 + \sum \beta_2 CONTROLS + \varepsilon \quad (3)$$

In equation (3), the dependent variable is *CHAIR_TURNOVER*, which equals 1 if the firm changes the audit committee chair, and 0 otherwise. *UNDER_60* is an indicator variable representing the new chair's age. It equals 1 if the new chair is younger than 60, and 0 otherwise. We use new chair's age as instrumental variable in that the age of the candidate influences the probability of being a new audit committee chair but is not directly related to current earnings management.

In Table 7, Column 1 we present results from the first stage regression. The results show that after netting out other control variables, the variable *UNDER_60* is positively associated with the dependent variable *CHAIR_TURNOVER* ($p < 0.01$), suggesting that a person younger than 60 is more likely to be a new audit committee chair. In Column 2, we present results from the second stage, which show that, after controlling for all other factors, the audit committee chair turnover is positively associated with absolute discretionary accruals ($p < 0.05$). The signs on the coefficients of other control variables are consistent with existing literature.

Table 7. Instrumental Variable Tests

	(1) *CHAIR_TURNOVER*			(2) *|DACC|*		
Variable	Coefficient	*z-stat*	*p-value*	Coefficient	*z-stat*	*p-value*
Constant	-2.6674	-2.40	0.016	0.2427	4.67	0.000
UNDER_60	0.3094	6.43	0.000			
CHAIR_TURNOVER				0.0592	2.06	0.039
NUMBD	-0.0270	-1.74	0.082	0.0015	2.03	0.043
RINDBD	0.4829	2.08	0.038	0.0070	0.62	0.533
RACBD	-0.4426	-1.93	0.054	0.0096	0.85	0.395
RINDAC	-0.2641	-0.52	0.601	-0.0226	-0.93	0.351
SIZE	-0.0720	-2.08	0.037	-0.0030	-1.75	0.080
ROA	-0.1091	-0.26	0.795	-0.0663	-3.33	0.001
MNA	-0.0789	-1.61	0.107	0.0001	0.06	0.954
GROWTH	0.2593	1.83	0.067	0.0426	6.11	0.000
FRGN	-0.0651	-0.62	0.533	-0.0009	-0.19	0.851
SEG	0.0293	2.15	0.031	-0.0017	-2.58	0.010
ZSCORE	0.4153	1.31	0.191	0.0609	3.90	0.000
LOSS	-0.0595	-0.64	0.524	0.0211	4.85	0.000
LEVERAGE	0.1929	1.14	0.254	-0.0298	-3.68	0.000
BIG4	-0.0214	-0.22	0.826	0.0056	1.19	0.235
EXPERT	-0.0466	-0.94	0.347	-0.0063	-2.74	0.006
LNAF	0.1361	2.68	0.007	0.0003	0.11	0.916
LAG	0.1294	0.80	0.423	-0.0062	-0.82	0.414
STTEN	0.3167	3.22	0.001	-0.0002	-0.04	0.968
LTTEN	-0.0962	-1.72	0.085	-0.0016	-0.60	0.550
CHANGE	-0.3812	-1.95	0.051	0.0107	1.07	0.284
Industry Indicator	Yes			Yes		
Year Indicator	Yes			Yes		
Observations	4,835			4835		
Log likelihood/Adjusted R square	-2,143.02			0.0173		

See Table 1 for variable definitions.

4.3 Additional Tests

4.3.1Audit Fee and Audit Committee Chair Turnover

The results from Table 5 to Table 7 indicate that firms with audit committee chair change receive lower audit quality services. To shed more light on a possible cause, we examine whether firms with audit committee chair turnover pay less audit fees, given that audit fee is one proxy of audit efforts which might influence the audit quality. Table 8 provides the results from the regressions with the log of audit fees as the dependent variable. We report the full sample regression results in column 1 and propensity-score-matching sample results in column 2. The adjusted R^2 for both regression results are over 80 percent. The coefficient of our main variable of interest, *CHAIR_TURNOVER*, is 0.0427 (0.0850) and significant at the less than 5 percent (1 percent) level in column 1 (column 2). The results suggest that, on average, firms with audit committee chair turnover pay approximately 4.5 (9.9) percent higher audit fees. Based on the median audit fees of $2.4 million (the exponential of 14.4868, the estimated fee premium associated with audit committee chair change is about $110,000 to $240,000. The sign on the coefficients of other control variables are consistent with existing literature. Specifically, the coefficients of the control variables,

NUMBD, *RINDBD*, *SIZE*, *MNA*, *FRGN*, *SEG*, *BIG4*, and *LAG* are significantly positive, suggesting audit fees increase with the strong corporate governance, high litigation risk, and complexity of business. Additionally, we find that audit fees are significantly and negatively associated with *ROA*, *GROWTH*, and *ZSCORE*, thus indicating that audit fees decrease with firm's performance, and financial distress. Overall, the results indicate that firms with audit committee chair turnover pay higher audit fees.

5. Discussion and Conclusion

This study investigated the relationship between audit committee chair turnover and audit quality as measured by the absolute value of discretionary accruals. To our knowledge, this is the first study that looks at this relationship, and thus adds to the body of knowledge identifying factors signaling audit quality.

5.1 Summary of Findings

Our results indicate that the absolute value of discretionary accruals is higher in observations where there is a turnover in audit committee chair when compared to observations without a turnover in audit committee chair. As cited in prior literature, an increase in discretionary accruals is an indication of decreased in audit quality (Klein 2002, Beasley and Petroni 2001, Cohen et al, 2004, DeFond and Francis 2005, DeZoort et al. 2002).

We find that firms with audit committee chair turnover have fewer board members and are smaller in size than firms without a change in audit committee chair. Additionally, we find the firms with audit committee chair turnover have shorter auditor tenure and are less likely to engage industry expert auditors. Our results are consistent with prior research findings that smaller companies with fewer board members, shorter auditor tenure, and auditors without industry expertise are correlated with lower audit quality (Larcker et al. 2007, Bowen et al. 2008, Dhaliwal et al. 2010).

With respect to audit fees, we find that audit fees increase in firms with audit committee turnover, which could indicate that a change in audit chair requires more time with the auditor, leading to an increase in the audit fee. This finding is consistent with Abbott et al. (2004). Overall, incremental to prior literature, we provide evidence that firms changing audit committee chair experience a low quality audit service but pay more fees.

5.2 Implications

Overall we find that a turnover in audit committee chair correlates to a decrease in audit quality and is therefore an indicator of financial statement quality. The validity of this finding is supported by the consistency of our results to prior research regarding company size, number of board members, audit fees, and other audit committee characteristics. The importance of audit quality and financial statement quality is well documented in academic research, and the significance of financial statement misstatements, whether intentional or unintentional, on the health of our financial markets and economy is well known to investors, regulators, and society as a whole. At the same time, it is difficult for the stockholders and others outside of a company to determine whether their agents, management, the board of directors, and the audit committee, are acting in the stakeholders' best interest. Therefore, our results are very significant since the stakeholders could use a change in audit committee chair as a signal of potential internal problems within an organization not otherwise apparent to those outside of the organization.

5.3 Limitations and Directions for Future Research

Our paper is subject to a number of limitations. We have made every effort to control for variables identified previously as correlated with our variables of interest; however, we may not have identified all potentially correlated variables. Further, our inferences are based on empirical measures of discretionary accruals, so consideration of the study's findings should include the potential for measurement error in these proxies.

The relation between audit committee chair change and audit quality has not been investigated before. Future research ideas include researching the reasons for audit committee chair change and using alternative control variables.

Table 8. Audit Fee Analysis

	(1) Full Sample			(2) Matched Sample		
Variable	***Coefficient***	***t-stat***	***p-value***	***Coefficient***	***t-stat***	***p-value***
Constant	9.2517	32.49	0.000	9.3728	19.77	0.000
CHAIR_TURNOVER	0.0424	2.58	0.010	0.0850	3.89	0.000
NUMBD	0.0279	6.43	0.000	0.0235	3.06	0.002
RINDBD	0.3960	6.09	0.000	0.4913	4.29	0.000
RACBD	-0.0546	-0.84	0.399	-0.1511	-1.37	0.172
RINDAC	0.0520	0.36	0.722	-0.0500	-0.20	0.842
SIZE	0.5345	87.63	0.000	0.5175	50.47	0.000
ROA	-0.5394	-4.45	0.000	-0.6782	-3.44	0.001
MNA	0.0624	4.52	0.000	0.0623	2.58	0.010
GROWTH	-0.2302	-5.68	0.000	-0.2153	-3.50	0.000
FRGN	0.6089	21.66	0.000	0.5845	12.28	0.000
SEG	0.0291	7.68	0.000	0.0279	4.04	0.000
ZSCORE	-0.7527	-8.21	0.000	-0.5923	-3.88	0.000
LOSS	0.0674	2.55	0.011	-0.0014	-0.03	0.975
LEVERAGE	-0.1456	-3.00	0.003	-0.0768	-0.94	0.348
BIG4	0.0643	2.26	0.024	0.1690	3.59	0.000
EXPERT	0.0503	3.64	0.000	0.0146	0.58	0.561
DACC	0.2657	4.54	0.000	0.2476	2.55	0.011
LAG	0.2357	5.15	0.000	0.2381	3.08	0.002
STTEN	-0.0601	-1.95	0.051	-0.0062	-0.13	0.896
LTTEN	-0.0423	-2.62	0.009	-0.0503	-1.81	0.071
CHANGE	-0.2229	-3.89	0.000	-0.1085	-1.13	0.259
Observations	4,835			4,835		
Adjusted R square	0.8131			0.8088		
Industry Indicator	Yes			Yes		
Year Indicator	Yes			Yes		

See Table 1 for variable definitions.

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Notes

Note 1. On the one hand, managers may manipulate earnings upwards to boost their equity-based compensation (Burns and Kedia 2006; Efendi et al. 2007) and to make new equity issues more attractive to the investors (Friedlan 1994; Teoh, Welch, and Wong 1998). On the other hand, managers could also manage earnings downward, before an issue of options (Coles, Hertzel, and Kalpathy 2006) or to shift income.