The Impact of Audit Committee and Shareholder Activism on the Association between Audit-Firm Tenure and Accounting Conservatism

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Abstract

The objective of this study is to (1) re-examine the association between accounting conservatism and audit-firm tenure, (2) investigate the influences of audit committee characteristics on the association between accounting conservatism and audit-firm tenure, and (3) examine the impact of shareholder activism on the association between audit-firm tenure and accounting conservatism. Using two proxies for accounting conservatism (accrual-based and market-based measures), we find a negative relation between accounting conservatism and audit-firm tenure. We also find that the association between accounting conservatism and audit-firm tenure is weakened in firms with more audit committee members being more than 65 years old and higher level of shareholder activism. The results indicate that firms can reduce the effect of long audit firm tenure when the firms have more experienced audit committee member and more shareholder activism. Our study extends the current literature on audit committee and shareholder activism. The current study is also of interest to firms, regulators, and investors.

Keywords: Accounting conservatism, Audit-firm tenure, Shareholder activism, Audit committee

1. Introduction

We investigate the moderating effect of audit committee characteristics and shareholder activism on the relationship between audit-firm tenure and accounting conservatism. The role of the audit committee has expanded and is even more important since the passage of the Sarbanes-Oxley Act of 2002 (SOX). The impact of audit committee characteristics on the relationship between audit-firm tenure and accounting conservatism has not received enough attention. (Note 1)

Shareholder activism has been emerging for decades. However, there has been a dramatic escalation in shareholder activism after the series of accounting scandals in the early 2000s and the passage of the SOX. This escalation is reflected in the rising success rates in unorthodox proxy fights and in obtaining board of directors' seats with which to carry forward the shareholders' agenda. Prior research examined the impact of shareholder activism on corporate governance, firm performance, and earnings management (e,g., Barber, 2007; Becht et al., 2008; Gillan & Starks, 1998; Karpoff, 2001; Karpoff et al., 1996; Hadani, 2011, Wahal, 1996). Yet, the moderating effect of shareholder activism on the relationship between audit-firm tenure and accounting conservatism has not been explored.

The impact of audit-firm tenure on audit quality has been the topic of discussions among regulators, practitioners, researchers and others, especially after the demise of Arthur Andersen. The advocates of mandatory audit-firm rotation assert that extended auditor tenure may reduce the auditor's objectivity. Furthermore, auditor complicity in management's financial related decisions may arise and thus lower audit quality (Johnson et al., 2002; Myers et al., 2003; Jenkins & Velury, 2008). Opponents of audit-firm rotation argue that short audit-firm tenure is costly and may negatively influence audit quality due to increased information asymmetry in the new auditor-client relationship (Johnson et al., 2002; Carcello & Nagy, 2004).

Prior research that examined the relation between auditor tenure and financial reporting quality provides mixed results regarding the impact of audit-firm tenure on the quality of financial reports (e.g., Johnson et al., 2002; Myers et al., 2003; Carcello & Nagy, 2004). Additionally, there is limited evidence on the association between auditor tenure and accounting conservatism. Watts (2003, 2006) argues that accounting conservatism is an important firm characteristic that evolved from the efficient financial contracts and can significantly help directors in mitigating agency costs. Focusing on accounting conservatism could be instrumental in reducing the agency costs. Francis et al.

(2004) find that accounting conservatism is associated with a relatively lower cost of equity, while Ahmed et al. (2002) find that accounting conservatism has a positive impact on lowering the cost of debt capital.

When long audit-firm tenure impairs auditor independence, audit-firm tenure is negatively related to accounting conservatism. Similarly, there is a positive association between audit-firm tenure and accounting conservatism if a short-tenured audit firm lacks client-specific knowledge. On the contrary, accounting conservatism may increase with the auditor's increased experience and client-specific knowledge. Jenkins and Velury (2008) is the only study that examined the relationship between auditor tenure and accounting conservatism. They find a positive association between auditor tenure and accounting conservatism.

Our study differs from Jenkins and Velury (2008) in five important ways. First, Jenkins and Velury (2008) do not examine moderating effect of audit committee characteristics on the relationship between auditor tenure and conservatism. We test the impact of audit committee size, ages of audit committee members, and directorships of audit committee members on such relation. This set of the audit committee characteristics reflects the strength of directors' monitoring, which supports auditor independence and positively impacts conservatism.

Second, we examine the moderating role of shareholder activism on the relationship between auditor tenure and accounting conservatism. Managers could use less conservative accounting and capitalize on the information asymmetry with the new auditor-client relationship or the lack of independence with the long auditor-client relationship. Active institutional investor involvement could result in the use of more conservative accounting (Ahmed and Duellman 2007). Managers could respond to shareholder activism by using more accounting conservatism, in order to signal managerial capabilities and higher quality in reporting earnings. As a result, it is paramount to investigate the impact of shareholder activism on the relationship between auditor tenure and accounting conservatism.

Third, while Jenkins and Velury (2008) use only one measure of conservatism (Basu, 1997) and some of its variations, we follow Ahmed and Dulleman (2007) and use two different measures of conservatism: an accrual-based measure and a market-based measure. No one single conservative measure could perfectly capture the accounting conservatism. The accrual-based measure could be distorted by the failure to consider differences in systematic risk, temporary disequilibrium effects, tax laws, and earnings management technology. Therefore, we also use a market-based measure, which is also not a perfect measure if stock price over or under-reacts. There are three competing predictions about market reaction to specific action. First, markets fully impound the expected costs and benefits from this action (Dechow, 1994). Second, the stock market under-reacts (Lakonishok & Vermaelen, 1995), therefore, the market has not completely impounded the expected costs and benefits from such action; thus, we would expect to find future positive abnormal returns. Third, the stock market over-reacts to such action (De Bondt & Thaler, 1987, 1990); therefore we would expect to find negative abnormal returns in future periods. We employee these two different conservative measures to avoid errors and problems related to one specific measure (Lindenberg & Ross, 1981; Ahmed & Duellman, 2007).

Moreover, our study employs a more extensive set of control variables not included in Jenkins and Velury (2008): duality, profitability, auditor class, firm size, leverage, R&D, cash flow from operations, sales growth, litigation risk, insider ownership and institutional ownership, and industry. Finally, our study covers a relatively longer period after the passage of SOX. Jenkins and Velury's (2008) study covers only two years after SOX (2002 to 2004), while our study covers seven years after SOX (2002 to 2009), which allows more time for SOX to impact auditors, audit committees, and board of directors.

The current study uses two samples (1) the sample of 690 U.S. firm-year observations for the models employing accrual-based measure of accounting conservatism, and (2) the sample including 624 U.S. firm-year observations for the models with market-based measure of accounting conservations during the period from 2002 to 2009. The firms in our sample are representative of all industries. We find consistent results regarding the association between accounting conservatism and audit-firm tenure, and the impact of audit committee and shareholder activism on the association between accounting conservatism and audit firm tenure. We find that audit-firm tenure is negatively and significantly associated with accounting conservatism. The results also show that the relation between accounting conservatism and audit-firm tenure is weakened in firms with older audit committee members and more shareholder activism. The results are consistent with our prediction that firms with older audit committee members and higher level of shareholder activism are more conservative; thus, these firms may be able to reduce the adverse effect of long audit firm tenure on the firms' accounting conservatism in financial reporting.

This study has a number of contributions. Firstly, the results of this study should be of interest to regulators, investors, researchers and the public. This is especially true because the study addresses the controversial issues of

mandatory auditor rotation, accounting conservatism, audit committees, and shareholder activism. Secondly, the current study extends prior literature on auditor tenure and accounting conservatism. Thirdly, our study investigates the influence of audit committee characteristics that are not commonly studied in prior literature.

The remainder of this paper is organized as follows. The next section provides background information and hypothesis development. This is followed by a description of our methods and results. The paper ends with a summary and conclusion.

2. Background and Hypotheses

2.1 Accounting Conservatism and Audit-Firm Tenure

Accounting conservatism refers to the accounting practices that "anticipate no profit, but anticipate all losses" (Watts 2003). This is the "the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" (Basu, 1997). According to Watts (2003), besides the contracting reasons, accounting conservatism emerges because of the expected high litigation costs of overstatement, income tax motivation, and regulatory reasons.

Accounting conservatism as an efficient contracting mechanism mitigates managers' opportunistic behaviors. Specifically, conservatism limits managers' ability and incentive to overstate earnings and net assets (Watts 2003). Also, accounting conservatism leads to the reduction of cost of debt and cost of equity (Ahmed et al., 2002; Watts, 2003; Francis et al., 2004).

Meanwhile, auditor tenure could influence auditor's objectivity and thus audit quality. Specifically, auditors' independence may be compromised with long audit-firm tenure (Shockley, 1982). This lack of independence is likely to influence accounting conservatism. However, the increased experience and client-specific knowledge of a long-tenured auditor may lead the auditor to become more conservative.

The General Accounting Office's (GAO 2003) survey of large public accounting firms and Fortune 1000 publicly traded companies indicates that "mandatory auditor rotation may not be the most efficient way to strengthen auditor independence and improve audit quality". Empirical evidence also documents that long auditor tenure does not influence auditor independence and audit quality (Johnson et al., 2002; Myers et al., 2003; Carcello & Nagy, 2004). The mixed empirical and anecdotal evidence on auditor tenure makes it worthwhile to examine the association of auditor tenure and accounting conservatism.

Jenkins and Velury (2008) examine the impact of audit-firm tenure on the reporting of conservative earnings. They find that accounting conservatism is lower for short audit-firm tenure periods as compared to higher accounting conservatism for medium and large audit-firm tenure periods. However, this study only examines the period 1980 to 2004, which only covers two years after the passage of SOX (i.e., from 2002 to 2004). Moreover, Jenkins and Velury (2008) do not consider the influence of the audit committee even though the audit committee has played a very important role since the early 2000s. In our study, we address this issue by investigating the potential moderating effect of audit committee characteristics on the association between audit-firm tenure and accounting conservatism. In addition, we examine the role of shareholder activism on the relationship between auditor tenure and accounting conservatism, a relation not examined by Jenkins and Velury (2008). Finally, in contrast to Jenkins and Velury (2008) we use more than one measure of conservatism and we use a more extensive set of control variables as we explain later.

2.2 Accounting Conservatism and Audit Committee Characteristics

The Audit committee has played an important role in overseeing firms' financial reporting. Recognizing this, a Blue Ribbon Committee (BRC) was established in 1999 with the aim to improving the effectiveness of audit committees. In their report, BRC made recommendations relating to audit committee composition as well as their oversight and revision of all economic relationships between the management and external auditors (BRC, 1999).

Post the passage of SOX, the audit committee's role has expanded. According to SOX , an audit committee is "a committee (or equivalent body) established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and financial reporting processes of the issuer and audits of the financial statements of the issuer." To ensure the effectiveness of the audit committee, Section 301 of the SOX requires each audit committee member to be "a member of the board of directors of the issuer, and otherwise be independent". Moreover, Section 407 of SOX requires the audit committee to have at least one financial expert. "Each issuer, together with periodic reports required pursuant to sections 13(a) and 15(d) of the Securities Exchange Act of 1934" is required to "disclose

whether or not, and if not, the reason therefore, the audit committee of that issuer is comprised of at least 1 member who is a financial expert".

Given the aforementioned regulatory changes relating to audit committee and the role of accounting conservatism in helping "directors in reducing deadweight losses and disciplining other sources of information" (Ahmed & Duellman, 2007; Watts, 2003), it is reasonable to expect an association between the audit committee and accounting conservatism. Prior research that examines the relation between accounting conservatism and corporate governance documents a positive relation between corporate governance and accounting conservatism (e.g. Ahmed & Duellman, 2007; Beekes et al., 2004; Chi et al., 2009; Lara et al., 2007; Lara et al., 2009). For example, using three market-based and accruals-based proxies for accounting conservatism (i.e., conditional conservatism using Basu's (1997), Ball and Shivakumar's (2005), and Givoly and Hayn's (2000) methods) to examine a large sample of U.S. firms during the period 1992 to 2003, Lara et al. (2009) find that firms with stronger corporate governance provisions in place are more conservative. Ahmed and Duellman (2007) document that accounting conservatism is negatively related to the percentage of inside directors and positively associated with the percentage of outside directors' shareholdings. However, prior studies on accounting conservatism and corporate governance have not examined (1) whether audit committee characteristics affect accounting conservatism, and (2) whether audit committee characteristics have a moderating effect on the association between accounting conservatism and other influential factors. In the current study, we attempt to fill this gap in the literature by investigating the potential effects of audit committee characteristics on the relation between accounting conservatism and audit-firm tenure. We discuss these associations in details in the following section.

2.3 Impacts of Shareholder Activism

Shareholder activism refers to the attempt to "bring about changes in the organizational control structure of firms (targets) not perceived to be pursuing shareholder-wealth-maximizing goals" (Smith, 1996). Specifically, a shareholder activist is defined to be "an investor who tries to change the status quo through "voice", without a change in control of the firm" (Gillan & Starks, 1998). Despite the fact that shareholder activism has been emerging for decades, regulators and the public paid especial attention to it only after the series of accounting scandals followed by the passage of SOX and the emergence of activist investors (Rubach & Sebora, 2009).

The increased attention paid to shareholder activism has raised a question about the impact of shareholder activism on firms' performance and operations. On one hand, prior research documents that shareholder activism can improve firms' corporate governance structures and performance through resolving monitoring and incentive problems (Barber, 2007; Becht et al., 2008; Karpoff, 2001). For instance, on evaluating CalPERS' activism, Barber (2007) concludes that public listed companies may be effectively monitored given the presence of shareholder activism. On the other hand, it is asserted that shareholder activism has a negative or insignificant influence on target companies (e.g., Gillan & Starks, 1998; Karpoff, 2001; Karpoff et al., 1996; Wahal, 1996). Black (1998), for example, concludes that "A small number of American institutional investors, mostly public pension plans, spend a trivial amount of money on overt activism efforts". Prior studies, however, do not examine whether shareholder activism influences firms' accounting conservatism and whether shareholder activism has a moderating impact on the association between audit tenure and accounting conservatism. Therefore, we examine whether shareholder activism moderates that relationship.

2.4 Hypothesis Development

As noted earlier, accounting conservatism may mitigate management opportunistic behavior caused by asymmetric information, asymmetric payoffs, or limited liability. Accounting conservatism is considered to be both an efficient contracting and financial reporting mechanism that can offset managerial bias and constrain "management's opportunistic payments to themselves and other parties" (Watts, 2003). In addition, conservatism helps to prevent managers from being "overly optimistic" in reporting earnings (Beekes et al., 2004).

With that significant role of accounting conservatism, the question is why some firms are more conservative in reporting earnings than others. This difference in implementing accounting conservatism depends on many factors (Ball et al., 2013; Mitra et al., 2013), of which corporate governance mechanisms are the most important (e.g., Lara et al., 2009). According to Lara et al. (2009), firms with strong corporate governance appear to be more conservative, using discretionary accruals to inform investors of bad news in a timelier manner. Corporate governance mechanisms refer to board of directors, audit committees, internal auditors, external auditors, management and other stakeholders (e.g., regulators, legislators, courts and legal system) (Cohen et al., 2004). However, we limit our investigation to audit committees and external auditors.

Audit-firm tenure, as one of the factors influencing the quality of the external auditor, is predicted to affect firms' accounting conservatism. Auditor independence (and thus audit quality) is deteriorated with the length of audit-firm tenure because of the auditor's lack of objectivity (Carcello & Nagy, 2004; Geiger & Raghunandan, 2002). Yet, a short-tenured auditor may have a fresh and objective look at a client's financial statements (Davis et al., 2009). Jenkins and Velury (2008) examine this association and find that accounting conservatism is positively related to the length of an auditor-client relationship (Jenkins & Velury, 2008). We reexamine this relation and make no directional prediction. The above discussion leads to the following hypothesis:

H_1: Audit-firm tenure is associated with accounting conservatism.

Audit firm rotation is currently voluntary as there are still debates on the costs and benefits of mandating firms to rotate their current auditors. Prior literature documents mixed results on the influence of audit-firm tenure on auditor independence and audit quality (Carcello & Nagy, 2004; Gul et al., 2007; Knechel & Vanstraelen, 2007). Hence, to ensure the quality of financial reporting, there should be other mechanism(s) to prevent the potential influence of audit-firm tenure. With the increasing responsibilities after SOX, audit committees can be a possible corporate governance mechanism that moderates the impact of audit-firm tenure on accounting conservatism. Prior studies show that a properly functioning audit committee is critical in "enhancing the effective oversight of the financial reporting process and ensuring high quality financial reporting (Chen & Zhou, 2007). The current study focuses on the moderating effect of three important audit committee characteristics, namely audit committee size, age, and other directorships.

Blue Ribbon Committee (1999) recommends that the audit committee of listed companies comprise a minimum of three audit committee directors. This audit committee size recommendation implies that size is an important factor of audit committee effectiveness. On the one hand, larger audit committees are found to be more effective because audit committee effectiveness can be perceived as a function of audit committee power delegated by boards of directors (Kalbers & Fogarty, 1993; Chen & Zhou, 2007). Moreover, the larger the audit committee is, the wider knowledge base it has (Karamanou & Vafeas, 2005) and the more effective it is. Hence, larger audit committee is more effective in oversight the financial reporting process and thus is more likely to support conservative accounting practice and moderate the relation between audit-firm tenure and conservative accounting. If long audit-firm tenure leads to lack of auditor independence, or short audit-firm tenure leads to more information asymmetry, the large audit committee will mitigate the negative effect of audit-firm tenure on accounting conservatism. Moreover, if long audit-firm tenure leads to less information asymmetry, or short audit-firm tenure leads to more auditor independence, the large audit committee will enhance the positive effect of audit-firm tenure on accounting conservatism. On the other hand, larger audit committee and board size may reduce firm value (e.g., Yermack, 1996). Accordingly, we do not predict the direction of the effect of audit committee size on the association between audit firm tenure and accounting conservatism. This discussion provides the basis for our second hypothesis:

H_2: The relation between accounting conservatism and audit-firm tenure is affected by audit committee size.

Another audit committee characteristic examined in this study is the percentage of audit committee members who are at least 65 years old. (Note 2) Older directors are perceived to be "more accepting of board passivity in controlling management and less likely to embrace newer perspectives reflecting more active board involvement and control in management in decision making" (Zajac & Westphal, 1996). This suggests that older audit committee members are expected to be more conservative in reporting earnings. If long audit-firm tenure leads to lack of auditor independence, or short audit-firm tenure leads to more information asymmetry, the older audit committee members will mitigate the negative effect of audit-firm tenure on accounting conservatism. Therefore, our third hypothesis is the following:

H_3: The relation between accounting conservatism and audit-firm tenure is strengthened in firms having more audit committee members who are at least 65 years old.

There has recently been a debate surrounding the topic of multiple directorships. Directors holding multiple other directorships may have reduced effectiveness as they have limited attention capabilities and time constraints (Ahn et al., 2010; Core et al., 1999; Ferris et al., 2008; Sharma et al., 2009). According to Ahn et al. (2010), holding too many other directorships make directors less effective monitors. This may result in more severe agency conflicts since "managers are better able to pursue their own private benefits at the expense of the shareholders". Empirical results from Core et al.'s study (1999) show that directors holding multiple directorships set excessively high levels of CEO compensation, leading to poor firm performance. In addition, Fich and Shivdasani (2006) document that firms with a majority of busy directors are associated with weak corporate governance, a lower market-to-book ratio, and weaker profitability. Consequently, we expect firms with less busy audit committee members (holding less other

directorships) to be more conservative and to strengthen the association between accounting conservatism and audit-firm tenure. If long audit-firm tenure leads to lack of auditor independence, or short audit-firm tenure leads to more information asymmetry, the less busy audit committee members will mitigate the negative effect of audit-firm tenure on accounting conservatism. This discussion leads to the following research hypothesis:

H_4: The relation between accounting conservatism and audit-firm tenure is strengthened in firms having less busy audit committee members.

In addition to the audit committee, shareholder activism can potentially influence the relation between audit-firm tenure and accounting conservatism. Prior research documents mixed results on the influence of shareholder activism on firm performance and operations (e.g., Barber, 2007; Becht et al., 2008; Gillan & Starks, 1998; Karpoff, 2001; Karpoff et al., 1996; Wahal, 1996). However, shareholder activism is proved to impact firms' governance structures (Karpoff, 2001). Hence, we expect shareholder activism to impact the relationship between accounting conservatism and audit-firm tenure. If long audit-firm tenure leads to lack of auditor independence, or short audit-firm tenure leads to more information asymmetry, active shareholder could vote their proxies in selecting or ratifying management's selection of an auditor to mitigate the negative effect of audit-firm tenure on accounting conservatism. This leads to our fifth hypothesis:

H_5: The relation between accounting conservatism and audit-firm tenure is strengthened in firms with more active shareholders.

3. Method

3.1 Models and Variables

Based on prior research on accounting conservatism, audit-firm tenure, and corporate governance (Ahmed & Duellman, 2007; Beaver & Ryan, 2000; Krishnan & Visvanathan, 2008; Ryan, 1995), we develop the following regression model to test our hypotheses:

$$\begin{aligned} ACCCON = {} & \alpha_0 + \alpha_1 * AudTenure + \alpha_2 * CorGov + \alpha_3 * (Tenure\_CorGov) + \alpha_4 * DirectorSum \\ & + \alpha_5 * DUALITY + \alpha_6 * FIRMSIZE + \alpha_7 * SALEGROWTH + \alpha_8 * LITIGATION \\ & + \alpha_9 * LEVARAGE + \alpha_{10} * R\_D\_ADV + \alpha_{11} * CFO + \alpha_{12} * BIG4 + \alpha_{13} * INSOWN \\ & + \alpha_{14} * INSIDERSPCTG + \varepsilon \end{aligned}$$

Variables are defined as follows:

ACCCON	=	One of the two accounting conservatism measures (*ACCCON_MKT* and *ACCCON_ACC*);
AudTenure	=	Audit firm tenure (in years);
CorGov	=	Audit committee and shareholder activism variables including *ACSize*, *AC_AgeOver65_Pctg*, *AC_DirOver3Board_Pctg*, and *Activism_intensity*;
ACSize	=	Audit committee size, measured as the total number of audit committee members;
AC_AgeOver65_Pctg	=	Proportion of audit committee members being at least 65 years old;
AC_DirOver3Board_Pctg	=	Proportion of audit committee members being on more than 3 other boards;
Activism_intensity	=	Aggregate number of shareholder proposals disclosed on a firm's proxy statements during each sample year.
Tenure_CorGov	=	Interaction term between audit firm tenure and each of audit committee and shareholder activism variables; (Note 3)
DirectorSum	=	Number of directors on the board;
DUALITY	=	1 if the CEO also serves as the chairperson of the board, and 0 otherwise;
FIRMSIZE	=	Log of total assets;
SALEGROWTH	=	Percentage of annual growth in total sales;
LITIGATION	=	1 if the firm operates in a high-litigation industry, and 0 otherwise (high litigation industries are industries with SIC codes of 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370);

LEVARAGE	=	Total long-term liabilities divided by average total assets;
R_D_ADV	=	Research and development costs plus advertising expenses, scaled by total assets;
CFO	=	Cash flow from operations, scaled by total assets;
INSOWN	=	Percentage of common stock held by institutions;
INSIDERSPCTG	=	Percentage of common stock owned by inside directors divided by total common shares outstanding.

3.1.1 Measures of Accounting Conservatism

Following Ahmed and Duellman (2007) and Krishnan and Visvanathan (2008), we employ market-value based and accrual-based proxies for accounting conservatism. The market-value based measure of accounting conservatism (*CON_MKT*) is originally from Beaver and Ryan (2000) where estimates of book-to-market ratio multiplied by negative one is used to determine accounting conservatism. Positive values of book-to-market ratio multiplied by negative one mean a firm is more conservative in financial reporting. The book-to-market ratio is estimated by regressing book-to-market on the current and six lagged annual security returns:

$$BTM_{t,i,} = \alpha_t + \alpha_i + \sum_{j=0}^{6} \beta_j R_{t-ji} + \varepsilon \quad (4)$$

This method separates the bias and lag components of book-to-market ratio. The intercept α_t captures the year-by-year variation in the *BTM*. The bias component, which is captured by α_i, is related to the measure of accounting conservatism, while β_j captures the lag component. Bias exists when the book value is persistently lower (higher) than market value. Persistently lower (higher) *BTM* means a more conservative (anticonservative) bias. Lags occur if "unexpected economic gains and losses are not fully recognized in net income in the period they occur, but they are fully recognized over a well-defined number of subsequent periods" (Ryan, 1995; Beaver & Ryan, 2000).

The second measure of accounting conservatism is an accrual-based measure, *CON_ACC*, which is employed by Ahmed and Dullman (2007). *CON_ACC* refers to income before extra-ordinary items less cash flows from operation plus depreciation expense deflated by average total assets over three year period centered on year 1, and then be multiplied by negative 1. According to this method, a positive value of *CON_ACC* means greater conservatism.

3.1.2 Audit Committee Characteristics and Shareholder Activism

To test the hypotheses, we employ *AudTenure* and (*Tenure_CorGov*) as the variables of interests. (*Tenure_CorGov*) represents the interaction terms between audit firm tenure and *ACSize*, *AC_AgeOver65_Pctg*, *AC_DirOver3Board_Pctg*, and *Activism_intensity*, respectively. The coefficient on *AudTenure* captures the association between audit-firm tenure and accounting conservatism (Hypothesis 1). Hypotheses 2 to 4 examine whether audit committee characteristics influence the association between audit-firm tenure and accounting conservatism. Thus, we include the interaction terms *(Ten*ACSize),* (*Ten*AC_AgeOver65_Pctg*), (*Ten* DirOver3Board_Pctg*) and (*Ten*ActivismIntensity*) and run separate models with each of the interaction terms to test hypotheses 2, 3, 4 and 5, respectively.

3.1.3 Control Variables

We include several variables that prior research has documented as associated with accounting conservatism, to reduce problems arising from potential omitted variables. Lara et al. (2009) find that firms with stronger corporate governance are more conservative in financial reporting. We include the number of directors on the board (*DirectorSum*) and whether the CEO serves as the chairperson of the board (*DUALITY*) to control for corporate governance characteristics. We do not form expectations about the sign of the *DirectorSum* coefficient because large boards of directors with wider knowledge are found to be more effective (Karamanou & Vafeas, 2005), while, alternatively, larger boards are more likely to lead to more negative consequences (Hermalin & Weisbach, 2003). We expect *DUALITY* to be positively associated with accounting conservatism since a CEO also acting as the chairperson of the board indicates weak corporate governance (Krishnan & Visvanathan, 2008; Lara et al., 2007).

Following Ahmed and Duellman (2007) and Krishnan and Visvanathan (2008), we expect the coefficients of *FIRMSIZE, LEVARAGE, R_D_ADV*, and *CFO* to be positively associated with accounting conservatism and the coefficient of *SALEGROWTH* to be negatively related to accounting conservatism. We make no predictions on the relation between accounting conservatism and *LITIGATION*, insider ownership (*INSIDERSPCTG*), and between accounting conservatism and Institutional Ownership (*INSOWN*). All continuous independent variables are winsorized at 1% and 99% percentiles.

3.2 Data

We obtain our data from the following primary sources: *Corporate Library*, *Compustat, CRSP,* and *Thomson Reuters*. Initially, our sample, which was randomly selected from all industries, contains U.S. 868 firm-year observations with available corporate governance and audit-firm tenure data in *Corporate Library* and *Thomson Reuters* databases for the period from 2002-2009. (Note 4) Data on audit-firm tenure are calculated using auditor code data available from *Compustat.*

We then collect the conservatism measures data and other financial data from *Compustat*. The stock returns data are retrieved from *CRSP*. The elimination of 168 missing observations on accrual based accounting conservatism and other financial data results in 690 firm-year observations for models employing accrual-based conservatism measure as dependent variable. Similarly, we delete 244 observations with missing data on market-based conservatism and other financial data, leading to the sample of 624 observations used for models with market-based measure of conservatism.

4. Results

4.1 Descriptive Statistics

Table 1 reports descriptive statistics of all variables used in our primary regression models. The mean and median value of the accrual-based conservatism measure (*CON_ACC)* is -0.020 and -0.013. Meanwhile the mean and median value of the market-based conservatism measure (*CON_MKT*) is -0.280 and -0.312. The average audit-firm tenure is 17.39 years and there are approximately 5 members on the audit committee.

Table 1. Descriptive statistics (N=690)

		Standard Deviation	25th percentile	Median	75th percentile
CON_ACC	-0.020	0.038	-0.030	-0.013	0.001
CON_MKT	-0.280	0.577	-0.421	-0.312	-0.186
AudTenure	17.392	10.096	9.000	16.000	26.000
ACSize	4.815	1.796	4.000	5.000	5.000
AC_AgeOver65_Pctg	9.621	16.168	0.000	0.000	16.667
AC_DirOver3Board_Pctg	28.157	26.605	0.000	25.000	40.000
Activism_intensity	4.850	4.409	2.000	3.000	6.000
DirectorSum	17.049	6.692	11.000	16.000	22.000
DUALITY	0.526	0.500	0.000	1.000	1.000
FIRMSIZE	9.396	1.674	8.256	9.221	10.625
SALEGROWTH	7.029	14.861	0.630	7.538	12.772
LITIGATION	0.574	0.495	0.000	1.000	1.000
LEVERAGE	0.576	0.231	0.419	0.557	0.763
R_D_ADV	0.064	0.051	0.024	0.052	0.087
CFO	0.132	0.065	0.090	0.129	0.174
Big4	0.979	0.143	1.000	1.000	1.000
INSIDERSPCTG	0.111	0.144	0.017	0.030	0.136
INSOWN	75.581	16.528	67.256	78.885	87.126

Notes: Variables are defined in Appendix A.

On average, 9.6 percent of audit committee members are at least 65 years old and 28 percent of audit committee members are on more than 3 boards of directors. During the year, firms submitted approximately 5 corporate governance proposals for shareholder ratification. The mean (median) number of directors on each board is 17 (16) directors. About 53 percent of the CEOs also serve as the chair of the board.

The mean and median value of sales growth is 7.03 percent and 7.54 percent. About 57 percent of the sample firms are classified to be in a high litigation industry. (Note 5) The average value of leverage is 0.58 and the mean value of

cash flow from operations scaled by total assets is 0.132. The mean and median of *R_D_ADV* are 0.064 and 0.052. Almost 98 percent of our sample firms are audited by one of the Big 4 accounting firms. Approximately 11 percent of the shares are held by inside directors whereas the average percentage of shares held by institutional investors is 75.58 percent.

Table 2 reports Pearson (above diagonal) and Spearman (below diagonal) pair-wise correlations among dependent variables and independent variables. In general, the results regarding the association between accounting conservatism and variables of interest and control variables are mixed across different measures of accounting conservatism. These relations are more accurately estimated with the inclusion of control variables in multiple regression models.

Table 2. Correlation matrix (N=690)

		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	*CON_ACC*	0.09**	0.17***	0.10***	0.01	0.14***	0.21***	0.14***	0.16***	0.20***	-0.01	-0.03	0.13***	-0.28***	-0.19***	-0.01	0.00	-0.11***
2	*CON_MKT*		0.19***	0.03	-0.12***	0.04	0.42***	0.14***	-0.12***	0.28***	-0.14***	-0.21***	0.38***	0.06*	-0.05	0.06*	0.23***	-0.21***
3	*AudTenure*	-0.02		0.13***	0.01	0.08**	0.26***	0.28***	0.03	0.20***	-0.24***	-0.06*	0.12***	0.05	-0.11***	0.02	-0.05	-0.10***
4	*ACSize*	0.04	0.09**		0.24***	-0.16***	0.07**	0.41***	-0.07*	0.09**	-0.27***	0.09**	0.21***	-0.09**	-0.01	0.09**	-0.28***	0.13***
5	*AC_AgeOver65_Pctg*	-0.11***	-0.02	0.31***		-0.09**	0.13***	0.15***	0.00	-0.06*	-0.11***	0.14***	-0.10***	-0.03	0.02	-0.09**	-0.19***	0.08**
6	*AC_DirOver3Board_Pctg*	0.18***	0.09***	-0.08**	-0.18***		0.27***	-0.11***	0.13***	0.32***	0.05	0.10***	0.11***	-0.21***	0.01	0.13***	0.13***	-0.31***
7	*Activism_intensity*	0.09***	0.18***	0.18***	0.05	0.30***		0.46***	-0.03	0.74***	-0.21***	0.15***	0.34***	-0.34***	-0.22***	0.06*	0.44***	-0.56***
8	*DirectorSum*	-0.12***	0.26***	0.28***	0.20***	-0.11***	0.40***		-0.30***	0.49***	-0.34***	0.02	0.38***	-0.25***	-0.28***	0.05	0.23***	-0.22***
9	*DUALITY*	0.01	0.00	0.08***	-0.06*	0.14***	0.04	-0.28***		-0.09***	0.08***	-0.04	0.10***	-0.02	-0.04	-0.04	-0.27***	0.19***
10	*FIRMSIZE*	0.10***	0.20***	0.14***	-0.04	0.35***	0.73***	0.47***	-0.07**		-0.09***	0.01	0.43***	-0.34***	-0.21***	0.23***	0.47***	-0.61***
11	*SALEGROWTH*	0.11***	-0.22***	-0.32***	-0.11***	0.05	-0.13***	-0.44***	0.12***	-0.10***		0.12***	-0.36***	0.00	0.24***	-0.02	-0.05	0.03
12	*LITIGATION*	-0.19***	-0.01	0.06*	0.15***	0.06*	0.18***	0.00	-0.04	0.04	0.11***		-0.27***	-0.30***	0.16***	-0.01	0.01	-0.09***
13	*LEVERAGE*	0.29***	0.10***	0.25***	-0.08**	0.20***	0.34***	0.39***	0.10***	0.41***	-0.43***	-0.23***		-0.13***	-0.30***	0.09***	0.18***	-0.15***
14	*R_D_ADV*	0.27***	0.01	-0.06*	-0.06*	-0.20***	-0.31***	-0.26***	0.03	-0.36***	-0.02	-0.31***	-0.12***		0.24***	0.07**	-0.24***	0.27***
15	*CFO*	0.44***	-0.05	-0.03	0.00	0.00	-0.12***	-0.28***	-0.04	-0.20***	0.30***	0.17***	-0.29***	0.23***		0.07**	-0.14***	0.01
16	*Big4*	0.10***	0.04	0.11***	-0.07**	0.16***	0.06	0.04	-0.04	0.20***	-0.20	-0.01	0.09***	0.07**	0.09***		-0.03	-0.13***
17	*INSIDERSPCTG*	0.03	0.03	-.034***	-0.17***	0.13***	0.18***	0.06*	-0.24***	0.17***	-0.08**	0.07**	0.02	-0.18***	-0.03	-0.07**		-0.63***
18	*INSOWN*	-0.19***	-0.10***	0.06*	0.10***	-0.32***	-0.46***	-0.16***	0.11***	-0.59***	0.00	-0.08**	-0.16***	0.21***	-0.07**	-0.16***	-0.38***	

Notes: (***), (**), and (*) Significant at 1%, 5% and 10% levels.

4.2 Multiple Regression Results

4.2.1 Accrual-based Measure of Accounting Conservatism

Table 3 provides results of models using an accrual-based measure of conservatism as the dependent variable. The table reports the results of models for each interaction term between audit firm tenure and each of the audit committee related variables, shareholder activism related variables. Specifically, Model I provides the results for the model with the interaction term between audit firm tenure and audit committee size while the influence of audit committee age on the association between audit firm tenure and accounting conservatism is reported in Model II. Model III shows the results for the influence on audit committee members' other directorships on the audit firm tenure-accounting conservatism relation. Finally, Model IV provides the results on the impact of shareholder activism on the association between audit firm tenure and accounting conservatism. To control for industry and year specific effects, we include year and industry dummies in all of the models. The overall regressions for the four models in Table 3 are significant (*p-value <.001*). Generally, the magnitude and statistical significance of coefficients of all control variables in the four models are similar.

Table 3. Regression results for models using accrual-based conservatism measure (*CON_ACC*)

	Model I		Model II		Model III		Model IV	
Variable	**Coeff.**	**p-value**	**Coeff.**	**p-value**	**Coeff.**	**p-value**	**Coeff.**	**p-value**
Intercept	0.007	0.368	-0.008	0.355	0.004	0.411	-0.018	0.186
AudTenure	-0.001	0.008	-0.0004	0.025	-0.001	0.002	-0.001	0.004
ACSize	-0.003	0.032	-	-	-	-	-	-
Ten_ACSize	0.000	0.138	-	-	-	-	-	-
AC_AgeOver65_Pctg	-	-	0.000	0.235	-	-	-	-
Ten_ACAgeOver65Pctg	-	-	0.000	0.051	-	-	-	-
AC_DirOver3Board_Pctg	-	-	-	-	0.000	0.099	-	-
Ten_AC_DirOver3Board_pctg	-	-	-	-	0.000	0.293	-	-
log_Activism_intensity	-	-	-	-	-	-	-0.011	0.028
ten_log_Activism_intensity	-	-	-	-	-	-	0.006	0.105
DirectorSum	-0.001	0.015	-0.001	0.010	-0.001	0.005	-0.001	0.014
DUALITY	-0.010	0.001	-0.008	0.008	-0.009	0.002	-0.008	0.009
FIRMSIZE	-0.001	0.269	-0.001	0.357	-0.001	0.275	0.000	0.398
SALEGROWTH	0.000	0.038	0.000	0.043	0.000	0.054	0.000	0.036
LITIGATION	0.004	0.185	0.002	0.357	0.002	0.325	0.003	0.245
LEVERAGE	0.005	0.243	0.002	0.384	0.003	0.342	0.002	0.399
R_D_ADV	0.197	<.0001	0.199	<.0001	0.197	<.0001	0.202	<.0001
CFO	0.058	0.006	0.044	0.031	0.053	0.010	0.050	0.014
INSOWN	0.000	0.091	0.000	0.110	0.000	0.152	0.000	0.144
INSIDERSPCTG	0.012	0.207	0.024	0.034	0.020	0.069	0.020	0.065
Yeardummy	0.003	0.015	0.003	0.032	0.002	0.059	0.003	0.034
sic_48	0.000	0.013	0.000	0.006	0.000	0.006	0.000	0.009
N		690		690		690		690
F-stat.		10.77		10.68		10.65		10.8
p-value		<.0001		<.0001		<.0001		<.0001
Adj. R^2		17.55%		17.41%		17.36%		17.58%

Notes: Variables are defined in Appendix A.

As shown in Table 3, the coefficients of audit-firm tenure (*AudTenure*) are negative and significant in all of the models. This result suggests that firms with longer auditor tenure are likely to be less conservative and firms with shorter auditor tenure tend to be more conservative. The result confirms H_1. The result is also consistent with the argument that long audit firm tenure may deteriorate auditor independence, leading to firms with long tenured auditors being less conservative. This result, therefore, provides additional evidence to the debate of mandatory auditor rotation.

Model I of Table 3 shows there is a negative and significant relation between the accrual-based measure of conservatism and audit committee size (*ACSize*) indicating that small audit committees are more effective and thus are more conservative in financial statement reporting. This model, however, does not show a significant result on the interaction between audit firm tenure and audit committee size. Thus, H_2 is not supported.

Model II of Table 3 indicates that there is a positive but insignificant relation between the accrual-based measure of conservatism and firms having more audit committee members being more than 65 years old (*AC_AgeOver65_Pctg*). While the relation is insignificant, the sign of the coefficient supports our prediction that firms with older audit committee members are more conservative in financial statement reporting. We, however, find a positive and

significant coefficient on the interaction term between audit firm tenure and audit committee members age *Ten_ACAgeOver65Pctg* (*p-value* = 0.051). The result suggests that firms with long-tenured auditors and more audit committee members being more than 65 years old tend to be more conservative than those with long-tenured auditors and younger audit committee members. The finding supports H_3, indicating that even though firms with long auditor-client relationship are less conservative, these firms become more conservative if the audit committee members are older.

As shown in Model III of Table 3, accounting conservatism is positively associated with *AC_DirOver3Board_Pctg*. The result suggests that firms with more audit committee members being on more than three boards of directors tend to be more conservative, which is inconsistent with our prediction of busy audit committees being less effective and conservative (H_4). A possible explanation of this result is significant experience of the busy member. Audit committee members working for more than three boards are more likely to have more experience as a member of boards of directors and thus work more effectively. Yet, the interaction term between audit firm tenure and audit committee being on more than three (*Ten_AC_DirOver3Board_Pctg*) boards is positive but not significant. The result does not support H_4.

Model IV of Table 3 reports the results on the impact of shareholder activism on the relation between audit firm tenure and accounting conservatism. We find that the coefficient on (*Ten*Activism_intensity*) is positive and marginally significant (*p-value* = 10.5). The result supports H_5, suggesting that shareholder activism moderates the association between accounting conservatism and audit firm tenure. Specifically, firms with long tenured auditor are more conservative when the firms have more active shareholders than those with less active shareholders.

For control variables, Table 3 shows that accounting conservatism is negatively associated with the size of the board of directors, providing consistent results with audit committee size. This suggests that firms are more conservative if the audit committee is smaller. As reported in Table 3, we also find a negative association between the accrual-based measure of accounting conservatism and CEO-Chair duality (*DUALITY*), indicating that firms with CEO also being the chair of the board are less conservative in financial statement reporting. We also find that accounting conservatism is positively associated with sales growth (*SALEGROWTH*), *R_D_ADV*, and cash flows from operations (*CFO*), respectively.

4.2.2 Market-based Measure of Accounting Conservatism

Results for models using the market-based measure of accounting conservatism are reported in Table 4. Similar to models using the accrual-based measure of accounting conservatism, we separately report the results for each of the audit committee and shareholder activism related variables and the corresponding interaction term with audit firm tenure variable. To be consistent with Beaver and Ryan (2000) and Ahmed and Duellman (2007), we control for the delay recognition component of the book-to-market ratio by adding the current and past 6 years' buy and hold market returns to all models employing market-based measures of conservatism.

Table 4. Regression results for models using market-based conservatism measure (*CON_MKT*)

	Model I		Model II		Model III		Model IV	
Variable	**Coeff.**	**p-value**	**Coeff.**	**p-value**	**Coeff.**	**p-value**	**Coeff.**	**p-value**
Intercept	-1.462	<.0001	-0.630	0.0212	-1.584	<.0001	-1.162	0.0003
AudTenure	-0.009	0.099	-0.016	<.0001	-0.003	0.219	-0.029	<.0001
ACSize	-0.044	0.070	-	-	-	-	-	-
Ten_ACSize	0.001	0.120	-	-	-	-	-	-
AC_AgeOver65_Pctg	-	-	0.000	0.023	-	-	-	-
Ten_ACAgeOver65Pctg	-	-	0.000	<.0001	-	-	-	-
AC_DirOver3Board_Pctg	-	-	-	-	0.001	0.350	-	-
Ten_AC_DirOver3Board_pctg	-	-	-	-	0.000	0.399	-	-
log_Activism_intensity	-	-	-	-	-	-	-0.024	0.401
ten_log_Activism_intensity	-	-	-	-	-	-	0.359	<.0001
DirectorSum	-0.012	0.029	-0.023	0.0001	-0.013	0.023	-0.020	0.001
DUALITY	-0.263	<.0001	-0.401	<.0001	-0.258	<.0001	-0.312	<.0001
FIRMSIZE	0.139	<.0001	0.036	0.062	0.128	<.0001	0.026	0.150
SALEGROWTH	-0.005	0.009	-0.003	0.084	-0.005	0.012	-0.003	0.077
LITIGATION	-0.046	0.267	0.032	0.322	-0.056	0.225	-0.154	0.012
LEVERAGE	0.914	<.0001	0.804	<.0001	0.891	<.0001	0.722	<.0001
R_D_ADV	1.836	0.000	2.030	<.0001	1.922	0.000	1.678	0.000
CFO	-0.204	0.300	0.634	0.040	-0.255	0.254	-0.868	0.009
INSOWN	0.001	0.302	-0.001	0.286	0.001	0.319	0.001	0.316
INSIDERSPCTG	0.316	0.095	0.354	0.047	0.455	0.022	0.191	0.187
Annret	0.471	<.0001	0.368	<.0001	0.475	<.0001	0.525	<.0001
lag_annret1	0.468	<.0001	0.463	<.0001	0.456	<.0001	0.469	<.0001
LAG_ANNRET2	0.348	<.0001	0.309	0.000	0.322	0.000	0.465	<.0001
LAG_ANNRET3	0.000	0.499	0.051	0.224	0.000	0.498	0.086	0.105
LAG_ANNRET4	-0.050	0.237	0.045	0.243	-0.053	0.232	-0.023	0.361
LAG_ANNRET5	0.225	<.0001	0.205	<.0001	0.229	<.0001	0.232	<.0001
LAG_ANNRET6	0.000	0.499	0.003	0.450	0.002	0.467	0.005	0.408
Yeardummy	-0.020	0.192	0.023	0.142	-0.017	0.244	0.005	0.400
sic_48	-0.004	0.072	-0.007	0.002	-0.004	0.059	-0.006	0.008
N		624		624		624		624
F-stat.		16.97		25.66		16.93		23.53
p-value		<.0001		<.0001		<.0001		<.0001
Adj. R^2		36.05%		46.55%		36.00%		44.31%

Notes: Variables are defined in Appendix A.

Similar to the results reported in Table 3, we find a significant and negative relation between the market-based measure of accounting conservatism and audit firm tenure in all models except for Model III, which finds a negative but not significant association between accounting conservatism and audit-firm tenure. Consistent with the findings in Table 3, we also find that the market-based measure of accounting conservatism is negatively related to audit committee size (Model I of Table 4, *p-value* = 0.070) and positively related to *AC_AgeOver65_Pctg* (Model II of Table 4, *p-value* =

0.023).

As in Table 3, Table 4 shows positive and significant associations between accounting conservatism and the interaction terms (*Ten*ACAgeOver65pctg*, and (*Ten*Activism_intensity*). The results support our predictions in H_3 and H_5. Specifically, the results suggest that firms with older audit committee members and more shareholder activism are likely to be more conservative. Accordingly, despite the fact that long auditor-client relationship is related to less conservative financial reporting, this effect may be weakened in firms with older audit committee members and more shareholder activism. The results for control variables are relatively similar to those in Table 3.

4.2.3 Additional Analyses and Sensitivity Tests

In our primary models, we use the percentage of audit committee members being at least 65 years old (*AC_AgeOver65_Pctg*) and the percentage of audit committee members being on at least three boards of directors (*AC_DirOver3Board_Pctg*) as additional audit committee characteristics besides the common characteristics such as audit committee size. As there are no standard measures for audit committee age and other directorships, we use other alternatives for age and directorship variables such as total audit committee members being at least 70 years old, total audit committee members being on at least four boards, audit committee members' average age, and audit committee members' average directorships. The results are relatively similar to those reported in our primary models.

5. Summary and Conclusion

The current study is motivated by the debate on mandatory auditor rotation, regulatory changes in the role of audit committees, and the emergence of shareholder activism. Our study attempts to examine whether accounting conservatism is influenced by the length of audit firm tenure, and whether audit committee characteristics and shareholder activism have any impact on the association between accounting conservatism and audit firm tenure.

We employ accrual-based and market-based measures of accounting conservatism in our study of 690 firm-year observations for accrual-based models and 624 firm-year observations for market-based models during the period from 2002 to 2009. As expected, we find consistent results regarding the relation between accounting conservatism and audit-firm tenure; that is, firms with short-tenured auditors tend to be more conservative and firms with long-tenured auditors tend to be less conservative. We also find positive coefficients on the interaction terms between audit firm tenure and the percentage of audit committee members being more than 65 years old and the level of shareholder activism. The results suggest that firms can reduce the effect of long auditor-client relationship on accounting conservatism when they have older audit committee members and when there is a higher level of shareholder activism.

We use two proxies for accounting conservatism (i.e., accrual- and market-based measures of accounting conservatism), which may not completely capture the fact of whether a firm has more conservative financial reporting or not. However, these are the two commonly used measures of accounting conservatism in accounting literature. Future research may develop and use different conservatism measures. Conducting studies with other corporate governance variables can be a potential avenue for future research.

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Appendix A. Variable Definitions

Variable	Description
ACCCON	One of the two accounting conservatism measures (*CON_ACC* and *CON_MKT*);
CON_ACC	(Net income before extraordinary items plus depreciation expense less cash flows from operations, where all variables are scaled by average total assets and averaged over 3 years ending in year *t*) multiplied by (-1);
CON_MKT	Book-to-market ratio multiplied by (-1);
AudTenure	Audit firm tenure (in years);
ACSize	Audit committee size, measured as the total number of audit committee members;
AC_AgeOver65_Pctg	Proportion of audit committee members being at least 65 years old;
AC_DirOver3Board_Pctg	Proportion of audit committee members being on more than 3 other boards;
Activism_intensity	Aggregate number of shareholder proposals disclosed on the firm's proxy statement during each sample year;
log_Activism_intensity	Natural logarithm of "*Activism_intensity*"
DirectorSum	Number of directors on the board;
DUALITY	1 if the CEO also serves as the chairperson of the board, and 0 otherwise;
FIRMSIZE	Log of total assets;
SALEGROWTH	Percentage of annual growth in total sales;
LITIGATION	1 if the firm operates in a high-litigation industry, and 0 otherwise (high litigation industries are industries with SIC codes of 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370);
LEVERAGE	Total long-term liabilities divided by average of total assets;
R_D_ADV	Research and development costs plus advertising expenses, scaled by total assets;
CFO	Cash flow from operations, scaled by total assets;
Big4	1 if the company's auditor is one of the Big 4 audit firms and 0 for other auditors;
INSIDERSPCTG	Percentage of common stock owned by inside directors divided by total common shares outstanding
INSOWN	Percentage of common stock held by institutions;
Ten_ACAgeOver65Pctg	Interaction term between *AudTenure* and *AC_AgeOver65_Pctg*;
Ten_AC_DirOver3Board_pctg	Interaction term between *AudTenure* and *AC_DirOver3Board_Pctg*;
ten_log_Activism_intensity	Interaction term between *AudTenure* and *log_Activism_intensity*;
Yeardummy	Year dummy variable;
Sic_48	Industry dummy variable;
Annret	Annual security returns;
lag_annret1	Lagged annual security returns (t=-1);
LAG_ANNRET2	Lagged annual security returns (t=-2);
LAG_ANNRET3	Lagged annual security returns (t=-3);
LAG_ANNRET4	Lagged annual security returns (t=-4);
LAG_ANNRET5	Lagged annual security returns (t=-5);
LAG_ANNRET6	Lagged annual security returns (t=-6).

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Notes

Note 1. Accounting conservatism refers to the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses (Basu, 1997; Watts, 2003).

Note 2. We use different age and number of directorship in the sensitivity analysis section.

Note 3. We run separate models for each of the audit committee related variables or shareholder activism variable and the corresponding interaction term to avoid multicollinearity problem.

Note 4. We use different age and number of directorship in the sensitivity analysis section.

Note 5. High litigation industries are industries with SIC codes of 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7370.