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Audit Committee Member Tenure and Earnings Management

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A B S T R A C T

Regulators and academics have increased their focus on audit committee composition, indicating an acknowledgement of the potential importance of audit committee monitoring efforts on earnings quality by minimizing the opportunistic earnings management practices. I extend prior corporate governance research on the influence audit committees may have on earnings management by exploring whether the duration of service on a specific audit committee (i.e., audit committee tenure) affects companies' use of GAAP-based or real earnings management techniques.

The results of my analysis suggest that audit committee members develop firm-specific knowledge about financial reporting issues, which limits the degree to which management relies upon accruals to influence earnings. I also test whether audit committee tenure is associated with firms' use of real earnings management since such techniques reflect routine business decisions that may not be as easily detectable by audit committees. I find that longer audit committee tenure is somewhat effective in reducing management's tendency to defer or minimize discretionary expenses to artificially inflate earnings. Taken together, these results may benefit regulators and boards of directors who seek to improve the effectiveness of audit committee financial reporting oversight and risk assessment responsibilities.

Keywords: Audit, Earnings Management, Audit Committee, Real Earnings Management

JEL classification: G00, G39, M41, M42

1. Introduction

Over the past two decades, a growing amount of attention has been given to the audit committee's role in the financial reporting process and its potential effect on earnings management and financial reporting quality (see DeZoort, Hermanson, Archambeault, and Reed 2002; Levitt 1998; BRC 1999; SOX 2002). If audit committees can identify and differentiate between management's effort to use accounting choices to communicate firm performance or to mask it, audit committees' efforts should be associated with a reduction in opportunistic earnings management practices (Schipper 1989; Schipper and Vincent 2003). In addition, the audit committee may influence firm performance through its oversight of non-financial reporting activities, such as internal auditing and risk management practices, and prior research finds that audit committee characteristics are associated with firm performance (Brown and Caylor 2005; Larker, Richardson and Tuna 2005). PCAOB board members have recently reconfirmed their perception that audit committees have an important role in the oversight of auditors and companies' financial reporting practice and have stated that the PCAOB intends to take further measures to improve audit committee effectiveness (PCAOB 2013).

Prior research generally finds that audit committee members' independence and financial expertise, as well as the size of the committee, are positively associated with the quality of reported earnings as evident by less earnings management (e.g., Xie, Davidson and DaDalt 2003; Klein 2002; Carcello and Neal 2003; Bedard, Chtourou and Courteau 2004; Yang and Krishnan 2005; Carcello, Hollingsworth, Klein and Nearl 2006). This study extends prior research by examining the potential impact a second measure of expertise, the length of service on the audit committee (audit committee tenure), has on the curtailment of earnings management. From a methodological perspective, my study addresses shortcomings in related research. Bedard et al. (2004) and Yang and Krishnan (2005) measure the effect of various audit committee characteristics on earnings quality, including overall board experience. However, board-level specifications fail to consider the fact that the monitoring of the financial reporting process and subsequent earnings quality issues rest largely on the shoulders of the audit committee (see SOX 2002). Unlike most directors, audit committees have first-hand exposure to unique financial reporting issues since they routinely meet with management and the external auditors to discuss the unique financial reporting issues that arise throughout the accounting period. Consequently, my study focuses on experience gained specifically by the audit committee members rather than general experience as a member of the board of directors.

Theory posits that experience on the audit committee will increase committee member knowledge about firm-specific accounting issues and that this knowledge likely improves audit committee effectiveness (Mazur and Hastie 1978; Cohen, Krishnamoorthy and Wright 2004). Prior literature provides evidence suggesting that firm-specific accounting issues exist. For example, Francis, LaFond, Olsson and Schipper (2004) and Easley and O'Hara (2003) demonstrate that investors identify firm-specific information risk based upon certain earnings attributes and that this risk is incorporated into the firm's cost of capital. Audit committee members may eventually improve their knowledge of unique financial reporting issues and oversight effectiveness in a manner similar to the positive effects that external auditor tenure has on financial reporting outcomes (Johnson, Khurana and Reynolds 2002; Carcello and Nagy 2004; Boone, Khurana and Raman 2005; Simnett and Carey 2006). If audit committee oversight of GAAP-based earnings management becomes more effective over time, and given the pressure management faces to meet analysts' earnings expectations, alternative means of managing earnings that escape traditional financial reporting oversight may be adopted.

This study also examines whether audit committee tenure also limits companies' use of non-traditional earnings management techniques that are not under the traditional purview of the audit committee or are not as easily observable by audit committees. There is a growing trend of companies making operational decisions that may improve earnings (i.e., real earnings management) in hopes of meeting analysts' earnings-per-share estimates, even if such decisions curtail long-term firm performance (Graham, Harvey, & Rajgopal, 2005). As auditor oversight has heightened following the passage of the Sarbanes-Oxley Act of 2002, firms have turned to real earnings management to influence earnings while avoiding auditor oversight since altering business decisions does not involve the application of GAAP (Cohen, Dey, & Lys, 2008; Zang 2012). Although real earnings management practices may not violate GAAP, the results may prevent audit committees from effectively executing other oversight responsibilities prescribed by SOX 2002, such as risk assessment (SOX 2002). The end result may be compromised earnings quality if management abandons GAAP-based earnings management when faced with an experienced audit committee that is familiar with management's past use of traditional earnings management techniques and instead turns to real earnings management.

Using a sample of approximately 2,355 firms, I develop several specifications of audit committee tenure including the average tenure of all audit committee members, the years of service of the longest serving committee member, and the total number of years that existing members served on the audit committee. I use GAAP-based earnings management proxies that may be sensitive to the traditional financial reporting oversight role of the audit committee. I also examine whether firm-specific expertise arises in the non-financial reporting aspects of the audit committee's duties by testing whether tenure is associated with real earnings management proxies.

The GAAP-based earnings management analysis provides evidence that average audit committee tenure and the tenure of the longest serving member are negatively associated with the ratio of accruals to operating cash flows, suggesting that tenure may help reduce management's opportunistic accounting choices, thus reducing earnings management. I also observe a negative association between the propensity to report income-increasing accruals and average audit committee tenure, again supporting the notion that tenure helps curtail aggressive earnings management practices. However, a sensitivity analysis of a subsample of firms reporting income-increasing accruals provides conflicting evidence of an association between the GAAP-based earnings management proxies and the audit committee tenure variables.

The analysis of audit committee tenure and real earnings management activity documents management's tendency to rely upon real business decisions (e.g., timing of transactions) to influence reported earnings even when facing an experienced audit committee. I find that management appears to be reluctant to use abnormally low discretionary expenses that result in higher income when faced with financial oversight of experienced audit committees. Related studies document management's reliance on increased production of inventory to allocate fixed costs across more units, thus reducing the per cost-of-goods-sold and overstating net income. However, the results of this study reveal no statistically significant associations between audit committee tenure and abnormal production levels. Overall, the results of the earnings management analysis provide modest evidence that audit committee tenure marginally reduces the extent to which GAAP-based and real earnings management practices are used by management to influence net income

This study makes several contributions to the accounting literature. First, I extend the analysis of tenure from the auditing literature to the audit committee setting by documenting

the sensitivity of earnings management to committee members' length of service on the audit committee. I also extend the growing debate about whether managers influence earnings by employing real earnings management techniques to the audit committee setting by demonstrating management's unwillingness to postpone discretionary expenses to later periods when faced with experienced audit committees. This finding may also be of interest to regulators who are tasked with setting standards and mandating oversight responsibilities, including risk assessment, to the audit committee. Finally, this study also employs more precise measures of experience at the audit committee level rather than the overall board of director level, thus addressing a short-coming of related governance studies.

The remainder of the paper proceeds as follows: Section 2 reviews prior research, develops related theory and establishes hypotheses pertaining to audit committee tenure's potential effect on earnings management. Section 3 describes the methodology employed throughout the audit committee tenure and earnings management, and section 4 discusses the results. Section 5 discusses the findings and identifies current limitations of the study.

2. Prior Literature, Theoretical Development and Hypotheses

2.1 Board of Director Composition and Financial Reporting

Jensen and Meckling (1976) provide a theoretical description of the separation of ownership and control within a firm that gives rise to agency costs and serves as a catalyst for the evolution of various governance mechanisms designed to mitigate these costs. The optimum governance structure reduces the cost of contracting between management and residual claimants (North 1990). Firms that find it relatively more efficient to internalize the cost of monitoring will rely primarily on the board of directors to provide adequate oversight of management's performance and reduce agency costs (Jensen and Meckling 1976; Williamson 1984). Boards represent an effort by residual claimants to overcome information asymmetry between residual claimants and the management team that oversees the asset use. To the extent that the information asymmetry between decision controllers (directors) and decision managers (management) regarding the true state of the firm can be bridged, agency costs can be reduced (Fama and Jensen 1983). The ability of financial accounting information to monitor managerial performance and reduce agency costs is, in part, a function of the board's ability to effectively oversee the creation of this information during the financial reporting process (Bushman and Smith 2001).

Prior research documents several board-level attributes that appear to affect financial reporting outcomes. Beasley (1996) finds that financial statement fraud is negatively associated with board tenure, the presence of a block holder on the board and board independence, but positively related to directors' participation on outside boards. A subsequent analysis shows that the boards of fraud firms meet infrequently (Beasley, et al. 2000). In addition, research finds earnings management is negatively associated with board independence, board experience and director ownership, but positively associated with executive ownership (Klein 2002; Bedard et al. 2004).

2.2 Responsibilities of the Audit Committee

More recently, researchers have refocused their analyses from the board of directors to the audit committee (Dezoort, et al. 2002). The audit committee is a subset of the board of directors and serves as a monitoring mechanism for the board during the financial reporting process

through its judicial role in resolving management- auditor disagreements over proposed adjusting journal entries that potentially affect the presentation of the company's financial statements. Since the audit committee ultimately approves the financial statements that are submitted to the board of directors to be filed with the SEC, audit committee members have the opportunity to significantly influence the quality of earnings presented to the investing public. The additional responsibilities afforded the audit committee by provisions of Sarbanes-Oxley 2002 have had beneficial effects on earnings quality (SOX 2002; Ghosh, Marra and Moon 2010).

The audit committee's responsibilities extend beyond the financial reporting setting and include oversight of internal controls pertaining to key business risks, internal auditor activity and external auditor retention decisions (DeZoort et al. 2002). A survey by Carcello, Hermanson and Neal (2002) reveals that forty-five percent of the sample engages in oversight of a firm's risk management practices, while practitioner literature cites monitoring of internal audit and internal control activities as key components of the audit committee's responsibilities (Burke and Guy 2001; Braiotta, Rickok and Blegler 1999). In fulfilling these oversight duties, the audit committee's focus shifts from the traditional financial statements to non-financial information included in budgets, internal auditing reports and production reports that are ultimately relied on by management and the board of directors throughout the course of operations (Braiotta et al. 1999). If any of these procedures indirectly affects the accounting system (e.g., frequent deployment of internal auditors), then the quality of earnings reported by the accounting system may be limited by the effectiveness of the audit committee. Audit committees must also have access to transparent financial information that allows for effective assessment of the company's solvency that could be compromised by poor management practices.

The importance of audit committee oversight has evolved throughout the 1900s, as evidenced by numerous recommendations from financial institutions that firms form audit committees dating as far back as the Securities Acts of 1933 and 1934. However, it was not until the early 1990s that publicly traded companies listed on the NYSE, NASDAQ and AMEX were required to have an audit committee as part of their governance structure (BRC 1999). Facing mandatory regulation, the major exchanges created a Blue Ribbon Committee in 1999 to examine the audit committee characteristics that were presumed to affect monitoring effectiveness, and eventually issued several recommendations (e.g., independence from management) that were, in part, adopted by the exchanges as listing requirements. Congress took additional steps to improve investor confidence in accounting information by mandating many of the previous recommendations regarding audit committee characteristics and behavior, and the NYSE has included the review of the risk assessment processes as a required audit committee task (e.g., SOX 2002; NYSE 2005).

DeZoort, et al. (2002) suggests, however, that not all audit committees are effective and develops an audit committee effectiveness framework that is based on the premise that effectiveness is a function of composition, authority, resources, and diligence. The literature has focused primarily on the commitment of the audit committee to its monitoring duties (i.e., diligence) and the characteristics of the audit committee members (i.e., composition), as these factors tend to be more readily observable. Several audit committee diligence studies examine audit committee meeting frequency and generally find that audit committees that meet more frequently experience fewer financial reporting problems, are less likely to be sanctioned by the SEC, and engage in less earnings management (McMullen and Raghunanden 1996; Bedard

et al. 2004). The frequency of this oversight likely results in the development of firm-specific reporting issues that can be better monitored by the audit committee so that more transparent financial statements can ultimately be issued.

Composition studies initially examined the effect of audit committee member independence on the firm's financial reporting environment. Carcello and Neal (2003) find that less independent audit committees are more likely to dismiss auditors following the issuance of a going concern opinion. Krishnan (2005) also finds that audit committee independence is negatively associated with frequency of internal control problems. Other studies generally find that independence reduces earnings management, but offer conflicting results about whether the degree of independence has a differential effect on earnings management (Klein 2002; Bedard et al 2004). For example, Bedard et al. (2004) finds that firms with 100 percent audit committee independence are associated with less earnings management, while Klein (2002) only documents such an association when at least one audit committee member is not independent. Consequently, the question of whether absolute audit committee independence entails lower earnings management remains unanswered.

The financial expertise of audit committee members has also received considerable attention in the academic literature. By increasing the committee members' accounting and finance-related knowledge, the degree of financial expertise should improve audit committee effectiveness. Initial investigations into the financial reporting implications of audit committee expertise generally suggest that expertise improves the quality of financial statements. Financial reporting problems, including earnings management, restatements, and accrual quality, are negatively related to various proxies of audit committee expertise (e.g., Xie et al. 2003; Bedard et al. 2004; Carcello et al. 2006; Dhaliwal, Naiker and Navissi 2006). Studies have also focused more on market-based implications of audit committee expertise and document conflicting results. Although the market appears to value the appointment of an expert to the audit committee and find the associated financial statement information to be more informative, firms with financial experts do not appear to be rewarded with a lower cost of debt (DeFond, Hann and Hu 2005; Anderson, Mansee and Reeb 2004). Overall, there appear to be benefits to the presence of a financial expert on the audit committee.

Other audit committee characteristics that have been examined include governance experience, ownership and audit committee size. Carcello and Neal (2003) provide evidence that auditor dismissal following the issuance of a going concern opinion is associated with a limited number of outside board appointments. Bedard et al. (2004) and Yang and Krishnan (2005) find that board experience is associated with less earnings management. Audit committee member stock (option) ownership appears to weaken monitoring efforts, as ownership has been shown to be positively associated with auditor dismissals following going concern opinions (Carcello and Neal 2003). The association between earnings management and audit committee ownership is less clear given the conflicting associations documented in recent studies (Bedard et al. 2004; Yang and Krishnan 2005). Audit committee size has been shown to be negatively associated with earnings management and the cost of debt, suggesting that larger audit committees reduce the likelihood of committee domination by a certain member (Bedard et al. 2004; Andersen et al. 2004).

In summary, the audit committee literature supports the conclusion that audit committee composition affects the quality of financial reporting. There remain, however, inconsistencies and incompleteness in the results that impede a full understanding of the role of audit committee composition. No study documents whether firm-specific knowledge off audit committee

members affects financial reporting quality, which is most likely to occur through extended time spent on an audit committee.

Variation in firms' earnings quality is not adequately explained by audit committee characteristics currently documented in the audit committee literature. For example, Klein (2002) finds that 100 percent audit committee independence does not appear to reduce earnings management, while a simple majority of independence has exhibited a more favorable association with earnings management. This result suggests there may be benefits to firm-specific knowledge that inside directors may bring to the audit committee. Traditional proxies for firm-specific monitoring experience are based on experience on a particular board rather than the director's experience on the firm's audit committee (e.g., Bedard et al. 2004; Yang and Krishnan 2005). Since monitoring of the financial statements occurs at the committee level, directors that do not serve on the audit committee are unlikely to have significant influence on the financial reporting process. Given the potential benefits of firm-specific knowledge that insider directors appear to bring to the audit committee and the general lack of research about tenure at the audit committee level, I explore whether the benefits of firm-specific knowledge arise with extended audit committee tenure, or whether ongoing relationships between committee members and management lead to weaker monitoring efforts.

2.3 Audit Committee Tenure and Earnings Management

Knowledge Acquisition and GAAP-based Earnings Management

Theoretical arguments made in the finance and psychology literature suggest that the accumulation of firm-specific knowledge by seasoned audit committee members, as well as directors' desire to build and preserve their reputations, may lead to greater audit committee effectiveness and, potentially, higher earnings quality. Fama and Jensen (1983) argue that the primary responsibility of the board is to ratify the decisions of management on behalf of outside shareholders. The degree to which the board (and audit committee) is successful at doing so is related to board's ability to reduce information asymmetry that naturally arises between the board and management.

Prior research suggests that this information asymmetry indeed exists and that information asymmetry can be influenced by the quality of reported earnings. Francis et al. (2004) provides evidence that investors price firm-specific information risk, which suggests that firms have unique information environments. Since the audit committee is charged with overseeing the financial reporting aspects of this environment, and investors appear to price firm-specific information attributes, it seems reasonable that, over a period of time, audit committee effectiveness would be impacted by the degree to which committee members familiarize themselves with firm-specific financial reporting issues. In addition, experienced audit committee members may be associated with more effective oversight of non-financial issues, such as assessing internal control testing or internal audit results, which may also influence efforts to monitor management's real earnings management activities and strategic decisions.

The primary means by which audit committee members obtain firm-specific knowledge is through their prolonged service on a specific audit committee (i.e., audit committee tenure) as this setting provides committee members with the opportunity to become acquainted with the firm's reporting issues. The learning process that ensues should lead to better monitoring performance. Psychology research confirms the notion of a learning effect. Throughout the learning process, people systematically replace incorrect conclusions with correct ones, and the rate at which replacement occurs is more rapid in early stages of the process. People develop

credible knowledge sets regarding a given task as experience with the task increases, which leads to an improvement in task performance (Mazur and Hastie 1978). Related research in the accounting setting confirms this phenomenon with auditing and accounting tasks (Libby 1993). For example, successful performance of audit tasks appears to be a related to both practice and feedback (Bonner and Walker 1994).

The potential effect of tenure by participants of the financial reporting process has been limited to the auditor-client relationship. Some studies demonstrate that audit quality improves, as longer auditor-tenure relationships are associated with less fraudulent financial reporting and earnings management (Johnson et al. 2002; Carcello and Nagy 2004). It apparently takes the audit team a period of time to become aware of the client's business model and unique accounting issues during the early stages of the relationship, with the benefits of this knowledge acquisition manifesting itself in later years. The notion of improved financial reporting quality over prolonged auditor-client relationships is evident in market analyses which show that audit tenure is negatively associated with the cost of debt while others find that equity risk premiums increase with prolonged auditor-client relationships (Mansi, Maxwell and Miller 2004; Boone et al. 2005). More recently, Simnett and Carey (2006) find that audit quality declines over time, suggesting that complacency occurs over time. The general consensus of this literature stream seems to be that prolonged relationships between those responsible for financial statements and those responsible for monitoring the reporting process affect the quality of reported earnings. A logical extension of this line of inquiry is to examine the potential effects of other financial reporting relationships, namely between the audit committee and management.

As audit committee members encounter more firm-specific reporting issues from one fiscal year to the next, their experience with these matters should increase their overall knowledge of matters that affect the quality of earnings (e.g., GAAP and industry issues). Committee members with prolonged service are more likely to understand management's incentives to make opportunistic accounting choices that may ultimately compromise earnings quality. For example, committee members may be more prone to questioning management's judgments and estimates that increase income to reach earnings thresholds or analysts' expectations (Burgstahler and Dichev 1997), especially when stock-based compensation exposes management to significant loss of wealth if such thresholds are not met (Bartov, Givoly and Hayn 2002; Cheng and Warfield 2005). Also, past experience with management during audit committee meetings may provide tenured members with the ability to identify managers who promote aggressive financial reporting. Consequently, as a committee members' knowledge set becomes more developed and refined with time, one would expect the monitoring performance of committee members to improve, as well reduce earnings management.

The desire to preserves one's reputation as an effective director also suggests that extended tenure on an audit committee may lead to improved audit committee effectiveness and higher earnings quality. Fama (1980) argues that directors are usually leaders in the business community and therefore seek to enhance or preserve their reputations. In light of the growing scrutiny placed on the role of corporate governance (e.g., Levitt 1998), one would expect directors that serve on the audit committee to consciously develop their monitoring skills over time so that they can establish and preserve their reputations as both effective monitors and credible members of the business community. Audit committee members can most effectively preserve their reputations through effective oversight intended to reduce the risk of an audit failure, SEC enforcement action or shareholder lawsuits.

Although research shows that extended board tenure may provide financial reporting benefits, the literature has not yet addressed whether audit committee knowledge acquisition results in more effective monitoring, less earnings management and higher earnings quality (Beasley 1996; Bedard et al. 2004; Cohen at al. 2004). The primary shortcoming of these studies relates to the focus on board experience rather than audit committee experience. For example, Beasley (1996) finds that financial statement fraud diminishes when board members have extensive experience serving on other boards. Studies typically measure experience in terms of length of time the audit committee members served on the board. Although board experience would enable committee members to develop some firm- specific knowledge, committee members are more likely to develop firm-specific expertise while actually serving on the committee (Bedard et al. 2004; Yang and Krishnan 2005). If knowledge acquisition does indeed occur at the committee level and members desire to use this knowledge to develop and preserve their reputations as effective monitors, then experienced audit committees should effectively minimizing management's opportunistic use of GAAP-based earnings management. Therefore, I make the following hypothesis:

H1: Audit committee tenure deters companies' use of GAAP-based earnings management

Real Earnings Management and Audit Committee Tenure:

The use of GAAP-based earnings management may be a less desirable tool given the increased oversight by external auditors and audit committees due to the implementation of SOX 2002 and, particularly, the oversight of public company audits by the PCAOB. Research documents the use of real earnings management techniques as an alternative to traditional GAAP-based earnings management that would likely be subjected to external auditor and audit committee scrutiny, and that the use of real earnings management has become more pronounced following the passage of SOX 2002 (Cohen, Dey, and Lys, 2008; Zang, 2012). Other studies show that management prefers to first utilize real earnings management before turning to GAAP-based earnings management and will do so to meet analysts' earnings-per-share expectations and to inflate stock prices during equity offerings, even at the expense long-term financial performance (Graham et al., 2005; Cohen & Zarowin 2010; Zang 2012). Real earnings management practices likely appeal to management since the altering of operational decisions to meet earnings targets is unrelated to the application of GAAP and, therefore, less likely to be a primary concern of external auditors. However, audit committees have broader responsibilities, including the requirement to perform risk assessment procedures which rely on credible financial information to determine whether the company's performance suggests that there is a solvency issue (SOX 2002; SEC 2013).

The nature of real earnings management techniques illustrates the struggle facing audit committees that attempt to determine whether the financial disclosures realistically depict the company's economic reality. A variety of operational decisions can be altered as the fiscal-year end approaches and the likelihood of achieving earnings targets becomes clear. Studies find that manufacturing firms produce abnormally high levels of inventory in order to spread overhead across more units, therefore minimizing cost-of-goods-sold and inflating earnings (Roychowdhury 2006). Postponing discretionary expenses (e.g., advertising, R&D), delaying investment projects, stock buy-backs, premature sale of fixed assets, and unplanned sales price reductions have all been used by management to minimize expenses or create gains on the income statement (Roychowdhury 2006; Graham et al., 2005; Hribar, Jenkins & Johnson 2006; Hermalin and Weisbach 2003; Jackson & Wilcox 2000).

Although independent auditors focus on the materially correct application of GAAP to financial statement disclosures, audit committees have responsibilities that span beyond oversight of the external audit. For example, enterprise risk management assessment requires the audit committee to have reliable financial and operational information at its disposal (SOX 2002). If the knowledge effect allows for the audit committee to improve its oversight as it develops experience with firm-specific financial reporting issues, then it's also plausible that the audit committee will become familiar with the appropriateness of operational decisions made by management. Therefore, audit committees' cumulative experience may be help it effectively detect and deter real earnings management and potentially improve the quality of reported earnings. Consequently, my second hypothesis states:

H2: Audit committee tenure deters companies' use of real earnings management techniques.

3. Research Design-Audit Committee Tenure & Earnings Management

3.1 Sample Selection

To test my hypotheses, I rely on an initial sample of 508 firms, spanning fiscal years 1998-2003, contained in a data set that resulted from the merger of Compustat, CRSP, IRRC, and EXECUCOMP databases. Further data attrition occurred due to incomplete proxy filings, missing values and from windsorizing the accruals-to-cash flows, growth and performance adjusted accruals proxies (see Table 1). This process resulted in 2,355 firm-year observations.

For each firm, I also obtained audit committee (e.g., expertise and tenure) and board data from the 1999-2004 proxy statements, as these statements contain board and committee-level information for fiscal years 1998-2003. Other variables were obtained from IRRC, Compustat and Execucomp databases.

3.2 Audit Committee Tenure

The primary test variable I employ throughout my study is the audit committee tenure proxy, ACT_{it}. I use several specifications of ACT_{it} including (1) the average tenure of all audit committee members for firm *i* in period *t* (ACT_Avg_{it}), (2) the number of years that the longest serving director has served on the audit committee (ACT_Long_{it}) and (3) the total number years that existing committee members have served on the audit committee (ACT_Sum_{it}).

Exhibit 1

Audit Committee Tenure Variables:	
ACT_Avg_{it}	= the average number of years that current members have served on the audit committee
ACT_Sum_{it}	= the total number of years that current members have served on the audit committee
ACT_Long_{it}	= the number of years that the longest serving member has been on the audit committee
Earnings Management Variables:	
ACC_OCF_{it}	= the absolute value of accruals divided by the absolute value of operating cash flows
$POSS\_ACC_{it}$	= 1 if the signed abnormal accruals from the Modified Jones Model (1991) were positive; 0 otherwise
$ABNML\_ACC_{it}$	= signed abnormal accruals obtained from the modified Jones (1991) model
ROA_ACC_{it}	= performance adjusted abnormal accruals
AB_Prodn_{it}	= abnormal production costs; production expenses
$AB\_DiscExp_{it}$	= abnormally low discretionary accruals
Governance Variables:	
FIN_EXPRT_{it}	= 1 if at least one audit committee member had a background in either accounting or finance; 0 otherwise
AC_Indp_{it}	= the percentage of audit committee members that were independent of the firm.
AC_Mtg_{it}	= the number of meeting held by the audit committee during the fiscal year.
AC_Owshp_{it}	= the total percentage of shares held by the audit committee members during the fiscal year.
AC_Size_{it}	= the number of directors that served on the audit committee during the fiscal year.
BOD_Size_{it}	= the number of individuals that served on the board of directors during the fiscal year.
BOD_Indp_{it}	= the percentage of board members that was independent of the firm.
Control Variables:	
ACT_Indp_{it}	= interaction of audit committee and audit committee independence proxies
SOXit	= 1 if the fiscal year (2002 or 2003) follows the implementation of SOX 2002; 0 otherwise
ACT_SOXit	= interaction of audit committee tenure and the SOX indicator variable
ΔNIit	= the change in net income from year *t* and *t-1*;
Big_Five_{it}	= 1 if the firm was audited by a big five (four) accounting firm during the fiscal year; 0 otherwise
$Growth_{it}$	= the ratio of the firm's market value of equity to the book value of equity.
Lev_{it}	= the ratio of total debt to total assets.
Sizeit	= the natural log of the firm's assets (untransformed asset values reported in Table 1)
$Exec\_Owshp_{it}$	= the percentage of the firm's outstanding shares that was owned by the top five executives of the firm.
Neg_OCF_{it}	= 1 if the firm's operating cash flows were negative, 0 otherwise.

Table 1. Sample Selection Firm-year Observations

Initial firms from randomly selected observations from a data set that resulted from the merger of Compustat, IBES, CRSP, EXECUCOMP and IRRC databases):	3,004
Less:	
Missing Compustat Values	(167)
Winsdsorized Data (1%, 99% of selected variables)	(122)
Firms available for initial analysis	2,715
Missing executive ownership values	(321)
Incomplete Proxy Filings	(39)
Firm-year observations available for regression analysis:	2,355

3.3 Regression Models:

To test for the potential association between audit committee tenure and earnings management, I separately regress several earnings management *(Erng_Mgt$_{it}$)* proxies on various specifications of the audit committee tenure variable and relevant control variables. Model (1) is estimated using pooled OLS regressions. The regressions also control for year and industry effects by including year and industry dummy variables (not shown).

The general form of model (1) is presented below:

$$\begin{aligned} Erng\_Mgt_{it} = {} & \beta_0 + \beta_1 ACT_{it} + \beta_2 FIN\_EXPRT_{it} + \beta_3 AC\_Indp_{it} + \beta_4 ACT\_SOX_{it} + \\ & \beta_5 SOX_{it} + \beta_6 AC\_Mtg_{it} + \beta_7 AC\_Owshp_{it} + \beta_8 AC\_Size_{it} + \\ & \beta_9 BOD\_Size_{it} + \beta_{10} BOD\_INDP_{it} + \beta_{11} \Delta NI_{it} + \beta_{12} Big\_Five_{it} + \\ & \beta_{13} Growth_{it} + \beta_{14} Lev_{it} + \beta_{15} Size_{it} + \beta_{16} EXEC\_OWHSP_{it} + \\ & \beta_{17} Neg\_OCF_{it} + \varepsilon_i \end{aligned} \quad (1)$$

GAAP-based Earnings Management Proxies

To capture the extent to which reported earnings effectively communicate the firm's true income to investors, I employ several earnings management proxies. The first two specifications include the ratio of the absolute value of accruals to the absolute value of operating cash flows and the propensity of firms to report income increasing abnormal accruals, and two real earnings management proxies. The first two proxies are GAAP- based in that they pertain specifically to management's accounting choices and are more prone to oversight by auditors and the audit committee.[1] The second set of proxies, abnormal production costs and abnormally low discretionary expenses, relate to real earnings management activities. Concurrently using various specifications of traditional earnings management should improve inferences made about audit committee tenure's effect on such opportunistic practices and whether management alternatively turns to real earnings management practices to influence

[1] Researchers also measure earnings quality following the Dechow and Dichev (2002) methodology whereby firm-specific abnormal accruals are computed by taking the standard deviation of the residuals from firm-specific regressions of changes in working capital accruals on current, future and lagged operating cash flows. This methodology is not suitable in my study since basing the current firm-year abnormal accrual would be based on prior-years financial statements, and would not reflect the influence of the current audit committee's tenure on the current period's financial statements.

reported earnings (Schipper 1989; Dechow and Skinner 2000).

My first earnings management proxy is the ratio of the absolute value of accruals to the absolute value of operating cash flows (ACC_OCF_{it}). Since net income is comprised of operating cash flows and total accruals, management's discretionary accounting choices are reflected in the degree to which net income is derived from accruals. If management relies on accruals to smooth earnings over accounting periods in order to mask firm performance, investors' ability to assess actual earnings fluctuations may be hampered (Leuz, Nanda and Wysocki 2003). I attempt to increase the power of my tests by modifying traditional specifications of the accruals to cash flow proxy by employing the firm-year ratio. Other research (e.g., Leuz et al. 2003) uses the standard deviation of accruals and cash flows from prior periods. I use firm-year observations because any effect of audit committee tenure on reported earnings should be contemporaneous and would not be relevant for prior periods during which specific audit committee members did not participate in the financial reporting process. If audit committee tenure impedes traditional earnings management, I would expect to observe a negative (positive) coefficient on the audit tenure proxies when the ratio of accruals to operating cash flows is used as a dependent variable.

My second GAAP-based earnings management proxy is an indicator variable that attempts to capture management's propensity to make discretionary accounting choices that increase reported earnings. *POSS_ACC* takes a value of one if the abnormal accruals produced from a modified version of the Jones (1991) model are positive (Dechow et al. 1995). First, I estimate model (2) on the entire population of Compustat firms for each year and two-digit SIC code.

$$TACC = \beta_0 + \beta_2 it\left[\left(\Delta REV_{it} - \Delta AR_{it}\right)/A_{it-1}\right] + \beta_3 it\left[PPE_{it}/A_{it-1}\right] + \varepsilon_{it} \quad (2)$$

I obtain parameter estimates for each year and two-digit SIC code and apply them to each sample firm's current year data to obtain firm-specific predicted discretionary accruals. I compute abnormal accruals by subtracting the predicted accruals from the firm's actual accruals (net income – operating cash flows). If the abnormal accruals are greater than zero, then *POSS_ACC* equals one, otherwise it takes a value of zero.

Real Earnings Management Proxies

The final two proxies employed in my audit committee tenure-earnings management analysis attempt to capture management's potential use of routine business decisions to influence earnings (e.g., Gunny 2005; Roychowdhury 2006). Two commonly used measure of real earnings management include abnormal levels of discretionary expenses and production costs. Management may decrease discretionary expenses by deferring selling, administrative, advertising or research and development expenses until later periods, resulting in higher current-period earnings. Managers may also choose to influence earnings by inflating production of goods in the current period which would increase the number of units over which fixed costs are allocated. This results in relatively lower cost of goods sold and artificially high earnings (Roychowdhury 2006).

Since these decisions are left to the discretion of management and GAAP is generally silent about the disclosure of such activity, it is plausible the real earnings management may be used to mask the firm's true performance and compromise earnings quality. It is possible that audit committees could detect such behavior during its review of operational audit results, internal control testing and other risk assessment activities, but it is inherently difficult to assess management's actual intent to use real earnings management or measure the extent to which

such behavior influences earnings (Salim and McNamee 1999). Given the sample period under analysis and the effect of SOX 2002 regulations on firms' willingness to abandon GAAP-based earnings management in favor or real earnings management, when faced with audit committee with extensive experience detecting GAAP-based earnings management.

The two real earnings management proxies used in my analysis include abnormally low discretionary expenses and abnormal production costs are determined by estimating Models (3) and (4), which assume that both discretionary expenses and production costs are largely driven by current and prior-period sales activity. The models also assume that discretionary expenses and production costs that are not related to sales activity reflect management discretion over those expenditures and, possibly, efforts to influence reported earnings.

I measure the abnormal level of discretionary expenditures *(AB_DiscExp$_{it}$)* by estimating the following equation for the full sample of Compustat firms:

$$DiscExp_{it} = \beta_0 + \beta_1 \frac{Sales_{it}}{Asset_{it-1}} + \beta_2 \frac{\Delta Sales_{it}}{Asset_{it-1}} + \varepsilon_{it} \quad (3)$$

DiscExp$_{it}$ is defined as the sum of advertising expenses, research and development and general and administrative expenses. *Sales$_{it}$* is the annual sales revenue. Model (3) is estimated for each year and two-digit SIC code. The resulting coefficients for each two-digit industry are applied to each sample firm's annual data, resulting in firm-specific estimates of expected discretionary expenditure estimates. Estimated discretionary expenses are deducted from the firm's actual discretionary expenditure value to arrive at firm-specific, abnormally low discretionary expense values *(AB_Disc_Exp$_{it}$)*, which is then multiplied by -1 so that the coefficient estimates can be directly interpreted (i.e., a negative coefficient estimate on the audit tenure variables would indicate that tenure reduces management's use of real earnings management). When testing my second hypothesis, which posits that management is less likely to rely upon real earnings management to influence earnings when faced with experienced audit committees, I employ abnormally low discretionary expenses *(AB_Disc_Exp$_{it}$)* as a dependent variable that is regressed against various audit committee tenure proxies and other control variables included in Model (1). Hypothesis 2 would be supported if I observe a negative coefficient on the audit committee tenure test variables as this would indicate a negative association between the two proxies.

Control Variables

Model 1 also includes audit committee, board, and firm level variables that have been shown to be associated with various earnings management proxies (Klein 2002; Xie et al. 2003; Bedard et al. 2004; DeFond and Jiambalvo 1994; Brown 2001; Francis et al. 1999;). Financial expertise on the audit committee *(FIN_EXPRT$_{it}$)*, independent audit committees *(AC_Indp$_{it}$)*, the effect of the implementation of SOX 2002 *(ACT_SOX$_{it}$ and SOX$_{it}$)*, larger audit committees (*AC_Size$_{it}$)*, more frequent audit committee meetings (*AC_Mtg$_{it}$)*, larger firms (*Size$_{it}$)*, percentage of independent directors on the board *(BOD_INDP$_{it}$)*, the size of the board *(BOD_Size$_{it}$)* and the retention of reputable audit firms *(Big_Five$_{it}$)* have been shown to reduce the use of discretionary accounting choices to manage earnings. Positive changes in net income *(ΔNI$_{it}$)*, executive ownership (*EXEC_Owshp$_{it}$)*, audit committee member ownership (*AC_Owshp$_{it}$)*, negative operating cash flows *(Neg_OCF$_{it}$)*, growth prospects *(Growth$_{it}$)* and leverage *(Lev$_{it}$)* have been shown to be positively associated with discretionary accounting choices.

4. Results Audit Committee Tenure and Earnings Management

4.1 Descriptive Statistics

Table 2 provides descriptive statistics of firm, board, audit committee tenure and earnings management variables for the 2,355 firm-year observations. Panel A contains several specifications of the primary variable of interest, audit committee tenure.[2] The average number of years an audit committee member has served on the committee *(ACT_Avg$_{it}$)* is approximately 4.73 years. The sum of all committee members' tenure *(ACT_Sum$_{it}$)* is about 19 years, reflecting the average committee size and average committee tenure. The longest serving member *(ACT_Long$_{it}$)* has an average tenure of nearly seven years, with an inter-quartile range of six to nine years.

Table 2. Descriptive Statistics

Variables	N	Mean	Median	25th Percentile	75th Percentile
Panel A: AC Tenure Proxies					
ACT_Avg$_{it}$	2355	4.73	4.66	3.66	5.67
AC_Sum$_{it}$	2355	19.35	18.00	13.00	24.00
ACT_Long$_{it}$	2355	7.02	7.00	6.00	9.00
Panel B: Earnings Quality Proxies					
ACC_OCF$_{it}$	2355	0.72	0.53	0.33	0.76
POSS_ACC	2355	0.55	0	0	1.00
ABNML_ACC	2355	0.01	-0.01	-0.04	0.03
ROA_Adj_ACC	2355	-0.01	0.01	-0.04	0.07
AB_DiscExp$_{it}$	2326	-0.01	-0.02	-0.09	0.08
AB_Prodn$_{it}$	2358	-0.05	-0.05	-0.14	0.03
Panel C: Governance Variables					
FIN_EXPRT$_{it}$	2355	0.37	0	0	1.00
AC_Indp$_{it}$	2355	0.90	1.00	0.80	1.00
AC_Mtg$_{it}$	2355	5.09	4.00	3.00	6.00
AC_Owshp$_{it}$	2355	0.01	0	0	0.0001
AC_Size$_{it}$	2355	3.87	4.00	3.00	5.00
BOD_Size$_{it}$	2355	9.80	10.00	8.00	11.00
BOD_Indp$_{it}$	2355	0.68	0.70	0.57	0.82
BOD_Owshp$_{it}$	2164	5.85	1.00	0	5.50
Panel D: Financial Variables:					
ΔNIit	2355	-0.20	0.05	-0.41	0.30
Big_Five$_{it}$	2355	0.98	1.00	1.00	1.00
Growth$_{it}$ and *Mkt_Book$_{it}$*	2355	3.46	2.48	1.69	4.07
Levit	2355	0.24	0.25	0.12	0.35
Size$_{it}$	2355	11,183.27	2,518.63	916.06	8,180.00
Exec_Owshp$_{it}$	2355	0.03	0.01	0.01	0.02
Neg_OCF$_{it}$	2355	0.02	0	0	0

[2] The three audit committee tenure variables are significantly correlated with each other, with p-values <.0001.

	Mining (N=198)	Manufacturing (N=1356)	Transportation (N=347)	Financial (N=187)	Other Services (N=267)
Panel E: AC Tenure Proxies					
ACT_Avg_{it}	4.95 (5.00)	4.69 (4.60)	4.81 (4.80)	5.04 (4.90)	4.57 (4.50)
AC_Sum_{it}	19.50 (19.0)	19.05 (18.00)	22.30 (22.00)	20.85 (19.00)	16.23 (16.00)
ACT_Long_{it}	7.23 (7.00)	7.01 (7.00)	7.16 (7.00)	7.37 (7.00)	6.66 (7.00)
Panel F: Earnings Management Proxies					
ACC_OCF_{it}	0.83 (0.67)	0.74 (0.51)	0.68 (0.57)	0.66 (0.53)	0.74 (0.54)
POSS_ACC	0.52 (1.00)	0.58 (1.00)	0.53 (1.00)	0.46 (0.00)	0.50 (0.50)
ABNML_ACC	-0.02 (-0.01)	-0.01 (-0.01)	-0.01 (-0.01)	-0.01 (-0.01)	0.19 (-0.01)
ROA_Adj_ACC	0.003 (0.01)	0.02 (0.01)	0.01 (0.004)	-0.002 (-0.003)	-0.20 (-0.001)
$AB\_DiscExp_{it}$	0.02 (0.01)	0.01 (0.01)	-0.06 (-0.06)	-0.06 (-0.03)	0.04 (0.01)
AB_Prodn_{it}	-0.07 (-0.08)	-0.05 (-0.04)	-0.03 (-0.03)	-0.02 (-0.01)	-0.16 (-0.13)
Panel G: Governance Variables					
FIN_EXPRT_{it}	0.28 (0.00)	0.37 (0.00)	0.39 (0.00)	0.39 (0.00)	0.50 (1.00)
AC_Indp_{it}	0.87 (1.00)	0.90 (1.00)	0.91 (1.00)	0.90 (1.00)	0.93 (1.00)
AC_Mtg_{it}	4.82 (4.00)	4.99 (4.00)	5.42 (5.00)	5.32 (5.00)	5.20 (4.00)
AC_Owshp_{it}	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)
AC_Size_{it}	3.87 (4.00)	3.80 (4.00)	4.40 (4.00)	4.01 (4.00)	3.45 (3.00)
BOD_Size_{it}	9.67 (9.00)	9.58 (9.00)	10.57 (11.00)	11.12 (11.00)	8.67 (8.00)
BOD_Indp_{it}	0.67 (0.71)	0.69 (0.71)	0.70 (0.72)	0.66 (0.67)	0.68 (0.67)
Panel H: Financial Variables:					
$\Delta NIit$	-0.40 (0.01)	-0.46 (0.01)	1.01 (0.03)	0.35 (0.12)	-0.42 (0.12)
Big_Five_{it}	1.00 (1.00)	0.98 (1.00)	1.00 (1.00)	1.00 (1.00)	0.96 (1.00)
$Growth_{it}$ and Mkt_Book_{it}	2.34 (2.14)	3.76 (2.72)	2.08 (1.77)	3.15 (2.36)	4.64 (3.50)
Lev_{it}	0.31 (0.30)	0.23 (0.24)	0.33 (0.35)	0.16 (0.11)	0.20 (0.16)
$Size_{it}$	4,199.78 (2,774.00)	4,005.45 (3,987.03)	13,087.19 (8,415.95)	5,037.06 (5,706.69	3,949.70 (892.56)
$Exec\_Owshp_{it}$	0.02 (0.01)	0.02 (0.01)	0.03 (0.01)	0.03 (0.01)	0.04 (0.01)
Neg_OCF_{it}	0.02 (0.00)	0.03 (0.00)	0.02 (0.00)	0.03 (0.00)	0.05 (0.00)

The cell contents in panels G-H
contain the mean (median) statistics for each variable.

Audit Committee Tenure Variables:	
ACT_Avg_{it}	= the average number of years that current members have served on the audit committee
ACT_Sum_{it}	= the total number of years that current members have served on the audit committee
ACT_Long_{it}	= the number of years that the longest serving member has been on the audit committee
Earnings Quality Variables:	
ACC_OCF_{it}	= the absolute value of accruals divided by the absolute value of operating cash flows
$POSS\_ACC_{it}$	= 1 if the signed abnormal accruals from the Modified Jones Model (1991) were positive; 0 otherwise
$ABNML\_ACC_{it}$	= signed abnormal accruals obtained from the modified Jones (1991) model
ROA_ACC_{it}	= performance adjusted abnormal accruals; coefficients were obtained by first estimating the Modified Jones model for each year and two-digit SIC code for the full population of Compustat firms; the coefficients were then applied to the annual data of each Compustat to obtain firm-specific, predicted non-discretionary accruals; abnormal accruals were computed by subtracting the predicted non-discretionary accruals from each firm's total accruals; the abnormal accruals were then subtracted from the abnormal accruals of the firm with the closest ROA within the sample firm's two-digit SIC and fiscal year to obtain performance adjusted accruals.
AB_Prodn_{it}	= abnormal production costs; production expenses (defined as the sum of cost of goods sold and annual change in inventory) were regressed on lagged assets, current period sales revenue, prior year change in sales, and lagged prior year sales for each 2-digit SIC in each year; the resulting coefficients were applied to each sample firms current year data to obtain predicted production costs; predicted production costs the subtracted from *actual* production cots to obtain abnormal production costs (which were used throughout the analyses).
$AB\_DiscExp_{it}$	= abnormally low discretionary accruals; discretionary expenses (defined as the sum of SG&A, advertising and research and development costs), were regressed on lagged assets, current year sales, and change in sales; the resulting model coefficients were applied to each firm's data in the same fiscal year and two-digit sic code to obtain predicted discretionary expenses; predicted discretionary expenses were then deducted from actual discretionary expenses to obtain abnormally low discretionary expenses. For the multivariate analysis, I then multiply abnormally low discretionary expenses by (-1) so that the directional interpretation of the coefficients on the explanatory variables is more intuitive (i.e., a positive coefficient on the tenure variable would suggest that tenure is associated with *greater use of abnormally low discretionary expenses* to influence earnings).
Governance Variables:	
FIN_EXPRT_{it}	= 1 if at least one audit committee member had a background in either accounting or finance; 0 otherwise
AC_Indp_{it}	= the percentage of audit committee members that were independent of the firm.
AC_Mtg_{it}	= the number of meeting held by the audit committee during the fiscal year.
AC_Owshp_{it}	= the total percentage of shares held by the audit committee members during the fiscal year.
AC_Size_{it}	= the number of directors that served on the audit committee during the fiscal year.
BOD_Size_{it}	= the number of individuals that served on the board of directors during the fiscal year.
BOD_Indp_{it}	= the percentage of board members that was independent of the firm.
Control Variables:	
ACT_Indp_{it}	= interaction of audit committee and audit committee independence proxies
SOXit	= 1 if the fiscal year (2002 or 2003) follows the implementation of SOX 2002; 0 otherwise
ACT_SOXit	= interaction of audit committee tenure and the SOX indicator variable
ΔNIit	= the change in net income from year *t* and *t-1*;
Big_Five_{it}	= 1 if the firm was audited by a big five (four) accounting firm during the fiscal year; 0 otherwise
$Growth_{it}$	= the ratio of the firm's market value of equity to the book value of equity.
Lev_{it}	= the ratio of total debt to total assets.
Sizeit	= the natural log of the firm's assets (untransformed asset values reported in Table 1)
$Exec\_Owshp_{it}$	= the percentage of the firm's outstanding shares that was owned by the top five executives of the firm.
Neg_OCF_{it}	= 1 if the firm's operating cash flows were negative, 0 otherwise.

The descriptive statistics for the earnings management proxies are provided in Panel B. Accruals comprise a significant portion of net income as the ratio of absolute value of accruals to absolute value of operating cash flows *(ACC_OCF$_{it}$)* is 0.72 on average[3]. Approximately half (.55) of sample firms reported income increasing accruals *(Poss_ACC$_{it}$)* during the sample period. Signed abnormal accruals *(ABNML_ACC$_{it}$)* and performance adjusted accruals *(ROA_Adj_ACC$_{it}$)* have mean values of 0.01 and -0.01, respectively. The median values of *real* earnings management proxies of abnormally low discretionary expenses *(AB_DiscExp$_{it}$)* and abnormal production costs *(AB_Prodn$_{it}$)* are - 0.02 and -0.05, respectively, and are comparable to the values reported in Roychowdhury (2006).

Descriptive statistics for audit committee and board level variables show that approximately 37 percent of firms have at least on audit committee member with a background in either accounting or finance *(FIN_EXPRT$_{it}$)* and 90 percent of the audit committee members are independent from the company *(AC_Indp$_{it}$)*, while aggregate equity ownership *(AC_Owshp$_{it}$)* is minimal[4]. Typically, audit committee consists of three to four directors *(AC_Size$_{it}$)* and boards contain approximately ten directors, the majority of which are independent (0.68).

Firm-level financial data reveals a median increase in year-to-year income *(ΔNI)* experienced by the sample firms is of 5.0 percent, which likely reflects the economic expansion that took place over the majority of the sample period. Most firms (98 percent) retained Big 5 firms for annual audits. Similar to DeFond et al. (2005), the mean market-to-book ratio *(Growth$_{it}$)* is for the 3.46, suggesting that the market anticipates future growth potential and reflecting overvaluation of the securities markets during that period. The financial leverage *(LEV$_{it}$)* of the sample firms is modest, with a mean debt-to-asset ratio of 0.24. The firm size reflects the sample's diversity as the inter-quartile range of total assets is 916.06 to 8,180.0. The top five executives own *(Exec_Owshp$_{it}$)*, on average, around 3 percent of the firm's outstanding common stock. The economic prosperity that occurred during the sample period is further supported by the fact that only two percent of the firms reported negative operating cash flows *(Neg_OCF$_{it}$)*.

The sample's industry composition is also reported Table 2. The sample is largely comprised of manufacturing firms, which likely indicates the data restrictions imposed on the sample for certain variable specifications. The values of audit committee tenure, earnings management and various control variables are comparable to those discussed above, with the highest (lowest) tenure observed in the transportation (other services) industries.

4.2 Univariate Analysis

Table 3 documents the results of initial test of the potential association between audit committee tenure and earnings management proxies. The accruals-to-cash flows proxy *(ACC_OCF$_{it}$)* has a positive and significant correlations (p-value=0.015) with the tenure of the longest serving audit committee member *(ACT_Long$_{it}$)*, suggesting that seasoned audit committee members may curtail their monitoring efforts over time. Table 3 also provides some evidence that experienced audit committee affect management's use of real earning management. Both *ACT_Sum$_{it}$* and *ACT_Long$_{it}$* exhibit positive and significant correlations with abnormal production costs *(AB_Prodn$_{it}$)*, while abnormally low discretionary expenses

[3] The mean and median values of the accrual components (NI, OCF and ACC-scaled by assets) are comparable to those reported in Carcello et al. 2006.

[4] I did not control for the presence of a blockholder on the audit committee because less than 1% of the sample had an audit committee member whose ownership interests exceeded 5%.

(AB_DiscExp$_{it}$) are negative and significantly correlated each of the audit committee tenure variables. These correlations provide initial support for my hypotheses as it appears that experienced audit committees are effective at detecting both GAAP-based and real earnings management.

Table 3. Spearman Correlations Audit Committee Tenure Variables FY: 1998-2003

Audit Committee Tenure Variables			
	ACT_Avg$_{it}$	***ACT_Sum$_{it}$***	***ACT_Long$_{it}$***
Panel A: Dependent Variables			
ACC_OCF$_{it}$	-0.01 (0.7881)	0.01 (0.7972)	0.05 (0.0153)
POSS_ACC$_{it}$	0.03 (0.1956)	0.01 (0.5523)	-0.01 (0.7041)
AB_DiscExp$_{it}$	-0.06 (0.0042)	-0.10 (<.0001)	-0.06 (0.0034)
AB_Prodn$_{it}$	0.01 (0.6476)	0.05 (0.0078)	0.05 (0.0128)
Panel B: Governance Variables			
FIN_EXPRT$_{it}$	0.02 (0.5496)	0.02 (0.4566)	0.03 (0.4331)
AC_Indp$_{it}$	-0.05 (0.1384)	-0.02 (0.4616)	0.11 (0.0105)
AC_Mtg$_{it}$	0.23 (<.0001)	0.27 (<.0001)	0.29 (<.0001)
AC_Owshp$_{it}$	-0.04 (0.2036)	-0.04 (0.1873)	-0.12 (0.0072)
AC_Size$_{it}$	0.07 (0.0356)	0.46 (<.0001)	0.09 (0.0485)
BOD_Size$_{it}$	0.10 (0.0027)	0.30 (<.0001)	0.15 (0.0005)
BOD_Indp$_{it}$	0.05309 (0.1057)	0.12843 (<.0001)	-0.00294 (0.9466)

Coefficient
(p-value)
N = 2,355

Correlations between the audit committee tenure variables and the governance variables are also provided in Table 3. Each audit committee tenure proxy exhibits a positive and significant correlation with *AC_Mtg$_{it}$* and *AC_Size$_{it}$*, which indicates that more experienced audit committees are associated with two additionally attributes of diligent audit committees, large audit committees that meet frequently. At the board of directors level, audit committee tenure is also correlated with large, active boards, as positive and significant coefficients are observed for both *BOD_Size$_{it}$* and *BOD_Mtg$_{it}$*. The board-level correlations are consistent with the notion that companies that invest in governance structures (i.e., large, active boards) are likely to appreciate financial reporting oversight benefits of knowledge and experience gained by long-serving audit committee members.

4.3 Multivariate Analysis

To test the potential association between various specifications of GAAP-based earnings management proxies and audit committee tenure, I estimated an OLS regression of model (1) for the full set of firm-year observations[5]. Table 4 contains the results of multiple model specifications across various combinations of audit committee tenure and earnings management proxies[6]. When the ratio of the absolute values of accruals to cash flows *(ACC_OCF$_{it}$)* is employed as the dependent variable, there appears to be a marginally negative association (p-values<0.10) between GAAP-based earnings management and the average audit committee tenure *(ACT_Avg$_{it}$)* as well as the length of the longest serving audit committee member *(ACT_Long$_{it}$)*. This result suggests that experienced audit committees are more effective at reducing managements' ability to rely on accruals to influence earnings relative to operating cash flows. This finding is consistent with the first hypothesis and supports the notion that audit committees gain knowledge of firm-specific reporting issues that improve the overall effectiveness of financial reporting oversight.

Consistent with recent research that documents a decline in GAAP-based earnings management following that the implementation of SOX 2002 (Cohen, et al. 2005), I also observe a reduction in GAAP-based earnings management during this period as evident by the significant, negative association between the SOX 2002 indicator variable and the accruals to cash flows proxy. The accruals to cash flow proxy is also significantly and positively associated with audit committee meeting frequency (p-value<.001), leverage (<0.0001), firm size (<0.05), executive ownership (<0.10) and negative operating cash flows (<0.0001). The use of accrual-based earnings management is also negative and significantly associated with the size of the board (<0.001), change in net income (<.05) and growth (<0.0001), while the remaining explanatory variables exhibit insignificant associations.

The next set of models reported in Table 4 regress the propensity to report income-increasing accruals *(POSS_ACC$_{it}$)* on the audit committee tenure proxies and control variables. Overall the results are weak, with a marginally negative coefficient on the average audit committee tenure *(ACT_Avg$_{it}$)* providing the only significant evidence of an association between tenure and income-increasing abnormal accruals. Nevertheless, this finding is consistent with the accruals to cash flows result discussed above and provides some support for the first hypothesis which posits that audit committees become more effective at hampering aggressive, GAAP-based earnings management practices. Opportunistic accounting choices are also positively associated with audit committee size (<0.05) and growth firms (<0.05), while board size (<0.05) and negative operating cash flows (<0.0001) exhibit negative associations.

[5] To assess whether multicolinearity is biasing my results, I examine variance inflation factors, noting that all variables except SOX and ACT_SOX have VIF factors ranging from 1-2.5. Therefore, the effects of multicolinearity on my test variable are minimal.

[6] I test whether serial correlation is affecting my results by re-performing my analysis using the STATA software package. The results were nearly identical to those reported throughout the Tables below.

Table 4. Audit Committee Tenure and GAAP-Based Earnings Quality

$$E0_{it} = \beta_o + \beta_1 ACT_{it} + \beta_2 FIN\_EXPRT_{it} + \beta_3 AC\_Indp_{it} + \beta_4 ACT\_SOX_{it} + \beta_5 SOX_{it} + \beta_6 AC\_Mtg_{it} + \beta_7 AC\_Owshp_{it} + \beta_8 AC\_Size_{it} + \beta_9 BOD\_Size_{it} + \beta_{10} BOD\_INDP_{it} + \beta_{11} \Delta NI_{it} + \beta_{12} Big\_Five_{it} + \beta_{13} Growth_{it} + \beta_{14} Lev_{it} + \beta_{15} Size_{it} + \beta_{16} EXEC\_OWHSP_{it} + \beta_{17} Neg\_OCF_{it} + \varepsilon_i \quad (4)$$

	ACC_OCF$_{it}$			***POSS_ACC$_{it}$***		
Test Variables						
ACT_Avg$_{it}$	-0.0372*			-0.0792*		
ACT_Sum$_{it}$		-0.0121			-0.0142	
ACT_Long$_{it}$			-0.0273*			-0.0561
Control Vars.						
FIN_EXPRT$_{it}$	0.0468	0.0513	0.0428	-0.0841	-0.0729	-0.0713
AC_Indp$_{it}$	-0.0321	-0.0365	-0.0318	0.0323	0.0236	0.0452
ACT_SOXit	0.0532**	0.0151	0.0329	0.0474	0.0012	0.0384
SOX$_{it}$	-0.3436***	-0.2107**	-0.2622*	-0.2021	-0.0193	-0.1621
AC_Mtg$_{it}$	0.0216***	0.0233**	0.0254**	0.0121	0.0164	0.0112
AC_Owshp$_{it}$	-0.5259	-0.5592	-0.3849	6.7332	6.5549	7.0532
AC_Size$_{it}$	-0.0022	0.0131	-0.0002	0.0831**	0.1332**	0.0921**
BOD_Size$_{it}$	-0.0229***	-0.0382***	-0.0249**	-0.0356*	-0.0351*	-0.0325*
BOD_Indp$_{it}$	-0.1729	-0.1625	-0.1672	0.0639	0.0914	0.0922
ΔNIit	-0.0021**	-0.0026**	-0.0023**	-0.0127	-0.0148	-0.0173
Big_Five$_{it}$	0.1137	0.1161	0.1174	-0.1162	-0.1251	-0.1276
Growth$_{it}$	-0.0428****	-0.0459****	-0.0472****	0.0238*	0.0271*	0.0292*
Lev$_{it}$	0.6192****	0.6017****	0.6092****	-0.2328	-0.2393	-0.2256
Size$_{it}$	0.0342**	0.0356**	0.0456**	0.0122	0.0131	0.0128
Exec_Owshp$_{it}$	0.5037*	0.4992*	0.4724*	-0.5516	-0.5432	-0.6021
Neg_OCF$_{it}$	1.7735****	1.7725****	1.7743****	-1.5296****	-1.5321****	-1.5462****
N	2355	2355	2355	2379	2379	2379
Adj. R^2 (Pseudo)	0.15	0.15	0.15	0.02	0.02	0.02

p-values * <0.10 ** <.05 *** <.001 **** <.0001

Two-tailed p-values are based on the White (1980) covariance heteroscedasticity corrected covariance matrix All variables are defined in Table 2

Table 5 documents the results of regressing model (1) when the real earnings management proxies are used as dependent variables and regressed on audit committee tenure proxies to test the second hypothesis. Since I multiply the *AB_DiscExp*$_{it}$ before loading it into the regression model, the negative and significant coefficient on the audit committee tenure proxies reported in Table 5 can be directly interpreted and suggest that audit committee tenure hampers management's use of abnormally low discretionary dispenses. This provides further support for the second hypothesis since more experienced audit committees are associated with management's reliance on lower discretionary expenses in order increase reported earnings.

Several significant associations between abnormally low discretionary expenses and the control variables were also observed. This finding is also consistent with prior research in that it corroborates the trend away from GAAP-based earnings management and towards real earnings management. Firms with active audit committees, independent boards and significant

growth prospects are more likely to engage in these practices (p-values<0.05 - 0.0001). Larger, highly leveraged firms that retain Big 5 auditors and have significant executive ownership are less likely to delay discretionary expenses (p-values<0.10 - 0.0001).

Table 5 Audit Committee Tenure and Abnormally Low Discretionary Expenses

$$AB\_DiscExp_{it} = \beta_o + \beta_1 ACT_{it} + \beta_2 FIN\_EXPRT_{it} + \beta_3 AC\_Indp_{it} + \beta_4 ACT\_SOX_{it} + \beta_5 SOX_{it} + \beta_6 AC\_Mtg_{it} + \beta_7 AC\_Owshp_{it} + \beta_8 AC\_Size_{it} + \beta_9 BOD\_Size_{it} + \beta_{10} BOD\_INDP_{it} + \beta_{11} \Delta NI_{it} + \beta_{12} Big\_Five_{it} + \beta_{13} Growth_{it} + \beta_{14} Lev_{it} + \beta_{15} Size_{it} + \beta_{16} EXEC\_OWHSP_{it} + \beta_{17} Neg\_OCF_{it} + \varepsilon_i \quad (5)$$

	AB_DiscExp$_{it}$		
ACT_Avg$_{it}$	-0.0175**		
ACT_Sum$_{it}$		-0.0013**	
ACT_Long$_{it}$			-0.0079**
Control Variables			
*FIN*_EXPRT$_{it}$	-0.0124	-0.0131	-0.0180
*AC*_Indp$_{it}$	-0.0367	-0.0321	-0.0302
ACT_SOXit	0.0129	0.0108	0.0163
SOX$_{it}$	-0.0384	-0.0131	-0.0439
AC_Mtg$_{it}$	0.0102***	0.0114**	0.0120***
AC_Owshp$_{it}$	0.6271	0.6073	0.6582
AC_Size$_{it}$	-0.0104	0.0016	-0.0032
BOD_Size$_{it}$	0.0002	0.0002	0.0004
BOD_Indp$_{it}$	0.0616**	0.0609**	0.0602**
ΔNIit	-0.0001	-0.0001	-0.0001
Big_Five$_{it}$	-0.0604*	-0.0628**	-0.0661*
Growth$_{it}$	0.0113****	0.0182****	0.0136****
Lev$_{it}$	-0.1303****	-0.1321****	-0.1382****
Size$_{it}$	-0.0171**	-0.0120**	-0.0171**
Exec_Owshp$_{it}$	-0.1503**	-0.1461**	-0.1507**
Neg_OCF$_{it}$	0.001	0.0131	0.0040
N	2326	2326	2326
Adj. R^2	0.07	0.07	0.07

p-values * <0.10 ** <.05 *** <.001 **** <.0001
Two-tailed p-values are based on the White (1980) covariance heteroscedasticity corrected covariance matrix All variables are defined in Table 2

4.4 Additional Analyses

Firms with Income-Increasing Abnormal Accruals

Table 6 reports the results of the earnings management after limiting the sample to 1,091 firm-year observations that reported positive abnormal accruals that were estimated using the modified Jones model. By isolating firms-year observations with income-increasing accruals, I attempt to observe the degree to which audit committee tenure potentially curtails aggressive reporting behavior. When the accruals to cash flows proxy *(ACC_OCF$_{it}$)* is employed as the

dependent variable, the negative coefficient on each of the audit committee tenure variable becomes significant (p-values <0.05). For these firms, audit committee tenure appears to reduce earnings management by limiting the extent to which net income is comprised of accruals. The second set of regressions uses signed abnormal accruals *(ABNML_ACC$_{it}$)* derived from the modified Jones model as the dependent variable. The associations between abnormal accruals and both average tenure *(ACT_Avg$_{it}$)* and sum of tenure *(ACT_Sum$_{it}$)* are positive and significant, indicating that abnormal accruals are more likely to be income-increasing when management is confronted with experienced audit committees. Together, these findings suggest that audit committee members with extended service are likely to curtail the extent to which accruals comprise net income given the negative association with accruals to cash flows. Nevertheless, these committees are more likely to condone the type of accruals since tenure appears to be positive and significantly associated with abnormal accrual activity.

Table 6 Audit Committee Tenure and Income-Increasing Abnormal Accruals

$$E0_{it} = \beta_o + \beta_1 ACT_{it} + \beta_2 FIN\_EXPRT_{it} + \beta_3 AC\_Indp_{it} + \beta_4 ACT\_SOX_{it} + \beta_5 SOX_{it} + \beta_6 AC\_Mtg_{it} + \beta_7 AC\_Owshp_{it} + \beta_8 AC\_Size_{it} + \beta_9 BOD\_Size_{it} + \beta_{10} BOD\_INDP_{it} + \beta_{11} \Delta NI_{it} + \beta_{12} Big\_Five_{it} + \beta_{13} Growth_{it} + \beta_{14} Lev_{it} + \beta_{15} Size_{it} + \beta_{16} EXEC\_OWHSP_{it} + \beta_{17} Neg\_OCF_{it} + \varepsilon_i \quad (6)$$

	ACC_OCF$_{it}$			***ABNML_ACC$_{it}$***		
ACT_Avg$_{it}$	-0.0604**			0.0872**		
ACT_Sum$_{it}$		-0.0092**			0.0112**	
ACT_Long$_{it}$			-0.0502**			0.0231
Control Variables						
FIN_EXPRT$_{it}$	0.0081	0.0245	0.0110	-0.0332	-0.0431	0.0442
AC_Indp$_{it}$	-0.0191	-0.0211	0.0001	-0.1861	-0.1637	-0.1883
ACT_SOX$_{it}$	0.06*	0.0012*	0.0531	-0.0924*	-0.0198*	-0.0342
SOX$_{it}$	-0.3502*	-0.3035*	-0.3294	0.0203	-0.0548	-0.1641
AC_Mtg$_{it}$	0.0076	0.0101	0.0080	0.0441**	0.0415**	0.0403**
AC_Owshp$_{it}$	-1.8983	-1.9931	-1.5956	-15.1091**	-14.9363**	-15.2001**
AC_Size$_{it}$	-0.0131	0.0369	-0.0130	-0.0448	-0.1002	-0.0546
BOD_Size$_{it}$	-0.0158	-0.0146	-0.0130	-0.0131	-0.0105	-0.0124
BOD_Indp$_{it}$	-0.2082	-0.1836	-0.1903	0.0839	0.0615	0.0401
ΔNI$_{it}$	-0.0015	-0.0010	-0.0013	-0.0003	-0.0003	-0.0015
Big_Five$_{it}$	-0.0171	-0.0130	0.0183	0.0949	0.0982	0.1440
Growth$_{it}$	-0.0440****	-0.0482****	-0.0447****	0.0401**	0.0429***	0.0471**
Lev$_{it}$	0.5901**	0.5880**	0.6202**	-0.5240*	-0.5015*	-0.5605*
Size$_{it}$	0.0271	0.0228	0.0204	-0.0816**	-0.0805**	-0.0820**
Exec_Owshp$_{it}$	0.7035	0.7212	0.6573	-0.7201	-0.7553	-0.7204
Neg_OCF$_{it}$	1.7548****	1.7403****	1.7312****	0.9904****	1.0128****	1.0203****
N	1091	1091	1091	1104	1104	1104
Adj. R^2	0.16	0.16	0.16	0.15	0.15	0.15

p-values * <0.10 ** <.05 *** <.001 **** <.0001

Two-tailed p-values are based on the White (1980) covariance heteroscedasticity corrected covariance matrix All variables are defined in Table 2

Abnormal Production Activity

A second real earnings management technique is the use of excessive production of inventory units towards the end of the fiscal year. Abnormal production could enable to increase earnings by creating unnecessary units over which more overhead costs could be allocated, unit costs minimized, and profit maximized. Following a similar procedure used in model (3), I measure the abnormal level of production costs *(AB_Prodn$_{it}$)* by estimating the following equation for the full sample of Compustat firms and apply the coefficients to obtain firm-specific, predicted production costs values:

$$Prod_{it} = \beta_0 + \beta_1 \frac{Sales_{it}}{Asset_{it-1}} + \beta_2 \frac{\Delta Sales_{it}}{Asset_{it-1}} + \beta_3 \frac{\Delta Sales_{it-1}}{Asset_{it-1}} + \varepsilon_{it} \quad (7)$$

where $Prod_{it}$ is defined as the sum of cost of goods sold and annual change in inventory.

Similar to the abnormally low discretionary expenses specification, I use the resulting parameter estimates to computer predicted production costs, which are subtracted from the firm's actual production costs to obtain abnormal production costs *(AB_Prodn$_{it}$)*. Ideally, management would only produce what it intends to sell so that total assets are not overly comprised of potentially illiquid inventory that incurs related holding costs. Therefore, production levels that exceed sales activity would be considered abnormal and potentially evidence of real earnings management practices that could obscure the company's actual financial performance. A positive association between abnormal production costs and audit committee tenure would suggest that, when faced with experienced audit committees, management will likely turn to abnormal production activity as a real earnings management tool.

Abnormal production costs *(AB_Prodn$_{it}$)*, fails to exhibit the expected positive, significant coefficient with any of the audit committee tenure proxies, and therefore does not support my second hypothesis. It is possible that the lack of results is due to the sample of firm-year observations contains a relatively small portion of manufacturing firms that routinely engage in production operations and could abnormally increase production levels to increase earnings by spread overhead costs across more inventory units and minimize cost-of-goods-sold expense.

Nevertheless, several governance and firm characteristics reveal statistically significant relationships with abnormal production costs. Firms characterized by relatively more audit committee ownership (p-value<.05), greater board independence (<.05) and significant growth prospects (<0.0001) are less likely to improve margins by artificially increasing production activity. However, abnormal production activity appears to be more common amongst firms that retain Big 5 audit firms (p-value<.10), are highly leveraged (<0.001), have substantial assets (<0.0001), have significant executive ownership (<0.05) and report negative operating cash flow (p- value<.001).

Table 7: Audit Committee Tenure and Abnormal Production Costs

$$AB\_Prodn_{it} = \beta_o + \beta_1 ACT_{it} + \beta_2 FIN\_EXPRT_{it} + \beta_3 AC\_Indp_{it} + \beta_4 ACT\_SOX_{it} + \beta_5 SOX_{it} + \beta_6 AC\_Mtg_{it} + \beta_7 AC\_Owshp_{it} + \beta_8 AC\_Size_{it} + \beta_9 BOD\_Size_{it} + \beta_{10} BOD\_INDP_{it} + \beta_{11} \Delta NI_{it} + \beta_{12} Big\_Five_{it} + \beta_{13} Growth_{it} + \beta_{14} Lev_{it} + \beta_{15} Size_{it} + \beta_{16} EXEC\_OWHSP_{it} + \beta_{17} Neg\_OCF_{it} + \varepsilon_i \quad (8)$$

	AB_Prodn$_{it}$		
ACT_Avg$_{it}$	0.0004		
ACT_Sum$_{it}$		0.0012	
ACT_Long$_{it}$			0.0023
Control Variables			
FIN_EXPRT$_{it}$	0.0103	0.0151	0.0128
AC_Indp$_{it}$	0.0221	0.0239	0.0207
ACT_SOXit	0.0027	-0.0001	-0.0004
SOX$_{it}$	-0.0130	-0.0043	-0.0123
AC_Mtg$_{it}$	-0.0127	0.0013	-0.0016
AC_Owshp$_{it}$	-0.7814*	-0.7703**	-0.7990**
AC_Size$_{it}$	0.0181	0.0023	0.0042
BOD_Size$_{it}$	-0.0192	-0.0021	-0.0023
BOD_Indp$_{it}$	-0.0521*	-0.0482*	-0.0404*
ΔNIit	-0.0001*	-0.0001	-0.0001
Big_Five$_{it}$	0.0625*	0.0502*	0.0512*
Growth$_{it}$	-0.0237****	-0.0161*****	-0.0131****
Lev$_{it}$	0.0931***	0.0936***	0.0971***
Size$_{it}$	0.0138****	0.0121****	0.0132****
Exec_Owshp$_{it}$	0.1451**	0.1460**	0.1491**
Neg_OCF$_{it}$	0.0771***	0.0712***	0.0703***
N	2358	2358	2358
Adj. R^2	0.13	0.13	0.13

p-values * <0.10 ** <.05 *** <.001 **** <.0001

Two-tailed p-values are based on the White (1980) covariance heteroscedasticity corrected covariance matrix All variables are defined in Table 2

5. Conclusion

The purpose of this study is to examine whether audit committee members' tenure affects the extent and type of earnings management practices adopted by companies to influence reported earnings. I first hypothesize that experienced audit committees will be able to effectively limit the extent to which management relies upon traditional, GAAP-based earnings practices since committee members should be able to develop the ability to detect opportunistic accounting assumptions and estimates that may hamper financial statement users' ability to assess a firm's financial performance (Fama 1980; Mazur and Hastie 1978; Bonner and Walker 1994; Johnson et al. 2002). I continue my analysis by examining whether management elects to use real earnings management, or operational decision making, to influence earnings when faced with an experienced audit committee. Academic research has recently documented a shift from traditional earnings management techniques towards real earnings management to avoid external auditor scrutiny following the implementation of SOX 2002.

I test these predictions by developing firm-specific audit committee tenure variables from a sample of 2,355 firms from the period 1998-2003. I regress various earnings management proxies on audit committee tenure and control variables for the full sample of firm-year observations. My analysis reveals a marginal, negative association between the GAAP-based earnings management proxies and audit committee tenure, providing evidence that extended audit committee tenure improves the committee's ability to identify and minimize management's use of opportunistic accounting choices (H1). I also find that management is reluctant to rely upon real earnings management techniques by deferring discretionary expenses to later period to increase current period earnings when facing experienced audit committees that likely possess a broader understanding of the company and are better positioned to identify management's use of operating decisions to manipulate reported earnings (H2).

This study contributes to ongoing research of the financial reporting implications of audit committee characteristics by documenting the potential impact of audit committee tenure on GAAP-based and real earnings management. Another unique attribute of this study is the use of a more precise method of measuring audit committee tenure based upon actual experience on an audit committee rather than on the board of directors.

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