

AUDITOR TENURE AND ACCOUNTING CONSERVATISM

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AUDITOR TENURE AND ACCOUNTING CONSERVATISM

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SUMMARY

Accounting regulators are concerned about the potential threat of long-term auditor-client relationships on auditor independence, leading to lower audit quality. The main objective of this study is to examine the association between auditor tenure and an important feature of accounting, namely conservatism. Following Basu (1997) and Ball, Kothari and Robin (2000), I define conservatism as the quicker recognition in earnings of bad news about expected future cash flows. I investigate whether long-term auditor-client relationships are associated with less timely recognition of earnings to bad news, and a lower rate of reversal of negative earnings changes.

The overall results strongly show that conservatism decreases as auditor tenure lengthens. The results are robust across various measures of conservatism and a series of sensitivity tests. However, auditors' litigation exposure appears to be able to mitigate the adverse impact of auditor tenure. In additional tests, I find that the reduced conservatism is not driven by the larger clients that auditors have incentives to retain. Moreover, I find that even industry specialists could not avoid the negative impact of longer auditor-client relationships on conservatism. The study provides some support to the regulators who are concerned about the potential negative impact of auditor tenure on audit quality and the rule of mandatory audit firm rotation.

CHAPTER 1

INTRODUCTION

High-profile corporate failures that occurred at the beginning of this century have raised concern about the reliability of companies' financial statements. While the primary responsibility for preparing accurate financial statements rests with company management and boards, questions also have been raised about the quality and independence of external auditors. Regulators and standard setters have attempted to enhance audit quality through rules impacting on auditor independence. For example, the Sarbanes-Oxley Act of 2002 (hereafter "SOX") directly restricts the provision of non-audit services performed by the external auditor of a client. Auditor tenure also has been the subject of regulatory intervention (AICPA 1992, SOX 2002), with a stated concern that long-term relationships between companies and their auditors create a level of over-familiarity that impairs auditor independence and reduces audit quality. The concern is not new. Over 40 years ago, Mautz and Sharaf (1961, page 208) stated that: "the great threat to his independence is a slow, gradual, almost casual erosion of this honest disinterestedness – the auditor in charge must constantly remind his assistants of the importance and operational meaning of independence..."

Mandatory rotation of audit firms for a particular audit client is suggested as a means of improving audit quality through maintained independence and new "fresh eyes" on audits. However, the accounting profession has strongly resisted mandatory audit firm rotation, with potentially high costs of transition being provided as the prominent reason (e.g., Sinnett 2004, International Code Council – ICC 2005). Furthermore, empirical

studies do not consistently document a negative impact of auditor tenure on audit quality. For example, Myers et al. (2003) provide evidence that audit firm tenure is positively associated with earnings quality measured by both signed and absolute values of discretionary accruals. Carcello and Nagy (2004) find that fraudulent reporting is more likely to occur in the early years of auditor-client relationships.

The primary objective of this study is to further examine regulators' concern about the impact of auditor tenure. In particular, the study extends prior research to investigate the association of long auditor tenure with an important feature of financial reporting, namely accounting conservatism. The conservatism principle has influenced accounting practice and theory for centuries (Basu 1997). Following Basu (1997) and Watts (2003a, 2003b), conservatism is defined as the application of a higher standard of verification for favorable information, whereby accounting income reflects "bad news" on a more timely basis than "good news". Ball and Shivakumar (2005) refer to this news-dependent conservatism as conditional conservatism, and argue that only conditional conservatism can increase debt and contracting efficiency.¹ The timely recognition of bad news in earnings is argued to be consistent with higher quality accounting relative to overly aggressive accounting (Watts and Zimmerman 1986, Watts 2003a, 2003b, Basu 1997, Francis et al. 2005, Ball and Shivakumar 2005, 2006). However, if a longer auditor-client relationship adversely affects auditor independence, leading to auditors'

¹ In contrast, unconditional conservatism involves predetermined understatement of the book value of net assets, which is independent of economic information. Unconditional conservatism can not be contracting efficient (Basu 1997, Ball and Shivakumar 2005, Ruddock et al. 2006). A more detailed discussion on the concept of conservatism is provided in Chapter 3.

acquiescence to managers' aggressive practices, the extent of conservatism would be reduced as auditor tenure is extended.

It is argued that the slow erosion of auditor independence would be minimized under a mandatory rotation regime where the length of time an auditor can serve a particular client is limited to a fixed number of years (Geiger et al. 1998). Accounting standard setters and regulators expressed this concern in the passage of SOX (i.e., requiring the study of mandatory rotation of registered public accounting firms not later than one year after the date of enactment of SOX). Therefore, the effect of auditor tenure on accounting conservatism should be of interest to both the accounting profession and to accounting regulators.

I operationalize conditional conservatism in a number of ways. Two tests of conditional conservatism based on Basu (1997) are widely applied in empirical accounting research. First, I use a piece-wise linear regression of earnings on contemporaneous stock returns to examine whether long auditor tenure is associated with slower recognition in earnings of bad news. Second, I examine whether auditor tenure is negatively related to the rate of the reversal of negative earnings changes, where a lower rate of reversal indicates reduced conservatism. Finally, to overcome the potential limitations associated with the interpretations and assumptions underlying the approaches of Basu (1997), I also test conditional conservatism using the model suggested in Ball and Shivakumar (2005, 2006), that is, accrual-based conditional conservatism.

Jenkins and Velury (2006) examine the association between auditor tenure and conservative earnings and find that conservatism increases as auditor tenure lengthens. However, their research design is subject to several important limitations. First, potential

omitted variables that relate to conservatism might overestimate the significance of auditor tenure. For example, firm size could drive the observed positive association between auditor tenure and conservatism. Second, they do not control for the possibility that auditor tenure choice is an endogenous variable in tests of conservatism. Accordingly, the simultaneity bias could negatively affect the results. Third, prior studies suggest that accounting conservatism varies over time (e.g., as auditors' exposure to litigation risk changes) (Basu 1997, Basu et al. 2001a). Hence, the pooled estimates over time may fail to accurately capture the effect of auditor tenure on conservatism in individual subperiods. Fourth, Jenkins and Velury (2006) measure auditor tenure as of 1980 while the analysis is from 1983 to 2004. Thus, in the earlier years of the sample period, many observations with longer auditor tenure are incorrectly measured as with short auditor tenure, which could significantly impact their results. My study more deeply investigates the relation between auditor tenure and conditional accounting conservatism.

The overall results strongly show that conditional conservatism decreases as auditor tenure increases, which suggests that long-term auditor-client relationships cause auditors to compromise independence and require less conservative reporting by clients. In additional analysis, I find that the adverse impact of auditor tenure on conservatism is mitigated during high auditor litigation exposure. Further, I find that the adverse impact of auditor tenure on audit quality is not driven by clients with great economic influence. Rather, the reduced conservatism is less evident in clients with the greatest influence, which suggests that the concern of the greater litigation risk and reputation loss associated with large clients changes auditors' behavior. Finally, I do not find evidence

of industry specialist auditors being able to play an active role in maintaining auditor independence as auditor-client relationships lengthen. In other words, reduced conservatism with longer auditor tenure is prevalent in all accounting firms regardless of their industry expertise.

The study contributes to the existing research in several ways. First, it examines an important feature of the auditor-client relationship, in particular, the duration of this relationship, and its impact on accounting conservatism. The issue is timely and important given the concern regarding the effect of longer audit tenure on audit quality. Given that accounting conservatism is a universal demand for auditors and stakeholders (Ball et al. 2000, Basu et al. 2001b) and an important feature in high-quality financial reporting, examining the association between accounting conservatism and auditor tenure provides important insights. The results from this study provide further evidence on the issue of mandatory auditor rotation, which is of interest to regulators and standard setters. The detrimental effect of longer auditor tenure on auditor independence observed in this study would reinforce the position of regulators who wish to promulgate and implement rules for mandatory audit firm rotation.

Recent research on accounting conservatism suggests that not only does conservatism in accounting exist, but that the practice of accounting has become more conservative in the last 40 years (Basu 1997, Givoly and Hayn 2000, Holthausen and Watts 2001, Ryan and Zarowin 2003). Prior research investigates and finds that the extent of conditional conservatism as measured by asymmetric timeliness varies across firms' characteristics and economic contexts (Basu et al. 2001b, Ball et al. 2000, 2003, Chandra et al. 2004, Beekes et al. 2004, Ball and Shivakumar 2005, Bushman and

Piotroski 2006). The study extends this line of research by suggesting that auditor tenure could be one potential factor that drives the observed differences in conservatism for public companies. Specifically, longer auditor tenure could lead to lower level of conservative reporting.

With respect to research design, this study uses simultaneous equations to avoid possible endogeneity problems arising from self selection (i.e., decision to retain the incumbent auditors). Endogeneity problems, which are often ignored in prior studies, could mistakenly affect the interpretation of the results. In addition, the consistent results based on the two measures of conditional conservatism from Basu (1997) and one alternative measure from Ball and Shivakumar (2005) make the conclusions more robust and convincing.

The remainder of the paper is organized as follows. Chapter 2 introduces the background of mandatory auditor rotation. Chapter 3 provides a conceptual framework of auditor tenure and audit quality. Chapter 4 discusses accounting conservatism and develops the hypotheses for this study. I present the research design in Chapter 5, including operationalized hypotheses, model specifications, and sample selection procedures. Chapter 6 presents the results. Discussions of the results and conclusions are provided in Chapters 7 and 8, respectively.

CHAPTER 2

BACKGROUND

2.1 The Debate on Mandatory Auditor Rotation in the U.S.

Regulators and the business press are interested in whether long-term relationships between companies and their auditors create a level of closeness that impairs auditor independence and reduces audit quality (AICPA 1978, 1992, Turner and Godwin 1999). The major financial reporting failures in 2001-2002 led to a series of new financial reporting regulations in SOX. Among the most important rules in SOX are those that relate to auditor independence and audit quality. They include restrictions on non-audit services to audit clients, increased audit committee responsibilities, the establishment of the Public Company Accounting Oversight Board (PCAOB), and mandatory rotation of lead and reviewing audit partners after five consecutive years on an engagement.

In a 1992 position statement, the American Institute of Certified Public Accountant (AICPA) argued that mandatory auditor rotation would be costly and counterproductive as well as ineffective in improving audit quality. While SOX does not impose mandatory rotation on audit firms, section 207 required the U.S. Government Accountability Office (hereafter “GAO”) to study the potential effects of mandatory rotation of registered public accounting firms. The GAO’s study included surveys and interviews of various stakeholders. The study found that all the large public accounting firms, most of the chief financial officers in Fortune 1000 companies, and the companies’ audit committee chairs believed that the costs of mandatory audit firm rotation likely exceeds the benefits. The GAO concludes that “mandatory audit firm rotation may not be the most efficient

way to enhance auditor independence and audit quality, considering the additional financial costs and the loss of institutional knowledge of a public company's previous auditor of record" (GAO 2003).

About 79 percent of public accounting firms and public companies contend that the risk of audit failure might increase due to the lack of client-specific knowledge during the initial years of engagements. Nearly all large public accounting firms estimated that initial year audit costs under mandatory audit firm rotation would increase by more than 20 percent over subsequent-year costs to acquire the necessary understanding of the new client and its business (Sinnott 2004). Such costs include learning the client's business environment and other indirect costs that result from reduced competence (Hamilton et al. 2005). Aside from the increased costs, the profession asserts that there is no evidence that long-term auditor tenure impairs audit quality, and often claims that there is a positive relation between auditor tenure and audit quality (Elliott et al. 2000, Copeland 2002, PricewaterhouseCoopers 2002).

A more compelling argument against mandatory auditor rotation would be a lack of auditor choice. Since Big 4 audit firms perform the audits for a large proportion of publicly held corporations, the choice of any subsequent auditor on a rotation is limited. Anecdotal evidence suggests that the Big 4 will gain greater market share if auditor rotation is mandatory, which will lead to a less competitive environment without addressing the related policy issues (Sinnott 2004).

2.2 Policy of Mandatory Auditor Rotation in Other Countries

The debate on the effect of long-term, auditor-client relationships on audit quality is not limited to the U.S. It is also the concern of many other countries that experience events involving publicly listed firms' fraud and bankruptcy. Italy is the first country since 1974 to adopt a periodic rotation of auditing firms. The audit engagement may be re-tendered every three years and the same public accounting firm may serve as auditor for a maximum of nine years. There is also a minimum time lag of three years before the previous auditor can be reappointed.² In Brazil, the rule of mandatory auditor rotation after five years was adopted in 1996 for banks and extended to listed companies in 1999. Since 1991, the regulatory authority in Korea has designated external auditors for a group of firms that are deemed to have strong incentives or great potential for accounting manipulation. In 2003, Korea required mandatory auditor rotation for all companies listed on Korean Stock Exchange (KSE) or registered in Korea Securities Dealers Automated Quotations (KOSDAQ).³ Singapore and India also require mandatory auditor rotation, but only for some companies. For example, from March 2002, banks in Singapore should terminate the current public accounting firms if they have audited the bank for the previous five consecutive years (the rule does not apply to foreign banks operating in the country).

Some countries established mandatory auditor rotation, but subsequently dropped it. For example, in 1989 the Spanish parliament passed an act requiring mandatory audit firm rotation with a maximum term of nine years, which included mandatory retention of

² The new 2005 bill in Italy has proposed an extension of the maximum term to 12 years.

³ There are some exceptions for foreign investment companies which are subsidiaries of foreign parent companies and companies listed on foreign exchanges (NASDAQ, NYSE, and London Stock Exchange only).

three years. However, the rule was dropped in 1995. The rule reversal was superficially due to the pressure from the accounting profession. That reversal occurred before the rule would have had an effect (i.e., before companies would have to rotate auditors). Further, the rule reversal may have been more attributable to political convenience – a bargaining chip exchanged for political support in the political market for legislative proposals (Gibbons 1999).⁴ Austria, under the Commercial Law of 2004, required mandatory audit firm rotation every six years with a minimum time lag of three years before the previous auditor can be reappointed. However, the implementation needed approval at the European Union level, and in 2005, the requirement was dropped by the company law. Until 1991, Canada required banks to rotate their auditors. In 1991, banking legislation was amended and the mandatory audit firm rotation requirement was abandoned.

In other countries (U.K., Sweden, U.S.), mandatory auditor rotation has been analyzed and discussed, but rejected. Hence, although regulators around the world are concerned about declining audit quality with long-term auditor tenure, mandatory rotation has been introduced in only a very small number of countries.

⁴ At the time the Spanish Audit law was enacted requiring mandatory auditor rotation, the Socialist party had obtained a parliamentary majority. However, following the 1993 general election, the Socialist party no longer had a parliamentary majority. To seek support for approval of a new regulation from the dominant political group (Convergència i Unió), the Socialist group agreed to remove the requirement of mandatory audit firm rotation.

CHAPTER 3

AUDIT QUALITY AND AUDITOR TENURE

3.1 The Concept of Audit Quality

The association between a long auditor-client relationship and audit quality is not simple because economic, financial, and social factors could drive the final result. Audit services are demanded as monitoring devices because of the potential conflicts of interest between company owners and managers as well as those among different classes of security holders (Watts 1977, Watts and Zimmerman 1981). Most empirical research defines audit quality relative to audit risk, which is the risk that an auditor will fail to modify the opinion on audited financial statements that are materially misstated.

DeAngelo (1981b) defines audit quality as the market-assessed joint probability that an auditor will discover a breach in a client's accounting system, and conditional on discovery, report the breach. Most other definitions of audit quality, although diverse, reflect the same structure. For example, Wallace (1980) argues that audit quality is a measure of the auditors' ability to reduce noise and improve fineness in accounting data. Lee et al. (1999) define audit quality as the probability that an auditor will not issue an unqualified report for statements containing material errors. Titman and Trueman (1986) and Beatty (1989) define audit quality as the accuracy of the information reported by auditors. *A Statement of Basic Auditing Concepts* (American Accounting Association 1973, SAR #6) refers to the ability of the auditor to exert control over the quality of information produced through assuring conformance with Generally Accepted Accounting Principles (GAAP). DeAngelo's definition captures attributes critical to the

role played by auditors in financial statement preparation. Thus, audit quality combines the ability of an auditor to detect a breach (auditor competence) and the willingness to report such a breach (auditor independence).

An important consideration in DeAngelo's definition is the market-assessed probabilities, that is, it hinges on the market's perception as to whether a given auditor will perform the audit competently and the perceived degree of auditor independence. Watkins et al. (2004) refer to the concept of market perception of audit quality as auditor reputation, which directly relates to what SAR #6 describes as the ability of the audit to enhance the credibility of financial information. On the other hand, the actual audit quality improves the reliability of financial information by reducing the noise contained in financial statements. Although the perceived auditor independence and competence may be positively correlated with actual auditor independence and competence, they are not necessarily the same. To maintain this distinction, consistent with the study of Watkins et al. (2004), I use the term "auditor reputation" and "auditor monitoring strength" to capture perceived and actual attributes of audit quality, respectively.

Figure 1 presents a schematic that shows the relation between the components of audit quality and their influence on financial statement information. Auditor monitoring strength represents the auditors' ability to provide objective reports on the true but externally unobservable circumstances of the client. Two components, actual auditor competence and auditor independence in fact (i.e., auditor objectivity) determine the effectiveness of an auditor's monitoring strength. Auditor reputation refers to users' beliefs about auditor monitoring strength, which they can not directly observe, including perceived auditor competence and independence in appearance. Auditor reputation

affects information credibility or the perceived reliability of the financial statements, which are the joint product of the auditor and management.

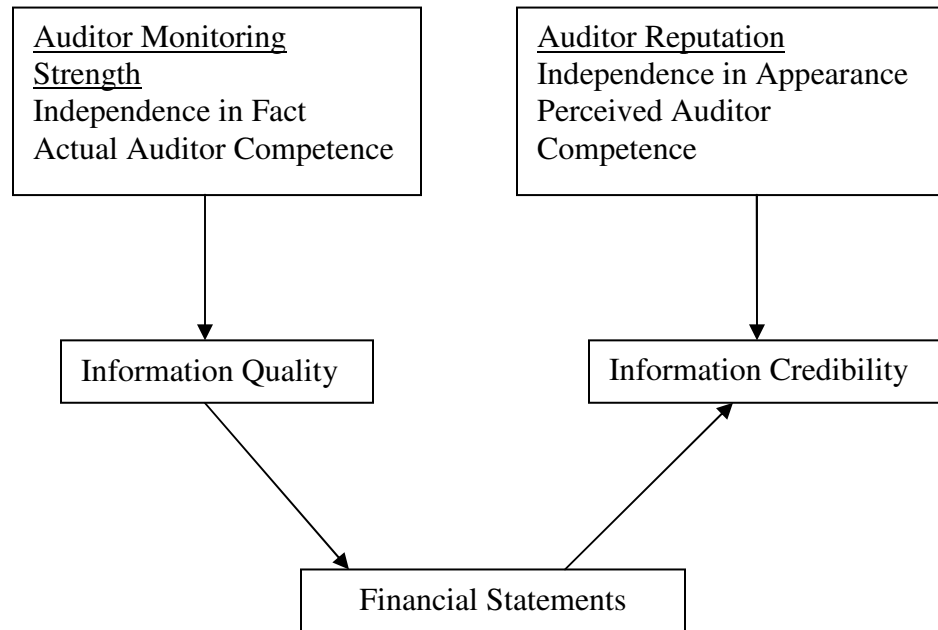


Figure 1: The Concept of Audit Quality

3.2 Auditor Tenure and Auditor Monitoring Strength

Auditor independence in fact plays a crucial role in determining the reliability of the auditor's report. The first implication of this feature is that auditor independence in fact can improve the credibility of published financial reports and add value to stakeholders. The second implication directly relates to the auditing profession, that is, the agency conflict between management and a company's stakeholders drives the demand for independent audits, which provides a monitoring device designed to improve information transparency and reduce information asymmetry.

Information quality, determined by auditor monitoring strength, is a crucial input in financial statement quality. Auditors interact with management daily during the audit, and this relationship obtains regardless of the length of auditor tenure. Opponents of mandatory auditor rotation argue that auditors' expertise with clients will increase as auditor tenure lengthens. Auditors must possess the ability to gauge when management has incentives to withhold available information, and this ability to a large extent arises from auditors learning about the client and its management through long-term cooperation. Mandatory auditor rotation will adversely affect auditors' accumulation of specific knowledge about their clients. In addition, a game-theoretical model by Yu et al. (2004) shows that mandatory auditor rotation can have adverse effects on auditor independence because it undermines the incentives to build up a reputation for auditors' honesty, especially in the last period before rotation. Meanwhile, a newly appointed auditor might fail because of a lack of a thorough understanding of the client. Incumbent auditors can profit from their learning curve effect in the detection of material errors or breach (DeAngelo 1981a).

Because actual audit quality is hard to observe by outsiders, prior research adopts various observable measures as proxies for actual audit quality. These proxies include discretionary accruals, the cost of debt financing, missed going-concern reports (e.g., failure to issue going concern reports before bankruptcy filings), financial restatements, auditor litigation and fraud. These studies generally find little evidence in support of mandatory auditor rotation: that is, the findings suggest that financial reporting quality and audit quality are increasing rather than decreasing in the length of auditor-client relationship.

The earlier studies of the effects of auditor tenure focus on audit failures. These studies provide evidence that alleged audit failures are more likely in the earlier years of an auditor-client relationship. For example, Stice (1991) reports that approximately 30 percent of companies in his litigation sample had auditor tenure of three years or less. Beasley et al. (2000) find that initial audits were 38 percent of their sample of SEC enforcement actions against auditors. Geiger and Raghunandan (2002) test for the association between the type of audit opinion issued on the financial statements immediately prior to bankruptcy and the length of auditor tenure. Their results suggest that auditors are less likely to modify opinions on financial statements immediately preceding bankruptcy during the initial years of engagement with a client. Carcello and Nagy (2004) examine the relation between audit firm tenure and fraudulent financial reporting and find that fraudulent reporting is more likely to occur in the early years of auditor-client relationships. Stanley and DeZoort (2007) find a negative relation between the length of the auditor-client relationship and the likelihood of restatement. They find that audit failures were more likely to occur in the initial years of an audit engagement instead of later years.

Myers et al. (2003) examine the relation between auditor tenure and earnings quality using both the signed and absolute value of discretionary accruals as proxies for earnings quality. Their results suggest that higher earnings quality is associated with longer auditor tenure, which they interpret as evidence that longer auditor tenure enables auditors to constrain management's opportunistic behavior. Although Myers et al. (2005) find that misstatements increasing core earnings are more likely in quarterly financial statements as tenure lengthens, auditor tenure is not associated with a significant increase

in the propensity for restatements of annual financial statements, which implies that as tenure increases auditors are more likely to detect errors contained in quarterly reports and correct them in annual reports. All of these empirical studies imply that mandatory limits on the duration of the auditor-client relationship will likely impose unintended costs on capital markets (Mansi et al. 2004).

On the other hand, regulators and the press allege that a long auditor-client relationship can decrease auditor monitoring strength (i.e., actual auditor competence and auditor independence). In particular, a long term auditor-client relationship creates a level of closeness that impairs auditor independence and reduces audit quality. The nature of auditing requires that auditors interact intensively with their clients. Long-term relationships may result in ‘overfamiliarity’ between management and the auditor and increase the likelihood of yielding to the inevitable client pressure in an audit conflict and even the auditor/client collusions. The experience of Enron and Andersen illustrate this point well. Andersen auditors and their consultants were given permanent office space at Enron headquarters. They frequently met in office parties and attended various entertainment activities. Under this situation, it is difficult for auditors to keep a high level of professional skepticism with regard to their clients (i.e., impaired independence in fact).⁵ In addition, management can take advantage of the auditor’s conflict by making a personal appeal for understanding and support. Thus, auditors’ reduced independence might arise either consciously or subconsciously. Proponents of mandatory auditor rotation claim that auditor rotation can create a fresh new ‘eye’ on management and then

⁵ Compustat shows that Enron Corporation had retained Andersen as its auditor at least from 1974 to 2001 (1974 is the first year that Compustat has available data about auditors).

reestablish a clean atmosphere between auditors and their clients to maintain auditors' objectivity.

Furthermore, as auditor tenure lengthens, auditors may become stale and view the audit as a simple repetition of earlier engagements (i.e., reduced actual competence). According to Shockley (1982), a long auditor-client relationship can have the following effects: 'complacency, lack of innovation, less rigorous audit procedures and a learned confidence in the client may arise after long association with the client'. Arel et al. (2005) point out that auditors returning to an engagement rely on prior-year workpapers to help plan the audit, set the budget, and provide information needed for the current-year audit. The staleness fosters a tendency for auditors to over-rely on previous work and anticipate results rather than keeping alert to subtle but important changes in circumstances, especially when the current-year auditor is reviewing his or her own workpapers from the prior year.

DeAngelo (1981b) assumed that incumbent auditors have some economic incentives not to disclose material errors or breaches, the reason being to retain clients. This incentive arises from the incumbent auditor wanting to protect his or her investment in client-specific expertise that is gradually built up during long term cooperation. Thus, the auditor's incentive to preserve independence declines over time. Vanstraelen (2000) examines Belgian companies and finds that for both financially distressed and non-distressed companies, long-term auditor-client relationships significantly increase the likelihood of an unqualified opinion or significantly reduce the auditor's willingness to qualify audit reports. However, the different business environment in Belgium could make findings not applicable to public firms in the U.S. Dopuch et al. (2001)

experimentally assess whether mandatory rotation increases independence by examining auditors' willingness to issue a report biased in favor of management. The results are consistent with the prediction that mandatory auditor rotation can improve an auditor's independence.

Although most studies, as mentioned earlier, provide results that reject mandatory auditor rotation, a few empirical studies report results consistent with a negative relation between audit quality and auditor tenure. For example, Deis and Giroux (1992) find that longer tenure is associated with reduced audit quality in a setting of public school districts audited by small audit firms. In contrast to the findings of Carcello and Nagy (2004) that focus on the relation between auditor tenure and SEC enforcement actions against auditors in 1990-2001, Casterella et al. (2002) consider the effect of auditor tenure during 1980-1991 with respect to fraud, litigation against auditors, and auditor reporting prior to bankruptcy and find that audit quality is lower as auditor tenure increases.

Davis et al. (2005) find that firms with both short (three years or less) and long (15 years or more) tenure are more likely to have smaller absolute forecast errors, and more likely to meet or beat earnings forecasts using discretionary accruals.⁶ The results suggest a trade-off between audit quality and auditor tenure; that is, while audit quality may deteriorate as auditor tenure lengthens, audit quality also suffers in new engagements.

⁶ One could argue that the findings are against mandatory auditor rotation since the impact of a long term auditor-client relationship is non-monotonic.

One recent study, Carey and Simnett (2006), uses unique data from Australia, where the audit partner can be identified, to examine the association between audit quality and long audit partner tenure. They find that longer audit partner tenure is associated with a lower propensity to issue a going-concern opinion and a higher propensity for clients to just beat earnings benchmarks, although there is no evidence of an association of long audit partner tenure with abnormal working capital accruals. In addition, Nagy (2005) examines the effect of mandatory auditor change on audit quality in the unique environment created by the failure of Arthur Andersen (AA). He finds a lower audit quality in short auditor tenure periods for small firms, with this negative relation effectively mitigated over the period of AA's demise.⁷ Although the demise of AA does not truly replicate a mandatory rotation regime, it does provide a rich setting to examine one aspect of such a regime – the effect that a forced auditor change has on the level of audit quality (Nagy 2005).

Taken together, a few findings from the research above are consistent with the argument that long auditor relationships are detrimental to audit quality. Daniels and Booker (2005) suggest that regulators should continue to consider requiring rotation of audit firms in publicly traded companies. It is recognized, however, that an inherent difficulty in studies on the effect of mandatory auditor rotation is that the auditor-client relationship can only be observed under the current system: that is, we are unable to assess the relative merits of a system that mandates auditor rotation (not available now in

⁷ Nagy (2005) finds no improved audit quality following the forced auditor change from AA for larger companies. He argues that the results could reflect higher bargaining power of larger companies toward their auditors.

the U.S.) compared to one that does not require rotation (Church and Zhang 2007).

Chung (2004) and Kim and Yi (2006) examined the impact of limited auditor tenure on earnings and audit quality using a sample of firms in Korea, which established mandatory auditor rotation in 1990. The results show that discretionary accruals of firms that fulfill the rotation requirement decrease after the passage to a mandatory rotation regime, which suggests that auditor rotation enhances audit quality.

3.3 Auditor Tenure and Auditor Reputation

As shown in Figure 1, auditor reputation consists of auditor independence in appearance and perceived auditor competence, both of which reflect the belief of users of financial reports on the credibility of information. Experimental research provides some evidence that a long relationship with clients is perceived to impair auditor independence. For example, Knapp (1991) finds that audit committee members perceive that audit quality is positively correlated with the length of auditor tenure in the early years of an auditor-client relationship and negatively correlated in subsequent years. He argues that audit committee members more likely perceive that a learning curve effect in the early years results in a gradual improvement in audit quality and after a number of years, there is some kind of a turning point in the auditor-client relationship which can be detrimental to the auditor's independence. Hussey and Lan (2001) analyzed the opinions of financial directors in the U.K. about the factors that influence the independence of external auditors. The regression of audit firm rotation on variables such as the perception of audit quality, the costs of the audit, and the assessment of the nature of the relationship with external auditors suggests that the perception of audit independence would be

enhanced by mandating auditor rotation. O’Leary (1996) conducted a survey on the perception of auditor independence and the consequences that mandatory auditor rotation may have among the most important listed companies in Australia. The survey shows that 63% of public firms consider the introduction of such a proposal as a useful means of improving the perception of auditor independence. Thus, consistent with the concern of regulators, a longer auditor-client relationship is associated with lower perceived auditor independence.⁸

An empirical study by Ghosh and Moon (2005) examines whether the stock market perceives auditor tenure positively. In particular, the authors use earnings response coefficients (ERC) as a proxy for investor perceptions of earnings quality. They document a positive association between ERC and auditor tenure. In addition, they find that the influence of past earnings on one-year-ahead analyst earnings forecasts becomes greater as auditor tenure increases. The positive perception of long auditor tenure could arise in the following situations. First, investors perceive that auditors will become more competent in terms of client-specific knowledge when they involve a long-term working relationship with clients. Second, the perceived auditor independence increases as tenure lengthens. Thus, this study suggests that the stock market rewards companies with long-term auditors and that mandatory auditor rotation will harm the perceived high audit quality associated with longer auditor tenure.

In sum, whether a long auditor-client relationship reduces auditor monitoring strength and auditor reputation is empirically ambiguous. The observed discrepancy in

⁸ Some analytical studies acknowledge this point of view, but they consider the introduction of mandatory rotation rule as an excessive tool with uncertain benefit (e.g., Gietzmann and Sen 2002, Yu et al. 2004).

findings across studies, however, could arise from research design differences, including different sample selection, omitted variables, and/or model specification error, which will be discussed in more detail in the next section. Thus, the actual relationship between auditor tenure and audit quality could be positive, negative, or even neutral. The neutral effect appears because it is possible that positive and negative effects are offset or because litigation risk and reputation protection dominate auditors and drive them to maintain objectivity during audits. Inconsistent findings between perceived lower auditor independence in experimental and survey research and positive stock market reaction documented in empirical studies (with long-term auditor tenure) may indicate that individual judgment differs from actual decision making in investment settings. The laboratory perceptions of auditor independence with long auditor tenure may have little impact on the decision making of financial statement users.

Regulators' concern regarding the impact of auditor tenure is certainly justifiable; however, regulators do not always act in the "public interest". The seminal book *'The Calculus of Consent'*, written by Buchanan and Tullock (1962), notes that self-interest drives the collective decision-making process, regardless of whether the motives of each individual are altruistic or not. Thus, regulatory decisions may not reflect what the facts are, and they are often "symbolic" rather than "real" implementation. The mandatory auditor rotation rule in Spain provides a good example here. Many studies highlighted the Spanish case as an illustration of the failure of mandatory auditor rotation; however, mandatory audit firm rotation was never given the chance to work (i.e., it was repealed before having an effect). The removal of the regulatory provision was not because of its failed practical impact, but rather it was politically convenient for a government seeking

to secure support for other reforms.⁹ In addition, Spanish initial approval of mandatory auditor rotation in 1988 could reflect regulators' self-interest, e.g., extending regulation power (Stigler 1971).¹⁰ Moreover, regulators appear to ignore the information role played by the stock market. If the findings of empirical studies that auditor tenure increases audit quality are justifiable, then the results of Ghosh and Moon (2005) that the market rewards auditor tenure positively imply that the stock market is efficient and can serve as an effective tool in communications among auditors, management, and users of accounting reports.

⁹ In fact, the Spanish government considered the proposals for the re-introduction of mandatory auditor rotation of auditors from March 2002 that require auditor firm rotation every 12 years for listed companies. The eventual outcome was mandatory rotation of the audit partner and the audit team every seven years.

¹⁰ In 1971, George Stigler published his seminal article, "The Theory of Economic Regulation". He presented and gave evidence for his "capture theory." Stigler argued that governments do not end up creating monopoly in industries by accident. Rather, he wrote, they regulate at the behest of producers who "capture" the regulatory agency and use regulation to prevent competition. Stigler concludes that regulation is designed and operated primarily for regulators' benefit.

CHAPTER 4

AUDITOR TENURE AND ACCOUNTING CONSERVATISM

4.1 Concept of Accounting Conservatism

Conservatism has been an important attribute in accounting practice, which is traditionally expressed as “anticipate no profit, but anticipate all losses” (Bliss 1924, pg.110). Anticipating profits means recording profits before there is legal claim to their associated future cash flows and before the revenues are verifiable (Watts 2003a).

Financial Accounting Standards Boards (FASB) Statement of Concepts No.2 justifies this behavior by defining conservatism as “a prudent reaction to uncertainty to try to ensure that uncertainties and risks inherent in business situations are adequately considered” (FASB 1980, pg.36). Many interpret this as traditional guidance for choosing between different methods of accounting for similar transactions. Kieso, Weygandt and Warfield (2001, pg. #50) state “conservatism means when in doubt choose the solution that will be least likely to overstate assets and income.”

In the recent academic literature, Basu (1997) interprets conservatism as representing the accountant’s tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses. In other words, conservatism can be defined as accountants’ asymmetric recognition of unrealized gains and losses in reported earnings. Building on this interpretation, Basu (1997) posits that accountants recognize bad news in earnings more quickly than good news. Thus, if we assume that current equity returns efficiently incorporate good and bad news about firms’ expected future cash flows, we expect that the slope coefficient and R^2 in a regression of earnings on

unexpected returns is higher for firms with negative unexpected returns (proxy for “bad news”) than for those with positive unexpected returns (proxy for “good news”). The empirical results from Basu (1997) are consistent with this prediction. Basu’s measures have been used in numerous studies to assess the extent of accounting conservatism (Givoly and Hayn 2000, Ball et al. 2000, 2003, Chaney and Philipich 2003, Krishnan 2003a, Francis et al. 2004, etc.)

Given the importance of the accounting conservatism principle in accounting practice, it is crucial to understand the difference and the inherent association between the traditional concept of accounting conservatism and the asymmetry of recognition presented by Basu (1997). Because the literature is very recent, the terminology is inconsistent across studies. The traditional conservatism is called *ex ante* conservatism (Giner and Rees 2001, Pope and Walker 2002, Richardson and Tinaikar 2004), *news-independent* conservatism (Chandra et al. 2004) or *unconditional* conservatism (Ryan and Zarowin 2003, Ball and Shivakumar 2005, 2006, Beaver and Ryan 2005). Basu’s concept of conservatism is called *ex post* conservatism (Richardson and Tinaikar 2004), *news-dependent* conservatism (Chandra et al. 2004), or *conditional* conservatism (Beaver and Ryan 2005, Ball and Shivakumar 2005, 2006). I will use the terminology of unconditional and conditional conservatism throughout this study.

Unconditional conservatism stems from the application of generally accepted accounting principles (GAAP) or policies that reduce earnings independent of current economic news, meaning that aspects of the accounting process determined at the time of acquisition of assets and liabilities yield expected undervalued assets. Examples of unconditional conservatism include immediate expensing of the costs of most internally

developed intangibles, accelerated depreciation of property, plant, and equipment, and historical cost accounting for positive net present value projects. As noted in Basu (1997), since unconditional conservatism is independent of current-period news, it will lower the intercept in a regression of earnings on returns but not affect the slope coefficient. That is, the implementation of unconditional conservatism will not have an impact on the relation between earnings and returns in the current period.

Conditional conservatism, on the other hand, implies an asymmetric recognition of bad news relative to good news: that is, book values are written down under sufficiently adverse circumstances but not written up under favorable circumstances. Examples of conditional conservatism include the lower of cost or market accounting rule for inventory, impairment accounting for long-lived tangible and intangible assets, and the asymmetric recognition of contingent losses and contingent gains. Thus, if the market is efficient such that good and bad news are impounded quickly and completely in equity prices, the application of conditional conservatism will lead to the slope coefficient in the regression of earnings on current returns being higher for firms with negative unexpected returns (proxy for bad news) than for those with positive unexpected returns (proxy for good news).

Confusion between the unconditional and conditional versions of conservatism helps explain why conservatism is a controversial property of accounting, despite its long-standing influence on practice (Ball and Shivakumar 2005).¹¹ Evidence of ambivalence can also be seen in APB Statement No.4, which appears to approve conservatism in its

¹¹ Basu (1997) cites evidence of conservatism in accounting as early as the beginning of the fifteenth century.

unconditional version (American Institute of Certified Public Accountants (AICPA) 1970, para.171). “Frequently, assets and liabilities are measured in a context of significant uncertainties. Historically, managers, investors, and accountants have generally preferred that possible errors in measurement be in the direction of understatement rather than overstatement of net income and net assets...”

Later on, however, the FASB seems to disapprove the concept above, since it cites the unconditional version disapprovingly. “The convention of conservatism, which was once commonly expressed as ‘anticipate no profits but anticipate all losses’, developed during a time when balance sheets were considered the prime (and often only) financial statement, and details of profits or other operating results were rarely provided...” (FASB 1980, para. 93)

It is recognized that under both definitions of conservatism, *ceteris paribus*, higher expense and lower income lead to lower reported equity because of the connection between the balance sheet and income statement.^{12,13} Empirical research thus far has provided valuable insights into the nature and implications of both types of conservatism. The literature on unconditional conservatism puts greater emphasis on the difficulty of valuing certain types of economic assets and liabilities and determining their effects on

¹² However, it is useful to realize that balance sheet conservatism and income statement conservatism do not always proceed hand in hand (Basu 2001). For example, under the pooling-of-interest method for mergers, the acquired firm’s assets and liabilities are recorded on the acquirer’s balance sheet at the values on the acquired firm’s balance sheet, and the depreciation rate typically continues as before. However, under the purchase method, the assets and liabilities of the acquired firms are recorded at the fair market values, which are typically larger than their book values, and later on depreciation rates are also higher than those previously used by the acquired firm. Thus, the pooling method leads to more conservative balance sheets and less conservative income statements than the purchase method.

¹³ The relationship holds under ‘clean surplus’ accounting (Peasnell 1982, Ohlson 1988, Feltham and Ohlson 1995), which implies that the firm’s accounting income equals fiscal-year change in book value of equity, adjusted for dividends and capital contributions.

future income, while the literature on conditional conservatism puts greater weight on improving contracting efficiency given managers' incentives to report more aggressively on the income statement and/or balance sheet. Because of different emphases, the literatures on the two types of conservatism have been largely separate.¹⁴

Only recently have researchers begun to study the interaction between the two types of conservatism. For example, Basu (2001) notes that less conservative news-unrelated accounting allocation methods are more likely to result in asset writedowns, and hence, greater asymmetric news-driven conservatism. In particular, assets will be written down when current market values are lower than their carrying book values. Similarly, the application of the lower-of-cost-or-market rule is more likely to arise when companies adopt first-in first-out (FIFO) inventory accounting than when they adopt last-in first-out (LIFO) inventory accounting. Pope and Walker (2002) also mention that unconditional conservatism limits the degree of expected conditional conservatism because in the extreme case, if assets have not been recognized, then no impairment of their economic values can be recognized in accounting income. Giner and Rees (2001) provide evidence of an interaction between unconditional conservatism and conditional conservatism by investigating conservatism across Germany, the UK, and France. Under the news-independent definition of conservatism (i.e., unconditional conservatism), Germany has historically enjoyed a reputation as the most conservative country of the three, followed by France and then the UK (Gray 1980, Joos and Lang 1994). However, Giner and Rees (2001) find that under the asymmetric news-dependent definition (i.e., conditional

¹⁴ It is also partly because the conditioned conservatism literature is much newer than unconditional conservatism literature.

conservatism), the UK is found to be the most conservative and Germany the least conservative.

Basu (2001) points out that the interaction between different conservatism definitions provides an interesting insight on whether conservatism has increased over time in the U.S. For example, Bowen et al. (1995) find that during the 1980s and early 1990s, companies exhibited large shifts from more conservative accounting choices, such as accelerated depreciation and LIFO, to less conservative choices, such as straight-line depreciation and FIFO. In contrast, Givoly and Hayn (2000) rely on measures of asymmetric conservatism and find that conservatism has increased over time. It is obvious that these conflicting results on conservatism over time can be reconciled by the negative relation between the two types of conservatism definitions. Further, the empirical results of Giner and Rees (2001) and Pope and Walker (2002) show that the degree of asymmetry in the recognition of bad news and good news is higher when unrecorded goodwill is relatively low, measured by the ratio of the market value of equity over the book value of equity. Pae et al. (2005) also report similar results. These findings suggest that any comparison of asymmetric earnings timeliness should consider the interaction between unconditional conservatism and conditional conservatism.

Beaver and Ryan (2005) develop a general model of conditional and unconditional conservatism under uncertainty. The model captures the fact that unconditional conservatism is a primary source of unrecorded goodwill, which constitutes a form of “accounting slack” that preempts the application of conditional conservatism unless news is sufficiently bad to use up that slack. In other words, unconditional conservatism is

determined at the acquisition of assets and liabilities and so precedes conditional conservatism.

Accounting conservatism has been observed for centuries, although there is significant controversy regarding whether conservatism is a desirable accounting attribute.¹⁵ Giner and Rees (2001) point out that conservatism should not be viewed as a necessarily desirable or undesirable characteristic. Ball et al. (2000) hypothesize that the demand for conservatism is universal in that accountants and auditors find negative information from managers more credible than good news, stakeholders are more concerned about receiving bad news promptly than good news, and regulators also are concerned about rapidly identifying problem areas. Christensen and Demski (2004) develop a model with a principal-agent setting and show that users of financial statements demand more information when a manager claims good news instead of bad news (i.e., asymmetric monitoring).

Watts (2003a) summarizes and categorizes four explanations for conservative reporting, all of which suggest that accounting conservatism benefits users of financial reports. First, conservative reporting arises because it is a necessary and efficient mechanism employed in firms and their contracts with various parties to avoid the moral hazard problem caused by information asymmetry. This contracting explanation suggests

¹⁵ Many capital market regulators and standard setters in the U.S. favor neutrality over conservatism (see FASB 1980, para. 91-97, Levitt 1998). In contrast, the International Accounting Standard Committee (IASC) regards conservatism as one of the core features of high-quality accounting. In 1989, IASC approved the *Framework for the Preparation and Presentation of Financial Statements*. Instead of using 'conservatism', the framework describes uncertainties in the reliability of financial statements associated with items recognized and measured in financial statements as 'prudence', which is "... the inclusion of a degree of caution in the exercise of the judgments needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated."

that conservatism can constrain managerial opportunistic behavior and offset managerial biases in asset valuation, which, in turn, increases the firm value shared among all parties. Second, asymmetric litigation costs in valuing a firm's net assets motivate conservative reporting in that undervaluing net assets is less likely to induce litigation costs than overvaluing net assets. Third, conservative reporting generates tax benefits in that delaying the recognition of revenues and accelerating the recognition of expenses defers tax payments. Lastly, conservatism has always been of interest and concern to regulators since conservatism reduces the political cost imposed by standard setters and regulators as well. Taken together, Watts (2003a) contends that both types of conservatism are likely to improve contracting efficiency because they represent bonding or recommitments by agents (Basu 2005). In contrast, Ball and Shivakumar (2005) argue that unconditional conservatism cannot increase debt and governance contracting efficiency because it does not cause financial statements to incorporate any information that was unknown at the time of contracting. However, timely loss recognition, conditional on a firm incurring economic losses, causes managers to act on the losses more quickly. They conclude that unconditional conservatism seems inefficient or at best neutral in contracting.

In addition, historical evidence suggests that most forms of unconditional conservatism arose from tax and regulatory incentives. For example, one of the primary motives to adopt LIFO and conservative depreciation methods is to minimize corporate income taxes. However, regardless of the role in contracting efficiency, the two types of conservatism capture investors' and others' perceived asymmetric loss functions,

minimizing firms' litigation, tax, or regulatory costs, and finally, could provide benefit to all users of accounting numbers (Beaver and Ryan 2005).

Conservatism is an important property in accounting income. Ball and Shivakumar (2006) argue that conditional conservatism (the asymmetry) is an important determinant of earnings quality, improving the usefulness of financial statements generally, and more specifically in the contexts of corporate governance, management compensation and debt contracting. Differences in the demand for accounting income in different institutional contexts, however, cause this property (i.e., conservatism) to vary internationally. Ball et al. (2000) examine the difference in conservatism between common law countries (e.g., U.S., U.K.) and code law countries (e.g., Germany, Japan). They argue that in code law countries, the comparatively strong political influence on accounting drives the demand for accounting income influenced more by the payout preferences of agents for labor, capital and the government, while in common law countries, the 'shareholder' governance model determines that the public disclosure market plays an important role in the desirable properties of accounting income. They hypothesize and find that accounting income in common law countries more quickly incorporates economic losses (income conservatism) than in code law countries.¹⁶

In another study by Ball et al. (2003), the authors argue that the classification of countries by accounting standards (e.g., from common law sources vs. from code law sources) is not appropriate because financial reporting practice under a given set of

¹⁶ The underlying premise is that a country's legal system creates incentives that influence the behavior of corporate executives, investors, regulators and other market participants. Such incentives shape the properties of reported accounting numbers through a complex interplay of accounting standards, legal, regulatory, and political pressures (Bushman and Piotroski 2006).

standards is sensitive to the incentives of the managers and auditors responsible for financial statement preparation and verification. They show that although the accounting standards in the East Asian countries, including Hong Kong, Malaysia, Singapore and Thailand, derive from common law countries (U.K., U.S., and International Accounting Standards (IAS)), their financial reporting is not more conservative (e.g., timely recognition of economic losses) than those under code law. Basu et al. (2005) find similar results for firms in Taiwan. The reason is that institutional structures including market and political forces in those five East Asian countries, which profoundly affect financial reporting practice, can be characterized as variants of the code law model.

Among the few countries that require mandatory auditor rotation or had required but later on dropped it, Canada is the only common law country based on both accounting standards and preparers' incentives. That is, Italy, Spain, South Korea, Austria, Brazil, Singapore, and India are classified as code law countries that are found to have lower reporting quality with respect to accounting conservatism.¹⁷ Given the fact that in code law countries, preparers' incentives predominantly originate from political forces (Ball et al. 2003), the enforcement of mandatory auditor rotation in those countries is more likely to reflect the incentives of government or other regulators instead of public shareholders.

4.2 Audit Quality and Accounting Conservatism

¹⁷ The classification of Italy, Spain, South Korea, Austria and Brazil into code law countries is consistent with the study by La Porta et al. (2000) and Bushman and Piotroski (2006). Based on Ball et al. (2003), I classify India as a code law country, because like Singapore, it has accounting standards from common law but has incentives similar to code law countries.

Auditors play an important role in determining the earnings quality of financial statements. Prior studies suggest one reason for accounting conservatism is auditors' liability exposure to shareholder lawsuits. Kothari et al. (1988) document that the legal liability exposure of auditors and managers has increased significantly over the last three decades. Conservatism reduces auditors' liability exposure and causes auditors to increase the asymmetric timeliness of earnings in recognizing economic losses. Basu (1997) and Basu et al. (2001a) find that earnings are more timely in recognizing bad news in periods of high auditor liability exposure, consistent with auditors being more conservative when exposed to greater legal liability.

DeAngelo (1981b) argues that audit firm size could be a surrogate of audit quality. Thus, big audit firms are expected to provide high quality earnings in financial statements. Consistent with this argument, Basu et al. (2001b) show that the earnings reported by big auditees are more conservative than the earnings of non-big auditees.¹⁸ Furthermore, Krishnan (2007) shows that earnings conservatism has increased for former Andersen clients of its Houston office that switched to a Big 4 auditor. All of these results suggest that Big 4 auditors and managers use earnings conservatism as a risk management strategy.

Audit firms can maintain higher reported audit quality by demanding more conservative earnings for their clients even under the 'threat' of auditor independence. Ruddock et al. (2006) find that nonaudit services provided by audit firms in Australia do

¹⁸ However, the association between audit firm size and audit quality may not apply to Arthur Andersen, in particular, Houston office. For example, Krishnan (2005a) reports that earnings of Andersen clients of its Houston office were less timely in reporting bad news about future cash flows relative to a control group audited by other big audit firms.

not impair auditor independence because the extent to which earnings reflect bad news is statistically similar across firms with high or low nonaudit fees. Li (2006) finds that earnings more quickly reflect bad news for clients with large economic influence, which again implies that auditors report more conservatively to mitigate their legal liability exposure.

In sum, empirical studies are consistent with auditors being conservative, especially when exposed to greater legal liability. Recent empirical studies find that auditors are more conservative after the passage of SOX (Krishnan 2007, Ahmed et al. 2006, Li 2006). The current study will link auditor tenure to accounting conservatism, as discussed in the next section.

4.3 Auditor Tenure and Accounting Conservatism

Givoly et al. (2007) offer a classification of the sources of conservatism, which they define as the systematic understatement of assets on the balance sheet. For illustration, I reproduce Appendix C of their study as Appendix A in this paper. In the first column, three sources of understatement are identified: C₁, conservatism arising from financial accounting's failure to capture the positive present value of projects and subsequent increases in the value of assets (i.e., historical cost accounting); C₂, conservatism resulting from minimization of the firm's assets as reported on the balance sheet; and C₃, conservatism due to the asymmetric recognition of losses relative to gains. The second column documents the features of financial reporting that contribute to the three sources of conservatism, while the last two columns point out the extent of discretion available to standard setters, regulators and management with respect to each aspect of conservatism.

The classification of conservatism sources C_1 and C_2 is consistent with unconditional conservatism, while C_3 refers to conditional conservatism. Thus, the combination of the historical cost convention, the choices of accounting methods and estimates within this convention, and the asymmetric recognition rules for losses relative to gains yield a conservative valuation of assets and equity (Givoly et al. 2007).¹⁹

Consistent with prior studies, this study examines the effect of auditor tenure on conditional accounting conservatism. Most of the prior research focuses on this version of conservatism because unconditional conservatism is argued to be difficult to test empirically since accounting choices could be driven by economically different asset investment and usage patterns (Basu 1995), are often stable within short periods (e.g., LIFO vs. FIFO), and because unconditional conservatism is claimed to lack contracting efficiency (Ball and Shivakumar 2005). In addition, as discussed earlier, the literature appears to establish a negative correlation between unconditional and conditional conservatism (Giner and Rees 2001, Basu 2001, Pope and Walker 2002, Beaver and Ryan 2005). Hence, it is not necessary to investigate the predicted impact of auditor tenure on both types of conservatism.

Regulators are concerned that long-term interaction between the auditor and client can impair auditor independence and reduce audit quality. Long-term audit revenue generated from current clients seemingly serves as an annuity for audit firms. In addition, auditors need subsequent years of work to recover their initial ‘investment losses’ arising from the practice of ‘lowballing’ in initial audit engagements (DeAngelo 1981a, Dye

¹⁹ Roychowdhury and Watts (2006) emphasize that the non-recognition of firm-level rents constitutes a distinct type of conservatism from the perspective of understatement of the value of net assets.

1991, Lee and Gu 1998, Zang 1999). Thus, auditors might attempt to obtain long-term relationships with their clients by acquiescing to management's reporting decisions. Consequently, the likelihood of auditors' compromising their independence might increase as auditor tenure lengthens. The extent of impairment to auditor independence also depends on auditors' other considerations, including reputation, litigation risk, and the economic importance of clients.

The potential reduced auditor independence due to long-term relationships with clients can decrease the extent of accounting conservatism. First, as shown in Appendix A, GAAP provides discretion to management as to when unrealized losses must be recognized. That is, even though management records expected losses less quickly, they are still in compliance with GAAP. During initial audits, the unfamiliarity between auditors and clients are more likely to drive auditors to behave strictly according to both GAAP and the conservative reporting convention in accounting due to the concern of uncertain litigation risk. However, as the auditor-client relationship grows, auditors are more familiar with and confident in various risks associated with the client. Thus, they may confer more discretion to allow management to report less conservatively. Second, after a company survives in the market for a long time, it is possible that conservative reporting fades in that the closeness with other contracting parties that have known the company well might produce a similar reduced alertness towards management. This is not to say that accounting conservatism becomes less important, but that under current

GAAP, conservatism is more or less ‘voluntary’, so that without the monitoring, management would tend toward more aggressive reporting behavior.²⁰

There may be competing potential effects of the auditor-client relationship on accounting conservatism in the early stages of audit engagements. In particular, newly appointed auditors lack sufficient knowledge about the client firm’s business operations and internal control systems; thus, auditors with less competence have to rely more on managers’ decisions in financial reporting and consequently, are more likely to acquiesce to managers’ opportunistic behavior, reducing the level of accounting conservatism. On the other hand, it is possible that the unfamiliarity with clients will raise auditors’ alertness toward audit work to avoid potential audit risk. For instance, they may be likely to increase sampling tests or even report more conservatively for some transactions. In contrast, a long auditor-client relationship produces increasing “familiarity” with each other, which might reduce auditor independence. In addition, the auditors’ overtrust of management after long-time cooperation more likely has become subconscious (Moore and Loewenstein 2004). In other words, individual partners do not realize that tight relations with the client impair their objectivity. This leads to reduced accounting conservatism without regard to the level of accounting conservatism at the early stages of the engagement. Hence, this study forms its main hypothesis as follows:

²⁰ The argument of divergence in interest between corporate owners and management can be traced back to an earlier study by Berle and Means (1932). Jensen and Meckling (1976) integrate agency theory and corporate finance to explain why an entrepreneur or manager (agent) in a firm will choose a set of activities for the firm such that the total value of the firm is *less* than it would be if he were the sole owner, and why this failure to maximize the value of the firm is perfectly consistent with efficiency.

Hypothesis 1: Conditional accounting conservatism, arising from asymmetric timely loss recognition relative to gain recognition, will decrease as auditor tenure lengthens.

Admitting that long-time working with clients also likely increases auditors' client-specific knowledge and skills, which in turn increases conservatism, causes the association between auditor tenure and accounting conservatism to potentially end up with a zero or even positive effect. Certainly, a zero effect can arise when in fact, there is no relation between auditor tenure and conservatism, while variation of conservatism level could be driven by other firm-specific characteristics.

Jenkins and Velury (2006) find evidence of a positive association between auditor tenure and accounting conservatism (i.e., asymmetric loss recognition) using the Basu (1997) model. However, their research design is subject to several important limitations. In particular, first, they examine publicly listed firms in the U.S. from 1983 to 2004 during which time accounting practices changed greatly. For example, Givoly and Hayn (2000) report that the timeliness of earnings to reflect bad news relative to good news was increasing from the 1950s to the 1990s, with the highest level at the end of 1990s. In addition, most sample firms will have longer auditor-client durations at the end of the 1990s. Consequently, the results of Jenkins and Velury (2006) might be driven by the prevalent pattern of changes in accounting conservatism, namely, increasing conditional accounting conservatism, instead of the effect of long auditor tenure.

Second, Jenkins and Velury (2006) do not control for many other potential factors which might play an important role in determining the level of conservatism. In other words, the observed association between auditor tenure and conditional conservatism

could be due to the factors that are not controlled for. For example, large firms are more likely to be associated with more accounting conservatism because large firms have greater exposure of litigation risks and more information asymmetry (Ball and Shivakumar 2005, LaFond and Watts 2006). Moreover, the firms with long auditor tenure could be those with good performance that survive in serious market competition. The larger firm size would be an important feature for those firms. In addition, Ahmed et al. (2002), Watts (2003a) and Ball et al. (2005) stress that debt contracting increases the demand for accounting conservatism, and conversely, conservative reporting mitigates the agency costs arising from information asymmetry between debt holders and management (LaFond and Watts 2006). This implies that the differences associated with debt contracting among different firms could produce heterogeneous demand for accounting conservatism. Hence, without considering the potential effect of omitted firms' important characteristics on accounting conservatism, the findings of Jenkins and Velury (2006) are inconclusive.

Third, the research design in Jenkins and Velury (2006) explicitly assumes that it is the auditor's choice to decide the length of association with the client. However, we know that the length of auditor-client relationship is the product of mutual interaction between auditors and their clients, rather than of any single party. On one hand, incumbent auditors certainly have their own option to decide whether they will continue the audits with current clients. This decision could be based on the consideration of the reasons for discontinuance and the impact of losing the client. On the other hand, management also has discretion on retaining the incumbent auditor, the decision of which could be based on company strategies or the cost of potential litigation risk. Thus, a

simple regression model with auditor tenure as an exogenous explanatory variable ignores the fact that auditor tenure is a mutual decision between auditors and companies, leading to possibly serious estimation error (i.e., endogeneity).

CHAPTER 5

RESEARCH DESIGN

5.1 Measures of Accounting Conditional Conservatism

5.1.1 Timeliness of Earnings to Reflect ‘News’

Asymmetric recognition of economic losses indicates that earnings reflect ‘bad news’ more quickly than ‘good news’. Because stock prices reflect information received from sources other than current earnings, stock prices lead accounting earnings by up to four years (Ball and Brown 1968, Beaver et al. 1980, Kothari and Sloan 1992), and thus, stock returns can be used as a proxy for ‘news’. In a piecewise-linear regression with market-adjusted stock returns as the independent variable and current-year accounting income as the dependent variable, as shown in model (1), the timeliness of earnings is inferred from the responsiveness of accounting income to the change in market values. The use of fiscal-year returns implies that there is no gap in calendar time between successive return intervals, which makes the test map into value relevance tests (Ball and Shivakumar 2005). Negative market-adjusted stock returns are used as a proxy for bad news and positive returns as a proxy for good news.

$$NI_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 R_{it} + \alpha_3 R_{it} * DR_{it} + \varepsilon \quad (1)$$

where

NI_{it} = net income before extraordinary items reported in period t divided by beginning of fiscal year total assets;

DR_{it} = 1 if market-adjusted return for firm i during year t is negative, and 0 otherwise;

and

R_{it} = market-adjusted annual stock return for firm i at the fiscal year-end t .

The extent of timeliness with annual earnings as the dependent variable is measured by the slope coefficient, α_2 , and overall explanatory power, R^2 , in this regression model (Beaver et al. 1980). The asymmetric recognition of economic losses relative to gains (i.e., conditional conservatism) is captured by the coefficient α_3 . I test the main hypothesis by developing the following operational hypothesis.

Hypothesis 1a: Firms' timeliness of earnings to unexpected negative returns ("bad news") decreases as auditor tenure increases.

To examine hypothesis H1a, auditor tenure (TENURE) is calculated by the number of years since the auditors have been employed. To mitigate the possibility of nonlinear relation between auditor tenure and conservatism, I also classify observations into three groups to compare the conservatism, where short (medium) (long) auditor tenure group contains firms with auditor tenure less than or equal to three years (less than or equal to eight years but greater than or equal to four years) (greater than or equal to nine years).²¹ As a sensitivity test, I also use various other cutoffs for short, medium, or long auditor tenure. As shown in model (2), I include the additional intercept and interactive slope coefficients to capture the incremental power of longer auditor tenure:

²¹ Prior research does not provide consistent definitions of long-tenure and short-tenure. The way to classify tenure used in this study is consistent with Johnson et al. (2002). Stanley and DeZoort (2007) define auditor-client relationship with longer than or equal to five years as long-tenure and less than or equal to three years as short-tenure.

$$NI_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 R_{it} + \alpha_3 R_{it} * DR_{it} + \alpha_4 TENURE_{it} + \alpha_5 DR_{it} * TENURE_{it} + \alpha_6 R_{it} * TENURE_{it} + \alpha_7 R_{it} * DR_{it} * TENURE_{it} \quad (2)$$

where

$TENURE_{it}$ = the number of years since the auditors have been employed for firm i at fiscal year-end t ; and

other variables are as previously defined.

If longer auditor tenure adversely affects audit quality (that is, leading to decreased auditor conservatism), then the coefficient for α_7 is expected to be significantly negative, which indicates that longer auditor tenure will cause lower incremental timeliness of earnings to reflect bad news than shorter auditor tenure.

5.1.2 Persistence of Earnings Changes

Although empirical research has widely used the approach of Basu (1997) (e.g., asymmetric recognition of losses) for tests of conditional conservatism, the application and interpretation of model (2) needs caution. Gigler and Hemmer (2001) develop a model of the relation between biases in financial reporting and managers' incentives to issue timely voluntary disclosures. They find that firms with relatively more conservative accounting are less likely to make timely voluntary disclosures than firms with less conservative accounting. Hence, contemporaneous stock returns more quickly reflect the news for firms with less conservative accounting.²²

²² Dietrich et al. (2007) argue that the interpretation of model (1) is valid only when the market is efficient; in particular, if market returns cause earnings, and not the reverse. Ryan (2006) notes that two well-known empirical results, the low R^2 s observed in contemporaneous returns-earnings regressions (Collins et al. 1997, Ely and Waymire 1999, Francis and Schipper 1999) and a large literature showing that returns

Mindful of these issues, I use a second approach based on another test of conditional conservatism in Basu (1997), namely, lower persistence of negative earnings changes. Basu (1997) shows that conservatism results in the lower persistence of earnings in bad news periods relative to good news periods. Thus, asymmetric timeliness, as discussed above, and asymmetric persistence are different ways to measure the same phenomenon, accounting conservatism. More persistence means that less current value relevant news is reported in current earnings, and more of it will be reported in future earnings. The deferred recognition of relatively good news results in positive changes in income being less likely to reverse than negative earnings changes. That is because from a time series perspective, the bad news reflected in current earnings will appear as a transitory shock in the earnings process, while in contrast, the effects of a current positive shock will be spread over several future periods' earnings as anticipated gains are realized (Basu 1997). Thus, positive earnings changes repeat more often than negative earnings changes. The following model from Basu (1997) is used to estimate this relation:

$$\Delta NI_{it} = \beta_0 + \beta_1 D\Delta NI_{it-1} + \beta_2 \Delta NI_{it-1} + \beta_3 D\Delta NI_{it-1} * \Delta NI_{it-1} + \varepsilon \quad (3)$$

where

ΔNI_{it} = change in net income before extraordinary items for firm i in fiscal year t

deflated by beginning-of-year total assets;

ΔNI_{it-1} = change in net income for firm i in fiscal year t-1 deflated by beginning-of-year

total assets; and

$D\Delta NI_{it-1} = 1$ if $\Delta NI_{it-1} < 0$, and 0 otherwise.

typically reflect information on a timelier basis than earnings, indicate that the concern mentioned by Dietrich et al. is likely to induce very tiny bias in the estimation of conservatism.

Timely recognition of economic losses implies that they are recognized as transitory income decreases, and hence reverse in the next period, leading to a negative value of β_3 . The less negative β_3 , the more that conservatism is decreasing. Thus, the main hypothesis can be examined by testing the second operational hypothesis:

Hypothesis 1b: The reversal of current negative earnings changes in the next period will be slower as auditor tenure increases.

To test hypothesis H1b, auditor tenure (TENURE) is included in model (3) as an interacting variable, as shown in model (4).

$$\begin{aligned}\Delta NI_{it} = & \beta_0 + \beta_1 D\Delta NI_{it-1} + \beta_2 \Delta NI_{it-1} + \beta_3 D\Delta NI_{it-1} * \Delta NI_{it-1} + \beta_4 TENURE_{it} \\ & + \beta_5 D\Delta NI_{it-1} * TENURE_{it} + \beta_6 \Delta NI_{it-1} * TENURE_{it} \\ & + \beta_7 D\Delta NI_{it-1} * \Delta NI_{it-1} * TENURE_{it} + \varepsilon\end{aligned}\quad (4)$$

where all variables are as previously defined.

I have no hypotheses concerning the difference of different auditor tenure in gain recognition, so I offer no prediction on the incremental tenure coefficient on earnings increases, β_6 . If longer auditor tenure adversely affects audit quality, resulting in reduced conservatism, then the coefficient for β_7 is expected to be significantly positive, which indicates that firms with a longer client-auditor relationship have a reduced tendency of negative earnings changes to reverse in the following period.

5.2 Control for Additional Sources of Conservatism

Conservatism can be measured by the Basu coefficient and/or the ratio of the market value of equity to the book value of equity (MB). The asymmetric recognition of losses

and gains, captured by the Basu coefficient, is a measure of accounting conditional conservatism that generates the understatement of net assets, which is conditional economic income. Roychowdhury and Watts (2006) argue that market returns can incorporate information about unbooked items, such as growth options and synergies, that cannot generate accrued gains or losses, financial statement-based “booked” variables. They also suggest that the Basu measure, compared to the MB ratio is a better measure of conservatism when estimated cumulatively over several periods. Ryan (2006) claims that the extent to which the MB ratio exceeds one is perhaps the most natural way to assess overall conservatism (conditional and unconditional conservatism). In addition, LaFond and Watts (2006) argue that the greater a firm’s growth options, the greater is the information asymmetry between equity investors in the firm, which leads to more conservatism. Thus, to control for growth options, not captured by the Basu coefficient, I include the book to market ratio (BM) in multivariate regressions testing incremental association between auditor tenure and conditional conservatism.²³

Accounting history is consistent with debt contracting being a major contracting influence on conservatism (Watts 1993, 2003a, 2003b, Ball et al. 2005). Different debt levels can reflect distinct demands for asymmetric timeliness of earnings. Loan agreements transfer decision rights to lenders conditional on adverse but not favorable outcomes, which generates higher demand of timely recognition of losses than of gains (Ball and Shivakumar 2006). Moreover, managers have incentives to disclose good news to potential lenders, thus, lenders are less likely to demand timely gain recognition in the

²³ The use of BM ratio instead of MB ratio can avoid the exclusion of firms with negative book value of equity.

financial statements. Accordingly, consistent with Ball and Shivakumar (2005) and LaFond and Watts (2006), I use LEV (the leverage ratio) to proxy for the debt contract demand for conservatism.

Prior studies suggest that litigation risk may also be a source of conservatism (Beaver 1993, Watts 1993) since litigation is more likely when the financial statements are overstated. Basu (1997) finds that accounting conservatism increases in periods where auditors' legal liability exposure increases. Hence, consistent with LaFond and Watts (2006), I measure auditors' litigation risk by using the parameters from Shu (2000) that develops a measure of auditor litigation risk. According to Shu's logit model, the auditors' litigation risk exposure (LIGA) is calculated as the probability of auditor litigation for each firm-year observation in my sample.

Lastly, firm size is also expected to be related to conservatism. Giner and Rees (2001), Basu et al. (2001a, 2001b) and LaFond and Watts (2006) find that small firms are more asymmetrically conservative than large firms. Higher conservatism associated with small firms could arise from more volatile returns in small firms, making them more likely to have material economic impairments, and hence, exposing their auditors and managers to greater legal liability risk. As a consequence, auditors tend to be harsher on their small clients (Carcello and Neal, 2000). Other possible explanations include less diversified operations in small firms or ex-ante income decreasing methods to preserve their access to costly debt capital (Basu 2001). Therefore, I include firm size (SIZE), measured as the natural log of a firm's market value of equity at the end of the estimation period.

Taken together, to mitigate the concern that the association between auditor tenure and conservatism is due to other source-based demands for conservatism, I include BM, LEV, LIGA and SIZE as interactive variables, as shown in model (5) and (6):

$$\begin{aligned}
NI_{it} = & \alpha_0 + \alpha_1 DR_{it} + \alpha_2 R_{it} + \alpha_3 R_{it} * DR_{it} + \alpha_4 TENURE_{it} + \alpha_5 DR_{it} * TENURE_{it} \\
& + \alpha_6 R_{it} * TENURE_{it} + \alpha_7 R_{it} * DR_{it} * TENURE_{it} + \alpha_8 BM + \alpha_9 DR_{it} * BM_{it} \\
& + \alpha_{10} R_{it} * BM_{it} + \alpha_{11} R_{it} * DR_{it} * BM_{it} + \alpha_{12} LEV_{it} + \alpha_{13} DR_{it} * LEV_{it} \\
& + \alpha_{14} R_{it} * LEV_{it} + \alpha_{15} R_{it} * DR_{it} * LEV_{it} + \alpha_{16} LIGA_{it} + \alpha_{17} DR_{it} * LIGA_{it} \\
& + \alpha_{18} R_{it} * LIGA_{it} + \alpha_{19} R_{it} * DR_{it} * LIGA_{it} + \alpha_{20} SIZE_{it} + \alpha_{21} DR_{it} * SIZE_{it} \\
& + \alpha_{22} R_{it} * SIZE_{it} + \alpha_{23} R_{it} * DR_{it} * SIZE_{it} + \varepsilon
\end{aligned} \tag{5}$$

$$\begin{aligned}
\Delta NI_{it} = & \beta_0 + \beta_1 \Delta NI_{it-1} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta \Delta NI_{it-1} * \Delta NI_{it-1} + \beta_4 TENURE_{it} \\
& + \beta_5 \Delta \Delta NI_{it-1} * TENURE_{it} + \beta_6 \Delta NI_{it-1} * TENURE_{it} \\
& + \beta_7 \Delta \Delta NI_{it-1} * \Delta NI_{it-1} * TENURE_{it} + \beta_8 BM_{it} + \beta_9 \Delta \Delta NI_{it-1} * BM_{it} \\
& + \beta_{10} \Delta NI_{it-1} * BM_{it} + \beta_{11} \Delta \Delta NI_{it-1} * \Delta NI_{it-1} * BM_{it} + \beta_{12} LEV_{it} \\
& + \beta_{13} \Delta \Delta NI_{it-1} * LEV_{it} + \beta_{14} \Delta NI_{it-1} * LEV_{it} + \beta_{15} \Delta \Delta NI_{it-1} * \Delta NI_{it-1} * LEV_{it} \\
& + \beta_{16} LIGA_{it} + \beta_{17} \Delta \Delta NI_{it-1} * LIGA_{it} + \beta_{18} \Delta NI_{it-1} * LIGA_{it} \\
& + \beta_{19} \Delta \Delta NI_{it-1} * \Delta NI_{it-1} * LIGA_{it} + \beta_{20} SIZE_{it} + \beta_{21} \Delta \Delta NI_{it-1} * SIZE_{it} \\
& + \beta_{22} \Delta NI_{it-1} * SIZE_{it} + \beta_{23} \Delta \Delta NI_{it-1} * \Delta NI_{it-1} * SIZE_{it} + \varepsilon
\end{aligned} \tag{6}$$

where (subscripts are abbreviated)

BM = the Book to Market ratio, defined as the book value of equity divided by the market value of equity at the fiscal year-end;

LEV = leverage, defined as total debt divided by total assets at the fiscal year-end;

LIGA = the probability of auditor litigation, calculated using the parameters from Table 3 of Shu (2000);

SIZE = the natural log of the firm's market value of equity at the fiscal year-end; and all other variables are as previous defined.

5.3 Control for Endogeneity

The tests above assume that auditor tenure choice is exogenous. However, if firms select auditor tenure based on companies' own characteristics, then auditor tenure

(TENURE) is endogenous. Therefore, the choice of auditor tenure should be estimated simultaneously with models of conservatism. Consistent with Krishnan (2003a), Ball and Shivakumar (2005) and Ruddock et al. (2006), I use the switching simultaneous equations model of Lee (1979), which controls for any bias resulting from self-selection of auditor tenure (Maddala 1983, Chapter 9). The standard 2SLS simultaneous equations model is inappropriate when the choice variable (i.e., TENURE) is interactive in models (2), (4), (5) and (6). Therefore, I rely on a two-stage “treatment effect” model using the Heckman (1979) two-stage approach to estimate the following model (i.e., auditor tenure choice equation):

$$\begin{aligned} \text{TENURE}_{it} = & \delta_0 + \delta_1 \text{SIZE}_{it} + \delta_2 \text{LEV}_{it} + \delta_3 \text{INVENTORY}_{it} + \delta_4 \text{AR}_{it} + \delta_5 \text{CURRENT}_{it} \\ & + \delta_6 \text{ROA}_{it} + \delta_7 \text{TECH}_{it} + \delta_8 \text{GROWTH}_{it} + \delta_9 \text{RETURN}_{it} + \delta_{10} \text{BETA}_{it} \\ & + \delta_{11} \text{VOLATILITY}_{it} + \delta_{12} \text{DLOSS} + \delta_{13} \text{LASTOPINION}_{it} + \delta_{14} \text{OPINION}_{it} \\ & + \delta_{15} \text{DELIST}_{it} + \delta_{16} \text{SEGMENT}_{it} + \delta_{17} \text{FIRMAGE} + \varepsilon \end{aligned} \quad (7)$$

where (subscripts are abbreviated)

TENURE = long or medium tenure group is coded as one when compared with short tenure group (coded as zero); long tenure group is coded one when compared with medium tenure group (coded as zero),

SIZE = natural logarithm of total assets;

LEV = long term debt over total assets;

Inventory = inventory divided by total assets at the beginning of the fiscal year;

AR = accounts receivable divided by total assets at the beginning of the fiscal year;

CURRENT = current assets divided by current liabilities;

ROA = net income divided by total assets;

TECH = 1 if a firm's SIC code is in the 2830s, 3570s, 7370s, 8730s, or between 3825 and 3839, and 0 otherwise;

GROWTH = sales growth;

RETURN = the compounded annual return over the fiscal year;

BETA = the slope coefficient of a regression of daily stock returns on equal-weighted market returns;

DLOSS = 1 if a firm reports negative earnings in the current year or prior year and 0 otherwise;

VOLATILITY = the standard deviation of daily stock returns over the fiscal year;

LASTOPINION = 1 if a firm has not received a completely clean opinion from its auditor in the last year, and 0 otherwise;

OPINION = 1 if a firm has not received a clean opinion from its auditor in the current year, and 0 otherwise;

DELIST = 1 if firm is delisted because of financial difficulties within the next year, and 0 otherwise;

SEGMENT = the reported number of business segments; and

FIRMAGE = the number of years that the firm has available data in Compustat since 1950.

In the first stage, I run a logistic model of auditor tenure choice and use the parameters estimated from this model (7) to calculate the inverse Mills ratios (Λ) for all firm-years in the sample. To estimate auditor tenure choice equation (7), I include factors suggested in prior studies that influence auditors' change, related to both auditor resignation and auditor dismissal. Auditors are more likely to resign from current clients

when litigation risk against auditors is high (Shu 2000). Stice (1991), Lys and Watts (1994), Francis et al. (1994), Shu (2000) and Heninger (2001) find that litigation against auditors is high when firms have larger size, higher leverage, higher ratios of accounts receivable and inventory to lagged total assets, higher stock volatility, worse financial condition, and operate in a litigious industry (e.g., high technology industry). The incorporation of the factors capturing client-related risks is consistent with Johnstone (2000) and Choi et al. (2004), who show that audit firms consider and screen clients based on clients' risk characteristics. I include qualified opinions since the events leading to qualified audit opinions might also give rise to auditor litigation leading to auditor resignation. Moreover, Lennox (2002) finds that companies strategically dismiss incumbent auditors if they are more likely to issue unfavorable audit opinions compared to newly appointed auditors. Thus, qualified audit opinions increase conflict between auditors and management, leading to a higher likelihood of either auditor resignation or auditor dismissal by management. The prior fiscal year audit opinions are included as well to capture the lagged effect of audit opinions on auditors' decisions to withdraw.

I posit that the firms with greater complexity of operations are more likely to encounter disagreements between auditors and management in the application of accounting methods. Hence, I use SEGMENT, defined as the number of reported business segments in the current fiscal year, to proxy for the complexity of firm operations. GROWTH is used to capture firms' operating characteristics that are likely to expose them to greater accounting measurement application risks (Kinney and McDaniel 1989). Furthermore, Ashbaugh et al. (2006) argue that growing firms are more likely to expand the complexity of operations. The increasing complexity might induce more

conflicts in accounting decisions between auditors and firms. Finally, older firms are more likely to have longer auditor-client relationships. Thus, FIRMAGE is included as well in model (7).

In the second stage, regression models (2), (4), (5) and (6) are re-estimated by including the inverse Mills ratio (Lambda) calculated from model (7) as a control variable and allowing its coefficient to vary between firms with long auditor tenure and those with short auditor tenure. The significant value of the coefficient of the inverse Mills ratio indicates an endogeneity problem. If longer auditor tenure adversely affects audit quality (that is, leading to decreased auditor conservatism), then the coefficient for α_7 (β_7) is expected to be significantly negative (positive), which indicates that longer auditor tenure will cause lower incremental timeliness of earnings to reflect bad news (lower tendency of negative earnings changes to reverse) than shorter auditor tenure.

5.4 Additional Measure of Conservatism

The tests of conditional conservatism based on Basu (1997) are widely applied in the accounting literature.²⁴ To further strengthen my tests, I use the model recently developed in Ball and Shivakumar (2005, 2006) as the third measure of conservatism, referred to as accruals-based loss recognition.

Accrual-based accounting eliminates transitory effects on cash flows and constructs earnings with less noise than cash flow from operations, which implies that accruals and

²⁴ Basu (1997) is one of the most influential papers in accounting research in the past decade (Ryan 2006). It is being cited in over 359 published and working papers as of June 2007 according to Google Scholar.

cash flow from operations are contemporaneously negatively correlated (Dechow 1994). Ball and Shivakumar (2005, 2006) incorporate another role for accruals in this relation, that is, timely recognition of economic gains and losses (Basu 1997). They assert a positive but asymmetric correlation between accruals and contemporaneous cash flows. The positive correlation arises because cash flow revisions in the current period tend to be positively correlated with current revisions for expected future cash flows. Furthermore, timely recognition of unrealized gains and losses is based on expected, not realized cash flows, and therefore accomplished through accruals. Thus, timely gain and loss recognition will produce a positive correlation between accruals and current period cash flows. The correlation is asymmetric because losses, under conservative reporting, are more likely to be recognized on a timely basis than gains.²⁵ This is shown in the following model:

$$ACC_{it} = \gamma_0 + \gamma_1 DCFO_{it} + \gamma_2 CFO_{it} + \gamma_3 CFO_{it} * DCFO_{it} \quad (8)$$

where:

ACC_{it} = Operating income for firm i minus its operating cash flows in year t, deflated by total assets in year t-1;

$DCFO_{it}$ = 1 if operating cash flows for firm i in year t is negative, and 0 otherwise; and

CFO_{it} = Operating cash flows in year t for firm i deflated by total assets in year t-1.

²⁵ Ball and Shivakumar (2006) incorporate conditional conservatism, the asymmetric timeliness with which accruals recognize economic losses, into the existing accruals models. The findings contribute to accounting research on the role of accruals in conditional conservatism and the specification of accruals models (Guay 2006).

Model (8) provides for both roles of accruals: mitigation of noise in cash flows and asymmetric recognition of unrealized gains and losses. Ball and Shivakumar (2005) predict a negative γ_2 and positive incremental coefficient γ_3 for accounting conservatism.

To examine hypothesis, auditor tenure (TENURE) is added in model (8) to interact with other independent variables:

$$\begin{aligned} \text{ACC}_{it} = & \gamma_0 + \gamma_1 \text{DCFO}_{it} + \gamma_2 \text{CFO}_{it} + \gamma_3 \text{CFO}_{it} * \text{DCFO}_{it} + \gamma_4 \text{TENURE}_{it} \\ & + \gamma_5 \text{DCFO}_{it} * \text{TENURE}_{it} + \gamma_6 \text{CFO}_{it} * \text{TENURE}_{it} \\ & + \gamma_7 \text{CFO}_{it} * \text{DCFO}_{it} * \text{TENURE}_{it} + \varepsilon \end{aligned} \quad (9)$$

If longer auditor tenure impairs auditor independence, leading to less conservative financial reporting, then the positive correlation between operating cash flows and accruals will be reduced as auditor tenure lengthens: that is, γ_7 is predicted to be negative. I offer no prediction for the intercept γ_0 or the coefficients γ_1 , γ_4 , γ_5 , and γ_6 .

I also include BM, LEV, LIGA, and SIZE to control for other sources of conservatism. The switching simultaneous equations model is applied as well to test the predicted association between auditor tenure and auditor conservatism.

The accrual-based test of conservatism also has limitations. First, this methodology relies on an assumption that the cash flow implications from a current news event are present in the current year and are persistent: that is, a current bad economic event will reduce both current and future bad cash flow projections (Bushman and Piotroski 2006, Ball and Shivakumar 2006). Second, some of the new information about cash flows relates to “unbooked” items such as growth options and synergies, which affect neither “bookable” gains or losses nor current-period cash flows, or some affect one but not the other (Ball and Shivakumar 2006). Third, this methodology assumes that cash flow from

operations is an unbiased measure of economic circumstances. However, Roychowdhury (2006) finds evidence consistent with management manipulating real activities to avoid reporting annual losses. Despite the different limitations mentioned for each of the measures used in this study, I believe that consistency of results will mitigate concerns about the potential errors and biases associated with a particular research design.

5.5 Sample Selection

The initial sample consists of all firm-years from 1988 to 2004 inclusive with sufficient required data from both Compustat and CRSP. All firms with SIC codes from 6000-6999 (financial services) are excluded because accounting rules are different for these industries and they are more heavily regulated. I exclude those public firms audited by small audit firms because prior research has suggested that big audit firms have a higher reputation in auditing and companies might have different incentives to select audit firms (Craswell et al. 1995, Francis et al. 1999, Reynolds and Francis 2001). The observations in the top or bottom 0.5 percent of the distribution of market-adjusted returns, operating income, and cash flow from operations are deleted to mitigate the effects of outliers.

I measure auditor tenure (TENURE) as the cumulative number of years since the auditor has been employed. Because the choice of the auditing firm is unavailable before the firm enters Compustat (e.g., pre-IPO), tenure is set to one year the first time financial information becomes available. TENURE was truncated as of 1974 because information

regarding a firm's auditor/opinion begins in Compustat in 1974.²⁶ Any measure of tenure that relies on Compustat is potentially biased downward (Mansi et al. 2004). However, the use of the categorical variable TENURE will mitigate this bias by defining TENURE less than or equal to three years as a short-term relationship, longer than or equal to nine years as a long-term relationship, and medium-term relationships between them (Johnson et al. 2002). In additional tests, I measure auditor tenure as a categorical variable to accurately classify observations.

Consistent with Myers et al. (2003) and Stanley and DeZoort (2007), auditor changes attributable to audit firm mergers were coded as a continuation of the prior auditor. I limit my analyses to years beginning in 1988 to provide some variation for auditor tenure; in addition, 1988 is the first year the COMPUSTAT database provides operating cash flows for public firms.

²⁶ This method is consistent with Mansi et al. (2004) and Stanley and DeZoort (2007).

CHAPTER 6

RESULTS

6.1 Descriptive Statistics

Table 1 describes the composition of auditor tenure groups in my sample and changes in the composition over 1988-2004, where short auditor tenure is defined as auditor-client relationships less than or equal to 3 years, medium auditor tenure is defined as auditor-client relationships greater than 3 years but less than 9 years, and long auditor tenure is defined as auditor-client relationships longer than or equal to 9 years. Table 1 Panel A shows that among 35,124 firm-year observations, around 19 percent of the observations have a short auditor-client relationship. Around 37 and 44 percent of the observations are in the medium tenure group and the long tenure group, respectively.

Table 1 Panel B shows that the percentages of observations in each auditor tenure group vary over time, but in most years, more observations are in the long tenure group. Figure 2a and 2b graphically show the trend of auditor-client relationships over time. In particular, Figure 2a shows that the mean values of auditor tenure (around 9 years) are quite stable over 1988-2004 with the shortest auditor tenure at 2002. Figure 2b shows that the proportions of each tenure group are stable before 1994. However, since 1995 the proportions of the medium (long) tenure group have increased (decreased), with the peak (dip) in 2001 (2002). The dramatic increases (decreases) of observations in the short (medium) tenure group after 2002 are mostly likely driven by the collapse of Arthur Anderson.

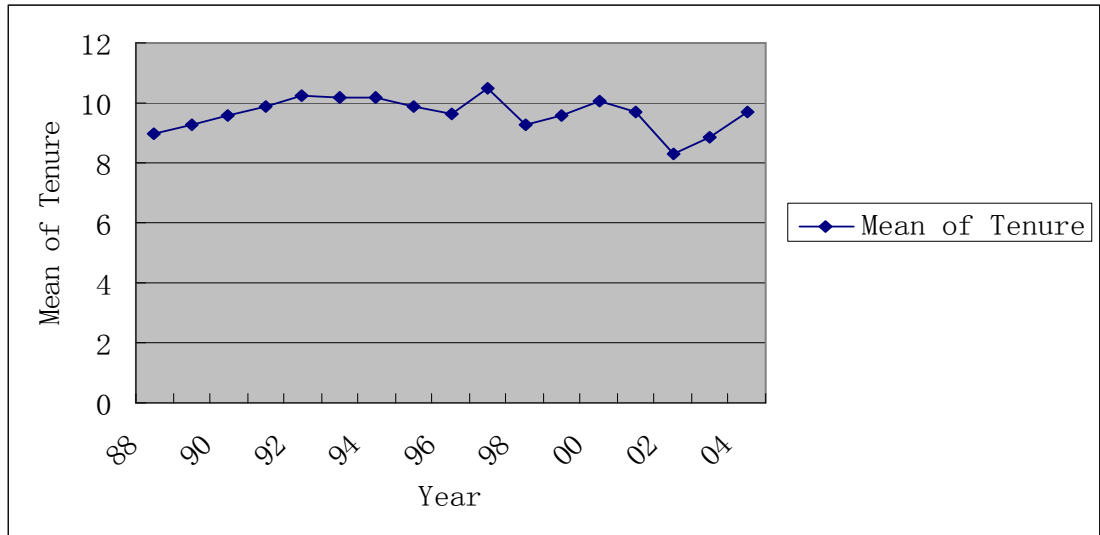
Table 1*Panel A: Composition of Auditor Tenure Groups*

| <u>Group</u> | <u>Tenure (years)</u> | <u>Observations</u> | <u>Percentage</u> |
|--------------|-----------------------|---------------------|-------------------|
| Short | < = 3 | 6783 | 19.31% |
| Medium | > = 4, and < = 8 | 12931 | 36.82% |
| Long | > = 9 | 15410 | 43.87% |
| Total | | 35124 | 100% |

Panel B: Composition of Auditor Tenure Groups over Time

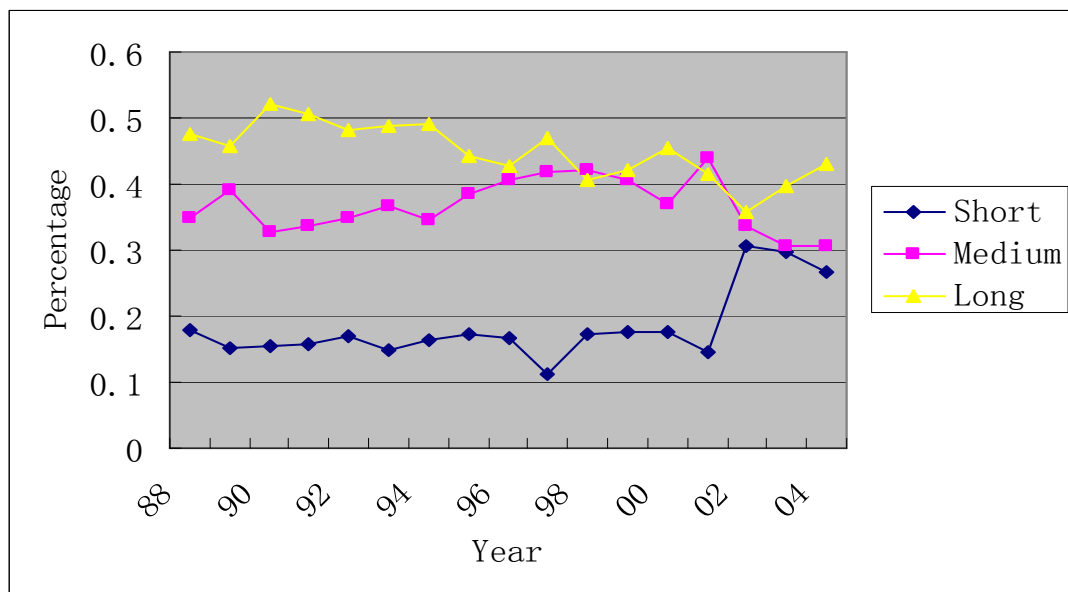
| <u>Year</u> | <u>Observations</u> | <u>Short</u> | <u>Medium</u> | <u>Long</u> |
|-------------|---------------------|--------------|---------------|-------------|
| 1988 | 1268 | 17.74% | 34.84% | 47.43% |
| 1989 | 1390 | 15.18% | 39.14% | 45.68% |
| 1990 | 1429 | 15.33% | 32.61% | 52.06% |
| 1991 | 1480 | 15.88% | 33.51% | 50.61% |
| 1992 | 1495 | 16.99% | 34.72% | 48.29% |
| 1993 | 1673 | 14.82% | 36.52% | 48.66% |
| 1994 | 1660 | 16.33% | 34.52% | 49.16% |
| 1995 | 1899 | 17.17% | 38.49% | 44.34% |
| 1996 | 2246 | 16.70% | 40.65% | 42.65% |
| 1997 | 1497 | 11.16% | 41.82% | 47.03% |
| 1998 | 2542 | 17.31% | 42.01% | 40.68% |
| 1999 | 2588 | 17.55% | 40.47% | 41.98% |
| 2000 | 2408 | 17.51% | 36.93% | 45.56% |
| 2001 | 2843 | 14.52% | 44.06% | 41.42% |
| 2002 | 2988 | 30.59% | 33.67% | 35.74% |
| 2003 | 2872 | 29.67% | 30.68% | 39.66% |
| 2004 | 2846 | 26.60% | 30.46% | 42.94% |

a.



a

b.



b

Figure 2a: The Means of Auditor Tenure over Time^a. Figure 2b: The Means of Auditor Tenure over Time for Each Tenure Group^b

^a Auditor tenure is the number of years since the auditors have been employed.

^b Short tenure group contains firms with auditor-client relationships less than or equal to three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure groups are firms with auditor-client relationships longer than or equal to nine years.

Table 2 reports the summary statistics for my sample. I report the mean, standard deviation, first quartile, median, third quartile, minimum, and maximum for TENURE, TA, RETURN, NI, Δ NI, CFO, MV, LEV and BM. The mean/median tenure is 10/7 years. All other variables except LEV are right skewed. For example, the mean/median of total assets (TA) is \$1,744/235 million, and the mean/median of operating cash flows (CFO) is \$164/16 million. Most firms have book-to-market ratios (BM) less than 1, which suggests that the portion of market values reflecting growth options are not captured in book values.

Table 3 reports the pairwise Pearson product-moment correlations. Most correlations are significant at a 10 percent level or better. For example, auditor tenure (TENURE) is significantly positively associated with the firm's total assets (TA), net income (NI) and cash flows from operations (CFO), which suggests that auditor-client relationships lengthen as firms grow.

6.2 Multivariate Regression Results

6.2.1 Timeliness of earnings to reflect 'news'

Table 4 reports the results for the first set of tests based on the timeliness of earnings to news. In panel A, I report the estimates of model (1), that is, the regression of earnings on market-adjusted stock returns without including incremental intercept and slope coefficients for TENURE. The results show evidence consistent with conservatism. In particular, the coefficient α_3 , which captures the incremental timeliness of earnings to bad news relative to good news (i.e., the degree of conservatism), is significantly positive (α_3

Table 2
Descriptive Statistics

| | <u>Mean</u> | <u>SD</u> | <u>25%</u> | <u>50%</u> | <u>75%</u> | <u>Min</u> | <u>Max</u> |
|-------------|-------------|-----------|------------|------------|------------|------------|------------|
| TENURE | 10 | 7 | 4 | 7 | 14 | 1 | 31 |
| TA | 1743.753 | 4988.698 | 60.990 | 234.767 | 1053.700 | 0.113 | 244192.530 |
| RETURN | 0.070 | 0.580 | -0.279 | -0.037 | 0.255 | -0.844 | 4.000 |
| NI | 74.571 | 258.921 | -0.808 | 6.631 | 44.997 | -1017.134 | 3533.000 |
| Δ NI | 11.868 | 195.027 | -3.577 | 0.734 | 10.309 | -3735.707 | 16329.132 |
| CFO | 164.023 | 450.192 | 1.379 | 16.136 | 97.730 | -110.539 | 4375.000 |
| LEV | 0.485 | 0.280 | 0.299 | 0.487 | 0.641 | 0.001 | 24.823 |
| BM | 0.600 | 2.912 | 0.286 | 0.504 | 0.820 | -333.230 | 22.090 |

Δ NI is the change of net income in current year. See Appendix B for other variable definitions.

Table 3
Pearson Correlations

| | <u>TENURE</u> | <u>TA</u> | <u>RETURN</u> | <u>NI</u> | <u>ΔNI</u> | <u>CFO</u> | <u>LEV</u> | <u>BM</u> |
|--------|---------------|--------------|---------------|--------------|--------------|--------------|---------------|---------------|
| TENURE | 1.000 | 0.157 | -0.017 | 0.190 | 0.019 | 0.189 | 0.075 | -0.018 |
| TA | | 1.000 | -0.006 | 0.656 | 0.115 | 0.832 | 0.178 | -0.012 |
| RETURN | | | 1.000 | 0.023 | 0.054 | 0.009 | -0.017 | -0.027 |
| NI | | | | 1.000 | 0.293 | 0.836 | 0.088 | -0.017 |
| ΔNI | | | | | 1.000 | 0.174 | 0.020 | -0.030 |
| CFO | | | | | | 1.000 | 0.151 | -0.020 |
| LEV | | | | | | | 1.000 | -0.106 |
| BM | | | | | | | | 1.000 |

The numbers in bold are significant at 10 percent or better. ΔNI is the change of net income in current year. See Appendix B for other variable definitions.

Table 4
Pooled Cross-sectional Regressions of Earnings on Market-adjusted Stock Fiscal-
year Returns

Panel A: Timeliness of earnings to news

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> |
|----------------|--------------|---------------------------------|-----------------|---------------|---------------------------|
| INTERCEPT | α_0 | ? | 0.033 | 12.807 | 0.00 |
| DR | α_1 | ? | 0.032 | 7.791 | 0.00 |
| R | α_2 | + | -0.029 | -8.624 | 0.00 |
| DR*R | α_3 | + | 0.385 | 39.919 | 0.00 |
| Adj- R^2 (%) | | | 5.59% | | |
| No. of obs | | | 35124 | | |

Panel B: Timeliness of earnings to news with incremental effect of auditor tenure

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> |
|----------------|--------------|---------------------------------|-----------------|---------------|---------------------------|
| INTERCEPT | α_0 | ? | 0.006 | 1.316 | 0.19 |
| DR | α_1 | ? | 0.042 | 5.962 | 0.00 |
| R | α_2 | + | -0.030 | -5.344 | 0.00 |
| DR*R | α_3 | + | 0.478 | 29.848 | 0.00 |
| TENURE | α_4 | ? | 0.003 | 7.249 | 0.00 |
| DR*TENURE | α_5 | ? | -0.002 | -2.784 | 0.01 |
| R*TENURE | α_6 | + | 0.001 | 1.164 | 0.24 |
| R*DR*TENURE | α_7 | - | -0.015 | -9.582 | 0.00 |
| Adj- R^2 (%) | | | 6.92% | | |
| No. of obs | | | 35124 | | |

(Table 4 continued)

Panel C: Timeliness of earnings to news by auditor tenure group^a

| | <u>Coeff</u> | Short Tenure | | | Medium Tenure | | | Long Tenure | | |
|----------------|--------------|-----------------|---------------|----------------|-----------------|---------------|----------------|-----------------|---------------|----------------|
| | | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | α_0 | 0.018 | 2.111 | 0.03 | 0.009 | 2.008 | 0.04 | 0.054 | 22.306 | 0.00 |
| DR | α_1 | 0.029 | 2.101 | 0.04 | 0.039 | 5.253 | 0.00 | 0.019 | 4.899 | 0.00 |
| R | α_2 | -0.016 | -1.545 | 0.12 | -0.030 | -5.510 | 0.00 | -0.025 | -6.783 | 0.00 |
| DR*R | α_3 | 0.413 | 13.489 | 0.00 | 0.399 | 25.030 | 0.00 | 0.287 | 28.128 | 0.00 |
| Adj- R^2 (%) | | 3.99% | | | 5.96% | | | 6.20% | | |
| No. of obs | | 6783 | | | 12931 | | | 15410 | | |

^a Short tenure group contains firms with auditor-client relationships less than or equal to three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure group contains firms with auditor-client relationships longer than or equal to nine years.

All the p-values are two sided. See Appendix B for variable definitions.

= 0.385, $p = 0.00$), consistent with earnings being more responsive to contemporaneous bad news than good news in all sample firms.

To examine the predicted variation of conservatism with auditor tenure, I estimate model (1) separately for each year of auditor tenure ranging from 1 to 31 years. Figure 3a graphs the estimates. The degree of conservatism as measured by asymmetric timeliness of earnings to news (i.e., α_3) dramatically decreases as auditor tenure increases. Model (2) is used to formally test this conclusion. In Panel B of Table 4, I report estimates of model (2), including intercept and slope coefficients for TENURE. The coefficient on α_3 continues to be significantly positive. However, the coefficient α_7 is significantly negative ($\alpha_7 = -0.015$, $p = 0.00$), which suggests that the earnings of firms with longer auditor tenure reflect bad news less quickly than firms with short auditor tenure. This is consistent with the hypothesis H1a that longer auditor tenure reduces auditors' tendency to report conservatively.

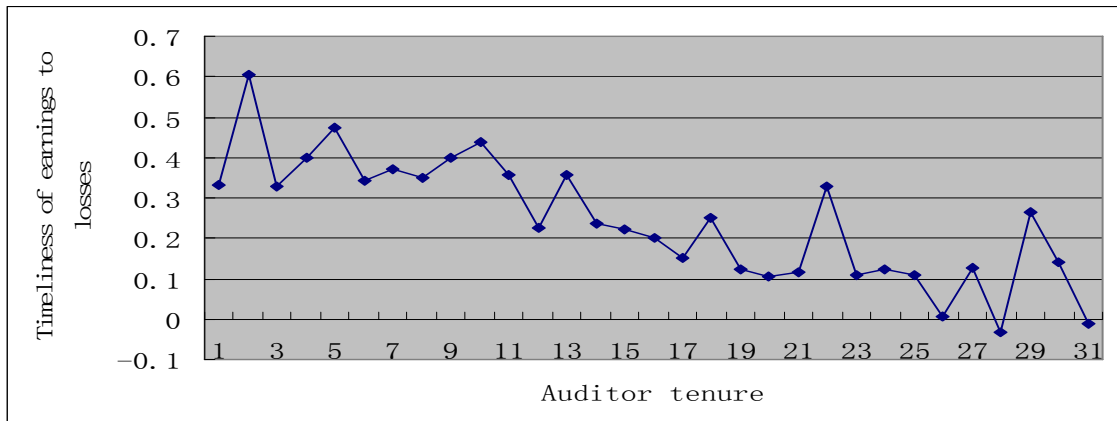


Figure 3a: Changes of Conservatism as Auditor Tenure^a

^a Conservatism is measured by the degree of timeliness of earnings to news (i.e., α_3) based on model (1). Auditor tenure is the number of years since the auditors have been employed.

To mitigate the possibility that the observed association between auditor tenure and conservatism measured by timeliness of earnings to news is nonlinear, Table 4 Panel C reports the regression results of model (1) separately for each tenure group (short auditor tenure group, medium auditor tenure group, and long auditor tenure group). It is apparent that conservatism which is evident in the overall sample (Table 4 Panel A) is also present within each of the tenure groups. In all cases, the coefficients α_3 are significantly positive. However, the magnitude of α_3 is decreasing as tenure increases (e.g., 0.413, 0.399, 0.287 for the short tenure group, medium tenure group, and long tenure group, respectively), which provides further evidence that conservatism, as measured by the timeliness of earnings to reflect bad news, is decreasing when auditor tenure lengthens.²⁷

6.2.2 Persistence of negative earnings changes

Table 5 reports the results of the second test of the association between auditor tenure and conservatism, where conservatism is measured by the persistence of negative earnings changes. These tests focus on the overall extent to which earnings changes reverse asymmetrically, and whether the extent of asymmetric reversal differs in the length of auditor tenure. In Panel A of Table 5, I report the estimates of model (3), that is, without including the incremental effect of auditor tenure. The results show that the coefficient β_3 is significantly negative ($\beta_3 = -0.938$, $p = 0.00$), which suggests that

²⁷ To ensure that the market response to the previous year's earnings is excluded, I also calculate market-adjusted returns to end three months after the fiscal year-end (Basu 1997). In addition, Gigler and Hemmer (2001) recommend using a return window that excludes the market reaction to both the prior year's earnings release as well as the current year's earnings release. To incorporate this approach, I also calculate a nine-month period return ending at fiscal year-end. The results based on these new measures are qualitatively similar to those reported above.

Table 5
Pooled Cross-sectional Regressions of Earnings Changes on Prior-period Earnings Changes

Panel A: Persistence of earnings changes

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|---|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | β_0 | ? | -0.012 | -7.609 | 0.00 |
| D Δ NI _{t-1} | β_1 | ? | -0.039 | -15.186 | 0.00 |
| Δ NI _{t-1} | β_2 | - | 0.116 | 33.467 | 0.00 |
| D Δ NI _{t-1} * Δ NI _{t-1} | β_3 | - | -0.938 | -156.879 | 0.00 |
| Adj- R^2 (%) | | | 46.19% | | |
| No. of obs | | | 35124 | | |

Panel B: Persistence of earnings changes with incremental effect of auditor tenure

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|---|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | β_0 | ? | -0.020 | -7.552 | 0.00 |
| D Δ NI _{t-1} | β_1 | ? | -0.055 | -12.955 | 0.00 |
| Δ NI _{t-1} | β_2 | - | 0.222 | 32.811 | 0.00 |
| D Δ NI _{t-1} * Δ NI _{t-1} | β_3 | - | -1.067 | -92.582 | 0.00 |
| TENURE | β_4 | ? | 0.001 | 5.782 | 0.00 |
| D Δ NI _{t-1} *TENURE | β_5 | ? | 0.001 | 3.808 | 0.00 |
| Δ NI _{t-1} *TENURE | β_6 | - | -0.022 | -18.141 | 0.00 |
| D Δ NI _{t-1} * Δ NI _{t-1} *TENURE | β_7 | + | 0.026 | 12.536 | 0.00 |
| Adj- R^2 (%) | | | 46.82% | | |
| No. of obs | | | 35124 | | |

(Table 5 continued)

Panel C: Persistence of earnings changes by auditor tenure group^a

| | Short Tenure | | | | Medium Tenure | | | Long Tenure | | |
|--------------------------------------|--------------|-----------------|---------------|----------------|-----------------|---------------|----------------|-----------------|---------------|----------------|
| | <u>Coeff</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | β_0 | -0.022 | -3.652 | 0.00 | -0.012 | -4.582 | 0.00 | -0.004 | -2.625 | 0.01 |
| $D\Delta NI_{t-1}$ | β_1 | -0.031 | -3.297 | 0.00 | -0.067 | -16.568 | 0.00 | -0.003 | -1.222 | 0.22 |
| ΔNI_{t-1} | β_2 | 0.227 | 23.634 | 0.00 | 0.072 | 16.155 | 0.00 | -0.006 | -0.953 | 0.34 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | -0.992 | -62.807 | 0.00 | -0.985 | -126.706 | 0.00 | -0.420 | -32.865 | 0.00 |
| Adj- R^2 (%) | | 39.83% | | | 62.96% | | | 9.32% | | |
| No. of obs | | 6783 | | | 12931 | | | 15410 | | |

^a Short tenure group contains firms with auditor-client relationships less than or equal to three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure group contains firms with auditor-client relationships longer than or equal to nine years.

All the p-values are two sided. See Appendix B for variable definitions.

earnings changes are reversed more quickly when the earnings changes are negative than positive, which is consistent with the interpretation of conservatism.

Similar to Figure 3a, Figure 3b graphs the changes of conservatism based on model (3) for each auditor tenure year ranging from 1 to 31 years. Generally, the graph in Figure 3b shows a decreasing degree of conservatism as auditor tenure lengthens, although some noise is found during the last few years of audits. As a formal test, I examine the incremental effect of auditor tenure by testing regression model (4) and the results are reported in Panel B of Table 5. It shows that the regression model has good explanatory power (e.g., $R^2 = 46.82\%$). Consistent with hypothesis H1b, the coefficient β_7 is significantly positive ($\beta_7 = 0.026, p = 0.00$), which suggests that the rate at which the negative earnings changes are reversed (i.e., conservatism) is reduced when auditor tenure is longer.

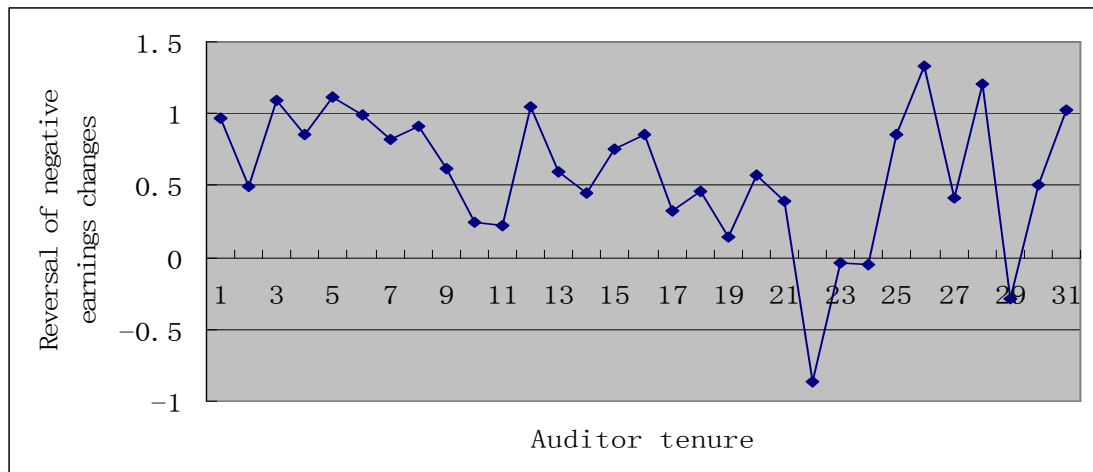


Figure 3b: Changes of Conservatism as Auditor Tenure ^a

^a Conservatism is measured by the reversal rate of negative earnings changes (i.e., β_3) based on model (3). The estimates in graph are multiplied by -1 for purpose of illustration. Auditor tenure is the number of years since the auditors have been employed.

Table 5 Panel C reports the separate estimates of model (3) for firms with short auditor tenure, medium auditor tenure, and long auditor tenure, respectively. The conservatism, as measured by the quick reversal of negative earnings changes, is evident in each group (e.g., β_3 is significantly negative). Moreover, as auditor tenure increases, the coefficient β_3 becomes less negative (e.g., -0.992 , -0.985 , -0.420 for the short tenure group, medium tenure group, and long tenure group, respectively, suggesting decreasing conservatism with auditor tenure. Thus, the results further strengthen the negative association between auditor tenure and conservatism reported in Panel B of Table 5.

6.2.3 Control for cross-sectional and time-series dependence

Taken together, the results in Table 4 and Table 5 are consistent with the hypothesis H1a and H1b, respectively. They suggest that as auditor tenure lengthens, firms recognize unexpected losses in earnings in a less timely fashion, that is, firms report less conservatively. To mitigate the concern that the estimated standard errors in the pooled regressions likely are affected by cross-sectional correlation, I estimate Fama-Macbeth t-statistics derived from annual cross-sectional regressions of models (2) and (4). The estimated coefficient is the average of the annual slope coefficients. The t-statistic is the ratio of the sample mean to the standard deviation of the time-series distribution of the estimated coefficients, divided by the square root of the number of annual cross-sections. The new results are similar to those reported in Panel B of Table 4 and Panel B of Table 5. A second concern relates to the potential impact of time-series dependence in my data. I use Durbin-Watson tests for model (2) and model (4) directed at testing the association between auditor tenure and conservatism. Although Durbin-Watson statistics indicate

that time-series dependence is minimal in my setting, I have also re-estimated models (2) and (4) by using the Newey-West procedures and find that the primary results are not qualitatively changed.²⁸

6.3 Control for Other Sources of Conservatism

Table 6 presents the results of models (5) and (6) directed at testing the effect of long-term auditor-client relationships and conservatism after controlling for other sources of conservatism. The results in Panel A show that the incremental effect of auditor tenure on timeliness of earnings to reflect news is still significant. Specifically, the coefficient on the interaction term $R*DR*TENURE$ (i.e., α_7) is -0.014 and the p-value is 0.00, which suggests that the previously found negative association between auditor tenure and timeliness of earnings to news is not driven by other sources of conservatism.

All of the controlled effects of BM , LEV , $LIGA$, and $SIZE$ on conservatism are significant and have directions consistent with LaFond and Watts (2006). In particular, I find that a large book-to-market ratio (BM) is associated with less conditional conservatism ($\alpha_{11} = -0.007$, $p = 0.00$). The significant positive coefficient on the interaction term $R*DR*LEV$ ($\alpha_{15} = 0.380$, $p = 0.05$) is consistent with the findings of Frankel and Roychowdhury (2006) that firms with higher leverage report more conservative earnings. Auditors report more conservatively for clients with higher litigation risk against auditors, which is suggested by the significant coefficient of

²⁸ Specifically, the Durbin-Watson statistic for model (2) is 1.58, which is the region of neither acceptance nor rejection of the null hypothesis of no serial correlation. The Durbin-Watson statistic for model (4) is 1.93, which cannot reject the null hypothesis of no serial correlation at the 5 percent level.

Table 6
Control for Other Sources of Conservatism

Panel A: Timeliness of earnings to news

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|----------------|---------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | α_0 | ? | -0.038 | -4.409 | 0.00 |
| DR | α_1 | ? | 0.018 | 1.272 | 0.00 |
| R | α_2 | + | -0.061 | -4.958 | 0.20 |
| DR*R | α_3 | + | 0.478 | 15.590 | 0.00 |
| TENURE | α_4 | ? | 0.002 | 4.382 | 0.00 |
| DR*TENURE | α_5 | ? | -0.002 | -2.978 | 0.00 |
| R*TENURE | α_6 | + | 0.001 | 1.159 | 0.00 |
| R*DR*TENURE | α_7 | - | -0.013 | -9.024 | 0.25 |
| BM | α_8 | ? | -0.007 | -4.666 | 0.00 |
| DR*BM | α_9 | ? | 0.019 | 6.071 | 0.00 |
| R*BM | α_{10} | + | 0.024 | 5.297 | 0.00 |
| R*DR*BM | α_{11} | -/+ | -0.007 | -1.223 | 0.00 |
| LEV | α_{12} | ? | -0.084 | -8.170 | 0.22 |
| DR*LEV | α_{13} | ? | 0.096 | 5.900 | 0.00 |
| R*LEV | α_{14} | - | 0.018 | 1.531 | 0.00 |
| R*DR*LEV | α_{15} | + | 0.380 | 14.347 | 0.05 |
| LIGA | α_{16} | ? | -0.498 | -5.635 | 0.00 |
| DR*LIGA | α_{17} | ? | 0.223 | 1.689 | 0.00 |
| R*LIGA | α_{18} | ? | 0.213 | 2.291 | 0.09 |
| R*DR*LIGA | α_{19} | + | 0.137 | 0.541 | 0.02 |
| SIZE | α_{20} | ? | 0.017 | 13.944 | 0.59 |
| DR*SIZE | α_{21} | ? | -0.007 | -3.628 | 0.00 |
| R*SIZE | α_{22} | + | 0.003 | 1.852 | 0.00 |
| R*DR*SIZE | α_{23} | - | -0.054 | -11.569 | 0.06 |
| Adj- R^2 (%) | | | 12.46% | | |
| No. of obs | | | 33741 | | |

(Table 6 continued)

Panel B: Persistence of earnings changes

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|---|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | β_0 | ? | -0.039 | -6.975 | 0.00 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.094 | -10.541 | 0.00 |
| ΔNI_{t-1} | β_2 | - | 0.205 | 14.800 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | - | -1.039 | -43.905 | 0.00 |
| TENURE | β_4 | ? | 0.001 | 3.239 | 0.00 |
| $D\Delta NI_{t-1} * TENURE$ | β_5 | ? | 0.001 | 3.556 | 0.00 |
| $\Delta NI_{t-1} * TENURE$ | β_6 | - | -0.018 | -14.514 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ | β_7 | + | 0.023 | 11.031 | 0.00 |
| BM | β_8 | ? | 0.001 | 1.357 | 0.17 |
| $D\Delta NI_{t-1} * BM$ | β_9 | ? | -0.002 | -1.218 | 0.22 |
| $\Delta NI_{t-1} * BM$ | β_{10} | - | -0.004 | -2.151 | 0.03 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * BM$ | β_{11} | -/+ | 0.002 | 0.363 | 0.72 |
| LEV | β_{12} | ? | -0.049 | -6.992 | 0.00 |
| $D\Delta NI_{t-1} * LEV$ | β_{13} | ? | 0.092 | 8.740 | 0.00 |
| $\Delta NI_{t-1} * LEV$ | β_{14} | + | 0.127 | 8.560 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LEV$ | β_{15} | - | -0.196 | -10.080 | 0.00 |
| LIGA | β_{16} | ? | 0.027 | 0.353 | 0.72 |
| $D\Delta NI_{t-1} * LIGA$ | β_{17} | ? | -0.280 | -2.978 | 0.00 |
| $\Delta NI_{t-1} * LIGA$ | β_{18} | ? | -1.016 | -5.528 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LIGA$ | β_{19} | - | -0.838 | -2.978 | 0.00 |
| SIZE | β_{20} | ? | 0.008 | 10.106 | 0.00 |
| $D\Delta NI_{t-1} * SIZE$ | β_{21} | ? | -0.001 | -0.791 | 0.43 |
| $\Delta NI_{t-1} * SIZE$ | β_{22} | - | -0.014 | -5.546 | 0.00 |
| $D\Delta NI_{t-1} \Delta NI_{t-1} * SIZE$ | β_{23} | + | -0.047 | -10.905 | 0.00 |
| Adj- R^2 (%) | | | 50.21% | | |
| No. of obs | | | 33566 | | |

All the p-values are two sided. See Appendix B for variable definitions.

$R*DR*LIGA$ ($\alpha_{19} = 0.137, p = 0.02$). Lastly, I find a significant negative relation between firm size and conservatism ($\alpha_{23} = -0.054, p = 0.06$), which is consistent with the argument of Basu (2001) and LaFond and Watts (2006). In particular, larger firms have more income aggregation and the relative amount of public information which reduces information asymmetry, resulting in a lower level of conservatism.

Roychowdhury and Watts (2006) suggest that estimating the asymmetric timeliness cumulatively over multiple periods preceding a given year generates a better measure of conservatism than that estimated over that year.²⁹ Following Basu (1997, Table 5), Roychowdhury and Watts (2006) and LaFond and Watts (2006), I reestimate model (5) by regressing cumulative earnings on cumulative returns. Earnings and returns are cumulated over the current and the prior two fiscal years. The results from the above tests are consistent with the results reported in Table 5.

Table 6 Panel B presents the results of the association between auditor tenure and conservatism after controlling for BM, LEV, LIGA, and SIZE, where conservatism is measured by the extent of the persistence of negative earnings changes. I continually find that long-term auditor-client relationships negatively affect conservatism as evidenced by a significant positive coefficient on the interactive term $\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ ($\beta_7 = 0.023, p = 0.00$). With respect to the controlled factors, Panel B shows that firms with higher leverage ratio (LEV) and higher litigation risk (LIGA) report

²⁹ Annual horizon estimates of the Basu coefficient are affected by firms' failure to record asset write-downs because previous asset value increases were not recorded due to conservatism (the "buffer" problem). Pae et al. (2005) suggest that this effect causes the annual Basu coefficient to underestimate the degree of conservatism. Roychowdhury and Watts (2006) provide evidence that the buffer problem is significantly reduced by estimating the Basu coefficient using three year estimation interval.

conservatively ($\beta_{15} = -0.196, p = 0.00$; $\beta_{19} = -0.838, p = 0.00$), which is consistent with the findings reported in Panel A of Table 6. Although Panel B does not show a significant effect of BM ratio on conservatism, it shows that a larger firm (SIZE) has a quick reversal rate of negative earnings changes, which means more conservatism. Although the interpretations with respect to SIZE are opposite to those reported in Table 6 Panel A, LaFond and Watts (2006) argue that large firms could report more conservatively due to high political costs.

In summary, the results reported in Table 6 Panel A and Panel B lend support to the primary hypothesis H1 that longer auditor-client relationships will impair auditor independence and hence, reduce conservatism. The combined results indicate that the influence of long-term auditor tenure on conservatism can not be attributed to other potential sources of conservatism, specifically, growth options, debt contracts, litigation risk, or firm size.

6.4 Control for Endogeneity

Table 7 and Table 8 report the regression results after controlling for endogeneity, with the measures of conservatism using timeliness of earnings to news and persistence of earnings changes, respectively. In each table, Panel A and Panel B report the results without and with controls for other sources of conservatism, respectively. Appendix C presents the results from the first stage model that predicts auditor tenure. To more fully examine whether accounting conservatism varies at different auditor tenure stages, I designate auditor tenure (TENURE) as a dummy variable so that I can compare

Table 7
Control for Endogeneity

Panel A: Timeliness of earnings to news^a

| | <u>Coeff</u> | <u>Predicted</u> | Short vs. Medium | | | Medium vs. Long | | | Short vs. Long | | |
|----------------|--------------|------------------|-------------------------|---------------|----------------|------------------------|---------------|----------------|-----------------------|---------------|----------------|
| | | <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | α_0 | ? | 0.028 | 1.559 | 0.12 | 0.158 | 11.007 | 0.00 | 0.162 | 17.896 | 0.00 |
| DR | α_1 | ? | 0.042 | 1.754 | 0.08 | 0.070 | 3.501 | 0.00 | 0.036 | 2.798 | 0.01 |
| R | α_2 | + | -0.001 | -0.050 | 0.96 | -0.044 | -2.794 | 0.01 | 0.005 | 0.547 | 0.58 |
| DR*R | α_3 | + | 0.458 | 8.615 | 0.00 | 0.583 | 12.767 | 0.00 | 0.380 | 13.069 | 0.00 |
| TENURE | α_4 | ? | -0.009 | -1.060 | 0.29 | -0.012 | -2.426 | 0.02 | -0.004 | -1.398 | 0.16 |
| DR*TENURE | α_5 | ? | -0.001 | -0.101 | 0.92 | -0.019 | -2.474 | 0.01 | -0.007 | -1.434 | 0.15 |
| R*TENURE | α_6 | + | -0.014 | -1.325 | 0.19 | 0.013 | 2.042 | 0.04 | -0.002 | -0.409 | 0.68 |
| R*DR*TENURE | α_7 | - | -0.031 | -1.025 | 0.31 | -0.127 | -7.016 | 0.00 | -0.062 | -5.279 | 0.00 |
| LAMBDA | | ? | 0.003 | 0.192 | 0.85 | -0.130 | -34.268 | 0.00 | -0.235 | -35.537 | 0.00 |
| Adj- R^2 (%) | | | 5.49% | | | 12.12% | | | 11.67% | | |
| No. of obs | | | 18864 | | | 27371 | | | 21363 | | |

(Table 7 continued)

Panel B: Timeliness of earnings to news with controls (continued on the next page)

| | Coeff | Short vs. Medium | | | | Medium vs. Long | | | Short vs. Long | | |
|-------------|---------------|-------------------|----------|--------|-------------|-----------------|---------|-------------|----------------|---------|-------------|
| | | Predicted Sign | Estimate | t-stat | p- value | Estimate | t-stat | p- value | Estimate | t-stat | p- value |
| INTERCEPT | α_0 | ? | -0.091 | -4.205 | 0.00 | 0.131 | 8.276 | 0.00 | 0.141 | 10.570 | 0.00 |
| DR | α_1 | ? | 0.028 | 0.825 | 0.41 | 0.067 | 3.090 | 0.00 | -0.005 | -0.288 | 0.77 |
| R | α_2 | + | -0.011 | -0.468 | 0.64 | -0.096 | -5.339 | 0.00 | -0.034 | -2.032 | 0.04 |
| DR*R | α_3 | + | 0.476 | 6.501 | 0.00 | 0.760 | 15.430 | 0.00 | 0.343 | 8.004 | 0.00 |
| TENURE | α_4 | ? | -0.002 | -0.219 | 0.83 | -0.009 | -1.697 | 0.09 | -0.002 | -0.510 | 0.61 |
| DR*TENURE | α_5 | ? | 0.001 | 0.104 | 0.92 | -0.016 | -2.050 | 0.04 | -0.004 | -0.893 | 0.37 |
| R*TENURE | α_6 | + | -0.020 | -2.003 | 0.05 | 0.011 | 1.654 | 0.10 | -0.004 | -0.956 | 0.34 |
| R*DR*TENURE | α_7 | - | 0.019 | 0.629 | 0.53 | -0.105 | -5.785 | 0.00 | -0.039 | -3.337 | 0.00 |
| BM | α_8 | ? | 0.000 | -0.019 | 0.98 | -0.007 | -4.961 | 0.00 | -0.006 | -2.459 | 0.01 |
| DR*BM | α_9 | ? | 0.011 | 1.404 | 0.16 | 0.013 | 4.623 | 0.00 | 0.008 | 2.164 | 0.03 |
| R*BM | α_{10} | + | 0.024 | 3.811 | 0.00 | 0.022 | 5.117 | 0.00 | 0.017 | 2.254 | 0.02 |
| R*DR*BM | α_{11} | -/+ | -0.073 | -4.682 | 0.00 | -0.014 | -2.464 | 0.01 | -0.011 | -1.312 | 0.19 |
| LEV | α_{12} | ? | -0.081 | -4.904 | 0.00 | -0.103 | -10.261 | 0.00 | -0.099 | -8.095 | 0.00 |
| DR*LEV | α_{13} | ? | 0.097 | 3.780 | 0.00 | 0.030 | 1.929 | 0.05 | 0.148 | 7.675 | 0.00 |
| R*LEV | α_{14} | - | 0.016 | 0.885 | 0.38 | 0.022 | 1.834 | 0.07 | 0.036 | 2.410 | 0.02 |
| R*DR*LEV | α_{15} | + | 0.380 | 7.434 | 0.00 | 0.065 | 1.954 | 0.05 | 0.542 | 13.299 | 0.00 |
| LIGA | α_{16} | ? | -0.476 | -4.433 | 0.00 | -0.413 | -3.757 | 0.00 | -0.196 | -1.509 | 0.13 |
| DR*LIGA | α_{17} | ? | 0.073 | 0.376 | 0.71 | 0.071 | 0.462 | 0.64 | 0.289 | 1.688 | 0.09 |
| R*LIGA | α_{18} | ? | 0.178 | 1.512 | 0.13 | 0.062 | 0.392 | 0.70 | 0.167 | 1.595 | 0.11 |
| R*DR*LIGA | α_{19} | + | 0.083 | 0.216 | 0.83 | -0.544 | -1.867 | 0.06 | 0.622 | 1.923 | 0.05 |
| SIZE | α_{20} | ? | 0.022 | 10.881 | 0.00 | 0.009 | 7.900 | 0.00 | 0.007 | 5.373 | 0.00 |
| DR*SIZE | α_{21} | ? | -0.010 | -3.025 | 0.00 | -0.006 | -3.197 | 0.00 | -0.009 | -4.243 | 0.00 |
| R*SIZE | α_{22} | + | 0.002 | 0.727 | 0.47 | 0.007 | 4.144 | 0.00 | 0.003 | 1.528 | 0.13 |
| R*DR*SIZE | α_{23} | - | -0.068 | -8.961 | 0.00 | -0.058 | -12.878 | 0.00 | -0.062 | -11.531 | 0.00 |

| | | | | | | | | | | |
|----------------|---|--------|-------|------|--------|---------|------|--------|---------|------|
| LAMBDA | ? | 0.038 | 2.448 | 0.01 | -0.110 | -27.648 | 0.00 | -0.191 | -26.738 | 0.00 |
| Adj- R^2 (%) | | 11.54% | | | 15.75% | | | 15.63% | | |
| No. of obs | | 18818 | | | 27338 | | | 21324 | | |

^a Short tenure group contains firms with auditor-client relationships less than or equal to three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure group contains firms with auditor-client relationships longer than or equal to nine years. Long or medium tenure groups are coded as one when compared with the short tenure group (coded as zero); Long tenure group is coded as one when compared with the medium tenure group (coded as zero).

All the p-values are two sided. See Appendix B for variable definitions.

Table 8
Control for Endogeneity (Continued)

Panel A: Persistence of earnings changes ^a

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | Short vs. Medium | | | Medium vs. Long | | | Short vs. Long | | |
|--|--------------|---------------------------------|-------------------------|---------------|----------------|------------------------|---------------|----------------|-----------------------|---------------|----------------|
| | | | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | β_0 | ? | -0.063 | -4.621 | 0.00 | 0.028 | 3.035 | 0.00 | 0.013 | 1.771 | 0.08 |
| D Δ NI _{t-1} | β_1 | ? | 0.010 | 0.646 | 0.52 | -0.189 | -16.237 | 0.00 | -0.036 | -3.980 | 0.00 |
| Δ NI _{t-1} | β_2 | - | 0.388 | 24.800 | 0.00 | 0.223 | 11.099 | 0.00 | 0.349 | 33.413 | 0.00 |
| D Δ NI _{t-1} * Δ NI _{t-1} | β_3 | - | -1.009 | -38.909 | 0.00 | -2.098 | -52.280 | 0.00 | -1.284 | -69.201 | 0.00 |
| TENURE | β_4 | ? | 0.013 | 2.191 | 0.03 | -0.005 | -1.629 | 0.10 | 0.003 | 1.381 | 0.17 |
| D Δ NI _{t-1} *TENURE | β_5 | ? | -0.038 | -4.249 | 0.00 | 0.062 | 13.810 | 0.00 | 0.012 | 3.308 | 0.00 |
| Δ NI _{t-1} *TENURE | β_6 | - | -0.158 | -17.154 | 0.00 | -0.075 | -8.137 | 0.00 | -0.116 | -18.630 | 0.00 |
| D Δ NI _{t-1} * Δ NI _{t-1} *TENURE | β_7 | + | 0.011 | 0.727 | 0.47 | 0.554 | 29.365 | 0.00 | 0.279 | 22.357 | 0.00 |
| LAMBDA | β_8 | ? | 0.047 | 3.340 | 0.00 | -0.031 | -9.732 | 0.00 | -0.063 | -9.252 | 0.00 |
| Adj- R^2 (%) | | | 52.71% | | | 55.67% | | | 36.26% | | |
| No. of obs | | | 18864 | | | 27371 | | | 21363 | | |

(Table 8 continued)

Panel B: Persistence of earnings changes with controls

| | Coeff | Predicted Sign | Short vs. Medium | | | Medium vs. Long | | | Short vs. Long | | |
|---|--------------|-------------------|------------------|---------|-------------|-----------------|---------|-------------|----------------|---------|-------------|
| | | | Estimate | t-stat | p- value | Estimate | t-stat | p- value | Estimate | t-stat | p- value |
| INTERCEPT | β_0 | ? | -0.081 | -5.267 | 0.00 | 0.000 | -0.020 | 0.98 | -0.006 | -0.606 | 0.54 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.071 | -3.327 | 0.00 | -0.161 | -12.673 | 0.00 | -0.128 | -10.341 | 0.00 |
| ΔNI_{t-1} | β_2 | - | 0.428 | 16.617 | 0.00 | 0.240 | 11.497 | 0.00 | -0.041 | -1.706 | 0.09 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | - | -1.049 | -25.544 | 0.00 | -1.705 | -37.638 | 0.00 | -1.471 | -38.851 | 0.00 |
| TENURE | β_4 | ? | 0.010 | 1.714 | 0.09 | -0.005 | -1.560 | 0.12 | 0.004 | 2.075 | 0.04 |
| $D\Delta NI_{t-1} * TENURE$ | β_5 | ? | -0.042 | -4.868 | 0.00 | 0.057 | 12.389 | 0.00 | 0.014 | 4.276 | 0.00 |
| $\Delta NI_{t-1} * TENURE$ | β_6 | - | -0.124 | -12.505 | 0.00 | -0.064 | -6.922 | 0.00 | -0.115 | -18.453 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ | β_7 | + | -0.094 | -5.851 | 0.00 | 0.490 | 25.757 | 0.00 | 0.294 | 25.218 | 0.00 |
| BM | β_8 | ? | -0.001 | -0.431 | 0.67 | 0.001 | 1.239 | 0.22 | 0.000 | 0.448 | 0.65 |
| $D\Delta NI_{t-1} * BM$ | β_9 | ? | 0.017 | 3.763 | 0.00 | -0.004 | -2.833 | 0.00 | 0.005 | 2.653 | 0.01 |
| $\Delta NI_{t-1} * BM$ | β_{10} | - | 0.001 | 0.222 | 0.82 | -0.004 | -2.527 | 0.01 | -0.001 | -0.634 | 0.53 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * BM$ | β_{11} | -/+ | 0.032 | 2.436 | 0.01 | -0.006 | -1.488 | 0.14 | 0.029 | 5.293 | 0.00 |
| LEV | β_{12} | ? | -0.067 | -5.886 | 0.00 | -0.027 | -4.368 | 0.00 | -0.057 | -6.871 | 0.00 |
| $D\Delta NI_{t-1} * LEV$ | β_{13} | ? | 0.136 | 8.305 | 0.00 | -0.007 | -0.774 | 0.44 | 0.150 | 11.797 | 0.00 |
| $\Delta NI_{t-1} * LEV$ | β_{14} | + | 0.142 | 6.937 | 0.00 | -0.069 | -4.938 | 0.00 | 0.335 | 13.219 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LEV$ | β_{15} | - | -0.295 | -10.637 | 0.00 | -0.157 | -7.774 | 0.00 | -0.590 | -19.671 | 0.00 |
| LIGA | β_{16} | ? | 0.037 | 0.357 | 0.72 | 0.201 | 2.856 | 0.00 | -0.203 | -1.996 | 0.05 |
| $D\Delta NI_{t-1} * LIGA$ | β_{17} | ? | -0.400 | -3.088 | 0.00 | -0.032 | -0.360 | 0.72 | 0.543 | 3.959 | 0.00 |
| $\Delta NI_{t-1} * LIGA$ | β_{18} | ? | -1.153 | -2.625 | 0.01 | -0.841 | -5.515 | 0.00 | -0.783 | -4.211 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LIGA$ | β_{19} | - | -1.338 | -2.584 | 0.01 | -2.003 | -8.250 | 0.00 | -4.085 | -6.981 | 0.00 |
| SIZE | β_{20} | ? | 0.011 | 7.814 | 0.00 | 0.006 | 7.915 | 0.00 | 0.004 | 4.474 | 0.00 |
| $D\Delta NI_{t-1} * SIZE$ | β_{21} | ? | 0.001 | 0.493 | 0.62 | -0.001 | -0.538 | 0.59 | 0.001 | 0.657 | 0.51 |
| $\Delta NI_{t-1} * SIZE$ | β_{22} | - | -0.040 | -11.259 | 0.00 | -0.001 | -0.403 | 0.69 | 0.047 | 12.783 | 0.00 |

| | | | | | | | | | | | |
|---|--------------|---|--------|--------|------|--------|--------|------|--------|--------|------|
| D Δ NI _{t-1} Δ NI _{t-1} *SIZE | β_{23} | + | -0.012 | -1.959 | 0.05 | -0.035 | -8.874 | 0.00 | -0.043 | -6.530 | 0.00 |
| LAMBDA | β_{24} | ? | 0.047 | 3.207 | 0.00 | -0.021 | -6.318 | 0.00 | -0.022 | -3.221 | 0.00 |
| Adj- R^2 (%) | | | 55.87% | | | 56.83% | | | 47.99% | | |
| No. of obs | | | 18651 | | | 27318 | | | 21167 | | |

^a Short tenure group contains firms with auditor-client relationships less than or equal to three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure group contains firms with auditor-client relationships longer than or equal to nine years. Long or medium tenure groups are coded as one when compared with the short tenure group (coded as zero); Long tenure group is coded one when compared with the medium tenure group (coded as zero).

All the p-values are two sided. See Appendix B for variable definitions.

conservatism between the short (medium) (long) tenure group and the medium (long) (short) tenure group.

Specifically, Table 7 shows that in almost all of the regressions, the coefficients on the inverse Mills ratio (LAMBDA) are statistically significant, which justifies endogeneity concerns. Panel A shows that the coefficient on the interactive term $R*DR*TENURE$, α_7 , is significantly negative when I compare the medium ($\alpha_7 = -0.127$, $p = 0.00$) or short tenure group ($\alpha_7 = -0.062$, $p = 0.00$) with the long tenure group. However, when the short tenure group is compared with the medium tenure group, the coefficient α_7 is negative but insignificant ($\alpha_7 = -0.031$, $p = 0.31$), which suggests no significant difference regarding conservatism between these two auditor tenure groups. Controlling for other factors related to conservatism has little impact on the coefficient α_7 ; that is, when auditor tenure lengthens (e.g., longer than or equal to 9 years), the earnings of firms reflecting bad news become less timely.

In addition, in the second test of conservatism, Table 8 also shows the presence of an endogeneity problem (e.g., the significant coefficients on LAMBDA). The results in Table 8 Panel A and Panel B suggest that after controlling for endogeneity and other sources of conservatism, the extent of conservatism as measured by the reversal rate of negative earnings changes (e.g., β_7) is lowest for firms that have the longest auditor-client relationships (i.e., long auditor tenure group). One intriguing finding in Table 8 Panel B is that firms during the middle years of audits appear to report higher conservatism than firms during initial years of audits (e.g., $\beta_7 = -0.094$, $p = 0.00$, in short auditor tenure group vs. medium auditor tenure group), which provides some evidence consistent with a learning curve effect.

Taken together, the results in Table 7 and Table 8, where I control for potential simultaneity bias arising from auditor tenure choice, suggest that the firms with longer auditor-client relationships (i.e., longer than or equal to nine years) record unexpected losses less quickly than firms with short or medium auditor-client relationships (i.e., reduced conservatism). However, I find no evidence showing the decreasing conservatism when auditor-client relationships change from short periods to medium periods.

6.5 Alternative Measure of Conservatism

To avoid the potential limitations contained in the two tests of conservatism based on Basu (1997), I examine the effect of auditor tenure on conservatism using the accrual-based measure of conservatism designed by Ball and Shivakumar (2005). Table 9 reports this set of results. In Panel A, I report the regression results of model (8) using the pooled estimates without including the incremental effect of auditor tenure. The coefficient γ_2 is -0.533 and significantly negative, implying that on average 53.3% of cash flow is offset by accruals in the years it is positive. γ_3 is 0.783 and significant, implying that in years with negative cash flows, only 25% ($78.3 - 53.5\%$) of cash flow is offset by accruals. Thus, the negative relation between accruals and cash flow is less pronounced when cash flow is negative, consistent with asymmetric recognition of unrealized losses than gains (i.e., more conservatism).

Panel B shows the results with the incremental effect of auditor tenure. The significantly negative coefficient on the interactive term $CFO*DCFO*TENURE$ ($\gamma_7 = -0.044$, $p = 0.00$) indicates that in negative cash flows years, the firms with long-term

Table 9
Alternative Measure of Conservatism

Panel A: Pooled estimates of accrual-based conservatism

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|----------------|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | γ_0 | ? | -0.007 | -4.192 | 0.00 |
| DCFO | γ_1 | ? | -0.006 | -2.105 | 0.04 |
| CFO | γ_2 | - | -0.533 | -41.532 | 0.00 |
| CFO*DCFO | γ_3 | + | 0.783 | 54.457 | 0.00 |
| Adj- R^2 (%) | | | 8.39% | | |
| No. of obs | | | 35124 | | |

Panel B: Accrual-based conservatism with incremental effect of auditor tenure

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|-----------------|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | γ_0 | ? | -0.009 | -3.095 | 0.00 |
| DCFO | γ_1 | ? | -0.002 | -0.442 | 0.66 |
| CFO | γ_2 | - | -0.601 | -28.134 | 0.00 |
| CFO*DCFO | γ_3 | + | 1.061 | 43.576 | 0.00 |
| TENURE | γ_4 | ? | 0.000 | 0.300 | 0.76 |
| DCFO*TENURE | γ_5 | ? | -0.001 | -1.708 | 0.09 |
| CFO*TENURE | γ_6 | ? | 0.007 | 3.971 | 0.00 |
| CFO*DCFO*TENURE | γ_7 | - | -0.044 | -17.653 | 0.00 |
| Adj- R^2 (%) | | | 10.03% | | |
| No. of obs | | | 35124 | | |

(Table 9 continued)

Panel C: Accrual-based conservatism with controls for other sources of conservatism

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|-----------------|---------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | γ_0 | ? | 0.003 | 0.557 | 0.58 |
| DCFO | γ_1 | ? | 0.026 | 2.543 | 0.01 |
| CFO | γ_2 | - | -0.785 | -18.395 | 0.00 |
| CFO*DCFO | γ_3 | + | 1.338 | 27.333 | 0.00 |
| TENURE | γ_4 | ? | 0.000 | 1.419 | 0.16 |
| DCFO*TENURE | γ_5 | ? | -0.001 | -2.503 | 0.01 |
| CFO*TENURE | γ_6 | ? | 0.001 | 0.393 | 0.69 |
| CFO*DCFO*TENURE | γ_7 | - | -0.043 | -16.183 | 0.00 |
| BM | γ_8 | ? | 0.000 | 0.416 | 0.68 |
| DCFO*BM | γ_9 | ? | 0.005 | 2.113 | 0.03 |
| CFO*BM | γ_{10} | + | -0.016 | -2.373 | 0.02 |
| CFO*DCFO*BM | γ_{11} | -/+ | 0.114 | 9.648 | 0.00 |
| LEV | γ_{12} | ? | -0.077 | -11.367 | 0.00 |
| DCFO*LEV | γ_{13} | ? | 0.010 | 1.008 | 0.31 |
| CFO*LEV | γ_{14} | - | -0.080 | -1.735 | 0.08 |
| CFO*DCFO*LEV | γ_{15} | + | 0.310 | 6.552 | 0.00 |
| LIGA | γ_{16} | ? | -0.018 | -0.275 | 0.78 |
| DCFO*LIGA | γ_{17} | ? | -0.502 | -6.065 | 0.00 |
| CFO*LIGA | γ_{18} | ? | 0.346 | 0.557 | 0.58 |
| CFO*DCFO*LIGA | γ_{19} | + | -1.945 | -3.096 | 0.00 |
| SIZE | γ_{20} | ? | 0.005 | 5.771 | 0.00 |
| DCFO*SIZE | γ_{21} | ? | -0.009 | -5.422 | 0.00 |
| CFO*SIZE | γ_{22} | + | 0.043 | 7.068 | 0.00 |
| CFO*DCFO*SIZE | γ_{23} | - | -0.095 | -11.677 | 0.00 |
| Adj- R^2 (%) | | | 14.47% | | |
| No. of obs | | | 33741 | | |

All the p-values are two sided. See Appendix B for variable definitions.

auditor-client relationships appear to accrue less unrealized losses compared to other firms. In other words, long auditor-client relationships reduce auditors' tendency to report conservatively.

When I control for other potential effects of BM, LEV, LIGA and SIZE on conservatism, Panel C shows similar results on the association of auditor tenure and conservatism as previously reported in Table 6. That is, even after controlling for those factors that relate to conservatism, firms with long auditor tenure have a significantly greater negative relation between accruals and cash flows (i.e., less conservatism). Overall, the results from the alternative measure of conservatism, like the other two measures based on the timeliness of earnings to bad news and the persistence of earnings changes, generate similar interpretations that auditors report less conservatively when their relationships with clients get longer.

6.6 Control for Firm Age

Firm age (FIRMAGE) is positively related to auditor tenure. Although I have included FIRMAGE in tests of controlling for endogeneity to predict auditor tenure, FIRMAGE could also be related to conservatism. To eliminate the concern that the association between auditor tenure and accounting conservatism is simply due to firm age, I further include FIRMAGE to control for this effect in all regression models testing the incremental effect of auditor tenure on conservatism. Table 10 reports the new estimations by incorporating the effect of firm age. Although the incremental negative effect of auditor tenure (i.e., α_7) on conservatism becomes marginally significant when I use the measure of timeliness of earnings to news (i.e., Panel A, $\alpha_7 = -0.002$, $p = 0.10$),

Table 10
Control for Firm Age

Panel A: Timeliness of earnings to news

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|----------------|---------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | α_0 | ? | -0.034 | -3.913 | 0.00 |
| DR | α_1 | ? | 0.015 | 1.093 | 0.27 |
| R | α_2 | + | -0.063 | -5.166 | 0.00 |
| DR*R | α_3 | + | 0.461 | 15.042 | 0.00 |
| TENURE | α_4 | ? | 0.001 | 2.337 | 0.02 |
| DR*TENURE | α_5 | ? | -0.000 | -0.706 | 0.48 |
| R*TENURE | α_6 | + | -0.000 | -0.632 | 0.53 |
| R*DR*TENURE | α_7 | - | -0.002 | -1.281 | 0.20 |
| BM | α_8 | ? | -0.007 | -4.271 | 0.00 |
| DR*BM | α_9 | ? | 0.016 | 5.191 | 0.00 |
| R*BM | α_{10} | + | 0.022 | 4.729 | 0.00 |
| R*DR*BM | α_{11} | -/+ | -0.008 | -1.301 | 0.19 |
| LEV | α_{12} | ? | -0.094 | -8.913 | 0.00 |
| DR*LEV | α_{13} | ? | 0.102 | 6.108 | 0.00 |
| R*LEV | α_{14} | - | 0.013 | 1.078 | 0.28 |
| R*DR*LEV | α_{15} | + | 0.436 | 12.740 | 0.00 |
| LIGA | α_{16} | ? | -0.482 | -5.472 | 0.00 |
| DR*LIGA | α_{17} | ? | 0.235 | 1.745 | 0.08 |
| R*LIGA | α_{18} | ? | 0.173 | 1.808 | 0.07 |
| R*DR*LIGA | α_{19} | + | 0.286 | 1.098 | 0.27 |
| SIZE | α_{20} | ? | 0.016 | 12.430 | 0.00 |
| DR*SIZE | α_{21} | ? | -0.006 | -2.887 | 0.00 |
| R*SIZE | α_{22} | + | 0.003 | 1.904 | 0.06 |
| R*DR*SIZE | α_{23} | - | -0.046 | -9.629 | 0.00 |
| AGE | α_{24} | ? | 0.001 | 2.748 | 0.01 |
| DR*AGE | α_{25} | ? | -0.001 | -3.093 | 0.00 |
| R*AGE | α_{26} | ? | 0.001 | 3.206 | 0.00 |
| R*DR*AGE | α_{27} | - | -0.011 | -10.769 | 0.00 |
| Adj- R^2 (%) | | | 13.15% | | |
| No. of obs | | | 33734 | | |

(Table 10 continued)

Panel B: Persistence of earnings changes

| | | <u>Predicted</u> | | | |
|---|--------------|------------------|-----------------|---------------|----------------|
| | <u>Coeff</u> | <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | β_0 | ? | -0.081 | -5.267 | 0.00 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.071 | -3.327 | 0.00 |
| ΔNI_{t-1} | β_2 | - | 0.428 | 16.617 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | - | -1.049 | -25.544 | 0.00 |
| TENURE | β_4 | ? | 0.010 | 1.714 | 0.09 |
| $D\Delta NI_{t-1} * TENURE$ | β_5 | ? | -0.042 | -4.868 | 0.00 |
| $\Delta NI_{t-1} * TENURE$ | β_6 | - | -0.124 | -12.505 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ | β_7 | + | 0.094 | 5.851 | 0.00 |
| BM | β_8 | ? | -0.001 | -0.431 | 0.67 |
| $D\Delta NI_{t-1} * BM$ | β_9 | ? | 0.017 | 3.763 | 0.00 |
| $\Delta NI_{t-1} * BM$ | β_{10} | - | 0.001 | 0.222 | 0.82 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * BM$ | β_{11} | -/+ | 0.032 | 2.436 | 0.01 |
| LEV | β_{12} | ? | -0.067 | -5.886 | 0.00 |
| $D\Delta NI_{t-1} * LEV$ | β_{13} | ? | 0.136 | 8.305 | 0.00 |
| $\Delta NI_{t-1} * LEV$ | β_{14} | + | 0.142 | 6.937 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LEV$ | β_{15} | - | -0.295 | -10.637 | 0.00 |
| LIGA | β_{16} | ? | 0.037 | 0.357 | 0.72 |
| $D\Delta NI_{t-1} * LIGA$ | β_{17} | ? | -0.400 | -3.088 | 0.00 |
| $\Delta NI_{t-1} * LIGA$ | β_{18} | ? | -1.153 | -2.625 | 0.01 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LIGA$ | β_{19} | - | -1.338 | -2.584 | 0.01 |
| SIZE | β_{20} | ? | 0.011 | 7.814 | 0.00 |
| $D\Delta NI_{t-1} * SIZE$ | β_{21} | ? | 0.001 | 0.493 | 0.62 |
| $\Delta NI_{t-1} * SIZE$ | β_{22} | - | -0.040 | -11.259 | 0.00 |
| $D\Delta NI_{t-1} \Delta NI_{t-1} * SIZE$ | β_{23} | + | -0.012 | -1.959 | 0.05 |
| AGE | β_{24} | ? | 0.047 | 3.207 | 0.00 |
| $D\Delta NI_{t-1} * AGE$ | β_{25} | ? | -0.081 | -5.267 | 0.00 |
| $\Delta NI_{t-1} * AGE$ | β_{26} | ? | -0.071 | -3.327 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * AGE$ | β_{27} | - | 0.428 | 16.617 | 0.00 |
| Adj- R^2 (%) | | | 51.03% | | |
| No. of obs | | | 33562 | | |

All the p-values are two sided. See Appendix B for variable definitions.

using the other two measures of conservatism based on the persistence of earnings changes (i.e., in Panel B, $\beta_7 = 0.094$, $p = 0.00$) and accruals (not reported) still show significant effects of auditor tenure on conservatism in predicted directions at the 1 percent level. Hence, the results suggest that the previously observed negative association between auditor tenure and conservatism is not simply driven by firm age. One intriguing finding in Table 10 Panel A and Panel B is that the significant values of coefficients on the interactive term of FIRMAGE (i.e., $\alpha_{27} = -0.011$, $\beta_{27} = 0.428$, $p = 0.00$) suggest that firms tend to reduce their accounting conservatism over time, which is consistent with my earlier argument that the demand for conservatism might fade after a company has survived in the market for a long time.

6.7 Restricted Sample

Myers et al. (2003) argue that firms switching auditors early in the relationship might differ systematically from firms retaining their auditors for many years. Ghosh and Moon (2005) note that firms might frequently switch auditors either because of “opinion shopping” (SEC 1988) or because of auditors’ preference for conservative accounting choices (DeFond and Subramanyam 1998). Hence, consistent with prior studies, I eliminate all firm-year observations when the auditor-client relationship lasts for less than five years (31,580 observations remain). This increases comparability because the early and later years represent the same auditor-client combinations (Myers et al. 2003). Alternatively, I require the sample firms to have at least 15 years of observations (9,682 observations remain) to increase comparability. The results obtained using these two restricted samples are generally consistent with the previously reported findings.

Accordingly, I only report the results using the constant sample (i.e., at least 15 years of observations) in Table 11. I also include all of the controlled variables previously mentioned in this study. Table 11 shows that the directions of interested coefficients, α_7 and β_7 , are continually consistent with the hypotheses. With few exceptions, all other controlled variables are generally consistent with the previous discussions.³⁰ Thus, by using the constant sample, the results continually show a negative relation between auditor tenure and conservatism.

6.8 Audit Firm Effects

I examine whether the results reported in previous tables are consistent across big audit firms. Given the merger of accounting firms in 1989 and 1998, I examine each audit firm up to and including the year of merger, with a separate estimate for the new merged firm after the year of merger. Unreported results consistently show a negative association between auditor tenure and various measures of accounting conservatism. The results are robust after controlling for other variables that relate to accounting conservatism. Hence, this test yields no audit-firm specific evidence of longer auditor-client relationships being associated with reduced conservatism.

6.9 Excluding the Last-year Audits

Following Myers et al. (2003), I test whether period-specific characteristics around the time of the auditor change are driving my results. I eliminate firm-years

³⁰ Specifically, compared with the results shown in Table 6 Panel A (Panel B), Table 11 Panel A (Panel B) shows an opposite effect of MB (SIZE) on conservatism.

Table 11
Constant Sample

Panel A: Timeliness of earnings to news

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|----------------|---------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | α_0 | ? | 0.072 | 6.874 | 0.00 |
| DR | α_1 | ? | 0.068 | 3.961 | 0.00 |
| R | α_2 | + | -0.014 | -0.929 | 0.35 |
| DR*R | α_3 | + | 0.684 | 15.434 | 0.00 |
| TENURE | α_4 | ? | 0.000 | 1.174 | 0.24 |
| DR*TENURE | α_5 | ? | -0.001 | -1.367 | 0.17 |
| R*TENURE | α_6 | + | -0.001 | -1.337 | 0.18 |
| R*DR*TENURE | α_7 | - | -0.002 | -1.491 | 0.07 |
| BM | α_8 | ? | -0.031 | -5.244 | 0.00 |
| DR*BM | α_9 | ? | -0.025 | -2.919 | 0.00 |
| R*BM | α_{10} | + | 0.024 | 2.699 | 0.01 |
| R*DR*BM | α_{11} | -/+ | -0.226 | -12.165 | 0.00 |
| LEV | α_{12} | ? | -0.106 | -9.872 | 0.00 |
| DR*LEV | α_{13} | ? | 0.050 | 2.779 | 0.01 |
| R*LEV | α_{14} | - | -0.021 | -1.476 | 0.14 |
| R*DR*LEV | α_{15} | + | 0.112 | 2.388 | 0.02 |
| LIGA | α_{16} | ? | -0.426 | -2.449 | 0.01 |
| DR*LIGA | α_{17} | ? | 2.973 | 1.578 | 0.11 |
| R*LIGA | α_{18} | ? | -0.345 | -1.212 | 0.23 |
| R*DR*LIGA | α_{19} | + | 14.204 | 2.430 | 0.02 |
| SIZE | α_{20} | ? | 0.007 | 5.494 | 0.00 |
| DR*SIZE | α_{21} | ? | -0.008 | -3.477 | 0.00 |
| R*SIZE | α_{22} | + | 0.002 | 1.032 | 0.30 |
| R*DR*SIZE | α_{23} | - | -0.061 | -9.253 | 0.00 |
| AGE | α_{24} | ? | 0.000 | 0.758 | 0.45 |
| DR*AGE | α_{25} | ? | -0.001 | -1.592 | 0.11 |
| R*AGE | α_{26} | ? | 0.000 | 0.710 | 0.48 |
| R*DR*AGE | α_{27} | - | -0.004 | -3.708 | 0.00 |
| Adj- R^2 (%) | | | 15.39% | | |
| No. of obs | | | 9666 | | |

(Table 11 continued)

Panel B: Persistence of earnings changes

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
|---|--------------|---------------------------------|-----------------|---------------|----------------|
| INTERCEPT | β_0 | ? | -0.021 | -3.736 | 0.00 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.045 | -4.634 | 0.00 |
| ΔNI_{t-1} | β_2 | - | 0.590 | 14.722 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | - | -1.806 | -26.437 | 0.00 |
| TENURE | β_4 | ? | 0.000 | 1.564 | 0.12 |
| $D\Delta NI_{t-1} * TENURE$ | β_5 | ? | -0.001 | -2.438 | 0.01 |
| $\Delta NI_{t-1} * TENURE$ | β_6 | - | -0.014 | -5.737 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ | β_7 | + | 0.005 | 1.540 | 0.10 |
| BM | β_8 | ? | -0.003 | -1.080 | 0.28 |
| $D\Delta NI_{t-1} * BM$ | β_9 | ? | 0.008 | 1.807 | 0.07 |
| $\Delta NI_{t-1} * BM$ | β_{10} | - | -0.233 | -6.686 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * BM$ | β_{11} | -/+ | 0.483 | 10.773 | 0.00 |
| LEV | β_{12} | ? | 0.005 | 0.740 | 0.46 |
| $D\Delta NI_{t-1} * LEV$ | β_{13} | ? | 0.011 | 1.034 | 0.30 |
| $\Delta NI_{t-1} * LEV$ | β_{14} | + | -0.726 | -11.523 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LEV$ | β_{15} | - | -1.163 | -14.165 | 0.00 |
| LIGA | β_{16} | ? | -0.812 | -1.297 | 0.19 |
| $D\Delta NI_{t-1} * LIGA$ | β_{17} | ? | 1.936 | 2.014 | 0.04 |
| $\Delta NI_{t-1} * LIGA$ | β_{18} | ? | 5.760 | 0.686 | 0.49 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * LIGA$ | β_{19} | - | -0.191 | -0.021 | 0.98 |
| SIZE | β_{20} | ? | 0.004 | 5.286 | 0.00 |
| $D\Delta NI_{t-1} * SIZE$ | β_{21} | ? | 0.005 | 3.854 | 0.00 |
| $\Delta NI_{t-1} * SIZE$ | β_{22} | - | -0.031 | -3.701 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * SIZE$ | β_{23} | + | 0.154 | 12.298 | 0.00 |
| AGE | β_{24} | ? | 0.000 | -2.008 | 0.04 |
| $D\Delta NI_{t-1} * AGE$ | β_{25} | ? | 0.000 | -0.336 | 0.74 |
| $\Delta NI_{t-1} * AGE$ | β_{26} | ? | 0.007 | 3.804 | 0.00 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * AGE$ | β_{27} | - | -0.018 | -7.002 | 0.00 |
| Adj- R^2 (%) | | | 20.16% | | |
| No. of obs | | | 9660 | | |

All the p-values are two sided. See Appendix B for variable definitions.

representing the last year with the predecessor auditor. Again, my results are robust to this change.

6.10 Earnings Skewness

Lastly, a number of studies have used earnings skewness to examine earnings conservatism because conservative accounting leads to negatively skewed earnings (Basu 1995, Ball et al. 2000, Givoly and Hayn 2000, Basu et al. 2001b, Lang et al. 2003, Krishnan 2005a). Following prior research, I examine changes of earnings skewness over time to look into whether earnings are less negatively skewed (i.e., less conservative) when auditor tenure increases. The skewness measure in each analysis is defined as $E(x - \mu)^3 / \sigma^3$. Figure 4 depicts the change in the skewness of the net income over total assets (i.e., ROA) over time, with skewness ranging from – 19.974 to 3.502. It apparently shows that earnings are less negatively skewed (i.e., less conservatism) when auditor tenure increases. Earnings are most negatively skewed during the initial stage of auditor-client relationship. Hence, using another popular measure of earnings conservatism (i.e., skewness) again reinforces my conclusion that auditor tenure is negatively associated with accounting conservatism.³¹

³¹ I find similarly negative association between auditor tenure and conservatism by examining the skewness of operating income over total assets and cash flow from operations over total assets.

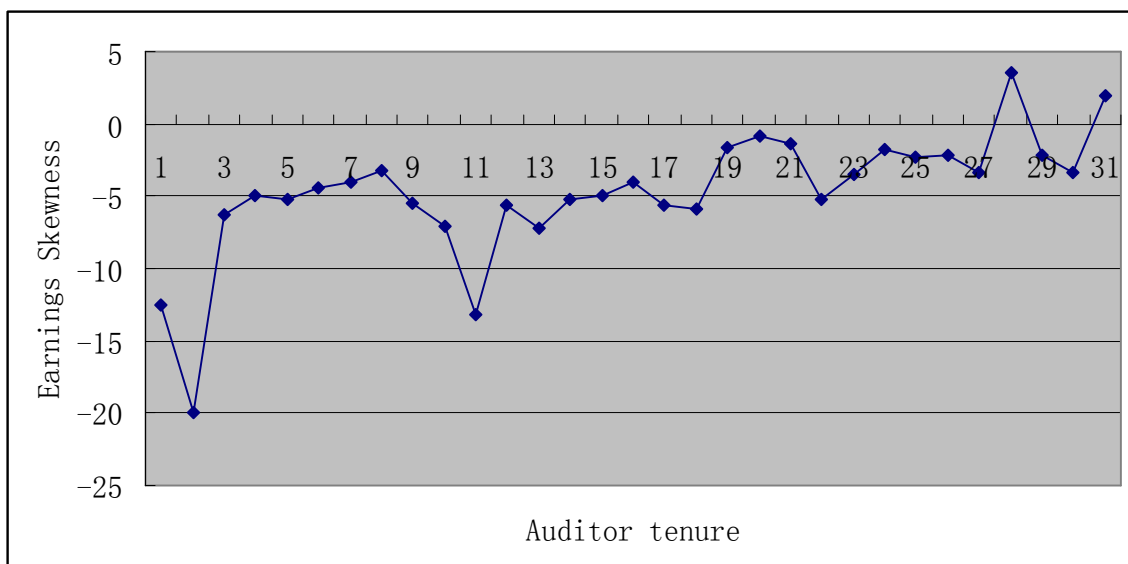


Figure 4: Changes of Earnings Skewness as Auditor Tenure^a

^a Earnings Skewness is defined as $E(x - \mu)^3 / \sigma^3$, where μ and σ are the mean and standard deviation of the x distribution. Earnings are defined as net income over total assets.

CHAPTER 7

DISCUSSION

7.1 Variation in Auditor Liability Exposure over Time

Basu (1997) finds that conservatism (asymmetric timeliness of earnings) varies in response to auditor litigation exposure. Kothari et al. (1988) designate 1975 as a high liability period, 1976-1982 as a low liability period, 1983-1985 as a high liability period, and 1986-1987 as a low liability period. Basu et al. (2001a) classify 1988-1991 as a high liability period, and the period since 1992 (to 1999) as a low legal liability period. Thus, the relation between auditor tenure and conservatism might change over different time periods. The sample years in my study include 1988 to 2004. I classify 2002-2004 as a high legal liability period due to a series of high-profile accounting scandals in 2001 and the passage of SOX in 2002. Thus, I have three alternating high and low legal liability periods in my sample: 1988-1991 and 2002-2004 as high legal liability periods, and 1992-2001 as low legal liability periods. I test whether the association between auditor tenure and conservatism is correlated with changes in auditor liability exposure over time.³²

Table 12 Panel A reports the results of model (2) including the incremental effect of auditor tenure on conservatism. Although I do not find evidence that the magnitude of

³² Choi et al. (2004) partition the period of audit litigation liability environment as follows: a period of increasing concerns about litigation liability (1985-1989), a period of lobbying for reform (1990-1994), and a post-relief period (1995-1999). They find that financial riskiness of large U.S. audit firm clienteles varied with the changing audit litigation liability periods. As an additional test, I also classify auditor litigation as in Choi et al. (2004).

Table 12
Variation of Conservatism over Different Litigation Regimes

Panel A: Timeliness of earnings to news

| | | | High | 1988- 1991 | | Low | 1992- 2001 | | High | 2002- 2004 | |
|----------------|--------------|------------------|-----------------|---------------|--------------|-----------------|---------------|--------------|-----------------|---------------|--------------|
| | | <u>Predicted</u> | | | <u>p-</u> | | | <u>p-</u> | | | <u>p-</u> |
| | <u>Coeff</u> | <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> |
| INTERCEPT | α_0 | ? | 0.026 | 3.300 | 0.00 | -0.009 | -1.350 | 0.18 | 0.015 | 2.255 | 0.02 |
| DR | α_1 | ? | 0.016 | 1.287 | 0.20 | 0.052 | 5.092 | 0.00 | 0.041 | 3.492 | 0.00 |
| R | α_2 | + | -0.044 | -3.468 | 0.00 | -0.023 | -2.789 | 0.01 | -0.034 | -3.911 | 0.00 |
| DR*R | α_3 | + | 0.374 | 12.407 | 0.00 | 0.425 | 19.232 | 0.00 | 0.667 | 21.994 | 0.00 |
| TENURE | α_4 | ? | 0.002 | 3.350 | 0.00 | 0.003 | 6.116 | 0.00 | 0.002 | 3.129 | 0.00 |
| DR*TENURE | α_5 | ? | -0.001 | -0.678 | 0.50 | -0.002 | -2.664 | 0.01 | -0.001 | -0.575 | 0.57 |
| R*TENURE | α_6 | + | 0.002 | 1.673 | 0.09 | 0.001 | 1.219 | 0.22 | 0.000 | -0.433 | 0.66 |
| R*DR*TENURE | α_7 | - | -0.012 | -4.113 | 0.00 | -0.015 | -7.306 | 0.00 | -0.009 | -2.789 | 0.01 |
| Adj- R^2 (%) | | | 9.94% | | | 5.16% | | | 14.39% | | |
| No. of obs | | | 5561 | | | 20858 | | | 8705 | | |

(Table 12 continued)

Panel B: Accrual-based conservatism

| | | | High | 1988- 1991 | | Low | 1992- 2001 | | High | 2002- 2004 | |
|-----------------|--------------|------------------|-----------------|---------------|--------------|-----------------|---------------|--------------|-----------------|---------------|--------------|
| | <u>Coeff</u> | <u>Predicted</u> | | | <u>p-</u> | | | <u>p-</u> | | | <u>p-</u> |
| | | <u>Sign</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>value</u> |
| INTERCEPT | γ_0 | ? | -0.005 | -0.830 | 0.41 | -0.008 | -1.866 | 0.06 | -0.013 | -3.070 | 0.00 |
| DCFO | γ_1 | ? | -0.014 | -1.530 | 0.13 | 0.012 | 1.715 | 0.09 | -0.054 | -6.722 | 0.00 |
| CFO | γ_2 | - | -0.643 | -16.005 | 0.00 | -0.590 | -18.373 | 0.00 | -0.602 | -18.637 | 0.00 |
| CFO*DCFO | γ_3 | + | 0.654 | 13.439 | 0.00 | 1.136 | 31.852 | 0.00 | 0.928 | 23.310 | 0.00 |
| TENURE | γ_4 | ? | 0.000 | -0.405 | 0.69 | 0.000 | 0.341 | 0.73 | 0.000 | 0.200 | 0.84 |
| DCFO*TENURE | γ_5 | ? | 0.001 | 1.490 | 0.14 | -0.001 | -1.852 | 0.06 | 0.001 | 0.737 | 0.46 |
| CFO*TENURE | γ_6 | ? | 0.012 | 3.210 | 0.00 | 0.007 | 2.455 | 0.01 | 0.007 | 2.235 | 0.03 |
| CFO*DCFO*TENURE | γ_7 | - | -0.026 | -4.328 | 0.00 | -0.050 | -13.610 | 0.00 | -0.033 | -8.010 | 0.00 |
| Adj- R^2 (%) | | | 14.80% | | | 10.83% | | | 10.52% | | |
| No. of obs | | | 5561 | | | 20858 | | | 8705 | | |

All the p-values are two sided. See Appendix B for variable definitions.

conservatism is lowest (measured by coefficient α_3) during the low litigation regime of 1992-2001, Panel A shows that the incremental negative effect of auditor tenure on conservatism (measured by coefficient α_7) is less negative in both high litigation regimes of 1988-1991 and 2002-2004 than in the low litigation regime of 1992-2001 (i.e., $\alpha_7 = -0.012, -0.009$ vs. -0.015).³³ This may indicate that higher litigation risk constrains the adverse impact of long-term auditor client relationships on audit quality. The regression results based on model (4) (i.e., the reversal of negative earnings changes) do not yield the predicted variation of conservatism over time (not reported); however, I find the predicted variation when I use the alternative measure of conservatism (i.e., model (8), accrual-based conservatism). Table 12 Panel B presents this result, which shows that the magnitude of reduced conservatism due to longer auditor-client relationships is larger in the low auditor liability exposure regime of 1992-2001 than in other periods (i.e., $\gamma_7 = -0.050$ vs. $-0.026, -0.033$). Thus, it appears that the auditors' exposure to liability risk can effectively mitigate the potential negative impact on auditor independence due to long-term auditor-client relationships.³⁴

7.2 The Effect of Large Client Influence

³³ It is noticeable that the magnitude of conservatism (measured by coefficient α_3) increases over 1988-2004, which is consistent with Basu (1997), Givoly and Hayn (2000), Holthausen and Watts (2001) and Ryan and Zarowin (2003) that report an increasing pattern of conservative financial reporting over time.

³⁴ By using the delineation of litigation exposure risk suggested in Choi et al. (2004), I also find that the adverse impact of auditor tenure on conservatism varies with the different litigation risk periods. In particular, based on the timeliness of earnings to news and accrual-based conservatism, I find that the incremental effect of auditor tenure on conservatism is smaller during 1988-1989 and 1990-1994 (high litigation periods), the smallest in 2002-2004 (high litigation period), and the highest in 1995-2001 (low litigation period).

DeAngelo (1981b) argues that the auditor-client relationship is a bilateral monopoly that creates an incentive for auditors to compromise their independence and report favorably in order to retain clients. This incentive can be termed as economic dependence (Reynolds and Francis 2001). Economic dependence theory predicts that clients with greater economic influence will adversely affect auditor independence, leading to lower audit quality. During the long-term auditor-client relationships, audit revenue generated from the influential clients serves as an important annuity for an auditor. Hence, the previously observed negative relation between auditor tenure and conservatism could be driven by the fact that auditors tend to compromise their independence and report aggressively for the clients with greater influence.

To probe this plausibility, I re-estimate regressions that test the association between auditor tenure and conservatism by partitioning the full sample into quintiles on the basis of client influence. I use the ratio of the client's log of net sales over the sum of all clients' log of net sales in an accounting firm as a proxy for client influence on the accounting firm (Chung and Kallapur 2003). Table 13 presents the estimations of models (2) and (4) on the lowest and highest quintile of client importance.³⁵ In particular, Panel A shows that the reduced timeliness of earnings to news (i.e., reduced conservatism) as auditor tenure increases applies to the firms with least influence ($\alpha_7 = -0.014$, $p = 0.00$), but not to the firms with greatest influence ($\alpha_7 = -0.001$, $p = 0.43$). Similarly, the results in Panel B suggest that the reduced tendency of negative earnings changes to reverse (i.e., reduced conservatism) as tenure increases only applies to the firms in the lowest quintile

³⁵ The results from the second, third, and fourth quintiles are qualitatively similar to the lowest quintile. Hence, I only report the results from the lowest and highest quintiles.

Table 13
The Influence of Large Clients ^a

Panel A: Timeliness of earnings to news

| | <u>Co-</u> <u>eff</u> | <u>Predicted</u> <u>Sign</u> | Lowest Client Influence | | | Highest Client Influence | | |
|----------------|--------------------------|---------------------------------|-------------------------|---------------|---------------------------|--------------------------|---------------|---------------------------|
| | | | <u>Estimate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> |
| INTERCEPT | α_0 | ? | 0.017 | 1.745 | 0.08 | 0.058 | 25.424 | 0.00 |
| DR | α_1 | ? | 0.040 | 2.576 | 0.01 | -0.005 | -1.270 | 0.20 |
| R | α_2 | + | -0.011 | -1.004 | 0.32 | -0.002 | -0.433 | 0.67 |
| DR*R | α_3 | + | 0.374 | 11.231 | 0.00 | 0.073 | 6.514 | 0.00 |
| TENURE | α_4 | ? | 0.001 | 1.524 | 0.13 | 0.000 | 1.188 | 0.23 |
| DR*TENURE | α_5 | ? | -0.002 | -1.411 | 0.16 | 0.000 | 1.292 | 0.20 |
| R*TENURE | α_6 | + | 0.001 | 0.382 | 0.70 | 0.000 | 0.991 | 0.32 |
| R*DR*TENURE | α_7 | - | -0.014 | -3.851 | 0.00 | -0.001 | -0.788 | 0.43 |
| Adj- R^2 (%) | | | 5.34% | | | 4.18% | | |
| No. of obs | | | 6978 | | | 7003 | | |

(Table 13 continued)

Panel B: Persistence of earnings changes

| | <u>Coeff</u> | <u>Predicted</u> <u>Sign</u> | Lowest client influence | | | Highest client influence | | |
|---|--------------|---------------------------------|-------------------------|---------------|----------------|--------------------------|---------------|----------------|
| | | | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | β_0 | ? | -0.024 | -1.900 | 0.06 | 0.003 | 2.158 | 0.03 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.135 | -7.641 | 0.00 | 0.002 | 0.834 | 0.40 |
| ΔNI_{t-1} | β_2 | - | 0.139 | 6.538 | 0.00 | 0.023 | 0.774 | 0.44 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1}$ | β_3 | - | -1.113 | -36.758 | 0.00 | -0.354 | -9.182 | 0.00 |
| TENURE | β_4 | ? | 0.000 | -0.170 | 0.86 | 0.000 | -1.190 | 0.23 |
| $D\Delta NI_{t-1} * TENURE$ | β_5 | ? | 0.010 | 4.702 | 0.00 | -0.001 | -3.190 | 0.00 |
| $\Delta NI_{t-1} * TENURE$ | β_6 | - | -0.011 | -2.900 | 0.00 | 0.001 | 0.404 | 0.69 |
| $D\Delta NI_{t-1} * \Delta NI_{t-1} * TENURE$ | β_7 | + | 0.052 | 8.762 | 0.00 | -0.018 | -6.950 | 0.00 |
| Adj- R^2 (%) | | | 40.85% | | | 14.70% | | |
| No. of obs | | | 6874 | | | 6977 | | |

^a Client influence is defined as the proportion of client's sales to total sales of all clients audited by an audit firm. Lowest (Highest) client influence group is the firms in the lowest (highest) quintile of client influence.

All the p-values are two sided. See Appendix B for other variable definitions.

of client influence ($\beta_7 = 0.052, p = 0.00$). For the firms with the greatest influence, Panel B shows that accounting conservatism actually increases as auditor tenure lengthens ($\beta_7 = -0.018, p = 0.00$).³⁶

Thus, contrary to the prediction of economic dependence theory, I do not find evidence that firms with greater influence cause auditors to compromise their independence and report less conservatively as auditor-client relationships grow longer. In contrast, the results suggest that auditors' concern about the higher litigation exposure associated with the largest firms dominates their incentives to retain those clients or that managers of these firms choose to report more conservatively.

7.3 The Role of Industry Specialist

Krishnan (2005b) finds that the earnings of clients of specialist auditors are more timely in reflecting bad news (that is, more conservative) than earnings of clients of non-specialist auditors. His finding is consistent with the previous studies that suggest that clients of industry specialists have higher earnings quality than clients of non-specialists (Balsam et al. 2003, Carcello and Nagy 2003, Krishnan 2003b, Dunn and Mayhew 2004). To examine the role played by auditor industry specialists in the association between auditor tenure and conservatism, I partition the full sample into two groups, that is, clients audited by industry specialists and clients audited by non-industry specialists.

³⁶ By using the alternative measure of conservatism, i.e., accrual-based conservatism (not reported), I find impaired auditor independence and hence, reduced conservatism associated with longer auditor tenure, in the first, second, third and fourth quintiles of client influence, but the opposite result is found in the highest quintile of client influence.

I use the clients' sales to proxy for auditor's industry market shares in each two-digit SIC code. I define auditor specialist in two ways. First, specialists are identified following Palmrose (1986) as "the largest suppliers in each industry, as well as the second- and third-largest suppliers in industries in which readily observable differences existed between the second and the third or between the third and the remaining suppliers." Second, consistent with Balsam et al. (2003), I define an auditor as dominant specialist in an industry if it is the largest supplier in the industry and the difference between the first and second supplier in the industry is at least 10 percent.

Table 14 reports the estimations from the regression models testing the association between auditor tenure and conservatism based on auditor specialist (dominant specialist) group vs. non-specialist (non-dominant specialist) group. By using two measures of conservatism, Panel A and Panel B show the presence of reduced conservatism as auditor tenure increases in all groups except in the non-specialist group of Panel B. Thus, consistent with Myers et al. (2003), I find that specialist (dominant specialist) auditors vs. non-specialist (non-dominant specialist) auditors make no difference on the adverse impact of auditor tenure on conservatism. In other words, even auditor specialists appear unable to mitigate the corrosion of auditor independence due to longer auditor-client relationships.

Table 14
Multivariate Regressions by Industry Specialist Group ^a

Panel A: Timeliness of earnings to news

| | | | Nonindustry specialist | | | Industry specialist | | | Nonindustry dominance | | | Industry dominance | | |
|----------------|---------------------|---------------------------|------------------------|---------------|---------------------|-----------------------|---------------|---------------------|-----------------------|---------------|---------------------|-----------------------|---------------|---------------------|
| | <u>Co- eff.</u> | <u>Predicted Sign</u> | <u>Esti- mate</u> | <u>t-stat</u> | <u>p- value</u> | <u>Esti- mate</u> | <u>t-stat</u> | <u>p- value</u> | <u>Esti- mate</u> | <u>t-stat</u> | <u>p- value</u> | <u>Esti- mate</u> | <u>t-stat</u> | <u>p- value</u> |
| INTER- | | ? | | | | | | | | | | | | |
| CEPT | α_0 | | -0.005 | -0.515 | 0.61 | 0.009 | 1.901 | 0.06 | -0.002 | -0.356 | 0.72 | 0.021 | 3.325 | 0.00 |
| DR | α_1 | ? | 0.031 | 1.905 | 0.06 | 0.046 | 6.175 | 0.00 | 0.043 | 4.816 | 0.00 | 0.036 | 3.505 | 0.00 |
| R | α_2 | + | -0.026 | -1.931 | 0.05 | -0.031 | -5.309 | 0.00 | -0.027 | -3.786 | 0.00 | -0.035 | -4.243 | 0.00 |
| DR*R | α_3 | + | 0.468 | 12.774 | 0.00 | 0.479 | 27.973 | 0.00 | 0.483 | 23.702 | 0.00 | 0.452 | 18.479 | 0.00 |
| TENURE | α_4 | ? | 0.003 | 3.784 | 0.00 | 0.002 | 6.355 | 0.00 | 0.003 | 6.466 | 0.00 | 0.002 | 3.294 | 0.00 |
| DR* | | ? | | | | | | | | | | | | |
| TENURE | α_5 | | -0.001 | -0.880 | 0.38 | -0.002 | -2.900 | 0.00 | -0.002 | -2.218 | 0.03 | -0.001 | -1.774 | 0.08 |
| R* | | + | | | | | | | | | | | | |
| TENURE | α_6 | | 0.001 | 0.540 | 0.59 | 0.001 | 0.973 | 0.33 | 0.000 | 0.576 | 0.56 | 0.001 | 1.317 | 0.19 |
| R*DR* | | - | | | | | | | | | | | | |
| TENURE | α_7 | | -0.016 | -4.579 | 0.00 | -0.014 | -8.439 | 0.00 | -0.015 | -7.451 | 0.00 | -0.014 | -6.156 | 0.00 |
| Adj- R^2 (%) | | | 5.34% | | | 8.10% | | | 6.60% | | | 8.07% | | |
| No. of obs | | | 10262 | | | 24076 | | | 24816 | | | 9522 | | |

(Table 14 continued)

Panel B: Persistence of earnings changes

| | <u>Co-</u> <u>eff.</u> | <u>Predicted</u> <u>Sign</u> | Nonindustry specialist | | | Industry specialist | | | Nonindustry dominance | | | Industry dominance | | |
|--------------------|---------------------------|---------------------------------|-----------------------------|---------------|---------------------------|-----------------------------|---------------|---------------------------|-----------------------------|---------------|---------------------------|-----------------------------|---------------|---------------------------|
| | | | <u>Esti-</u> <u>mate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> | <u>Esti-</u> <u>mate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> | <u>Esti-</u> <u>mate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> | <u>Esti-</u> <u>mate</u> | <u>t-stat</u> | <u>p-</u> <u>value</u> |
| INTER- | | ? | | | | | | | | | | | | |
| CEPT | β_0 | | -0.017 | -3.132 | 0.00 | -0.018 | -5.857 | 0.00 | -0.029 | -9.482 | 0.00 | -0.008 | -1.532 | 0.13 |
| $D\Delta NI_{t-1}$ | β_1 | ? | -0.017 | -1.991 | 0.05 | -0.071 | -14.801 | 0.00 | -0.035 | -7.372 | 0.00 | -0.079 | -9.184 | 0.00 |
| ΔNI_{t-1} | β_2 | - | 0.029 | 0.948 | 0.34 | 0.238 | 35.027 | 0.00 | 0.321 | 41.323 | 0.00 | 0.112 | 8.001 | 0.00 |
| $D\Delta NI_{t-1}$ | | | | | | | | | | | | | | |
| $*\Delta NI_{t-1}$ | β_3 | - | -0.146 | -4.162 | 0.00 | -1.363 | -109.165 | 0.00 | -0.996 | -73.039 | 0.00 | -1.199 | -55.367 | 0.00 |
| TENURE | β_4 | ? | 0.000 | 1.081 | 0.28 | 0.001 | 5.167 | 0.00 | 0.002 | 6.787 | 0.00 | 0.001 | 2.310 | 0.02 |
| $D\Delta NI_{t-1}$ | | | | | | | | | | | | | | |
| $*TENURE$ | β_5 | ? | -0.003 | -4.187 | 0.00 | 0.003 | 7.951 | 0.00 | 0.000 | -0.607 | 0.54 | 0.003 | 3.960 | 0.00 |
| ΔNI_{t-1} | | | | | | | | | | | | | | |
| $*TENURE$ | β_6 | - | 0.002 | 0.650 | 0.52 | -0.025 | -19.992 | 0.00 | -0.026 | -20.363 | 0.00 | -0.027 | -9.417 | 0.00 |
| $D\Delta NI_{t-1}$ | | | | | | | | | | | | | | |
| $*\Delta NI_{t-1}$ | | | | | | | | | | | | | | |
| $*TENURE$ | β_7 | + | -0.093 | -19.592 | 0.00 | 0.067 | 29.699 | 0.00 | 0.011 | 4.914 | 0.00 | 0.053 | 11.807 | 0.00 |
| Adj- R^2 (%) | | | 28.25% | | | 57.12% | | | 46.13% | | | 54.14% | | |
| No. of obs | | | 10262 | | | 24076 | | | 24816 | | | 9522 | | |

^a Auditors are defined as industry specialists if the sales of all clients audited by one audit firm over total sales of clients in one industry (two-digit SIC code) is ranked as first, second, or third. Auditors are defined as industry dominant if they are ranked first.

All the p-values are two sided. See Appendix B for other variable definitions.

CHAPTER 8

CONCLUSION

The concern of the threat of auditor tenure on audit quality has been the subject of regulatory intervention. Proponents of mandatory auditor rotation have alleged that the longer auditor-client relationships impair auditor independence, leading to auditors accepting clients' relatively more aggressive accounting. However, opponents of mandatory auditor rotation claim there is no evidence of this impaired auditor independence; rather they provide some evidence that shows a positive relation between auditor tenure and audit quality.

The purpose of this study is to extend prior research by examining the association between auditor tenure and an important feature of accounting, namely conditional accounting conservatism. Following the regulators' concerns about longer auditor tenure, I hypothesize that firms with longer auditor tenure report less conservatively, where conservatism is operationalized by using the two approaches based on Basu (1997). The overall results are consistent across both measures of conservatism. In particular, the earnings of firms having long relationships with their auditor reflect unexpected losses less quickly, and their negative earnings changes are reversed more slowly, than those firms having short relationships with their auditor. These findings suggest a negative association between auditor tenure and accounting conservatism.

To make the findings more robust, I implement a series of sensitivity tests. For example, I control for other sources of conservatism to avoid the possibility that the observed link between auditor tenure and conservatism is driven by those other factors

that relate to conservatism. In addition, I adopt an additional measure of conservatism based on Ball and Shivakumar (2005). All of these additional tests have limited impact on my findings. Furthermore, I control for an endogeneity problem possibly arising from the auditor tenure variable, which is often ignored in previous studies. Although the result of the endogeneity test shows no evidence of auditors with medium-term tenure reporting less conservatively than those with short-term tenure, it suggests that auditors with long-term tenure report significantly less conservatively than those with short or medium-term tenure. The high explanatory power in my tests and all the consistent results across various tests strengthen the robustness of the results.

There are three findings from additional tests. First, I find that auditors' litigation exposure mitigates the adverse effect of longer auditor tenure on accounting conservatism. Specifically, the evidence appears to show that the extent of reduced conservatism associated with longer auditor tenure is mitigated during the higher litigation regime. Second, I find that the negative impact of auditor tenure on conservatism can not be applied to the most influential clients, which is contrary to the economic dependence theory that suggests that the largest clients would induce incentives for auditors to retain them by reporting favorably. This finding is consistent with the notion that for their largest clients, auditors' litigation concerns and reputation protection dominate their opportunistic practices (Reynolds and Francis 2001). Third, I do not find evidence showing that industry specialists play a role in constraining impaired auditor independence for longer auditor-client relationships.

Given the importance of conservatism in accounting practice and its nature in current accounting standards (e.g., much discretion in compliance), my study provides direct

evidence of the effect of longer auditor-client relationships on audit quality. The results have implications for the debate surrounding the issue of mandatory audit firm rotation. To the extent that reduced conservatism is due to the overfamiliarity or over trust after long-term interactions between auditors and their clients, which impairs auditor independence either consciously or subconsciously, mandatory audit firm rotation could mitigate the decline documented in this study. Although SOX has not mandated audit firm rotation but requires audit partner rotation every five years, future research is necessary to investigate whether audit partner rotation is a good substitute for audit firm rotation in mitigating any potential adverse impact of long auditor tenure on audit quality. In addition, given the firm size effect on conservatism suggested in prior studies (Giner and Rees 2001, Basu 2001), future research is also called for to examine whether the reduced conservatism due to impaired auditor independence arising from longer auditor-client relationships can be found in firms audited by those non-big audit firms (i.e., small firms), which is ignored in this study.

APPENDIX A

CLASSIFICATION OF FINANCIAL REPORTING CONSERVATISM BY SOURCE, FEATURES AND EXTENT OF DISCRETION

| Source of Conservatism (the understatement of the book value of the firm's equity relative to its economic value) | Financial Reporting Features that Contribute to Conservatism | Extent of Discretion to Influence the Degree of Conservatism Available to : | |
|--|--|---|---|
| | | Standard Setters and Regulators | Management |
| C1: Failure to capture the positive present value of projects and subsequent increases in value of assets | Historical cost convention coupled with the transaction-based accounting approach and the assumptions of going concern and a stable monetary unit | No discretion as long as the historical cost framework is adopted. Discretion exists, however, on whether to move to pure market valuation or allow a deviation from historical cost for certain items (e.g., marketable securities) or in certain situations (e.g., hyperinflation). | Limited or no discretion |
| C2: Minimization of the carrying value of net assets in place | Choices of income-deferring methods and estimates within the historical cost framework | Discretion in prescribing accounting methods (e.g., accounting for R&D, goodwill, executive stock options; revenue recognition criteria; inflation accounting) | Discretion in: <ul style="list-style-type: none"> • choosing among acceptable alternative accounting methods (inventory, depreciation), • implementing rules (e.g. for loss contingencies, cost capitalization, revenue recognition) and • making estimates |
| C3: Prompter recognition of losses relative to gains | Asymmetric treatment of gains and losses through means such as LCM (Note that losses in value are not captured by LCM until the market value falls below the book value of the asset.) | Discretion in prescribing accounting rules for impairment and loss contingencies Limited discretion (within the historical cost framework) to prescribe or prohibit recognition of unrealized gains (e.g., marketable securities) | Discretion in the timing and amount of implementing LCM No accounting discretion with respect to the recognition of unrealized gains. Some discretion with respect to the classification of securities as trading or available-for-sale, which has implications for timeliness of gain and loss recognition. |

Source: Givoly et al. (2007).

APPENDIX B

VARIABLE DEFINITIONS

| | |
|--------------------|---|
| TENURE | the number of years since the auditors have been employed |
| TA | total assets at the end of fiscal year |
| NI | net income before extraordinary items reported at the fiscal year-end divided by beginning of fiscal year total assets |
| R | market adjusted annual stock return for firm i at the fiscal year-end |
| DR | an indicator variable that is equal to one if the market adjusted return during year t is negative, and zero otherwise |
| ΔNI_t | change in net income before extraordinary items for in fiscal year-end deflated by beginning-of-year total assets |
| ΔNI_{t-1} | change in net income in last fiscal year deflated by beginning-of-year total assets |
| $D\Delta NI_{t-1}$ | an indicator variable that is equal to one if ΔNI_{t-1} is negative, and zero otherwise |
| BM | the Book to Market ratio, defined as the book value of equity divided by the market value of equity at the fiscal year-end |
| LEV | leverage ratio, defined as total debt divided by total assets at the fiscal year-end |
| LIGA | the probability of auditor litigation, calculated using the parameters from Table 3 of Shu (2000) |
| SIZE | the natural log of firm's market value of equity at the fiscal year-end |
| ACCRUAL | net income before extraordinary items minus its operating cash flows at fiscal year-end, deflated by beginning-of-year total assets |
| CFO | operating cash flows at fiscal year-end deflated by beginning-of-year total assets |
| DCFO | an indicator variable that is equal to one if CFO is negative, and zero otherwise |

APPENDIX C

CONTROL FOR ENDOGENEITY – THE FIRST STAGE MODELS

$$\text{TENURE}_{it} = \delta_0 + \delta_1 \text{SIZE}_{it} + \delta_2 \text{LEV}_{it} + \delta_3 \text{INVENTORY}_{it} + \delta_4 \text{AR}_{it} + \delta_5 \text{CURRENT}_{it} + \delta_6 \text{ROA}_{it} + \delta_7 \text{TECH}_{it} + \delta_8 \text{GROWTH}_{it} + \delta_9 \text{RETURN}_{it} + \delta_{10} \text{BETA}_{it} + \delta_{11} \text{VOLATILITY}_{it} + \delta_{12} \text{DLOSS} + \delta_{13} \text{LASTOPINION}_{it} + \delta_{14} \text{OPINION}_{it} + \delta_{15} \text{DELIST}_{it} + \delta_{16} \text{SEGMENT}_{it} + \delta_{17} \text{FIRMAGE} + \varepsilon$$

| | Short vs. Medium | | | Medium vs. Long | | | Short vs. Long | | |
|------------------|------------------|---------------|----------------|-----------------|---------------|----------------|-----------------|---------------|----------------|
| | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> | <u>Estimate</u> | <u>t-stat</u> | <u>p-value</u> |
| INTERCEPT | 0.642 | 163.323 | 0.00 | -0.797 | 275.921 | 0.00 | -0.056 | 1.094 | 0.30 |
| SIZE | 0.021 | 10.231 | 0.00 | 0.019 | 9.425 | 0.00 | 0.033 | 23.574 | 0.00 |
| LEV | -0.050 | 1.436 | 0.23 | -0.267 | 44.167 | 0.00 | -0.302 | 44.776 | 0.00 |
| INVENTORY | 0.038 | 0.411 | 0.52 | 0.362 | 45.296 | 0.00 | 0.474 | 53.908 | 0.00 |
| AR | -0.014 | 0.069 | 0.79 | 0.243 | 19.067 | 0.00 | 0.199 | 8.768 | 0.00 |
| CURRENT | -0.001 | 0.833 | 0.36 | 0.000 | 0.006 | 0.94 | -0.001 | 0.420 | 0.52 |
| ROA | 0.210 | 0.854 | 0.36 | -0.097 | 0.137 | 0.71 | 0.201 | 0.495 | 0.48 |
| TECH | 0.031 | 1.483 | 0.22 | -0.034 | 2.216 | 0.14 | -0.015 | 0.316 | 0.57 |
| GROWTH | -0.003 | 1.559 | 0.21 | -0.015 | 5.813 | 0.02 | -0.019 | 6.640 | 0.01 |
| RETURN | -0.031 | 3.367 | 0.07 | 0.019 | 1.478 | 0.22 | -0.023 | 1.619 | 0.20 |
| BETA | 0.020 | 2.446 | 0.12 | 0.032 | 7.706 | 0.01 | 0.043 | 10.227 | 0.00 |
| VOLATILITY | 0.189 | 0.132 | 0.72 | -2.706 | 26.748 | 0.00 | -2.926 | 23.334 | 0.00 |
| DLOSS | -0.014 | 0.381 | 0.54 | -0.027 | 1.701 | 0.19 | -0.036 | 2.414 | 0.12 |
| LASTOPINION | -0.188 | 56.803 | 0.00 | 0.030 | 1.703 | 0.19 | -0.194 | 65.238 | 0.00 |
| OPINION | -0.131 | 28.655 | 0.00 | -0.002 | 0.011 | 0.92 | -0.105 | 19.745 | 0.00 |
| DELIST | -0.357 | 13.566 | 0.00 | -0.025 | 0.049 | 0.83 | -0.399 | 12.522 | 0.00 |
| SEGMENT | -0.026 | 13.702 | 0.00 | -0.032 | 26.169 | 0.00 | -0.041 | 40.142 | 0.00 |
| FIRMAGE | -0.016 | 303.744 | 0.00 | 0.055 | 4094.023 | 0.00 | 0.033 | 1357.752 | 0.00 |
| Likelihood Ratio | 738.839 | | 0.00 | 7688.208 | | 0.00 | 2723.834 | | 0.00 |
| Wald | 725.362 | | 0.00 | 5688.970 | | 0.00 | 2317.370 | | 0.00 |

N

18866

27371

32363

TENURE = Long or medium tenure group is coded as one when compared with short tenure group (coded as zero); Long tenure group is coded one when compared with medium tenure group (coded as zero), where short tenure group contains firms with auditor-client relationships less than three years; Medium tenure group contains firms with auditor-client relationships less than or equal to eight years but greater than or equal to four years; and long tenure group contains firms with auditor-client relationships longer than or equal to nine years. SIZE = natural logarithm of total assets. LEV = long term debt over total assets. Inventory = inventory divided by total assets at the beginning of fiscal year. AR = account receivable divided by total assets at the beginning of fiscal year. CURRENT = current assets divided by current liabilities. ROA = net income divided by total assets. TECH = a dummy variable, equal to one if a firm's SIC code is in the 2830s, 3570s, 7370s, 8730s, and between 3825 and 3839, and zero otherwise. GROWTH = sales growth. RETURN = the compounded annual return over the fiscal year. BETA = the slope coefficient of a regression of daily stock returns on equal-weighted market returns. DLOSS = a dummy variable, equal to one if a firm reports a negative earning in current year or prior year; and zero otherwise. VOLATILITY = the standard deviation of daily stock returns over the fiscal year. LASTOPINION = a dummy variable, equal to one if a firm has not received a completely clean opinion from its auditor in last year, and zero otherwise. OPINION = a dummy variable, equal to one if a firm has not received a completely clean opinion from its auditor in current year, and zero otherwise. DELIST = a dummy variable, equal to one if firm is delisted because of financial difficulties within the next year, and zero otherwise. SEGMENT = the reported number of business segments. FIRMAGE = the number of years that the firm has available data in Compustat since 1950.

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