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Accounting comparability, audit effort and audit outcomes

Joseph Hongbo Zhang
Louisiana State University and Agricultural and Mechanical College, hzhan19@lsu.edu

ACCOUNTING COMPARABILITY, AUDIT EFFORT AND AUDIT OUTCOMES

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Hongbo Zhang

B.S., Zhejiang University, 1996
M.S., University of Illinois, 2004, 2006

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DEDICATION

I dedicate this dissertation to four females who have influenced my life the most. First is my mother who often reminds me that life is bitter sweet so I stay humble. Second I dedicate this to my wonderful wife who supports me while going through my three graduate programs. I would have never made it through these without her. Lastly, I dedicate this to my two daughters who have transferred to several different elementary schools while I was at different graduate programs for so long.

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ABSTRACT

The paper investigates the usefulness of accounting comparability for audit engagement. Comparability among peer firms in the same industry reflects the similarity and the relatedness of firms' operating environment and accounting reporting. From two perspectives of "inherent business risk" and "external information efficiency", comparability is helpful for auditors to assess client business risk and lowers the cost of information acquisition, processing, and testing. For a given firm, I hypothesize that the availability of information about comparable firms is helpful for auditors by improving audit accuracy and audit efficiency. The comparability proxy is based on a variety of measures including pair-wise earnings-return similarity (De Franco, Kothari and Verdi 2011), historical covariance of stock returns and cash flows, and earnings comparability controlling accounting choice differences. The empirical results show that accounting comparability is positively associated with audit quality and audit reporting accuracy as of a clean or a going-concern opinion. Meanwhile, comparability is negatively related to audit delay, audit fees, and the likelihood of auditor's issuing a going-concern opinion. In totality, the study shows that industry-wise comparability enhances the utility of accounting information for external audit.

1. INTRODUCTION

Given the costs of producing, auditing, and processing financial information, it is likely that comparability and consistency are desirable characteristics of financial reports (Kothari et al. 2010). This paper examines the implications and benefits of accounting comparability for external auditing. Financial statements comparability among peer firms in the same industry reflects the similarity and the relatedness of firms' operating environment and financial reporting behaviors, and presumably helps lower the cost of information processing and testing, thus auditability is improved when a client firm's comparability is higher. This study aims to investigate whether accounting comparability is useful to auditors in terms of audit risk and audit outcomes.

Comparability is defined as the quality of information that enables users to identify similarities in and differences between two sets of economic phenomena.[1] If a firm's accounting amounts are more comparable with those of its industry peers, the marginal costs for outsiders (e.g., shareholders, creditors, and regulators) and for specialized monitors (e.g., independent auditors and financial analysts) to collect and process accounting information of these peer firms become smaller. As a result, they can evaluate the firm's true performance more accurately because the accounting information of comparable firms is a valuable additional input to analyze the business fundamentals of the firm in question.

An individual firm's business operations are shaped by both firm-specific factors and industry common factors that affect all its peer firms. When common economic factors explain a

[1] In their conceptual framework for financial reporting, the FASB (2010) and IASB (IASB 2010) identified comparability as the qualitative characteristic of financial information that enables users to identify and understand similarities in, and differences among items. Despite the fact that accounting comparability is one important qualitative characteristics, the empirical research on it is relatively scarce. One reason is that it is a relative or comparative concept, not an absolute or independent criterion like other accounting characteristics (De Franco et al. 2011). As a result, the empirical test for comparability has been intractable, especially for large sample of firms within a country (Sohn 2011).

large amount of the similarity and/or dissimilarity of firms in an industry, these firms have higher comparability. Cognitively, it is difficult for individuals to evaluate information signals that are unique to a firm, and accordingly individuals tend to underweight idiosyncratic information in decision making (Slovic and MacPhillamy 1974; Lipe and Salterio 2000). A higher degree of accounting comparability lowers the cost of information acquisition, and increases the overall quantity and quality of information available to information users (De Franco et al. 2011). Thus, comparability mitigates their dependence on information from management reports (Gong et al. 2012). Taken together, comparability is an attribute that enhances the utility of financial statements.

Industry-wise comparability may provide efficiency and knowledge spillovers achieved by a single firm in the audit engagement (Simunic 1984). Information comparability contributes to the externality gains.[2] Given the role of externalities in expanding auditors' available information set, the study of intra-industry information transfers in audit engagements provides additional insights into the economic benefits of audit accuracy and audit efficiency. Auditors could better understand how economic events translate into accounting performance for firms of a higher degree of accounting comparability. This enhanced knowledge facilitates the auditor's ability to attest the firm's accounting results and thus improves audit quality.

Comparability of financial information also enriches an individual firm's information environment, which is beneficial for audit planning and risk assessment of client business. Risk measures assessed during the planning stage of an engagement are arguably subjective, whereas comparability is presumably helpful for auditor's actual perceptions of risk. In fact, the "halo effect" theory reveals that auditors' developing or inheriting high-level performance-related

[2] Financial reporting externalities occur when information about the operations of one firm conveys information about the operations of other firms (Beaver 1981).

judgments (strategic risk assessments) prior to evaluating more detailed performance measures (changes in account balances) will reduce their use of the diagnostic information contained in the more detailed measures (e.g., Murphy et al. 1993; Eilifsen et al. 2001; O'Donnell and Schultz 2005, among many others). Comparability facilitates the halo effect in reliability assessment. Conclusively, an analytical model of an individual auditee *i*'s accounting comparability can be expressed as: $Comparability_i$ = Function($FirmRisk_{it}$, $IndustryStructure_{1\ldots i\ldots J}$), $i \in [J]$. *J* contains a group of comparable (or economically related) companies. A business entity's accounting comparability is due to firm-specific inherent risk and dynamic interactivities within peer firms in the same industry.

Despite the potential importance of industry structure on the economic conduct of accounting firms, there is very little research at this level of analysis. Francis (2011, p.140) points out that "… we have barely scratched the surface in our understanding of the role that industry structure plays in audit quality". This paper is aimed to investigate whether this particular client characteristic (a client firm with a higher degree of industry-wise comparability) is an engagement-specific characteristic of audit risk and audit outcomes.

The tests require empirical measures of pair-wise accounting comparability: The first and primary approach is using De Franco et al. (2011)'s theoretical constructs of comparability based on the degree of earnings-return similarity among peer firms. I also use earnings comparability controlling for accounting choice heterogeneity (Cheng and Zhang 2011), the degree of comovement of stock returns for firm relatedness (Bhojraj and Lee 2002), and comovement of cash flows. I examine how accounting comparability is associated with audit effort and

outcomes that are reflected by audit quality[3], audit pricing, audit delay, audit report accuracy, and the auditor's propensity to issue a going-concern opinion.

I anticipate that high accounting comparability is accommodating for audit tasks when engagement teams expand their comparative knowledge and skill sets, thus audit judgments could be improved. Hence, accounting comparability will lead to higher audit quality. Accounting comparability reflects the degree to which a client firm's business risk and the risk of auditability entail. I conjecture that the association between accounting comparability and audit risk is negative. Moreover, comparability also can help audit effectiveness (e.g., less redundancy of effort on information searching and attestation). As a result, it is negatively related to audit fees and audit report lag.

Regressing audit metrics from Audit Analytics on the accounting comparability using a large sample of U.S. firms during 2000-2009 period, I find that accounting comparability is negatively associated with audit fees and audit delay (both indicating audit time and effort), and negatively associated with financial statement restatements. Empirical results further show that accounting comparability is negatively related to the likelihood of auditor's issuing a going-concern opinion, suggesting that clients with higher accounting comparability face lower systematic business riskiness for receiving a going-concern audit opinion. In addition, comparability is positively related to audit quality (indicated by performance-matched abnormal current accruals) and to the reporting accuracy as rendering a clean or a going-concern audit opinion. The relation between audit reporting accuracy and comparability is more pronounced for new audit clients (for instance, audit tenure is no more than three years). Additional tests show that these findings are robust to the use of earnings comparability and firm relatedness

[3] The indirect audit outcome, audit quality, is indicated by earnings quality, such as discretionary accruals, following Becker et al. (1998); Francis and Krishnan (1999); and Geiger and North (2006), among many others.

variables, and to different specifications of regression models (e.g., the change in accounting comparability is significant in the audit fee / audit delay changes model).

This paper contributes to the literature in a number of ways. First, to my knowledge, this is the first paper to empirically study how accounting comparability is related to audit consequences. The results shed light on the role of comparability in the outcomes of audit engagement. In spite of its importance underscored by the FASB, comparability is under-researched. Thus far, accounting comparability has been studied primarily from the viewpoint of accounting standards or methods (Sohn 2011). The paper expands the scope of accounting comparability research to auditing area. Understanding comparability is important because accounting comparability facilitates information transfer, and thus it should be beneficial for audit compliance and audit outcomes.

Second, this paper argues that enhanced accounting comparability reduces the marginal costs for auditor to acquire and process comparable clients' accounting information. We have an impoverished understanding of the intrinsic quality of audit evidence (Francis 2011), and little is known about the reliability and relevance of audit evidence. Thus, it is extremely difficult for auditors to accurately assess the true audit risk. Comparability can be used to bridge the reliability and the relevance of evidences controllable by a client firm and those beyond the auditee's control (i.e., externalities). The effect of client industry structure is scarcely researched in auditing literature. The paper contributes from a new perspective of industry-setting information that is useful for auditability.

Third, the study has practical implications for both auditors and client firms: Auditor enjoys the qualitative characteristics of comparability on the attestation process. With the aid of accounting comparability, audit judgment and decision-making improve, audit quality increases,

and risk of audit failure diminishes. The results also suggest that there is perhaps a demand for client firms to make their accounting information comparable. In other words, comparability will bring tangible benefits to firms in terms of auditability (for instance, timely and transparent financial report and audit report, and less audit fees paid).

The rest of this paper proceeds as follows. Section 2 presents background and relevant literature. Section 3 develops testable hypotheses. Section 4 describes the sample and the measurements of accounting comparability and audit metrics. Section 5 outlines the research methodologies and examines the relation between accounting comparability and audit effort / outcomes. Section 6 describes alternative measures of research variables and a battery of robustness tests. Section 7 concludes. The Appendixes present variable descriptions and alternative measures of research variables.

2. BACKGROUND AND LITERATURE REVIEW

The study links two streams of literature: research that has examined financial statement comparability and research that has studied the relationships between audit outcomes and accounting quality.

2.1. The Framework of Accounting Comparability

FASB states that "Our financial reporting system is essential to the efficient functioning of the economy. That is because it is the means by which investors, creditors, and others receive credible, transparent, and comparable financial information they rely on to make sound investment and credit decisions."[4] Specifically, the properties of GAAP as described in efficient contracting theory (e.g., comparability, consistency, verifiability, conservatism, auditability, etc.) suggest that the "institution" of GAAP helps mitigate both information asymmetry and agency problems in capital market transactions, thereby facilitating the long-run efficiency of the capital markets (Kothari et al. 2010).

The importance of comparability has been underscored in GAAP. Accounting Principles Board Statement No.4 (1970) highlights that "the Board ranks comparability among the most important of the objectives of financial accounting..." (p.41). FASB Concepts Statement No.2 (1980) defines comparability as "…the quality of information that enables users to identify similarities in and differences between two sets of economic phenomena" (p.9), and states that "investing and lending decisions essentially involve evaluations of alternative opportunities, and they cannot be made rationally if comparative information is not available" (p.40). Comparability is important as resource allocations necessitate comparisons among investment alternatives, indeed it facilitates efficient allocation (Revsine 1985).

[4] See FASB website http://www.fasb.org/facts/index.shtml

Comparability enables information users to identify and understand similarities in, and differences among accounting items. Occasionally, a single economic phenomenon can be faithfully represented in multiple ways, but permitting alternative accounting methods for the same economic phenomena diminishes comparability. The board then states that "comparability should not be confused with uniformity" and that "an overemphasis on uniformity may reduce comparability…". As FASB Concepts Statements No.8 makes clear that "Comparability is not uniformity. For information to be comparable, like things must look alike and different things must look different" (para. QC23).

Comparability, which includes consistency, is a secondary quality that interacts with relevance and reliability to contribute to the usefulness of information. GAAP allows that accounting rules represent common practice, and it does not preclude alternative practices that are likely to generate innovation in accounting. Comparability addresses comparing information among different entities while consistency addresses comparing information over time for the same entity.[5] Like comparability, consistency is a quality of the relationship between two accounting numbers rather than a quality of the numbers themselves in the sense that relevance and reliability are. The consistent use of accounting methods is a necessary but not a sufficient condition of comparability.

Except that consistency contains the scope of comparability, Schipper and Vincent (2003) point out that defining financial reporting quality in terms of relevance, reliability, and comparability is empirically problematic if the intent is to separately assess these three attributes. Moreover, the identification and selection of comparable firms is a very difficult and time-consuming process. The process is relatively subjective, requiring substantially professional

[5] Comparability between firms has always been problematic. Different firms may use different accounting principles making comparison among firms (even within the same industry) difficult at best (Schipper and Vincent 2003).

judgment. Therefore, Schipper and Vincent claim that evidence of a focus on reliability and comparability is visible only in "detailed implementation guidance".

2.2. Recent Empirical Studies of Accounting Comparability

Recently empirical studies have emerged in response to the development of new methodologies to measure comparability, an output-based financial statements comparability developed by De Franco et al. (2011). A number of IFRS studies adopt De Franco et al.'s measures (and/or modified ones) to examine whether accounting comparability has increased after the introduction of IFRS (e.g., Lang et al. 2010; Barth et al. 2011; Wu and Zhang 2011). In general, these studies document that the capital market benefits from global harmonization of accounting standards when accounting is more comparable.

Another stream of more closely related research to this paper is the studies on the effect of accounting comparability using U.S. sample firms. Kini et al. (2009) report that, if analysts belong to a country where accounting regulation enforces firms to include more accounting items in their annual reports, their sector diversification increases. They reason that economic commonalities due to more comprehensive and comparable accounting across firms in a market enable an analyst to expend less time and effort to analyze other firms operating in the same market. Their work shows that; by focusing her attention on a set of firms within a market that are strongly influenced by a common set of economic forces, an analyst is able to harness economies of scale in the acquisition and production of information. These "scale economies can enable an analyst to either maintain a larger research portfolio or produce more accurate earnings forecasts by studying firms in greater depth" (p.871).

Engelberg et al. (2010) examine the effect of geographic and industry proximity on the choice of institutional investors' portfolio structure and find that mutual fund managers are more

likely to hold other stocks in the same geography-industry cluster as the stocks in which they already have a large position. They reason that firms in the same industry and geography have more efficient market prices than firms outside clusters because their fundamentals such as investment and earnings strongly commove over time. This earnings comparability reduces the marginal cost of information acquisition for the institutional investors when they add new stocks to their portfolios.

De Franco et al. (2011) investigate the effect of accounting comparability on analyst coverage and forecast properties and report that analyst coverage increases, forecast accuracy improves, and forecast dispersion diminishes when accounting comparability of the followed firms is higher. They argue that, for a given firm, the availability of information about comparable firms lowers the cost of acquiring information, and increases the overall quantity and quality of information available about the firm. Comparability also allows analysts to better explain firm's historical performance or to use information from comparable firms as additional inputs in their analyses.

Cheng and Zhang (2011) examine the informativeness of earnings comparability (cross-sectional earnings attribute) and earnings smoothness (time-series firm-specific earnings attribute). Earnings, if artificially smoothed, are not representationally faithful to the reporting entity's business model and its economic environment. If a firm's reported earnings deviate too much from its industry peers, the market could discount the smoothness. Common economic factors among firms in the same industry create comparability which eases the interpretation of a firm's earnings and enables investors to better understand the firm's operation. Earnings comparability potentially strengthens investors' confidence as they appear to assess reported earnings and to react more positively when earnings are comparable. They find that the

informativeness of earnings smoothness is contingent on the comparability of earnings to industry peers, in terms of contemporaneous earnings-return relation, the relation between current returns and future earnings, and cash flow forecast accuracy.

Gong et al. (2012) investigate the effect of earnings synchronicity on management disclosure and document that managers are more likely to provide earnings forecasts when their firms' earnings synchronicity with other firms is lower. They posit that lower synchronicity means that the relative importance of firm-specific factors vis-à-vis industry common factors becomes higher in earnings determination, thereby increasing information acquisition costs for outside investors, which in turn increases information asymmetry between managers and outsiders. As a result, managers try to mitigate this asymmetry by disclosing more private information.

2.3. Audit Outcomes

Observable audit outcomes are sometimes direct, such as, auditor resignations and client disagreements with auditor (e.g., Form 8-K filing).[6] Audit report is a final direct outcome; a company's financial statement is a joint product of the client and its auditor (Antle and Nalebuff 1991). The audit outcomes also include its informativeness of audit report, auditor's opinion of going-concern issue, and an opinion on the effectiveness of the client's internal control over financial reporting. Indirect outcomes include financial statement quality and/or earnings quality since audit would constrain earnings management (e.g., Becker et al. 1998).[7] There are also secondary effects of differential audit quality: Mansi et al. (2004) document that auditor quality and tenure are negatively and significantly related to the cost of debt financing, and in equity

[6] See papers by Krishnan and Krishnan (1997) and Shu (2000), among many others.
[7] Earnings quality is limited mainly to "accruals". Quantitative audit quality, in lots of empirical research, is proxied by "accruals".

markets Teoh and Wong (1993) conclude that larger auditors generate more value-relevant earnings information.

Prior research has studied some factors related to audit outcomes. Mainly, these factors are auditor characteristics, engagement-specific characteristics, client characteristics, and institutions. Factors of auditor characteristics can be accounting firm size, brand name, industry expertise, and locale/unit of analysis (e.g., global, country, office, and partner). Engagement-specific characteristics are auditor independence, service fees (likely indicating client influence or economic bonding between client and auditor, as Larcker and Richardson (2004) argue), engagement tenure, auditor alumni, etc. Client characteristics include size, information environment, and corporate governance (e.g., audit committees). Institutional factors, such as regulatory agencies, litigation, and investor protection, also impact audit outcomes.

2.4. Accounting Comparability and Auditability

In response to changing business conditions over time and across auditees, auditors have increased the extent to which they consider business risk when they evaluate factors that could influence audit efficiency and accuracy.[8] Integrating knowledge of business risk into materiality attestation can improve audit effectiveness by helping auditors develop a richer and more complete comprehension for the business processes that drive financial performance (Peecher et al. 2007). Procedures for assessing and incorporating business risk into the audit plan change the task structure that auditors use to learn about client operations and evaluate audit risk.

Comparative financial information is useful for auditors to recognize similarities, differences and trends over time periods and across client businesses. Auditor can better

[8] Professional standards direct the auditor to ‘‘obtain an understanding of the entity’s objectives and strategies, and the related business risks that may result in material misstatement of the financial statements (International Federation of Accountants (IFAC) 2008, ISA 315, 30).” ISA 315 asserts that ‘‘[a]n understanding of business risks increases the likelihood of identifying risks of material misstatement (31).” In addition, it cautions that elevated business risk may increase the risk of intentional manipulation of financial statements.

understand how economic events translate into accounting results for her client(s) of a higher degree of accounting comparability, and this knowledge expansion facilitates the auditor' judgment and decision making (JDM) process in audit engagement. A positive side is that industry-wide comparability may provide efficiencies and knowledge spillovers achieved by a single firm in the audit engagement (e.g., Simunic 1984; Whisenant et al. 2003).

Industry-wide comparative information helps auditors develop a holistic perspective on client operations before they become embroiled in firm-level condition. Before an auditor starts a new audit task from her client, if the client experiences similar underlying economic fundamentals over time (i.e., higher comparability) with her existing clients, then the auditor will be better off in her audit planning and processing. In fact, there is a "halo effect" on auditor judgment by influencing the reliability assessments that develop from independent evidence. Halo effect occurs when knowledge of an overall evaluative judgment changes the extent to which detailed evidence influences a decision because evidence consistent with the overall judgment has a greater impact on the decision than evidence inconsistent with the overall judgment (e.g., Nisbett and Wilson 1977; Balzer and Slusky 1992; O'Donnell and Schultz 2005; Moroney and Carey 2011, among many others).

During risk assessment, auditors who establish an initial judgment by learning about their client's business operation should develop a cognitive index with stronger links to knowledge about aggregate conditions that affect the viability of business processes and the quality of audit judgment and decision making. By shifting the focus of knowledge acquisition activities, the top-down task structure should provide auditors with mental models that increase the salience of

conditions that determine business process performance and the integrity of management reporting (Schultz et al. 2010).[9]

This study examines how accounting comparability affects the extent to which risk factors influence auditor judgment about the business risk of financial information. As illustrated in Figure 1, auditors must consider three types of risk factors when they evaluate the audit risk of their individual clients, including (1) industry-wide business conditions (i.e., common economic factors) that determine the effectiveness of processes that drive the business model, (2) entity-level conditions of individual clients can increase the risk of faithful representation by management, and (3) account-level conditions involving patterns of fluctuations in accounting metrics that are inconsistent across time with other clients.

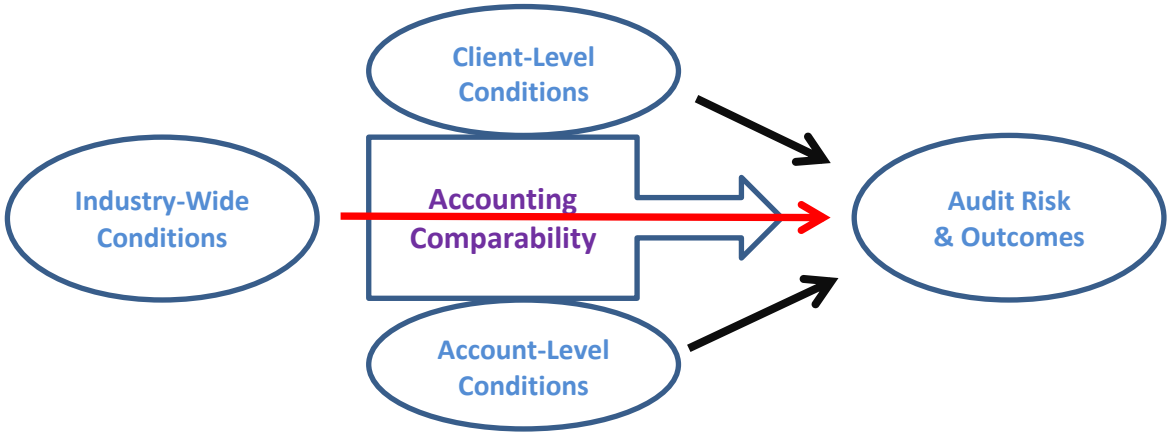

Figure 1:

Factors of Accounting Comparability that Influence Audit Risk Assessment

Industry-wide information comparability helps auditors develop richer knowledge structures when they process individual client information. It essentially enhances the auditor's

[9] The top-down approach describes the auditor's sequential thought process in identifying risks and the controls to test, not necessarily the order in which the auditor will perform the auditing procedures (Auditing Standard No.5).

ability to achieve accurate results in the examination of a client's financial reporting (i.e., the auditability). Hence, I argue, from a broad sense, that this superior knowledge will improve decision performance by providing a more comprehensive and complete context for recognizing the implications of audit evidence, as a result, more effective audit service.

3. HYPOTHESIS DEVELOPMENT

3.1. Timeliness of Audit Report

Timeliness is an important qualitative attribute of financial statement, which requires the information to be made available to information users as rapidly as possible.[10] The recognition that the length of audit may be the single most important determinant affecting the timing of financial reports (Givoly and Palmon 1982). The shorter the time between the end of the accounting year and the publication date, the greater the benefits that can be derived from the financial statements. The delay in releasing financial reports is most likely to increase uncertainty associated with the decisions made based on information contained in the financial statements. Both the empirical and analytical evidences reveal that the timeliness of financial statements has some repercussions on firm valuation (e.g., Beaver 1968; Givoly and Palmon 1982; Chamber and Penman 1984; Kross and Schroeder 1984). Besides, as Bamber et al. (1993) argue, the delayed reporting may encourage certain unscrupulous investors to acquire costly private pre-disclosed information and exploit their private information at the cost of less informed investors.

Ball et al. (2000) define timeliness as the extent to which current-period accounting income incorporates current-period economic income, the proxy for which is change in market value of stockholders' equity. Accounting comparability captures the degree of similarity over time reflecting that common economic factors shape an individual firm's accounting income. That is to say, a firm's income, if comparable, generally deviates less from the firm's economic income.[11] In fact, comparability is higher for firms in the same industry and for firms with

[10] FASB (1980) posits two fundamental qualitative characteristics, relevance and faithful representation. It also adds the enhancing characteristics of comparability, verifiability, timeliness, and understandability.

[11] Information asymmetry creates a demand for accounting income with the property of observability independently of managers. Accounting income incorporates only the subset of available value-relevant information that is

similar market capitalization (De Franco et al. 2011). While this research design infers timeliness from the way the preparer and the auditor make the financial reports available to public, the paper reasons that comparability is an inherent characteristic of an individual company's business conditions, is reflective of economic income of the company, and should be informative in terms of timely reporting.

Comparability, from another perspective of information efficiency for audit engagement, can help reduce redundancy in information searching and attestation. In other words, comparability is related to a reduction in collective effort by auditor, as a consequence, more timely audit report (proxy by audit delay, it is measured as the number of calendar days from fiscal year-end to the date of the auditor's report). The functionality of comparability for information efficiency will translate into audit efficiency. Determinants of timeliness of audit reports are interesting since audit delay affects the timeliness of both the annual earnings information release and the Form 10-K filing date. Understanding the (client-related) determinants of audit delays may provide some insights into audit efficiency (e.g., Bamber et al. 1993; and Ettredge et al. 2000; among many others). I propose that information comparability contributes to information efficiency for audit work. My first hypothesis is as followed:

H1: Accounting comparability is positively (negatively) associated with the timeliness of audit report (the audit delay).

3.2. Audit Pricing

Studies document that auditor pricing is a function of auditor effort and perceived audit risk (e.g., Simunic 1980; Palmrose 1988; Simunic and Stein 1996; Seetharaman et al. 2002). Audit fees are indeed related to the effort of auditor corresponding to the level of audit risk, a function of audit complexity which affects the amount of effort expended on the audit

independently observable, whereas economic income incorporates information that is not independent of managers, such as plans and forecasts (Ball et al. 2000).

production. Due to business complexity, auditor will charge a higher fee as the required effort to effectively audit the client increases. Some studies use abnormal audit fees to test for auditor independence (e.g., Larcker and Richardson 2004). An abnormal fee is the residual or unexplained audit fee from a standard audit fee model, the idea being that the unexplained fee provides a measure of economic bonding between the auditor and client. However, Francis (2011) argues that abnormal audit fees may capture abnormally high audit effort or auditor's pricing (unobserved) of client risk characteristics.

Prior research (e.g., Antle et al. 2006) shows a negative relation between the level of fees (both audit and non-audit) paid to auditors and accruals (i.e., higher fees are associated with smaller accruals). Cheng and Zhang (2011) document a negative correlation between accounting comparability and the level of total accruals and discretionary accruals as well. Kim et al. (2010) find that mandatory IFRS adoption has led to an increase in audit fees, and that the IFRS-related audit fee premium increases with the extent of comparable accounting between a country's former local accounting standards and the IFRS.

Research has argued that when auditors provide both audit and non-audit services, scope of economies arise because auditors can gain from the spillovers of knowledge from auditing to consulting, and vice versa. Krishnan and Yu (2011) find a strong and significant negative relationship between audit fees and non-audit fees. Their results suggest that knowledge spillover flows from non-audit to the audit side, as well as from the audit side to the non-audit side. However, Wu (2006) concludes that there is no empirical evidence for such knowledge-spillover benefits on audit pricing from studies of auditor costs and hours (cost savings).[12]

[12] The two papers by Wu (2006) Krishnan and Yu (2011) are based on the knowledge-spillover effect from a single client where an auditor provides multiple services (auditing and non-auditing service within the same client). The knowledge spillover in this study is pointed at the industry-wide cross-firm phenomenon.

Industry-setting comparability reflects a positive externality gain for auditors. Moreover, comparability indicates the degree to which common economic factors shape an individual client's business environment and financial reporting, thus high comparability reflects low systematic business risk. I propose that a higher degree of accounting comparability indicates low level of business risk which induces less audit effort necessary, and at the same time, comparability facilitates information transfer for audit production by saving time and cost of information acquisition and attestation. Auditing firms would less price the decreased audit risk and effort into their fees. My second hypothesis is as followed:

H2: *Ceteris paribus,* accounting comparability is negatively related to audit fees.

3.3. Audit Quality

Audit quality is not directly observable. Hence prior studies have used a variety of measures as proxies for audit quality, e.g., restatement as a measure of audit quality (Srinivasan 2005; Dao et al. 2012). Comparing audit outcomes between classes of auditors is also to proxy for audit quality. On average, Big-N audits are of better quality (e.g., Francis and Krishnan 1999; Weber and Willenborg 2003). An industry specialist, in addition to a brand name, is known to offer a higher level of assurance than does a non-specialist (e.g., O'Keefe et al. 1994; Craswell et al. 1995; Beasley and Petroni 2001; Owhoso et al. 2002; Balsam et al. 2003; Krishnan 2003; Reichelt and Wang 2010).

An extensive branch of audit differentiation research focuses on the quality of the client's financial statements, in which discretionary accruals are often used as a proxy for audit quality, as they reflect the auditor's constraint over management's reporting decisions. Becker et al. (1998) indicate that high-quality audits decrease earnings management (i.e., managers' intentional reporting bias), and Watkins et al. (2004) suggest that unintentional measurement

errors could be reduced by high-quality audits. Using Greek sample firms, Caramanis and Lennox (2008) measure audit quality by actual engagement hours and show that client earnings quality is higher when auditors exert more effort. Gunny and Zhang (2009) also document a direct link between audit quality and the quality of client earnings based on the PCAOB reports. Khurana and Raman (2004) suggest that investors' perception of financial reporting quality (as captured in *ex ante* cost of equity) increases with perceived audit quality.[13]

Recently, researchers have examined the effect of financial statement comparability on client's earnings quality. Gong et al. (2012) posit that low earnings comparability indicates management's relative information advantage over outsiders, whereas higher comparability attenuates information asymmetry between insiders and uninformed investors. Therefore, when a firm's earnings are largely determined by non-comparable firm-specific factors, corporate outsiders incur greater costs (either more time or more effort or both) to discover and process a firm's idiosyncratic information, and uninformed outsiders will face greater difficulty in evaluating the truthfulness of reported earnings. In explaining the validity of their measure of accounting comparability, De Franco et al. (2011) document that comparability is positively related to accruals quality, earnings predictability, and earnings smoothness, and negatively related to earnings loss. Cheng and Zhang (2011) focus on earnings comparability controlling accounting choice heterogeneity, they document that earnings comparability is positively correlated with cash flow comovement, earnings smoothness, and earnings persistence, and negatively correlated with abnormal accruals. Sohn (2011) reveals that managers' real earnings management increases whereas their accrual-based earnings management decreases with the degree of their firms' accounting comparability with peer firms.

[13] The studies by Callen et al. (2011) and Lawrence et al. (2011) also use *ex ante* cost of capital as a proxy to capture the capital market's perception of the financial reporting credibility.

Comparability can be viewed from a network perspective. Increasing the number of firms with directly comparable financial reports increases the number of two-way communication linkages in the "financial reporting" network (Meeks and Swann 2008), which enhances the value of the overall network to both management and outsiders. Consistent with the network perspective, one firm's adoption of more comparable reporting practices creates externalities on other firms (Hail et al. 2009). Nevertheless, Beyer and Sridhar (2006) counter-argue that, in the presence of limited wealth for the audit firm, the addition of a second client can decrease audit quality and increase the likelihood of audit failure relative to a single-client setting.

Information comparability across clients enables auditor to assess one client's relative financial position and performance among other clients. Comparability over time is necessary for the identification of misstatements in a client firm's financial compliance and reporting. With the aid of comparative information, auditor can systematically detect irregularities and errors in company's financial recording practices, the transparency of the company, and the forthrightness of the managers who interact with the auditor. In view of that, I posit that if a client's accounting comparability is high, audit accuracy is enhanced when auditors assess and attest the client's earnings information and reporting model, thus leading to higher audit quality. My third hypothesis is as followed:

H3: Accounting comparability is positively related to audit quality.

3.4. Auditor's Going-Concern Opinion

The going-concern assessment is a matter of auditors' professional judgment. Prior research has investigated audit quality with the auditor's greater propensity to issue a going-concern audit opinion (GCAO). The notion that higher-quality auditors are more likely to issue a GCAO has been well established in the literature. Extant research suggests that larger auditors

(Weber and Willenborg 2003), larger audit fees (Geiger and Rama 2003), and national and/or office-level industry expertise (Lim and Tan 2008; Reichelt and Wang 2010), are positively associated with an auditor's propensity to issue a GCAO. Lennox (1999) uses the going-concern / client failure framework in a different way to measure auditor reporting accuracy. Auditors report accurately if client failures are preceded by a GCAO and if clients that do not fail receive a clean opinion. In this paper I move beyond the traditional definition of a high-quality auditor, and investigate whether the effect of enhanced knowledge spillover and/or an inherent business risk is related to the likelihood of auditor's issuing a going-concern report.

During the last decade, large accounting firms adopt new audit approaches often referred to as business risk auditing which are based on a top-down, holistic perspective of the client, and encourage the auditor to develop a thorough understanding of a client's business and related business risks (Bell et al. 2005; Knechel et al. 2007). The business risk approach forces an auditor to determine the extent to which the client's strategic objectives are being met (or not) and to assess the likelihood that the client will succeed in the future. Several recent studies indicate that under certain conditions the business risk audit methodology may lead to greater audit effectiveness and efficiency (e.g., Erickson and Mayhew 2000; Choy and King, 2005; Kopp and O'Donnell 2005). However, Bruynseels et al. (2011) document that audit firms using a business risk methodology are less likely to issue a going-concern opinion for a firm that subsequently goes bankrupt.[14] They further conclude that there is no evidence supporting that business risk auditors are more likely to issue a going-concern opinion for companies that subsequently go bankrupt.

[14] Bruynseels et al. (2011) use a sample of U.S. companies from manufacturing industries (SIC 20-39) that went bankrupt from 1998 to 2001.

Risk assessment typically starts with a strategic analysis of the client (Bruynseels et al. 2011). This assessment comprises an analysis of the industry within which the client is operating, the client's strategy to achieve a sustainable competitive advantage, the business risks that threaten the success of this strategy, and the client's responses to these risks. The knowledge gained from industry-based experience can be applied to unfamiliar tasks set within a familiar industry context (Moroney and Carey 2011). As such, comparability helps auditor gain a thorough understanding of the adequacy and feasibility of the company's strategy in light of the external business environment and client internal processes and resources.

The above research views the enhanced industry knowledge from the side of business risk auditor, while this paper view the implication of accounting comparability as client's inherent business risk to auditor. I argue that comparative information is useful for a thorough analysis of the client's business and could potentially decrease the likelihood of audit reporting errors because it may enhance auditors' ability to recognize going-concern problems.

Even the fact that the likelihood to issue a going-concern opinion is deemed as quality audit and accounting comparability is presumably associated with higher quality of audit, the going-concern opinion is in essence the auditor's opinion of client risk of continued operation more than the quality of audit. Client risk encompasses audit risk faced by auditors, nevertheless, client risk is independent from audit risk which diminishes when auditors comply with generally accepted auditing standards (GAAS) and render a clean or a going-concern opinion, when and wherever appropriate.

From a financial statement user's point of view, bankruptcies without a prior going-concern report are often viewed as audit reporting failures (McKeown et al. 1991). Geiger and Raghunandan (2001) show that the proportion of bankruptcy companies that receive a going-

concern audit opinion in the year immediately preceding bankruptcy is less than 50%. Recent research indicates that strategic information about a client can have a significant impact in the likelihood that an auditor issues a GCAO (e.g., Behn et al. 2001; Geiger and Rama 2003). I hypothesize that comparative information has a positive impact on auditor reporting accuracy. Comparability can help detect potential deception regarding the true economic conditions of the client.

Moreover, since accounting comparability indicates the degree to which common economic factors shape an individual client's business environment and financial reporting, a higher degree of comparability should reflect low systematic business risk, specifically, the risk of a client's ability to continue functioning as a business entity. Therefore, auditor will be less likely to issue a going-concern opinion for a client with a higher degree of accounting comparability. More importantly, comparability helps auditors accurately evaluate client's going-concern situation. In my fourth hypothesis, I jointly test the following:

H4a: An auditor is less likely to issue a going-concern report when the client's accounting comparability is higher, *ceteris paribus*.

H4b: Accounting comparability is positively related to auditor's reporting accuracy, if client failure is preceded by a going-concern audit opinion.

4. DATA AND MEASUREMENTS

4.1. Measures of Accounting Comparability

FASB [1980] states that, "comparability is the quality of information that enables users to identify similarities and differences between two sets of economic phenomena." I add structure to this idea by defining the accounting system as a translation of economic events into financial statements. De Franco, Kothari and Verdi (2011, hereafter as DKV) use stock returns as a proxy for the net effect of economic events on the firm's financial statements. These economic events could be unique to the firm but could also be due to industry- or economy-wide shocks. The proxy for financial statements is earnings. While earnings are certainly one important summary income statement measure, I acknowledge that using only earnings to capture financial statement comparability is a limitation of the analysis. For each firm-year I first estimate the following equation using the 16 previous quarters of data:

$$Earn_{it} = \alpha_0 + a_1 Return_{it} + \varepsilon_{it} \quad (4\text{-}1)$$

where:

Earn = The ratio of quarterly net income before extraordinary items to the beginning-of-period market value of equity;

Return = The stock price return during the quarter.

The "closeness" of the functions between two firms represents the comparability between the firms. To estimate the distance between functions, i.e., a measure of closeness or comparability, I invoke the implication of accounting comparability: if two firms have experienced the same set of economic events, the more comparable the accounting between the firms, the more similar their financial statements. I use firm *i*'s and firm *j*'s estimated accounting functions to predict their earnings, assuming that they had the same return (i.e., if they had

experienced the same economic events, $Return_{it}$). Specifically, I use the two estimated accounting functions for each firm with the economic events of a single firm. I calculate:

$$E(Earn)_{iit} = \hat{a}_i + \hat{\beta}_i Return_{it} \quad (4\text{-}2)$$

$$E(Earn)_{ijt} = \hat{a}_j + \hat{\beta}_j Return_{it} \quad (4\text{-}3)$$

$E(Earn)_{iit}$ is the predicted earnings of firm *i* given firm *i*'s function and firm *i*'s return in period *t*; and $E(Earn)_{ijt}$ is the predicted earnings of firm *j* given firm *j*'s function and firm *i*'s return in period *t*. By using firm *i*'s return in both predictions, I explicitly hold the economic events constant. I define accounting comparability between firms *i* and *j* ($Comp_{ijt}^{Acct}$) as the negative value of the average absolute difference between the predicted earnings using firm *i*'s and *j*'s functions:

$$Comp_{ijt}^{Acct} = -\frac{1}{16} \times \sum_{t-15}^{t} |E(Earn_{iit}) - E(Earn_{ijt})| \quad (4\text{-}4)$$

Greater values indicate greater accounting comparability. I estimate accounting comparability for each firm *i* – firm *j* combination for *J* firms within the same SIC two-digit industry classification and whose fiscal year ends in March, June, September, or December.[15] In addition to the *i* – *j* measure of comparability, I also produce a firm-year measure of accounting comparability by aggregating the firm *i* – firm *j* $Comp_{ijt}^{Acct}$ for a given firm *i*. Investors may select a few closely comparable firms in the same industry when assessing comparability, in which considering more firms simply adds noise (Cooper and Cordeiro 2008). Specifically, after estimating accounting comparability for each firm *i* – firm *j* combination, I rank all the *J* values

[15] Following De Franco et al. (2011), I exclude holding firms. Compustat contains financial statements for both the parent and subsidiary company, and I want to avoid matching two such firms. I exclude ADRs and limited partnerships because the focus is on corporations domiciled in the United States. Specifically if the word Holding, Group, ADR, or LP (and associated variations of these words) appear in the firm name on Compustat, the firm is excluded. I also exclude firms with names that are highly similar to each other using an algorithm that matches five-or-more-letter words in the firm names, but avoids matching on generic words such as "hotels", "foods", "semiconductor", etc.

of $Comp_{ijt}^{Acct}$ for each firm *i* from the highest to lowest. $Comp_{it}^{A5}$ is the average $Comp_{ijt}^{Acct}$ of the five firms *j* with the highest comparability to firm *i* during period *t*.

4.2. Measures of Earnings Comparability and Cash Flow Comparability

DKV (2011) develop a measure of accounting comparability, in which firms whose economic events are correlated will have correlated financial statements over time when their accounting is similar.[16] Their output-based measure of comparability is derived from the strength of the historical covariance between a firm's earnings and the earnings of other firms in the same industry, as evidenced by the R^2 values. Therefore, earnings comparability is based on the covariation between a firm's earnings and earnings of its peers.[17] I extend DKV's construct by controlling for accounting choice heterogeneity (Christie and Zimmerman 1994; DeFond and Hung 2003) as accounting differences reduce the comparability of earnings, assuming that pairwise earnings difference is partially resulting from accounting choices. I estimate equation (4-5) for each firm *i* and firm *j* pair ($i \neq j$), *j = 1 to J*, within the same two-digit SIC industry:

$$NI_{it} = a_{1ij} + a_{2ij}NI_{jt} + a_{3ij}ACH_{ijt}(NI_{it} - NI_{jt}) + \varepsilon_{ijt} \quad (4\text{-}5)$$

$$ACH_{ijt} = |ACH_{it} - ACH_{jt}|$$

$$CFO_{it} = b_{1ij} + b_{2ij}CFO_{jt} + \mu_{ijt} \quad (4\text{-}6)$$

where:

NI = Annual net income before extraordinary items, scaled by prior-year total assets;

CFO = Annual cash flows from operations less cash flows from extraordinary items, following the approach in Hribar and Collins (2002), scaled by prior-year total assets;

[16] They further argue that accounting earnings could fulfill a comparability role to investors even when the accounting functions per se are not identical.

[17] Other researchers have studied the selection of comparable firms to examine valuation methods. For instance, Bhojraj and Lee (2002) use stock return co-movement as a way to measure economic relatedness among firms as a way to select comparable firms. Alford (1992) selects comparable firms on the basis of industry, size, and earnings growth. Cheng and McNamara (2000) evaluate the P/E, P/B benchmark valuation method and a combined P/E-P/B valuation method.

ACH = Accounting choice heterogeneity.

Accounting choice heterogeneity (*ACH*) is an index ranging from 0 to 1 that captures the comparability of a firm's accounting choice with its industry peers. The index is computed by assigning a value of one to each firm whose accounting choice differs from the most frequently chosen method in that firm's industry group, for each of the following five accounting choices: (1) inventory valuation; (2) investment tax credit; (3) depreciation; (4) successful-efforts vs. full-cost for companies with extraction activities; and (5) purchase vs. pooling.[18] I use a rolling window of six years of data to estimate equation (4-5) for each firm *i* and *j* combination. I remove observations in which NI_i is more than three standard deviations away from the mean value of the six annual observations of NI_i.

After obtaining the R^2 from estimating equation (4-5) for each firm *i*–firm *j* combination, I rank all *J-1* numbers of R^2s for each firm *i* from the highest to the lowest. The firm with the highest R^2 is considered to be the most comparable firm with firm *i*, and its earnings are the most likely to be affected by the same common economic factors as the earnings of firm *i*. One measure of earnings comparability that I use, $Comp_{it}^{Earn}$, is the mean R^2 for all firm *J*s (j = 1 to *J*, $i \neq j$) in the industry. However, investors may select a few closely comparable firms in the same industry when assessing comparability, in which considering more firms simply adds noise (Cooper and Cordeiro 2008). Therefore, I also calculate another measure of earnings comparability, $Comp_{it}^{E5}$, using the average R^2 for the five firm *J*s with the highest R^2s. In either

[18] Following Christie and Zimmerman (1994) and DeFond and Hung (2003), I use Compustat data to identify each firm's accounting choices. I use the following Compustat data and footnotes sources: inventory valuation method (data item 59), investment tax credit method (footnote 8), depreciation method (footnote 15), property, plant and equipment (footnote 31), and acquisition method (footnote 37). If a firm has no information or a missing value for a given accounting choice, the choice is coded as zero (consistent with the firm selecting the most common accounting choice in the industry). The score for each firm is summed, and then scaled by the number of accounting choices in the industry: 5 for firms in the petroleum and natural gas industry (because they are eligible for all 5 choices); 3 for firms in banking, insurance, real estate, and trading industries (because they have no inventory choice and are not extractive industries); and 4 for firms in all other industries (because they are not extractive industries).

case, the higher the value of $Comp_{it}^{Earn}$ or $Comp_{it}^{E5}$, the more comparable a firm's earnings are. Similarly, I use annual estimates of equation (4-6) to obtain cash flow comparability ($Comp_{it}^{CFO}$ or $Comp_{it}^{C5}$).

Other commonly-used comparability variables are based primarily on "closeness" to a cross-sectional level based on contemporaneous measures (e.g., return on equity, firm size, or price multiples) measured at a single point in time (e.g., Alford 1992; Joos and Lang 1994; Land and Lang 2002). In contrast, this measure of earnings comparability captures similarities over time and is firm-specific. Besides, the comparability measures are calculated absent from the effects of other earnings attributes, such as earnings smoothness and persistence, which are calculated independently of the performance of other firms.

4.3. Measure of Economic Relatedness

I proxy for the similarity in economic shocks by developing return comparability variables, measured analogously to cash flow comparability. Bhojraj et al. (2003), for instance, use covariance in stock return as a way to measure economic relatedness among firms. Hameed et al. (2010) examine information spillover as a source of stock return synchronicity, where information about highly-followed "prominent" stocks is used to price other "neglected" stocks sharing a common fundamental component. They find that stocks followed by few analysts co-move significantly with firm-specific fluctuations in the prices of highly followed stocks in the same industry, but do not observe the converse. This reasoning suggests that Merton's (1987) model might be usefully supplemented by considering information spillovers, where investors use information about one stock to price another that is likely affected by similar fundamentals.

I propose that the three most important fundamental variables that affect the audit-outcome proxies and also influence the differences between auditor groups are the client's

industry, size, and performance. To match on these dimensions, for a given fiscal year-end, industry (defined by two-digit SIC code), and size distance (firms that are within a size distance of 50 percent), firm *i* is matched to firm *j* with the most comparable performance, measuring performance as stock returns' covariance over the preceding 48 months, where higher covariance indicates higher comparability.[19] As per the De Franco et al. (2011) methodology, I measure returns covariance using the adjusted R^2 of the following regression of firm *i*'s monthly returns on firm *j*'s monthly returns:

$$Returns_{it} = \gamma_{0ij} + \gamma_{1ij} Returns_{jt} + \mu_{ijt} \quad (4\text{-}7)$$

In addition, I require matched firms to have their fiscal year-end on the same month to reduce differences from timing in financial reporting. Allowing for 50 percent distance in total assets results in more than one potential control for every treatment observation, and the final selection among all possible controls is based on returns' covariance. This procedure is likely to closely match peer-firms deemed economically comparable by the market. Compared to other matching approaches, it does not rely on a specific functional form to predict comparability, beyond a return covariance structure, and can be used not only in case-control research settings, but also in situations where a company needs to be matched with its economic peers; for example, to form benchmark groups for valuation or to perform analytical audit procedures.

In equation (4-7), $Comp^{RET}$ is computed in a manner that parallels the construction of $Comp^{CFO}$. Instead of *CFO* in equation (4-6), I use monthly stock returns taken from the CRSP Monthly Stock File, and instead of 16 quarters I use 48 months. $Comp^{RET}$ captures covariation in economic shocks related to cash flow expectations over long horizons.

[19] As noted by Chan et al. (2007, p.57), "if equity market participants consider a set of companies closely related, then shocks in the group of stocks should experience coincident movements in their stock returns."

4.4. Proxies for Audit Quality

Extant studies in a variety of contexts have used client discretionary accruals as the proxy for audit quality (e.g., Becker et al. 1998; DeFond and Subramanyam 1998; Francis and Krishnan 1999). Following this line of research, I use performance-matched discretionary accruals as a primary proxy for audit quality. I follow the same approach as in Geiger and North (2006), who examine accruals quality after the hiring of a new Chief Financial Officer. Following Geiger and North (2006), I estimate abnormal current accruals by using the cross-sectional version of the Jones (1991) model introduced by DeFond and Jiambalvo (1994). I estimate the following model by two-digit SIC industry and by year:

$$\frac{TCA_{it}}{A_{it-1}} = \varphi_0 + \varphi_1 \frac{1}{A_{it-1}} + \varphi_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{it-1}} + \varepsilon_{it} \quad (4\text{-}8)$$

where:

TCA_{it}	=	Firm *i*'s total current accruals in year t measured as = ($\Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STDEBT_{it}$);
ΔCA_{it}	=	Change in current assets for firm *i* from year *t-1* to year *t*;
ΔCL_{it}	=	Change in current liabilities for firm *i* from year *t-1* to year *t*;
$\Delta Cash_{it}$	=	Change in cash and short term investment for firm *i* from year *t-1* to year *t*;
$\Delta STDEBT_{it}$	=	Change in current portion of long-term liabilities for firm *i* from year *t-1* to year *t*;
A_{it}	=	Total assets of firm *i* for year *t-1*;
ΔREV_{it}	=	Change in revenues for firm *i* from year *t-1* to year *t*;
ΔREC_{it}	=	Change in receivables for firm *i* from year *t-1* to year *t*.

The residuals from the industry and year-specific regressions using equation (4-8) are a measure of abnormal current accruals (*ACA*). I then adjust ACA_{it} for performance matching following the approach used by Francis et al. (2005). I form performance decile groups by industry based on the current year's *ROA* (income before extraordinary items divided by total assets). I estimate performance-matched abnormal current accruals ($PMACA_{it}$) as the difference

between ACA_{it} and median *ACA* for the *ROA* decile to which firm *i* belongs (where the median is calculated excluding firm *i*).

4.5. Sample Selection

My sample period covers from 2000 to 2009.[20] I exclude ADRs, closed-end funds, and REITs, firms with negative assets, market price, or sales, and firms without the necessary data to calculate the control variables in the main regression models (for example, imposing all the necessary requirements to calculate the discretionary accruals regression variables). For accounting comparability measures, I begin all U.S. public firms (with share code 10 or 11) that are at the intersection of the CRSP monthly returns file with Fundq quarterly data. This results in a full sample consisting of 42,158 firm-year observations. From Audit Analytics for all the auditing variables, I first exclude firms with unidentified auditors (auditor coded as 0 and 9). The combined comparability data and audit data has 20,884 firm-year observations. I then run simple OLS regression of the full sample with all the interest variables and exclude the output data with the absolute value of studentized residual greater than 3 to remove the undue influence of outliers. The final sample includes 20,750 firm-year observations with 6,423 individual firms.

Table 1 delineates the detailed sample selection procedures. The initial sample consists of 104,796 firm-year observations for U.S. firms from 1995 to 2010, with sufficient data available on Compustat. I employ the following sample selection criteria: I remove 1) 25,393 observations with negative assets / sales / yearend stock price; 2) 913 observations with missing cash flows in fiscal year of 2010; 3) 2,725 observations are not in CRSP return file or not common shares. I obtain 44,589 observations of accounting comparability, and then intersect with various variables in selected Compustat dataset and with Audit Analytics data. I remove 21,274 observations not

[20] To select the sample for empirical tests I collect non-missing observations for Compustat firms incorporated in the U.S. with the data from 1995-2010 as I need cash flow volatility variable that is calculated based on prior six-year data and the following year cash flow variable.

intersected with Audit Analytics, and/or with unidentified auditor, and/or missing observations of industry specialist auditor. I also drop 134 outlier observations with studentized value greater than 2. The final sample, spanning from 2000 to 2009, has 20,750 firm-year observations with 6,423 individual firms.

TABLE 1

Sample Selection

Criteria	**# of Observations**
Firm-year observations for U.S. firms from Compustat between year 2000 and 2010	104,796
Less observations:	
Firms with negative assets / sale revenues / yearend stock price	25,303
Firms with no operating cash flows in 2010	913
Firms are not public firms with share code (10 or 11) and not intersected with CRSP return file	2,725
Firms with missing accounting comparability	33,697
Firms not intersected with Audit Analytics dataset, with unidentified auditor (auditor key: 0 or 9) and missing indicator variable of joint city and national industry specialist auditor following Reichelt and Wang (2010)	21,274
With extreme outliers (absolute value of studentized residuals greater than 3)	134
Final sample during fiscal year 2000-2009 for main tests	20,750 (6,423 individual firms)

4.6. Descriptive Statistics

Table 2 shows the descriptive statistics of the main variables. The mean and median of accounting comparability ($Comp^{Acct}$) is -3.955 and -3.260 respectively, suggesting that the average error in quarterly earnings between firm *i* and firm *j* functions is 3.96% of market value. The mean value for earnings comparability ($Comp^{Earn}$) is 0.197, suggesting that on average firm *j*'s earnings explain 20% of firm *i*'s earnings. On average, 83.7% of the sample firms are audited by Big-N auditors and 17.7% of firms are audited by joint national and city industry specialist auditor (*SPEC)*. The mean (median) of audit delay (*Delay*), the square root of the number of calendar days from fiscal yearend to the date of the auditor report is, 6.925 (6.782), respectively. The average (median) of audit fees (*FEE*) in the natural logarithm format is 13.285 (13.254), respectively. The average client importance (*CI*) is 0.111, indicating that around a given client's market share consists of 11% of the market shares of all the clients audited by a given auditor. 3.3% of the client firms under study receive a going-concern audit opinion from their auditor, and 14% of firms undergo financial statement restatements.

All variables (except the dummy variables, firm age, and audit tenure) are winsorized at the 1% and 99% percentiles each year. The descriptive statistics is based on a sample size of 20,750 during the period of 2000-2009 for all variables except implied cost of capital measure (*ICC*) that has 19,856 observations over the same time period. Refer to the Appendix I for variable description and the detailed measurement of *ICC* in the Appendix II.

TABLE 2

Descriptive Statistics

Variable	Mean	Std Dev	Q1	Median	Q3
$Comp^{Acct}$	-3.955	2.950	-4.410	-3.260	-2.311
$Comp^{Earn}$	0.197	0.165	0.108	0.201	0.369
ROA	0.044	0.384	-0.036	0.031	0.071
SIZE	6.012	2.199	4.422	5.982	7.511
lnBM	-0.712	0.847	-1.187	-0.666	-0.186
LOSS	0.330	0.470	0.000	0.000	1.000
PMACA	0.006	1.964	-0.049	0.000	0.043
SalesG	0.674	15.960	-0.040	0.070	0.195
LEV	0.216	0.356	0.017	0.180	0.330
Export	0.010	0.056	0.000	0.000	0.013
Altman	3.824	9.789	1.528	2.962	5.140
CashVol	0.083	0.108	0.031	0.055	0.096
EP	0.261	0.414	0.002	0.222	0.489
ACH	0.233	0.211	0.000	0.250	0.250
SEG	2.689	2.013	1.000	2.000	4.000
|SPI|	0.031	0.122	0.000	0.003	0.019
BigN	0.837	0.340	1.000	1.000	1.000
CI	0.111	8.435	0.000	0.000	0.000
FEE	13.285	1.480	12.206	13.254	14.277
Restate	0.142	0.352	0.000	0.000	0.000
Tenure	9.575	8.371	3.000	7.000	13.000
GCAO	0.033	0.170	0.000	0.000	0.000
Delay	6.925	1.545	5.657	6.782	7.937
SPEC	0.177	0.379	0.000	0.000	0.000
AudChg	0.089	0.285	0.000	0.000	0.000
Accuracy	-0.345	0.430	-1.000	-1.000	0.000
ICC	0.106	0.068	0.071	0.094	0.124

Table 3 presents the correlations among variables to enter the regression. The bottom left triangular matrix is the Pearson correction coefficient, and the upper right triangular matrix is Spearman's rank correlation coefficient. From the table, I observe that there are significant positive correlations between accounting comparability ($Comp^{Acct}$) and earnings comparability ($Comp^{Earn}$), evidenced by the coefficients 0.069 (Pearson) and 0.053 (Spearman), respectively. Notably, $Comp^{Acct}$ is positively correlated with firm value (*SIZE*) and profitability (*ROA*) and negatively related to cash flow volatility (*CashVol*), special items (|*SPI*|), abnormal accruals (*PMACA*), audit fees (*FEE*), audit report lag (*Delay*), and financial reporting restatement (*Restate*).

Like accounting comparability, $Comp^{Earn}$ shows a similar pattern of correlation with the firm characteristics variables. It is negatively correlated with audit fees, audit delay, and abnormal accruals. For simplicity, cash flow comparability ($Comp^{CFO}$) is not tabulated for correlation analysis. Similar to $Comp^{Acct}$ or $Comp^{Earn}$, it is negatively correlated with audit fees, audit delay, abnormal accruals, and financial restatements.

TABLE 3

Correlation of Variables (Obs.=20,750)

	$Comp^{Acct}$	$Comp^{Earn}$	*SIZE*	*FEE*	*Delay*	*CashVol*	*CI*	*EP*	*ROA*	*|SPI|*	*Tenure*	*PMACA*	*BigN*	*Restate*
$Comp^{Acct}$		0.053	0.325	-0.027	-0.198	-0.340	0.149	0.027	0.370	-0.173	0.146	-0.017	0.094	-0.033
$Comp^{Earn}$	0.069		0.074	-0.014	-0.010$^{\#}$	-0.014	0.031	0.147	0.044	0.021	-0.003$^{\#}$	-0.031	0.070	-0.041
SIZE	0.267	0.091		0.770	-0.592	-0.462	-0.342	0.030	0.420	-0.084	0.289	-0.062	0.391	0.001$^{\#}$
FEE	-0.054	-0.022	0.773		-0.202	-0.421	-0.274	-0.043	0.221	0.187	0.317	-0.025	0.332	0.063
Delay	-0.207	-0.017	-0.596	-0.399		0.265	-0.128	-0.061	-0.302	0.053	-0.222	0.025	-0.345	0.023
CashVol	-0.262	-0.049	-0.344	-0.358	0.225		0.090	-0.158	-0.269	0.091	-0.200	0.025	-0.177	-0.006$^{\#}$
CI	-0.030	-0.002$^{\#}$	-0.177	-0.189	0.179	0.045		-0.057	0.146	0.018	-0.007$^{\#}$	-0.019	-0.501	-0.011$^{!}$
EP	0.022	0.129	0.016	-0.034	-0.054	-0.113	-0.018		0.020	-0.063	0.007$^{\#}$	-0.071	0.032	-0.057
ROA	0.374	0.023	0.354	0.237	-0.285	-0.461	-0.017	0.083		-0.273	0.128	-0.049	0.115	-0.006$^{\#}$
|SPI|	-0.247	-0.043	-0.138	-0.029	0.073	0.153	-0.008$^{\#}$	0.008$^{\#}$	-0.461		-0.042	-0.015	-0.069	0.027
Tenure	0.136	0.012$^{!}$	0.305	0.336	-0.222	-0.187	-0.027	-0.006$^{\#}$	0.134	-0.042		-0.010$^{\#}$	0.208	-0.032
PMACA	-0.014	-0.017	-0.017	-0.024	0.012$^{!}$	0.026	0.000$^{\#}$	-0.020	-0.056	-0.014	-0.025		-0.029	0.094
BigN	0.083	0.055	0.386	0.319	-0.362	-0.140	-0.449	0.029	0.113	-0.024	0.177	-0.014		0.004$^{\#}$
Restate	-0.050	-0.078	0.002$^{\#}$	0.022	0.009	0.022	-0.006$^{\#}$	-0.013	-0.085	0.002$^{\#}$	-0.026	0.032	0.004$^{\#}$	

Pearson (Spearman) correlations are below (above) the diagonal. All correlations are significant at the 5% level except those with superscript '!' indicating 5%~10% level or '#' indicating ≥ 10% level. All variables are winsorized at the 1% and 99% percentiles each year before the correlation analysis. Refer to the Appendix I for variable definitions.

5. EMPIRICAL ANALYSES

This section presents the regression models and the results from the tests of the hypotheses described in Section 4. Audit fees and audit delay are more related to audit effort. I first present the empirical model and results on the relation between audit delay and accounting comparability. I then analyze the relation between audit fees and comparability. Furthermore, I examine the association between comparability and audit outcomes. Specifically, audit quality proxied by abnormal accruals is an indirect audit outcome, whereas audit opinion and auditor report accuracy are directly observable outcomes.

5.1. Audit Delay Regression

The first test of audit effort is using audit delay, the number of calendar days from fiscal year-end to the date of the auditor's report. Understanding the determinants of audit delays may provide some insights into audit efficiency, and could improve our understanding of market reactions to earning releases (Ashton et al. 1989). Using Australian sample, an early study by Dyer and McHugh (1975) first reports three corporate attributes, namely the corporate size, the year-end closing date, and the profitability as major explanatory factors of audit delay. Later, Davies and Whittred (1980) find that the financial year-end has little influence on the total reporting lag. They also find that companies experiencing extreme changes in the (absolute) amount of extraordinary items take significantly longer time to release both their preliminary and final annual accounts. They further suggest that variables such as extraordinary items, changes in accounting techniques, changes in auditors, audit firm size, and audit opinion should be considered.

Prior literature has revealed various client and audit firm factors that potentially influence audit delay. Among client-related variables, audit delay is a decreasing function of client size, of

client industry (whether the client is in the financial industry), and of client ownership concentration (e.g., Ashton et al. 1987; Newton and Ashton 1989; Bamber et al. 1993). Audit delay is an increasing function of client extraordinary items (Bamber et al. 1993), of client net losses (Ettredge et al. 2000), of client financial condition (Bamber et al. 1993), of modified auditor opinions on the financial statements (Bamber et al. 1993; Ettredge et al. 2000), and of the client's correction of previously reported interim earnings (Kinney and McDaniel 1993). Among auditor-related factors, audit delay is a decreasing function of the proportion of audit work accomplished at interim dates (Ashton et al. 1987; Knechel and Payne 2001), and of the percentage of total audit hours related to partner and manager time (Knechel and Payne 2001). Audit delay is an increasing function of a structured audit approach (Cushing 1989; Newton and Ashton 1989; Bamber et al. 1993; Ettredge et al. 2000) and of incremental audit effort (Knechel and Payne 2001). Based on these prior researches, I build the regression model as followed:

$$\begin{aligned} Delay_{it} = {} & \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 GCAO_{it} + \beta_3 BigN_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} \\ & + \beta_7 lnBM_{it} + \beta_8 SalesG_{it} + \beta_9 LOSS_{it} + \beta_{10}|DA_{it}| + \beta_{11}|SPI_{it}| + \beta_{12} SEG_{it} \\ & + \beta_{13} Export_{it} + \beta_{14} Restate_{it} + \beta_{15} ACH_{it} + \beta_{16} OWN_{it} + \beta_{17} Tenure_{it} \\ & + Industry_{FE} + Year_{FE} + \varepsilon_{it} \end{aligned} \quad (5\text{-}1)$$

where:

Delay	=	The square root of the number of calendar days from fiscal year-end to the date of the auditor's report;
$Comp^{Acct}$	=	Accounting comparability following De Franco et al. (2011);
GCAO	=	A dummy variable, 1 if auditor issues a going-concern audit opinion, and 0 otherwise;
BigN	=	1 if the client has a Big-4/5 auditor in year$_t$, and 0 otherwise;
SIZE	=	The natural logarithm of market value of equity at fiscal yearend;
ROA	=	Return on assets, as net income before extraordinary items scaled by lagged assets;

LEV	=	The natural logarithm of long-term debt plus debt in current liabilities, divided by average total assets;
lnBM	=	The natural logarithm of book value of equity/market value of equity at fiscal yearend;
SalesG	=	Sales growth;
LOSS	=	A dummy variable, 1 if net income before extraordinary items is negative, and 0 otherwise;
|*DA*|	=	The absolute value of discretionary accruals scaled by lagged assets, calculated from the Kothari et al. (2005) performance-adjusted accruals model of Jones (1991);[21]
|*SPI*|	=	The absolute value of special items divided by total assets;
SEG	=	Square root of the number of business segments;
Export	=	The ratio of foreign sales to total sales;
Restate	=	1 if there is a subsequent financial restatement, 0 otherwise;
ACH	=	Accounting choice heterogeneity;
OWN	=	The client's concentration of ownership;
Tenure	=	The number of consecutive years that firm *i* has retained the auditor since 1974 at year *t*.

In addition to other controls I discuss above, I control for accounting choice heterogeneity (*ACH*), a factor of comparability and consistence, because audit task is presumably be related to a client's unique accounting inputs, but attestation should not be disguised by changing accounting methods.[22] Audit literature suggests that the extent to which

[21] I measure performance-adjusted discretionary accruals using the modified Jones (1991) model as recommended by Kothari et al. (2005). The Kothari et al. model is as follows and is estimated by year and by two-digit SIC code, scaled by average lagged assets: $\frac{AC_t}{TA_{t-1}} = a_1 \frac{1}{TA_{t-1}} + a_2 \frac{\Delta Sales_t}{TA_{t-1}} + a_3 \frac{PPE_t}{TA_{t-1}} + a_4 ROA_t + \varepsilon_t$, where for firm *i* and fiscal year *t*, *AC* equals net income before extraordinary items minus operating cash flows from continuing operations); Δ*Sales* equals change in accounts receivable from year$_{t-1}$ to year$_t$; *PPE* equals net property, plant, and equipment in year$_t$; *ROA* is net income before extraordinary items scaled by lagged assets, and ε equals the estimated discretionary accruals. I use |*DA*| (the absolute value of ε) to proxy for the level of abnormal accruals.

[22] DeFond and Hung (2003) calculate the *ACH* index variable ranging from 0 to 1 that captures the comparability of a firm's accounting choices with its industry peers. They find that analysts tend to forecast cash flows for firms with more heterogeneous accounting choices relative to their industry peers.

the client's shares are widely held is one of the factors related to audit business risk (e.g., Ashton et al. 1987; Arens et al. 2004). Using the average number of shares per shareholder as the proxy for the client's ownership concentration, Bamber et al. (1993) empirically show that it is negatively related to audit delay. Ettredge et al. (2000) also find a similar result for a quarterly earnings release lag. I measure client's concentration of ownership (*OWN*) as the natural logarithm of client's number of common shares outstanding divided by the number of common shareholders (i.e. the natural logarithm of average number of shares per shareholder). I predict a negative relation between $Comp_{it}^{Acct}$ and the audit delay (i.e., a negative β_1), and the coefficient of *ACH* to be positive.

Table 4 shows regression of audit delay on accounting comparability for the pooled sample, controlling the fixed year and industry effect. I implement the OLS regression based on equation (5-1) after removing outliers (with the absolute value of studentized residuals greater than 2)[23]. I find a negative coefficient (β_1 = -0.039, t = -5.97) of accounting comparability ($Comp^{Acct}$), statistically significantly at the 1% level. This supports the first hypothesis that accounting comparability is positively associated with the timeliness of audit report. In other words, a client firm with a higher degree of accounting comparability can help its auditor produce the audit report more quickly, or auditor may spend lesser effort in completion of audit task.

Table 4 also shows that accounting choice heterogeneity (*ACH*) is positively associated with the delay (coefficient of 0.121, t = 2.93). Consistent with Bamber et al. (1993), financial leverage (*LEV*) is positively related to audit delay (coefficient of 0.527, t = 11.81), and firm value (*SIZE*) is negatively related to delay (coefficient of -0.428, t = -51.47). However, I do not

[23] In certain cases, outliers in the dataset skew regression results. I apply an alternative way, a robust estimation method other than least square controlling studentized residuals. In SAS I use *PROC ROBUSTREG* command, S-estimator (to minimize the variances of the estimator). The results, un-tabulated, are statistically very similar.

find a significant relation between financial restatement (*Restate*) and delay, nor do I find a significant relation between abnormal accruals (|*DA*|) and delay. Prior research finds no relationship between client operational complexity and audit delay (e.g., Ashton et al. 1987; Bamber et al. 1993), while I find that there is a significantly positive relation between business segments / foreign sales and audit delay (coefficient of *SEG* = 0.054 t = 12.60 and coefficient of *Export* = 0.087 t = 5.36, respectively).

I also control for auditing firm size in equation (5-1). While prior literature has not specifically reported the relationship between large auditing firms and audit delay. Research has reported the audit production by Big-N auditor, for instance, audit reports of large auditors are more conservative with more modifications (Francis and Krishnan 1999), and more informative reporting (Weber and Willenborg 2003), smaller abnormal accruals (Becker et al. 1998; Francis et al. 1999), and stronger earnings-return relation (Teoh and Wong 1993; Krishnan 2003). In this study, I find a negative relation between Big-N auditor and audit delay (coefficient = -0.459, t = -19.05), and auditor tenure (*Tenure*) is also positively related to the timeliness of audit reporting (coefficient = -0.019, t = -3.07).

5.2. Audit Pricing Regression

Following Chaney et al. (2004), I model the determination of audit fees as follows:

$$FEE_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 SIZE_{it} + \beta_3 CI_{it} + \beta_4 LEV_{it} + \beta_5 Quick_{it} + \beta_6 CURR_{it} + \beta_7 BigN_{it} + \beta_8 ROA_{it} + \beta_9 LOSS_{it} + \beta_{10}|SPI|_{it} + \beta_{11} Export_{it} + \beta_{12} SEG_{it} + \beta_{13} ISSUE_{it} + \beta_{14} lnBM_{it} + \beta_{15} SalesG_{it} + \beta_{16} GCAO_{it} + \beta_{17} Restate_{it} + \beta_{18} AudChg_{it} + Industry_{FE} + Year_{FE} + \varepsilon_{it} \quad (5\text{-}2)$$

where:

FEE = The natural log format of total audit fees in a year;

TABLE 4

Association between Accounting Comparability and Audit Delay

	Prediction	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept		7.342	0.495	14.83	<.0001
$Comp^{Acct}$	-	-0.039	0.007	-5.97	<.0001
GCAO	+	0.661	0.052	12.68	<.0001
BigN	-	-0.459	0.024	-19.05	<.0001
SIZE	-	-0.428	0.005	-51.47	<.0001
ROA	-	-0.350	0.052	-6.76	<.0001
LEV	+	0.527	0.045	11.81	<.0001
lnBM	?	-0.068	0.011	-6.16	<.0001
SalesG	?	0.183	0.021	8.83	<.0001
Loss	+	0.105	0.022	4.88	<.0001
|*DA*|	?	-0.022	0.015	-1.44	0.149
|*SPI*|	+	0.535	0.131	4.08	<.0001
SEG	+	0.054	0.004	12.60	<.0001
Export	+	0.087	0.015	5.36	<.0001
Restate	+	0.009	0.022	0.41	0.684
ACH	+	0.121	0.041	2.93	0.003
OWN	-	-0.014	0.005	-2.98	0.003
Tenure	?	-0.019	0.006	-3.07	0.002
Year and Industry Effect		Yes			
Adj. R^2 (Obs.=20,750)		0.475			

The regression is based on the model equation (5-1). The dependent variable is audit delay (*Delay*), the explanatory variable of interest is accounting comparability ($Comp^{Acct}$). Estimates on year dummies and industry dummies are not reported for brevity. Refer to the Appendix I for all other variable definition.

CI	=	Client importance, calculated as client *i*'s total assets to the sum of the total assets of all the clients of an auditor *j* at the same year (Chen et al. 2010);
Quick	=	The quick ratio, current assets less inventory scaled by current liabilities;
CURR	=	The current ratio, calculated as current assets divided by current liabilities;
ISSUE	=	A dummy variable set equal to 1 when the firm issued equity or long-term debt during the year that is greater than 5% of its total assets;
AudChg	=	1 if there is the auditor change during the fiscal year, 0 otherwise.

The other variables are previously described. I include various proxies for audit risk as they are known to affect both auditors' client acceptance decisions and audit fee pricing (e.g., Simunic and Stein 1996; Whisenant et al. 2003). These variables are client size to control for the client's market value (*SIZE*), the natural logarithm of a firm's end-of-year equity book-to-market ratio (*lnBM*), quick ratio (*Quick*), and current ratio (*CURR*). Client importance (*CI*) captures the economic bonding between the auditor and the client by the relative significance of a client's total fees to the fee revenue received by the auditor (Chung and Kallapur 2003; Chen et al. 2010). I control for changes in the firm's financing activities (*ISSUE*). I also control for profitability (*ROA*), the restatement variable (*Restate*), and the auditor change variable (*AudChg*), since audit fee changes could be due to performance or/and financial restatements or/and differences in the successor auditor's audit fee model, beyond the changes in the fundamentals of the client firm.

Table 5 presents the results of the OLS regression of audit fees on accounting comparability for the pooled sample, controlling fixed year and industry effect.[24] As expected, the coefficient of $Comp^{Acct}$ (β_1 = -0.017 t = -7.62) shows that audit fees and accounting comparability are negatively related, supporting the hypothesis H2. The regression results are also consistent with the simple correlation analysis in Section 4. I interpret that a client with a higher degree of accounting comparability entails less audit risk and thus less audit effort in general it requires for auditing engagement, as a consequence, auditor would price less fees.

Regression results show that the other factors related to audit fees are essentially consistent with prior researches. Client size (*SIZE*) is an increasing function of audit fees (evidenced by positive t = 83.74 and significant p-value < .0001). The significantly positive coefficient of *BigN* (0.100, t = 5.49) indicates that there is a Big-N audit fee premium. Three variables, special items (|*SPI*|), segment (*SEG*), and foreign sales (*Export*) – proxy for client complexity, are shown to be positively associated with audit fees. Five variables, current ratio (*CURR*), quick ratio (*Quick*), profitability (*ROA*), financial leverage (*LEV*), and the propensity of auditor's issuing a going-concern opinion (*GCAO*), control for client financial condition. The coefficients of *ROA* is negative (-0.203), while the coefficients of leverage (*LEV*) and the indicator variable of a going-concern opinion (*GCAO*) are positive, 0.588 and 0.209, respectively. The client importance metric (*CI*) is negatively related to audit fees (coefficient = -0.696, t = -14.91). Auditor change generally is linked with reduced audit pricing (coefficient = -

[24] Instead of OLS regression controlling industry and year effect, I also use standard errors clustered by firm and by year to allow for cross-sectional and time-series dependence (Gow et al. 2010), the results, un-tabulated, are qualitatively similar.

0.356, t = -20.68).[25] The overall model is significant and the adjusted R^2 of 45% is in line with prior audit fee studies.

TABLE 5

Association between Accounting Comparability and Audit Fees

	Prediction	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept		7.824	0.055	42.25	<.0001
$Comp^{Acct}$	-	-0.017	0.002	-7.62	<.0001
SIZE	+	0.536	0.004	83.74	<.0001
CI	-	-0.696	0.048	-14.91	<.0001
LEV	+	0.588	0.038	15.37	<.0001
Quick	?	-0.005	0.002	-2.24	0.025
CURR	?	0.013	0.004	3.60	0.001
BigN	+	0.100	0.018	5.49	<.0001
ROA	-	-0.203	0.037	-5.56	<.0001
LOSS	+	0.187	0.015	12.31	<.0001
|SPI|	+	1.057	0.092	-11.44	<0.001
Export	+	4.523	0.188	24.09	<.0001
SEG	+	0.081	0.003	27.40	<.0001
ISSUE	?	-0.063	0.015	-4.24	<.0001
lnBM	?	0.343	0.007	46.95	<.0001
SalesG	?	-0.152	0.012	-10.60	<.0001
GCAO	+	0.209	0.037	5.67	<.0001
Restate	+	0.080	0.015	5.45	<.0001
AudChg	?	-0.356	0.017	-20.68	<.0001
Year and Industry Effect		Yes			
Adj. R^2 (Obs.=20,750)		0.451			

[25] In order to control for the effect of non-voluntary auditor changes (e.g., Arthur Anderson clients, mergers and acquisitions) and their effect on audit fees, I try various sensitivity checks. The results (untabulated) are virtually the same.

(Footnote of Table 5 continues):
The regression is based on the model equation (5-2). The dependent variable is audit fees (*Fee*), the explanatory variable of interest is accounting comparability ($Comp^{Acct}$). Estimates on year dummies and industry dummies are not reported for brevity. Refer to the Appendix I for all other variable definition.

5.3. Audit Quality Regression

The third test is to examine the association between audit quality and accounting comparability. I follow Geiger and North (2006) and Dao et al. (2012) using performance-matched abnormal current accruals to proxy for audit quality, as the dependent variable in model equation (5-3). I use the following model to test H3:

$$PMACA_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 BigN_{it} + \beta_3 Comp_{it}^{Acct} \times BigN_{it} + \beta_4 CashVol_{it} + \beta_5 SIZE_{it} + \beta_6 TAcc_{it} + \beta_7 LEV_{it} + \beta_8 lnBM_{it} + \beta_9 SalesG_{it} + \beta_{10} ROA_{it} + \beta_{11} LOSS_{it} + \beta_{12} AGE_{it} + \beta_{13} EP_{it} + \beta_{14} SPEC_{it} + \beta_{15} LITI_{it} + Industry_{FE} + Year_{FE} + \varepsilon_{it} \quad (5\text{-}3)$$

where:

PMACA = Performance-matched abnormal current accruals following Francis et al. (2005);

CashVol = The standard deviation of cash flows, scaled by lagged assets, over rolling 6 years (requiring a minimum of 4 years of data to estimate);

TAcc = Total accruals (earnings less operating cash flows, scaled by current year total assets);

AGE = The inverse value of firm age based on the CRSP return data;

EP = Earnings persistence over rolling 16 quarters (requiring a minimum of 8 quarters of data to estimate in the autoregressive model);

SPEC = A dichotomous variable equal to 1 if the auditor is a joint city and national industry specialist following Reichelt and Wang (2010), based on their definition 2 of industry market share (on p.656), 0 otherwise;

LITI = An indicator variable that takes the value of 1 if the firm operates in a high-litigation industry and 0 otherwise. High-litigation industries are industries with SIC codes 2833-2836 (Biotech), 3570-3577, 7370-7374 (computer), 3600-3674 (electronics), 5200-5961 (retailing), following, e.g., Frankel et al. (2002) and Ashbaugh et al. (2003).

All the other variables are explained previously in this section. Accounting comparability ($Comp_{it}^{Acct}$) is my main variable of interest. I include other variables: firm age (*AGE*) because accruals differ with changes in firm life cycle (Anthony and Ramesh 1992). Client size (*SIZE*) is included because large firms tend to record larger, more stable accruals (Dechow and Dichev 2002). Because prior research suggests that large audit firms tend to be more conservative and their conservatism tends to limit extreme accruals (e.g., Becker et al. 1998; Francis and Krishnan 1999; Francis et al. 1999), I include auditor type (*BigN*) and industry specialist auditor (*SPEC*), following Reichelt and Wang (2010).

In model equation (5-3), accounting comparability ($Comp^{Acct}$) and Big-N auditor (*BigN*) are interacted, I examine whether large auditors have an effect on accounting comparability that is incremental to their impact on earnings quality. In case of this, I predict a negative β_1 which would suggest that the stand-alone accounting comparability has a significant relationship with abnormal accruals. Lastly, I include industry and time effects because the types of accruals vary by industry (Barth et al. 2001), and the magnitude and type could vary by year.[26]

Table 6 presents the results from the regression model equation (5-3). The model is significant with adjusted R^2 of 0.232, and the coefficients of the control variables generally have the signs expected based on prior research. The coefficient of $Comp^{Acct}$ is negative and significant (β_1 = -0.031 t = -3.50 p-value < 0.01), indicating that performance-matched abnormal current accruals are lower in a client firm with a higher degree of accounting comparability. A significantly negative coefficient of $Comp^{Acct} \times BigN$ (β_3 = -0.042 t = -7.98 p-value < 0.01) indicates that the joint impact of large auditor and accounting comparability is negatively related to a lower level of abnormal accruals an auditee incurs.

[26] Lang et al. (2010) point out there is no theoretical or empirical guidance concerning appropriate control variables to include in a regression that explains comparability. I include industry fixed effects at the 2-digit SIC industry classification as a further control for innate firm characteristics and potential omitted variables.

Other control variables are also strongly related to a client firm's performance-matched abnormal current accruals. Firm profitability (*ROA*), firm valuation (*SIZE*), and earnings persistence (*EP*) are negatively related to *PMACA*. It shows that industry specialist auditor (*SPEC*) also contain firm's accrual management (β_{14} = -0.008 t = -2.11). *PMACA* is positively associated with total operating accruals (*TAcc*), firm loss (*LOSS*), cash flow volatility (*CashVol*), sales growth (*SalesG*), and high-litigation industry (*LITI*).

TABLE 6

Association between Accounting Comparability and Audit Quality (*PMACA*)

Prediction		Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept		0.172	0.033	5.24	<.0001
$Comp^{Acct}$	-	-0.031	0.010	-3.50	<.001
BigN	-	-0.023	0.010	-2.36	0.018
$Comp^{Acct} \times BigN$	-	-0.042	0.004	-7.98	<.0001
CashVol	+	0.044	0.026	1.71	0.087
SIZE	-	-0.027	0.012	-2.26	0.008
TAcc	+	0.320	0.017	18.82	<.0001
LEV	?	-0.027	0.010	-2.75	0.006
lnBM	?	-0.025	0.010	-2.41	0.016
SalesG	?	0.051	0.005	11.22	<.0001
ROA	-	-0.034	0.015	-2.31	0.021
LOSS	+	0.026	0.005	5.68	0.004
AGE	?	0.156	0.053	2.93	0.003
EP	-	-0.011	0.005	-2.52	0.011
SPEC	-	-0.008	0.004	-2.11	0.035
LITI	+	0.010	0.005	2.20	0.027
Year and Industry Effect		Yes			
Adj. R^2 (Obs.=20,750)		0.232			

(Footnote of Table 6 continues):
The regression is based on the model equation (5-3). The dependent variable is performance-matched abnormal current accruals (*PMACA*) following the approach used by Francis et al. (2005). The explanatory variable of interest is accounting comparability ($Comp^{Acct}$). Estimates on year dummies and industry dummies are not reported for brevity. Refer to the Appendix I for all other variable definition.

5.4. Audit Opinion Regression

The variable for going-concern opinion (*GCAO*) is directly taken from Audit Analytics and is coded as "1" if the auditors gave a going-concern opinion to a client in the fiscal year, and "0" otherwise. I hypothesize that, other things being equal, an auditee is less likely to receive a going-concern opinion from its auditor if the client's accounting comparability is high, that is to say, the client firm experiences low operational riskiness from a viewpoint of industry-setting information perspective.

To test hypothesis H4a, I estimate the following logistic model in equation (5-4):

$$GCAO_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 SIZE_{it} + \beta_3 BigN_{it} + \beta_4 LEV_{it} + \beta_5 LOSS_{it} + \beta_6 ROA_{it} + \beta_7 L1ROA_{it} + \beta_8 LITI_{it} + \beta_9 Altman_{it} + \beta_{10} SPEC_{it} + \beta_{11} lnBM_{it} + \beta_{12} CFO_{it} + \beta_{13} DCF_{it} + \beta_{14} EP_{it} + \beta_{15} ISSUE_{it} + Industry_{FE} + Year_{FE} + \varepsilon_{it} \quad (5\text{-}4)$$

where:

GCAO = A dummy variable, 1 if auditor issues a going-concern audit opinion, and 0 otherwise;

L1ROA = Prior year return on assets;[27]

Altman = Z-score by Altman (1983). It is a measure of the probability of bankruptcy, with a lower value indicating greater financial distress;

CFO = Annual cash flows from operations less cash flows from extraordinary items, (*OANCF–XIDOC*), following the approach used by Hribar and Collins (2002), scaled by prior-year total assets;

DCF = A dummy variable of *CFO*, if positive it is coded as 1, 0 otherwise.

[27] Instead of including both the *ROA* and *L1ROA* variables, I use the summed prior three-year earnings. The statistical pattern of model equation (5-4) is qualitatively same.

All other variables are as previously defined. I expect that auditors are more likely to issue a going-concern opinion to clients who have volatile earnings (*EP*), are financially distressed (*Altman*), incur a loss (*LOSS*), are more leveraged (*LEV*), and have higher litigation risk (*LITI*). I expect that auditor is less likely to issue a going-concern opinion if the client is large in size (*SIZE*), is more profitable at current year and prior year, has higher growth opportunities (*lnBM*), and is Big-N audited (*BigN*). I include auditor differentiation type (*SPEC*) as a factor of audit opinion metric. Reichelt and Wang (2010) find that when the auditor is both a national and a city-specific industry specialist, its clients are more likely to be issued a going-concern audit opinion.

The results of estimating equation (5-4) are reported in Table 7. The model is significantly at p-value < 0.01, with pseudo R^2 around 27% and Max-Rescaled R^2 around 49%. All control variables are significant at p < 0.05 except *lnBM*, *LITI*, and *ISSUE*. The control variables, *SIZE, BigN*, *ROA*, *L1ROA*, *LEV*, *Altman*, *CFO*, *DCF*, *SPEC* and *EP* have the predicted coefficient signs.[28]

Table 7 results report that a client firm with a higher degree of accounting comparability is less likely to receive a going-concern opinion, evidenced by a significantly negative parameter estimate (β_1 = -0.070, λ^2 = 20.80, p-value < 0.01). Lennox (1999) shows that cash flows (*CFO*) and leverage (*LEV*) have non-linear effects on financial viability. Failure to take account of these non-linearities may cause heteroscedasticity problems. In the model (5-4) I also include polynomial variables (LEV^2, CFO^2, ROA^2, and ROA^3). The results, untabulated for simplicity, show qualitatively similar for control variables, whilst the estimate of $Comp^{Acct}$ becomes more

[28] The sign of the *LOSS* coefficient is negative due to correlation with the *ROA* variable, which if excluded results in a positive *LOSS* coefficient sign. Untabulated correlation analysis shows that loss is positively correlated with *GCAO* variable.

significant. Overall, the results support the hypothesis H4a; auditor is less likely to issue a going-concern report when the client's accounting comparability is higher, *ceteris paribus*.

TABLE 7

Probit Model of Going-Concern Report and Accounting Comparability

	Prediction	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		0.368	0.037	47.79	<.0001
$Comp^{Acct}$	-	-0.070	0.015	20.80	<.0001
SIZE	-	-0.519	0.049	108.06	<.0001
BigN	-	-0.424	0.134	9.87	0.002
LEV	+	2.629	0.346	57.76	<.0001
LOSS	+	-0.860	0.239	21.74	<.0001
ROA	-	-0.894	0.261	11.68	0.001
L1ROA	-	-0.491	0.229	4.58	0.032
LITI	+	0.136	0.328	1.12	0.288
Altman	+	0.055	0.011	9.20	<.0001
SPEC	+	0.227	0.105	5.21	<0.001
lnBM	?	-0.097	0.068	2.02	0.123
CFO	-	-2.301	0.396	33.61	<.0001
DCF	-	-0.511	0.178	8.22	0.004
EP	-	-0.292	0.161	6.41	0.009
ISSUE	?	-0.134	0.147	0.83	0.361
Year and Industry Effects		Yes			
(Obs. = 20,750)		Pseudo R^2 = 0.268		Max-Rescaled R^2 = 0.493	

The logit regression is based on model equation (5-4). Note: Coefficient p-values are two-tailed and based on Wald Chi-squares robust to heteroscedasticity and time-series correlation following the methodology in Rogers (1993). Estimates on year dummies and industry dummies are not reported for brevity. Refer to Appendix I for variable definitions.

Hopwood et al. (1994) emphasize the importance of client financial distress for the auditor's going-concern decision because auditors issue going-concern disclosures only to clients experiencing difficulties, and an apparent lack of financial stress may be due to management's manipulations. Prior literature (e.g., Lim and Tan 2008; Reichelt and Wang 2010) restrict their going-concern opinion analysis to financially distressed firms. Also, Lennox and Pittman (2010) indicate negative book equity as companies suffer financial distress. I define that auditor's opinion is accurate (*Accuracy* =1) if a going-concern opinion is issued and the client subsequently occurs negative operating cash flow or book value, and not accurate (*Accuracy* = –1) if a going-concern opinion is not issued before the client subsequently occurs negative operating cash flows or is issued to subsequently viable clients, *Accuracy* is 0 otherwise.[29] The classification of auditor opinion accuracy is expressed as follows:[30]

$$Accuracy = \begin{cases} \textit{1 if GCAO is issued for financially distressed clients. A firm is defined as a financial distressed firm if it reports negative operating cash flow or negative book value in the following year;} \\ \textit{-1 if GCAO is not issued for financial distressed clients or issued to subsequently viable clients (viability means, in the following year, 2 out 4 quarterly ROAs are positive, or annual ROA is nonnegative);} \\ \textit{0, otherwise.} \end{cases}$$

The average value of *Accuracy* is -0.345, which echoes the finding by Geiger and Raghunandan (2001): the proportion of bankruptcy companies that receive a going-concern audit

[29] The main difficulty in measuring the accuracy of audit reports is that one does not directly observe whether companies deserve clean or qualified audit opinion (Lennox 1999). Using bankruptcy outcome as an *ex post* measure of whether a company should been given a qualified report is not a prefect measure of accuracy. Meanwhile, "premier" bankruptcy prediction models as a benchmark of evaluating the accuracy of audit report do not appear to be accurate (Louwers 1998). Refer to Hopwood et al. (1994) for their categorization of financial stress.

[30] Prior studies examine both types of going-concern reporting errors (i.e., type I errors - modified opinions rendered to subsequently viable clients; and type II errors - unmodified opinions rendered to subsequently bankrupt clients).

opinion in the year immediately preceding bankruptcy is less than 50%.[31] To test hypothesis H4b, I estimate the following logistic model in equation (5-5):

$$\begin{aligned} Accuracy_{it} = {} & \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 lnSales_{it} + \beta_3 BigN_{it} + \beta_4 LEV_{it} + \beta_5 LOSS_{it} + \\ & \beta_6 ROA_{it} + \beta_7 L1ROA_{it} + \beta_8 LITI_{it} + \beta_9 Altman_{it} + \beta_{10} SPEC_{it} + \\ & \beta_{11} lnMB_{it} + \beta_{12} CFO_{it} + \beta_{13} DCF_{it} + \beta_{14} EP_{it} + \beta_{15} ISSUE_{it} + \\ & \beta_{16} Delay_{it} + \beta_{17} EXCH_{it} + \beta_{18} Tenure_{it} + Industry_{FE} + Year_{FE} + \varepsilon_{it} \end{aligned} \quad (5\text{-}5)$$

where:

lnSales = The natural log of sales revenue (in thousands of dollars);

EXCH = 1 if listed on the New York or American Stock Exchange, and 0 otherwise.

All the other variables are defined as earlier. Following Geiger and Raghunandan (2006), I add client size (*lnSales*), audit delay (*Delay*), and stock exchange (*EXCH*) as additional controls. Following Geiger and Raghunandan (2002), I also control for audit tenure (*Tenure*). I use ordered Probit model to perform censored regression analysis.[32] The results of estimating equation (5-5) are reported in Table 8.

All control variables are significant at $p < 0.05$ except *BigN*. As more than 80% of sample client firms are audited by Big-N firms, the results shows that big audit firms are ineffective in their professional judgment regarding rendering a clean or a going-concern opinion,[33] consistent with Geiger and Rama (2003) who study audit reporting decisions on financially stressed

[31] Palmrose (1987) and St. Pierre and Anderson (1984) find that half of all litigation against auditors is associated with client bankruptcy and/or severe financial stress. Carcello and Palmrose (1994) report that auditors are named as defendants 74% of the time when litigation followed client bankruptcy. The importance of litigation on auditor reporting behavior is also shown by Geiger and Raghunandan (2001) reporting a lower frequency of going concern opinions after passage of the Private Securities Litigation Reform Act of 1995, a law that generally lowers auditor litigation risk.

[32] To test the audit opinion accuracy, the qualitative and limited dependent variable, I use *PROC QLIM* command in SAS to estimate ordered Probit model. I use various sensitivity tests (e.g., specifying a logistic distribution and/or assuming a heteroscedastic logit model).

[33] In the case of a type I error, clients do not welcome the receipt of audit reports modified for going concern, particularly if the report is viewed as unwarranted based on their continued viability. Clients may express this displeasure by switching to a different auditor (Geiger et al. 1998; Carcello and Neal 2003). I delete client firms who change auditor because clients may express displeasure by switching to a different auditor (Geiger et al. 1998; Carcello and Neal 2003). I also delete the client firms audited by Arthur Anderson during 2000 to 2003. The coefficient estimate of β_3 still remain insignificant.

companies and conclude there is no Big-4 reporting effect.[34] Whilst industry specialist auditor (of joint national level and city level) are more capable of expressing an accurate opinion (evidenced by a positive β_{10} on *SPEC* = 0.062, p-value = 0.032). More importantly, the coefficient on accounting comparability ($Comp^{Acct}$) is significantly positive (β_1 = 0.017 t = 3.17 p-value = 0.001). It supports that a client characteristics of high accounting comparability is helpful for auditor's professional judgment in a going-concern assessment. Hence, the results confirm the hypothesis H4b that accounting comparability is positively related to auditor's reporting accuracy, if client failure is preceded by a going-concern audit opinion.

The control variables, *lnSales*, *ROA*, *L1ROA*, and *CFO* have predicted coefficient signs. The client size (*lnSales*) has a positive effect on opinion accuracy (β_2 = 0.134, p-value < 0.01). Nogler (1995) finds that smaller companies are more likely to resolve their going-concern uncertainties and subsequently receive an unmodified opinion from their auditors; and that larger companies receiving going-concern modifications are more likely to subsequently file for bankruptcy. Like client firm size, profitability (*ROA*) and earnings persistence (*EP*) also has a significant positive effect on audit reporting accuracy. The coefficient of *EXCH* is positive and significant (β_{17} = 0.054 t = 5.21). Like firm size, listing on large exchanges is positively associated subsequently bankruptcy (Geiger and Raghunandan 2006), and is easier for auditor to judge the client's going-concern-related decision. For the controls of audit tenure and reporting lag (the number of delay days from fiscal year-end to audit report date), results show that audit tenure (*Tenure*) is positively associated with audit opinion report accuracy while audit reporting lag (*Delay*) is negatively associated with audit opinion accuracy.

[34] My testing results are also consistent with other researcher's findings, e.g., both Mutchler et al. (1997) and Geiger et al. (2005) examine prior audit reports issued to bankrupt companies and conclude there is no significant Big-4 effect on type II error rates.

TABLE 8

Ordered Probit Model of Audit Opinion Accuracy and Accounting Comparability

	Prediction	Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.259	0.060	-6.30	<.0001
$Comp^{Acct}$	+	0.017	0.005	3.17	0.001
lnSales	+	0.134	0.008	16.01	<.0001
BigN	+	0.030	0.027	1.18	0.238
LEV	?	0.384	0.097	3.95	<.0001
LOSS	?	-0.374	0.034	-10.78	<.0001
ROA	+	0.405	0.107	3.76	<.001
L1ROA	+	0.595	0.085	6.99	<.0001
LITI	?	-0.129	0.028	-4.56	<.0001
Altman	?	-0.006	0.002	-2.11	0.035
SPEC	+	0.062	0.030	2.07	0.032
lnBM	?	0.138	0.018	7.58	<.0001
CFO	+	2.028	0.163	12.38	<.0001
DCF	-	-0.485	0.044	-10.90	<.0001
EP	+	0.072	0.035	2.02	0.043
ISSUE	+	0.068	0.025	2.72	0.001
Delay	-	-0.012	0.005	-2.34	0.003
EXCH	+	0.054	0.009	5.21	<.0001
Tenure	+	0.009	0.002	3.87	<.001
Year and Industry Effects		Yes			

The order Probit model regression is based on equation (5-5), the dependent variable is audit opinion accuracy (*Accuracy*). The sample observation is 20,750 during the period from 2000 to 2009. Estimates on year dummies and industry dummies are not reported for brevity. Refer to Appendix I for variable definitions.

(Table 8 continues):

Goodness-of-Fit Measures		
Measure	**Value**	**Formula**
Aldrich-Nelson	0.277	$\frac{R}{R+N}$
Cragg-Uhler	0.318	$1-\exp(-\frac{R}{N})$
Adjusted Estrella	0.374	$1-[\frac{\log(L)-K}{\log(L_0)}]^{(\frac{-\log(L_0)}{N})}$
McFadden's LRI	0.349	$\frac{R}{U}$
Veall-Zimmermann	0.529	$\frac{R\times(U+N)}{U\times(R+N)}$
McKelvey-Zavoina	0.500	

Goodness-of-fit measures are also displayed. All measures except McKelvey-Zavoina are based on the log-likelihood function value. The likelihood ratio test statistic has chi-square distribution conditional on the null hypothesis that all coefficients are zero.

6. SENSITIVITY AND ADDITIONAL TESTS

6.1. Other Comparability Proxies

In section 4, I describe three alternative measures of accounting comparability, namely earnings comparability, cash flow comparability, and stock return comparability (or economic relatedness among firm peers). I then use earnings comparability ($Comp^{Earn}$), cash flow comparability ($Comp^{CFO}$) and economic relatedness ($Comp^{RET}$) for additional tests. I first test the association between $Comp^{Earn}$ / $Comp^{CFO}$ / $Comp^{RET}$ and audit delay based on model equation (5-1). The new explanatory variables are $Comp^{Earn}$ or $Comp^{CFO}$ or $Comp^{RET}$ replacing $Comp^{Acct}$. These independent variables are the standardized rank (i.e. the rank within the industry-year group divided by the number of observations in the group). I use the regression approach of standard errors cluster by firm and by year to allow for cross-section and time-series dependence (Gow et al. 2010). Unlike the original model equation (5-1), there is no control for fixed year and industry effect in new regression.

The results are shown in Table 9. The first column I use earnings comparability to explain the audit delay. The coefficient of $Comp^{Earn}$ (β_2 = -0.258 t-value = -2.24) supports the argument that a higher degree of earnings comparability is negatively (positively) associated with audit delay (timeliness of audit report). The same conclusion can be drawn from cash flow comparability and economic relatedness as explanatory variables in other two columns explaining audit delay, evidenced by significantly negative coefficients (β_2 = -0.365 t-value = -4.47 and β_2 = -0.297 t-value = -4.56, respectively, at the 1% level). The controls variables are same as in Table 4, and their coefficients are qualitatively similar. The results from Table 9 are consistent with the first hypothesis. I find that accounting comparability (or alternative comparability metrics) is negatively (positively) related to audit reporting lag (audit reporting

timeliness). Table 9 also shows that earnings comparability ($Comp^{Earn}$) is more modest in explaining the audit delay, relative to cash flow comparability ($Comp^{CFO}$) or stock return comparability ($Comp^{RET}$), evidenced by a comparison of R^2 in these three model regression tests.

TABLE 9

Association between Other Comparability Metrics and Audit Delay

	Explanatory Variable =					
	Earnings Comparability		*Cash Flow Comparability*		*Economic Relatedness*	
	Para. Estimate	t Value	Para. Estimate	t Value	Para. Estimate	t Value
Intercept	0.412	8.98***	0.369	7.52***	0.283	8.02***
Comp	-0.258	-2.24**	-0.365	-4.47***	-0.297	-4.56***
GCAO	0.307	4.21***	0.414	5.25***	0.346	3.25***
BigN	-0.250	-3.32***	-0.248	-3.25***	-0.195	-3.44***
SIZE	-0.147	-6.87***	-0.078	-7.88***	-0.153	-5.99***
ROA	-0.224	-4.25***	-0.471	-6.07***	-0.378	-5.51***
LEV	0.320	2.12**	0.087	1.77	0.301	2.01**
lnBM	-0.125	-1.98*	0.078	1.40	-0.160	-2.03**
SalesG	0.087	0.58	0.147	1.99**	0.154	3.02***
Loss	0.078	2.57***	0.104	5.22***	0.147	6.03***
|DA|	-0.039	-3.68***	-0.074	-4.70***	-0.044	-3.58***
|SPI|	0.107	4.25***	0.120	4.11***	0.208	5.02***
SEG	0.043	2.47**	0.055	3.02***	0.046	2.97***
Export	0.087	3.68***	0.100	3.55***	0.103	3.72***
Restate	0.009	1.25	0.010	1.40	0.015	3.15***
ACH	0.121	3.24***	0.120	2.84**	0.129	2.88***
OWN	-0.014	-1.47	0.009	1.02	-0.098	-2.59***
Tenure	0.003	1.50	0.004	2.00**	0.003	1.74
Adj. R^2	0.460		0.501		0.488	

(Footnote of Table 9 continues):
The sample observation is 20,750 during the period from 2000 to 2009. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively, based on two tailed hypotheses. Significance based on 2-way cluster standard errors to account for time-series (firm) and cross-sectional (year) dependence. The regression is based on modified model equation (5-1). The dependent variable is audit delay (*Delay*), the explanatory variable of interest (***Comp***) is earnings comparability ($Comp^{Earn}$) or cash flow comparability ($Comp^{CFO}$) or stock return comparability ($Comp^{RET}$). Refer to the Appendix I for all other variable description.

Next I use these three alternative comparability metrics to test the relation between audit fees and comparability. The model is based on equation (5-2). I apply the technique of two-dimension clustered by firm and by year, with no inclusion of year and industry dummies. I predict a negative relationship between a client's financial statement comparability and audit fees paid by the client.

The results are presented in Table 10. In the first column I use earnings comparability to explain audit fees. The coefficient of $Comp^{Earn}$ (β_2 = -0.047 t-value = -5.27) supports the argument that a higher degree of earnings comparability is negatively associated with audit fees. As the arguments for the hypothesis H2 assert; a client firm with a higher degree of information comparability is associated with lower level of business risk, and at the same time, information comparability contributes to externality gains that result in audit efficiency. The dual effects of comparability consequently lead to less audit pricing.

The same conclusion can be drawn from cash flow comparability and economic relatedness as explanatory variables in determination of audit fees, evidenced by significantly negative coefficients (β_2 = -0.060 t-value = -6.38 and β_2 = -0.039 t-value = -4.78, respectively, at the 1% level). The controls variables in Table 10 reproduce those in Table 5 and their coefficients are qualitatively similar. Overall, the results from Table 10 are consistent with the hypothesis H2. I find that accounting comparability (or alternative comparability metrics) is negatively related to audit fee pricing.

TABLE 10

Association between Audit Fees and Other Comparability Metrics

	Explanatory Variable =					
	Earnings Comparability		*Cash Flow Comparability*		*Economic Relatedness*	
	Para. Estimate	t Value	Para. Estimate	t Value	Para. Estimate	t Value
Intercept	6.847	17.48***	7.152	20.01***	7.084	19.58***
Comp	-0.047	-5.27***	-0.060	-6.38***	-0.039	-4.78***
SIZE	0.507	24.02***	0.521	26.87***	0.505	22.87***
CI	-0.741	-21.02***	-0.699	-19.82***	-0.722	-20.57***
LEV	0.456	15.01***	0.560	17.37***	0.352	10.28***
Quick	-0.034	-6.14***	-0.005	-2.24**	-0.005	-2.00**
CURR	0.015	4.01***	0.010	3.36***	0.011	3.50***
BigN	0.125	4.98***	0.130	5.47***	0.124	4.81***
ROA	-0.197	-5.85***	-0.200	-6.02***	-0.187	-5.27***
LOSS	0.097	6.21***	0.129	8.21***	0.091	6.07***
|SPI|	0.985	9.60***	0.578	4.20***	0.912	8.19***
Export	2.106	14.08***	1.987	11.21***	2.047	14.05***
SEG	0.083	18.17***	0.074	17.26***	0.080	17.75***
ISSUE	-0.048	-2.87***	-0.052	-3.25***	-0.052	-3.23***
lnBM	0.229	20.10***	0.250	24.01***	0.227	19.58***
SalesG	-0.128	-6.98***	-0.150	-10.02***	-0.122	-7.06***
GCAO	0.214	6.23***	0.203	6.28***	0.180	6.09***
Restate	0.087	7.33***	0.082	7.05***	0.010	7.50***
AudChg	-0.372	-16.30***	-0.251	-10.86***	-0.274	-11.02***
Adj. R^2	0.421		0.474		0.460	

The sample size is 20,750 during the period from 2000 to 2009. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively, based on two tailed hypotheses. Significance based on 2-way cluster standard errors to account for time-series (firm) and cross-sectional (year) dependence. The regression is based on modified model equation (5-2). The dependent variable is audit fees (*FEE*), the explanatory variable of interest (***Comp***) is earnings comparability ($Comp^{Earn}$) or cash flow comparability ($Comp^{CFO}$) or stock return comparability ($Comp^{RET}$). Refer to the Appendix I for all other variable description.

In model (5-2), the dependent variable I use is the natural logarithm format of total audit fees. As an additional test, I use total fees (i.e., audit fees plus non-audit fees including tax service fees and other consulting fees, combined paid to the auditor) as the new dependent variable. The regression tests (un-tabulated for brevity) reveal that a client firm's accounting comparability is negatively associated with total service fees paid to its auditor.

6.2. Alternative Proxies for Audit Quality

Following Khurana and Raman (2004) and Lawrence et al. (2011) who use implied cost-of-equity capital as an additional audit quality proxy, I examine the relation between accounting comparability and the *ex ante* cost of capital, as follows:

$$\begin{aligned} ICC_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 BigN_{it} + \beta_3 SPEC_{it} + \beta_4 SIZE_{it} + \beta_5 TAcc_{it} + \\ \beta_6 LEV_{it} + \beta_7 lnBM_{it} + \beta_8 SalesG_{it} + \beta_9 ROA_{it} + \beta_{10} LOSS_{it} + \beta_{11} AGE_{it} + \\ \beta_{12} EP_{it} + \beta_{13} CashVol_{it} + \beta_{14} LITI_{it} + \beta_{15} TECH + \beta_{16} Beta_{it} + \beta_{17} EXCH_{it} + \\ Industry_{FE} + Year_{FE} + \varepsilon_{it} \end{aligned} \quad (6\text{-}1)$$

where:

ICC = The *ex ante* cost-of-equity capital estimated using Hou et al. (2012) approach;

TECH = An indicator variable equal to 1 when firm is in high technology industries (SIC code the 2830s, 3570s, 7370s, 8730s, and between 3825 and 3829), and 0 otherwise;

Beta = Stock beta (systematic risk) calculated over the 36 months ending in the month of the fiscal year-end, following, e.g., Khurana and Raman (2004).

The sample is from U.S. public firms with share code 10 and 11. The *ex ante* cost-of-equity sample reflects the intersection of Compustat and CRSP data. After imposing the necessary requirements to calculate the *ex ante* cost-of-capital regression variables and all the controls, I obtain a sample of 18,256 during fiscal years 2000-2009. In addition, I control the industry type of high-technology industries relative to firms in low-technology industries. It may take considerable time and effort for an auditor to acquire a thorough knowledge of the business

entity and to become acquainted with a company's internal controls, information systems, recordkeeping, and audit needs. In fact, accounting comparability is generally lower for firms in high-technology industries relative to firms in low-technology industries. Since the cost-of-equity capital (*ICC*) can vary over time, I control for the year of the observation ($Year_{FE}$). Also, because some industries are perceived to be more risky than others, I control for industry specific risk using industry dummies ($Industry_{FE}$). I include the stock beta (*Beta*) as an explanatory variable, because the capital assets pricing model (CAPM) suggests that systematic risk (*Beta*) is positively correlated with the cost-of-equity capital. Hence, *Beta* is expected to have a positive sign. More importantly, I expect the primary measure of comparability, $Comp^{Acct}$, is negatively related to *ICC*.

Table 11 shows that the coefficient of $Comp^{Acct}$ (β_1) is -0.011 and is significantly related to implied cost of capital at the 1% level. That is to say, a client with the characteristics of higher accounting comparability is of financial reporting credibility, proxy by a lower level of implied cost of capital. Audits by the Big-N auditor and/or an industry specialist auditor show higher audit quality (evidenced by negative signs of *BigN* and *SPEC*). Collectively, the coefficients of control variables, *SIZE* through *EXCH*, controlling equity risk, essentially show a qualitatively similar pattern with those in Table 6. Specifically, *Beta* is positively related to the *ex ante* cost of capital (β_{16} = 0.025 t = 3.22 p-value = 0.002). Furthermore, if perceived audit quality is driven by litigation risk, high-technology industries, and listing exchange, then the predicted signs for *LITI*, *TECH* and *EXCH* in implied cost of capital model are positive. The results of these coefficients are consistent with the statement above.

TABLE 11

Regressions of Implied Cost of Capital on Accounting Comparability

	Prediction	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept		0.127	0.013	9.77	<.0001
$Comp^{Acct}$	-	-0.011	0.001	-10.62	<.0001
BigN	-	-0.013	0.002	-7.36	<.0001
SPEC	-	-0.007	0.003	-2.58	0.010
SIZE	-	-0.008	0.001	-9.25	<.0001
|DA|	+	0.003	0.002	0.89	0.399
LEV	?	0.007	0.003	-2.88	0.004
lnBM	?	0.009	0.001	-11.41	<.0001
SalesG	?	-0.003	0.001	-2.47	0.013
ROA	+	0.084	0.003	22.31	<.0001
LOSS	+	0.043	0.001	35.08	<.0001
AGE	?	0.156	0.095	1.63	0.123
EP	-	-0.024	0.009	-2.51	0.009
CashVol	-	-0.049	0.007	-7.06	<.0001
LITI	?	0.010	0.003	3.98	<.001
TECH	?	0.025	0.008	3.60	<.001
Beta	+	0.025	0.008	3.22	0.002
EXCH	?	-0.087	0.021	4.18	<.0001
Year and Industry Effects		Yes			
Adj. R^2 (Obs.=19,856)		0.274			

The dependent variable is implied cost of capital (*ICC*) following Hou et al. (2012); Appendix II details the measurement of *ICC*. The regression is based on model equation (6-1). Once again, in Table 11 the year-specific and industry-specific intercepts are omitted for brevity. Refer to the Appendix I for all other variable description.

Comparability of financial information enriches an individual firm's information environment. Financial statement comparability is beneficial for audit planning and risk assessment of client business. It would also help financial analysts following clients of high comparability be able to make more accurate forecasts of future earnings than those analysts following clients of low comparability. More recently, Behn et al. (2008) and Lawrence et al. (2011) include financial analyst forecast accuracy as an audit-quality proxy. I use analyst forecast accuracy as alternative audit-quality measure to proxy for an enhanced level of decision making by sophisticated financial statement users.[35] I use the following model employed by Behn et al. (2008):

$$AFA_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 BigN_{it} + \beta_3 SPEC_{it} + \beta_4 SIZE_{it} + \beta_5 TAcc_{it} + \beta_6 LEV_{it} + \beta_7 lnBM_{it} + \beta_8 SalesG_{it} + \beta_9 ROA_{it} + \beta_{10} LOSS_{it} + \beta_{11} UE_{it} + \beta_{12} EP_{it} + \beta_{13} CashVol_{it} + \beta_{14} Beta_{it} + \beta_{14} EXCH_{it} + \beta_{15} Horizon_{it} + \beta_{16} FOL_{it} + Industry_{FE} + Year_{FE} + \varepsilon_{it} \quad (6\text{-}2)$$

where:

AFA = Analyst forecast accuracy, as per Lang and Lundholm (1996);

UE = Unexpected earnings, measured as (net income at year *t+1* – net income at year *t*)/market value of equity at the end of year *t*;

Horizon = The natural logarithm of the average number of calendar days between forecast announcement date and subsequent earnings announcement date;

FOL = The natural logarithm of one plus the number of analysts following the client.

All the other variables are described previously. The dependent variable is analysts forecast accuracy (*AFA*), the absolute value of the forecast error multiplied by -100, scaled by the stock price at the end of the prior fiscal year, where the forecast error is the I/B/E/S analysts' mean annual earnings forecast less the actual earnings as reported by I/B/E/S. Observations

[35] The forecast accuracy metric is regarded as a company's accounting information quality, e.g., Callen et al. (2012).

having *AFA* variable smaller than -1.5 (less than 1% of the distribution) are removed as outliers.[36] The full sample has a total of 18,502 firm-year observations during the period from 2000 to 2009.

The results, presented in Table 12, displays coefficients and p-value of fixed effect panel data regression with year dummies and industry dummies. The coefficient of $Comp^{Acct}$ (β_1) is 0.005 and is significantly related to analysts forecast accuracy at the 1% level. That is to say, a client with the characteristics of higher accounting comparability is of financial statement quality, proxy by more accurate forecasts by financial analysts. The results are consistent with De Franco et al. (2011) who find that comparability is beneficial for financial analysts in their forecast activities.

Table 12 also shows that audits by the Big-N auditor and/or an industry specialist auditor indicate higher audit quality, evidenced by significantly positive signs of *BigN* and *SPEC* with coefficients 0.006 and 0.008, respectively. Collectively, the coefficients of control variables, *SIZE* through *Beta*, controlling client-related characteristics, essentially show a qualitatively similar pattern with prior studies (e.g., Lawrence et al. 2011). Specifically, unexpected earnings (*UE*), *Beta* and forecast horizon (*Horizon*) are negatively associated with forecast accuracy. More financial analysts following the client firm (*FOL*) and listing on NYSE or Amex Exchange (*EXCH*) improve forecast accuracy. Moreover, relevant to this analysis, I find that Big 4 audit clients have a larger analyst following while the joint national and city specialist auditor has no strong correlation with analyst following.

[36] The results are not sensitive to different outlier control approaches.

TABLE 12

Regressions of Forecast Accuracy on Accounting Comparability

	Prediction	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.052	0.005	-9.77	<.0001
$Comp^{Acct}$	+	0.005	0.002	3.79	0.001
BigN	+	0.006	0.002	3.51	0.002
SPEC	+	0.008	0.002	4.10	<.0001
SIZE	+	0.003	0.001	3.01	0.003
TAcc	+	0.003	0.002	1.02	0.309
LEV	-	-0.008	0.004	-2.52	0.010
lnBM	?	-0.004	0.002	-3.44	<.0001
SalesG	?	-0.004	0.001	-2.87	0.002
ROA	+	0.002	0.001	2.31	0.020
LOSS	-	0.018	0.002	9.08	<.0001
UE	-	-0.052	0.015	-3.63	0.001
EP	+	0.018	0.009	2.05	0.041
CashVol	-	-0.024	0.008	-3.54	0.002
Beta	-	-0.018	0.005	-3.46	0.002
EXCH	?	0.012	0.002	6.07	<.0001
Horizon	-	-0.007	0.001	-5.80	<.0001
FOL	+	0.016	0.005	4.01	<.0001
Year and Industry Effects		Yes			
Adj. R^2 (Obs. =18,502)		0.304			

The dependent variable is analysts forecast accuracy (*AFA*). Appendix III details the measure of *AFA*. The regression is based on model equation (6-2). Once again, in Table 12 the year-specific and industry-specific intercepts are omitted for brevity. Refer to the Appendix I for all other variable description.

6.3. Changes Model Analysis

Audit effort varies with changes in inherent risk of a client firm. O'Keefe et al. (1994) use data from one audit firm and document that both audit hours and the mix of labor are sensitive to client size, complexity, leverage, and inherent risk. I implement change analysis, using change in accounting comparability as the inherent risk factor, for a possible root cause analysis of audit effort. In the meantime, information spillover due to accounting comparability brings about a positive gain in terms of audit effectiveness.

6.3.1. Does the Increase in Comparability Reduce Audit Delay?

I reformulate the first hypothesis on the basis that if timelier audit reporting documented in the primary analysis (in model equation 5-1) is accompanied by an increasing degree of client's accounting comparability, the increase in comparability should subsequently reduce the audit reporting lag. The dependent variable in the tests is the change of audit delay. The variable *ΔDelay* is measured as the current period audit delay less the value for audit delay in the prior year. Similarly, I estimate two OLS regressions as specified by the following equation (6-3), using either the change in accounting comparability or the change in earnings comparability, along with control variables known to influence audit report delay.

$$\begin{aligned}\Delta Delay_{it} = \beta_0 + \beta_1\{\Delta Comp_{it}^{Acct} or\ \Delta Comp_{it}^{Earn}\} + \beta_2 \Delta GCAO_{it} + \beta_3 \Delta BigN_{it} + \\ \beta_4 \Delta SIZE_{it} + \beta_5 \Delta ROA_{it} + \beta_6 \Delta LEV_{it} + \beta_7 \Delta lnBM_{it} + \beta_8 \Delta SalesG_{it} + \\ \beta_9 \Delta LOSS_{it} + \beta_{10} \Delta|DA_{it}| + \beta_{11} \Delta|SPI_{it}| + \beta_{12} \Delta SEG_{it} + \beta_{13} \Delta Export_{it} + \\ \beta_{14} \Delta Restate_{it} + \beta_{15} \Delta ACH_{it} + \beta_{16} \Delta OWN_{it} + \beta_{17} \Delta Tenure_{it} + \beta_{18} Delay_{it-1} + \\ Industry_{FE} + Year_{FE} + \varepsilon_{it}\end{aligned} \quad (6\text{-}3)$$

The control variables *lnBM*, *LEV*, *SIZE*, *ROA* and etc. are computed similarly as in equation (5-1), and all change variables are calculated relative to prior year. The sample entering regression has 17,883 observations. I explicitly control for client firm characteristics so that the year- and industry-dummies in the regressions capture the *direct* effects of comparability on

audit report delay incremental to the *indirect* effects caused by changes in these firm characteristics. This multivariate regression approach thus mitigates the possibility that observed audit delay changes are due solely to other corporate changes. I also control for prior period audit delay ($Delay_{it-1}$).

Table 13 presents the results of estimating the change model equation (6-3) using OLS regression. The coefficients on two comparability measures are significant and signed consistent with the first hypothesis that increases in financial statement comparability are positively associated with timely audit report. The coefficients on both $\Delta Comp^{Acct}$ and $\Delta Comp^{Earn}$ are negative and significant (-0.011 and -0.029, respectively) at 5% level. In addition, both $\Delta Comp^{CFO}$ and $\Delta Comp^{RET}$ have significantly negative coefficients (untabulated for simplicity). Taken together, I conclude that increases in financial statement comparability, associated with a reduction of business inherent risk, seem to be helpful for audit effectiveness, in terms of production of timely audit report.

Other change variables controlling the change of timeliness of audit report are generally significant, expect the change of financial leverage (ΔLEV), change of book to market ($\Delta lnBM$), change of discretionary accruals ($\Delta|DA|$) and change of auditor tenure with the client ($\Delta Tenure$). Audit delay of prior year ($Delay_{it-1}$) is significantly related to current year change in audit delay. Overall, the change model is significant, and the adjusted R^2 equals 29.4% for the change model with $\Delta Comp^{Acct}$ as the explanatory variable, and the adjusted R^2 equals 30.5% for the change model with $\Delta Comp^{Earn}$ as the explanatory variable, compared with the adjusted R^2 of 47.5% in the original audit delay model expressed in equation 5-1.

TABLE 13

Does the Increase in Comparability Reduce Audit Delay?

	Explanatory Variable = Accounting Comparability		Explanatory Variable = Earnings Comparability	
	Parameter Estimate	Pr > |t|	Parameter Estimate	Pr > |t|
Intercept	0.029***	<.0001	0.031***	<.0001
$\Delta Comp^{Acct}$	-0.011**	0.022		
$\Delta Comp^{Earn}$			-0.029**	0.048
ΔGCAO	0.061***	0.002	0.065***	0.002
ΔBigN	-0.052***	<.0001	-0.051***	<.0001
ΔSIZE	-0.047***	0.001	-0.047***	0.001
ΔROA	-0.164***	0.001	-0.160***	0.001
ΔLEV	0.013	0.109	0.016*	0.094
ΔlnBM	-0.020	0.127	-0.041*	0.052
ΔSalesG	0.014***	0.001	0.013***	0.001
ΔLOSS	0.074***	<.0001	0.075***	<.0001
Δ|DA|	0.009	0.257	-0.008	0.304
Δ|SPI|	0.084**	0.023	0.095***	0.009
ΔSEG	0.008**	0.018	0.008**	0.011
ΔExport	0.105***	<.0001	0.127***	<.0001
ΔRestate	0.085***	0.003	0.094***	0.002
ΔACH	0.087***	0.001	0.086***	<.001
ΔOWN	-0.075***	0.015	-0.082***	0.012
ΔTenure	0.001	0.247	0.003	0.150
$Delay_{it-1}$	0.002***	0.007	0.002***	0.010
Year and Industry Effect	Yes		Yes	
Adj. R^2 (Obs.=17,883)	0.294		0.305	

The regression is based on the model equation (6-3). The dependent variable is change in audit delay (*ΔDelay*), the explanatory variable of interest is change in accounting comparability ($\Delta Comp^{Acct}$) or change in earnings comparability ($\Delta Comp^{Earn}$). ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively, based on two tailed hypotheses. Estimates on year dummies and industry dummies are not reported for brevity. Refer to the Appendix I for all other variable definition.

6.3.2. Does the Increase in Accounting Comparability Reduce Audit Pricing?

I further analyze whether less audit fees paid are related to increased financial statement comparability as the client potentially entails less inherent business riskiness. Following Dao et al. (2012), I perform the audit fee regression in the "changes" form as follows:

$$\begin{aligned}\Delta FEE_{it} = {} & \beta_0 + \beta_1\{\Delta Comp_{it}^{Acct} or\ \Delta Comp_{it}^{Earn}\} + \beta_2\Delta SIZE_{it} + \beta_3\Delta CI_{it} + \beta_4\Delta LEV_{it} + \\ & \beta_5\Delta Quick_{it} + \beta_6\Delta CURR_{it} + \beta_7 BigN_{it} + \beta_8\Delta ROA_{it} + \beta_9\Delta LOSS_{it} + \\ & \beta_{10}\Delta|SPI|_{it} + \beta_{11}\Delta Export_{it} + \beta_{12}\Delta SEG_{it} + \beta_{13}\Delta ISSUE_{it} + \beta_{14}\Delta lnBM_{it} + \\ & \beta_{15}\Delta SalesG_{it} + \beta_{16}\Delta GCAO_{it} + \beta_{17}\Delta Restate_{it} + \beta_{18}\Delta AudChg_{it} + \beta_{19}FEE_{it-1} + \\ & Industry_{FE} + Year_{FE} + \varepsilon_{it}\end{aligned} \quad (6\text{-}4)$$

For the changes model, I use the same equation (5-2) discussed in the previous section, except that the dependent and independent variables are all measured in changes form (i.e., value for year *t* minus the value of the same variable for year *t-1*). The results from the above multivariate regression for the change analysis are presented in Table 14. The overall model is statistically significant, with an adjusted R^2 of 21.0% (model F-value = 6.75) for the change model with $\Delta Comp^{Acct}$ as the explanatory variable and the adjusted R^2 of 22.6% (model F-value = 6.79) for the model with $\Delta Comp^{Earn}$ as the explanatory variable.

In Table 14 the first column using $\Delta Comp^{Acct}$ to explain the change of audit fees, the coefficient of $\Delta Comp^{Acct}$ is -0.021 (p-value = 0.070), indicating that a client firm that has an increase in accounting comparability leads to a reduction of audit fees paid to its external auditor. Similarly, an increase in earnings comparability with its coefficient of $\Delta Comp^{Earn}$ (β_1 = -0.039, p-value = 0.062) is associated with lesser audit fees paid. The results suggest that an increase in financial statement comparability is associated with less effort for auditor, and therefore the auditor prices less service fees.

A changes regression is particularly appropriate for audit fees because, in general, last years' audit fees predict well this year's audit fees (Dao et al. 2012). I also control prior year

audit fees (FEE_{it-1}), the coefficient of β_{19} is 0.089 with p-value < 0.001. Other change variables controlling the change of audit pricing are generally significant at 10% level, expect the change of financing activities (*ΔISSUE*) and no change of auditor during a year (*ΔAudChg*). In sum, the results of Table 14 support the hypothesis that audit fees are decreasing in comparability. These results support the idea that both the client firm and its auditor benefit from the higher quality information sets associated with firms that have higher comparability.

In the model equation (6-4), the dependent variable I use is changes in the natural logarithm value of current year's total audit fees relative to the logarithm value of prior year's total audit fees. As an additional test, I use the change value of the log format of total fees (i.e., audit fees plus non-audit fee combined paid to the same auditor) as the new dependent variable. The changes regression results (un-tabulated for brevity) reveal that increase in a client firm's information comparability is negatively associated with the change of total service fees paid to its auditor.

These changes in audit fees can be caused by *direct* or *indirect* impacts of accounting comparability, due to its inherent business riskiness or the knowledge spillover effect. I do not separate these two effects here for several reasons: (1) audit firms base their fees on the perceived risk of audit failure, so they are likely able to assess the overall changes in business operation and reporting with an aid of comparative information; (2) the audited companies with high accounting comparability deem their businesses less risky and less complex, and thus negotiation of audit fees is potentially beneficial for these client firms; and (3) the control variables in model equation (6-4), to some extent, control for the *indirect* impact.

TABLE 14

Does the Increase in Comparability Reduce Audit Pricing?

	Explanatory Variable = Accounting Comparability		Explanatory Variable = Earnings Comparability	
	Parameter Estimate	Pr > |t|	Parameter Estimate	Pr > |t|
Intercept	1.074***	0.004	0.928	<.0001
$\Delta Comp^{Acct}$	-0.021*	0.070		
$\Delta Comp^{Earn}$			-0.039*	0.062
ΔSIZE	0.127***	<.0001	0.150***	<.0001
ΔCI	-0.086*	0.075	-0.080*	0.081
ΔLEV	0.029*	0.085	0.036**	0.041
ΔQuick	-0.062***	0.001	-0.057***	0.002
ΔCURR	0.008*	0.071	0.019**	0.027
ΔBigN	0.054**	0.027	0.047*	0.068
ΔROA	-0.147***	0.001	-0.202**	<.0001
ΔLOSS	0.195***	0.008	0.206***	<.0001
Δ|SPI|	-0.641*	0.090	-1.006**	0.027
ΔExport	1.058***	0.001	1.072***	<.0001
ΔSEG	0.108*	0.098	0.112*	0.085
Δ*ISSUE*	-0.105	0.183	-0.122	0.160
ΔlnBM	0.257*	0.090	0.250*	0.092
ΔSalesG	-0.080**	0.047	-0.086**	0.039
ΔGCAO	0.356***	0.008	0.359***	0.008
ΔRestate	0.102*	0.057	0.104**	0.050
ΔAudChg	-0.287	0.125	-0.269	0.120
FEE_{it-1}	0.089***	<.0001	0.089***	<.0001
Year and Industry Effect	Yes		Yes	
Model F	6.75 (*p-value < 0.01*)		6.79 (*p-value < 0.01*)	
Adj. R^2 (Obs.=16,883)	0.210		0.226	

(Footnote of Table 14 continues):
The regression is based on the model equation (6-4). The dependent variable is change in audit fees (ΔFEE), the explanatory variable of interest is change in accounting comparability ($\Delta Comp^{Acct}$) or change in earnings comparability ($\Delta Comp^{Earn}$). ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively, based on two tailed hypotheses. Estimates on year dummies and industry dummies are not reported for brevity. Refer to the Appendix I for all other variable definition.

6.4. Endogeneity between Audit Effort and Outcomes

There is a two-way relationship between audit effort and audit outcomes and a potential effect of comparability on the auditor-client relationship.[37] I examine the possibility that the estimates are biased because of the endogeneity of accounting comparability, audit effort and audit outcomes. In the main analysis, I take both accounting comparability and audit quality as given. An alternative view is that high audit quality can lead to high financial statement comparability which becomes an audit outcome. Besides, the comparability of earnings outputs among peer firms is likely to be influenced by auditors. As argued by Kothari et al. (2010), auditors are likely to have detailed working rules for routine interpretation and implementation of specific accounting standards and for compliance with GAAP more generally and with GAAS as well.

Audit effort and audit outcomes are jointly determined along characteristics of the information environment and client riskiness. Auditability is associated with company's financial reporting behavior; Geiger and Raghunandan (2002) document that large accruals are found to be positively associated with subsequent audit failures and auditor litigation. Moreover, Caramanis and Lennox (2008) find a positive relationship between audit hours (an observable

[37] The main tests in previous section show that there is negative relation between audit effort and comparability, and also a positive relation between audit quality and comparability. One may argue that audit fees (proxy for audit effort) and audit quality are positively related. For example, insights from the behavioral auditing literature (e.g., McDaniel 1990; Asare et al. 2000) predict that fee and time pressures reduce audit quality by causing auditors to "cut corners", i.e., auditor may respond to these pressures by "cutting corners" on the audit with a corresponding reduction in audit scope and loss in audit quality. In light of this, a simultaneous equation estimation incorporating audit fees and audit quality is necessary to test the interplay of comparability with them and the validity of test results from single-equation models.

measure of audit effort) and abnormal accruals (especially income-increasing earnings management) even after controlling for endogeneity. Thus their results suggest that auditors might have to work harder if they believe that their clients are attempting to manage earnings.

Controlling for endogeneity, I have accounting comparability simultaneously in the audit effort (audit fees) model and in the audit outcome model (whether comparability leads to higher audit quality or vice versa). I also add a variety of controls in the simultaneous equation system. They mostly are included in the main analysis as of single equation estimation in previous section. I address the endogeneity issue using 2SLS (two-stage least squares) analysis, simultaneous determination of accounting comparability, audit pricing, and audit quality.

The first equation of audit fee model is the mostly same as the equation (5-2) for the main analysis. Caramanis and Lennox (2008) add prior-year audit hours as an instrumental variable; they reason that audit hours are highly persistent over time, making the previous year's hours a powerful predictor of the current year's hours. Even though, audit hours are endogenous and, as a priori, it is unclear in which direction endogeneity might bias the results (Hansen and Watts 1997). I control prior year's audit fees as a control in the first equation (6-5). The second equation (6-6) is auditing quality regressing on accounting comparability. I add audit fees as a control for likely controlling economic bonding between client and auditor (Larcker and Richardson 2004). The third equation (6-7) captures that comparability is potentially the outcome of high audit quality. I estimate the following system of equations:

$$FEE_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 SIZE_{it} + \beta_3 CI_{it} + \beta_4 LEV_{it} + \beta_5 Quick_{it} + \beta_6 CURR_{it} + \beta_7 BigN_{it} + \beta_8 ROA_{it} + \beta_9 LOSS_{it} + \beta_{10}|SPI|_{it} + \beta_{11} Export_{it} + \beta_{12} SEG_{it} + \beta_{13} ISSUE_{it} + \beta_{14} lnBM_{it} + \beta_{15} SalesG_{it} + \beta_{16} GCAO_{it} + \beta_{17} Restate_{it} + \beta_{18} AudChg_{it} + \beta_{19} FEE_{it-1} + \varepsilon_{it} \quad (6\text{-}5)$$

$$PMACA_{it} = \beta_0 + \beta_1 Comp_{it}^{Acct} + \beta_2 BigN_{it} + \beta_3 Comp_{it}^{Acct} \times BigN_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LOSS_{it} + \beta_7 CashVol_{it} + \beta_8 TAcc_{it} + \beta_9 LEV_{it} + \beta_{10} lnBM_{it} + \beta_{11} SalesG_{it} + \beta_{12} Restate_{it} + \varepsilon_{it} \quad (6\text{-}6)$$

$$Comp_{it}^{Acct} = \beta_0 + \beta_1 PMACA_{it} + \beta_2 BigN_{it} + \beta_3 SPEC_{it} + \beta_4 CashVol_{it} + \beta_5 SIZE_{it} + \beta_6 CI + \beta_7 TAcc_{it} + \beta_8 LEV_{it} + \beta_9 lnBM_{it} + \beta_{10} SalesG_{it} + \beta_{11} ROA_{it} + \beta_{12} LOSS_{it} + \beta_{13} FEE_{it} + \beta_{14} Tenure_{it} + \varepsilon_{it} \quad (6\text{-}7)$$

Table 15 reports the results of the simultaneous equation estimation. I estimate the system of equations by year using two-stage least square and average the coefficients across years. For simplicity, I focus the discussion on the variable of interest in audit fees. Consistent with the main analysis, the coefficient on *Comp*^{Acct} is negative and significant at the 5% level (coefficient = -0.020) which suggests that high accounting comparability contributes to less audit effort. The coefficient of *Comp*^{Acct} on *PMACA* proxy for audit quality in the second equation (6-6) is negative and significant at the 5% level (coefficient = -0.051) which suggests that high comparability helps auditor contain discretionary accruals management. Overall, I conclude that the negative association between audit effort and accounting comparability does not appear to be driven by the endogeneity.[38]

[38] There are some limitations in this study. One obvious limitation is to differentiate whether accounting comparability is the result of high audit production by Big-N audits, or comparability of client firm promotes audit quality. The main limitation is the failure to find strong and valid instrumental variables as this can skew the results of the 2SLS models. Therefore, most of the results are interpreted from the OLS models and thus the endogeneity problem is not entirely controlled.

TABLE 15

Simultaneous Equation Analysis

	FEE	*PMACA*	$Comp^{Acct}$
$Comp^{Acct}$	-0.020**	-0.051**	
SIZE	0.425***	-0.022**	0.010***
CI	-0.657***		-0.274***
LEV	0.524***	-0.025*	-0.108**
Quick	-0.007*		
CURR	0.020**		
BigN	0.078**	-0.028*	0.065*
$BigN \times Comp^{Acct}$		-0.070***	
ROA	-2.08***	-0.048***	0.072***
LOSS	0.150***	0.030***	-0.081***
|SPI|	0.574***		
Export	1.512***		
SEG	0.070***		
ISSUE	-0.098*		
lnBM	0.358***	-0.017*	0.156***
SalesG	0.275***	0.052**	0.029***
CashVol		0.049**	0.031**
TAcc		0.257**	-0.023**
GCAO	0.368***		
Restate	0.050**	0.057***	
AudChg	-0.278***		
FEE_{it}			0.002**
FEE_{it-1}	0.800***		
Tenure			0.009**
PMACA			-0.068***
SPEC			0.087***
First Stage R^2	0.397	0.250	0.357
Second Stage R^2	0.241	0.185	0.198

(Footnote of Table 12 continues):
Table 15 presents the results of the three equations estimated simultaneously. The system is annually estimated by two-stage least squares and then averaged across time. The standard errors are based on the times-series distribution of the annual estimates. *, **, *** indicates 10%, 5%, 1% levels of significance, respectively. The dependent variable for the first equation is audit fees (*FEE*). The dependent variable in the second equation is performance-matched abnormal current accruals (*PMACA*). The dependent variable of the third equation is accounting comparability ($Comp^{Acct}$). The sample has 20,750 observations during 2000-2009. The parameters of intercept effect, year and industry dummies are omitted for brevity. Refer to the Appendix I for variable description.

6.5. Other Additional Tests

An increase in the likelihood of an auditor's issuing a going-concern opinion to a company that subsequently does not file bankruptcy (i.e., Type I error) can be reflective of a decrease in auditor competence. While this issue is probably less important than the opposite problem (Type II error), Geiger and Raghunandan (2002) focus on bankrupt companies, so they are unable to infer the effect of auditor tenure on Type I errors. An earlier study by Carcello and Neal (2000) considers the relationship between auditor tenure and audit reports for financially distressed companies but does not specifically address the issue of whether auditor tenure affects auditor Type I error rates. Knechel and Vanstraelen (2007) extend Geiger and Raghunandan (2002) and Carcello and Neal (2000) by examining the nature of auditor decision errors for a nonbankrupt sample, they document that there is a weak relation between auditor tenure and the ability of predicting bankruptcy.[39]

Extrapolating from prior literature on the association between auditor tenure and audit opinion, I partition the sample based on the audit tenure (more than 3 year or not) to examine whether accounting comparability is helpful for short-term auditing firms with their judgmental competence. Besides, the issue of endogeneity is more likely to be a problem if audit firm tenure is short (Myers et al. 2003). I separate the length of auditor tenure and test whether financial

[39] Using a sample of stressed bankrupt companies and stressed nonbankrupt companies in Belgium, the results by Knechel and Vanstraelen (2007) indicate that auditors do not become less independent over time nor do they become better at predicting bankruptcy.

statement comparability is more helpful for auditor with a short-term auditor relative to a long-term tenure in the auditor's professional judgment of business viability. I expect that accounting comparability is more important for new auditor to help improve her/his ability to discern when a company is truly at risk of entering bankruptcy and to express an accurate audit opinion.

The portioned sample has 5,188 observations of clients with no more than three-year auditor tenure, and 15,562 observations of client with greater than three-year audit tenure duration.[40] Using the ordered probit model, I employ the model equation (5-5) to examine the relationship between accounting comparability ($Comp^{Acct}$) and auditor report accuracy (*Accuracy*) for clients with different length of auditor tenure.[41] The results reported in Table 16 reveal that $Comp^{Acct}$ coefficients are positive and statistically significant in both short and long tenure samples (coefficient = 0.022 and 0.016, respectively). More importantly, the difference of $Comp^{Acct}$ coefficients (positive 0.006) is statistically significant at the 5% level. Like in the main analysis, Big-N audits do not show an improved judgmental competence of issuing a going-concern opinion (evidenced by the insignificant coefficient of *BigN* in the pooled or partitioned sample).[42] Overall, the results suggest that industry-setting accounting comparability is particularly useful for new auditor in assessing the business risk and issuing a going-concern audit report.

In this subsection I discuss several other additional tests, the results, untabulated, remain statistically unaltered, relative to the results from the primary analyses:

[40] I arbitrarily assume the cut-off three-year auditor tenure is a short client-auditor relationship. The partition is accordance with a quartile value, 25% of the sample observations are with no more than auditor tenure duration.
[41] Since I use tenure variable to partition the sample, control variable *Tenure* is dropped from equation (5-5) in this test.
[42] I also add firm age (*AGE*) as a control variable for the regression. When I exclude the control for firm age, the results about the difference of coefficients on comparability ($Comp^{Acct}$) for long or short auditor tenure remain qualitatively same.

a) I drop client firms with merger and acquisition activities because accruals for firms undergone these activities tend to be larger for reasons unrelated to earnings management (Ashbaugh et al. 2003). I drop firms engaged in an M&A or other corporate restructuring activity as indicated in the Compustat footnote. Alternatively, I add a dummy of 1 if the company engaged in these activities, else 0;

b) Except external audit, I also consider other external monitoring mechanism (institutional ownership, analysts coverage, and greater takeover threat) following Kim et al. (2011);

c) I exclude client firms in financial sector (2-digit SIC code between 60 and 69) since financial institutions have fundamentally different operating characteristics and reporting behavior;

d) Bhojraj et al. (2003) point out that the definition of industry at the two-digit SIC code is imperfect. Consequently, I re-estimate the comparability measures using the Fama-French (1997) definitions of 48 industry classifications.

e) Cooper and Cordeiro (2008) document that practitioners generally use a small number of closely comparable firms (four to six) to estimate valuation multiples for investment purpose. They find that it is generally better to use a few closely comparable firms in the same industry, and that considering more firms simply adds noise. Auditor, perhaps, also uses a small group of peer clients for information comparability. Therefore, I replace the average of the top six highest comparability measures with industry-wide average comparability measure;

f) I delete firm-year observations in a year when a company switches auditing firm.

TABLE 16

Association of Audit Report Accuracy and Comparability Portioning by Auditor Tenure

	Pooled Sample	Auditor Tenure ≤ 3 years	Auditor Tenure > 3 years	Difference
Intercept	-0.308***	-0.305***	-0.323***	0.018***
Comp^{Acct}	0.018***	0.022***	0.016**	0.006**
lnSales	0.136***	0.138***	0.130***	0.008*
BigN	0.032	0.041	0.030	0.011
LEV	0.383***	0.380***	0.387***	-0.007
LOSS	-0.376***	-0.319***	-0.390***	0.071***
ROA	0.404***	0.409***	0.391***	0.018*
L1ROA	0.594***	0.581***	0.607***	-0.026**
LITI	-0.129***	-0.161***	-0.120***	-0.041**
Altman	-0.006***	-0.009***	-0.005***	-0.004
SPEC	0.062***	0.071***	0.060***	0.011***
lnBM	0.137***	0.141***	0.132***	0.009*
CFO	2.022***	1.803***	2.107***	-0.296***
DCF	-0.486***	-0.502***	-0.447***	-0.055***
EP	0.075***	0.078***	0.074***	0.004
ISSUE	0.062***	0.058***	0.065***	-0.007**
Delay	-0.018***	-0.017***	-0.020***	0.003
EXCH	0.058***	0.059***	0.055***	0.004
AGE	0.048*	0.045*	0.051**	-0.006*
Observation	20,750	5,188	15,562	
Aldrich-Nelson Goodness of Fit	0.278	0.280	0.267	

The results are based on the ordered Probit regression of the model equation (5-5). The dependent variable is audit report accuracy (*Accuracy*). ***, **, * indicates that the coefficient is statistically different from zero at the 1%, 5%, 10% level of significance. Estimates on year dummies and industry dummies are not reported for brevity. Refer to Appendix I for all variable definitions.

7. SUMMARY AND CONCLUSIONS

The objective of this study is to examine the usefulness of an under-researched accounting quality – comparability for the auditor-client relationship. Specifically, I investigate how accounting comparability affects the overall quality and perceived riskiness of external audit. Comparability enables auditors to identify similarities and differences of how client firms' economic events are translated into accounting results over time and across clients. Industry-wise comparability can provide efficiency and knowledge spillovers achieved by a single firm in audit engagement (Simunic 1984). I expand this framework that comparability reflects low audit risk from inherent client business riskiness per se and provides a positive externality gain for multiple audit engagements.

The framework offers the following prediction: Comparability is positively associated with the timeliness of audit production, a reduced level of audit effort, and improved audit opinion accuracy. Empirical tests indicate that accounting comparability is systemically associated with audit efficiency and accuracy. I find that accounting comparability is positively related to audit quality (smaller magnitude of abnormal accruals, more accurate analyst forecasts of earnings, and lower implied cost of capital), and the audit opinion accuracy, and that comparability is negatively related to financial restatement, audit delay, audit pricing, and the likelihood of auditor's issuing a going-concern opinion.

This study is important in advancing our understanding of the accounting quality of comparability. An auditee with a higher degree of information comparability is associated with lower level of business risk, and at the same time, information comparability contributes to externality gains that result in audit efficiency. The dual effects of comparability that is associated with 1) less audit fees and more informative earnings, bring benefits to auditees; 2)

more timely and accurate audit reporting, less audit failure, bring benefits to auditors as well. Given the role of externalities in expanding auditors' available information set, the study of intra-industry information transfers in audit engagements provides additional insights on the economic benefits of audit accuracy and audit efficiency.

Notwithstanding the above results, some caveats follow. One limitation is that I use aggregate net income / cash flows as the only accounting result for comparability, which captures only one dimension of the financial statements. I suggest that future studies create multi-dimensional measures of financial statement comparability, considering the cross-sectional differences in firms' production functions, business models, and accounting systems. Professional auditing standards require auditors to assess the risk of misstatement at the assertion level for each significant account balance or class of transactions. Future research can consider the role of comparability in account level and/or in auditor's materiality tests. Other necessary concerns this study omits are, for instance, 1) whether quality audits promote accounting comparability across client firms; 2) whether comparability matters more or less to a specialist auditor who has more clients in the same industry where there are economies of scale; 3) whether the use of computerized audit techniques weaken or strengthen the role of comparability, etc.

Auditability should be largely affected by auditee's characteristics, e.g., financial reporting practices, transparency of corporate environment, and the forthrightness of management who interacts with auditor. I have added many business risk factors as controls and conducted analyses for different tests, the results remain strong. Still, one caveat of the paper is that some risks from client side may be omitted from the analyses, e.g., corporate governance metrics (of audit committee and many other multi-faceted governance proxies) are not included.

Besides, I must rely upon proxies for audit quality and audit effort since neither construct is directly observable. While random measurement error in the constructs merely dilutes the power of tests, any systematic association between measurement error in my audit quality proxies and audit outcome proxies potentially can yield misleading inferences. I have no reason to suspect the existence of a systematic pattern in measurement error, but neither can I rule out this possibility. Second, the tests are based on cross-sectional regressions and, as such, the direction of causality cannot be inferred. In particular, it is possible that large auditing firms and long auditor tenure may tend to push financial statement comparability, even though I implement "changes model" analysis and endogeneity tests to support the results from the main analyses. Potentially, future research could revisit the issue using an across-time design that might be more effective in isolating the direction of causality. Finally, behavior studies addressing how auditors use industry-setting comparable information are very necessary to complement the empirical tests from this study.

REFERENCES

Accounting Principles Board. 1970. Statement No. 4, *Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises.* New York: Accounting Principles Board.

Alford, A.W. 1992. The effect of the set of comparable firms on the accuracy of the price-earnings valuation method. *Journal of Accounting Research* 30 (1): 94-108.

Altman, E.I. 1983. Corporate financial distress: A complete guide to predicting, avoiding and dealing with bankruptcy. Toronto: Wiley & Sons.

Anthony, J.H., and K. Ramesh.1992. Association between accounting performance measures and stock prices: A test of the life cycle hypothesis. *Journal of Accounting and Economics* 15: 203-227.

Antle, R., E. Gordon, G. Narayanamoorthy, and L. Zhou. 2006. The joint determination of audit fees, non-audit fees, and abnormal accruals. *Review of Quantitative Finance and Accounting* 27 (3): 235-266.

Antle, R., and B. Nalebuff. 1991. Conservatism and auditor-client negotiations. *Journal of Accounting Research* 29 (Supplement): 31-54.

Arens, A., R. Elder, and M. Beasley. 2004. *Auditing and Assurance Services: An Integrated Approach.* Tenth Edition. Upper Saddle River, New Jersey: Prentice Hall.

Asare, S., G. Trompeter, and A. Wright. 2000. The effect of accountability and time budgets on auditors' testing strategies judgments. *Contemporary Accounting Research* 17 (4): 539-560.

Ashbaugh, H., R. LaFond, and B.W. Mayhew. 2003. Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review* 78: 611-639.

Ashton, R.H., J.J. Willingham, and R.K. Elliott. 1987. An empirical analysis of audit delay. *Journal of Accounting Research* 25 (2): 275-292.

Ashton, R.H., P.R. Graul, and J.D. Newton. 1989. Audit delay and the timeliness of corporate reporting. *Contemporary Accounting Research* 5 (2): 657-673.

Ball, R., S.P. Kothari, and A. Robin. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29: 1-51.

Ball, R., S.P. Kothari, and A. Robin. 2003. Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics* 36: 235-270.

Balsam, S., J. Krishnan, and J. Yang. 2003. Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory* 22: 71-97.

Balzer, W., and L. Slusky. 1992. Halo and performance appraisal research: A critical examination. *Journal of Applied Psychology* 77 (6): 975-985.

Bamber, E.M., L.S. Bamber, and M.P. Schoderbek. 1993. Audit structure and other determinants of audit report lag: An empirical analysis. *Auditing: A Journal of Practice & Theory* 12 (1): 1-23.

Barth, M.E., D.P. Cram, and K.K. Nelson. 2001. Accruals and the prediction of future cash flows. *The Accounting Review* 76: 27-58.

Barth, M.E., W.R. Landsman, M.H. Lang, and C.D. Williams. 2001. Are IFRS-based and US GAAP-based accounting amounts comparable? Working paper. Stanford University, University of North Carolina, and University of Michigan.

Beasley, M.S., and K. Petroni. 2001. Board independence and audit firm type. *Auditing: A Journal of Practice & Theory* 20: 97-114.

Beaver, W.H. 1968. The information content of annual earnings announcements, empirical research in accounting: Selected studies. *Journal of Accounting Research* 6: 67-92.

Beaver, W.H. 1981. Financial reporting: An accounting revolution. Prentice-Hall, Englewood Cliffs, N.J., 1981.

Becker, C.L., M.L. DeFond, J.J. Jiambalvo, and K.R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15: 1-24

Behn, B.K, J.H. Choi, and T. Kang. 2008. Audit quality and properties of analyst earnings forecasts. *The Accounting Review* 83 (2): 327-359.

Behn, B.K, S.E. Kaplan, and K.R. Krumwiede. 2001. Further evidence on the auditor's going-concern report: The influence of management plans. *Auditing: A Journal of Practice & Theory* 20 (1): 13-29.

Bell, T., M.E. Peecher, and I. Solomon. 2005. The 21st Century Public Company Audit. New York, NY: KPMG LLP.

Benston, G., M. Bromwich, and A. Wagenhofer. 2006. Principles- versus rules-based accounting standards: The FASB standard setting strategy. *Abacus* 42 (2): 165-188.

Beyer, A., and S. Sridhar. 2006. Effects of multiple clients on the reliability of audit reports. *Journal of Accounting Research* 44 (1): 29-51.

Bhojraj, S., and C.M.C. Lee. 2002. Who is my peer? A valuation-based approach to the selection of comparable firms. *Journal of Accounting Research* 40 (2): 407-439.

Bhojraj, S., C.M.C. Lee, and D.K. Oler. 2003. What's my line? A comparison of industry classification schemes for capital market research. *Journal of Accounting Research* 41 (5): 745-774.

Biddle, G.C., G. Hilary, and R.S. Verdi. 2009. How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics* 48 (2-3): 112-131.

Bloomfield, R. 2002. The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons* 16: 233-243.

Bradshaw, M.T., Miller, G.S., and S.J. Serafeim. 2011. Accounting method heterogeneity and analysts' forecasts. Working paper, Boston College, University of Michigan, and Harvard Business School.

Bruynseels, L., W.R. Knechel, and M. Willekens. 2011. Auditor differentiation, mitigating management actions, and audit-reporting accuracy for distressed firms. *Auditing: A Journal of Practice & Theory* 30 (1): 1-20.

Callen, J. L., M. Khan, and H. Lu. 2012. Accounting quality, stock price delay and future stock returns. *Contemporary Accounting Research*, forthcoming.

Caramanis, C., and C. Lennox. 2008. Audit effort and earnings management. *Journal of Accounting and Economics* 45 (1): 116-138.

Carcello, J.V., and T.L. Neal. 2000. Audit committee composition and auditor reporting. *The Accounting Review* 75 (4): 453-467.

Carcello, J.V., and T.L. Neal. 2003. Audit committee characteristics and auditor dismissals following "new" going-concern reports. *The Accounting Review* 78 (1): 95-117.

Carcello, J.V., and Z-V. Palmrose. 1994. Auditor litigation and modified reporting on bankrupt clients. *Journal of Accounting Research* 32 (Supplement): 1-30.

CFA Institute Center. 2008. June survey where do you stand? Results on auditors. Charlottesville, VA: CFA Institute.

Chambers, A.E., and S.H. Penman. 1984. Timeliness of reporting and stock price reaction to earnings announcements. *Journal of Accounting Research* 22: 21-47.

Chan, L., J. Lakonishok, and B. Swaminathan. 2007. Industry classifications and return comovement. *Financial Analyst Journal* 63 (6): 56-70.

Chaney, P., D. Jeter, and L. Shivakumar. 2004. Self-selection of auditors and audit pricing in private firms. *The Accounting Review* 79 (1): 51-72.

Chen, S., S.Y.J. Sun, and D. Wu. 2010. Client importance, institutional improvements, and audit quality in China: An office and individual auditor level analysis. *The Accounting Review* 85: 127-158.

Cheng, C.S.A., and R. McNamara. 2000. The valuation accuracy of the price-earnings and price-book benchmark valuation methods. *Review of Quantitative Finance and Accounting* 15 (4): 349-370.

Cheng, C.S.A., and H. Zhang. 2011. The effect of earnings comparability on the informativeness of earnings smoothing. Working paper, Louisiana State University.

Choy, A.K., and R.R. King. 2005. An experimental investigation of approaches to audit decision making: An evaluation using systems-mediated mental models, *Contemporary Accounting Research* 22 (2): 311-350.

Christie, A., and J.L. Zimmerman. 1994. Efficient and opportunistic choices of accounting procedures: Corporate control contests. *The Accounting Review* 69 (4): 539-566.

Chung, H., and S. Kallapur. 2003. Client importance, nonaudit services, and abnormal accruals. *The Accounting Review* 78: 931-955.

Cooper, I., and L. Cordeiro. 2008. Optimal equity valuation using multiples: The number of comparable firms. Working paper, London Business School.

Craswell, A., J. Francis, and S. Taylor. 1995. Auditor brand name reputations and industry specializations. *Journal of Accounting and Economics* 20: 297-322.

Cushing, B. 1989. Discussion of the association between audit technology and audit delay. *Auditing: A Journal of Practice & Theory* (Supplement): 38-47.

Dao, M., K. Raghunandan, and D.V. Rama. 2012. Shareholder voting on auditor selection, audit fees, and audit quality. *The Accounting Review*, forthcoming.

Davies, B., and G.P. Whittred. 1980. The association between selected corporate attributes and timeliness in corporate reporting: Further analysis. *Abacus* 16 (1): 48-60.

Davis, L.R., D.N. Ricchiute, and G. Trompeter. 1993. Audit effort, audit fees, and the provision of nonaudit services to audit clients. *The Accounting Review* 68 (1): 135-150.

De Franco, G., S.P. Kothari, and R.S. Verdi. 2011. The benefits of financial statement comparability. *Journal of Accounting Research* 49 (4): 895-931.

DeAngelo, L. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3: 183-199.

Dechow, P.M., and I. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77 (4): 35-59.

DeFond. M., Hu, X., Hung, M., and S. Li. 2011. The impact of mandatory IFRS adoption on foreign mutual fund ownership: The role of comparability. *Journal of Accounting and Economics* 51(3): 240-258.

DeFond, M.L., and M. Hung. 2003. An empirical analysis of analysts' cash flow forecasts. *Journal of Accounting and Economics* 35 (1): 73-100.

DeFond, M.L., and J. Jiambalvo. 1994. Debt covenant effects and the manipulation of accruals. *Journal of Accounting and Economics* 17 (1): 145-176.

DeFond, M.L., and K.R. Subramanyam. 1998. Auditor changes and discretionary accruals. *Journal of Accounting and Economics* 25 (1): 35-67.

Dunn, K.A., and B.W. Mayhew. 2004. Audit firm industry specialization and client disclosure quality. *Review of Accounting Studies* 9: 35-58.

Dye, R. 1993. Auditing standards, legal liability and auditor wealth. *Journal of Political Economy* 101: 887-914.

Dyer, J.C., and A.J. McHugh. 1975. The timeliness of the Australian annual report. *Journal of Accounting Research* 13 (2): 204-220.

Eilifsen, A., W.R. Knechel, and P. Wallage. 2001. Application of the business risk audit model: A field study. *Accounting Horizons* 15 (3): 193-207.

Engelberg, J., A. Ozoguz, and S. Wang. 2010. Know thy neighbor: Industry cluster, information spillover and market efficiency. Working Paper, University of North Carolina at Chapel Hill.

Erickson, M., and B.W. Mayhew. 2000. Why do audits fail? Evidence from Lincoln Savings and Loan, *Journal of Accounting Research* 38 (1): 165-194.

Ettredge, M., D. Simon, D.B. Smith, and M. Stone. 2000. Would switching to timely reviews delay quarterly and annual earnings releases? *Review of Quantitative Finance and Accounting* 14 (2):111-130.

Fairfield, P., S. Ramnath, and T.L. Yohn. (2009). Do industry-level analyses improve forecasts of financial performance? *Journal of Accounting Research* 47 (1): 147-178.

Fama, E.F., and K.R. French. 1993. Common risk factors in the returns on bonds and stocks. *Journal of Financial Economics* 33: 3-56.

Fama, E.F., and K.R. French. 1996. Multifactor explanations of asset pricing anomalies. *The Journal of Finance* 51: 55-84.

FASB. 1980. Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information. Available at http://www.fasb.org/pdf/con2.pdf

Ferguson, A., J.R. Francis, and D.J. Stokes. 2003. The effects if firm-wide and office-level industry expertise on audit pricing. *The Accounting Review* 78: 429-448.

Francis, J., R. LaFond, P. Olson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295-327.

Francis, J., P. Olsson, and D. Oswald. 2000. Comparing the accuracy and explainability of dividend, free cash flow, and abnormal earnings equity value estimates. *Journal of Accounting Research* 38: 45-70.

Francis, J., and K. Schipper. 1999. Have financial statement lost their relevance? *Journal of Accounting Research* 37: 319-352.

Francis, J.R., and J. Krishnan. 1999. Accounting accruals and auditor reporting conservatism. *Contemporary Accounting Research* 16: 135-165.

Francis, J.R., E.L. Maydew, and H.C. Sparks. 1999. The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice & Theory* 18: 17-34.

Francis, J.R., K. Reichelt, and D. Wang. 2005. The pricing of national and city-specific reputations for industry expertise in the U.S. audit market. *The Accounting Review* 80: 113-126.

Francis, J.R. 2011. A framework for understanding and researching audit quality. *Auditing: A Journal of Practice & Theory* 30 (2): 125-152.

Frankel, R.M., M.F. Johnson, and K.K. Nelson. 2002. The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review* 77 (Supplement): 71-105.

Geiger, M.A., and D.S. North. 2006. Does hiring a new CFO change things? An investigation of changes in discretionary accruals. *The Accounting Review* 81 (4): 781-809.

Geiger, M.A., and K. Raghunandan. 2001. Bankruptcies, audit reports, and the Reform Act. *Auditing: A Journal of Practice & Theory* 20 (1): 187-195.

Geiger, M.A., and K. Raghunandan. 2002. Auditor tenure and audit reporting failures. *Auditing: A Journal of Practice & Theory* 21 (1): 67-80.

Geiger, M.A., K. Raghunandan, and D.V. Rama. 1998. Costs associated with going-concern modified audit opinions: An analysis of auditor changes, subsequent opinions, and client failures. *Advances in Accounting* 16: 117-139.

Geiger, M.A., K. Raghunandan, and D.V. Rama. 2005. Recent changes in the association between bankruptcies and prior audit opinions. *Auditing: A Journal of Practice & Theory* 24 (1): 21-35.

Geiger, M.A., and D.V. Rama. 2003. Audit fees, nonaudit fees, and auditor reporting on stressed companies. *Auditing: A Journal of Practice & Theory* 22: 53-69.

Geiger, M.A., and D.V. Rama. 2006. Audit firm size and going-concern reporting accuracy. *Accounting Horizons* 20 (1): 1-17.

Givoly, D.M., and D. Palmon. 1982. Timeliness of annual earnings announcements: Some empirical evidence. *The Accounting Review* 57 (3): 486-508.

Gode, D., and P. Mohanram. 2003. Inferring the cost of capital using the Ohlson-Juettner model. *Review of Accounting Studies* 8 (4):399-431.

Gong, G., L.Y. Li, and L. Zhou. 2012. Earnings non-synchronicity and voluntary disclosure. *Contemporary Accounting Research*: forthcoming.

Gow, I.D., G. Ormazabal, and D.J. Taylor. 2010. Correcting for cross-sectional and time-series dependence in accounting research. *The Accounting Review* 85 (2): 483-512.

Gul, F.A., S.Y.K. Fung, and B. Jaggi. 2009. Earnings quality: Some evidence on the role of auditor tenure and auditors' industry expertise. Journal of Accounting and Economics 47: 265-287.

Gunny, K., and T. Zhang. 2009. PCAOB inspection reports and audit quality. Working paper, University of Colorado and Singapore Management University.

Hail, L., C. Leuz, and P. Wysocki. 2009. Global accounting convergence and the potential adoption of IFRS by the United States: An analysis of economic and policy factors. Working paper, University of Pennsylvania.

Hameed, A., R. Morck, J. Shen, and B. Yeung. 2010. Information, analysts, and stock comovement. Working paper, National University of Singapore.

Hansen, S.C., and J.S. Watts. 1997. Two models of the auditor-client interaction: Tests with United Kingdom data. *Contemporary Accounting Research* 14: 23-50.

Hopwood, W., J.C. McKeown, and J.F. Mutchler. 1994. A reexamination of auditor versus model accuracy within the context of the going-concern opinion decision. *Contemporary Accounting Research* 10 (2): 409-431.

Hou, K., M.A. Van Dijk, and Y. Zhang. 2012. The implied cost of capital: A new approach. *Journal of Accounting and Economics*, forthcoming.

Houston, R.W., M.F. Peters, and J.H. Pratt. 1999. The audit risk model, business risk and audit-planning decisions. *The Accounting Review* 74 (3): 281-298.

Hribar, P., and D. Collins. 2002. Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research* 40 (1): 105-134.

International Federation of Accountants (IFAC). 2008. Handbook of international auditing, assurance, and ethics pronouncements – Part I. New York, NY: IFAC.

Jenkins, D.S., G.D., Kane, and U. Velury. 2006. Earnings quality decline and the effect of industry specialist auditors: An analysis of the late 1990s. *Journal of Accounting and Public Policy* 25 (1): 71-90.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29 (2): 193-228.

Joos, P., and M. Lang. 1994. The effects of accounting diversity: Evidence from the European Union. *Journal of Accounting Research* 32: 141-168.

Khurana, I., and K. Raman. 2004. Litigation risk and the financial reporting credibility of Big 4 versus non-Big 4 audits: Evidence from Anglo-American countries. *The Accounting Review* 79 (2): 473-495.

Kim, Y., and S. Li. 2010. Mandatory IFRS adoption and intra-industry information transfer. Working paper, Santa Clara University.

Kim, J., Y. Li, and L. Zhang. 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics* 100: 639-662.

Kim, J., X. Liu, and L. Zheng. 2010. Does mandatory IFRS adoption impact audit fees? Theory and evidence. Working paper, City University of Hong Kong.

Kini, O., S. Mian, M. Rebello, and A. Venkateswaran. 2009. On the structure of analyst research portfolios and forecast accuracy. *Journal of Accounting Research* 47 (4): 867-909.

Kinney, W.R.,Jr., and L.S. McDaniel. 1993. Audit delay for firms correcting quarterly earnings. *Auditing: A Journal of Practice & Theory* 12 (2): 135-142.

Knapp, M.C. 1985. Audit conflict: An empirical study of the perceived ability of auditors to resist management pressure. *The Accounting Review* 60: 202-211.

Knechel, W.R., and J.L. Payne. 2001. Additional evidence on audit report lag. *Auditing: A Journal of Practice & Theory* 20 (1): 137-146.

Knechel, W.R., S. Salterio, and B. Ballou. 2007. Auditing: Assurance and Risk. 3rd edition. Cincinnati, OH: South-Western College Publishing.

Knechel, R.W., and A. Vanstraelen. 2007. The relationship between auditor tenure and audit quality implied by going concern opinions. *Auditing: A Journal of Practice & Theory* 26 (1): 113-131.

Kothari, S.P., A.J. Leone, and C.E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163-197.

Kothari, S.P., J.W. Lewellen, and J.B. Warner. 2006. Stock returns, aggregate earnings surprises, and behavioral finance. *Journal of Financial Economics* 79: 537-568.

Kothari, S.P., K., Ramanna, and D. Skinner. 2010. Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics* 50: 246-286.

Krishnan, G. 2003. Audit quality and the pricing of discretionary accruals. *Auditing: A Journal of Practice & Theory* 22 (1): 109-126.

Krishnan, G., 2003. Does Big 6 auditor industry expertise constrain earnings management? *Accounting Horizons* (Supplement): 1-16.

Krishnan, G., and W. Yu. 2011. Further evidence on knowledge spillover and the joint determination of audit and non-audit fees. *Managerial Auditing Journal* 26 (3): 230-247.

Krishnan, J., and J. Krishnan. 1997. Litigation risk and auditor resignations. *The Accounting Review* 72 (4): 539-560.

Kopp, L.S. and E. O'Donnell. 2005. The influence of a business-process focus on category knowledge and internal control evaluation. *Accounting, Organizations and Society*, 30 (5): 423-434.

Kross, W., and D.A. Schroeder. 1984. An empirical investigation of the effect of quarterly earnings announcement timing on stock returns. *Journal of Accounting Research* 22 (1): 153-176.

Land, M.H., and M. Lang. 2002. Empirical evidence on the evolution of international earnings. *The Accounting Review* 77 (supplement): 115-133.

Lang, M., and R. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71 (4): 467-492.

Lang, M., M. Maffett, and E. Owens. 2010. Earnings comovement and accounting comparability: The effects of mandatory IFRS adoption. Working paper, University of North Carolina.

Larcker, D.F., and S. Richardson. 2004. Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research* 42 (3): 625-658.

Larcker, D.F., and T.O. Rusticus. 2010. On the use of instrumental variables in accounting research. *Journal of Accounting and Economics* 49 (3): 186-205.

Lawrence, A., M., Minutti-Meza, and P. Zhang. 2011. Can big 4 versus non-big 4 differences in audit-quality proxies be attributed to client characteristics? *The Accounting Review* 86 (1): 259-286.

Lemon, M., K.W. Tatum, and W.S. Turley (2000) *Developments in the Audit Methodologies of Large Accounting Firms*. Hertford, U.K.: Stephen Austin & Sons, Ltd.

Lennox, C. 1999. Are large auditors more accurate than small auditors? *Accounting and Business Research* 29 (3): 217-227.

Lennox, C., and J.A. Pittman. Big Five audits and accounting fraud. *Contemporary Accounting Research* 27 (1): 209-247.

Lim, C.Y., and H-T, Tan. 2008. Non-audit service fees and audit quality: The impact of auditor specialization. *Journal of Accounting Research* 46 (1): 199-246.

Lipe, M.G., and S.E. Salterio. 2000. The balanced scorecard: Judgmental effects of common and unique performance measures. *The Accounting Review* 75 (3): 283-298.

Louwers, T.J. 1998. The relation between going-concern opinions and the auditor's loss function. *Journal of Accounting Research* 36 (1): 143-156.

Low, K.Y. 2004. The effect of industry specialization on audit risk assessments and audit planning decisions. *The Accounting Review* 79 (1): 201-209.

Mansi, S.A., Maxwell, W.F., and D.P., Miller. 2004. Does auditor quality and tenure matter to investors? Evidence from the bond market. *Journal of Accounting Research* 42 (4): 755-793.

McDaniel, L. 1990. The effects of time pressure and audit program structure on audit performance. *Journal of Accounting Research* 28 (2): 267-285.

McKeown, J.C., J.F. Mutchler, W. Hopwood, and T.B. Bell. 1991. Towards an explanation of audit failure to modify the audit opinion of bankruptcy companies. *Auditing: A Journal of Practice & Theory* 10 (Supplement): 1-13.

McNichols, M.F. 2002. Discussion of "The quality of accrual and earnings: The role of accrual estimation errors". *The Accounting Review* 77 (supplement): 61-69.

Meeks, G., and G. Swann. 2008. Accounting standards and the economics of standards. Working paper, University of Cambridge and University of Nottingham.

Merton, R.C. 1987. A simple model of capital market equilibrium with incomplete information. *The Journal of Finance* 42: 483-510.

Moroney, R., and P. Carey. 2011. Industry- versus task-based experience and auditor performance. *Auditing: A Journal of Practice & Theory* 30 (2): 1-18.

Murphy, K., R. Jako, and R. Anhalt. 1993. Nature and consequences of halo error: A critical analysis. *Journal of Applied Psychology* 78 (2): 218-225.

Mutchler, J.F., W. Hopwood, and J.M. McKeown. 1997. The influence of contrary information and mitigating factors on Audit Opinion Decisions on Bankrupt companies. *Journal of Accounting Research* 35 (2): 295-310.

Myers, J.N., L.A., Myers, and T.C. Omer. 2003. Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation. *The Accounting Review* 78: 779-799.

Neal, T.L., and R.R. Riley Jr. 2004. Auditor industry specialist research design. *Auditing: A Journal of Practice & Theory* 23 (2): 169-177.

Newton, J.D., and R.H. Ashton. 1989. The association between audit technology and audit delay. *Auditing: A Journal of Practice & Theory* 8 (Supplement): 22-37.

Nisbett, R., and T. Wilson. 1977. The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology* 35 (4): 250-256.

Nogler, G.E. 1995. The resolution of going concern opinions. *Auditing: A Journal of Practice & Theory* 14 (2): 54-73.

O'Donnell, E., and J. Schultz. 2005. The halo effect in business risk audits: Can strategic risk assessment bias auditor judgment about accounting details? *The Accounting Review* 80 (3): 921-938.

O'Keefe, T.B., R.D. King, and K.M. Gaver. 1994. Audit fees, industry specialization, and compliance with GAAS reporting standards. *Auditing: A Journal of Practice & Theory* 13: 41-55.

Ohlson, J.A. 1995. Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research* 11 (2): 661-687.

Owhoso, V.E., W.F. Messier, Jr., and J.G. Lynch, Jr. 2002. Error detection by industry specialized teams during sequential audit review. *Journal of Accounting Research* 40: 883-900.

Palmrose, Z-V. 1987. Litigation and independent auditors: The role of business failures and management fraud. *Auditing: A Journal of Practice & Theory* 6: 90-103.

Palmrose, Z-V. 1988. An analysis of auditor litigation and audit service quality. *The Accounting Review* 63 (1): 55-73.

Peecher, M., R., Schwartz, and I. Solomon. 2007. It's all about quality: Perspectives on strategic-systems auditing. *Accounting, Organizations and Society* 32 (4-5): 463-486.

Penman, S., and T. Sougiannis. 1998. A comparison of dividend, cash flow, and earnings approaches to equity valuation. *Contemporary Accounting Research* 15: 343-383.

Piotroski, J., and D. Roulstone. 2004. The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock price. *The Accounting Review* 79 (4): 1119-1151.

Rajgopal, S., D. Taylor, and M. Venkatachalam. 2011. Frictions in the CEO labor market: The role of talent agents in CEO compensation. *Contemporary Accounting Research* 15: 1-33.

Ramnath, S. 2002. Investor and analyst reaction to earnings announcements of related firms: An empirical analysis. *Journal of Accounting Research* 40 (5): 1345-1371.

Reichelt, K.J., and D. Wang. 2010. National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research* 48 (3): 647-686.

Revsine, L. 1985. Comparability: An analytic examination. *Journal of Accounting and Public Policy* 4 (1): 1-12.

Ricchiute, D.N. 2010. Evidence complexity and information search in the decision to restate prior-period financial statements. *Journal of Accounting Research* 48 (3): 687-724.

Richardson, S., I. Tuna, and P. Wysocki. 2010. Accounting anomalies and fundamental analysis: A review of recent research advances. *Journal of Accounting and Economics* 50 (2-3): 410-454.

Schipper, K., and L. Vincent. 2003. Earnings quality. *Accounting Horizons* 17: 97-110.

Schultz, J.J., J.L. Bierstaker, and E. O'Donnell. 2010. Integrating business risk into auditor judgment about the risk of material misstatement: The influence of a strategic-systems-audit approach. *Accounting, Organizations and Society* 35 (2): 238-251.

Seetharaman, A., F.A. Gul, and G.L. Stephen. 2002. Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets. *Journal of Accounting and Economics* 33: 91-115.

Shu, S. 2000. Auditor resignations: Clientele effects and legal liability. *Journal of Accounting and Economics* 29 (2): 173-205.

Simunic, D. 1980. The pricing of audit services: Theory and evidence. *Journal of Accounting Research* 18 (1): 161-190.

Simunic, D. 1984. Auditing, consulting, and auditor independence. *Journal of Accounting Research* 22: 679-702.

Simunic, D., and M.T. Stein. 1996. Impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing: A Journal of Practice & Theory* 15: 119-134.

Slovic, P., and D. MacPhillamy. 1974. Dimensional commensurability and cue utilization in comparative judgment. *Organizational Behavior and Human Performance* 11 (2): 172-194.

Sohn, B. 2011. The effect of accounting comparability on earnings management. Working paper, City University of Hong Kong.

Solomon, I., M.D. Shields, and O.R. Whittington. 1999. What do industry-specialist auditors know? *Journal of Accounting Research* 37 (1): 191-208.

Srinivasan, S. 2005. Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research* 43 (2): 291-334.

St. Pierre, K., and J.A. Anderson. 1984. An analysis of the factors associated with lawsuits against public accountants. *The Accounting Review* 59: 242-263.

Stanley, J. D., and T. F. DeZoort. 2007. Audit firm tenure and financial restatements: An analysis of industry specialization and fee effects. *Journal of Accounting and Public Policy* 26: 131-159.

Stubben, S. 2010. Discretionary revenues as a measure of earnings management. *The Accounting Review* 85 (2): 695-717.

Taylor, M. 2000. The effects of industry specialization on auditor's inherent risk assessments and confidence judgments. *Contemporary Accounting Research* 17 (4): 693-712.

Teoh, S.H. 1992. Auditor independence, dismissal threats, and the market reaction to auditor switches. *Journal of Accounting Research* 30: 1-23.

Teoh, S.H., and T. Wong. 1993. Perceived auditor quality and the earnings response coefficient. *The Accounting Review* 68 (2), 346-366.

Watkins, A.L., W. Hillison, and S.E. Morecroft. 2004. Audit quality: A synthesis of theory and empirical evidence. *Journal of Accounting Literature* 23: 153-193.

Weber, J., and M. Willenborg. 2003. Do expert informational intermediaries add value? Evidence from auditors in Microcap IPOs. *Journal of Accounting Research* 41 (4): 681-720.

Whisenant, S., S. Sankaraguruswamy, and K. Raghunandan. 2003. Evidence on the joint determination of audit and nonaudit fees. *Journal of Accounting Research* 41 (4): 721-744.

Wu, G.H. 2006. An economic analysis of audit and nonaudit services: The trade-off between competition crossovers and knowledge spillovers. *Contemporary Accounting Research* 23 (2): 527-554.

Wu, S., and I.X. Zhang. 2011. Accounting integration and comparability: Evidence from relative performance evaluation around IFRS adoption. Working paper, University of Rochester and University of Minnesota.

Wyatt, A. 2005. Accounting recognition of intangible assets: Theory and evidence on economic determinants. *The Accounting Review* 80 (3): 967-1003.

APPENDIX I
VARIABLE DEFINITIONS

Research Variables:

$Comp^{Acct}$	=	The absolute value of the difference of the predicted value of a regression of firm *i*'s earnings on firm *i*'s return using the estimated coefficients for firms *i* and *j* respectively. It is calculated for each firm *i* – firm *j* pair, ($i \neq j$), *j* = 1 to *J* firms in the same two-digit SIC industry as firm *i*.
$Comp^{A5}$	=	The average of the five highest $Comp^{Acct}$ values for firm *i*.
$Comp^{Earn}$	=	The R^2 from a regression of firm *i*'s annual earnings on the annual earnings of firm *j*, controlling for accounting choice heterogeneity (ACH), over rolling 6 years, is calculated for each firm *i* – firm *j* pair, ($i \neq j$), *j* = 1 to *J* firms in the same two-digit SIC industry as firm *i*. A firm-level measure is calculated by taking the average of all the firm *i* – firm *j* measures.
$Comp^{E5}$	=	The average of the five highest $Comp^{Earn}$ values for firm *i*.
$Comp^{CFO}$	=	The R^2 from a regression of firm *i*'s annual operating cash flows on the annual operating cash flows of firm *j*, over rolling 6 years, is calculated for each firm *i* – firm *j* pair, ($i \neq j$), *j* = 1 to *J* firms in the same two-digit SIC industry as firm *i*. A firm-level measure is calculated by taking the average of all the firm *i* – firm *j* measures.
$Comp^{C5}$	=	The average of the five highest $Comp^{CFO}$ values for firm *i*.
$Comp^{RET}$	=	The R^2 from a regression of firm *i*'s quarterly cumulative returns on quarterly cumulative returns of firm *j*, over rolling 16 quarters, is calculated for each firm *i* – firm *j* pair, ($i \neq j$), *j* = 1 to *J* firms in the same two-digit SIC industry as firm *i*. A firm-level measure is calculated by taking the average of all the firm *i* – firm *j* measures.
GCAO	=	A dummy variable, 1 if auditor issues a going-concern audit opinion, and 0 otherwise.
Accuracy	=	Auditor's opinion is accurate (*Accuracy* =1) if a going-concern is issued and the client subsequently occurs negative operating cash flow or negative book value, not accurate (*Accuracy* = –1) if a going-concern is not issued but the client subsequently occurs negative operating cash flows, or issued to subsequently viable clients (viability means, in the following year, 2 out 4 quarterly ROAs are positive, or annual ROA is nonnegative). *Accuracy* is 0 otherwise.
FEE	=	The natural log format of total audit fees during the fiscal year.

SPEC	=	A dichotomous variable equal to 1 if the auditor is a joint city and national industry specialist following Reichelt and Wang (2010), based on their definition 2 of industry market share (on p.656), 0 otherwise.
BigN	=	An indicator variable equals to 1 if the auditor is a Big 4/5/6 auditor, and 0 otherwise.
Delay	=	The square root of the number of calendars days from fiscal year-end to the date of the auditor's report.
PMACA	=	Performance-matched abnormal current accruals, following Francis et al. (2005).
ICC	=	The *ex ante* cost of equity capital following Hou et al. (2012).
AFA	=	Analysts forecast accuracy, the absolute value of the forecast error multiplied by -100, scaled by the stock price at the end of the prior fiscal year, where the forecast error is the I/B/E/S analysts' mean annual earnings forecast less the actual earnings as reported by I/B/E/S.

Control Variables:

SIZE	=	The natural log of market value of common equity at fiscal year-end.
lnSales	=	The natural log of sales (in thousands of dollars).
lnBM	=	The natural log of the ratio of book value to market value.
ROA	=	Return on assets, net income before extraordinary items, scaled by lagged assets.
L1ROA	=	Prior year return on assets.
CashVol	=	The standard deviation of cash flows (*OANCF–XIDOC*), scaled by lagged assets, over rolling 6 years (requiring a minimum of four years of data to estimate).
EP	=	Earnings persistence, regression of AR(1) model, over rolling 16 quarters (requiring a minimum of 8 quarters of data to estimate).
LOSS	=	A dummy variable, 1 if net income before extraordinary items is negative, and 0 otherwise.
CI	=	Client importance, calculated as client *i*'s total assets to the sum of the total assets of all the clients of an auditor *j* at the same year (Chen et al. 2010), $CI_{it} = \frac{TA_{it}}{\sum_{i=1}^{N} TA_{jt}}$.
LEV	=	Financial leverage, calculated as long term debt plus debt in current liabilities, scaled by total assets.

OWN	=	The client's concentration of ownership. It is measured by natural logarithm of the client's number of common shares outstanding divided by the number of common shareholders.
Altman	=	Altman (1983) Z score, measure of the probability of bankruptcy, with a lower value indicating greater financial distress, following, e.g., DeFond and Hung (2003); Rajgopal et al. (2011).
LITI	=	An indicator variable that takes the value of 1 if the firm operates in a high-litigation industry and 0 otherwise. High-litigation industries are industries with SIC codes 2833-2836 (Biotech), 3570-3577, 7370-7374 (computer), 3600-3674 (electronics), 5200-5961 (retailing), following, e.g., Frankel et al. (2002) and Ashbaugh et al. (2003).
TECH	=	An indicator variable equal to 1 when firm is in high technology industries (SIC code the 2830s, 3570s, 7370s, 8730s, and between 3825 and 3829), and 0 otherwise.
LEV	=	Financial leverage, calculated as long term debt plus debt in current liabilities, scaled by total assets.
SalesG	=	Yearly sales growth.
AGE	=	The inverse value of firm age based on the CRSP return data.
CURR	=	The current ratio, calculated as current assets divided by current liabilities.
Quick	=	The quick ratio, calculated as current assets less inventory, scaled by current liabilities.
Export	=	The ratio of foreign sales to total sales.
SEG	=	Square root of the number of business segments.
|*SPI*|	=	The absolute value of special items divided by total assets (|*spi/at*|).
Tenure	=	The number of consecutive years that firm *i* has retained the auditor since 1974 at year *t*.
CFO	=	Annual cash flows from operations less cash flows from extraordinary items, (*OANCF–XIDOC*), following the approach in Hribar and Collins (2002), scaled by prior-year total assets;
DCF	=	A dummy variable of *CFO*, if positive it is coded as 1, 0 otherwise.
TAcc	=	Total accruals (earnings less operating cash flows) scaled by total assets.

$\|DA\|$	=	The absolute value of discretionary accruals scaled by lagged assets, calculated from the Kothari et al. (2005) performance-adjusted accruals model of Jones (1991).
ISSUE	=	A dummy variable set equal to 1 when the client firm issued equity or long-term debt during the year that is greater than 5% of total assets.
Restate	=	1 if there is a subsequent financial restatement, 0 otherwise.
ACH	=	Accounting choice heterogeneity following DeFond and Hung (2003).
AudChg	=	1 if there is the auditor change during the fiscal year, 0 otherwise.
Beta	=	Stock beta (systematic risk) calculated over the 36 months ending in the month of the fiscal year-end.
EXCH	=	1 if firm is listed on the New York or American Stock Exchange, and 0 otherwise.
UE	=	Unexpected earnings, measured as (net income at year $t+1$ – net income at year t)/market value of equity at the end of year t;
FOL	=	The natural logarithm of one plus the number of analysts following the client.
Horizon	=	The natural logarithm of the average number of calendar days between forecast announcement date and subsequent earnings announcement date.

APPENDIX II
MEASURES OF IMPLIED COST OF CAPITAL

Following Khurana and Raman (2004) and Lawrence et al. (2011), I use the *ex ante* cost-of-equity capital to proxy for audit quality. Hou et al. (2012) propose a new approach to estimate the implied cost of capital (*ICC*). The new approach is distinct from prior studies in what they do not rely on analysts' earnings forecast to compute the *ICC*. It is a cross-sectional model to forecast the earnings of individual firms. The approach enjoys two major advantages: 1) it allows estimating the *ICC* for a much larger sample of firms over a much longer time period; 2) it is not affected by the various issues that lead to well-documented biases in analysts' forecasts. According to Hou et al. (2012), the cross-sectional earnings model delivers earnings forecast that outperform consensus analysts forecast as they present evidence on the implications for the equity premium and a variety of asset pricing anomalies.

I follow Hou et al. (2012) to compute firm-level *ex ante* cost of capital. I estimate the following pooled cross-sectional regressions using the previous ten years (three years minimum) of data:

$$E_{it+\tau} = a_0 + a_1 V_{it} + a_2 A_{it} + a_3 D_{it} + a_4 DD_{it} + a_5 E_{it} + a_6 LOSS_{it} + a_7 TAcc_{it} + \varepsilon_{it+\tau}$$

where:

$E_{it+\tau}$ = Earnings of firm *i* in year $t+\tau$ ($\tau = 1, 2,$ or 3);

V_{it} = The market value of the firm;

A_{it} = The total book assets;

D_{it} = The dividend payment;

DD_{it} = A dummy variable that equals 0 for dividend payers and 1 for non-payers;

$LOSS_{it}$ = A dummy variable that equals 1 for firms with negative earnings (0 otherwise);

$TAcc_{it}$ = The operating accruals (earnings less operating cash flows).

All explanatory variables are measured at the end of year *t*. This model is also consistent with the fundamental forecasting framework proposed by Richardson et al. (2010). I use the model to forecast dollar earnings for the next three years. In addition, it is a common practice in the literature to use dollar earnings forecasts in the residual income model to estimate the *ICC*. That is to say, I am concerned about overweighting firms with extreme earnings in the regressions. To mitigate the influence of such observations, I winsorize earnings and other level variables each year at the 0.5% and 99.5% percentiles (observations beyond the extreme percentiles are set to equal to the values at those percentiles).[43]

For each firm and each year *t* in the sample, I estimate expected earnings for year *t+1*, *t+2*, and *t+3* (i.e., $E_t[E_{t+1}]$, $E_t[E_{t+2}]$, and $E_t[E_{t+3}]$) by multiplying the independent variables observed at the end of year *t* with the coefficients from the pooled regression estimated using the previous ten years (three years minimum) of data. This is to ensure that earnings forecasts are strictly out of sample (that is, all information that is required to forecast earnings for year *t+1*, *t+2*, and *t+3* is available at the end of year *t*). Note that I only require a firm to have non-missing values for the independent variables for year *t* to calculate its earnings forecasts. As a result, the survivorship requirement is minimal.

The *ICC* for a given firm is the internal rate of return that equates the current stock price to the present value of expected future cash flows. One common approach to estimate the *ICC* is to use the discounted residual income model, which has the following general form:

$$P_{it} = BPS_{it} + \sum_{k=1}^{\infty} \frac{E_t[(ROE_{it+k} - R_i) \times BPS_{it+k-1}]}{(1+R_i)^k} \quad \text{(A-1)}$$

where:

[43] I also carry out robustness checks by scaling the earnings (and the other variables in the earnings regressions) using total assets, market equity, sales, or net operating assets and obtain similar results.

P_{it}	=	The stock price of firm *i*;
R_i	=	The implied cost of equity capital (*ICC*);
BPS_{it}	=	The book equity per share;
$E_t[]$	=	Market expectation;
ROE	=	The after-tax return on book equity;
$(ROE_{it+k} - R_i) \times BPS_{it+k-1}$	=	The firm's residual income for year $t+k$, defined as the difference between the *ROE* and the *ICC* multiplied by book equity per share for the previous year.

Intuitively, a firm's residual income measures its ability to earn income beyond that required by equity investors. Assuming "Clean Surplus" accounting, equation (A-1) is equivalent to the familiar dividend discount model.[44] Previous studies (e.g., Penman and Sougiannis 1998; Francis et al. 2000; Gebhardt et al. 2001) argue that the residual income model does a better job in capturing the effect of economic profits on firm value, and the resulting valuation is less sensitive to assumptions about long-term growth rates. I compute the *ICC* as the cost of capital R_i that solves an adapted version of equation (A-1):

$$M_{it} = B_{it} + \sum_{k=1}^{11} \frac{E_t[(ROE_{it+k} - R_i) \times B_{it+k-1}]}{(1+R_i)^k} + \frac{E_t[(ROE_{it+12} - R_i) \times B_{it+11}]}{R_i \times (1+R_i)^{11}} \quad \text{(A-2)}$$

Equation (A-2) is identical to the model of Gebhardt et al. (2001), but expresses firm valuation in terms of market equity (M_{it}) and book equity (B_{it}) instead of stock price and book equity per share. In line with Gebhardt et al. (2001), I estimate expected ROE for year $t+1$ to $t+3$ using the earnings forecasts from the cross-sectional model and book equity determined based on clean surplus accounting ($B_{it+\tau} = B_{it+\tau-1} + E_{it+\tau} - D_{it+\tau}$, where $D_{it+\tau}$ is the dividend for year $t+\tau$, computed using the current dividend payout ratio for firms with positive earnings, or using current dividends divided by 0.06 × total assets (A_{it}) as an estimate of the payout ratio for firms

[44] "Clean Surplus" accounting requires that all gains and losses affecting book equity are included in earnings. In other words, the change in book equity is equal to earnings minus net dividends (Ohlson 1995).

with negative earnings). After year *t+3*, I assume that the ROE mean-reverts to the historical industry median value by year *t+11*, after which point the residual income becomes perpetuity. As in Gebhardt et al. (2001), I exclude loss firms when calculating the industry median ROE. I estimate the *ICC* for each firm at the end of June of each calendar year *t* using the end-of-June market value and the earnings forecasts at the previous fiscal year end. I follow previous studies and discard negative *ICC* estimates. In addition, I winsorize the *ICC* estimates at the 0.5% and 99.5% percentiles to minimize the impact of outliers. However, the main results are robust to relaxing the non-negativity restriction or removing the winsorization. I match the *ICC* estimates of individual firms with their annual stock returns from July of year *t* to June of year *t+1*.

APPENDIX III
MEASURES OF ANALYST FORECAST ACCURACY

More recently, Behn et al. (2008) include analyst forecast accuracy as an audit-quality proxy. They argue that if one type of auditor increases the reporting reliability of earnings in comparison to the other type, then, *ceteris paribus*, analysts of the superior type's clients should be able to make more accurate forecasts of future earnings than those analysts of the non-superior type's clients. Using this reasoning, Behn et al. (2008) find that analysts of Big 4 clients have higher forecast accuracy than analysts of non-Big 4 clients. I use analyst forecast accuracy as the third audit quality measure to proxy for an enhanced level of decision making by sophisticated financial statement users. Lawrence et al. (2011) also use analyst forecast accuracy as an additional proxy for audit quality.

In fact, the type of audit firms (e.g., Big 4 or non-Big 4) does not always differentiate audit quality. Anecdotal evidence according to a 2008 CFA Institute survey of 617 CFA investment analysts shows that the majority of analysts do not prefer Big 4 auditors to non-Big 4 auditors. Specifically, only 41 percent of the respondents generally indicated that they had a preference for firms using "brand-name" auditors; moreover, only 15 percent of the respondents thought that the attractiveness of a company as an investment is detracted when a smaller company switches to a lower-cost auditor that may be more efficient and cost-effective (CFA Institute Center 2008).

Forecast accuracy (AFA_t) is measured by the negative of the absolute value of forecast error scaled by stock price at time *t*-1, following Lang and Lundholm (1996). I denote by $FORECAST_t^{t-1}$ the mean I /B/E/S consensus forecast of period *t* earnings made during the period starting two months before the corresponding actual earnings announcement and ending three

days before the announcement; by EPS_t I denote actual earnings per share before extraordinary items at time *t*, taken from I/B/E/S, and by $PRICE_{t-1}$ the stock price at the end of period *t*-1. I remove the influence of stale forecasts by using only the most recent forecast for the calculation of the mean if an analyst announces multiple forecasts during the period. Then, forecast accuracy is defined as:

$$AFA_t = (-1)\frac{|FORECAST_t^{t-1} - EPS_t|}{PRICE_{t-1}}$$

Observations having *AFA* variable smaller than -1.5 (about 1% of the distribution in this study) are removed as outliers. The results are not sensitive to difference outlier control approaches.

I also compute a slightly different measure of analyst forecast accuracy (*AFA*), the absolute value of the forecast error, following De Franco et al. (2011):

$$AFA_{it} = (-100)\frac{|Forecast\ EPS_{it} - Actual\ EPS_{it}|}{PRICE_{it-1}},$$

where *Forecast* EPS_{it} is analysts' mean I/B/E/S forecast of firm-*i*'s annual earnings for year *t*. For a given fiscal year (e.g., December of year *t+1*) I collect the earliest forecast available during the year (i.e., I use the earliest forecast from January to December of year *t+1* for a December fiscal year-end firm). *Actual* EPS_{it} is the actual amount announced by firm *i* for fiscal period *t+1* as reported by I/B/E/S. $PRICE_{it-1}$ is the stock price at the end of the prior fiscal year. Because the absolute forecast error is multiplied by -100, higher values of *AFA* imply more accurate forecasts.

I also measure optimism in analysts' forecasts (*Optimism*) using the singed forecast error:

$$Optimism_{it} = 100 \times \frac{|Forecast\ EPS_{it} - Actual\ EPS_t|}{PRICE_{it-1}}.$$

VITA

Joseph (Hongbo) Zhang was born and grew up in Zhoushan, China. He attended Zhejiang University and earned a Bachelor Degree in Science. He also earned two graduate degrees from University of Illinois, Master of Science and Master of Accounting, respectively. His professional working experience includes staff accountant in the headquarters office of Archer Daniels Midland Company, a Fortune-100 U.S. company. He is a Certified Public Accountant with the State of Illinois.

His teaching interests are in financial accounting, cost accounting, and auditing. He has had teaching experience in financial accounting and managerial accounting courses. His current research interests focus on empirical financial accounting and auditing research. Before he earned the doctorate degree in accounting from Louisiana State University, he presented a paper in the AAA annual meeting and another paper in the AAA Financial Accounting and Reporting Section mid-year meeting.