

Some Controversies in the Auditing Literature

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Introduction

This essay presents our views on some important controversial issues in the auditing literature. Our objective is to help researchers gain a deeper understanding of audit quality, both conceptually and empirically. We begin with a discussion of whether researchers should study audit quality, because a recent paper questions the fundamental value of audit quality research (Donovan, Frankel, Lee, Martin and Seo, 2014). We next address the controversy over whether the auditor's responsibility is limited to the assurance of GAAP compliance, or whether it extends to fair presentation. This debate is critical in understanding the conceptual meaning of audit quality. Next we discuss several concerns regarding the validity of some commonly used measures of audit quality, including restatements, accruals, and going concern opinions. We present a systematic analysis of the sources and magnitudes of the measurement errors embedded within these measures, which we hope will help guide researchers in their use of these proxies. Finally, we provide some insights into the heated debate over the effectiveness of the PCAOB's inspection program by reviewing the recent empirical archival literature that addresses whether the inspections favorably impact audit quality.

1. Controversy #1: Should researchers study audit quality (AQ)?

Donovan, Frankel, Lee, Martin and Seo (2014) (hereafter DFLMS) question whether investors care about AQ and hence whether research on AQ has value. They further suggest that research on AQ could harm society by encouraging unwarranted regulation. Their views are reflected in the quotes below:

“We question whether audit-quality differences among publicly traded companies are of significant interest to investors, clients, and auditors and ask for research on this topic.” (DFLMS Abstract)

“A focus on audit quality bends research to topics of interest to regulators who emphasize higher audit quality based on a belief that auditors should do their utmost to prevent firms from managing earnings or committing fraud.” (DFLMS, page 327)

We sequentially critique each of these two issues.

1.1 Do investors care about audit quality?

1.1.1 DFLMS’s questionable premise

The conceptual basis for DFLMS’s doubts about the value of AQ research is their faith in the ability of free markets to generate Pareto-efficient outcomes. Specifically:

“We [researchers] tend not to concern ourselves with the quality of products that result from a competitive equilibrium where we believe that consumers and producers are acting rationally with full information.” (DFLMS, page 329)

This quote is based on the first fundamental welfare theorem in economics, which assumes that market participants are fully informed and markets are perfectly competitive. However, it is widely accepted that these assumptions are highly unrealistic. We are somewhat surprised that the authors of DFLMS, all of whom are accounting researchers, would argue that markets are characterized by full information. If this were true, there would be no need for accounting in the first place, let alone auditing. Financial accounting exists because investors are imperfectly informed about the companies in which they invest. Likewise, auditing exists because investors are imperfectly informed about the reliability of the financial statements. If DFLMS’s premise were true, and investors were fully informed, then researchers should cease doing both accounting and auditing research. On the other hand, if market participants are not fully informed, then DFLMS’s suggestion that investors do not care about AQ is based on a false premise.

In contrast to DFLMS's full information premise, auditing theory is grounded in the more realistic premise that managers, auditors, and investors are asymmetrically informed. Auditing researchers generally accept that investors are imperfectly informed about AQ because audits are “credence goods.” A credence good is one in which the consumer is imperfectly informed about its quality even after the consumer experiences it. Audits are credence goods because investors are typically unsure of the level of AQ even after the audit is completed. Thus, the full information assumption in DFLMS is particularly questionable with regard to AQ research.

1.1.2 DFLMS's questionable analogy

DFLMS draws an analogy between AQ and airline safety, and argues that most people do not care about airline safety when they purchase airline tickets:

“When we fly, arriving alive is of overriding importance, but price and schedule determine our ticket purchase. The variation in flight safety across our choice set is too small to affect our decision. Customers do not seek information on safety, and airlines do not distinguish themselves on safety. This logic suggests that if cross-sectional variation in audit quality matters, we would expect attempts by high-quality auditors to differentiate themselves from low quality auditors. We would see some clients purchasing high quality audits and advertising this fact. We would expect to see investors seeking information on audit quality.” (DFLMS, page 330)

We find the parallel between airline safety and AQ problematic for several reasons.

One is that DFLMS do not explain why US airline passengers are unconcerned about cross-sectional variation in flight safety. We conjecture that this is because flight safety is heavily regulated by the US Federal Aviation Administration (FAA). This is an example of regulation helping markets perform better, in this case by ensuring passenger confidence that flying is safe. We acknowledge, however, that the FAA may have gone too far, and that the level of airline regulation could be too high. In other words, society may be better off with less aviation regulation, more aircraft crashes, and cheaper flights. However, this is not a policy we would be comfortable prescribing. Similarly, the regulated level of AQ might be higher than the socially

optimal level of AQ. In other words, US markets may be better off with less audit regulation, more audit failures, and cheaper audits. But this is also not a policy we would be comfortable prescribing.

A second problem with the analogy is that passengers DO consider flight safety when doubts are raised about the effectiveness of regulation. Consider for example, the mysterious disappearance of Malaysian Airline's flight 370, which led to allegations of political involvement and the subsequent collapse in the market share of Malaysian Airlines (Delmore, 2014; Yan, 2014). This episode illustrates that passengers are concerned about flight safety when they lose confidence in the ability of the airline and regulators to assure safety. Moving beyond this anecdotal example, academic research finds evidence that customers are reluctant to fly with airlines following plane crashes (Mitchell and Maloney 1989). Similarly, investors are more cautious about accounting and audit quality following the wave of accounting frauds in the early 2000's.

In the absence of external regulation, passengers would find it very costly to become fully informed about flight safety because, like auditing, flying is also a "credence" good. For example, if a plane has a 5% risk of crashing and you arrive safely, you cannot be sure that the risk of crashing was (only) 5%. In the absence of regulation, information asymmetry would provide incentives for airlines to compromise on safety, because passengers are unable to directly assess airline safety. For example, passengers cannot assess the airline's maintenance procedures, or evaluate its pilot training program, because these activities are not publicly observable. If an airline compromises on safety to cut costs, it creates competitive pressure on other airlines to similarly compromise on safety. The increased risk of flying would eventually result in more plane crashes and a reduction in passenger demand for flying. Ultimately, these

negative externalities can lead to a “race to the bottom” with each airline compromising on safety because the loss of passengers affects their competitors as well as themselves. Eventually this would lead to passengers refusing to get on any plane, and consequently the collapse of the entire market. These negative externalities provide a theoretical justification for why we observe regulation in markets such as airlines and audits. Thus, DFLMS’s assertion that passengers do not care about airline safety is unsupported. Rather, DFLMS’s example of flight safety speaks to the importance of regulation in assuring that passengers remain confident enough to get on a plane, and that investors remain confident enough to keep investing.

Finally, DFLMS ignore some fundamental differences between the market for air travel and the market for audits. One important difference is that the failure rate for air travel is much lower than the failure rate for audits. Specifically, the airline fatality rate is 1.5 fatalities per 100 million miles traveled, whereas the rate at which audited financial statements are restated is approximately 2-5% over the past decade. Further, since some material misstatements may not necessarily result in restatements, the statistics on restatements are likely to understate the true failure rate. Although this is not an apples-to-apples comparison, airline failures are obviously much less common than audit failures, which suggests that cross-sectional variations in airline safety are likely to be much smaller than the cross-sectional variations in audit quality.

1.1.3 DFLMS’s questionable evidence

DFLMS support their suggestion that investors do not care about AQ using two empirical observations. The first is that only 1% of analysts mention the term “audit” in conference calls and only 0.2% mention “audit” in research reports. The second observation, drawn from Francis, Wang, and Mayhew (2005), is that the variation in audit fees declined in the years following mandated fee disclosures in 2000. DFLMS argue that high audit fees communicate high AQ, so

clients have incentives to buy more auditing services to communicate that they value high AQ. They interpret the decline in the variation of audit fees as evidence that “clients lack incentives to demonstrate higher audit quality than their peers” (DFLMS, page 330).

We believe these two observations are much too weak to draw such strong inferences. As DFLMS acknowledge, searching for the term “audit” in analysts’ reports and conference calls is likely to understate analysts’ concerns for AQ, because analysts commonly raise questions about accounting issues, which would reflect potential concerns about AQ even if the word “audit” is not mentioned. DFLMS’s inference about the decline in audit fee variation is flawed for several reasons. First, Francis, Wang, and Mayhew (2005) do not compare the variance in audit fees before versus after mandatory fee disclosure, since fees data are unavailable before their mandatory public disclosure. Rather, they document that fee variation declines in the second year of public disclosure (2001) as compared with the first year of public disclosure (2000). Second, even if fee variation declined after public disclosure, this would only suggest that fee disclosure had led to increased benchmarking. It would not imply that there are no differences in the demand for audit services across clients. Third, DFLMS ignore compelling evidence that investors do care about AQ, and that investors recognize that AQ varies. For example, there is ample evidence that private companies voluntarily choose to be audited (Blackwell et al. 1998; Lennox and Pittman, 2011), and companies with higher agency costs choose higher quality auditors, consistent with these clients having incentives to demonstrate higher AQ (Francis and Wilson 1988; DeFond 1992). Consistent with market participants valuing the variation in AQ, higher quality auditors command a fee premium (Francis, 1984; Craswell et al. 1995; Ireland and Lennox 2002); the market assigns higher ERCs and lower cost of capital to companies with higher quality auditors (Teoh and Wong, 1993; Khurana and Raman, 2004; Pittman and Fortin,

2004); stock prices react to the issuance of audit reports that contain going concern opinions (Menon and Williams, 2010); and investors punish companies with perceived threats to AQ, such as higher non-audit service fees (Higgs and Shantz, 2006; Francis and Ke, 2006; Krishnan, Sami, and Zhang, 2005; Khurana and Raman, 2006).

Survey evidence also suggests that analysts value AQ and recognize that it varies across engagements. Specifically, the Institute of Certified Financial Analysts (ICFA), which represents over 10,000 members, reports survey evidence that 72 percent of its members find the auditor's report important to their analysis, and 46 percent find it "very important."¹ The survey also reports that 72 percent of the ICFA members would like to see public disclosure of information that might have a bearing on the auditor's independence. Consistent with analysts valuing AQ, the ICFA has filed comment letters that strongly support the PCAOB's proposal to increase the amount of disclosure by auditors in their audit reports.²

1.2. Can research on AQ be harmful because it encourages unwarranted regulation?

1.2. 1. Does AQ research encourage more regulation?

DFLMS argue that AQ research supports a view that more AQ is always preferred, which encourages additional regulation to increase AQ. Specifically:

"A focus on audit quality bends research to topics of interest to regulators who emphasize higher audit quality based on a belief that auditors should do their utmost to prevent firms from managing earnings or committing fraud." (DFLMS, page 327)

"Audit-quality research suits regulators seeking levers to increase audit quality." (DFLMS, page 327)

"Researchers support the view that audit quality is unambiguously good by concentrating their efforts on the determinants of audit-quality." (DFLMS, page 329)

"Words like "competence," "quality" and "auditor independence" reinforce a view that more is better." (DFLMS, page 329)

¹ See (http://www.cfainstitute.org/Survey/independent_auditors_report_survey_results.pdf).

² See <http://pcaobus.org/Rules/Rulemaking/Docket034/143.pdf>.

These assertions are problematic for several reasons. First, many AQ studies have no relevance to regulation. For example, Section 3 of DeFond and Zhang (2014) discusses factors (such as agency costs) that drive the market demand for audit assurance. These studies take a market-based approach and have nothing to say about the desirability of regulation. Moreover, studying the determinants and consequences of AQ does not necessarily suggest that increased AQ or more regulation is desirable. For example, Lennox and Li (2014) find that private lawsuits against audit firms result in improved AQ. Their study speaks to the consequences of private litigation rather than public regulation. Similarly, the vast majority of AQ studies refrain from drawing conclusions about the desirability of more (or less) regulation. Therefore, DFLMS's assertion that AQ research encourages more regulation is irrelevant to much of the AQ literature.

Second, many AQ studies do not support the case for increased regulation. Section 5 of DeFond and Zhang (2014) reviews several studies that show unexpected and often negative consequences associated with increased regulation. For example, studies find that the adoption of Auditing Standard No. 2 led to over-auditing and excessive audit fees (Bronson, Hogan, Johnson, and Ramesh, 2011). Further, research suggests that some tax-related non-audit services (NAS), which were curtailed under SOX, actually increase AQ (e.g., Gleason and Mills 2011). Thus, it is misleading to intimate that AQ research generally supports a political call for increased regulation.

Third, while some AQ research can be misused to create political pressure for more regulation, we do not believe that this is grounds for dismissing AQ research altogether. At the time SOX was adopted, there were studies that both supported and refuted the assertion that NAS fees impair AQ (e.g., Frankel, Johnson and Nelson, 2002; DeFond, Raghunandan and

Subramanyan, 2002, respectively). The fact that regulators could have chosen either side to support their position does not mean that the effect of NAS on AQ was not worthy of study. Indeed, Watts and Zimmerman (1979) report that the exploitation of academic research by regulators is not unique to auditing. Thus, we do not believe AQ research is harmful simply because it may be used opportunistically by regulators (or the auditing profession).

1.2.2. Can empirical auditing research evaluate social welfare?

DFLMS are concerned that regulation leads to sub-optimally high levels of AQ and call for research on how regulation affects social welfare.

“We ask for research on whether auditors and their clients show behavior consistent with regulated audit quality exceeding the audit quality level demanded absent regulation.” (DFLMS, Abstract)

The optimal level of AQ occurs where the social marginal benefit equals the social marginal cost. The harsh reality, however, is that empirical researchers have no feasible means of accurately measuring the social marginal benefits and costs of auditing. Thus, it is impossible for empirical research to show that the socially optimal level of AQ is lower (or higher) than the prevailing level of AQ. The same is true for the socially optimal level of financial accounting quality. By proposing such a research agenda, DFLMS are essentially asking audit researchers to do something that is impossible.

1.3. Conclusion

We disagree with DFLMS's suggestion that investors do not care about AQ and that AQ research inevitably serves to encourage more regulation. Their assumption that investors are perfectly informed is unrealistic, their analogy between flight safety and AQ is problematic, their evidence is far too weak to support such claims, and they overlook a mountain of research suggesting that investors do care about AQ. We also take issue with DFLMS's suggestion that

researchers should cease studying AQ because it encourages more regulation. Much of the auditing literature neither addresses regulation, nor draws conclusions about the desirability of regulation. Even when AQ research does have implications for regulation, it is not grounds for dismissing this research altogether.

We also observe that DFLMS takes a free-market perspective, suggesting that unregulated audit markets are optimal. DFLMS's criticisms raise implicit questions about the form that regulation may take. Typically, we think of two forms of regulation: self-regulation and external public regulation. While we suspect that DFLMS is criticizing external governmental regulation, their criticism applies equally to self-regulation, because self-regulation is also unnecessary and potentially harmful if free markets are optimal. While DFLM seem to support a "corner solution," whereby unfettered free markets would provide "optimal" AQ, the current regulatory environment is actually a mix of free markets, self-regulation, and governmental regulation. Specifically, while audit firms remain in the private sector, with market-based incentives to maximize profits, the auditing profession is self-regulated (by the AICPA), and public company audits are externally regulated by the PCAOB. An alternative "corner solution" in the direction of more regulation would be to adopt an "IRS" model, whereby the inspectors replace the audit firms and perform the audits themselves. Indeed, regulators discussed whether auditors should be private firms or government employees during the inception of the SEC in the early 1930s (PCAOB, 2007). We acknowledge these alternatives merely to present a balanced discussion and we emphasize that we do not advocate either corner solution.

2. Controversy #2: Are auditors only responsible for assuring compliance with GAAP, or are they also responsible for assuring fair presentation?

In private correspondence with one of the authors (DeFond), Professor Zoe-Vonna Palmrose strongly objected to the characterization of auditors' responsibilities as described in DeFond and Zhang (2014). Professor Palmrose argued that auditors' responsibilities are limited to assuring compliance with GAAP. This is in contrast to DeFond and Zhang (2014), who argue that high quality auditors not only provide greater assurance of technical compliance with GAAP, but also provide greater assurance that the financial statements faithfully reflect the company's underlying economics (conditioned on the applicable GAAP). For convenience, we henceforth refer to Palmrose's view as the "narrow view" of auditors' responsibilities, and the view in DeFond and Zhang (2014) as the "broad view" of auditors' responsibilities.

We observe that we are not the first academics to criticize the narrow view proposed by Palmrose. Ball (2009) discusses the narrow view at great length, and laments that it may have arisen as a result of the "rule-checking" mentality that has crept over the accounting profession. Zeff (2007) also criticizes the narrow view, and provides an excellent chronicle of its historical origins and evolution. In addition to criticism from academics, the narrow view also has a long history of being rejected by regulators, federal legislators, and the courts. These institutions have consistently held the broader view that auditors' responsibilities extend beyond mere GAAP compliance. This is reflected in the following statement from the PCAOB:

"There is evidence, however, that some participants in the U.S. financial reporting community have *incorrectly* viewed the term "fairly presents in conformity with GAAP" to mean nothing more than *technical compliance* with the authoritative accounting pronouncements." (PCAOB 2005, emphasis added).

In this section, we discuss how the narrow view contradicts auditing standards, federal legislation, GAAP, and auditors' legal responsibilities as defined by the courts.

2.1 The narrow view of auditors' responsibilities contradicts auditing standards and federal legislation

The narrow view that auditors only opine on GAAP compliance omits a critical feature of the auditor's opinion. Specifically, it fails to acknowledge that auditors provide assurance that the financial statements are "fairly presented" in accordance with GAAP. PCAOB auditing standards explicitly require the auditor to render an opinion "as to whether the financial statements *present fairly* ... in conformity with GAAP" (AU 508.08, emphasis added). Thus, auditors do not merely opine on GAAP compliance, but also express an opinion on the *fair presentation* of the financial statements.

According to the FASB and the IASB, "fair presentation" of the financial statements *requires* "faithful representation" (FASB Concept Statement No. 8 BC3.44; IASB IAS 1, 1.15). To assure fair presentation, the PCAOB unambiguously requires auditors to consider substance over form. Specifically, auditors must "consider whether the *substance* of transactions or events differs materially from their *form*" (AU411.06, emphasis added). Notably, this is equivalent to the FASB's definition of "faithful representation," which is information that "represents the *substance* of an economic phenomenon rather than merely representing its legal *form*." (Concept Statement No. 8, BC3.26, emphasis added). Thus, providing assurance that the financial statements are *fairly presented* is equivalent to assuring that they are *representationally faithful*. Indeed, the Conceptual Framework explicitly acknowledges that: "*fair presentation*... describe[s] information that has the qualitative characteristics of relevance and *representational faithfulness*", and further states that the: "true and fair view or fair presentation are different words to describe information that has the qualitative characteristics of relevance and *representational faithfulness*" (BC3.44, emphasis added). Thus, "faithful representation" and "fair presentation" are equivalent concepts. Accordingly, DeFond and Zhang (2014) define high AQ as "greater assurance that the financial statements faithfully reflect the company's

underlying economics.” Hence, the discussion of auditors’ responsibilities in DeFond and Zhang (2014) is firmly rooted in authoritative auditing standards, which require not just compliance with GAAP, but also "fair presentation" and hence consideration of economic substance.

To support the narrow view of auditors' responsibilities, Professor Palmrose argued that auditors are not required to consider “faithful representation” because the Concept Statements are not authoritative GAAP. However, this narrow view is not only at odds with auditing standards (as noted above), but also contradicts federal legislation. SOX Section 302 mandates CEOs and CFOs to certify that the financial statements are fairly presented. Specifically, SOX 302(a)(3) requires “the financial statements, and other information included in the report, *fairly present* in all material respects the financial condition and results of operations of the issuer” (emphasis added). Critically, SOX 302 makes “fairly present” the sole criterion for management certification of the financial statements, and makes no reference to GAAP compliance (Zeff, 2007). In addition to US auditing standards and SOX 302, the IASB explicitly makes “faithful representation” part of authoritative accounting standards in IAS 1: “*Fair presentation* requires the *faithful representation* of the effects of transactions, other events, and conditions in accordance with the definitions and recognition criteria for assets, liabilities, income and expenses set out in the Framework” (1.15, emphasis added). Thus, the notion of “faithful representation” is not unique to the Concept Statements, and is required by auditing standards, authoritative federal legislation, and IAS.

The broad view of auditors' responsibilities has also been confirmed many times in public statements by the PCAOB, the SEC, and the GAO. For example, in reviewing existing auditing standards, a PCAOB Advisory Group concluded, "The auditor is required to evaluate *more than technical compliance* with accounting pronouncements in determining whether financial

statements are fairly presented in conformity with GAAP" (PCAOB Advisory Group 2005, emphasis added). Further, former SEC Commissioner Sommer stated: "'present fairly' was a concept separate from 'generally accepted accounting principles,' and the latter did not necessarily result in the former" (Ketz, 2006). SEC Chief Accountant Howard Scheck also stated: "the takeaway point is that we [SEC Enforcement] will be investigating and prosecuting cases where investors are misled, *notwithstanding arguments that ... GAAP was followed*" (SEC, 2010, emphasis added). Finally, similar sentiments were expressed by the GAO (2005): "the enterprise has a responsibility to evaluate financial statement presentation for both (1) conformity with the individual standards and (2) *overall fair presentation*", and "We believe fair presentation includes considerations *beyond literal compliance* with the specific requirements of individual accounting and reporting standards" (emphasis added). Taken together, these authoritative bodies strongly support the broad view of companies' and auditors' responsibilities.

While the narrow view emphasizes GAAP compliance, we observe that the broad view fully acknowledges the importance of GAAP. DeFond and Zhang (2014) condition high audit quality on a firm's financial reporting system, which includes the applicable GAAP. However, mere assurance of GAAP compliance is not a sufficient condition for high audit quality. PCAOB auditing standards clearly require auditors to consider both "fair presentation" and "compliance with GAAP." When GAAP does not provide clear guidance, auditors should assure that preparers choose the accounting treatment that fairly presents the companies financial condition. Yet the narrow view focuses exclusively on GAAP compliance, and ignores fair presentation altogether. Since fair presentation is part of the audit opinion, it is unambiguously an inherent part of auditors' responsibility.

2.2 The narrow view of auditors' responsibilities ignores the fact that GAAP is principles-based

Even if auditors were allowed to limit their assurance to mere GAAP compliance, the principles-based nature of US GAAP makes it impossible for auditors to ignore the fair presentation of economic substance. As argued at length in Ball (2009), and contrary to the beliefs of many commentators, GAAP is primarily principles-based and "the ultimate criterion for financial reporting in the United States is fair representation of financial condition." Further, the standards, which are typically not black and white, often do not provide definitive guidance in their implementation. Most standards use ill-defined terms such as "substantially all" or "generally" and often require the manager and auditor to choose between a variety of treatments, all of which could be viewed as acceptable under GAAP. Thus, implementing GAAP requires significant professional judgment (e.g., the estimation of bad debts, option expense, goodwill impairment).

In many circumstances authoritative GAAP fails to provide definitive guidance, in which case managers and auditors are forced to rely on concepts such as "faithful representation" (SFAS 168). Thus, it is difficult to imagine how auditors could practically evaluate GAAP compliance without considering faithful representation. Auditors are also required to discuss "qualitative aspects of the company's significant accounting policies and practices" with audit committees (AS 16). This means that auditors must evaluate the fairness of accounting treatments, not just technical compliance with GAAP.³ Indeed, fair presentation is so important that AICPA Ethical Standards explicitly require auditors to deviate from GAAP "when the *literal application* of GAAP would have the effect of rendering financial statements misleading (Rule 203)." While deviations from GAAP are expected to occur only in rare instances, this rule

³ AS 16 requires auditors to communicate *qualitative* aspects of firms' accounting treatment to the audit committee. This requirement has also been adopted into federal regulation in SOX 204 and Section II(F)(6)(G) of the SEC's adopting release (SEC, 2003).

illustrates that when the two are in conflict, faithful representation dominates the simple mechanical implementation of GAAP.

Professor Palmrose also argued that auditors are not required to consider faithful representation because there is no common understanding of the meaning of terms such as “faithful representation” or “economic substance”. While implementing these terms requires significant judgement in practice, they are conceptually clear and they are ubiquitous and enduring fundamental concepts in accounting. Indeed, it is difficult to comprehend how financial statements could be informative in the absence of faithful representation. The FASB understands these terms, as it clearly defines faithful representation in the Concept Statements as financial information that “represents *the substance of an economic phenomenon* rather than merely representing its legal form. Representing a legal form that differs from the economic substance of *the underlying economic phenomenon* could not result in a faithful representation” (BC3.26, emphasis added). Further, in its Preliminary Views on the Conceptual Framework, the FASB provides a lengthy discussion of faithful representation and its relation to economic substance, including intuitive examples (FASB 2006, QC16-34, pages 25-54).⁴

2.3 The narrow view contradicts auditors' legal responsibilities

Perhaps the strongest argument against the narrow view is that it was explicitly considered and rejected by the US Supreme Court in the landmark Continental Vending case (*United States v. Simon*, 1969). The judge in this case famously concluded that, "Even if Defendants complied with GAAP, a jury could have found, as the jury did here, that Defendants intentionally misled investors." This ruling has been interpreted to mean that auditors are ultimately responsible for fair presentation, and cannot hide behind GAAP (Ball, 2009). This ruling remains the law today,

⁴ Courts find that disagreement over the definition of terms such as “present fairly” does not make them ambiguous. As one judge states, "The fact that parties may vehemently disagree upon the construction of a contract term [*present fairly*] does not render a provision ambiguous." (IN RE MERCURY COMPANIES, INC., emphasis added)

and the precedent set by *Continental Vending* has played a role in many high profile trials, including *Adelphia*, *WorldCom*, and *Lehman*.

Adelphia: In March 2002, Adelphia Communications Company disclosed that it had \$2.2 billion in liabilities not previously reported. Adelphia's stock was delisted and the company filed for bankruptcy shortly afterwards. John Rigas, the CEO, was arrested and charged with looting the company. In his appeal, Rigas asked for evidence that the defendants violated GAAP. The court's response was "GAAP neither establishes nor shields guilt in a securities fraud case... Even if Defendants complied with GAAP, a jury could have found, as the jury did here, that Defendants intentionally misled investors" (*U.S. vs. Rigas*). The court further noted "making GAAP compliance determinative of securities fraud charges would require jurors to accept the accountants' evaluation whether a given fact was material to overall fair presentation"—a proposition this Court rejected in *Simon*." Thus, the ruling in *U.S. vs Rigas* was an application of the precedent that was originally set in the *Continental Vending* case (*U.S. vs. Simon*).

WorldCom: WorldCom disguised its declining performance by capitalizing hundreds of millions of dollars in operating expenses. Worldcom's CEO, Bernard Ebbers, was sentenced to 25 years' imprisonment. In his appeal, Ebbers argued that the government did not allege and prove violations of GAAP. The court responded that "The rules are no shield, however, in a case such as the present one, where the evidence showed that accounting methods known to be misleading—although perhaps at times fortuitously in compliance with particular GAAP rules—were used for the express purpose of intentionally misstating WorldCom's financial condition and artificially inflating its stock price ... GAAP itself recognizes that technical compliance with particular GAAP rules may lead to misleading financial statements, and imposes an overall requirement that the statements as a whole accurately reflect the financial status of the

company.” (U.S. vs. Ebbers) In this case, the court unequivocally reaffirmed the Continental Vending case and explicitly stated that "we see no reason to depart from Simon."

Lehman: The collapse of Lehman Brothers in 2008 disrupted the entire economy and led to the largest bankruptcy in US history. Its auditor, EY, was implicated for facilitating a massive fraud. EY settled the case by agreeing to pay \$99 million in damages to shareholders. Court records show that in defending their case, EY asserted that "[t]he GAAP opinion is expressly based on the GAAS opinion" and that the GAAS opinion, too, "divulges its basis—*i.e.*, EY's belief that it conducted its audits in accordance with PCAOB standards." The court responded by noting that "The ultimate — if tacit — implication here is that an audit opinion *never* can be false or misleading so long as the auditor's opinion about fair presentation of a company's financial position and results itself is predicated on a good faith opinion that the auditor performed its audit in compliance with GAAS. But this argument is too clever by half and does not absolve EY from liability under the securities laws *ex ante*." Thus, the court again confirms its view that auditors cannot hide behind their good faith opinion that the company complied with GAAP and the auditor complied with GAAS. The above cases show that courts base their judgments on whether the financial statements are fairly presented, and resoundingly reject the notion that an auditor's good faith opinion about compliance with GAAS or GAAP are sufficient to protect auditors from culpability when financial statements are found to be misleading.

Given that litigation risk is an important driver of audit quality, the courts' view on auditors' responsibilities obviously cannot be ignored. Thus, we expect high quality auditors to have litigation-driven incentives to provide assurance that the financial statements faithfully represent companies' underlying economics, in conformity with GAAP.

2.4 Conclusion

In conclusion, the narrow view that auditors' responsibilities are limited to GAAP compliance echoes the stance commonly adopted by audit firms when they attempt to defend their audits in court. Our view suggests that financial statement users do not expect high quality auditors to merely "check the boxes", but rather to play an active role in ensuring that companies provide relevant and reliable information to capital markets. We believe a clarification on this issue is important and timely. In light of investor demand for fair presentation, the debate over principle vs. rule-based standards, and the call for expanded auditor disclosure, researchers need clarity on what AQ really means. We hope that our discussion provides a framework for better understanding AQ conceptually and will generate insightful future research.

3. Controversy #3: Are empirical measures of financial reporting quality (FRQ) valid proxies for audit quality (AQ)?

Auditing researchers commonly use measures of FRQ to proxy for AQ because higher AQ provides greater assurance of higher FRQ (DeFond and Zhang, 2014). Proxies commonly used in the literature to capture FRQ include restatements, Accounting and Auditing Enforcement Releases (AAERs), and discretionary accruals. However, these proxies measure the true underlying FRQ with error (Dechow, Ge and Schrand, 2010). In addition, FRQ is a joint product of both the manager and the auditor (Antle and Nalebuff, 1991; Magee and Tsang, 1991), which means that FRQ measures contain measurement error when they are used to capture AQ. This section discusses the validity of using measures of FRQ to capture AQ.

3.1 Measures of financial reporting failure

3.1.1 Limitations of using FRQ measures to infer AQ

Many auditing studies measure AQ using relatively direct proxies for low FRQ, such as allegations of fraudulent reporting contained in AAERs and accounting restatements.⁵ In this section, we point out several limitations that researchers should consider when using AAERs and restatements to measure AQ.

One limitation is that AAERs and restatements are rare. Research shows that fewer than 1% of audited financial statements are alleged to be fraudulent by the SEC.⁶ Accounting restatements occur more often but their incidence has been declining in recent years. According to data from Audit Analytics, the number of reissuance restatements fell from a record high of 1,005 in 2005 to just 169 in 2015. The low frequency of AAERs and restatements limits their statistical power and makes them impractical when sample sizes are small. In addition, while AAERs and restatements can indicate low AQ, the absence of an AAER or restatement does not necessarily mean that AQ is high (DeFond and Zhang, 2014).

Another limitation of AAERs and restatements is that they are measures of FRQ rather than AQ. FRQ is a joint product of *both* the preparer *and* the auditor of the financial statements (Antle and Nalebuff, 1991). If the preparer's pre-audited financial statements are fairly presented, the audited financial statements will also be fairly presented even if the auditor performs no audit procedures.⁷ The auditor's role is to provide *assurance* that the financial

⁵ Auditing studies that use accounting restatements include Blankley et al. (2012), Czerny et al. (2014), Eshleman and Guo (2014), Kinney et al. (2004), Lennox and Li (2014), Lennox (2016), Lobo and Zhao (2013), Paterson and Valencia (2011). Auditing studies that use AAERs include Lennox and Pittman (2010) and Bentley et al. (2013).

⁶ For example, Lennox and Pittman (2010) report that only 1,109 company-years are subject to a subsequent AAER out of a total sample of 130,642 company-years between 1981-2001.

⁷ A manager is motivated to prepare fairly presented financial statements even when the auditor does no testing, because the manager can lose reputation or be sued if the financial statements are later found to have been materially misstated. Moreover, an inherently honest and competent manager would prepare fairly presented financial statements even in the absence of a high quality audit.

statements are fairly presented in accordance with GAAP. The auditor provides this assurance by performing the procedures prescribed by Generally Accepted Auditing Standards (GAAS). An audit that does not comply with GAAS cannot be regarded as high quality even if the audited financial statements happen to be fairly presented and comply with GAAP. Thus, high FRQ does not necessarily imply high AQ.⁸

Audit firms and academics sometimes take the view that high FRQ implies high AQ. For example, in the early years of the PCAOB inspections, audit firms attempted to deflect criticisms of the quality of their audits by pointing out that the deficiencies identified by the inspectors had not resulted in restatements.⁹ The suggestion is that such audit deficiencies are unimportant because they do not harm investors. This view is also echoed in a recent article in CFO.Com, in which two prominent audit researchers assert that audit deficiencies reported by PCAOB inspectors should not be regarded as “audit failures” because the deficiencies did not result in restatements (Peecher and Solomon, 2014).

We find this view problematic because it conflates “audit failures” with “financial reporting failures.” The term “audit failure” suggests the auditor failed to gather sufficient evidence to support the audit opinion, as required by GAAS. In contrast, a “financial reporting failure” suggests a joint failure by the manager and auditor to ensure that the audited financial statements are fairly presented in compliance with GAAP. Thus, the absence of a financial reporting failure does not necessarily imply the absence of an audit failure.

⁸ For example, GAAS requires an auditor to observe the inventory count but if the auditor fails to comply with this requirement it will not necessarily cause inventory to be misstated. As a more extreme example of GAAS non-compliance, the audited financial statements could be fairly presented even if the auditor performs no audit at all.

⁹ For example, the response letter of Deloitte & Touche to its 2006 inspection includes the following statement: “We have evaluated the matters identified by the Board’s inspection team for each of the eight Issuer audits described in Part I of the Draft Report and have taken appropriate actions. In evaluating the matters identified, we have considered whether it was necessary to perform additional auditing procedures in accordance with AU 390, Consideration of Omitted Procedures After the Report Date, and in six instances we performed and documented additional auditing procedures, which did not change our conclusions or affect our reports on the Issuers’ financial statements.” (Appendix C of the Report on 2006 Inspection of Deloitte & Touche).

3.1.2 An illustration of why financial reporting failures measure audit failures with error

The above discussion suggests there are significant measurement errors in using indicators of financial reporting failure (i.e., restatements and AAERs) to measure AQ. To illustrate the sources of these measurement errors, we set up a simple conceptual model. The model begins with the client preparing the pre-audit financial statements. For simplicity, we present this as a binary choice: the client either does or does not materially misstate the pre-audit financial statements. For simplicity, we assume the client cannot anticipate the level of AQ.

We assume the auditor makes a binary decision: the auditor either conducts a high quality audit or does not, where (for convenience) we define a “high quality” (or “competent”) audit as one in which the auditor gathers sufficient evidence to support their audit opinion, as required by GAAS. We define a competent, or high quality, audit as one in which the audit complies with GAAS. AQ is treated as a binary construct in our conceptual models for simplicity. We note, however, that compliance with GAAS is only the minimum level of AQ that an audit is required to meet. In practice, auditors may provide audits that exceed the minimum level of AQ required under GAAS (See Controversy #2). Similarly, an audit that does not comply with GAAS may result in varying degrees of low AQ.

We assume that if the auditor conducts a competent audit, there is a higher probability the auditor will detect, and correct, all material misstatements in the manager’s pre-audit financial statements. If the auditor does not conduct a competent audit, the probability of auditor detection and correction is lower. After the audit is finished, the audited financial statements are publicly released to investors. If the audited financial statements are materially misstated, we assume there is a positive probability that the financial statements will be restated. If the audited financial statements are not materially misstated, we assume a subsequent restatement cannot occur.

The decision tree for this conceptual model is illustrated in Fig. 1. The AQ proxy is *MISSTATE*, which is a dummy variable equal to one if the audited financial statements are subsequently restated, and zero otherwise. Prior research assumes that *MISSTATE* = 1 indicates a low quality audit, whereas *MISSTATE* = 0 indicates a high quality audit. We use the decision tree to identify situations in which restatements correctly (incorrectly) capture AQ.

As shown in Fig. 1, there are three situations where *MISSTATE* is a correct measure of AQ, and three situations where *MISSTATE* is incorrect.

MISSTATE is a *correct* measure of AQ when:

- i) the client materially misstates the pre-audit financial statements, the auditor conducts a competent audit, and the audited financial statements are not subsequently restated,
- ii) the client materially misstates the pre-audit financial statements, the auditor conducts an incompetent audit, and the audited financial statements are subsequently restated, and
- iii) the client does not materially misstate the pre-audit financial statements, the auditor conducts a competent audit, and the audited financial statements are not subsequently restated.

On the other hand, *MISSTATE* is an *incorrect* measure of AQ when:

- i) the client materially misstates the pre-audit financial statements, the auditor conducts a competent audit, and the audited financial statements are subsequently restated,
- ii) the client materially misstates the pre-audit financial statements, the auditor conducts an incompetent audit, and the audited financial statements are not subsequently restated, and
- iii) the client does not materially misstate the pre-audit financial statements, the auditor does not conduct a competent audit, and the audited financial statements are not subsequently restated.

The first incorrect situation corresponds to the case where the audited financial statements are restated despite the auditor conducting a competent audit. This can occur because a competent audit only provides reasonable assurance (not a guarantee) that material misstatements will be detected and corrected.

The second incorrect situation corresponds to the case where the audited financial statements are materially misstated, but the misstatements are not subsequently corrected in a restatement announcement. This can occur either because the misstatement is never detected, or because it is detected but goes unreported. Consistent with managers being motivated to hide misstatements from investors, Files et al. (2009) shows that companies make “stealth” restatement disclosures. Dyck et al. (2015) estimate that only one quarter of the frauds between 1996-2004 were detected and publicly disclosed. Therefore, the number of observed restatements likely understates the true number of material misstatements in audited financial statements.

The third incorrect situation corresponds to where the financial statements are not materially misstated and the auditor conducts an incompetent audit. In this situation, there is no restatement because the manager’s pre-audit financial statements are fairly stated. The researcher incorrectly assumes that the absence of a restatement implies a high quality audit.

While *MISSTATE* incorrectly measures AQ as often as it correctly measures AQ, it does not mean that *MISSTATE* is uncorrelated with AQ. To quantify the sign and magnitude of the correlation between *MISSTATE* and AQ, it is necessary to assign some probabilities to the decision tree in order to gauge how often each of the six situations occur. Assigning probabilities requires subjective judgment and we choose probabilities that appear reasonable, based upon the evidence we are able to gather. In the following three paragraphs, we explain the rationale for the probabilities that we assign to the decision tree in Fig. 1. However, we invite skeptical readers to

plug their own probabilities into the decision tree to quantitatively assess the measurement errors associated with *MISSTATE*.

We start at the beginning of the decision tree with the manager's preparation of the pre-audit financial statements. Unfortunately, there is no direct evidence on how often managers materially misstate the pre-audit financial statements. Dyck et al. (2015) estimate that 15% of *audited* financial statements were fraudulently reported in 1996-2004. The misstatement rate is likely higher for the pre-audit financial statements than the audited financial statements. Thus, we assume that 20% of the pre-audit financial statements are materially misstated.

Next, we consider how often audits are competent. There is some evidence on the audit deficiency rate from PCAOB inspections. However, the PCAOB inspectors do not examine every audit engagement and the selected engagements are not randomly chosen. Thus, the deficiency rate may not be representative of the audit population. Notwithstanding this limitation, PCAOB inspection reports indicate that approximately 20% to 40% of the inspected audit engagements fail to comply with auditing standards. Auditors have stronger incentives to perform competent audits when clients have a higher risk of material misstatement. Therefore, we assume that 80% of audits comply with GAAS when the pre-audit financial statements are materially misstated, while 60% of audits comply with GAAS when the pre-audit financial statements are not materially misstated.

Next, we assume that a competent audit is more likely to result in the detection and correction of a material misstatement in the manager's pre-audit financial statements. This assumption is reflected in our choice of probabilities. When the pre-audit financial statements are materially misstated and the auditor does not conduct a competent audit, we assume a subsequent restatement rate of 50%. When the pre-audit financial statements are materially misstated and the

auditor does conduct a competent audit, we assume a lower subsequent restatement rate of 20%. We also assume that a restatement never occurs when the manager's pre-audit financial statements are fairly presented.

Having made these assumptions about the probabilities, we next calculate how frequently *MISSTATE* correctly or incorrectly measures AQ. This decision tree is reported in Fig. 2. Summing across the three situations where *MISSTATE* is a correct measure of AQ, we find that *MISSTATE* is correct 62.8% of the time and incorrect 37.2% of the time. Because 62.8% > 37.2%, *MISSTATE* is correlated with AQ in the direction assumed by prior research. Nevertheless, it is clear that there are substantial measurement errors with using *MISSTATE* as a proxy for AQ.

The Fig. 2 analysis is also helpful for understanding the main source of the measurement error. Most of the measurement error (32% out of 37.2%) occurs when the pre-audit financial statements are fairly presented and the auditor fails to conduct a competent audit. In this situation, the *MISSTATE* variable equals zero, which the researcher incorrectly assumes to be indicative of a high quality audit. Thus, the main source of measurement error arises when there is no restatement because the manager did not materially misstate the pre-audit financial statements but, nevertheless, the auditor conducted a low quality audit.

The other two sources of measurement error appear to be relatively less important. Measurement error occurs when the audited financial statements are restated despite the auditor conducting a competent audit, but this situation occurs only 3.2% of the time in Fig. 2. Measurement error also occurs when the audited financial statements are materially misstated, the auditor conducts an incompetent audit, and the misstatements are not subsequently corrected

in a restatement, but this situation occurs only 2% of the time in Fig. 2. Thus, the other two sources of measurement error account for only 5.2% of the total measurement error of 37.2%.

We emphasize that the exact magnitudes of the measurement errors will change if the reader plugs different probabilities into Fig. 2. Nevertheless, for all reasonable ranges of probabilities that we considered, our conclusions are unchanged. First, accounting restatements contain significant measurement errors when they are used as a proxy for AQ. Second, the main source of measurement error occurs when there is no restatement because the manager's pre-audit financial statements were fairly presented but the auditor failed to conduct a competent audit. A similar analysis could be performed using AAERs, with the same key takeaways. Namely, AAERs contain significant measurement errors when used as proxies for AQ, because the absence of an AAER could indicate high quality reporting by the *preparer*, rather than a high quality audit.

3.2 Accrual-based measures

3.2.1 Discretionary accruals are poor measures of FRQ

Discretionary accruals are also widely used to proxy for AQ.¹⁰ Most auditing studies assume that managers use their discretion over accruals to mislead investors. Since a competent audit may mitigate opportunistic reporting, audit studies generally assume that high quality audits result in smaller discretionary accruals. One problem, however, is that managers may use their discretion over accruals to provide investors with informative signals of future cash flows (Subramanyam 1996; Sankar and Subramanyam 2001; Tucker and Zarowin 2006; Ball 2013).

¹⁰ Auditing studies that use accruals variables include Ashbaugh et al. (2003), Becker et al. (1998), Caramanis and Lennox (2008), Carey and Simnett (2006), Chen et al. (2008, 2011), Chi et al. (2009), Chung and Kallapur (2003), Ferguson et al. (2004), Francis and Wang (2008), Francis, Maydew and Sparks (1999), Francis and Yu (2009), Francis et al. (2013), Frankel et al. (2002), Gul et al. (2009, 2013), Heninger (2001), Johnson et al. (2002), Ke et al. (2015), Larcker and Richardson (2004), Menon and Williams (2004), Myers et al. (2003), Reichelt and Wang (2010), Reynolds and Francis (2000).

This non-opportunistic motivation would mean that the discretionary accruals metric is a poor measure of FRQ (and AQ).

Another problem is that it is challenging to empirically distinguish between discretionary and non-discretionary accruals. Most researchers use a variation of the Jones (1991) model, which regresses total accruals on the change in revenues and the level of property, plant and equipment (PPE). However, the Jones model (and its variations) make two questionable assumptions. The first is that revenues and PPE are non-discretionary. This is questionable because revenues and PPE are accounts that are often manipulated. Approximately half of all accounting frauds involve materially overstated revenues (Beasley et al. 1999) and, according to the Audit Analytics database, approximately 10% of reissuance restatements between 2000-2016 involved restatements of PPE. In addition, the PCAOB often cites audit deficiencies in revenue and PPE accounts. Therefore, it is questionable to assume that revenues and PPE are non-discretionary.

A second assumption in the Jones model is that the residuals capture discretionary accruals. However, many non-discretionary accruals are not controlled for in the Jones model and its variations. For example, a company is likely to experience an increase in inventory when there is a negative shock to sales. This would be classified as an income-increasing “discretionary” accrual, even if no accounting discretion has been exercised by the manager or the auditor (Ball 2013). Thus, Ball (2013, p. 851) laments that in many accrual studies “*an explanation of the reported results that does not involve manipulation is at least as plausible as one that does.*”¹¹

¹¹ Interestingly, Dechow et al. (2011) find that total accruals are stronger predictors of accounting frauds than discretionary accruals. Thus, attempting to separate accruals into their discretionary and non-discretionary components could yield a worse measure of FRQ than simply using total accruals.

3.2.2 Discretionary accruals are a noisy measure of AQ

As with restatements and AAERs, discretionary accruals are designed to measure FRQ. However, FRQ is a joint product of *both* the manager *and* auditor, which means that high FRQ does not necessarily imply high AQ. Thus, the analysis presented in Fig. 1 for restatements is also generalizable to discretionary accruals. That is, discretionary accruals are a noisy measure of AQ. There is recent evidence suggesting that audits have only a small impact on reported accruals. Lennox et al. (2016) find that audit adjustments reduce mean signed accruals (scaled by assets) by only 0.5%. While this is statistically significant, its economic significance is somewhat modest. As audit adjustments have only a small effect on accruals, there are significant concerns about the ability of accruals to empirically capture AQ.¹²

3.2.3 Absolute vs. signed discretionary accruals

Leaving aside the conceptual issues with using discretionary accruals to proxy for AQ, there are also significant empirical challenges. One challenge is whether to use signed or absolute measures. While many studies use both the signed and absolute accruals, some studies use one but not the other (e.g., Ferguson et al. 2004; Johnson et al. 2002). These choices are important because the two measures may yield different results, and thus a study's conclusions depend upon which measure best captures AQ. Recent evidence suggests that signed accruals are a better measure of AQ. For example, Hribar and Nichols (2007) find that absolute accruals are more likely than signed accruals to be contaminated by omitted variables. Lennox et al. (2016)

¹² We note, however, that the effect of audit adjustments on accruals is a function of the quality of the pre-audited financial statements, which in turn is a function of the expected level of audit quality. That is, managers may increase FRQ in anticipation of being audited. Thus, 0.5% may underestimate the true effect of audit quality on FRQ.

find that audit adjustments have a larger negative effect on signed accruals than absolute accruals.¹³

3.3 Conclusion

While restatements and AAERS are relatively direct measures of low FRQ, they contain significant measurement errors when used as a proxy for AQ. A fundamental problem is that FRQ is a joint product of *both* the manager *and* the auditor. Fig. 1 suggests that high FRQ may often be incorrectly attributed to high AQ, even when auditors provide low quality audits. In other words, the absence of a restatement/AAER, or low discretionary accruals, do not necessarily mean that the audit was of high quality. Moreover, there are significant empirical challenges in identifying the discretionary portion of accruals. Auditing researchers have long used FRQ measures to capture AQ, and indeed AQ is an important element of FRQ (Ge, Dechow and Schrand 2010). However, we believe it is time to exercise greater caution in using FRQ variables as a proxy for AQ. Researchers need to acknowledge the important limitations of these measures, and carefully design their analysis to mitigate the measurement error problems that result from using FRQ measures to proxy for AQ.

4. Controversy #4: Are going-concern opinions valid measures of AQ?

Many auditing studies use going-concern (GC) audit opinions as a measure of AQ. Unlike the FRQ proxies, the audit opinion is issued directly by the auditor, and is therefore a more direct measure of the outcome of an audit. However, the GC opinion is also a joint product of (1) whether a firm has GC uncertainty, and (2) whether the auditor identifies the GC

¹³ They find two reasons for this result. First, auditors require downward accrual adjustments more often than upward adjustments. Downward adjustments increase the frequency with which accruals change sign from positive to negative. Second, auditors require downward adjustments to negative accruals more often than they require upward adjustments to negative accruals. These downward adjustments increase the absolute magnitude of negative accruals but reduce the signed magnitude of negative accruals.

uncertainty. GC opinions are used to capture AQ for two reasons. First, high quality auditors are more likely to identify GC problems. Second, high quality auditors are less likely to succumb to client pressures to report a clean opinion when a GC is warranted.¹⁴ Some studies also use Type I and Type II errors as a measure of AQ. A Type I error occurs when the auditor issues a GC opinion and the company does not go bankrupt in the subsequent year. A Type II error occurs when the auditor does not issue a GC opinion and the company goes bankrupt in the subsequent year.¹⁵

Although GC opinions directly capture audit outcomes, they do so with significant measurement error, which has gone unnoticed, or at least unacknowledged, in the literature. To better understand these measurement errors, we provide a conceptual model similar to the decision tree examined in Controversy #3. We first consider the measurement errors that arise when researchers use GC opinions to measure AQ. Next, we consider whether these measurement errors are mitigated when researchers use Type I and Type II error rates to measure AQ.

4.1 The use of GC opinions to capture AQ

The decision tree in Fig. 3 begins with the client either having, or not having, a material GC uncertainty that ought to be disclosed in the audit report. Next, the auditor performs a competent or incompetent audit. To assess the magnitudes of the measurement errors, we assign numerical probabilities to the decision tree. Approximately 25% of SEC registrants receive GC

¹⁴ Auditing studies that use GC opinions include: Bartov et al. (2000), Bradshaw et al. (2001), Carcello and Neal (2000), Carcello and Neal (2003), Carcello et al. (2009), Carey and Simnett (2006), Craswell et al. (2002), DeFond et al. (2002), DeFond and Lennox (2011), Feldmann and Read (2010), Firth (2002), Firth et al. (2012), Francis and Krishnan (1999), Francis and Yu (2009), Geiger and Rama (2003), Geiger et al. (2006), Gramling et al. (2011), Hope and Langli (2010), Knechel and Vanstraelen (2007), Lennox (2005), Lennox and Li (2012), Li (2009), Minutti-Meza (2013), Reichelt and Wang (2010), Reynolds and Francis (2000), Ye et al. (2011).

¹⁵ Auditing studies that calculate Type I and/or Type II errors include: Bruynseels et al. (2011), Callaghan et al. (2009), Carcello et al. (1995), Geiger and Raghunandan (2001), Geiger and Raghunandan (2002), Geiger et al. (2005), Geiger and Rama (2006), Hopwood et al. (1994), Knechel and Vanstraelen (2007), Lennox (1999a, 1999b), Mutchler and Williams (1990), Raghunandan and Rama (1995), Robinson (2008), Weber and Willenborg (2003).

audit opinions (Carson et al. 2013), so we assume that 30% of companies have material GC uncertainties. We add 5% to account for possible under-reporting. Consistent with the decision tree in Fig. 2, we assume auditors have stronger incentives to perform competent audits for riskier clients. Specifically, we assume that 80% of audits are competent when clients have material GC uncertainties, while 60% of audits are competent when clients do not have material GC uncertainties. Next, we assume that a competent audit is more likely to result in the auditor detecting and reporting a GC problem. When the company has a material GC uncertainty and the auditor conducts a competent audit, we assume the auditor always issues a GC opinion. When the company has a material GC uncertainty and the auditor does not conduct a competent audit, we assume the auditor issues a GC opinion with probability 50%. The probability is 50% rather than zero because GC problems are sometimes public knowledge (e.g., the company has already disclosed a loan covenant default), in which case an auditor would know that the company ought to receive a GC opinion even if the audit is not competent. When the company does not have a material GC uncertainty, we assume the auditor does not issue a GC opinion.¹⁶

We use the decision tree in Fig. 3 to investigate the measurement errors that arise when researchers use GC opinions to measure AQ. The GC variable equals one when the auditor issues a GC opinion, and zero otherwise. Following prior research, we assume that a GC opinion denotes high AQ.

Fig. 3 shows there are three situations where the GC opinion correctly captures AQ:

- i) The company has a material GC uncertainty, the auditor conducts a competent audit and issues a GC opinion, which occurs with a probability of 24%.

¹⁶ We assume this to be true regardless of whether the auditor conducts a competent audit. This assumption can easily be relaxed by allowing an incompetent audit to result in a GC opinion with positive probability when a company does not have a material GC uncertainty.

- ii) The company has a material GC uncertainty, the auditor conducts an incompetent audit and fails to issue a GC opinion, which occurs with a probability of 3%.
- iii) The company does not have a material GC uncertainty, the auditor conducts an incompetent audit and does not issue a GC opinion, which occurs with a probability of 28%.

Summing across these three situations, we find that the GC opinion correctly identifies AQ 55% of the time ($55\% = 24\% + 3\% + 28\%$).

Fig. 3 shows there are two situations where the GC opinion incorrectly captures AQ:

- i) The company has a material GC uncertainty, and the auditor conducts an incompetent audit but issues a GC opinion, which occurs with a probability of 3%.
- ii) The company does not have a material GC uncertainty, the auditor conducts a competent audit and issues a clean opinion, which occurs with a probability of 42%.

Thus, GC opinions incorrectly capture AQ in two situations. One is where there are public indicators of severe financial distress. In this situation, it is obvious even to an auditor that performs an incompetent audit that the company ought to receive a GC opinion. Therefore, a GC opinion does not necessarily imply a competent audit. The second situation occurs because researchers assume that a clean audit opinion indicates a low quality audit. However, this assumption is false if the company ought to receive a clean opinion because it did not have a material GC uncertainty. In Fig. 3, this second situation explains most of the measurement error in the GC variable (i.e., 42% out of 45%).

Some researchers attempt to reduce this second source of measurement error by restricting their samples to companies where there are clear public signals of financial distress. While this sampling restriction can reduce the second source of measurement error, it can worsen

other measurement errors in two ways. First, using only distressed companies increases the frequency of clear public signals of financial distress, which increases the likelihood of auditors issuing GC opinions on incompetent audits (the first situation above). Second, excluding companies where there are no publicly observable indicators of financial distress could exclude companies with material GC uncertainties. For example, a company could hide its financial problems by understating its losses, overstating its liquidity, and understating its leverage. In this situation, the researcher would drop the company from the sample because the company does not exhibit clear signs of financial distress. Yet, it is these companies for which a high quality audit is particularly important given that the financial problems are hidden from investors.

4.2 Using Type I and Type II errors to capture AQ

Some studies use the Type I and Type II methodology to measure AQ. An audit opinion is coded as “incorrect” when the auditor issues a GC opinion and the company does not go bankrupt (known as a Type I error), or the auditor does not issue a GC opinion and the company does go bankrupt (known as a Type II error). An opinion is coded as “correct” when the auditor issues a GC opinion and the company subsequently goes bankrupt ($GC = 1$ & $BANK = 1$) or the auditor issues a clean opinion and the company does not subsequently go bankrupt ($GC = 0$ & $BANK = 0$). The literature generally considers Type II errors (i.e., false negatives) to be costlier to investors and auditors than Type I errors (i.e., false positives).

Do researchers reduce the measurement error problems in GC opinions when they use Type I and Type II error rates? Perhaps surprisingly, the answer is not necessarily. To demonstrate why, we extend Fig. 3 to incorporate the company’s bankruptcy status in the year following the issuance of the audit report. In so doing, we make two further assumptions. First, a company is more likely to file for bankruptcy if the company had a material GC uncertainty at

the audit report date. Second, the issuance of a GC opinion increases the probability of bankruptcy due to a self-fulfilling prophecy effect (Citron and Taffler 2001; Gaeremynck and Willekens 2003; Louwers et al. 1999; Pryor and Terza 2002; Vanstraelen 2003).

In Fig. 4, the highest bankruptcy probability occurs when a company has a material GC uncertainty and receives a GC opinion from its auditor. We assume this probability is 50%. The second highest bankruptcy probability occurs when a company has a material GC uncertainty but the company does not receive a GC opinion. We assume this probability is 40%. The difference (50% versus 40%) represents the effect of a GC opinion on the likelihood of bankruptcy (i.e., the self-fulfilling prophecy effect). The lowest bankruptcy probability occurs when a company does not have a material GC uncertainty. We assume this probability is 20%.¹⁷

As shown in Fig. 4, the Type I and Type II errors in GC opinions incorrectly denote AQ in five situations, which can be grouped as follows:

- i) Situations in which the auditor performed a competent audit, but the audit is incorrectly denoted as low quality, which occurs with a probability of 20.4% (12% + 8.4%):
 - a. The company has a material GC uncertainty, the auditor correctly issues a GC opinion, but the company does not file for bankruptcy due to an improvement in the company's financial condition subsequent to the audit report date. This occurs with a probability of 12%.
 - b. The company does not have a material GC uncertainty, the auditor correctly issues a clean opinion, and the company subsequently files for bankruptcy due to a deterioration in its financial condition subsequent to the audit report date (Blacconiere and DeFond, 1997). This occurs with probability 8.4%.

¹⁷ We retain our assumption from Fig. 3 that auditors do not issue GC opinions to companies that do not have a material GC uncertainty. Again, it is straightforward to relax this assumption by modifying the decision tree in Fig. 4.

- ii) Situations in which the auditor does not perform a competent audit, but the audit is incorrectly denoted as high quality, which occurs with a probability of 25.7% (1.5% + 1.8% + 22.4%):
- a. The company has a material GC uncertainty, the auditor correctly issues a GC opinion, and the company subsequently files for bankruptcy, which occurs with a probability of 1.5%. This can occur when it is obvious to everyone (including an auditor that performs an incompetent audit) that the company has a material GC uncertainty and therefore ought to receive a GC opinion.
 - b. The company has a material GC uncertainty, the auditor incorrectly issues a clean opinion, and the company does not file for bankruptcy due to a subsequent improvement in its financial condition. This occurs with probability 1.8%.
 - c. The company does not have a material GC uncertainty, the auditor performs an incompetent audit but correctly issues a clean opinion, and the company does not file for bankruptcy, which occurs with probability 22.4%.

Fig. 4 also allows us to determine whether the measurement errors stem more from the Type I or Type II methodology. The Type I methodology applies to companies that do not go bankrupt. There are five situations in Fig. 4 where companies do not go bankrupt ($BANK = 0$), which occurs with a probability of 71.3%.¹⁸ In three situations, the Type I methodology yields the wrong measure of AQ (i.e., the red boxes in Fig. 4 where $BANK = 0$), which occurs with a probability of 36.2%.¹⁹ Therefore, the Type I methodology is incorrect for 50.8% of the non-bankrupt companies (50.8% = 36.2%/71.3%). In contrast, the Type II methodology applies to companies that go bankrupt. There are five situations where companies go bankrupt ($BANK = 1$),

¹⁸ $\text{Prob}(BANK = 0) = 12\% + 1.5\% + 1.8\% + 33.6\% + 22.4\% = 71.3\%$.

¹⁹ $36.2\% = 12\% + 1.8\% + 22.4\%$.

which occurs with a probability of 28.7%.²⁰ In two situations, the Type II methodology yields the wrong measure of AQ (i.e., the red boxes in Fig. 4 where $BANK = 1$), which occurs with a probability of 9.9%.²¹ Therefore, the Type II methodology is incorrect for only 34.5% of the bankrupt companies ($34.5\% = 9.9\%/28.7\%$).

A comparison indicates that the Type I methodology results in larger measurement errors than the Type II methodology ($50.8\% > 34.5\%$). The measurement error in the Type I methodology is larger because most non-bankrupt companies do not have material GC uncertainties, and these companies tend to receive clean opinions regardless of AQ. In contrast, the Type II methodology results in smaller measurement errors because most bankrupt companies have material GC uncertainties and competent audits are more likely to result in GC opinions.

Several additional observations can be made from a comparison of Figs. 3 and 4. First, summing across the five situations in Fig. 4 that incorrectly denote AQ, the measurement error that a researcher incurs using the Type I / Type II methodology is 46.1% ($12\% + 1.5\% + 1.8\% + 8.4\% + 22.4\%$). When compared to the 45% error rate in Fig. 3 (where GC opinions are used to measure AQ), this means that the Type I / II methodology does not necessarily reduce the measurement error. Second, the measurement errors in Fig. 3 arise from different sources compared with those in Fig. 4. In Fig. 3, the largest measurement error (42%) occurs when a *competent* audit results in correctly issuing a clean opinion to companies without material GC uncertainties. In Fig. 4 the largest measurement error (22.4%) occurs when an *incompetent* audit results in correctly issuing a clean opinion to companies without material GC uncertainties, but *the absence of bankruptcy* incorrectly denotes high AQ. Third, Figs. 3 and 4 do not prove that

²⁰ Prob ($BANK = 1$) = 28.7% = 12.0% + 1.5% + 1.2% + 8.4% + 5.6%.

²¹ 9.9% = 1.5%+8.4%

Type I and Type II errors *inevitably* result in a worse measure of AQ than GC opinions. The analysis simply shows that the Type I / II methodology does not necessarily result in a better measure of AQ, and could prove worse than using the GC variable on its own. It is possible to plug different probabilities into Figs. 3 and 4 and obtain different measurement error rates. However, based on prior research, the probabilities we use seem to be realistic. The Type I and Type II error rates in Fig. 4 are 18.9% and 52.9%, respectively.²² These numbers compare relatively well with the 10-13% and 46-57% reported in Fargher and Jiang (2008), and the 8.9% and 55.0% reported in Francis (2011).

4.3 Conclusion

We show that auditors' GC opinions provide a noisy measure of AQ for two key reasons. First, a GC opinion can be a weak indicator of high AQ because GC problems can be obvious even to low quality auditors when there are public signals of financial distress. This problem is exacerbated when researchers restrict their analysis to distressed companies. Second, the absence of a GC opinion can be a weak indicator of low AQ because most companies do not have material GC uncertainties and thus receive clean opinions even when AQ is high.

Some studies use the Type I/II methodology. However, our analysis suggests that this could provide a worse measure of AQ than GC opinions alone. The Type I methodology is a weak indicator of AQ because non-bankrupt companies typically receive clean opinions from both high and low quality auditors. The Type II methodology is a better indicator of AQ, but it can only be applied to companies that file for bankruptcy, which reduces generalizability.

We are not suggesting that audit researchers should stop using GC opinions or Type I/II error rates to proxy for AQ. Rather our objective is to highlight the sources of the measurement

²² The type I error rate = $\text{Prob}(GC = 1 | BANK = 0) = (12\% + 1.5\%) / (12\% + 1.5\% + 1.8\% + 33.6\% + 22.4\%)$. The type II error rate = $\text{Prob}(GC = 0 | BANK = 1) = (1.2\% + 8.4\% + 5.6\%) / (1.2\% + 8.4\% + 5.6\% + 12\% + 1.5\%)$.

errors and to quantify their likely magnitudes. Audit researchers need to consider whether these measurement errors could generate misleading inferences in their research settings. For example, our analysis indicates that the Type I/II methodology is less reliable in settings where companies suffer financial shocks that could not have been anticipated by auditors at the time of the audit report. Thus, researchers need to carefully weigh the pros and cons of alternative AQ proxies for their particular research setting.

5. Controversy #5: Is the PCAOB audit inspection program successful at improving AQ?

The Public Company Accounting Oversight Board (PCAOB) was established by the Sarbanes-Oxley Act of 2002 to oversee the audits of public companies. The inspection program is the primary tool provided by Congress to help assure high quality audits. Recently, the auditing profession and some researchers have publicly criticized PCAOB inspections as largely ineffective. The basis for this criticism is largely derived from surveys and interviews with auditing professionals, which reflects their opinions of the inspectors and the inspection process.

5.1 Summary of the findings from the survey/interview research

Interview and survey studies have raised several criticisms of PCAOB inspections (Glover, Prawitt and Taylor (2009); Glover, Taylor and Wu (2015); Dowling, Knechel and Moroney (2015); Johnson et al. (2015)). One common criticism is that most audit deficiencies identified by the PCAOB inspectors reflect differences in professional judgment between the inspectors and auditors, rather than "true" deficiencies. Another common criticism is that the inspectors engage in "second guessing" the well-reasoned judgments of auditing professionals.

Exacerbating this concern are allegations that the inspectors lack the technical competence or current expertise to evaluate the decisions made by professional working auditors.

The PCAOB inspectors are also criticized for identifying deficiencies that simply reflect a lack of audit documentation, rather than the absence of a critical auditing procedure. In other words, auditors often assert that the appropriate auditing procedure was performed but not properly documented. Some studies further allege that the PCAOB's rigid focus on documentation provides auditors with incentives to focus on trivial minutiae, rather than more substantive issues. Another concern is that the PCAOB selects engagements to be inspected based on risk factors, and typically only examines the higher risk portions of an audit. This non-random selection means that the inspected engagements may not be representative of the audit firm's procedures, and thus may not be reflective of firm-wide AQ.

These criticisms are important because they suggest that PCAOB inspections are unlikely to improve AQ. Specifically, audit “deficiencies” that arise from judgmental differences, inspector incompetence, lack of auditor documentation, and unrepresentative engagements, should have no effect on AQ. Moreover, it is alleged that the inspections incentivize auditors to divert limited resources towards managing "inspection risk" and away from areas that present greater audit risk. Thus, the PCAOB inspection program may actually reduce AQ, as speculated in Dowling et al. (2015).

There are, however, obvious disadvantages in drawing inferences about the effectiveness of the regulator, by asking those who are being regulated. The inspection reports often criticize auditors. This suggests that evidence from interviews with auditing professionals may be biased

against the inspection program.²³ To gain a more objective and independent view on this controversy, we examine evidence from the archival empirical research.

5.2 Summary of the findings from the empirical archival research

We identify seven published and working papers that test whether PCAOB inspections improve AQ. Three studies examine the effects of the PCAOB inspections of non-US auditors and four examine PCAOB inspections of US auditors. We summarize each study below.

Lamoreaux (2016) compares the quality of non-US audit firms that are inspected by the PCAOB with the quality of non-US audit firms in countries that prohibit PCAOB inspections of domestic auditors. Using a difference-in-differences design, the study finds that US-listed foreign companies with PCAOB-inspected auditors have a higher likelihood of receiving GC opinions, a lower likelihood of receiving adverse internal control opinions, and lower discretionary accruals (DAC), relative to US-listed foreign companies in countries that prohibit PCAOB inspections. Krishnan, Krishnan, and Song (2016) compare the quality of US-listed foreign companies that have PCAOB-inspected auditors with the quality of two control groups: non-US-listed foreign companies that have PCAOB-inspected auditors but whose own engagements are not subject to inspection, and foreign companies with auditors not inspected by the PCAOB. Using a difference-in-differences design, they find that US-listed companies with PCAOB-inspected auditors have lower DAC and higher value relevance of earnings after the

²³ We have heard numerous unsupported assertions about PCAOB inspections during research workshops and conferences. One common assertion from some academic researchers is that the deficiencies disclosed in inspection reports are simply documentation issues. We find this puzzling, however, because our review of the inspection reports does not find a single deficiency that mentions a lack of audit documentation. Another common assertion is that the reported deficiencies are not serious, and simply reflect differences in professional judgment. This too appears contrary to the content of actual inspection reports, which, in our judgment, contain serious deficiencies. Unfortunately, it appears that researchers have failed to verify whether their assertions are consistent with the details contained in the inspection reports. Overall, we believe that researchers have an obligation to show more skepticism with regards to what auditors are telling them. Academic studies need to be objective and independent because otherwise they might be used as a political lobbying tool on behalf of the auditing profession (or indeed regulatory agencies).

PCAOB inspections, relative to the control groups. Fung, Ramen and Zhu (2014) examine the effect of PCAOB inspections on the non-US-listed clients of foreign audit firms. They find that AQ (as captured by several proxies) is higher after audit firms are inspected by the PCAOB, as compared to non-US-listed clients that have uninspected auditors. Thus, the findings in these studies suggest that PCAOB inspections of non-US auditors improve AQ.

In a US setting, Drake, Goldman, and Lusch (2016) examine the remediation effects of publicly disclosing Deloitte's 2007 Part II inspection findings, which indicated deficiencies in auditing income tax accounts. They find that the public disclosure is followed by Deloitte's clients increasing their deferred tax asset valuation allowances and reserves for uncertain tax benefits. This suggests that PCAOB inspections improve auditors' scrutiny over the accounts that were found to be deficient. DeFond and Lennox (2016) examine whether PCAOB inspections affect the quality of internal control audits. They find that internal control audit deficiencies identified in PCAOB inspections lead to an increase in the issuance of adverse internal control opinions by auditors. Their findings suggest that PCAOB inspections prompt auditors to remediate deficiencies in their audits of internal controls.

In a recent working paper, Gipper, Luez, and Maffet (2015) examine the change in the market's response to earnings news following the staggered introduction of PCAOB inspections at the Big 4 firms. Using a difference-in-differences design, they find that the earnings response coefficients are larger following PCAOB inspections, which suggests that inspections increase the credibility of financial reporting. Aobdia (2016) uses proprietary PCAOB inspection data to examine whether inspections increase audit effort. He finds that, after the inspections, auditors increase audit hours on both the inspected and non-inspected engagements. Moreover, inspected

clients with reported deficiencies are more likely to switch to a high quality auditor. His findings suggest that PCAOB inspections improve audit effort and are valued by clients.

5.3 Conclusion

Taken together, the conclusions found in the archival literature are in sharp contrast to those found in the survey and interview literature. Archival studies find that PCAOB inspections improve AQ, as evidenced by both the audit output and input measures, and both actual and perceived AQ proxies. We caution, however, that there are several caveats that should be considered in interpreting these findings. First, there may be a publication bias against "no result" studies that find insignificant effects on AQ. Second, empirical AQ proxies such as DAC and GC opinions have important limitations (see Controversies #3 & #4). Finally, even if researchers conclude that PCAOB inspections increase AQ, the net benefits or costs of the inspections are difficult to quantify. Overall, while it is still premature to draw definitive conclusions, the bulk of the empirical archival evidence finds that PCAOB inspections do improve AQ. However, this evidence cannot be interpreted as a recommendation for more regulatory intervention or a justification for existing regulation (see Controversy #1).

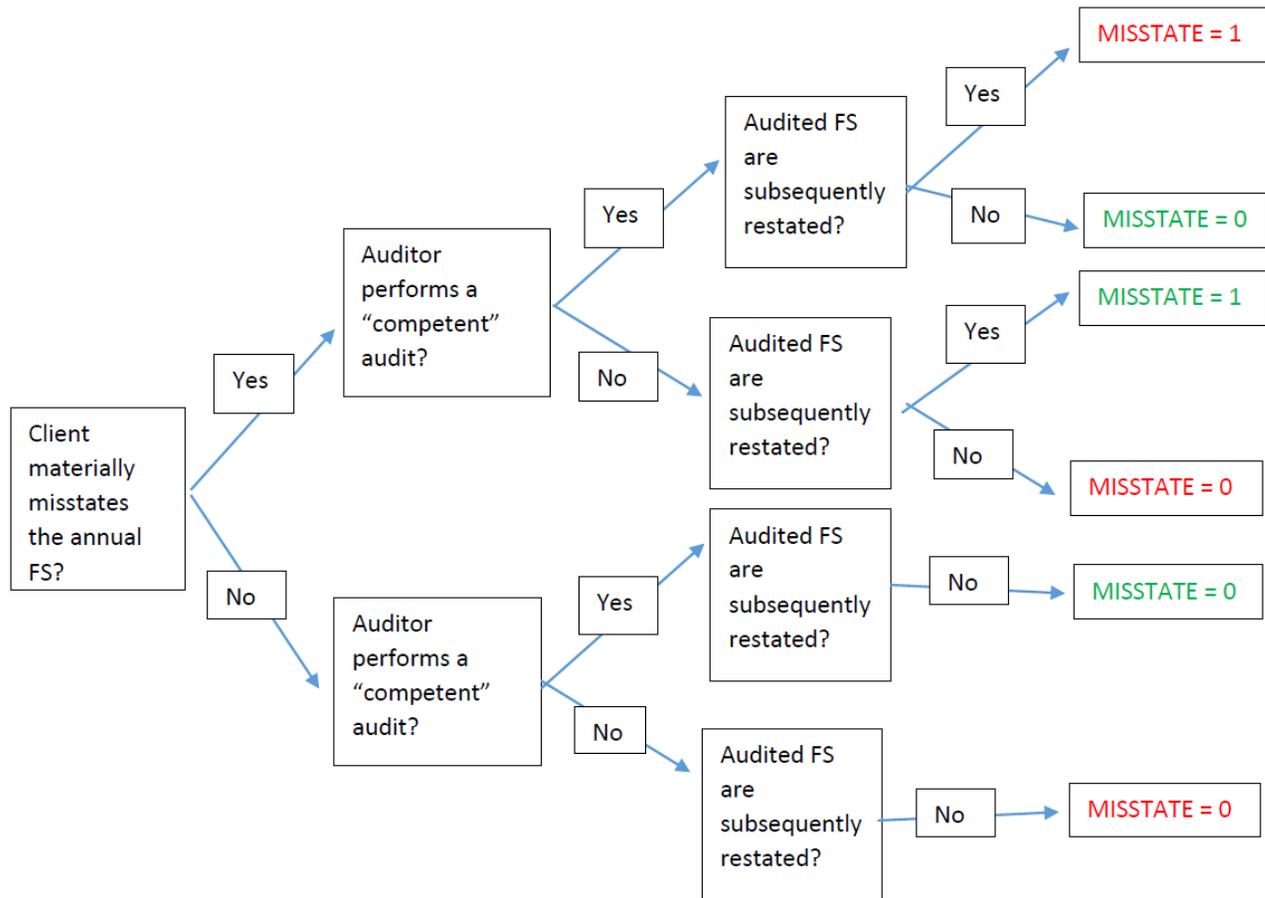


Fig. 1
Using accounting restatements as a measure of audit quality

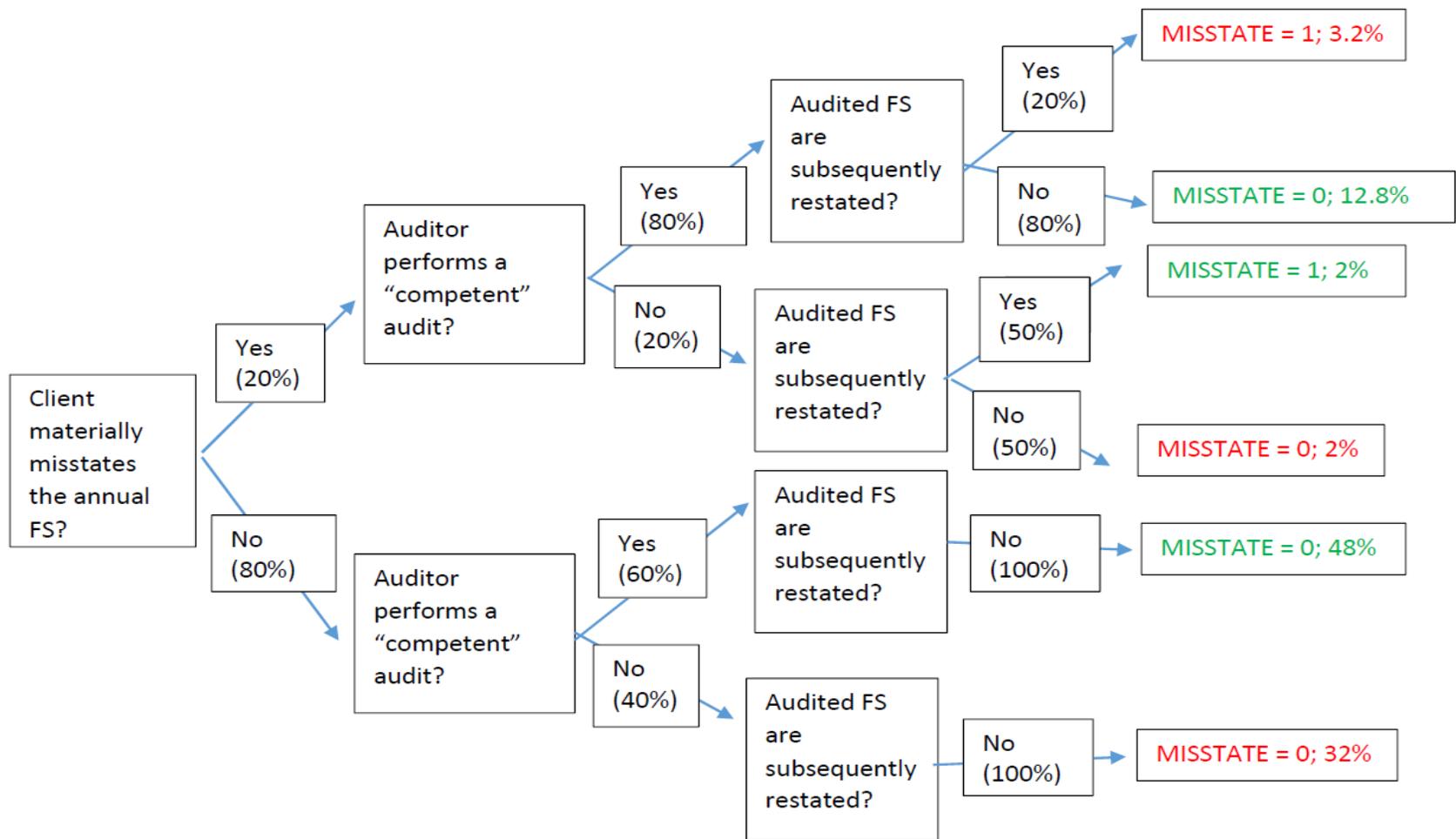


Fig. 2
Quantifying the measurement errors when researchers use accounting restatements to measure audit quality

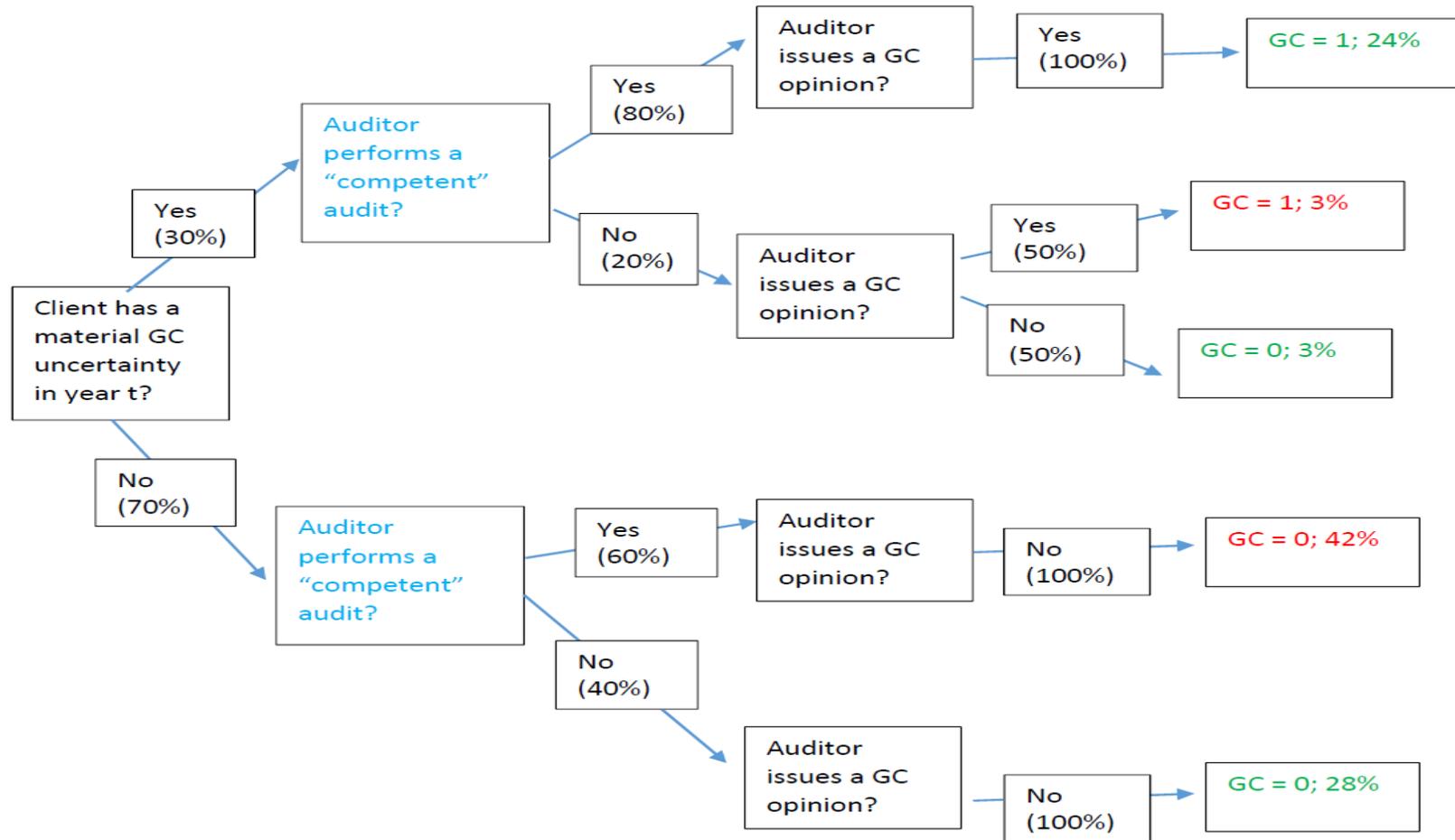


Fig. 3
Quantifying the measurement errors when researchers use GC audit opinions to measure audit quality.

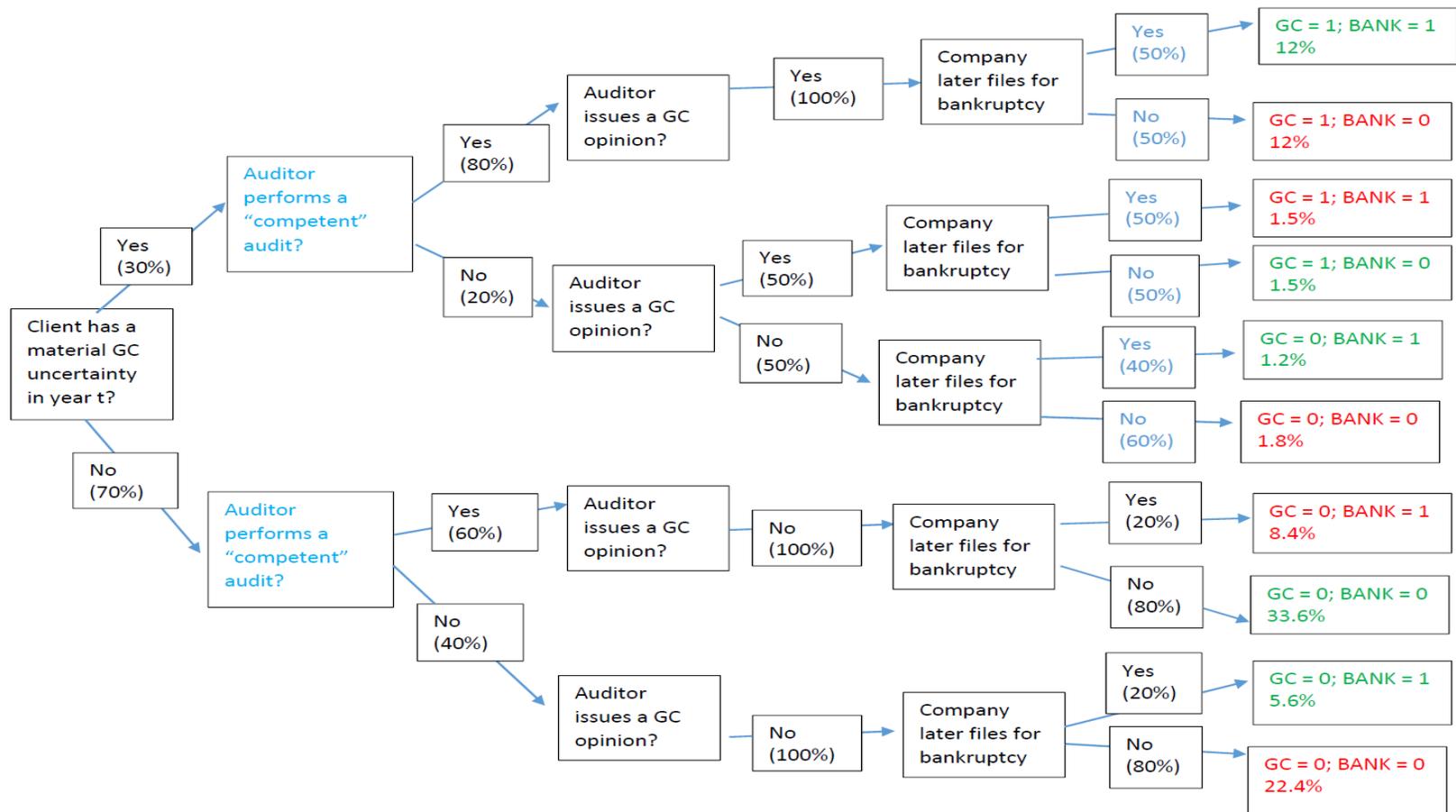


Fig. 4
Quantifying the measurement errors when researchers use Type I and Type II error rates to measure audit quality.

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