

**Are Audit Committees More Challenging Given a Sophisticated Investor Base? Does the Answer Change Given Anticipation of Additional Mandatory Audit Report Disclosure?**

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## **Are Audit Committees More Challenging Given a Sophisticated Investor Base? Does the Answer Change Given Anticipation of Additional Mandatory Audit Report Disclosure?**

### **Abstract**

This study examines the effect of investor sophistication on experienced audit committee (AC) members' propensity to ask challenging questions about management's significant accounting estimates. Findings indicate AC members are more challenging given a sophisticated vs. unsophisticated investor base. This difference, however, narrows in the presence of anticipated additional audit report disclosure regarding such estimates where AC members tend to *decrease* their overall questioning behavior. Further analysis indicates this pattern is driven by those who are designated financial experts and that the effects are likely below the level of AC members' conscious awareness. The finding that AC members ask fewer challenging questions given unsophisticated investors is potentially disconcerting given the SEC's traditional emphasis on protecting unsophisticated investors. Moreover, the finding that anticipation of mandated audit report disclosure decreases AC member's propensity to ask challenging questions has potential implications for both research and practice, especially given recent regulatory and standard-setting activities designed to increase audit report disclosure.

**Keywords:** Audit committee effectiveness, investor sophistication, mandatory audit report disclosure

## Introduction

As fiduciaries of shareholders, audit committee (AC) members form part of the “three-legged stool” who, along with management and auditors, are responsible for public company’s financial reporting. AC members are charged with overseeing the external audit process (NYSE & NASD, 1999; AS 16). One of the most significant ways in which AC members can fulfill their duties and help protect shareholder interests is to ask challenging questions of the auditor or of management about significant accounting estimates (NACD, 2012; Beasley et al., 2009; Gendron & Bedard, 2006; Gendron et al., 2004). Prior research, however, provides little theory or empirical evidence on the factors that influence whether and the degree to which AC members actually ask such questions.<sup>1</sup> This study provides theory and empirical evidence of how two institutionally important factors jointly influence AC member’s propensity to ask such questions. In particular, it examines the influence of *investor sophistication* (i.e., more versus less sophisticated investor base) and *anticipation of additional mandatory audit report disclosure* (i.e., presence versus absence of a new regulation requiring additional disclosure on management’s significant accounting estimates in the audit report).

The protection of investors, especially those who are unsophisticated, has long been of interest to regulators and standard setters, as evident in various historic rules imposing fiduciary duties on accounting professionals and AC members to protect investors who are unable to sufficiently protect their own interests (e.g., SEC, 1969). Despite their fiduciary duty to protect shareholder interests, however, it is not clear whether and to what extent the characteristics of a firm’s investor base affects AC members’ oversight process. Melding institutional knowledge about the financial

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<sup>1</sup> Some anecdotal evidence alleges that some AC members failed to ask challenging questions during the financial crisis and in the midst of corporate fraud (Deloitte, 2010; Ernst & Young, 2008). WorldCom board members, for example, were sanctioned up to 20% of their net worth for their passiveness in not asking critical questions, allowing for the fraud to sustain (Kaplan & Kiron, 2004).

reporting context with accountability theory from social psychology (Lerner & Tetlock, 1999), this study provides insight on this issue by examining how investor sophistication influences the extent to which AC members engage in questioning behavior.

Theory holds that individuals develop different social and cognitive strategies for coping with accountability to obtain acceptance from, or avoid conflict with, important interpersonal or institutional audiences (Tetlock, 1983; Tetlock et al., 1989). This implies that the extent to which differences in investor sophistication will influence AC members' questioning behaviors likely depends on whom AC members perceive greater accountability pressure from. Being fiduciaries, investor protection (especially of those that are more vulnerable and unsophisticated) may be the key motive underlying AC members' behavior, leading them to feel greater accountability pressure in the presence of unsophisticated investors. Simultaneously, however, AC members face significant reputational and liability risks. AC members are likely to be aware that sophisticated investors are more likely than unsophisticated investors to scrutinize discretionary accruals in financial statements (e.g., Balsam et al., 2002) and engage in aggressive actions such as shareholder activism if earnings disappoint (e.g., Ryan & Schneider, 2002). Hence, I expect AC members to perceive greater accountability pressure in the presence of sophisticated investors, leading their inclination towards pre-emptive criticism to be geared to protecting themselves from such negative consequences, instead of being geared to the fiduciary protection of unsophisticated investors. Therefore, I predict that AC members will be more questioning of significant accounting estimates in their oversight process given sophisticated as opposed to unsophisticated investors.

The study further investigates how and whether anticipation of additional mandatory audit report disclosure moderates the effect of investor sophistication on AC members' questioning behavior. Recently, regulators and standard setters have begun to contemplate requiring additional

disclosure in the audit report as a way of providing more information to investors regarding the financial reporting and auditing process. Proponents of such change generally argue that greater disclosure will improve the frankness of communications among the AC, management, and auditors and thereby, help increase investor confidence (Ernst & Young, 2012; PCAOB, 2011, 2013; PwC, 2012).<sup>2</sup> These movements accentuate the importance of research questions related to whether and how additional mandatory audit report disclosure likely will affect AC members' oversight process.

Greater disclosure of significant accounting estimates in the audit report would subject these estimates to additional scrutiny by investors, especially those who are sophisticated. Proponents of increased audit report disclosure believe that greater disclosure requirements will make preparers (i.e., management) as well as overseers (auditors and ACs) of the financial statements exert greater effort (e.g., more questioning behavior from the AC) resulting in better financial reporting quality (Ernst & Young, 2012; PCAOB, 2013; PwC, 2012). However, the exposure to various reputational and litigation risks may cause AC members to choose a more defensive strategy when they anticipate greater disclosure in the audit report. One way AC members can reduce potential risk exposure is to strategically avoid asking challenging questions about the significant accounting estimate predicted to be disclosed in the forthcoming audit report. Such a tactic would enable AC members to create a portrayal that there was no reason for them to doubt the overall appropriateness of the estimate and hence, avoid being subject to additional scrutiny from sophisticated investors. Moreover, it may even cause the external auditors to believe less extensive disclosure about the estimate is necessary. Therefore, I predict AC members will

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<sup>2</sup> Some of the changes that recently have been discussed by US standard setters and regulators, such as including more information about management's significant accounting estimates and communication of such matters to the AC, are already in new audit standards issued in some jurisdictions (e.g., ISA 700 in the UK and Ireland).

decrease their questioning behavior when they anticipate additional mandatory audit report disclosure. Further, given that sophisticated investors compared to unsophisticated investors are likely to be of greater concern, AC members' questioning behaviors will likely decrease more given sophisticated, as opposed to unsophisticated, investors in anticipation of additional mandatory audit report disclosure.

I test these predictions in an experiment using a 2 x 2 design, with investor sophistication and anticipation of additional mandatory audit report disclosure as between-subject factors. Participants are predominantly experienced AC members who first receive information about a significant accounting estimate related to potentially obsolete inventory that management has favorably revised late in the audit process. Participants who are in the anticipation of additional disclosure present conditions are then alerted of a new regulation that requires auditors to disclose additional information about significant accounting estimates in the audit report, while no such regulation is in the anticipation of additional disclosure absent conditions. The main task is to develop questions about the significant inventory obsolescence estimate after viewing the following: management's justifications for favorably revising it, the auditor's communication about the estimate to the AC, and a draft of the anticipated audit report under the regulatory regime where the requirement of additional audit report disclosure is either present (anticipation of additional disclosure present conditions) or absent (anticipation of additional disclosure absent conditions).

Overall, the findings support the hypothesized predictions. AC members ask a higher number of challenging questions given a sophisticated, as opposed to an unsophisticated, investor base. Moreover, AC members' questioning behavior drops to a significantly greater extent given sophisticated, as opposed to unsophisticated, investors when they anticipate additional mandatory

audit report disclosure. Additional analysis shows that designated financial experts are more responsible than at-large AC members for driving this ordinal interaction pattern of findings. Because designated experts likely face greater accountability risk than those who are not so designated (Rupley et al., 2011; Vera-Munoz, 2005), the fact that they drive the results provides further support for the assumption that, on average, AC members are more concerned about avoiding potential scrutiny from sophisticated investors and protecting themselves than protecting the more vulnerable, unsophisticated investors.

Despite these main findings, analysis of post experimental questions shows that AC members believe that investor sophistication would *not* significantly affect their propensity to ask challenging questions and that they would ask *more* challenging questions when they anticipate additional mandatory audit report disclosure. Notably, neither belief is validated by actual AC questioning behaviors, and the latter belief runs exactly opposite to what actually occurs in my experiment. This indicates that the observed joint effects of investor sophistication and anticipation of additional mandatory audit report disclosure on AC members' questioning behavior likely is below the level of AC members' conscious awareness.

This study makes several contributions. One, it enhances our understanding of factors that influence AC members' questioning behaviors by identifying investor sophistication and anticipation of additional mandatory audit report disclosure as joint determinants of AC members' propensity to ask challenging questions. Two, the finding that AC members tend to ask significantly more probing questions given sophisticated as opposed to unsophisticated investors under the historic auditor's reporting model, is particularly interesting given the consistent historic and topical emphasis on investor protection by regulators and standard setters (SEC, 1969; PCAOB, 2012). Three, this study addresses the call for research on "unintended (behavioral)

consequences” of attempts to regulate AC members (Turley & Zaman, 2004) by providing theory-consistent evidence on how mandating greater disclosure in the audit report can actually reduce AC members’ oversight behavior. Four, this study suggests that AC members are unlikely aware of how investor sophistication and, especially, anticipated increase in mandatory audit report disclosure actually affect their propensity to ask challenging questions of management or auditors. Finally, the study adds to the expertise and corporate governance literatures by demonstrating that, despite having greater capacity to challenge management’s estimates, designated financial experts do not act on this advantage when the investor base is predominantly unsophisticated, a potentially troubling outcome for these users’ investment choices and for regulators and standard setters hoping to ensure adequate investor protection.

The remainder of this paper is organized as follows. Section II provides background and theoretical development. Section III outlines the experimental method and section IV provides the results. Section V presents supplemental analyses and section VI concludes.

## **Background and Theoretical Development**

### **Background**

The objective to protect investors is regaining attention from regulators and standard setters such as the PCAOB who recently announced investor protection as their new strategic mission (PCAOB, 2012). Given their fiduciary duty towards protecting investors, the AC members’ role in the financial reporting process and the importance of enhancing their effectiveness are also being emphasized. The implementation of AS No. 16 *Communication with Audit Committees*, which encourages two-way communications between AC members and auditors, highlights the regulators’ recognition of the vital role ACs play in ensuring the integrity of the financial reporting process.



Prior studies have examined AC effectiveness in terms of the extent to which AC members support auditors versus management given auditor-management disagreements (Knapp, 1987; DeZoort & Salterio, 2001; DeZoort et al., 2003a; DeZoort et al., 2003b; DeZoort et al., 2008). More recently, however, studies indicate ACs are rarely involved in resolving auditor-client negotiations (Gibbins et al., 2001; Cohen et al., 2002, 2010; Gibbins et al., 2007) and suggest measuring AC effectiveness in terms of the extent to which AC members ask probing questions related to negotiated accounting decisions (Kang et al., 2015; Pomeroy, 2010). This is consistent with the NACD's belief that "AC members should pay particular attention to the issues identified by management and ... question assumptions that underlie critical accounting estimates" in fulfilling their oversight duty and protecting shareholder interests (NACD 2010, p. 8). However, little is known with respect to factors that actually influence AC's questioning behavior due to the paucity of empirical research in this area. This study sheds light on this important issue by melding institutional knowledge of the financial reporting and audit context with accountability theory from social psychology (Lerner & Tetlock, 1999) to predict and examine how two factors – investor sophistication and anticipation of additional mandatory audit report disclosure – jointly affect AC's propensity to challenge management's significant accounting estimates.

## **Theoretical Development**

### **The Effect of Investor Sophistication**

The social psychology theory of accountability concerns how individuals cope with different socio-economic pressures (Gibbins & Newton, 1994; Hoffman & Patton, 1997; Lerner & Tetlock, 1994, 1999; Peecher, 1996; Tetlock, 1983; Tetlock et al., 1989). Specifically, it predicts that individuals develop different social and cognitive strategies for coping with accountability to obtain acceptance from, or avoid conflict with, important interpersonal or institutional audiences.

This implies that AC members' questioning behavior in overseeing the financial reporting and audit process will be influenced by who they perceive greater accountability pressure from.

Within the financial reporting context, AC members are accountable for protecting shareholder interests and overseeing the external audit process (NYSE & NASD, 1999; AS 16). To the extent AC members take on this fiduciary duty, investor protection (especially those that are more vulnerable and unsophisticated) is likely to be a key motive underlying their behaviors. In addition, AC members arguably self-select into their fiduciary role because they desire to help protect others with integrity.

Along with their fiduciary duty to protect investors, however, AC members simultaneously face significant reputation and liability risks. These risks are more salient in contentious corporate governance environments, such as those subject to increased shareholder scrutiny and shareholder activism.<sup>3</sup> Relative to unsophisticated investors, sophisticated investors who hold greater analytical skills (Bartov et al., 2000; Walther, 1997) are more likely to question management's accounting (Balsam et al., 2002) as well as engage in shareholder activism, which often results in negative consequences such as a change in board composition (Carleton et al., 1998; Del Guercio & Hawkins, 1999; Karpoff et al., 1996; Ryan & Schneider, 2002; Smith, 1996).<sup>4</sup> These institutional aspects of the financial reporting context suggest that AC members will likely perceive greater accountability pressure in the presence of sophisticated, as opposed to unsophisticated, investors and act more as strategic agents to protect their self-interests, rather than as fiduciaries. Accordingly, I predict that AC members will ask more probing questions given a

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<sup>3</sup> Shareholder activism refers to the use of power by an investor to bring about significant changes in the strategy or organizational structure of firms and include implementing confidential voting, creating shareholder advisory committees, and altering board composition.

<sup>4</sup> Change in board composition is one outcome of activist shareholders, who sometimes themselves join the board. For example, on August 30, 2013, Microsoft signed a pact with ValueAct Capital, an activist shareholder that gives the President of ValueAct Capital an option to join as a director (see <http://wp.me/p3pFEk-2h1>).

predominately sophisticated investor base to reduce their chance of being scrutinized by sophisticated investors and of facing negative consequences due to shareholder activism.

**H1:** AC members' propensity to ask challenging questions about management's significant estimates is greater when the primary shareholders are sophisticated versus unsophisticated.

### **The Moderating Effect of Anticipating Additional Mandatory Audit Report Disclosure**

Increasing information regarding the audit process by modifying the auditor's reporting model has been a longstanding issue which is gaining momentum with the project launched by the PCAOB Standing Advisory Group (SAG) on revising the current audit report to disclose additional information (PCAOB, 2010). Most recently, this project led to a proposed new standard from the PCAOB that would require auditors to disclose additional information about critical matters that have been communicated with AC members (PCAOB, 2013). Proponents of requiring additional audit report disclosure suggest that it will increase the effectiveness of the interaction between AC, management, and auditors (NYSE & NASD, 1999; Ernst & Young, 2012; PCAOB, 2013; PwC, 2012). Notably, the PCAOB holds that new disclosures in the audit report should not diminish the governance role of the AC over public company's financial statement information but rather lead the AC to spend more time reviewing and discussing the critical audit matters (PCAOB, 2013, p. A5-41). Under this view, the hopeful expectation is that requiring greater audit report disclosure will lead AC members to not change or to ask even more probing questions of management or of auditors during their oversight process.

Greater audit report disclosure on the financial reporting and audit process, however, increases the possibility of sophisticated investors challenging the appropriateness of the firm's financial accounting or engaging in shareholder activism activities. Hence, when AC members are predicted to act more as strategic agents to protect their self-interests (e.g., trying to reduce facing reputational and liability risk), more than fiduciaries, AC members likely will choose a more

defensive strategy that allows them to escape potential censure from such events. One way to achieve this objective is to ask fewer questions about management's estimates to create a portrayal that there are no unusual reasons for them to question the appropriateness of the financial reporting and auditing process.<sup>5</sup> The tactic would make it appear to the investor base that there are no unusual reasons for them to further question the appropriateness of the financial reporting and auditing process and protect the AC from any additional shareholder scrutiny that may result from greater disclosure regarding management's significant estimates in the audit report. Moreover, it may also lead to less extensive disclosure regarding the estimate deemed necessary by the auditors. Given that sophisticated investors compared to unsophisticated investors are likely to be of greater concern, AC members' questioning behaviors will likely decrease more given sophisticated, as opposed to, unsophisticated investors in anticipation of additional mandatory audit report disclosure. This prediction is hypothesized below and illustrated in Figure 1.

**H2:** AC members' propensity to ask challenging questions about management's significant estimates is greatest when the primary shareholders are sophisticated and there is no anticipated additional mandatory audit report disclosure, lower when the primary shareholders are unsophisticated and there is no anticipated additional mandatory audit report disclosure, and lowest when additional mandatory audit report disclosure is anticipated.

[Insert Figure 1 Here]

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<sup>5</sup> Such a tactic is similar to what the accountability literature calls *defensive bolstering*, which is a self-serving strategy employed to cope with greater accountability pressure typically after a noncompliant action (Gibbins & Emby, 1984; Gibbins & Newton, 1994; Lerner & Tetlock, 1999; Messier & Quilliam, 1992). Prior auditing studies have found auditors that engage in defensive bolstering by "stylizing" documentation in audit working papers so as to create a desired portrayal of what happened such as the appropriateness of the work prepared and conclusions reached (Gibbins, 1984; Rich et al., 1997).

## Method

### Participants & Experimental Design

#### Participants

As AC members are high fidelity participants that are not easily accessed, I ensured complete anonymity and targeted individuals who either possess AC experience or are considered eligible to serve on an AC.<sup>6</sup> Individuals were invited via e-mail through the alumni association of the college of business at a Big 10 university and also through professional networks asking them to voluntarily participate in a study about the decision making process of ACs and were randomly assigned to experimental conditions.<sup>7</sup>

A total of 81 participants completed the online experiment, 73 (90.1%) of whom have some prior AC experience.<sup>8</sup> Specifically, they have 7.4 years of AC experience on average (st. dev. = 6.3; min = 0; max = 25), with no significant difference across the four different experimental conditions.<sup>9</sup> Approximately half (52.1%) of the participants with AC experience reported being designated financial experts. These participants also have significantly greater amount of AC experience (9.53 vs. 5.10 years,  $t_{79} = 3.24$ ,  $p < 0.01$ , one-tailed) and have served on a significantly greater number of public company ACs (2.03 vs. 0.83,  $t_{79} = 2.54$ ,  $p < 0.01$ , one-tailed) compared to those who are not so designated.

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<sup>6</sup> Eligibility is determined based on their year of earning their bachelor's degree in business and their current career standing. Specifically, their graduation year must be before 1996 (i.e., have at least 15 years of professional experience) and they must either be professors or hold or have held corporate positions in or near the C-suite.

<sup>7</sup> The survey software ensured complete anonymity (i.e., no IP addresses were collected). Hence, an analysis of the differences between the responses obtained from the two different recruitment methods could not be conducted.

<sup>8</sup> While I cannot calculate response rates because I do not know the number of participants recruited via professional networks, I can infer that a consistent response rate exists across experimental conditions given there was random assignment to experimental conditions and a similar number of observations manifested across conditions.

<sup>9</sup> Eight participants reported to have no AC experience but met qualifications to serve as AC members. The analysis result excluding these 8 participants are not significantly different from the results including all 81 participants. Hence, I include all 81 participants in my analysis.

As one would expect given random assignment, participants assigned to different experimental conditions are similar in terms of their prior propensity to ask questions at AC meetings and task-relevant knowledge. Specifically, the reported propensity to ask questions in AC meetings is moderately high with a mean of 1.33 on a scale of -3 (extremely low) to +3 (extremely high), with no significant difference across conditions ( $p = 0.157$ , two-tailed). Further, as Table 1 shows, the mean (median) values for participants' self-reported relative knowledge of financial accounting, financial statement analysis, auditing, AC best practices, and the industry used in the case materials are 80.8% (82.7%), 81.7% (85.0%), 79.2% (82.7%), 77.5% (81.3%), and 50.7% (50.0%), respectively, again with no significant difference across conditions (lowest  $p = 0.187$ , two-tailed).

[Insert Table 1 Here]

### **Independent Variables**

I employ a full factorial 2 x 2 between-subjects online experiment, with investor sophistication and anticipation of additional mandatory audit report disclosure as manipulated independent variables. Investor sophistication is manipulated at two levels (lower vs. higher) using information regarding the firm's primary shareholders. Specifically, participants are informed either that 85% of the investor base consists of unsophisticated or sophisticated investors.

Anticipation of additional mandatory audit report disclosure is also manipulated at two levels (absent vs. present). In the present conditions, participants are informed of a new regulation that requires additional disclosure on management's significant accounting estimates in the audit report. They are also provided with a draft of an audit report, including a preliminary version of the likely additional disclosure regarding the significant accounting estimate described in the case. In the anticipation of additional disclosure absent conditions, there is no new regulation regarding audit

report disclosure and the draft audit report is characterized as a standard unqualified audit report with no additional disclosures regarding the financial reporting and audit process.

### **Dependent Variables**

The primary dependent variable, AC members' propensity to challenge management's significant estimates, is examined in terms of the level and nature of questions AC members ask. Specifically, I use the number of *probing* questions AC members ask after receiving information related to a significant accounting estimate as the primary measure of their questioning behavior. There is no generally accepted list of probing questions AC members should ask. Hence the coding scheme is developed based on AC best practices set out by the NACD, Center for Audit Quality (CAQ), and The Audit Committee Handbook. Specifically, probing questions are questions that are difficult to answer by challenging the respondent to justify the decision or questions that directly probe into the process of resolving the decision (Kang et al., 2015; Pomeroy, 2010). Therefore, if by answering the question, the question recipient would have to justify or provide important additional information about their decision or disclose how the accounting treatment was agreed upon, then the question is considered probing. The full coding scheme is shown in Appendix A.

The coding was performed independently by two manager-level auditors of two different Big 4 accounting firms who were blind to the experimental conditions and hypotheses. The coders were first provided with the previously described coding scheme that defines what probing questions are. The coders were then asked to evaluate the list of questions for every participant to determine whether or not each question was probing in nature (i.e., binary coding with 1 = probing, 0 = not probing). The coders initially obtained a high level agreement of 89.6%. Any disagreements were resolved through a conference call.

## Case Material and Procedures

Participants who agreed to participate in the study clicked on a link to a website provided in the invitation e-mail that randomly directed them to one of the four experimental conditions. The experiment began by asking participants to assume they are a member of an AC of a manufacturing company and are preparing for an upcoming board meeting.

As illustrated in Figure 2, the participants first read background information about the firm, including a brief overview of its operations and information regarding its primary investor base (unsophisticated vs. sophisticated). Participants in the anticipation of additional disclosure present conditions were further alerted of a new regulation requiring additional commentary on significant accounting estimates in the audit report. After reading the background information about the firm, all participants read a document developed by the external auditor regarding a significant accounting issue related to obsolete inventory. The document included information about the nature of the accounting issue, management's initial and revised (more favorable) estimate, and the auditor's assessment of management's final estimate. The document was followed by an income statement and balance sheet that reflects the initial and revised estimate. Finally, participants in the anticipation of additional disclosure absent conditions previewed a preliminary draft of the anticipated standard audit report with no additional commentary. Participants in the anticipation of additional disclosure present conditions previewed a preliminary draft of the anticipated audit report under the new regulation that includes likely commentary about the accounting estimate.<sup>10</sup> Such operationalization of additional audit report disclosure is based on the

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<sup>10</sup>It is important to note that the additional commentary provided in the additional disclosure present conditions does not include additional information regarding the significant accounting estimate that is not provided in the additional disclosure absent conditions. The additional commentary is simply a high-level summary of the information provided in the case materials to all participants. Hence, the information content regarding the significant accounting estimate is held constant across the different experimental conditions.



long-form reporting model, which is one of the possible forms of the modified audit report being considered by the PCAOB.

Although the eventually implemented, new form of the audit report may differ from the one used in the study, this is a realistic option and, more importantly, is well suited for testing my theory. In addition, the long-form reporting model is similar to how emphasis-of-matter is disclosed in current reports. Hence, the use of a long-form reporting model allows the study findings to have implications with respect to possible effects that emphasis-of-matter disclosures under the current reporting model may have. Appendix B presents the additional commentary provided in the additional disclosure conditions.

[Insert Figure 2 Here]

After previewing a preliminary form of the anticipated audit report, the participants were asked about their comfort level on the final estimate as well as the degree to which they would like to ask questions about the issue. I further asked them to develop questions they would like to ask the external auditors and/or management regarding the significant accounting issue. The experiment concluded by asking several debriefing and demographic questionnaires.

## **Results**

### **Manipulation Checks**

Analysis results indicate my manipulations of investor sophistication and anticipation of additional mandatory audit report disclosure were successful. Specifically, participants in the higher sophistication conditions perceive investor sophistication to be significantly higher than those in the lower sophistication conditions (1.79 vs. -1.43;  $t_{79} = 14.60$ ,  $p < 0.001$ , one-tailed). Participants in the higher sophistication conditions also perceive the investor base to have a significantly higher level of expertise compared to the participants in the lower sophistication

conditions (1.51 vs. -1.42;  $t_{79} = 14.21$ ;  $p < 0.001$ , one-tailed). Moreover, participants in the higher sophistication conditions perceived the investor base to be significantly less vulnerable compared to the participants in the lower sophistication conditions (0.86 vs. 1.41;  $t_{79} = -2.03$ ;  $p = 0.023$ , one-tailed).<sup>11</sup> Participants in the anticipation of additional disclosure present conditions also were found to believe the preliminary version of the anticipated audit report they saw would alert the financial users to a greater extent (0.09 vs. -1.5) than those in the additional disclosure absent conditions ( $t_{79} = 4.45$ ,  $p < 0.001$ , one-tailed).<sup>12</sup>

To ensure that my manipulation of investor sophistication did not lead to a difference in AC members' risk assessment, I also conduct a post-test survey using a small panel of 13 participants.<sup>13</sup> Using a shorter version of the original experiment in which investor sophistication is manipulated within subjects, I ask the panel to indicate the level of risk of material misstatement and fraud.<sup>14</sup> Results suggest that my manipulation of investor sophistication does not lead to significantly different levels of assessed risk of fraud or material misstatement (lowest  $p = 0.190$ , two-tailed). Further, to examine the difference in accountability pressure activated by a more versus less sophisticated investor base, I ask the panel to indicate the likelihood they believe the investor base would 1) require them to justify their judgments and decisions, 2) evaluate the quality of their decision process, and 3) require them to explain the process they followed when making their judgments and decisions. Consistent with my predictions, I

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<sup>11</sup> The responses regarding the extent to which they believe the investor base is vulnerable, sophisticated, as well as their perceived level of investor expertise were on a scale of -3 (extremely not vulnerable/unsophisticated/low) to +3 (extremely vulnerable/sophisticated/ high).

<sup>12</sup> The responses regarding the extent to which they believe the preliminary version of the anticipated audit report for the hypothetical firm would alert the financial statement users of the significant accounting issue were on a scale of -3 (extremely low) to +3 (extremely high).

<sup>13</sup> The panel members had an average of 7.88 years of experience serving on public company ACs. Six of them were designated as financial experts in the ACs they serve on while 7 of them were former audit partners who are eligible to serve as financial experts. It is important that the post-test panel consists of AC members who currently are designated financial experts or are eligible to serve as one given the significant effect of designated financial experts in my main findings (see Supplemental Analysis for details).

<sup>14</sup> The order of high vs. low investor sophistication was counter-balanced.

find that AC members feel greater accountability pressure given a more sophisticated, as opposed to a less sophisticated, investor base (highest  $p < 0.001$ , two-tailed).

### **Test of Hypotheses**

AC members' propensity to question management's significant accounting estimates is examined using the number of probing questions asked by the participants. Panel A of Table 2 tabulates the average and standard deviation of the number of probing questions participants developed by experimental conditions, and Panel B of Table 2 presents the analysis of variance (ANOVA). Figure 3 also presents the observed pattern of results. Results show that AC members show greater questioning when the primary shareholders are sophisticated compared to unsophisticated ( $3.74 > 2.11$ ;  $F_{1, 77} = 4.66$ ;  $p = 0.034$ , two-tailed). Therefore, H1 is supported. Moreover, when AC members anticipate additional disclosure in the audit report, their level of questioning significantly decreases ( $3.82 > 2.02$ ;  $F_{1, 77} = 5.65$ ;  $p = 0.020$ , two-tailed). Results also show a significant interaction between investor sophistication and the anticipation of additional disclosure in the audit report on AC members' questioning behavior, in which the decrease in questioning behavior due to anticipation of additional disclosure is greater given a sophisticated, as opposed to, unsophisticated investor base ( $F_{1, 77} = 4.40$ ;  $p = 0.039$ , two-tailed).<sup>15</sup>

As I predict an ordinal interaction (i.e., a non-symmetric pattern of cell means) of investor sophistication and anticipation of additional mandatory audit report disclosure on AC members' questioning behavior, I use contrast codes to test H2. Such analysis allows me to obtain greater statistical power in examining interactions compared to the conventional ANOVA tests (Buckless & Ravenscroft, 1990). Panel C of Table 2 presents the results of the planned contrast tests as well

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<sup>15</sup> Analysis results of the participants' preference on questioning the accounting issue and their likelihood of questioning on behalf of investors are also directionally consistent with the findings based on the level and nature of questions developed by the participants.

as follow-up simple effect tests. Consistent with my prediction, I apply contrast weights as follows: +3 in the anticipation of additional disclosure absent/higher sophistication condition, +1 in the anticipation of additional disclosure absent/lower sophistication condition, and -2 in the anticipation of additional disclosure present conditions. Consistent with the predicted interaction in H2, results show that the planned contrast is statistically significant ( $F_{1, 77} = 10.76$ ,  $p = 0.001$ , one-tailed).<sup>16</sup> These findings, combined with the post-test panel survey results where I find AC members perceive greater accountability pressure from sophisticated versus unsophisticated investors, suggest that AC members' concern in protecting themselves from potential scrutiny of sophisticated investors, rather than their fiduciary responsibility to protect unsophisticated investors has a greater influence on their oversight behavior.

[Insert Table 2 and Figure 3 Here]

Given the findings, some may argue that greater mandatory audit report disclosure levels the playing field between sophisticated and unsophisticated investors. However, the findings are potentially disconcerting as the "leveling of the playing field" is obtained by a *decrease* in questioning behavior given *sophisticated* investors, not an *increase* in questioning behavior given *unsophisticated* investors when there is anticipation of additional mandatory audit report disclosure. Moreover, the fact that the questioning behavior is lower for unsophisticated investors under the current regime where there is no additional disclosure in the audit report is also potentially troubling as unsophisticated investors are the ones who would most likely benefit from

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<sup>16</sup> I examined the semi-omnibus F-test related to my planned contrast (see, e.g., Buckless & Ravescroft, 1990). The semi-omnibus F-test is statistically insignificant ( $F_{2, 78} = 2.01$ ,  $p = 0.142$ ), indicating that once the between-subject sum of squares accounted by the contrast is taken out, investor sophistication and anticipated additional mandatory audit report disclosure do not explain a significant amount of variation of the dependent variable (i.e., number of probing questions).

additional questioning from the AC, especially under financial reporting environments with less disclosure regarding the financial reporting and auditing process.

## **Supplemental Analyses**

### **Effect of Designated Financial Experts**

Being designated as an AC financial expert is likely to increase an AC member's perceived accountability risk (Paskell-Mede & Jackson, 1999; Rupley et al., 2011; Vera-Munoz, 2005; Zacharias, 2000). In fact, many of the comment letters to the SEC regarding the rule on financial experts proposed under Section 407 of SOX expressed concern that such rule would increase the perceived liability of AC members, decreasing their willingness to serve as financial experts or as AC members at all.<sup>17</sup> If this is true, the main findings of decreased questioning behavior when there is anticipated increase in mandatory audit report disclosure, especially given sophisticated investors, are likely to be stronger for participants who are designated financial experts. I conduct a supplemental analysis to test this prediction.

Table 3 summarizes the analysis based on the number of probing questions participants asked by groups. Panel A tabulates the descriptive statistics and Panel B presents the three-way analysis of variance (ANOVA), while Panel C primarily tests my prediction.<sup>18</sup> The observed pattern of the results by groups is shown in Figure 4.

[Insert Table 3 and Figure 4 Here]

Results suggest the findings documented in the previous section are mainly driven by participants who are designated as financial experts. Specifically, the +3, +1, -2, -2 planned

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<sup>17</sup> See <http://www.sec.gov/rules/proposed/s74002.shtml> for the full list of comment letters.

<sup>18</sup> As participants were randomly assigned, I did not balance how many designated financial experts ended up in different experimental conditions. As it turns out, the four conditions have an unbalanced number of designated financial experts. Some statisticians recommend using Type II instead of Type III sums of squares in such situations (e.g., Maxwell & Delaney, 1990). Analysis results using the Type II sums of squares is not significantly different than that using the Type III sums of squares.

contrast is statistically significant ( $F_{1, 34} = 14.85$ ,  $p < 0.001$ , one-tailed) for designated financial experts while it is not significant ( $F_{1, 39} = 0.76$ ,  $p = 0.194$ , one-tailed) for non-financial experts.<sup>19</sup> In addition, the results of the follow-up simple effect tests for designated financial experts show that when the AC does not anticipate additional mandatory disclosure in the forthcoming audit report, there is a significant effect of investor sophistication ( $F_{1, 34} = 13.93$ ,  $p = 0.001$ , one-tailed). The results also show that anticipated increase in mandatory audit report disclosure significantly influences the propensity to challenge management's estimates given sophisticated investors ( $F_{1, 34} = 16.53$ ,  $p < 0.001$ , one-tailed), while having no significant effect given unsophisticated investors ( $F_{1, 34} = 0.17$ ,  $p = 0.343$ , one-tailed). I also confirm that there is no statistically significant effect of investor sophistication given anticipated increase in mandatory audit report disclosure for designated financial experts ( $F_{1, 34} = 0.02$ ,  $p = 0.879$ , two-tailed).

Such findings provide further evidence in support of the assumption that AC members are more concerned about reducing accountability risk than acting as fiduciaries for investors. The fact that the main findings were driven by AC members who are likely to be more concerned about liability or other forms of accountability risk (i.e., those designated as financial experts) also provides indirect evidence that anticipated increase in mandatory audit report disclosure leads AC members to behave more as strategic agents. Moreover, the findings suggest that despite their greater capacity to ask challenging questions, designated financial experts will challenge auditors and/or management to a greater extent only when they perceive a strong cognitive need to do so (e.g., when the primary shareholders are sophisticated and no additional mandatory disclosure is anticipated in the audit report).

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<sup>19</sup> I also examined the semi-omnibus F-test for financial experts alone (e.g., Buckless & Ravenscroft, 1990). This test is once again statistically insignificant ( $F_{2, 35} = 1.73$ ,  $p = 0.192$ ), similar to my results for all participants (see footnote 15).

## AC's Self-Awareness of Their Decision Processes

I conduct additional analysis to gain further insight on AC members' self-awareness regarding the effect of investor sophistication and additional mandatory audit report disclosure on their oversight processes. As part of my post-experimental questions, I asked AC members to assess how they think greater investor sophistication and anticipation of additional mandatory audit report disclosure would affect their questioning behavior on a scale that ranged from -3 (substantially decrease questioning) to +3 (substantially increase questioning).

The mean response for the effect of investor sophistication on their questioning behavior was 0.12 which is significantly greater than 0 "no effect" ( $t_{80} = 2.16$ ;  $p = 0.034$ , two-tailed) but also significantly less than +1 "slightly increase questioning" ( $t_{80} = -15.30$ ;  $p < 0.001$ , two-tailed). This suggests that AC members believe that investor sophistication has little qualitative effect on their questioning behaviors and that their propensity to ask challenging questions does not qualitatively drop when the investor base is unsophisticated. These results are inconsistent with the main findings where the predominance of unsophisticated investors caused a significant drop in their questioning behavior. This implies that the heightened questioning behavior observed in the presence of sophisticated investors is likely below the level of AC members' conscious awareness.

Moreover, participants believe they tend to increase their level of questioning when they anticipate additional mandatory audit report disclosure (mean = 1.24,  $t_{80} = 9.15$ ,  $p < 0.001$ , two-tailed).<sup>20</sup> Only 8.64% said they would decrease their questioning behavior when they anticipate additional mandatory audit report disclosure. Recall, however, that the main results show that AC members' questioning behavior actually significantly *drops* when they anticipate additional

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<sup>20</sup> Designated financial experts, compared to those who are not so designated, are not more aware of the effect of greater investor sophistication (mean = 0.12 vs. 0.13;  $t_{79} = 0.13$   $p = 0.901$ , two-tailed) and additional mandatory audit report disclosure (mean = 1.14 vs. 1.33;  $t_{79} = 0.70$ ,  $p = 0.486$ , two-tailed) on their questioning behavior.

mandatory audit report disclosure. This provides evidence that the manner in which AC members react to anticipation of additional mandatory audit report disclosure is likely below their level of conscious awareness.

Together, the findings suggest that the motivational climate (i.e., incentive to avoid potential shareholder scrutiny or activism from sophisticated investors) triggers AC members to *subconsciously* increase their questioning behavior in the presence of sophisticated investors and when they do not anticipate additional mandatory audit report disclosure.

### **Mediation Effects of Perceived Investor Vulnerability and Perceived Comfort Level**

To gain further understanding of the judgment processes underlying the effect of anticipating additional mandatory audit disclosure on AC members' questioning behavior, I examine the mediation effects of perceived investor vulnerability and perceived comfort level. If AC members are primarily concerned about reducing accountability risk and protecting their self-interests, an increase in anticipated additional mandatory audit report disclosure will likely lead AC members to rationalize not asking probing questions by convincing themselves that they already are comfortable with management's estimate. By contrast, if AC members' primary concern is to adhere to their fiduciary duty to protect investors (especially those who are more vulnerable and unsophisticated), an increase in anticipated mandatory audit report disclosure would likely lead to a perception of more information being available to investors. This would cause a decrease in perceived investor vulnerability, especially given unsophisticated investors.

Results show that anticipation of additional mandatory audit report disclosure does not significantly affect perceived investor vulnerability ( $F_{1,77} = 0.01$ ,  $p = 0.933$ , two-tailed) and there is no significant interaction between anticipation of additional disclosure and investor sophistication ( $F_{1,77} = 0.22$ ,  $p = 0.637$ , two-tailed). This implies that the observed decrease in AC



members' questioning given the anticipation of additional mandatory audit report disclosure is not driven by a decrease in perceived investor vulnerability, as would have been expected if AC members were primarily concerned about adhering their duty as fiduciaries to protect investors.

If AC members were primarily concerned about reducing their accountability risk as predicted in my main hypotheses, AC members likely will respond to greater anticipated mandatory audit report disclosure by questioning less to rationalize that they are not directly responsible for management's estimate or that management's estimate is meritorious. One way to do this would be for the AC members to convince themselves that they are already relatively comfortable with management's estimate. To examine if this is the process in which anticipation of additional mandatory audit disclosure affects AC members' questioning behavior, I conduct a mediation analysis using the participants' comfort regarding the accounting decision.

I first develop a variable of AC's overall comfort regarding the accounting issue based on a factor analysis on the participants' perceived comfort regarding 1) management's change in estimate, 2) auditor's decision to allow management's updated, smaller write-down of inventory, and 3) the difference in the net income that results from the different write-down amounts. Using this new variable, I conduct a mediation analysis according to the four-step procedure specified by Baron & Kenny (1986). The analysis is only conducted on the responses provided by designated financial experts given sophisticated investors as these are the conditions that drive my overall findings. Figure 5 summarizes the results of the analysis.

Consistent with my main findings, step 1 indicates anticipation of additional mandatory audit report disclosure negatively affects participants' propensity to challenge management's estimates ( $b = -6.10$ ,  $p = 0.001$ , one-tailed). Step 2 indicates that anticipation of additional mandatory audit report disclosure positively affects participants' perceived level of comfort regarding the

accounting decision ( $b = 2.02$ ,  $p = 0.041$ , one-tailed). Step 3 shows that the perceived comfort level about the accounting decision negatively impacts the participants' propensity to challenge management's estimate ( $b = -3.73$ ,  $p = 0.003$ , one-tailed). Finally, step 4 indicates that participants' comfort with respect to the accounting decision fully mediates the influence of anticipating additional mandatory audit report disclosure on their propensity to challenge management's accounting estimate ( $b = -2.72$ ,  $p = 0.166$ , two-tailed). Such results are consistent with the drop in AC members' questioning behavior with anticipation of additional mandatory audit report disclosure being rationalized by stating that they are more comfortable with, and thus, have less of a reason to question management's estimate.<sup>21</sup>

[Insert Figure 5 Here]

### **Conclusion**

This study provides theory and empirical evidence on how investor sophistication affects AC members' degree of questioning during their oversight process and how anticipation of additional mandatory audit report disclosure moderates such an effect. Overall, the findings suggest that when there is no anticipation of additional mandatory audit report disclosure, AC members challenge management's estimate at a significantly greater level given a primarily sophisticated, as opposed to unsophisticated, investor base. The evidence also indicates that AC members significantly decrease their level of questioning when additional mandatory audit report disclosure is anticipated,

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<sup>21</sup> The increased comfort level found with anticipation of additional mandatory disclosure could be due to participants reasoning that auditors likely would provide more competent and impartial audits under such conditions, perhaps especially for sophisticated investors. While I did not design my case materials to test whether such reasoning occurred or mediated my hypothesized effects, analysis of two post-test questions on participants' assessment of auditor's competence and integrity are of some relevance. Specifically, participants were asked to assess the auditor's competence and integrity in light of the favorable revision in management's inventory obsolescence estimate. Neither anticipation of additional disclosure nor investor sophistication nor their interaction (lowest  $p=0.642$ ) significantly affects participant's assessment of the auditor's competence or integrity. Future research can ask more pointed questions about whether perceived auditor effort on estimates separately disclosed and discussed in the audit report changes with investor sophistication and anticipation of additional disclosure in the audit report.

especially given a primarily sophisticated investor base. Overall these findings suggest AC members are more concerned about reducing their accountability risk and protecting their self-interests rather than acting as fiduciaries to protect investors (especially those who are more vulnerable and unsophisticated).

Supplemental analysis shows that my main findings are more pronounced for designated financial experts, whose incentives are more likely to depend on sophisticated investors' scrutiny of and reactions to management estimates that are described in an audit report. Further analysis also indicates that how AC members actually respond to investor sophistication and anticipation of additional mandatory audit report disclosure is quite different than how they think they behave. Thus, the joint influence of these two factors likely falls outside of the AC members' level of conscious awareness. Finally, I also find that a tendency to find more comfort in management's estimate fully mediates the effect of anticipating additional mandatory audit report disclosure on AC members' questioning behavior.

There are various ways future research can extend this study. One, this study identifies situations where the incentive to reduce accountability risk and protect self-interest outweighs the AC members' accountability towards protecting investors, especially those who are more vulnerable and unsophisticated. However, the two motivations are not mutually exclusive. Hence, identifying circumstances where the AC members' accountability towards investors outweighs their incentive to reduce accountability risk may be of interest for future research. Two, while this study's manipulation of anticipated additional mandatory audit report disclosure entails additional language describing one of management's key accounting estimates that is similar to the proposed standard in which auditors would identify critical audit matters, it does not use an approach that is identical to that currently being proposed by the PCAOB (e.g., no description of what a "critical

audit matter” appears in the draft report). Although I am unaware of a theory that would predict it, it is possible that describing what critical audit matters are within a draft audit report could dampen or otherwise moderate the ordinal interaction I observe. Future research can examine this issue, which will help further our understanding of whether ACs react differently to otherwise identical descriptive information about significant accounting estimates in the audit report depending on whether or not it is also couched as being a “critical audit matter.”

Overall, the theory and findings of the study provide some of the first theory-based empirical evidence regarding two factors that jointly determine AC members’ propensity to ask challenging questions of management’s key financial statement estimates. In doing so, it answers a call for research that provides *ex ante* evidence on how and why ACs could *decrease* their vigilance with greater audit report disclosure (Carcello et al., 2011). In short, my study shows that AC members’ reaction to additional mandatory audit report disclosure can cause what Sterman (2002) calls ‘policy resistance,’ even though AC members themselves are unaware that their reaction is creating policy resistance.<sup>22</sup> Finally, the theory and findings herein also demonstrate that, while designated financial experts have greater capacity to challenge management’s estimates, they are significantly less likely to draw upon this capacity to protect vulnerable unsophisticated investors than to protect themselves from scrutiny by sophisticated investors.

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<sup>22</sup> Policy resistance is defined as “the tendency for interventions to be defeated by the response of the system to the intervention itself” and is used in the systems dynamics literature to refer to the occurrence of unintended consequences of well-intended efforts to solve pressing problems (Sterman, 2002).

## APPENDIX A

### Coding Scheme for Qualitative Analysis

Please code the questions in terms of 1) who the question was directed to and 2) whether the question is probing or not based on the coding scheme described below. (*Note: I do not make any predictions with respect to who the target of the questions will be. This is simply to obtain insight on the proportion of questions directed to management vs. auditors*)

1. Who is the question directed to?
    - a. (0) none
    - b. (1) management (CFO/COO/CEO)
    - c. (2) auditor
    - d. (3) both
  2. Is the question probing?
    - a. (0) No
    - b. (1) Yes
- To be considered probing, questions must be directly related to the inventory valuation decision and must challenge the auditor and/or CFO to justify the decision.

Specifically, probing questions are questions that are difficult to answer by challenging the respondent to justify the decision; or questions that directly probe into the process of resolving the decision. Therefore, if by answering the question, the question recipient would have to justify the inventory valuation decision, provide important additional information about the decision or disclose how the accounting treatment was agreed upon, then the question is considered probing.

- Any question that asks about the *appropriateness of the accounting treatment* is considered challenging or probing.
  - Ex: Justify the difference between the two estimates.
  - Ex: How confident are the auditors about management's estimates?
  - Ex: What is the fair value of this inventory?
  - Ex: If given a choice, what method would you choose to value the inventory?
  - Ex: How would regulatory bodies view manipulation of this kind?
- Any question that asks about the *internal or external influences or pressures* that could affect the estimate is considered challenging or probing.
  - Ex: Does the new estimate affect the company's ability to be in compliance with debt covenants?
  - Ex: What are the implications for going concern?
  - Ex: Does the new estimate affect management's compensation in any way?

- Any question that asks about *disagreements* between the management and auditors is considered challenging or probing.
  - Ex: Were there any disagreements with the management on the estimate, and if so, how did they respond to your disagreement?
- *Note: The list above is not conclusive. Any other question that challenges the respondent to justify the inventory valuation or provide important additional information about the decision or disclose how the accounting treatment was agreed upon is considered probing.*
- Non-probing questions: does not challenge the respondent to provide information or justification about how the issue was resolved with the other party.
  - Ex: How much additional investment does the company need to spend in order to make those products related to the old strategy to be sold?
  - Ex: What does the company plan to do with obsolete inventory? – Business strategy question that is not directly related to the accounting decision.
  - Are there any accounts receivables outstanding related to sales of the old strategy inventory?

## **APPENDIX B**

### **Commentary Added in the Anticipation of Additional Disclosure Present Conditions**

#### **Justification of Assessments**

In accordance with the professional standards applicable in the United States, we bring to your attention the following matters:

SCA's management adjusted its inventory by writing it down to its estimated net realizable value. This write down was necessary when a portion of its inventory became unsalable after implementation of a new marketing strategy as described in note 3.2 to the consolidated financial statements. The portion of on-hand inventory that management estimated to be unsalable had a carrying value of \$970,000, and so management took a write down of inventory in this amount, materially decreasing SCA's net income.

As part of our audit of significant accounting estimates, we assessed the assumptions made and the approach taken by management regarding this estimate for compliance, in all material respects, with U.S. GAAP. In addition, we communicated this issue to the AC in accordance with PCAOB Auditing Standards (AU 380). These procedures were performed in the context of our audit of the consolidated financial statements as a whole, and therefore contributed to the opinion expressed above.

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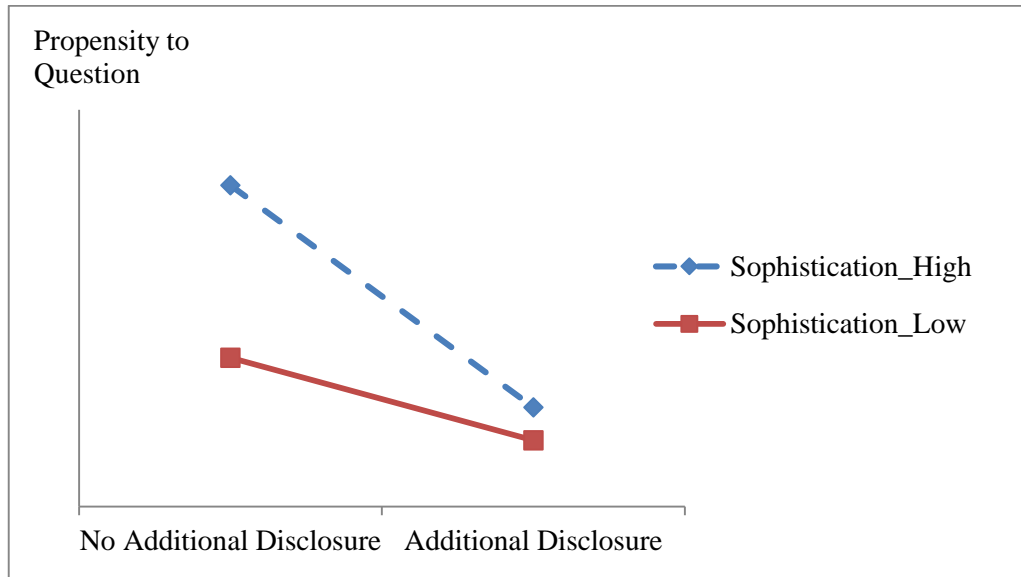
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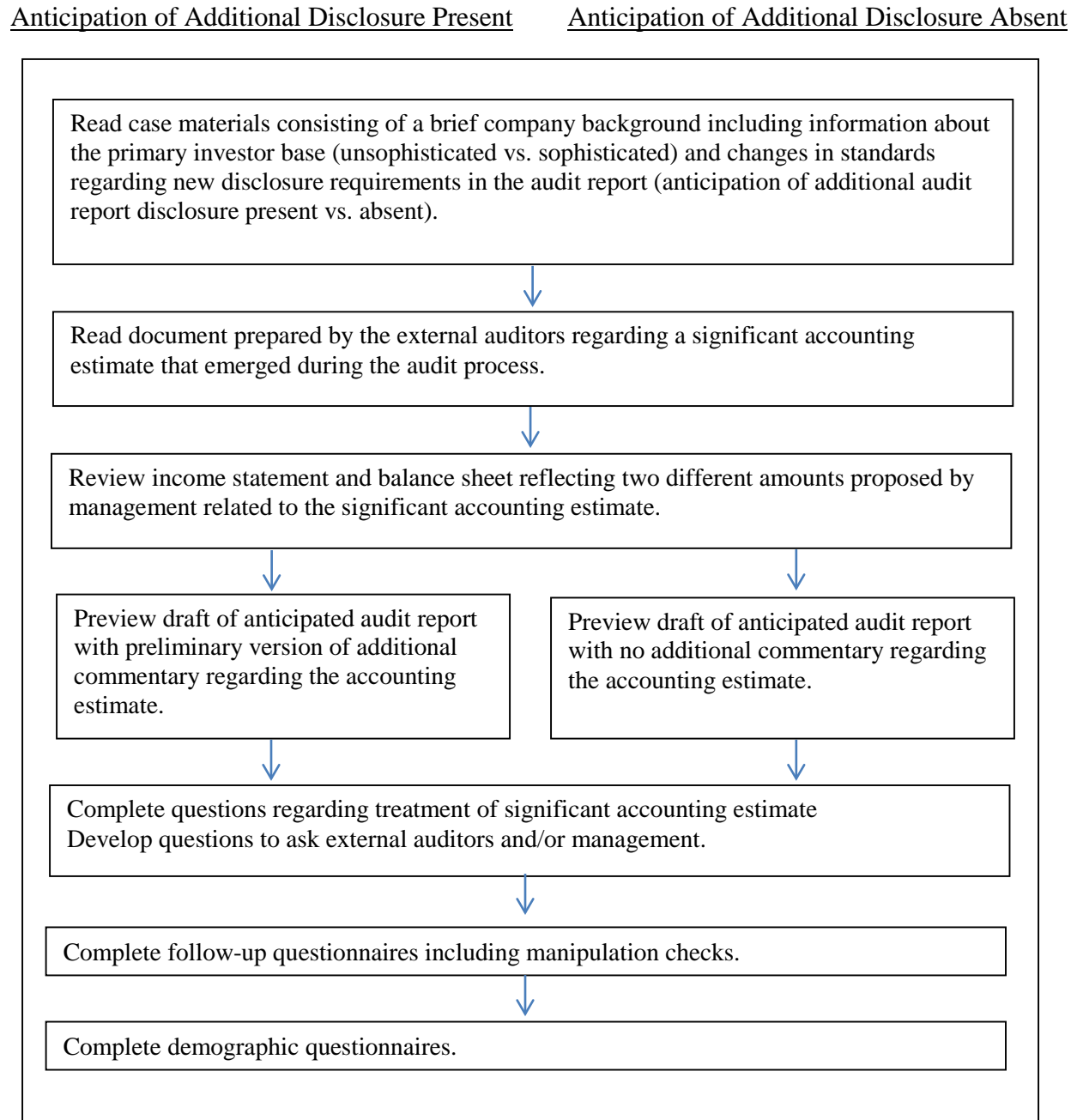
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**Figure 1**  
**Predicted Effect of Investor Sophistication & Anticipation of Additional Mandatory Audit Report Disclosure**



Note: This figure depicts the predicted joint effect of investor sophistication and anticipation of additional mandatory audit report disclosure on AC members' propensity to challenge management's significant accounting estimates. The propensity to question management's significant accounting estimates was measured by the number of probing questions developed by the experimental participants.

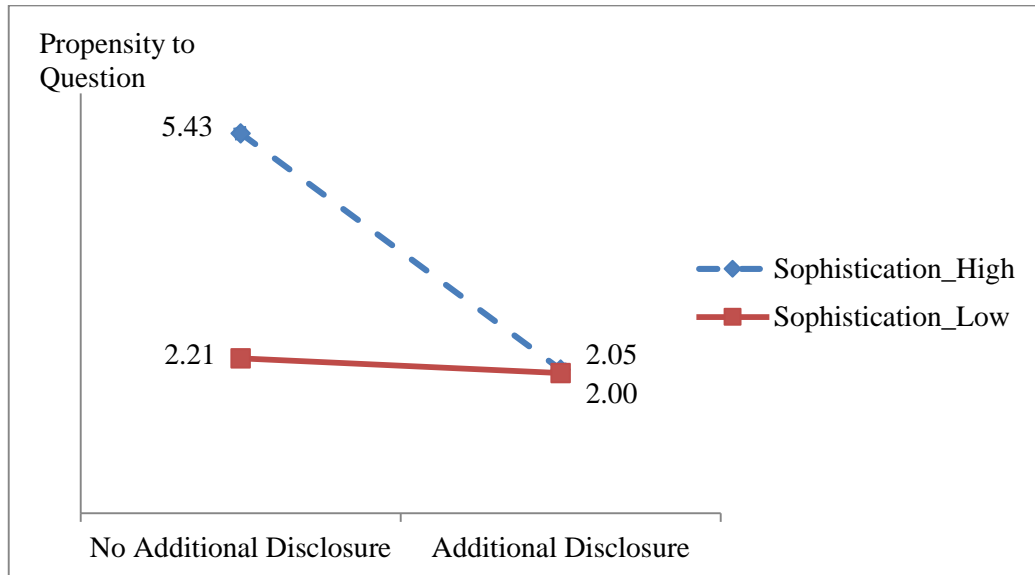
**Figure 2**  
**Experimental Procedures**




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Note: This figure depicts the experimental process for this study.

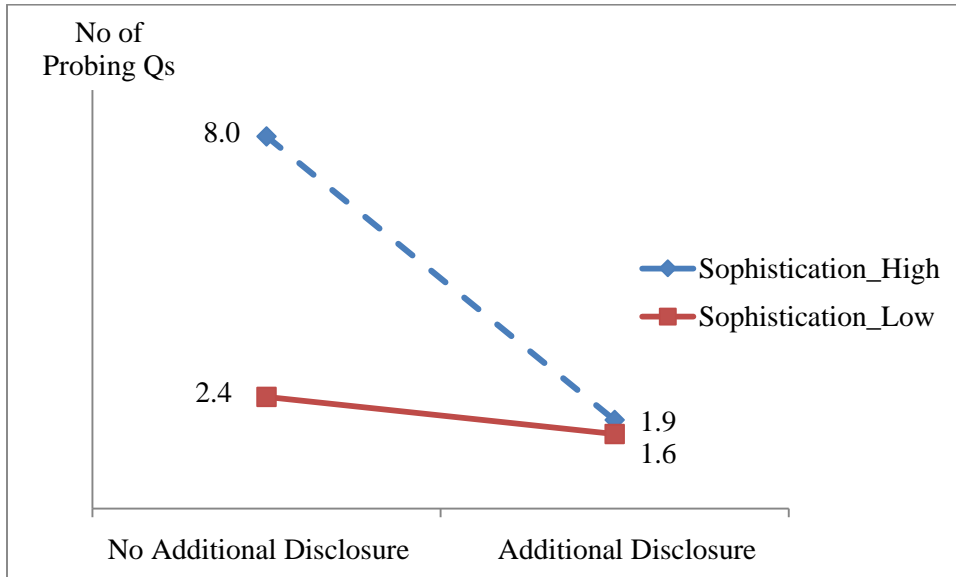
**Figure 3**  
**Observed Pattern of Results**



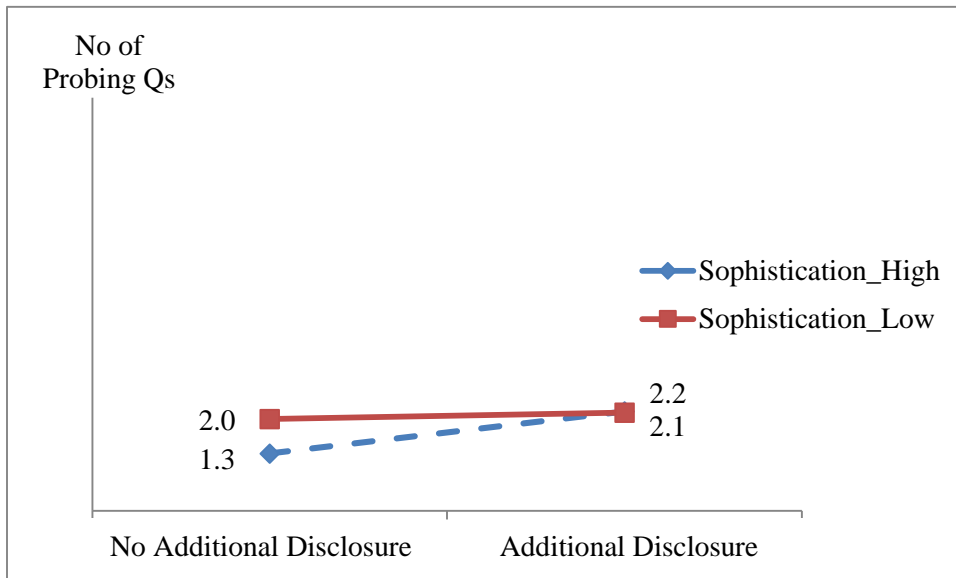
Note: This figure depicts the observed effect of investor sophistication and anticipation of additional mandatory audit report disclosure on the number of probing questions asked by the participants.

**Figure 4**  
**Effect of Investor Sophistication & Anticipation of Additional Mandatory Audit Report Disclosure by Groups**

**Panel A: Designated Financial Experts**

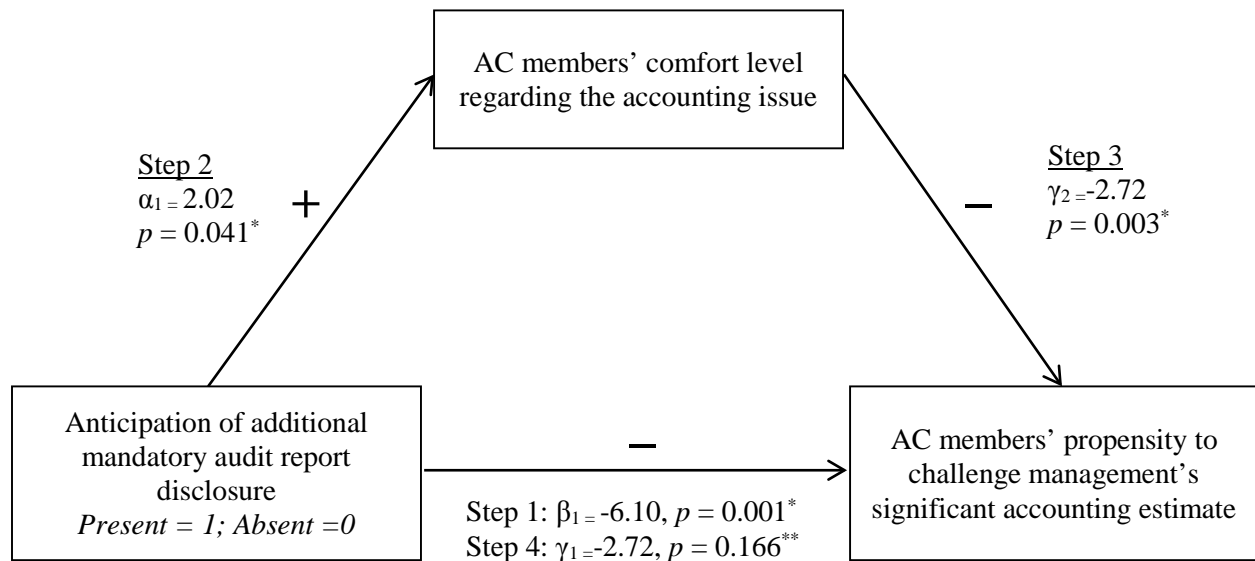


**Panel B: Non-Financial Experts**



Note: This figure depicts the Investor Sophistication \* Anticipation of Additional Mandatory Audit Report Disclosure interaction plot based on whether the participants are designated as financial experts in the AC they serve on.

**Figure 5**  
**Mediating Role of Perceived Comfort on how Anticipation of Additional Mandatory Audit Report Disclosure Affects AC Members' Questioning Behavior**



Note: This figure summarizes tests of the mediating role of perceived comfort in the causal relation between anticipation of additional mandatory audit report disclosure and the AC members' propensity to challenge management's significant accounting estimate.

\*p-values are one-tailed, given directional predictions.

\*\* two-tailed equivalent

**Table 1****Descriptive Statistics on Participants' Self-Reported Relative Knowledge Against Other AC Members on Specific Issues (Percentile)**

	<b>Issues</b>				
	<u>Financial</u> <u>Accounting</u>	<u>F/S</u> <u>Analysis</u>	<u>Auditing</u>	<u>AC Best</u> <u>Practice</u>	<u>Case Industry</u>
Mean	81	82	79	78	51
Std. Deviation	17	17	19	20	26
Minimum	9	9	9	9	0
25th Percentile	74	76	69	62	29
Median	83	85	83	81	50
75th Percentile	91	92	95	95	72
Maximum	100	100	100	100	100
<i>n</i>	81	81	81	81	81

Note: This table presents descriptive statistics for the measure used in the experiment to capture the participants' self-reported extent of knowledge relative to other AC members on five different areas. A total of 81 participants provided responses on a 99-point percentile basis scale (1<sup>st</sup> percentile = few, if any, are less knowledgeable than me, 99<sup>th</sup> percentile = few, if any, are more knowledgeable than me).



**Table 2**  
**Main Analyses Based on Number of Probing Questions: Descriptive Statistics and Two-Way ANOVA**

<b>Panel A: Mean [Standard Error] for number of probing questions</b>					
		<b>Investor Sophistication</b>			
		<u>Lower</u>	<u>Higher</u>	<u>Collapsed Across Sophistication</u>	
<b>Anticipation of Additional Mandatory Disclosure</b>	Absent	2.21 [0.78] <i>n</i> = 19	5.43 [0.74] <i>n</i> = 21	3.82 [0.54] <i>n</i> = 40	
	Present	2.00 [0.78] <i>n</i> = 19	2.05 [0.73] <i>n</i> = 22	2.02 [0.53] <i>n</i> = 41	
	Collapsed Across Disclosure	2.11 [0.55] <i>n</i> = 38	3.74 [0.52] <i>n</i> = 43		
<b>Panel B: Basic ANOVA model</b>					
Source	Type III SS	<i>df</i>	Mean Square	<i>F</i> -Ratio	<i>p</i> -value
Investor	53.70	1	53.70	4.66	0.034
Disclosure	65.11	1	65.11	5.65	0.020
Investor * Disclosure	50.75	1	50.75	4.40	0.039
Error	887.26	77	11.52		

Note: All *p*-values are two-tailed.

**Table 2 (continued)****Panel C: Planned contrast coding and follow-up simple effect tests**

Source	<i>df</i>	Mean Square	<i>F</i> -Ratio	<i>p</i> -value
<u>Overall test:</u>				
AC members' propensity to ask challenging questions about management's significant estimates is greatest when the primary shareholders are sophisticated and there is no anticipated additional mandatory audit report disclosure, lower when the primary shareholders are unsophisticated and there is no anticipated additional mandatory audit report disclosure, and lowest when there is anticipated additional mandatory audit report disclosure.	1	123.94	10.76	0.001
<u>Follow-up simple effect tests:</u>				
Effect of investor sophistication given no add. disclosure	1	103.3	8.97	0.002
Effect of investor sophistication given add. disclosure	1	0.02	0.00	0.966
Effect of disclosure given sophisticated investors	1	122.97	10.67	0.001
Effect of disclosure given unsophisticated investors	1	0.42	0.04	0.425

Note: This table presents descriptive statistics, basic ANOVA, planned contrast coding, and follow-up simple effect test results for AC's propensity to challenge significant accounting estimates. The experiment manipulates (1) whether the primary investor base is sophisticated vs. unsophisticated and (2) whether the anticipated audit report is required to have additional disclosure on management's estimates. The cells of the experiment receive contrast weights as follows: sophisticated/additional disclosure absent = +3, unsophisticated/additional disclosure absent = +1, sophisticated/additional disclosure present = -2, unsophisticated/additional disclosure present = -2. Reported *p*-values are two-tailed for the simple effect of investor sophistication given anticipation of additional mandatory audit report disclosure, and one-tailed equivalent for all other tests given my directional predictions.

**Table 3**  
**Supplemental Analyses: Descriptive Statistics and Three-Way ANOVA of Number of Probing Questions Asked**

<b>Panel A: Mean [Standard Deviation] for number of probing questions by groups</b>					
		<u>Financial Experts</u>		<u>Non-Experts</u>	
		Investor Sophistication		Investor Sophistication	
		Lower	Higher	Lower	Higher
Anticipation of Additional Mandatory Disclosure	Absent	2.40 [1.13] <i>n</i> = 10	8.00 [0.99] <i>n</i> = 13	2.00 [0.80] <i>n</i> = 9	1.25 [0.85] <i>n</i> = 8
	Present	1.60 [1.60] <i>n</i> = 5	1.90 [1.13] <i>n</i> = 10	2.14 [0.65] <i>n</i> = 14	2.17 [0.70] <i>n</i> = 12
<b>Panel B: Three-Way ANOVA model</b>					
Source	Type III SS	<i>df</i>	Mean Square	<i>F</i> -Ratio	<i>p</i> -value
Investor	30.85	1	30.85	3.42	0.069
Disclosure	39.31	1	39.31	4.35	0.040
Expert	46.33	1	46.33	5.13	0.027
Investor*Disclosure	23.61	1	23.61	2.61	0.110
Investor*Expert	50.60	1	50.60	5.60	0.021
Disclosure*Expert	73.01	1	73.01	8.08	0.006
Investor*Disclosure*Expert	42.51	1	42.51	4.71	0.033
Error	659.38	73	9.03		

**Table 3 (continued)**

**Panel C: Planned contrast coding and follow-up simple effect tests**

Source	<i>df</i>	Mean Square	<i>F</i> -Ratio	<i>p</i> -value
<u>Financial Experts</u>				
<i>Overall test:</i>				
AC members' propensity to ask challenging questions about management's significant estimates is greatest when the primary shareholders are sophisticated and there is no anticipated additional mandatory audit report disclosure, lower when the primary shareholders are unsophisticated and there is no anticipated additional mandatory audit report disclosure, and lowest when there is anticipated additional mandatory audit report disclosure. [Contrast Weights (3, 1, -2, -2)]	1	188.91	14.85	<0.001
<i>Follow-up simple effect tests:</i>				
Effect of investor sophistication given no add. disclosure	1	177.25	13.93	0.001
Effect of investor sophistication given add. disclosure	1	0.30	0.02	0.879
Effect of disclosure given sophisticated investors	1	210.32	16.53	<0.001
Effect of disclosure given unsophisticated investors	1	2.13	0.17	0.343
<u>Non-Experts</u>				
<i>Overall test:</i>				
AC members' propensity to ask challenging questions about management's significant estimates is greatest when the primary shareholders are sophisticated and there is no anticipated additional mandatory audit report disclosure, lower when the primary shareholders are unsophisticated and there is no anticipated additional mandatory audit report disclosure, and lowest when there is anticipated additional mandatory audit report disclosure. [Contrast Weights (3, 1, -2, -2)]	1	4.44	0.76	0.194

Note: Panel A and C present descriptive statistics and the planned contrast coding and follow-up simple effect test results based on whether the participants are designated financial experts in the ACs they serve on. Panel B presents the three-way ANOVA to examine whether financial expertise influence the joint effect of investor sophistication and anticipated additional mandatory audit report disclosure on the participants' propensity to ask probing questions. Reported *p*-values are two-tailed for the simple effect of investor sophistication given anticipation of additional mandatory audit report disclosure, and one-tailed equivalent for all other tests given my directional predictions.