An Investigation of Auditors' Judgments when Companies Release Earnings before Audit Completion

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ABSTRACT

Over two-thirds of public companies now announce earnings prior to (versus with, or after) audit completion. We expect this practice has potential to increase pressure in auditor/client negotiations over post-announcement audit adjustments. We report results of a controlled experiment with audit partners and senior managers that indicates auditors are significantly less likely to require audit adjustments for aggressive financial reporting when earnings have been released (versus drafted). Further, we test and find this effect can be fully mitigated with strong audit committee effectiveness (i.e., including idealistic, but achievable, characteristics that are likely currently lacking in average committees) or with higher auditor professional identification. Our process-model tests suggest released earnings causes auditors to adopt directional goals to avoid adjustments, leading to biased decision processing and lower judgment quality. Our study provides evidence on the importance of high-quality auditors and audit committees in promoting high-quality financial reporting.

Key Words: Auditor Judgment; Audit Committees; Professional Identification; Earnings Announcements; Audit Completeness; Financial Reporting Quality

1. Introduction

We report the results of a controlled experiment conducted with 114 highly experienced audit partners and senior managers, and designed to investigate the audit-judgment-related effects of the differential timing of firms' earnings releases and firms' annual financial-statement-audit completion. Our study is motivated by the dramatic shift in firms releasing unaudited versus audited annual earnings announcements. Prior to 2004, approximately 75 percent of annual earnings announcements were released *on or after* the audit report date (Bamber, Bamber, and Schoderbek [1993], Schwartz and Soo [1996]), whereas, today, approximately 70 percent of U.S. public companies release earnings approximately 16 days, on average, *prior to* the audit report date (Schroeder [2016]; Marshall, Schroeder, and Yohn [2017]).[1]

Although recent archival studies document lower financial reporting quality for firms releasing annual earnings prior to the audit report date (Marshall et al. [2017], Bronson, Masli, Schroeder [2017]), the causal mechanism leading to the diminution in financial reporting quality is largely unexplored. While firms' managers are responsible for financial reporting quality, we propose that auditors have a contributing role in the observed reduction in financial reporting quality when earnings are announced prior to audit completion. Specifically, because firms experience adverse capital market reactions when announced unaudited accounting information is subsequently revised in audited 10-K filings (Bronson, Hogan, Johnson and Ramesh [2011], Hollie, Livnat, and Segal [2005, 2012]), we propose firms announcing earnings prior to audit completion can lead to increased pressure on auditors to conform with managers' financial

[1] This shift is primarily due to audits taking 16 days longer, on average, post-2004 with added requirements of PCAOB Auditing Standards No. 2 and 3 (Bronson, Hogan, Johnson and Ramesh [2011]) and managers maintaining their historical earnings release dates due to market pressures for timely earnings (PCAOB [2004a, 2004b], Krishnan and Yang [2009]). Furthermore, this practice persists to present day with firms marking their annual financial statements in the earnings announcement as "unaudited" (Marshall et al. [2017]).

reporting decisions when negotiating post-earnings-announcement adjustments during the completion of the audit.

Our study capitalizes on a comparative advantage of experiments to provide complementary evidence to the extant archival literature. For example, given limitations in archival datasets, prior research could not detect or control for (1) whether (and to what extent) audits are actually incomplete when earnings are announced prior to the audit report date or (2) the potential role of the auditor in contributing to diminished financial reporting quality when earnings are announced prior to the completion of audit procedures. In our experiment, we are able to manipulate the timing of the earnings announcement in relation to the completion of the audit, and isolate and investigate the potential effects on experienced auditors' judgments. In addition, we are able to control for potential selection issues in firms' decisions to issue earnings announcements before/after audit completion and the relation of that decision to financial reporting quality. Furthermore, because regulators are unlikely to require firms to wait for audit completion to voluntarily announce earnings, we also exploit the experimental method to investigate alternative firm-initiated (i.e., audit committee quality) and auditor-initiated (i.e., professional identification of auditors) mechanisms that can improve post-earnings-announcement audit judgments (and financial reporting quality).

We complement prior archival studies by providing three types of empirical evidence unique to our research setting. First, given the opacity of audit processes in real-world audit settings, we collect (post-experimental) survey data from our participants that reveal a significant amount of audit work (e.g., conclusions about significant accounting estimates, audit review) is often incomplete when annual earnings are released prior to the audit report date. These data support the audit-completion-timing claims made in prior archival studies, and identify pre-audit-

completion earnings announcements ("released earnings") as a potential salient source of pressure to avoid subsequent year-end audit adjustments. Second, in our controlled experiment, we test theory as to how this client pressure influences auditor judgments; specifically, we investigate whether releasing annual earnings prior to the completion of the audit increases auditors' adoption of client-preferred accounting outcomes. Third, we use process-level data that is unavailable in archival settings to investigate (1) how released-earnings-induced directional goals influence auditors' decision processing (and audit quality) and (2) mechanisms that can help auditors avoid succumbing to released-earnings-induced pressure.

To guide our investigation, we develop a motivated-reasoning-related model that explains the process by which released earnings prior to the completion of the audit leads to increased pressure for auditors to adopt client-preferred directional goals, which then influences auditor judgments. We test our model and predictions using an experiment with 114 highly experienced auditors (i.e., 67.1 percent audit partners/directors, 31.3 percent audit senior managers, and 1.6 percent audit managers with median audit experience of 17 years). We manipulate the timing of the annual earnings release relative to the completion of the audit by varying whether the annual earnings announcement was "released" (i.e., 16 days before the audit task) or "drafted" (i.e., expected to be released 16 days after the audit task). We also manipulate audit committee (AC) effectiveness and predict mitigating effects with higher-quality ACs, modeled with characteristics envisioned by audit advocacy groups (PCAOB [2012], Center for Audit Quality (CAQ) [2013, 2016]) (i.e., active involvement in accounting issues and proactively communicating with auditors), which we expect are achievable but relatively rare in practice.[2] Finally, because AC

[2] Despite enhanced requirements of AC members with the Sarbanes-Oxley Act of 2002 (SOX), ACs as effective monitors in the financial reporting process is questioned as survey evidence suggests auditors and CFOs perceive AC members to be often uninvolved in resolving accounting issues and often not even informed about issues until after auditor/manager negotiations have been resolved (Cohen, Krishnamoorthy, and Wright [2010], Gibbins, McCracken,

effectiveness is beyond auditors' control, we also examine whether auditors with higher levels of professional identification (i.e., the extent to which auditors' norms and values overlap with the accounting profession) (Bamber and Iyer [2002, 2007], Bauer [2015]), can mitigate the negative effects of released earnings on auditors' judgment quality.

In our experiment, participants are provided with case information that contains a brief description of a hypothetical company, its annual earnings announcement with selected financial information, a description of its AC, and details about a year-end accounting issue (i.e., deferred-tax valuation allowance) and potential audit adjustment. Participants are then provided with the tax specialists' memo, which describes the potential issue related to the deferred-tax valuation allowance, a subjective, complex estimate evaluated near the end of the audit that is a common source of "last-chance earnings management" (Gleason and Mills [2002], Dhaliwal, Gleason, and Mills [2004]). The case is designed such that management's estimate and related assumptions are aggressive. Participants are asked to evaluate the reasonableness of management's assumptions related to the estimate and to assess whether they would recommend a year-end audit adjustment.

Our results are consistent with our hypotheses and process-model predictions. First, we find the effects of released annual earnings on auditor judgments depend on AC effectiveness. When the AC is moderately effective (i.e., the likely level of effectiveness across most companies), auditors are significantly less likely to require year-end audit adjustments when earnings are released versus drafted. However, this effect is fully mitigated when the AC has strong effectiveness, such that auditors are equally likely to require year-end audit adjustments when earnings have been released and drafted. Importantly, our process-model results support our predictions that auditors' directional goals and motivated decision processing fully mediate the

and Salterio [2007]). Importantly, our baseline level of AC effectiveness (moderate) meet the minimum requirements related to member independence and expertise.

effects of this client pressure on auditors' adjustment assessments. Specifically, released earnings increase auditors' adoption of directional goals, but only when the AC is moderately effective. In turn, auditors' directional goals influence the likelihood of requiring year-end audit adjustments through both biased evaluations of evidence in support of management's aggressive estimates and decreased information acquisition of disconfirming-evidence and total-evidence items.

We also find, under moderate AC effectiveness, the negative effects of released unaudited earnings on auditor judgments are mitigated with higher auditor professional identification. Specifically, we find that auditors with lower professional identification adopt client-preferred directional goals in response to client pressures from released earnings, whereas auditors with higher professional identity do not adopt directional goals regardless of whether earnings are released or drafted. In turn, auditors' directional goals significantly influence their information evaluation about the aggressive estimates and ultimately their likelihood of requiring year-end audit adjustments.

Our study has implications for the academic literature, practitioner community, and regulators. We complement prior archival studies related to earnings-announcement timing (e.g., Bronson et al. [2011], Marshall et al. [2017]) by providing survey evidence suggesting audits are often incomplete when companies announce earnings and controlled-experimental evidence that diminished quality of auditor judgments can contribute to the archivally observed reduction in financial reporting quality when earnings are released before audit completion. We also contribute to the auditing literature on the effects of client-induced pressure on auditors. Prior research suggests client pressures lead to motivated reasoning and impaired auditor judgments through auditors' adoption of directional goals (Kadous, Kennedy, and Peecher [2003], Koch and Salterio [2017]). We identify and provide evidence on two factors that should mitigate auditors' adoption

of client-preferred directional goals when faced with client pressures: stronger ACs and higher auditor professional identification. Both of these factors have implications for audit quality beyond the setting in our study, as client-related pressures permeate the audit environment.

Our study also has important implications for regulatory and policy organizations. Our results are consistent with motivated-reasoning-related reductions in audit quality when management releases earnings before audit completion. While prior archival studies suggest the PCAOB consider how their standards impact audit timeliness, we provide two implementable factors that can overcome the adverse effects on audit quality: clients investing in high-quality ACs and audit firms instilling high-quality auditors with stronger professional identification. Our results also provide support for recent initiatives (e.g., CAQ [2013, 2016]) aimed at improving AC effectiveness. Specifically, we suggest that ACs should not only be independent and have sufficient expertise consistent with regulatory requirements, but should be actively involved in accounting issues to better advocate and support auditors who face client pressures.

Our remaining paper is organized as follows. Section 2 includes the theoretical development of our hypotheses. Section 3 describes our research design. Section 4 reports the results of our tests and additional analyses. We conclude and discuss implications in Section 5.

2. Hypothesis Development

Prior research finds that companies releasing annual earnings prior to the audit report date have negative associations with financial reporting quality, including a greater likelihood of financial statement restatements and lower discretionary-accrual quality (Bronson et al. [2017], Marshall et al. [2017]); however, the cause of diminished financial reporting quality and the potential effects of released earnings on auditor judgments have not been explored. We extend this line of research by examining the effects earnings announcement timing on auditor judgment

quality and by identifying the mechanism underlying its effects. Moreover, we identify two potential mitigating factors (i.e., AC effectiveness and auditor professional identification)—both implementable in practice—that can counteract the negative effects of earnings announcement timing on auditors' judgment quality. In the following section, we describe a process model and develop hypotheses related to the release of unaudited annual earnings prior to audit completion.

2.1 A PROCESS MODEL OF THE EFFECTS OF RELEASED EARNINGS PRIOR TO THE COMPLETION OF THE AUDIT

2.1.1. Effect of Released Earnings on Auditor's Directional Goals and the Likelihood of Requiring Year-end Audit Adjustments.

Building on seminal work by Kunda [1990], prior auditing research suggests that auditors often adopt client-preferred directional goals in reaction to various client pressures and circumstances in the audit environment, and that they use motivated reasoning to support these goals. For example, auditors are more likely to support aggressive client-preferred accounting treatment when engagement risk is relatively low (Hackenbrack and Nelson [1996]), when the auditor perceives a threat of losing the client (Blay [2005]), or when the auditor's affinity for the client is relatively high (Koch and Salterio [2017]). Kadous et al. [2003] provide evidence that these effects occur through auditors' commitment to client-preferred directional goals.

We extend this line of literature by examining whether the release of unaudited annual earnings prior to the completion of the audit is a source of pressure that influences auditors' directional goals, and whether it affects auditors' likelihood of requiring year-end audit adjustments for aggressive accounting estimates. We examine this setting because, post-2004, public companies have dramatically increased their release of unaudited annual earnings prior to the audit report date. Specifically, at present, approximately 70 percent of annual earnings announcements are unaudited and released, on average, 16 days prior to the audit report date

(Marshall et al. [2017]). While annual earnings released prior to the audit report date are required to be labeled "unaudited," thereby cautioning financial statement users that the amounts have not yet been finalized, subsequent revisions to GAAP information in the 10-K disclosures are associated with negative market reactions (Bronson et al. [2011], Hollie et al. [2005, 2012]). Accordingly, managers and auditors have heightened pressure to avoid subsequent adjustments to year-end earnings.

As we illustrate in Figure 1 (i.e., Link 1), we posit that this perceived pressure causes auditors to adopt client-preferred directional goals to avoid year-end audit adjustments. That is, auditors will likely internalize their clients' desire to avoid subsequent revisions to publicly released earnings (i.e., to avoid negative market reactions), or they may anticipate tougher negotiation positions from managers regarding potential audit adjustments (e.g., related to subjective accounting estimates). A recent PCAOB action against Christopher E. Anderson, a Deloitte partner on the Navistar Financial Corporation audit engagement, illustrates the potential effects of this perceived pressure on auditors' judgments and decisions. Specifically, Mr. Anderson increased planning materiality by 50 percent during the year-end audit to avoid a material revision to annual earnings that had already been released by Navistar (PCAOB [2008]).

[Insert Figure 1 about here]

Consistent with prior research (Kadous et al. [2003]; Koch and Salterio [2017]), we predict this client pressure will increase auditor adoption of client-preferred directional goals leading to a lower likelihood of requiring year-end audit adjustments, even for the aggressive accounting estimates (i.e., Link 6 in Figure 1). By comparison, when the client waits to release annual earnings until the audit is complete, we expect auditors are less likely to adopt client-preferred directional

goals and are therefore more objective in their decision processing, leading to a higher likelihood of requiring year-end audit adjustments.

Interestingly, this prediction runs counter to findings in prior research, albeit in a slightly different setting. Specifically, Kadous et al. [2003] find that during the year-end audit, pressure induced by the existence of two previously released (unaudited) quarterly financial statements (i.e., reviewed by a different audit firm) did not increase auditors' client-preferred directional goals.[3] Instead, they found that the public release of financial statements significantly *decreased* auditors' directional goals to accept the client-preferred accounting method.[4] Subsequently, auditors' directional goal commitment influenced auditors' propensity to accept aggressive client-preferred accounting method. Contrary to findings in Kadous et al. [2003], we predict auditors in the current environment (i.e., who regularly experience clients releasing annual earnings prior to the completion of the audit) will be more likely to adopt client-preferred directional goals in response to the pressure of announced unaudited earnings.

2.1.2. Effect of Auditor's Directional Goals on Information Processing and the Likelihood of Requiring Year-end Audit Adjustments.

The motivated reasoning literature suggests individuals' directional goals influence their decision processing in a manner that supports their desired conclusions (Kunda [1990]). That is, individuals with directional goals unconsciously engage in motivated reasoning through biased

[3] Specifically, Kadous et al. [2003] manipulated client pressure by varying the timing of the newly engaged auditor's involvement in a financial reporting issue related to the appropriateness of the client's accounting method, such that the issue was identified during interim audit testing when no financial statements had been released to the public (i.e., lower client pressure) versus during fieldwork testing after year-end when two quarterly financial statements containing the client-preferred accounting method had already been publicly released (i.e., higher client pressure).

[4] Prior to 2004, publicly announcing unaudited earnings information was relatively rare, as was the setting included in Kadous et al. [2003] (i.e., the public release of two unaudited quarterly statements containing a revenue recognition treatment that was in question at the year-end audit date). Therefore, dealing with the revenue-recognition issue in the year-end audit likely violated auditors' "reasonableness constraints" (Kunda [1990]), leading auditors to be *less likely* to adopt client-preferred goals, resulting in more objective accounting treatment (Koch and Salterio [2017]). By comparison, because releasing unaudited earnings is relatively common subsequent to 2004, auditors' reasonableness constraints should not be violated, thereby allowing for auditor adoption of directional goals and motivated reasoning.

information evaluation, biased information acquisition, or both. Further, individuals with directional goals tend to be more skeptical of preference-inconsistent information and less skeptical of preference-consistent information (Ditto and Lopez [1992], Hales [2007]).

Prior research finds that auditors with directional goals engage in biased information evaluation through a number of means. For example, auditors with directional preferences have been found to exploit ambiguity in accounting standards to support their desired outcomes (Hackenbrack and Nelson [1996], Kadous et al. [2003]), to place more weight on the importance of preference-consistent evidence (Church [1991], McMillan and White [1993]), and to interpret preference-consistent evidence as more favorable to support their desired outcomes (Wilks [2002]). Likewise, auditors with client-preferred directional goals have been found to engage in biased information acquisition by being quicker to formulate judgments, seeking less disconfirming evidence (McMillan and White [1993], Brown, Peecher, and Solomon [1999]), and seeking less overall evidence (Smith and Kida [1991], McMillan and White [1993]).

Following this line of literature, we expect auditors' client-preferred directional goals will bias their cognitive processing (i.e., evidence acquisition and evaluation) in a manner that supports client-preferred outcomes. With respect to acquiring evidence, we expect auditors with stronger client-preferred directional goals will be less skeptical (or more accepting) of management's estimates by seeking less refuting, preference-inconsistent evidence and by being quicker to form their judgments (i.e., requiring less overall evidence). In contrast, we expect auditors with relatively weaker directional goals will be more objective and skeptical of management's aggressive estimates and therefore will acquire more refuting and overall evidence. Accordingly, we predict negative relationships between auditors' client-preferred directional goals and information acquisition of refuting and overall evidence (Link 3 in Figure 1), and we predict

positive relationships between auditors' information acquisition of refuting and overall evidence and their likelihood of requiring year-end audit adjustments (Link 5 in Figure 1).

In addition, in the context of evaluating complex estimates, we expect auditors with stronger client-preferred directional goals will be more likely to interpret evidence as more supportive of management's estimate and/or place more weight on preference-consistent evidence. Also, given the subjectivity and uncertainty in evaluating complex estimates, auditors may be less skeptical and critical of management's assumptions used to support their aggressive estimates. In contrast, we expect auditors with relatively weaker client-preferred directional goals will be more objective when evaluating evidence and thus more skeptical and critical of management's assumptions used to support their aggressive estimates. Accordingly, we predict positive relationships between auditors' client-preferred directional goals and evidence evaluation in favor of management's estimates (Link 2 in Figure 1), which we expect negatively influences auditors' likelihood of requiring year-end audit adjustments (Link 4 in Figure 1).

2.2. FACTORS INFLUENCING THE RELATIVE STRENGTHS OF PATHS

While previous studies focused on the effects of auditors' client-preferred directional goals on auditors' decision processing and judgment quality (Hackenbrack and Nelson [1996], Kadous et al. [2003], Koch and Salterio [2017]), research has not yet examined factors that can mitigate the effects of client pressure on auditors' directional goals. We identify two potential factors that we expect to interact with client pressure to decrease the likelihood that auditors will adopt client-preferred directional goals, and increase auditors' judgment quality. In particular, we examine one mitigating factor in which public companies can invest (i.e., strong AC effectiveness) and one mitigating factor in which audit firms can invest (i.e., higher professional identification of auditors).

2.2.1. Audit Committee Effectiveness.

Audit committees play an important role in corporate governance (Blue Ribbon Committee [1999]) and prior research documents positive associations between AC effectiveness (e.g., independence, expertise, and frequency of meetings) and financial reporting and audit quality (DeFond and Zhang [2014]). Despite enhanced AC requirements with SOX, post-SOX survey evidence suggests ACs are often not effective in their oversight role over the financial reporting process. Specifically, auditors report that ACs often (i.e., 48%) play a passive role in helping resolve disagreement with management and that very few AC members (i.e., 38%) ask probing questions during meetings (Cohen et al. [2010]). Likewise, CFOs report that the AC is frequently (i.e., 67%) not informed of auditor-client disagreements until *after* the outcome has been negotiated (Gibbins, McCracken, and Salterio [2007]). This suggest that while ACs meet regulatory requirements, their perceived effectiveness is questionable, especially as it related to their involvement in significant accounting issues.

To improve AC effectiveness, the PCAOB recently issued AS No. 16, requiring increased auditor and AC communication on significant audit and financial reporting matters (PCAOB [2012]). Furthermore, the CAQ has provided guidance encouraging AC members to be more proactive in their oversight responsibilities and involved in the resolution of financial reporting matters (CAQ [2013, 2016]). We expect these regulatory initiatives aimed at improving AC effectiveness (i.e., active involvement in resolving accounting issues and asking probing questions) will not only improve managers' behavior (Agoglia, Doupnik, and Tsakumus [2011]) but will also improve auditors' judgments. Specifically, we expect stronger AC effectiveness will help auditors avoid succumbing to client pressures as prior research suggests strong AC effectiveness increases auditors' perceived bargaining power in contentious manager/auditor

negotiations (Brown-Liburd and Wright [2011]). Thus, we expect auditors will be less likely to adopt client-preferred directional goals when there is strong AC effectiveness, and in turn, lead to more objective auditor judgments.

Accordingly, we predict that released earnings will negatively influence auditors' decision processing and judgment quality when there is moderate AC effectiveness representative of the current environment (i.e., AC is independent and meets the expertise requirements, but is not actively involved). We also predict that this negative effect will be attenuated when there is strong AC effectiveness (i.e., a committee that is actively involved in resolving accounting issues and asks probing questions), as we expect auditors will be better able to stand against client pressures when they are supported by a strong AC advocating for high audit quality. Specifically, we predict that strong AC effectiveness will moderate the negative effect of client pressures on auditors' directional goals (Link 1 in Figure 1), which will influence their decision processing and judgments, leading to the following formal prediction:

> Summary Hypothesis 1: *The likelihood of requiring year-end audit adjustments will be lowest with released annual earnings and moderate AC effectiveness, higher with released annual earnings and strong AC effectiveness or with drafted annual earnings and moderate AC effectiveness, and highest with drafted annual earnings and strong AC effectiveness.*

2.2.2 Auditors' Professional Identification

We also examine whether a characteristic controlled by the audit firm—the professional identification of auditors—can help auditors avoid adopting directional goals in response to client pressures even when there is moderate AC effectiveness. Auditor professional identification is the extent to which auditors identify with the norms and values of the accounting profession (Bamber and Iyer [2002], Bauer [2015]). Prior research finds auditors with higher professional identification are less likely to acquiesce to client preferences and make more objective judgments (King [2002], Bamber and Iyer [2007], Bauer [2015]). Auditors with higher professional identification also

engage in more effortful processing in complex auditing tasks which improves task performance (Bhaskar, Majors, and Vitalis [2016]).

Consistent prior research, we expect auditors with higher professional identification will be more likely to require audit adjustments for aggressive client estimates, consistent with upholding the values of the profession. In the context of our model, we posit that an auditor's professional identification will moderate the effect of client pressure on auditor's likelihood of adopting directional goals (Link 1 in Figure 1). In turn, we expect auditors with higher versus lower professional identification will process information more objectively and will be more likely to require year-end audit adjustments for aggressive management estimates even when earnings have already been released and when there is only moderate AC effectiveness. This interaction prediction is formalized as follows:

> Summary Hypothesis 2. *When AC effectiveness is moderate, the likelihood of requiring year-end audit adjustments will be lowest with released annual earnings and lower auditor professional identification, higher with released annual earnings and higher auditor professional identification or with drafted annual earnings and lower auditor professional identification, and highest with drafted annual earnings and higher auditor professional identification.*

3. Method

We conduct a 2 × 2 (timing of the annual earnings release, AC effectiveness) between-participants, full-factorial experiment. We also include auditors' professional identification as a measured independent variable (i.e., higher versus lower). For ease of exposition, we present our results within the framework of two 2 × 2 experimental studies. With all participants, we first examine the joint effect of the timing of the annual earnings release and AC effectiveness on

auditor judgments. We then examine the joint effect of released earnings and auditor professional identification on auditor judgments within the Moderate AC conditions.[5]

In an experimental administration managed by the CAQ, 179 auditors from seven national accounting firms accessed our experimental materials via a Qualtrics survey.[6] Fifty-eight participants exited the study without completing the dependent measures and two participants failed to thoroughly complete the task are therefore excluded.[7] For the remaining 121 participants, the median time spent on the task was 45.57 minutes. The auditors in the final sample (n = 119) are highly experienced with a mean (median) audit experience of 17.6 (17) years. Seventy-four (67.1 percent) are partners or directors, 35 (31.3 percent) are senior managers, three (2.7 percent) are managers, and seven did not disclosure their position.[8] Participants also have relevant experience for completing this case with significant experience auditing income tax provisions (mean of 7.4 on a scale of 11) and the valuation allowance for deferred tax assets (mean of 7.1 on a scale of 11). These mean assessments are significantly greater than the midpoint of the scale (*p-values* < 0.001).

3.1 TASK

Participating auditors evaluate the reasonableness of an accounting issue and potential adjustment during the year-end audit for a hypothetical client. The accounting issue is a subjective,

[5] We do not examine the effect of auditor professional identification in conditions with strong AC effectiveness as we expect the two factors are substitutes such that either factor can mitigate negative effects of released earnings on auditors' judgment. Accordingly, we would not expect to observe an incremental effect of auditor professional identification in the presence of strong AC effectiveness.

[6] Firm is not a significant covariate in any of our analyses and is therefore excluded.

[7] The non-completion rates did not significantly differ across experimental conditions ($F_{3,175}$ = 1.358, p = 0.257). The two participants excluded for not thoroughly completing the task spent less than 10 minutes on the task and had no variation in their responses to the dependent measures and process measures (i.e., one participant selected the highest rating for all questions answered and the other participant selected the median rating for all questions answered).

[8] Audit experience has no effect on the main dependent measure related to auditors' adjustment assessments; however, audit experience has a significant negative effect on auditors' reasonableness assessments ($F_{1,102}$ = 8.616, p = 0.004). Including audit experience as a covariate in our analyses has no effect on the inferences reported in our results and tests of hypotheses and thus we exclude audit experience from further analyses.

complex estimate related to the company's income tax provision: the need for a valuation allowance for deferred taxes assets. We use this setting because of the complexity and subjectivity involved in estimating the income tax valuation allowance and because of the late timing of accounting for income tax accounts. The tax valuation allowance is a significant, complex estimate that involves substantial discretion and potential use as an earnings management tool (Gleason and Mills [2002]). Further, because of its late timing in the financial statement preparation process, Dhaliwal et al. [2004] find that managers use the tax expense as a "last-chance" opportunity to manage earnings to meet analysts' forecasts.

Our case materials were developed with practicing audit partners from a Big 4 firm and were pilot tested for reasonableness. The materials include background information about the client company and the potential accounting issue. Specifically, participants are informed that the company has not recorded a valuation allowance for the current year based on their tax-planning strategies and expectations of company's future taxable income. They are also informed that their audit team verified the assumptions underlying the projection of future taxable income as of June 30 of the current year in conjunction with the goodwill impairment test, and found them to be reasonable. However, new developments since June 30 have potential implications for the reasonableness of these assumptions as of the year-end, December 31.

In addition to the background information, participants were also provided the fourth quarter and annual earnings announcement (released or drafted version) that contained additional background and financial information about the client company. After the earnings release, participants are provided with a memo from their team's tax specialists. The memo highlights the subjective assumptions made by management in their analysis, and raises concerns about the reasonableness of management's conclusions given changes in the current environment.

Specifically, the specialists are concerned about the reasonableness of the assumptions supporting management's expectations of future profitability including (1) next year operating income forecast and (2) and the projected growth rate (e.g., 3 to 8 percent) for the four-year projection of operating income. The specialists provide a sensitivity analysis with a schedule of different valuations and potential adjustments based on a range of assumptions (included in Panel A of the Appendix). The potential adjustments from the amount management has recorded range from quantitatively immaterial to very material in terms of the impact on net income. The company's recorded valuation allowance is based on the use of aggressive assumptions at the high-end of the range.

Importantly, we also incorporate features into the case materials to allow us to better understand the processes underlying the auditors' judgments. At the end of the case materials, we present participants with the option of obtaining supplemental information about the client company's current operating environment. Specifically, we provide six optional links that include representations from management related to characteristics affecting the viability of management's projections (included in Panel B of the Appendix). Three of the links have titles and contain information that supports management's projections (e.g., "growing consumer demand") and three of the links contain information that refutes management's projections (e.g., "volatile economic year"). Participants are asked to access, at their discretion, any or none of the links to obtain supplemental details. The setting allows us to capture the number of links and time spent reading the supplemental information for both supporting and refuting evidence items.

3.2 INDEPENDENT VARIABLES

We manipulate the timing of the annual earnings in relation to the year-end audit at two levels. In the Released conditions, participants were informed that the annual earnings

announcement (unaudited) was released and filed with the SEC approximately 16 days ago, consistent with the current practice (Marshall et al. [2017]). In addition, the annual earnings announcement is formatted as if it has been filed and released with the SEC and is dated February 13. In the Drafted conditions, participants were informed that the annual earnings announcement was anticipated to be released in March concurrent with the 10-K filing (in approximately 14 days) and it was in a draft form with a proposed date of release "March XX, 2017 (Date of 10-K Filing)." An excerpt of the earnings announcements is included in Panel C of the Appendix. Importantly, information in the earnings announcement is held constant across both conditions and it was included prior to the tax memo thereby allowing auditors to adopt directional goals prior to their evaluation of the accounting issue (Wilks [2002]).

We manipulate the strength of AC effectiveness at two levels following prior research (Brown-Liburd and Wright [2011], Agoglia et al. [2011]) and we incorporate key features of "effective" ACs promoted by the CAQ [2013, 2016].[9] In the Moderate AC conditions, the AC is designed as one with average effectiveness such that it meets, but does not exceed, the minimum requirements for public companies (i.e., members are independent and there is one financial expert). This condition serves as a control or baseline condition to study the effects of released earnings on auditors' judgments. We expect that most public companies' AC effectiveness are similar to this average condition. In the Strong AC conditions, the AC is designed as one with above-average effectiveness such that it exceeds the minimum requirements for public companies and it possesses characteristics envisioned by the CAQ (i.e., active involvement in resolving accounting issues and asking probing questions). This condition serves as an idealistic condition

[9] We thank Steven Fuller for sharing his experimental manipulation of audit committee effectiveness (strong and moderate) which is adapted from prior research and descriptions from the CAQ.

that is achievable but currently likely rare in public companies. The complete manipulation descriptions are included in Panel D of the Appendix.

We measure auditors' professional identification following Bamber and Iyer [2007] based on the Organizational Identification Scale developed and validated in psychology research (Mael and Ashforth [1992], Wan-Higgins, Riordan, and Griffeth [1998]). The measure is an average composite score from responses to five scale items with five-point scales (refer to Panel E of the Appendix). Scores in our sample range from 2.2 to 5.0, with a mean (median) of 3.94 (3.80), similar to auditors in Bamber and Iyer [2007] who had a mean (median) score of 3.71 (3.80). Using a binary median split, we assign auditors to higher and lower conditions.[10]

3.3. DEPENDENT VARIABLE

Following prior research (Ng and Tan [2003, 2007], Libby and Kinney [2000]), our primary dependent measure is auditors' assessed likelihood of recommending an initial adjustment to the income tax provision as of the year-end using an 11-point Likert scale from "not at all likely" to "extremely likely" (referred to as "adjustment assessments").

4. Results

4.1 MANIPULATION CHECKS

We asked participants whether the annual earnings announcement "has already been released and filed with the SEC" or whether it "has been drafted, but not yet released and filed with the SEC." Because of the importance of this information for testing our theory, we exclude

[10] Results are robust to using a binary mean split. We also measure participants' professional identification using a pictorial scale directly following Bauer [2015] adapted from Aron, Aron, and Smollan [1992] where participants select one of seven images of two overlapping circles of the self and the accounting profession. Importantly, we find the two measures of auditor professional identification are significantly positively correlated (p = 0.017 two-tailed). We use the Bamber and Iyer [2007] measure as there is relatively more variation in the scores which is important for conducting a median split for the independent variable.

five participants who failed this manipulation check question (i.e., sample is reduced from 119 to 114).[11] We also find a successful manipulation of AC effectiveness as participants in the Strong AC versus Moderate AC conditions assessed the AC to be a stronger advocate (means 7.04 vs 5.73, $t_{106} = 3.078$, $p = 0.003$) and more effective at resolving accounting issues (means 8.04 vs 4.70, $t_{106} = 8.936$, $p < 0.001$). Finally, given auditor professional identification is an individual trait measured after the study, we ensure that our experimental manipulations did not affect the measure. Importantly, the main effect of released versus drafted earnings, the main effect of moderate versus strong AC effectiveness, and the interaction of the two manipulated variables have no significant effect on auditors' professional identification (all *p*-values > 0.20).

4.2 PRELIMINARY ANALYSES ON THE ISSUE OF RELEASING EARNINGS PRIOR TO AUDIT COMPLETION

Before conducting tests of hypotheses, we examine the extent to which the auditors' public company clients release earnings prior to the audit report date and to what extent the audit may be incomplete in those circumstances. While archival research provides evidence that a majority of public companies currently release annual earnings prior to the audit report date (unaudited) (Marshall et al. [2017]), it is unclear whether and to what extent the audit is incomplete. To shed light on this issue, we asked auditors about their experiences related to the practice of clients releasing annual earnings prior to the audit report date. A summary of our findings is included in Table 1. Consistent with archival findings, 78.7 percent (85 of 108) of auditors report that at least one of their public company clients releases annual earnings prior to the audit report date and 45.4 percent of auditors report that 81-100 percent of their public company clients release annual earnings prior to the audit report date.

11 Our reported inferences are robust to including all 119 participants in the analyses.

Regarding audit completion (or incompletion), within these audits, auditors report that approximately 18.1 percent of the total audit hours are remaining, on average, when earnings are released. This percentage is significantly greater than zero (t_{106} = 10.786, p < 0.001) suggesting that audits are generally not complete when earnings are released in these audits. Likewise, auditors report there being a significant likelihood that conclusions about significant accounting estimates might not yet be finalized. The mean assessment of 3.5 on a scale from 1 "not at all" to 11 "to a great extent" is statistically greater than 1 (t_{106} = 14.040, p <0.001). Finally, auditors also report there being a significant likelihood that the engagement quality review partner has not yet completed his/her review which has potential to impact audit conclusions. The mean assessment of 6.0 on a scale from 1 "not at all" to 11 "to a great extent" is statistically greater than 1 (t_{106} = 19.298, p <0.001) and it doesn't differ from the midpoint (t_{106} = -0.30, p = 0.976), suggesting there is an equally likely chance of the engagement quality review being incomplete as complete when earnings are released in these audits. This qualitative evidence from the auditors supports our assumption that, on average, a significant amount of audit work including audit review is incomplete when annual earnings are released prior to the audit report date.

[Insert Table 1 about here]

In addition, we asked auditors to share their views regarding the practice of clients releasing annual earnings prior to the completion of the audit. In support of our theory, many auditors explicitly discuss how releasing earnings prior to the completion of the audit causes undue pressure on auditors due to the risk of finding adjustments during the period between the earnings announcement and audit report dates. For example, one auditor described the practice as follows: "it clearly puts pressure on the audit team and each finding after the earnings release is challenged

more than if it had been identified prior to the release." In addition, several auditors describe it as a "dangerous practice" and highlight the risks involved.

4.3 TESTS OF HYPOTHESES

We first test Summary Hypotheses 1 (H1) and 2 (H2) and then we test the process model underlying these predictions. Related to H1, the results for auditors' likelihood of requiring a year-end audit adjustment ("adjustment assessments") are presented in Panel A of Figure 2 and Table 2. Panel B of Table 2 presents the conventional analysis of variance (ANOVA) table and Panel C reports our hypothesized interaction contrast and the follow-up simple effects tests.[12] Because we predict an ordinal interaction, contrast coding is the most appropriate test of our Hypothesis 1 (Buckless and Ravenscroft [1990]). In accordance with our hypothesized interaction, contrast weights are -4 in the Released / Moderate AC condition, +2 in the Draft / Strong AC condition, and +1 in the other two conditions.[13] The planned contrast is significant ($F_{1,110} = 7.110$, $p = 0.009$), supporting H1. Importantly, the residual between-cells variation is insignificant ($F_{2,110} = 0.075$, $p = 0.928$), supporting that our contrast explains the data well.

[Insert Figure 2 and Table 2 about here]

Follow-up simple-effects tests provide additional support for our predictions. In the Moderate AC conditions, auditors' likelihood of requiring a year-end audit adjustment is significantly lower when earnings have been released (mean = 6.46) versus drafted (mean = 7.69, $t_{55} = -1.951$, $p = 0.028$). In contrast, in the Strong AC conditions, auditors are equally likely to

[12] A conventional ANOVA tests for two main effects and a disordinal (crossover) interaction. Therefore, the conventional ANOVA does not provide appropriate or powerful tests for hypothesized ordinal interactions, which are best tested with planned contrast coding (Buckless and Ravenscroft [1990]). While we provide the conventional ANOVA table for completeness, we caution against interpreting the effects from this analysis given our ordinal interaction prediction.

[13] Our results are robust to alternate contrast coding tests including -3 in the Released / Moderate AC condition and +1 in the other three conditions ($F_{1,110} = 6.577$, $p = 0.012$) and -5 in the Released / Moderate AC condition, +3 in the Draft / Strong AC condition, and +1 in the other two conditions ($F_{1,110} = 7.239$, $p = 0.008$).

require a year-end audit adjustment regardless of whether earnings have been released (mean = 7.79) or drafted (mean = 8.12, t_{55} = -0.465, p = 0.644).[14] The findings suggest that a strong AC not only attenuates the negative effect of released earnings on auditors' adjustment assessments, but it *fully mitigates* the problem. Moreover, we find that when earnings have been released, auditors are significantly more likely to require year-end audit adjustments if there is a strong versus moderate AC (t_{50}= 1.766, p = 0.042). This finding is important given that this is the setting that most auditors face during the completion of year-end audits. Together, our findings highlight the importance of having a strong AC to help auditors stand against aggressive financial reporting.[15]

Related to H2, the results for auditors' adjustment assessments for the Moderate AC Effectiveness conditions are presented in Panel B of Figure 2 and Table 3. In accordance with our hypothesized interaction, contrast weights are -4 in the Released / Lower Professional Identification condition, +2 in the Drafted / Higher Professional Identification condition, and +1 in the other two conditions.[16] The planned contrast is statistically significant ($F_{1,52}$ = 5.324, p = 0.025) and the residual between-cells variation is insignificant ($F_{2,52}$ = 0.309, p = 0.736), supporting H2.

Follow-up simple-effects tests provide additional support for our predictions. In the Lower Professional Identification conditions, auditors' adjustment assessments are lower when earnings

[14] In fact, in each condition, auditors are more likely than not to require a year-end audit adjustment, on average (condition means are significantly greater than the scale midpoint with p-values < 0.05), except for the Released / Moderate AC condition whereby auditors are equally likely to require or not require an audit adjustment (t_{27} = 0.949, p = 0.351).

[15] As a robustness check, we confirm our tests of Hypothesis 1 using a secondary dependent measure: auditors' reasonableness assessments (untabulated). Results are consistent with our main analyses. Specifically, the planned contrast is statistically significant ($F_{1,110}$ = 7.840, p = 0.006), supporting our hypothesis. Likewise, the simple main effects show a significant effect of released earnings on auditors' reasonableness assessments in the Moderate AC conditions (t_{55} = 1.630, p = 0.054), but the effect is fully mitigated in the Strong AC conditions (t_{55} = -0.987, p = 0.328). Finally, when earnings have been released, auditors assess management's estimates as significantly less reasonable if there is a strong versus moderate audit committee (t_{50} = -2.182, p = 0.004).

[16] Our results are robust to alternate contrast coding tests including -3 in the Released / Moderate AC condition and +1 in the other three conditions ($F_{1,52}$ = 4.590, p = 0.037) and -5 in the Released / Moderate AC condition, +3 in the Draft / Strong AC condition, and +1 in the other two conditions ($F_{1,52}$ = 5.635, p = 0.021).

have been released (mean = 6.00) versus drafted (mean = 7.25, t_{24} = -1.324, p = 0.099) with marginal significance. In contrast, in the Higher Professional Identification conditions, auditors are equally likely to require year-end audit adjustments regardless of whether earnings have been released (mean = 7.31) or drafted (mean = 8.00, t_{28} = -0.856, p = 0.399). Moreover, we find that when earnings have been released, auditors are more likely to require year-end audit adjustments for auditors with higher versus lower professional identification (t_{25}= 1.392, p = 0.088) with marginal significance. Together, our findings highlight the importance of auditors' professional identification to stand against client pressures and aggressive management estimates, especially in the absence of strong AC effectiveness.

[Insert Table 3 about here]

4.4 PROCESS MODEL VARIABLES

To examine whether our results are due to the processes described in our theoretical model, we use structural equations-based path analysis to simultaneously estimate each of the links in the model shown in Figure 3. Panel A includes analysis for all conditions and Panel B includes analysis for the Moderate AC Effectiveness conditions. Next, we briefly describe the other process measures (endogenous variables) used in the model, followed by results.

4.4.1. Client-preferred Directional Goals.

Following prior research by Kadous et al. [2003] adopted from Klein et al. [2001], we measure auditors' commitment to the goal of accepting the client's accounting estimates using a composite score from participants' responses to five items related to the following goal, "To build a justifiable case that Limelight's tax provision balance is reasonable and appropriate as of December 31, 2016 considering the current circumstances." Responses were collected using 5-

point Likert scales and higher scores represent higher client-preferred directional goals. The measure details are included in Figure 3 and the results by condition are reported in Table 4.

[Insert Table 4 about here]

4.4.2. Information Evaluation.

We capture auditors' information evaluation by asking participants to assess the extent to which the available evidence supports the company's position about the reasonableness of the income tax provision as of the year-end for nine evidence items. Assessments were obtained using 11-point Likert scales from "does not at all support" to "supports to a great extent." The mean assessments by condition for each evidence item as well as a composite score for the nine items combined are reported in Table 5. We use the mean composite score of the nine factors as the primary measure of information evaluation. Because the measure captures the extent to which the evidence supports management's position, an aggressive accounting estimate, higher assessments reflect greater bias in support of client-preferred outcomes.

[Insert Table 5 about here]

We also asked participants to rank the top five evidence items in order of importance to their evaluation process about the reasonableness of the company's income tax provision balance at year-end. The results are reported in Table 5 including the rank of importance from 1 to 5 and the percentage of participants who ranked the evidence item in their top 5. Lower ranked scores reflect higher assessed importance. As a secondary measure of information evaluation, we use the mean composite score for the three evidence items ranked as most important by a consensus of the auditors (i.e., the company's operating history, the sensitivity of assumptions, and dependency of assumptions). Importantly, auditors in the Released / Moderate AC condition (the condition of interest) assessed the ranked importance of the evidence items consistent with the consensus of the

other three conditions. Therefore, differences in information evaluation across conditions cannot be attributable to differences in perceived importance of evidence items.

Finally, as an alternate measure of information evaluation, we use auditors' assessments to the likelihood that management will achieve the two key assumptions supporting management's expectations of future profitability including (1) their anticipated pre-tax book income for the next year and (2) their estimated annual growth rate for the next four years, both measured using 11-point Likert scales from "not at all likely" to "extremely likely." The mean assessments are reported by condition in Table 5. A principle components analysis finds that the two assessments load onto a single factor that explains 87 percent of the variance; thus, we use the composite of the two assessments as the alternate measure of information evaluation.

4.4.3. Information Acquisition.

We capture auditors' information acquisition by measuring whether and to what extent participants accessed and acquired supplemental, optional information available immediately prior to making their adjustment and reasonableness assessments (i.e., the dependent measures). Specifically, at the end of the case study, participants were provided with the option to click on six separate links that contained supplemental information with management's representations related to the characteristics affecting the viability of management's projections. Three of the links had titles that suggest supporting evidence (e.g., growing consumer demand") and three of the links had titles that suggest refuting evidence (e.g., "volatile economic year") (refer to details in Panel B of the Appendix). Our primary measures of information acquisition is the mean number of supplemental evidence accessed for refuting and total items. As a secondary measure of information acquisition, we use the mean total time spent in the supplemental evidence for refuting

and total items, using ranked transformations for time spent which mitigates the effects of extreme outliers. The information acquisition results by condition are reported in Table 6.

[Insert Table 6 about here]

4.5 PROCESS MODEL RESULTS

4.5.1. Summary Hypothesis 1 with All Conditions.

We use a generalized structural equations-based path analyses. The overall model has good fit.[17] The model including the standardized path coefficients and tests of significance are included in Panel A of Figure 3. Given our interaction prediction that the relationship between released earnings and auditors' adjustment assessments depends on the strength of the AC, we test the path from released earnings (released versus drafted) to auditors' client-preferred directional goals separately for the AC effectiveness groups (moderate or strong) (Link 1). Consistent with our prediction, the relationship between released earnings and auditors' client-preferred directional goals is significantly positive in the Moderate AC conditions (coef. +2.519, $p = 0.031$). As reported in Panel A of Table 4, in the Moderate AC conditions, auditors have significantly higher directional goals when earnings have been released (mean = 14.52) versus drafted (mean = 12.00). Also, consistent with predictions, the effect of released earnings on auditors' directional goals is significantly weaker in the Strong AC conditions ($\chi^2 = 3.02$, $p = 0.041$) such that released earnings no longer affects auditors' directional goals when there is strong AC effectiveness (coef. -0.814, *p*

[17] The chi-square goodness of fit test is not significant (χ^2=1.372, $p = 0.712$) indicating there is no better-fitting model available (i.e., an insignificant effect suggests a good fit). Thompson [2000] describes the CFI, comparative fit index, and the RMSEA, root mean square error approximation, as being the most informative criteria for assessing model fit, especially for smaller samples. The CFI is 1.000 indicating good fit (normal benchmarks for goodness of fit are a CFI approaching 1). Likewise, the RMSEA is 0.000 and indicates good fit (less than 0.05 indicates a good fit). The Tucker-Lewis Index is 109 percent and also suggests good fit (it is above the accepted cutoff value of 90 percent (Kline [1998])).

= 0.550). This finding is noteworthy as it suggests that strong AC effectiveness can help auditors avoid adopting directional goals in response to client-based pressures.

[Insert Figure 3 about here]

As predicted, auditors' client-preferred directional goals are positively associated with their information evaluation in a manner that supports management's aggressive estimates (Link 2, coef. +0.645, $p = 0.002$), which in turn negatively affects their adjustment assessments (Link 4, coef. -0.106, $p < 0.001$). The results are inferentially identical using the two alternate measures of information evaluation described earlier and presented in Table 5. Likewise, directional goals are negatively associated with auditors' information acquisition of supplemental refuting evidence items (Link 3a, coef. -0.072, $p = 0.003$) and total evidence items (Link 3b, coef. -0.133, $p = 0.004$). In turn, information acquisition is positively associated with auditors' adjustment assessments (*p*-values < 0.05). The results are inferentially identical using time spent evaluating the evidence as the measures of information acquisition. The results are consistent with auditors engaging in overall lower critical thinking and less skeptical actions rather than engaging in confirmation bias (i.e., searching for preference-consistent information). Finally, results show that the indirect effect of released earnings on auditors' adjustment assessments is no longer significant in the Moderate AC conditions (coef. -0.572, $p = 0.123$, one-tailed test, untabulated), consistent with auditors' directional goals and information processing fully mediating the joint effects of released earnings and AC effectiveness on auditors' adjustment assessments.

4.5.2. Summary Hypothesis 2 with Moderate AC Effectiveness Conditions.

Next we examine the mitigating effect of auditors' professional identification in the process model when there is moderate AC effectiveness. The model results are included in Panel B of

Figure 3.[18] Consistent with our prediction, the relationship between released earnings and auditors' client-preferred directional goals is significantly positive in the Lower Professional Identification conditions (Link 1, coef. +3.190, $p = 0.042$). As reported in Panel B of Table 4, auditors with lower professional identification have significantly higher directional goals when earnings have been released (mean = 16.86) versus drafted (mean = 13.67). However, released earnings does not significantly affect auditors' directional goals for individuals with higher professional identification (coef. 1.176, $p = 0.489$).

In turn, auditors' client-preferred directional goals influence their decision processing and adjustment assessments consistent with predictions and findings reported above for all conditions, with one exception. Auditors' directional goals do not significantly influence their information acquisition of supplemental refuting and total evidence items (Link 3). Rather, auditors' client-preferred directional goals negatively influence their adjustment assessments through their information evaluation in favor of management's estimate (Links 2 and 4). The results are robust to using the alternate measures for information evaluation and acquisition reported in Tables 5 and 6. Finally, results from the process model show that the indirect effect of released earnings on auditors' adjustment assessments is no longer significant for auditors with lower professional identification (coef. -0.675, $p = 0.188$, one-tailed test, untabulated), consistent with auditors' directional goals and information evaluation fully mediating the joint effects of released earnings

[18] The overall model has good fit. The chi-square goodness of fit test is not significant ($\chi^2=0.207$, $p = 0.977$) indicating there is no better-fitting model available (i.e., an insignificant effect suggests a good fit). Tompson [2000] describes the CFI, comparative fit index, and the RMSEA, root mean square error approximation, as being the most informative criteria for assessing model fit, especially for smaller samples. The CFI is 1.000 indicating good fit (normal benchmarks for goodness of fit are a CFI approaching 1). Likewise, the RMSEA is 0.000 and indicates good fit (less than 0.05 indicates a good fit). The Tucker-Lewis Index is 130 percent and also suggests good fit (it is above the accepted cutoff value of 90 percent (Kline [1998])).

and auditors' professional identification on auditors' adjustment assessments when AC effectiveness is average.

4.6 ROBUSTNESS ANALYSES AND SUPPLEMENTAL ANALYSES

4.6.1. Evidence of an Unintentional Effect.

Following Frederickson and Miller [2004], we examine whether the systematic effects of released earnings on auditor judgments are intentional (conscious) or unintentional (unconscious) by asking participants whether other auditors at their level would have assessed the reasonableness of management's estimates differently if "the earnings announcement had already been (would not have been) released and filed with the SEC prior to (until after) the completion of the audit" in Drafted (Released) conditions (i.e., in the alternate earnings release condition). On average, the majority of auditors (69.4 percent, Chi-square test = 16.33, $p < 0.001$) indicate that other auditors' assessments would not differ, consistent with effects being unintentional.

4.6.2. Controlling for Confounding Factors.

We held all information constant across the experimental conditions. However, as noted in the process model results, participants with higher directional goal commitment (i.e., participants in the Released / Moderate AC condition) accessed and acquired relatively less supplemental evidence. While the supplemental evidence was optional and was not required to formulate judgments about the reasonableness of management's estimates, we test and find that our results of H1 and H2 are robust to including auditors' information acquisition as a covariate in our analyses (untabulated).

As reported in Table 1, 21.3 percent of the auditors have no clients that currently release earnings prior to the audit report date and there is variation for the other 78.7 percent of auditors. We examine whether auditors' experiences with clients releasing earnings prior to the audit report

date impact auditors' adjustment assessments and our results of H1 and H2. Interestingly, we find a significant, negative effect of the percent of auditors' clients that release earnings early on auditors' adjustment assessments ($F_{1,103}$ = 5.184, p = 0.025) for analyses with all conditions, consistent with greater experience of clients releasing earnings early causing a lower likelihood of requiring year-end audit adjustments. Importantly, all tests of H1 and H2 are robust to including the percent of auditors' clients that release earnings early as a covariate (untabulated).

5. Discussion and Conclusions

Since implementation of PCAOB Auditing Standards No. 2 and 3 in 2004 (i.e., added requirements related to internal control audits and audit workpaper documentation), the "new normal" for many firms is to announce annual earnings significantly before the audit report date. While prior research suggests financial reporting quality is lower when firms announce earnings before the audit report date (Marshall et al. [2017]; Bronson et al. [2017]), these association-based studies cannot convincingly isolate the source of diminished financial reporting quality (i.e., client versus auditor). We provide evidence that earnings announcement timing (i.e., before versus after audit completion) is an important factor influencing experienced-auditor judgments, such that auditors succumb to client pressures and thereby leave aggressive end-of-year financial reporting unchecked when earnings have already been released. An attempt to address this problem by requiring firms to delay releasing earnings until after the audit is complete, as suggested by prior research, is likely an unworkable and undesirable solution given the benefits of timely information. By comparison, we turn to other parties involved in monitoring financial reporting quality and offer two implementable solutions: investment in high-quality audit committees (i.e., strong AC effectiveness) and higher-quality auditors (i.e., higher professional identification of auditors). Our

findings suggest that either factor can effectively fully mitigate the harmful effects of released earnings on auditor judgments (and financial reporting quality).

We base our inferences on a controlled experiment conducted with 114 highly experienced audit partners and senior managers. We use the comparative advantage of experiments to provide highly internally valid evidence that addresses some of the limitations in prior archival-based studies. For example, archival data sets do not identify the extent to which audits are incomplete at the earnings announcement date. Our (post-experiment) survey data provides evidence that a significant amount of audit work (e.g., conclusions about significant accounting estimates, audit review) is often incomplete when annual earnings are released prior to the audit report date, supporting the audit-completion-timing claims made in prior archival studies. In addition, we unambiguously manipulate the timing of the earnings announcement in relation to the completion of the audit, and isolate and investigate the effects on experienced auditors' judgments. Through randomization, we also control for potential selection issues in firms' decisions to issue earnings announcements before/after audit completion; thus we control for a significant threat to the internal validity of archival analyses.

We also extend prior work on motivated reasoning in audit contexts to investigate auditors' judgment processes and we propose interventions to help auditors adopt neutral goals in the presence of client pressures when they might otherwise adopt client-preferred directional goals. Our process-model results suggest, in cases where the client announces earnings prior to audit completion, if the auditor has lower professional identification in the presence of a moderate AC, then auditors are more likely to have increased goal commitment in favor of the client's aggressive accounting estimate. In turn, this results in auditors being biased in their information search and evaluation (i.e., consistent with less critical thinking and lower professional skepticism), ultimately

resulting in biased judgments in favor of the client position. However, these effects are fully mitigated with strong AC effectiveness and/or with higher auditor professional identification, such that auditors no longer succumb to client pressure and adopt client-preferred directional goals. Thus, generalizing results of our study, we expect these two factors can help mitigate harmful effects of any client pressure on auditors' decision processing and judgment quality by reducing directional goals.

Finally, we provide evidence relevant to recent calls for enhancements in the structure and function of ACs (PCAOB [2012]; CAQ [2016]). A large proportion of extant AC research was conducted pre-SOX (i.e., prior to mandated requirements for member independence and expertise). Further, because archival AC-effectiveness research is susceptible to endogeneity concerns, DeFond and Zhang (2014) call for additional research to gain a better understanding as to how audit committee effectiveness affects financial reporting quality. Because of limitations of existing AC-related data, they call for research to identify new audit committee characteristics that affect audit quality (i.e., in addition to independence, expertise, and frequency of meetings). Similar to Brown-Liburd and Wright (2011), we answer these calls for research by examining characteristics of strong audit committees that cannot be examined with archival data sets, including more active involvement in their oversight responsibilities and in resolving accounting issues.

APPENDIX

Panel A: Tax Specialist Memo Excerpt with Sensitivity Analysis

Adjustments to valuation allowance with varying assumptions for the annual growth rate (8%) and for the anticipated pre-tax book income for 2017			
	Assumptions for anticipated pre-tax book income for 2017		
Assumptions for Annual Growth Rate	$64.9 million (Limelight's estimate)	$55.6 million (2016 pre-tax income adjusted*)	$50.3 million (2016 pre-tax income)
8%	0	0	0
7%	0	0	1,635,227
6%	0	0	4,766,186
5%	0	0	7,816,809
4%	0	321,909	10,788,822
3%	0	3,522,800	13,683,925

Notes:
Limelight projects pre-tax book income of $64.9 million for 2017 and an annual growth rate of 8% for each of the years 2018-2021.
* $55.6 million represents the actual 2016 pre-tax income of $50.3 million adjusted by $5.3 million for a one-time expense for the write-down of investments that occurred in 2016.

This table illustrates the sensitivity analysis included in the tax specialists' memo highlighting the significant assumptions made by management in their analysis and raises concerns about the reasonableness of management's conclusions. Note that materiality in the case is set at $2.5 million.

Panel B: Optional Links used to Capture Participants' Information Acquisition

Supplemental Information (Optional)

Please note: Additional information about Limelight and its current operating environment can be obtained below in each of the links. The information in the links includes representations from Limelight's management that relates to characteristics affecting the viability of management's projections. Please click on any links to obtain the supplemental details at your discretion (i.e., reading this supplemental information is not required).

Volatile economic year	Stable customer base
Growing consumer demand	Market uncertainty for existing products
2016 operating results below expectations	Extensive experience of company management

This table illustrates the six optional links that include representations from management related to the characteristics affecting the viability of management's projections. Three links have titles and contain information that supports management's projections and three links contain information that refutes management's projections.

Panel C: Released versus Drafted Earnings Announcement Manipulation

EX-99.1 2 a012-1816_1ex99d1.htm EX-99.1 **Exhibit 99.1**

LIMELIGHT

FOR IMMEDIATE RELEASE

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LIMELIGHT, INC. REPORTS FOURTH QUARTER AND 2016 OPERATING RESULTS

San Jose, CA, February 13, 2017 – Limelight, Inc., the world's leading supplier of light sources used by chipmakers to create advanced semiconductor chips, today announced operating results for the fourth quarter and year ended December 31, 2016.

For the fourth quarter of 2016:

- Net income totaled $3,984,000, equal to $0.13 per share (diluted), compared to net income of $21,437,000 equal to $0.67 per share (diluted) in the fourth quarter of 2015 and net income of $5,331,000, equal to $0.18 per share (diluted) in the third quarter of 2016.
- Revenue totaled $100,448,000 compared to revenue of $139,922,000 in the fourth quarter of 2016, and revenue of $110,619,000 in the third quarter of 2016.

TO BE RELEASED ON MARCH XX, 2017 (DATE OF 10-K FILING)

LIMELIGHT, INC. REPORTS FOURTH QUARTER AND 2016 OPERATING RESULTS

San Jose, CA, March XX, 2017 – Limelight, Inc., the world's leading supplier of light sources used by chipmakers to create advanced semiconductor chips, today announced operating results for the fourth quarter and year ended December 31, 2016.

For the fourth quarter of 2016:

- Net income totaled $3,984,000, equal to $0.13 per share (diluted), compared to net income of $21,437,000 equal to $0.67 per share (diluted) in the fourth quarter of 2015 and net income of $5,331,000, equal to $0.18 per share (diluted) in the third quarter of 2016.
- Revenue totaled $100,448,000 compared to revenue of $139,922,000 in the fourth quarter of 2016, and revenue of $110,619,000 in the third quarter of 2016.

These figures illustrate our manipulation of the timing of the annual earnings announcement. The first figure is an excerpt from the Released condition whereby participants were informed that the annual earnings announcement (unaudited) was released and filed with the SEC approximately 16 days ago and

the second figure is an excerpt from the Drafted condition whereby participants were informed that the annual earnings announcement was anticipated to be released in March concurrent with the 10-K filing (in approximately 14 days). The content in the earnings announcement across both conditions was held constant.

Panel D: AC Strong versus Moderate AC Effectiveness Manipulation

Strong conditions: The audit committee is composed of three individuals, who are all independent. Two of the members are CPAs with extensive experience in public accounting and qualify as financial experts as defined by the SEC, and the third member is financially literate. You have been very impressed with the audit committee's high level of diligence in representing shareholders' interest. They meet frequently and are actively involved in the resolution of key accounting and disclosure issues. The audit committee members are proactive, ask probing questions, and debate the appropriate accounting treatment regarding key transactions and issues.

Moderate conditions: The audit committee is composed of three individuals, who are all independent. Only one of the members qualifies as a financial expert as defined by the SEC as he is viewed as a supervisory financial expert. The other two members are financially literate. None of the members have direct accounting or financial reporting experience. Your experience with the audit committee is that they meet infrequently and are somewhat involved in the resolution of key accounting and disclosure issues. The audit committee members are reactive; they follow discussions of the issues during meetings but they do not ask too many questions regarding the issues.

This panel displays the experimental manipulation of the audit committee effectiveness which were included in the "Case Instructions and Background" section of the experimental materials. Participants were first introduced to the accounting issue and potential adjustment. They were then informed that per audit firm guidance, their audit team is required to discuss the significant accounting estimate with the audit committee. Following, they received one of the two audit committee descriptions above.

Panel E: Auditor Professional Identification

Please indicate your agreement with the following statements on a scale from 1 "strongly disagree" to 5 "strongly agree."

1. When someone criticizes my profession, it feels like a personal insult.
2. When I talk about my profession, I usually say "We" rather than "They."
3. I am very interested in what others think about my profession.
4. My profession's successes are my successes.
5. When someone praises my profession, it feels like a personal compliment.

This panel details the measure of auditor's professional identification which is a composite score of participants' responses to five items above directly following (Bamber and Iyer [2007]) adapted from validated scales used in psychology (Mael and Ashforth [1992], Wan-Higgins et al. [1998]).

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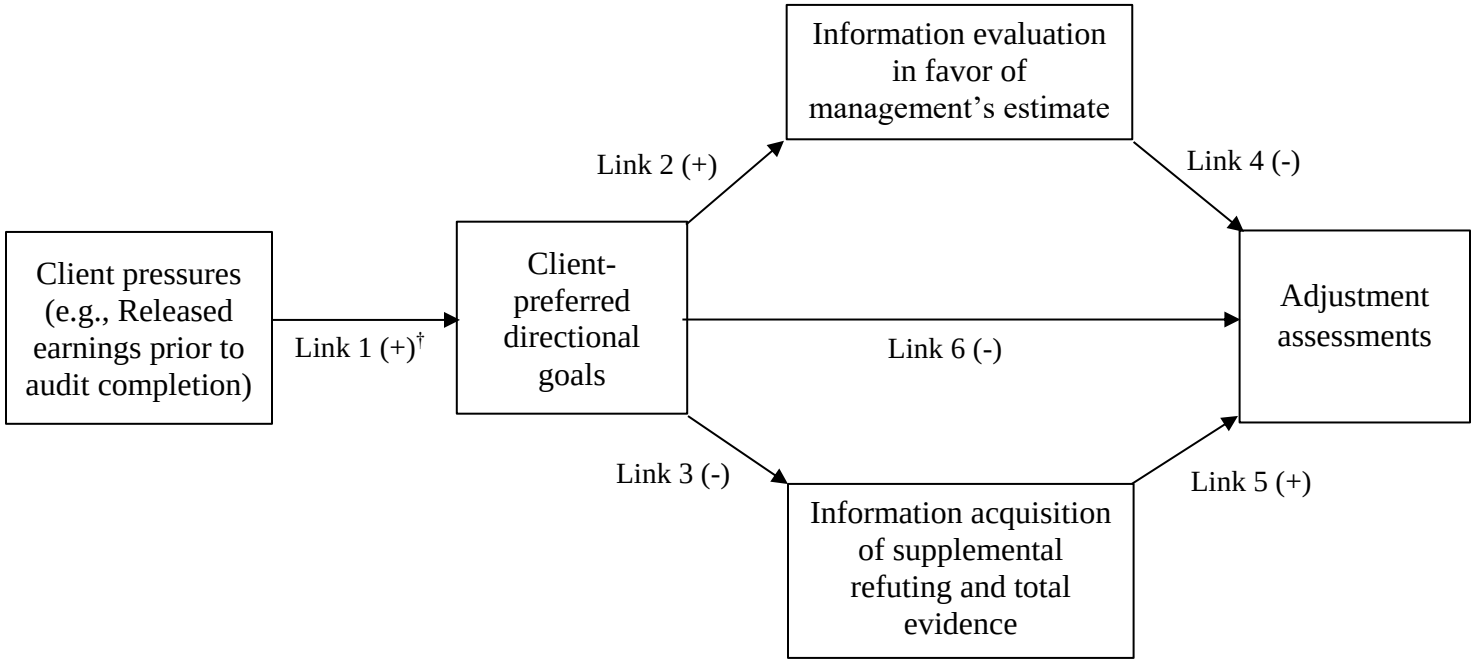
FIGURE 1

Hypothesized Model of the Effects of Released Earnings on Auditors' Assessed Likelihood of Year-end Adjustments[*]

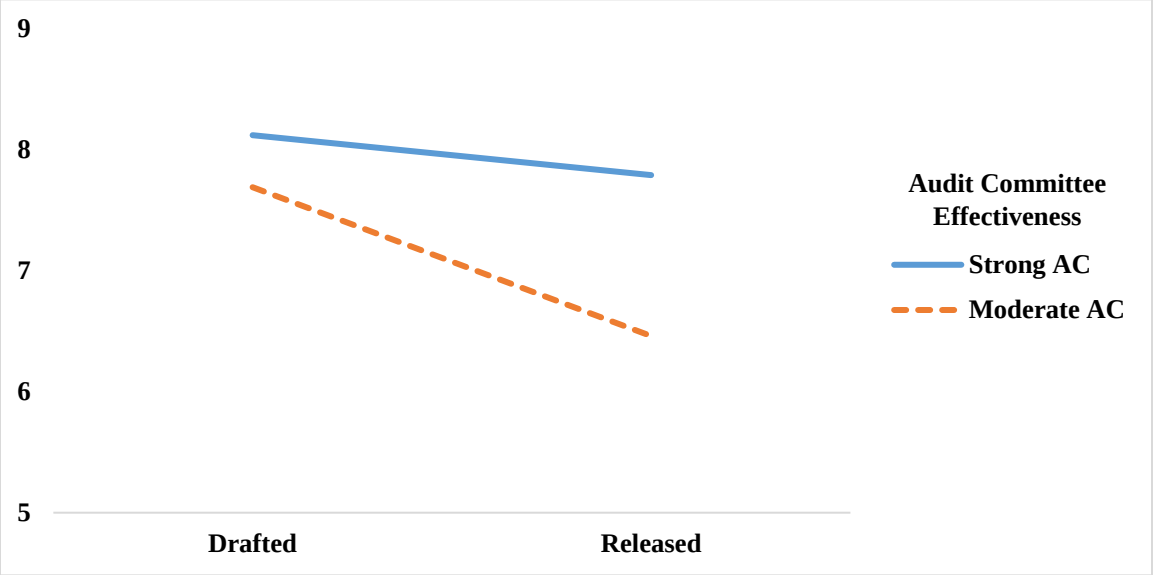


* This figure illustrates our process-based model of how released earnings prior to audit completion influences auditors' likelihood of recommending year-end audit adjustments. The parenthetical comment next to each link represents the expected coefficient sign.

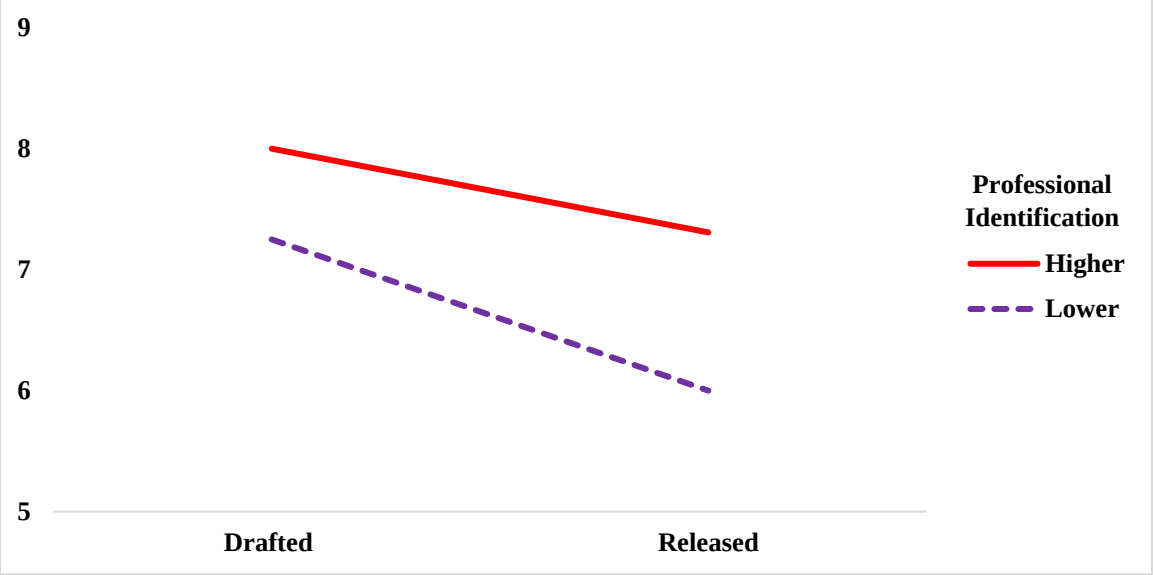
† The strength of link 1 is hypothesized to be moderated by AC effectiveness and auditor's professional identification.

FIGURE 2
Summary of Results

Panel A: Effects on auditors' assessed likelihood of year-end audit adjustment for all conditions



Panel B: Effects on auditors' assessed likelihood of year-end audit adjustment for the Moderate AC conditions



Notes:
Panel A summarizes how released annual earnings and the strength of the AC effectiveness jointly influence auditors' likelihood of requiring year-end audit adjustments. Then, within the conditions with moderate AC effectiveness, Panel B summarizes how released annual earnings and the auditor's professional identification jointly influence auditors' likelihood of requiring year-end audit adjustments.

The dependent variable measures auditors' responses to "How likely is it that you would recommend an initial adjustment to the income tax provision as of December 31, 2016" on a scale from 1 (not at all likely) to 11 (extremely likely).

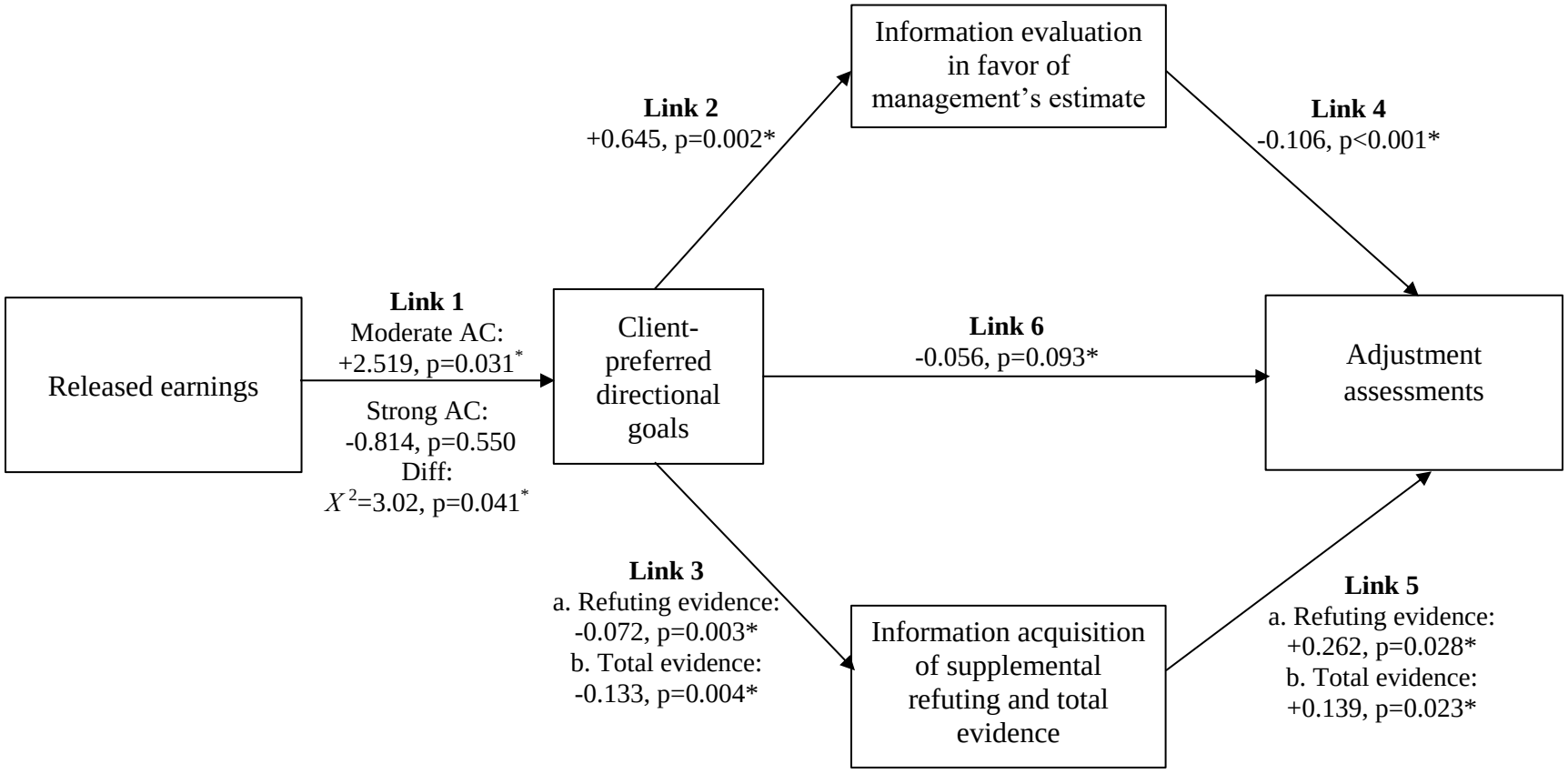
The timing of the annual earnings announcement during the year-end audit was manipulated as released (it had already been released and filed with the SEC, *unaudited*, prior to the completion of the year-end audit) or drafted (it had been drafted but would not be released and filed with the SEC until the audit report date at the completion of the year-end audit). An excerpt of the manipulation is included in Panel C of the Appendix.

The strength of AC effectiveness was manipulated as strong (described as above average effectiveness such that it exceeds the minimum requirements) or moderate (described as average effectiveness such that it meets but does not exceed the minimum requirements). The manipulation is included in Panel D of the Appendix.

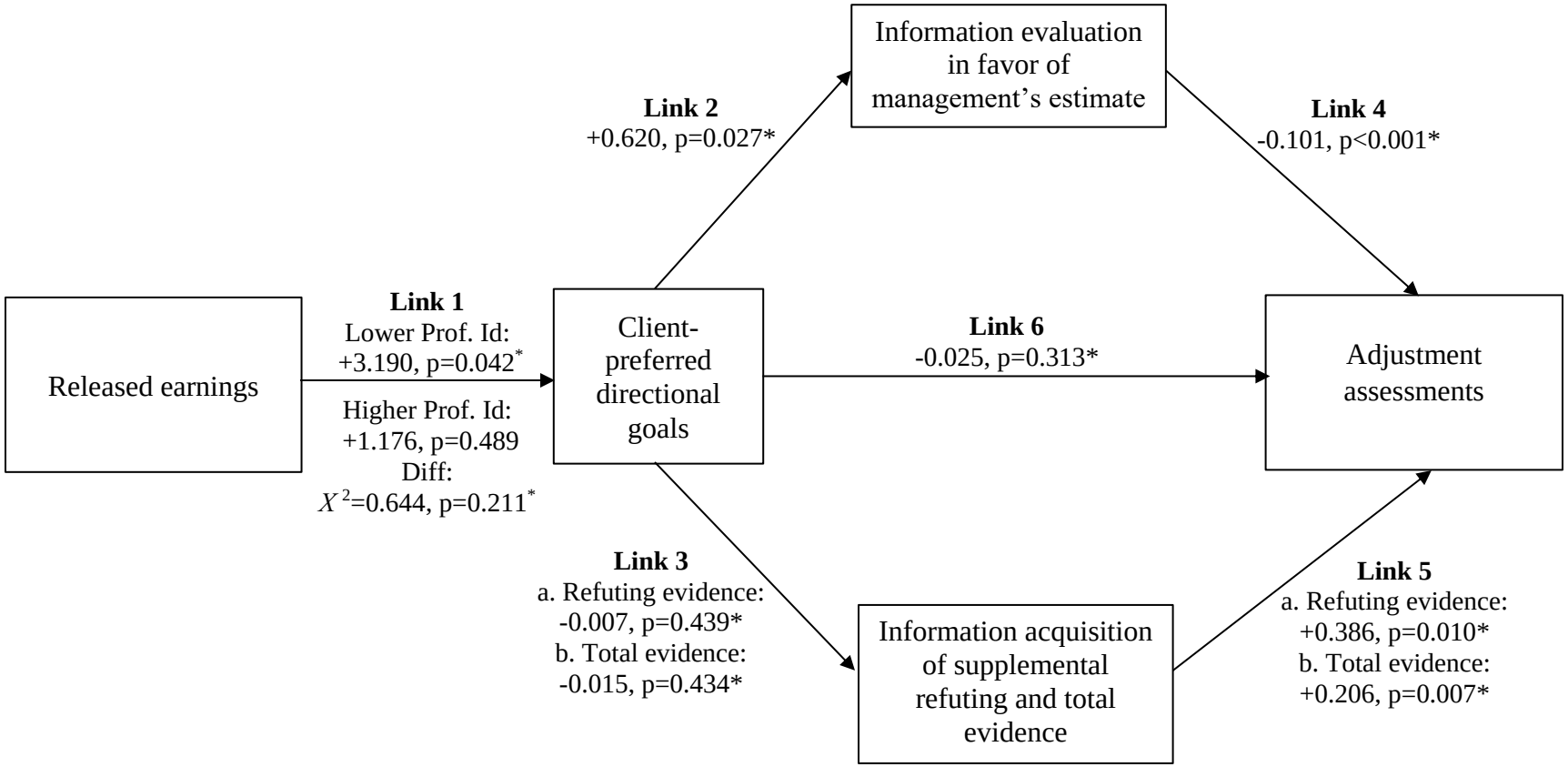
Auditor's professional identification is a composite score of participants' responses to five items measuring professional identification directly following (Bamber and Iyer [2007]) adapted from validated scales used in psychology (Mael and Ashforth [1992], Wan-Higgins et al. [1998]). The items are included in Panel E of the Appendix.

FIGURE 3
Process Model Results

Panel A: Effects on auditors' assessed likelihood of year-end audit adjustment for all conditions



Panel B: Effects on auditors' assessed likelihood of year-end audit adjustment for Moderate AC conditions



Notes:
Figure 3 displays results from a generalized structural equations model (GSEM) on how auditors' client-preferred directional goals and information processing (information evaluation and information acquisition) mediate the effects of the timing of the annual earnings announcement during the year-end audit on auditors' assessed likelihood of requiring a year-end audit adjustment ("adjustment assessments"). Panel A includes results for all experimental conditions and examines the moderating effect of the strength of the AC effectiveness on auditors' client-preferred directional goals. The number of observations is 108. Panel B includes results for the Moderate AC Effectiveness conditions and examines the moderating effect of the auditor's professional identification on auditors' client-preferred directional goals. The number of observations is 56.

The path analyses simultaneously tests the relationships among the variables. The standardized path coefficients and corresponding *p*-values are shown next to each path. * One-tailed *p*-value for directional predictions. All other *p*-values are two-tailed.

See Figure 1 for descriptions of the independent and dependent variables. Earnings released is coded as 1 for Released and 0 for Drafted. The AC strength is coded as 1 for Strong AC and 0 for Moderate AC. Auditor's professional identification is a binary variable, coded as 1 for higher and 0 for lower.

Client-preferred directional goals is a continuous variable and measures auditors' agreement with the following statements related to the goal "To build a justifiable case that Limelight's tax provision balance is reasonable and appropriate as of December 31, 2016 considering the current circumstances" on a scale from 1 "strongly disagree" to 5 "strongly agree" following Kadous et al. [2003, p. 767].

1. I thought this was a good goal to shoot for.
2. I was strongly committed to pursuing this goal.
3. It was hard to take this goal seriously. (R)
4. Quite frankly, I didn't care if I achieved this goal or not. (R)
5. It wouldn't have taken much to make me abandon this goal. (R)

Information evaluation measures auditors' assessed "…extent to which the available evidence supports Limelight's position about the reasonableness of the income tax provision as of December 31, 2016" from 1 (does not at all support) to 11 (supports a great extent) for nine evidence items using a composite score.

Information acquisition measures the count of supplemental (optional) evidence items (refuting and total) accessed for characteristics affecting the viability of management's future projections supporting management's year-end estimates. Six links were available including three supporting and three refuting in terms of management's estimates.

TABLE 1

Post-experiment Survey of Responses Related to Auditors' Experience and Views on the Practice of Clients Releasing Annual Earnings Prior to the Audit Report Date

1. What percent of your public company audit engagements have released annual earnings prior to your audit report date?	n	Percent
0%	23	21.3%
1-20%	8	7.4%
21-40%	7	6.5%
41-60%	15	13.9%
61-80%	6	5.6%
81-100%	49	45.4%
Total	108	100.0%

	Mean
2. In these audits, approximately what percentage of the total hours are remaining, on average?	18.1%
3. In these audits, how likely is it that conclusions about significant accounting estimates might not yet be finalized? (Scale from 1 "not at all" to 11 "to a great extent.")	3.5
4. In these audits, how likely is it that the engagement quality review partner has complete his/her review? (Scale from 1 "not at all" to 11 "to a great extent.")	6.0
5. In these audits, how important is support from the audit committee when a potential adjustment arises after the annual earnings have been released? (Scale from 1 "not at all" to 11 "to a great extent.")	9.0

6. In general, what is your view about the practice of audit clients releasing earnings prior to the completion of the audit (i.e., the audit report date)?

Examples of responses:

a. *This is a dangerous practice. The Audit Committee should not permit release of earnings until the audit is completed and any issues resolved.*
b. *It presents a challenge for the auditor because of the strong reluctance by management to change any of the previously reported numbers in the earnings release.*
c. *It is a common practice and it is important to make sure the client understands the audit is not done until the report is issued.*
d. *It makes it more stressful to be complete with the majority of the audit work and if adjustments do arise, it is hard to get them pushed through (recorded). Also, findings*

late in the game can jeopardize the client relationship and management's perception of the value we add.

e. *I believe it puts pressure on the audit, especially in areas of judgements such as impairments and income taxes which typically come towards the end of the client's process. This doesn't always leave much time to get through the necessary audit work.*
f. *It clearly puts pressure on the audit team and each finding after earning release is challenged more than if it had been identified prior to release.*

TABLE 2

Results of Auditors' Assessed Likelihood of Year-end Audit Adjustment for All Conditions

Panel A: Means (standard deviations)

Status of annual earnings announcement (EA) during the year-end audit:	Audit Committee (AC) Strength:		
	Moderate AC	Strong AC	Combined
Drafted	7.69	8.12	7.92
	(2.14)	(2.50)	(2.33)
	n = 29	*n* = 33	*n* = 62
Released	6.46	7.79	7.08
	(2.59)	(2.83)	(2.76)
	n = 28	*n* = 24	*n* = 52
Combined	7.09	7.98	
	(2.43)	(2.62)	
	n = 57	*n* = 57	

Panel B: Analysis of variance

Source	Sum of squares	*df*	Mean square	F-stat.	*p*-value
Released Earnings	17.007	1	17.007	2.701	0.103
AC Strength	21.762	1	21.762	3.456	0.066
Released Earnings × AC Strength	5.645	1	5.645	0.896	0.346
Error	692.645	110	6.297		

Panel C: Follow-up contrast tests

Planned contrast tests of H1:	*df*	F-stat.	*p*-value
- Released/Moderate AC (-4), Drafted/Moderate AC (+1), Released/Strong AC (+1), Drafted/Strong AC (+2)	1,110	7.110	0.009

Simple effects tests:	*df*	t-stat.	*p*-value
- Effect of released earnings with a moderate AC	55	-1.951	0.028*
- Effect of released earnings with a strong AC	55	-0.465	0.644
- Effect of AC strength if released earnings	50	1.766	0.042*
- Effect of AC strength if drafted earnings	60	0.725	0.471

Notes:

See Figure 1 for descriptions of the independent and dependent variables. Sample excludes five participants who incorrectly completed manipulation check questions; however, inferences are robust to including these participants.

* One-tailed *p*-value for directional predictions. All other *p*-values are two-tailed.

TABLE 3

Results of Auditors' Assessed Likelihood of Year-end Audit Adjustment for Moderate AC Conditions

Panel A: Means (standard deviations)

Status of annual earnings announcement (EA) during the year-end audit:	Auditor's Professional Identification: Lower	Higher	Combined
Drafted	7.25 (2.18) n = 12	8.00 (2.12) n = 17	7.69 (2.14) n = 29
Released	6.00 (2.57) n = 14	7.31 (2.29) n = 13	6.63 (2.48) n = 27
Combined	6.58 (2.44) n = 26	7.70 (2.18) n = 30	

Panel B: Analysis of variance

Source	Sum of squares	*df*	Mean square	F-stat.	*p*-value
Released Earnings	12.986	1	12.986	2.473	0.122
Prof. Id	14.575	1	14.575	2.776	0.102
Released Earnings × Prof. Id	1.071	1	1.071	0.204	0.653
Error	273.019	52	5.250		

Panel C: Follow-up contrast tests

Planned contrast tests of H1:	*df*	F-stat.	*p*-value
- Released/Lower Prof. Id AC (-4), Drafted/Lower Prof. Id (+1), Released/Higher Prof. Id AC (+1), Drafted/Higher Prof. Id (+2)	1,52	5.324	0.025

Simple effects tests:	*df*	t-stat.	*p*-value
- Effect of released earnings with lower Prof. Id.	24	-1.324	0.099*
- Effect of released earnings with higher Prof. Id.	28	-0.856	0.399
- Effect of Prof. Id. if released earnings	25	1.392	0.088*
- Effect of Prof. Id. if drafted earnings	27	0.927	0.362

Notes:

See Figure 1 for descriptions of the independent and dependent variables. * One-tailed *p*-value for directional predictions. All other *p*-values are two-tailed.

TABLE 4

Results of Auditors' Client-preferred Directional Goals

Panel A: For all conditions

	All conditions	Released / Moderate AC	Drafted / Moderate AC	Released / Strong AC	Drafted / Strong AC
Sample size	108	27	29	23	29
Mean composite score	13.12	14.52	12.00	12.57	13.38
Standard deviation	4.99	5.75	4.33	5.27	4.53

Panel B: For Moderate AC conditions

	Moderate AC conditions	Released / Lower Prof. ID	Drafted / Lower Prof. ID	Released / Higher Prof. ID	Drafted / Higher Prof. ID
Sample size	56	14	12	13	17
Mean composite score	13.21	16.86	13.67	12.00	10.82
Standard deviation	5.18	5.35	4.36	5.23	4.03

TABLE 5

Results of Auditors' Information Evaluation

Panel A: For all conditions

Evidence items		All conditions	Released / Moderate AC	Draft / Moderate AC	Released / Strong AC	Draft / Strong AC
1. Economic outlook	a	5.00	5.26	4.72	4.65	5.31
	b	n/a	5	5	n/a	5
	c	50.0%	44.4%	62.1%	34.8%	55.2%
2. Industry outlook	a	4.79	5.00	4.55	4.61	4.97
	b	4	n/a	4	4	3
	c	79.6%	74.1%	75.9%	82.6%	86.2%
3. Company's operating history	a	6.35	7.00	5.93	6.26	6.24
	b	2	2	2	1	4
	c	79.6%	77.8%	75.9%	100.0%	69.0%
4. Company's customer base	a	7.06	7.15	6.97	6.96	7.17
	b	n/a	n/a	n/a	n/a	n/a
	c	29.6%	37.0%	20.7%	26.1%	34.5%
5. Company's financial condition	a	6.83	7.11	6.93	6.96	6.38
	b	n/a	n/a	n/a	n/a	n/a
	c	19.4%	44.4%	34.5%	34.8%	27.6%
6. Management's experience	a	7.67	7.93	8.00	7.78	7.00
	b	n/a	n/a	n/a	n/a	n/a
	c	16.7%	25.9%	13.8%	21.7%	6.9%
7. The stability of the company's products	a	5.73	5.70	5.79	5.65	5.76
	b	5	5	n/a	5	n/a
	c	53.7%	63.0%	55.2%	39.1%	55.2%

8. The sensitivity of assumptions related to the significant estimates	a	5.08	5.96	5.24	5.04	4.14
	b	1	1	1	2	2
	c	81.5%	74.1%	82.8%	87.0%	82.8%
9. The dependency of assumptions on the outcome of the forecasted results related to the significant estimates	a	4.74	5.19	4.72	5.22	3.97
	b	3	3	3	3	1
	c	74.1%	59.3%	79.3%	73.9%	82.8%
Composite score of all evidence items		48.47	51.30	48.31	48.52	45.97
Average score of three evidence items ranked most important (3, 8, 9)		5.39	6.05	5.30	5.51	4.78

Support for key management assumptions		All conditions	Released / Moderate AC	Draft / Moderate AC	Released / Strong AC	Draft / Strong AC
10. Next year income assumption	d	4.18	4.81	4.00	4.09	3.83
11. Annual growth rate assumption	e	3.83	4.33	3.66	3.74	3.62
Composite score for support of management's assumptions (10, 11)		4.00	4.57	3.83	3.91	3.72

Panel B: For Moderate AC conditions

Evidence items		Moderate AC conditions	Released / Lower Prof. ID	Drafted / Lower Prof. ID	Released / Higher Prof. ID	Drafted / Higher Prof. ID
1. Economic outlook	a	4.98	5.93	5.08	4.54	4.47
	b	n/a	n/a	5	n/a	5
	c	53.6%	35.7%	41.7%	53.8%	76.5%
2. Industry outlook	a	4.77	5.93	4.75	4.00	4.41

	b	4	3	4	4	2
	c	75.0%	78.6%	66.7%	69.2%	82.4%
3. Company's operating history	a	6.45	7.64	5.08	6.31	6.53
	b	2	2	1	2	4
	c	76.8%	78.6%	91.7%	76.9%	64.7%
4. Company's customer base	a	7.05	7.21	7.17	7.08	6.82
	b	n/a	n/a	n/a	n/a	n/a
	c	28.6%	42.9%	41.7%	30.8%	5.9%
5. Company's financial condition	a	7.02	7.00	7.17	7.23	6.76
	b	n/a	5	n/a	n/a	n/a
	c	39.3%	57.1%	50.0%	30.8%	23.5%
6. Management's experience	a	7.96	7.79	8.42	8.08	7.71
	b	n/a	n/a	n/a	n/a	n/a
	c	19.6%	21.4%	25.0%	30.8%	5.9%
7. The stability of the company's products	a	5.75	5.79	6.58	5.62	5.24
	b	5	n/a	n/a	3	n/a
	c	58.9%	42.9%	41.7%	84.6%	64.7%
8. The sensitivity of assumptions related to the significant estimates	a	5.59	6.64	5.50	5.23	5.06
	b	1	1	2	5	1
	c	78.6%	100.0%	75.0%	46.2%	88.2%
9. The dependency of assumptions on the outcome of the forecasted results related to the significant estimates	a	4.95	6.64	5.00	4.08	4.53
	b	3	4	3	1	3
	c	69.6%	42.9%	66.7%	76.9%	88.2%
Composite score of all evidence items		49.75	54.21	50.00	48.15	47.12
Average score of three evidence items ranked most important (3, 8, 9)		5.66	6.83	5.19	5.21	5.37

Support for key management assumptions		Moderate AC conditions	Released / Lower Prof. ID	Drafted / Lower Prof. ID	Released / Higher Prof. ID	Drafted / Higher Prof. ID
10. Next year income assumption	d	4.39	5.36	4.42	4.23	3.71
11. Annual growth rate assumption	e	3.98	4.93	4.17	3.69	3.29
Average score for support of management's assumptions (10, 11)		4.19	5.14	4.29	3.96	3.50

Notes:

a. Auditors' mean assessment rating regarding the "extent to which the available evidence supports Limelight's position about the reasonableness of the income tax provision as of December 31, 2016" using an 11-point Likert scale from "Does not at all support" to "Supports a great extent" for each evidence item.

b. The average rank of importance to auditors' evaluation of the reasonableness of the company's income tax provision balance as of December 31, 2016, with 1 being most important. Participants were asked to rank their top 5 factors. Unranked factors were assigned a 6. Lower rankings represent greater importance.

c. The percentage of participants who ranked the evidence item as one of the five most important to their evaluation of the reasonableness of the company's income tax provision balance as of December 31, 2016.

d. Auditors' mean assessment rating regarding "how likely it is that Limelight's management will achieve their anticipated pre-tax book income of $64.9 million for 2017 using an 11-point Likert scale from "not at all likely" to "extremely likely."

e. Auditors' mean assessment rating regarding "how likely is it that Limelight's management will achieve their estimated annual growth rate of 8% for the next four years" using an 11-point Likert scale from "not at all likely" to "extremely likely."

TABLE 6

Results of Auditors' Information Acquisition

Panel A: All conditions

Acquisition of supplemental information		All conditions	Released / Moderate AC	Draft / Moderate AC	Released / Strong AC	Draft / Strong AC
Refuting evidence:						
Total time spent acquiring evidence	a	44.95	40.89	45.18	47.42	42.32
Count of evidence items accessed	b	1.40	1.36	1.48	1.33	1.42
Supporting evidence:						
Total time spent acquiring evidence	a	43.5	39.18	44.56	42.63	44.54
Count of evidence items accessed	b	1.31	1.25	1.41	1.13	1.39
Total evidence:						
Total time spent acquiring evidence	a	45.41	40.89	45.44	49.38	41.41
Count of evidence items accessed	b	2.71	2.61	2.90	2.46	2.82

Panel B: For Moderate AC conditions

Acquisition of supplemental information		Moderate AC conditions	Released / Lower Prof. ID	Drafted / Lower Prof. ID	Released / Higher Prof. ID	Drafted / Higher Prof. ID
Refuting evidence:						
Total time spent acquiring evidence	a	43.02	29.00	31.17	52.62	55.59
Count of evidence items accessed	b	1.43	1.07	1.25	1.69	1.65
Supporting evidence:						
Total time spent acquiring evidence	a	42.93	31.29	30.75	50.62	55.24
Count of evidence items accessed	b	1.36	1.07	1.08	1.54	1.65
Total evidence:						
Total time spent acquiring evidence	a	43.21	30.00	30.92	51.62	56.35
Count of evidence items accessed	b	2.79	2.14	2.33	3.23	3.29

Notes:
a. Mean number of supplemental evidence items accessed. There were six (optional) supplemental factors, three with supporting and three with refuting evidence which were apparent in the title of the links.
b. Mean time spent acquiring information related to the supplemental factors using ranked transformations.