

Can Auditors Pursue Firm-Level Goals Nonconsciously on Audits of Complex Estimates? An Examination of the Joint Effects of Tone at the Top and Management’s Specialist

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ABSTRACT: We examine whether tone at the top emphasizing firm-level commercial, audit quality, or both goals (balanced) can nonconsciously affect auditors’ engagement-level tendency to accept management’s estimates, and whether the effects differ if management engages a specialist. This study is motivated by academics’ and regulators’ increasing attention on firm-level tone at the top and concerns about management bias in audited estimates, especially when the evidence is prepared by management’s specialist. We find firm-level goals can be pursued nonconsciously by auditors when performing a complex task. When management’s specialist is absent, a balanced approach reduces auditors’ tendency to agree with management’s estimate compared to a commercial approach; however, it is less effective when management’s specialist is present. We find an audit quality approach reduces auditors’ tendency to accept management’s estimate compared to a commercial approach, regardless of the absence/presence of a specialist. Our results have important implications for regulators and audit firms.

Data Availability: Data are available from the authors upon request.

Keywords: tone at the top; nonconscious goal pursuit; management’s specialist; complex estimates; firm-level quality control; audit quality goals.

I. INTRODUCTION

This study investigates whether and how a critical firm-level quality control mechanism, tone at the top, can mitigate auditors’ tendency to accept management’s preferred accounting estimates despite the presence of contradictory evidence, and whether its effect differs when management uses the work of a specialist (hereafter, management’s

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Supplemental material can be accessed by clicking the link in Appendix C.

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specialist). Our focus on firm-level quality control is driven by the increasing attention that academic researchers and U.S. and international regulators and standard setters have given to firm-level audit quality control standards, including tone at the top (Gold, Gronewold, and Salterio 2013; Federation of European Accountants [FEE] 2016; Public Company Accounting Oversight Board [PCAOB] 2016c, 2018a; International Auditing and Assurance Standards Board [IAASB] 2017, 2018; Koch and Salterio 2017). Academic research has long stressed the crucial role that tone at the top, set by leadership, plays in influencing firm culture and how it is ultimately reflected in the actions and behaviors of employees (e.g., auditors) (e.g., Brickley, Smith, and Zimmerman 2003; Schwartz, Dunfee, and Kline 2005; Gronewold and Donle 2011; Gold et al. 2013; Patelli and Pedrini 2015). Regulators advocate that effective tone at the top supports the firm-level goal of audit quality by promoting appropriate levels of professional skepticism, objectivity, and integrity, which align with their longstanding objective to protect the public interest (e.g., PCAOB 2013a). Regulators further contend that a firm's leadership must convey the appropriate tone related to their commitment to audit quality, as it "can shape the engagement team, which does not operate in isolation" and is an important mechanism that affects "the strength of the engagement team's work" (International Federation of Accountants [IFAC] 2007; PCAOB 2015a, 20).

In recent years, regulators have criticized firms for setting a tone at the top that overemphasizes firm-level commercial goals (e.g., client satisfaction, client retention, and firm profitability) while underemphasizing audit quality goals that are consistent with the profession's responsibilities to protect the public interest (e.g., International Forum of Independent Audit Regulators [IFIAR] 2014; PCAOB 2012b, 2013a, 2013b, 2015c, 2017a; American Institute of Certified Public Accountants [AICPA] 2017). This approach can potentially perpetuate auditors' tendency to agree with management's position (e.g., Kadous, Kennedy, and Peecher 2003; Koch and Salterio 2017). Although audit firms face these two competing firm-level goals (i.e., commercial versus audit quality)¹ and prior research provides considerable evidence that auditors are motivated to engage in self-interested directional goal pursuit consistent with management's position (e.g., Peecher 1996; Kadous et al. 2003), a paucity of research exists that examines how pursuit of these conflicting goals influences auditors' judgment and decision-making (JDM) (Griffith, Kadous, and Young 2016; Hillison 2018).

Both audit research and the recurring deficiencies in regulatory inspection reports provide considerable evidence that incentives/pressures commonly existing in the audit environment motivate auditors to pursue self-interested directional goals often consistent with management's preferred position (e.g., Hackenbrack and Nelson 1996; Peecher 1996; Wilks 2002; Kadous et al. 2003; Ng and Tan 2003; Koch and Salterio 2017; PCAOB 2012a, 2017a). This tendency is not only detrimental to firm-level audit quality goals and protecting the public interest (e.g., Kadous et al. 2003; Koch and Salterio 2017; Deloitte 2017; KPMG 2017), it is especially troubling as researchers find robust evidence of management bias in audited complex estimates, suggesting that auditors are failing to detect or correct the bias (e.g., Hilton and O'Brien 2009; Choudhary 2011; Bratten, Gaynor, McDaniel, Montague, and Sierra 2013). To exacerbate these concerns, audit research and inspection findings highlight that auditors' tendency to accept management's preferred conclusions is compounded when management uses a specialist (Giddens 1990; Stegenga and Occhipinti 2004; PCAOB 2016a, 2016b, 2017a; Anantharaman 2017).

Auditors often evaluate evidence that is prepared by management's specialist due to the increasing use of specialists to assist in developing complex estimates (PCAOB 2015b, 2017a, 2017b, 2018b, 2019). However, regulators have criticized auditors for not exercising appropriate levels of professional skepticism when evaluating evidence prepared by management's specialists (PCAOB 2016a, 2016b, 2017a).² Significant research highlights regulators' concerns by indicating that even highly knowledgeable experts/specialists are not infallible and are prone to self-interested incentives to arrive at management's desired estimates (e.g., Mumpower and Stewart 1996; Peecher, Solomon, and Trotman 2013; Glover, Taylor, and Wu 2019; Kjellevoid 2019).³ Anantharaman (2017) provides archival evidence with pension accounting that suggests that despite management's use of third-party specialists to assist with complex estimates, management opportunism/bias in audited estimates persists (i.e., higher, obligation-reducing discount rates). Joe, Vandervelde, and Wu (2017) also provide evidence that auditors do not

¹ We acknowledge that commercial and audit quality goals potentially may not conflict in all instances; however, in the current study, we focus on the conflicting nature of these two goals. Our approach is consistent with regulators, who generally view commercial and audit quality goals as conflicting and contend that an overemphasis on commercial interests adversely affects an audit firm's audit quality goals and is not in the public's interest (e.g., IFIAR 2014; PCAOB 2018a). Likewise, prior research finds that auditors' pursuit of commercial goals (e.g., agreeing with management's preferred position) often conflicts or competes with their pursuit of audit quality goals (e.g., Hackenbrack and Nelson 1996; Kadous et al. 2003; Griffith et al. 2016).

² Professional skepticism is defined in auditing standards "as an attitude that includes a questioning mind and a critical assessment of audit evidence" (AU 230, ¶8; also see PCAOB 2012b), which appears to take more of a "neutral" perspective (i.e., auditors assume that management is neither honest nor dishonest). In contrast, broader society (e.g., regulators, inspectors, and practitioners) and some academic literature take a more "presumptive-doubt" perspective (i.e., auditors assume some level of management bias/dishonesty) (e.g., Bell, Peecher, and Solomon 2005; Nelson 2009; Nolder and Kadous 2018). Arguably, a shift from a more neutral to a more presumptive-doubt perspective increases the need for more convincing and persuasive audit evidence (Bell et al. 2005; Nelson 2009).

³ Consistent with regulatory concerns, guidance prescribes that auditors need to be cognizant that the roles played by management's specialists and auditors' specialists are fundamentally different, and that "when a company's specialist develops assumptions used in a fair value measurement, the auditor is required to evaluate the reasonableness of those assumptions as if the assumptions were developed by the company [management]" (PCAOB 2017a, 8).

recognize the potential that management can strategically influence evidence prepared by specialists. Together, research and regulatory concerns underscore the notion that auditors should be wary of allowing evidence provided by management's specialist to inappropriately influence their propensity to accept management's estimate, especially when indicators of management opportunism/bias are present. That is, the presence of a specialist does not inherently signal an enhancement in the diagnostic value, reliability, and/or the reasonableness of management's estimate. Motivated by the above research and regulatory concerns, we investigate whether and how firm-level tone at the top can mitigate auditors' tendency to pursue directional goals often consistent with management's preferred position, and whether its effect differs in the face of a stronger tendency to agree with management (i.e., presence of management's specialist).

Auditors pursue goals that can arise from a variety of sources, either explicitly (e.g., via task instructions, incentives, or preferences expressed by management) or implicitly (e.g., via subtle priming by environmental cues) (e.g., [Peecher 1996](#); [Kadous et al. 2003](#); [Gollwitzer and Bargh 2005](#); [Dijksterhuis and Aarts 2010](#); [Kleiman and Hassin 2013](#)). Per the extant psychology research, lower-order goals, also referred to as momentary temptations, interfere with one's pursuit of higher-order or global goals (e.g., [Shah and Kruglanski 2002](#); [Fishbach, Friedman, and Kruglanski 2003](#); [Fishbach and Shah 2006](#); [Fishbach and Zhang 2008](#)). Applied to an audit setting, firm-level goals conveyed via tone at the top represent global goals. In contrast, the incentives/pressures commonly present at the engagement level (e.g., client importance, budgets, supervisors' and managements' preferences) represent momentary temptations that increase auditors' tendency to pursue directional goals aligned with management's position and may interfere with pursuit of firm-level goals, such as audit quality.

Prior research theorizes that auditors' pursuit of self-interested directional goals need not be conscious, highlighting that engagement-level incentives/pressures can motivate auditors to pursue goals often consistent with management's preferences, but not aligned with firm-level audit quality (accuracy) goals (e.g., [Hackenbrack and Nelson 1996](#); [Peecher 1996](#); [Brown, Peecher, and Solomon 1999](#); [Wilks 2002](#); [Kadous et al. 2003](#); [Koch and Salterio 2017](#); [Messier and Schmidt 2018](#); [Deloitte 2017](#); [KPMG 2017](#)). This research also suggests that auditors are likely unaware that the manner in which they interpret evidence is biased toward pursuing such directional goals and, thus, are unlikely to take corrective action (e.g., [Kadous et al. 2003](#); [Griffith et al. 2016](#)).

Drawing on the nonconscious goal pursuit research in psychology, we adapt the two-stage, or "separate experiments," paradigm to explore whether tone at the top can serve as a mechanism to subtly activate firm-level goals that auditors subsequently pursue nonconsciously when performing engagement-level tasks (e.g., [Dijksterhuis and Aarts 2010](#); [Kleiman and Hassin 2011, 2013](#)).⁴ Importantly, a primary advantage of subtle priming and subsequent nonconscious goal pursuit is that this method circumvents individuals' very limited conscious resources, thus improving the efficiency with which they perform cognitively taxing tasks (e.g., auditing complex estimates) ([Kahneman 1973](#); [Hassin, Bargh, and Zimmerman 2009](#); [Dijksterhuis and Aarts 2010](#)). Further, in contrast to explicitly triggering task-specific goal pursuit, this paradigm has been effectively employed in psychology research to enable higher-order goals (e.g., firm-level goals) to be subtly primed in Stage 1, where the goals activated can be contextually related or unrelated to the subsequent task in Stage 2 and, thus, are not limited to a specific task or engagement (e.g., [Hassin et al. 2009](#); [Kleiman and Hassin 2011, 2013](#)).⁵ This form of goal activation is more global in nature, and psychology research finds that it leads to nonconscious goal pursuit in subsequent tasks. Moreover, priming of higher-order goals can inhibit the pursuit of lower-order goals (i.e., engagement-level goals) (e.g., [Shah, Friedman, and Kruglanski 2002](#); [Dijksterhuis and Aarts 2010](#); [Kleiman and Hassin 2011, 2013](#)).

To address our research objectives, we recruited 230 experienced auditors to participate in our study. We employ the two-stage paradigm, where an audit firm's goals for the new fiscal year are communicated via tone at the top in Stage 1, and auditors complete a separate goodwill task in Stage 2. Our between-subjects research design manipulates tone at the top at three levels: (1) emphasis of a singular commercial goal; (2) emphasis of a singular audit quality goal; or (3) a balanced approach (equal emphasis of the two conflicting goals). We also manipulate whether management employs a specialist to assist with the goodwill analysis at two levels: (1) absent, or (2) present. Consistent with the prior literature and regulatory concerns (e.g., [Kadous et al. 2003](#); [Griffith, Hammersley, and Kadous 2015a](#); [PCAOB 2012b, 2017a](#)), we focus on a setting where auditors encounter common engagement-level incentives/pressures (i.e., temptations) to agree with management's preferred position (i.e., goodwill is not impaired), despite the presence of contradictory evidence that indicates a greater potential for management bias/aggressiveness in the estimate and, in

⁴ Different terms have been used interchangeably in the literature to describe the effects of goals that are outside of a person's awareness (e.g., nonconscious, subconscious, unconscious, and automatic) (e.g., [Kleiman and Hassin 2011, 2013](#); [Dijksterhuis and Aarts 2010](#); [Bipp et al. 2017](#)). Consistent with [Kleiman and Hassin \(2011, 2013\)](#), we use the term *nonconscious* to investigate the effects of conflicting goals that can be activated without a person's awareness.

⁵ This phenomenon has been observed in numerous instances in psychology research, which mainly uses student participants and basic tasks that do not require job-related knowledge and/or expertise and lack the professional context in which auditors operate. Thus, it is important to test whether the effect observed in psychology research applies to auditors who have a professional obligation to make decisions in the public interest and in higher-stakes environments. Moreover, this is consistent with [Smith and Kida \(1991\)](#), who suggest that a psychological phenomenon observed with students may occur differently with auditors completing naturalistic audit tasks.

turn, an increased likelihood of impairment. Accordingly, we anticipate that auditors exhibiting directional goal pursuit will be more likely to accept management's position (i.e., less likely to recommend impairment).

Consistent with nonconscious goal theory (e.g., [Fishbach and Zhang 2008](#); [Kleiman and Hassin 2013](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)), we find that firm-level goals can be subtly primed via tone at the top and then subsequently pursued nonconsciously by auditors when performing a complex audit task. Consistent with our first hypothesis, we find that the efficacy of the balanced versus commercial approach differs depending on whether management engages a specialist (i.e., strength of engagement-level temptation). We find that a balanced approach (subtle priming of two conflicting goals) reduces auditors' tendency to agree with management's estimate compared to a commercial approach in the absence of management's specialist, but it is less effective in the presence of management's specialist. Consistent with our second hypothesis, we find that regardless of whether management engages a specialist, an audit quality approach (subtle priming of a singular goal) mitigates auditors' tendency to agree with management's estimate compared to a commercial approach and, thus, improves audit quality, consistent with protecting the public interest. Notably, analysis of post-experimental questions verifies that the reliability of management's goodwill analysis is held constant (i.e., auditors did not perceive any differences in reliability of the audit evidence across conditions). This finding lends support for our theoretical premise that auditors encounter stronger engagement-level temptations to agree with management's estimate in the presence of a specialist despite the specialist adding no incremental reliability to management's estimate.

Our study makes several contributions to the audit literature. First, we extend goal pursuit research that suggests that auditors have difficulty overcoming the nonconscious engagement-level tendency to agree with management's preferred position (e.g., [Wilks 2002](#); [Kadous et al. 2003](#); [Blay 2005](#); [Koch and Salterio 2017](#); [Messier and Schmidt 2018](#)). For example, [Kadous et al. \(2003\)](#) find that explicitly requiring auditors to make quality assessments regarding the appropriateness and quality of management-preferred methods does not reduce their goal pursuit in favor of management's preferred position, but instead amplifies and exacerbates this tendency. We extend this stream of literature using the two-stage paradigm from the nonconscious goal pursuit psychology research to provide new evidence that subtle priming of firm-level audit quality goals (i.e., those that align with protecting the public interest) via tone at the top can be an effective mechanism to mitigate auditors' tendency to agree with management's preferred position and, importantly, to enhance professional skepticism. Second, we extend the limited research on tone at the top (e.g., [Gold et al. 2013](#); [Carpenter and Reimers 2013](#); [Pickerd, Summers, and Wood 2015](#)). We provide the first systematic evidence that varying firm-level goals (i.e., singular versus conflicting) via tone at the top can subsequently impact auditors' performance on complex audit tasks, and such impact depends on whether engagement-level temptations to agree with management's position are strengthened with the presence of management's specialist. In doing so, we answer the call for research by [Griffith et al. \(2016\)](#) regarding how conflicting versus singular goal pursuit can influence auditors' JDM.

We next contribute to psychology research by investigating boundary conditions where the efficacy of nonconscious *conflicting* goal pursuit ([Kleiman and Hassin 2013](#)) may be moderated. Drawing on the expertise and goal pursuit research in psychology (e.g., [Chaiken 1980](#); [Petty and Cacioppo 1986](#); [Steginga and Occhipinti 2004](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)), we develop theory and provide evidence that the benefit of nonconscious conflicting goal pursuit posited and found by [Kleiman and Hassin \(2013\)](#) (i.e., that it reduces the tendency for confirmatory thinking) is conditioned on the strength of the engagement-level temptation to agree with management's position (i.e., the presence/absence of management's specialist) naturally occurring in the audit context.

Our results have important implications for regulators, audit firms, and academics. Our findings confirm academics' and regulators' long-held position that tone at the top is an important firm-level quality control mechanism that influences auditors' engagement-level JDM. We demonstrate how subtle priming of firm-level goals via tone at the top serves as a promising mechanism for firm leadership to positively influence professional skepticism, which remains one of regulators' longstanding objectives to improve audit quality in the public interest (e.g., [PCAOB 2012b, 2017a, 2017b, 2017c, 2018a](#)). Unlike other hands-on or conscious interventions that are designed to enhance audit quality, a primary benefit of subtly priming firm-level goals via tone at the top is that subsequent nonconscious goal pursuit circumvents auditors' very limited conscious resources while performing cognitively taxing tasks (e.g., [Hassin et al. 2009](#); [Dijksterhuis and Aarts 2010](#)). Our finding that tone at the top emphasizing audit quality reduces auditors' tendency to unduly accept estimates provided by management's specialist has important implications for audit firms and regulators as both continue to work on improving auditors' performance when relying on the work of specialists ([PCAOB 2017b](#)).

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Firm-Level Tone at the Top and Engagement-Level Temptations

A commonly accepted belief exists in the academic literature that tone at the top influences the actions and behaviors of employees (e.g., [Brickley et al. 2003](#); [Gronewold and Donle 2011](#); [Gold et al. 2013](#); [Skaife, Veenman, and Wangerin 2013](#);

Patelli and Pedrini 2015). Similarly, regulators contend that firm-level goals communicated by leadership set the firm's overall global tone at the top and that they should have profound effects on how auditors pursue these goals at the engagement level (PCAOB 2014, 2015a). The PCAOB (2015a) argues that firm-level tone at the top, and not just the expectations within the engagement team, influence auditor performance. Thus, U.S. and international regulators and standard setters have recently focused on further improving firm-level quality control, including tone at the top, with the longstanding objective to improve audit quality to the benefit of the public's interest (Financial Reporting Council [FRC] 2011, 2012; PCAOB 2013b, 2014, 2016c, 2018a; IAASB 2014, 2016, 2017; FEE 2016). Despite these long-held beliefs and recent regulatory actions, limited direct evidence is available on the effects of firm-level tone at the top on engagement-level behavior.

To date, audit research provides preliminary evidence regarding the effects of tone at the top philosophy and climate. Using a survey, Gronewold and Donle (2011) find only an indirect effect between office-level philosophy (e.g., error management climate) and auditors' predispositions for handling their errors (e.g., analyze, learn from, and communicate errors). Extending Gronewold and Donle (2011), Gold et al. (2013) use an experiment to investigate the effect of office-level error management climate on auditors' propensity to report post-review discovery of superiors' errors in audit files. They find evidence that a more open office-level climate related to error management increases auditors' propensity to report errors contained in working papers during post-review.

The current study extends tone at the top research by examining whether and how firm-level goals established via tone at the top influence auditors' tendency to pursue engagement-level goals consistent with management's preferred position. The inherent incentives/pressures present at the engagement level (e.g., meeting budgets, satisfying management's and supervisors' preferences) often exacerbate auditors' tendency/temptation to agree with management's conclusions and interfere with their pursuit and achievement of firm-level audit quality goals (Hackenbrack and Nelson 1996; Peecher 1996; Rich, Solomon, and Trotman 1997; Brown et al. 1999; Wilks 2002; Kadous et al. 2003; Blay 2005; Peecher, Piercey, Rich, and Tubbs 2010; Koch and Salterio 2017; Messier and Schmidt 2018). Specifically, we vary the strength of engagement-level temptation via the absence/presence of management's specialist.

In recent years, regulators have criticized auditors for not exercising appropriate levels of professional skepticism when evaluating evidence provided by management's specialists, suggesting that auditors are "blindly" relying on client evidence more than is warranted (PCAOB 2016a, 2016b, 2017a). This regulatory concern is relevant in the setting we investigate, where indicators of management opportunism/bias are present, and in light of research that underscores why it would be unappealing for auditors to allow the presence of management's specialist to disproportionately increase their propensity to accept management's preferred estimate. Even highly knowledgeable experts/specialists are prone to pressures by management to arrive at management's desired position/estimate. For example, experts' judgments are not infallible and are prone to self-interested tendencies, especially for highly subjective and complex tasks (e.g., Stewart 1991; Hammond 1996; Mumpower and Stewart 1996; Bradshaw, Richardson, and Sloan 2006; Barber, Lehavy, and Trueman 2007; Khim, Low, H. Tan, and S. Tan 2012; Peecher et al. 2013; Anantharaman 2017; Glover et al. 2019). Consequently, although management's specialists may be highly qualified and knowledgeable, their objectivity can be compromised given that they are hired and paid by management.⁶ For instance, a recent field study provides insight from management's specialists who report feeling pressure from management to conform to its preferred estimates. Moreover, audit partners in the same study report difficulties in assessing whether management's specialist's objectivity has been impaired (Kjellevoid 2019). These findings are consistent with archival evidence that finds that management uses more aggressive assumptions when it is a more economically important client of the specialist (Anantharaman 2017).⁷

Even though experts are not infallible, research demonstrates that individuals are prone to blindly trusting experts' advice and judgments (Giddens 1990; Steginga and Occhipinti 2004; Smith-Lacroix, Durocher, and Gendron 2012). Psychology research suggests that individuals who are motivated to systematically process judgment-related information are still prone to the "expert opinion heuristics," trusting experts' statements, especially in situations with high uncertainty (Chaiken 1980; Petty and Cacioppo 1986; Chaiken and Maheswaran 1994; Steginga and Occhipinti 2004). Similarly, accounting research finds that investors are susceptible to over-relying on analysts' (i.e., experts') stock recommendations despite knowledge of the analysts' incentives to provide favorable (biased) recommendations (Hirst, Koonce, and Simko 1995; Barber et al. 2007; Khim et al. 2012). Recent experimental research also provides evidence that auditors are not always aware of the potential that management can strategically influence client evidence prepared by its specialists and, thus, "auditors' substantive testing is most susceptible to strategic manipulations in the client specialist's report on higher-risk clients" (Joe et al. 2017, 110).

⁶ In such an instance, there is the possibility that the specialist himself or herself could give comfort that the apparent contradictory evidence is not so negative after all.

⁷ Moreover, experimental and archival audit research find that management can "opinion shop" for specialist reports to obtain the desired estimate (Salzsieder 2016; Anantharaman 2017).

Together, this research suggests that auditors' tendency to agree with management's position is amplified and more difficult to overcome when management uses the work of a specialist (i.e., stronger engagement-level temptations).

Overwhelming academic research and regulatory inspection findings discussed above support the underlying theoretical premise of the current study. That is, if auditors' propensity to agree with management's estimate increases, despite management's specialist adding no incremental reliability to management's estimate, then auditors falling prey to stronger engagement-level temptation to agree with management interferes with the pursuit of a higher-order firm-level audit quality goal (e.g., Kadous et al. 2003; Bratten et al. 2013; PCAOB 2016a; 2017a; Anantharaman 2017). However, we acknowledge that this theoretical premise is not without tension, as an alternative situation could emerge where management's specialist incrementally enhances the reliability of management's estimate compared to the absence of management's specialist (PCAOB 2017a). Arguably, in such an alternative situation, an auditor making a higher-quality judgment could place greater reliance on client evidence prepared by a specialist if the auditor deems the specialist to be competent and qualified. Consequently, in this alternative situation, the stronger engagement-level temptation to agree with management's preferred position in the presence of management's specialist should not be assumed to hinder the pursuit of higher-order firm-level audit quality goals.⁸

Activating Goals and Nonconscious Goal Pursuit

Goals are represented in networks of mental representations containing the means for achieving these goals and the contexts in which they can be routinely pursued consciously or nonconsciously. These mental representations of goals can be explicitly activated by task instructions and preferences expressed by management, supervisors, and accounting firms, or implicitly via subtle priming environmental features without an individual's awareness (Peecher 1996; Kadous et al. 2003; Hassin et al. 2009; Dijksterhuis and Aarts 2010; Kleiman and Hassin 2011, 2013). Previous audit research, as well as regulators, note that the profit-oriented nature of public accounting firms and the audit process, in which auditors usually start with management-prepared data and conclusions (i.e., management is the "first mover"), increase auditors' tendency to pursue directional goals consistent with management-preferred conclusions (e.g., Spence and Carter 2014; PCAOB 2012b, 2012d; Kadous et al. 2003; Earley, Hoffman, and Joe 2008; Koch and Salterio 2017). Extant research provides considerable evidence that explicitly activated task-specific objectives or engagement-level goals lead auditors to engage in directional goal pursuit consistent with the task goals at hand (e.g., meeting budgeted hours, supervisors' preferences, and client-preferred accounting positions) (Hackenbrack and Nelson 1996; Peecher 1996; Rich et al. 1997; Brown et al. 1999; Wilks 2002; Kadous et al. 2003; Blay 2005; Peecher et al. 2010).

Psychology research provides overwhelming evidence that goals can be subtly primed by features of one's environment to activate components of the goal networks that have powerful effects on individuals' subsequent nonconscious pursuit of such goals (Bargh, Gollwitzer, Lee-Chai, Barndollar, and Troetschel 2001; Hassin et al. 2009; Dijksterhuis and Aarts 2010; Kleiman and Hassin 2011, 2013; Bipp, Kleingeld, van Mierlo, and Kunde 2017). For example, Bipp et al. (2017) find that high school students nonconsciously primed with an achievement goal via a photograph of a woman winning a race achieved higher exam grades than those not exposed to an achievement goal (i.e., a neutral photograph of a man resting on a mountain). This research applies a two-stage, or "separate experiments," paradigm to subtly prime higher-order goals that are nonconsciously activated and pursued when the participant completes a subsequent task (e.g., Bargh et al. 2001; Fishbach et al. 2003; Hassin et al. 2009; Kleiman and Hassin 2011, 2013). This form of goal activation triggers a more general mode of information processing and subsequent goal pursuit that does not need to be domain- or task-specific (Kleiman and Hassin 2013). Moreover, research suggests that subtly primed goals can remain mentally accessible after the initial activation and can help inhibit lower-order temptations that may interfere with achievement of the higher-order goal (e.g., Shah et al. 2002; Dijksterhuis and Aarts 2010; Kleiman and Hassin 2013).

One important advantage of subtle priming and subsequent nonconscious goal pursuit "lies in freeing our very-limited-capacity consciousness from many burdens, and thus improve the efficiency with which we cope with our complex and ever-changing environment" (Hassin et al. 2009, 21). Furthermore, the nonconscious goal literature provides evidence that the two-stage paradigm affects individuals' nonconscious goal pursuit in contextually related and unrelated subsequent tasks (e.g., Bargh et al. 2001; Fishbach et al. 2003; Hassin et al. 2009; Kleiman and Hassin 2011, 2013; Bipp et al. 2017). Kleiman and Hassin (2013) perform experiments where the subtle priming of goals and subsequent task (i.e., determining whether a fellow student is an extrovert) were either contextually *related* (i.e., pursuing academic versus social goals) or *unrelated* (i.e., pursuing

⁸ We hold constant management's evidence and the presence of contradictory evidence across all treatment conditions; thus, the presence of management's specialist in our setting does not incrementally increase the reliability or reasonableness of the client's goodwill analysis (and the risk that goodwill could be impaired). As will be discussed in Section IV, post-experimental questions confirm the theoretical premise of the current study. That is, despite management's specialist adding no perceived incremental reliability to management's estimate, auditors are more prone to agree with the estimate in the absence versus presence of management's specialist.

health versus indulgence goals). Thus, this form of goal priming enables the establishment of global higher-level goals that can be pursued and applied across numerous tasks rather than only the specific task at hand (Bargh et al. 2001; Dijksterhuis and Aarts 2010; Hassin et al. 2009; Kleiman and Hassin 2011, 2013).

To examine the efficacy of subtle priming of firm-level goals on auditors' nonconscious pursuit of those goals at the engagement level, we manipulate a feature of the audit environment, firm-level tone at the top, that is well suited to investigate this research objective. Regulators contend that firms' tone at the top should emphasize audit quality; however, there are allegations that firms overemphasize commercial goals and that such an approach ultimately hinders audit quality (PCAOB 2012b, 2012d, 2015c, 2018a). Thus, with a commercial approach serving as the baseline, we investigate the effect of varying tone at the top on auditors' judgments when completing a complex audit task, such as assessing the reasonableness of management's complex estimates where auditors are prone to directional goal pursuit to agree with management's position. Further, we examine the efficacy of tone at the top based on the absence versus presence of management's specialist (i.e., extent of engagement-level temptations).

Conflicting Goal Pursuit versus Singular Goal Pursuit

Psychology research theorizes and provides evidence regarding the effects of subtly priming singular and conflicting global goals on individuals' subsequent goal pursuit and behaviors (e.g., Shah and Kruglanski 2002; Fishbach and Zhang 2008; Kleiman and Hassin 2011, 2013; Orehek and Vazeou-Nieuwenhuis 2013). Within the context of this study, tone at the top that focuses on either commercial or audit quality goals represents priming of a singular global goal, whereas a balanced approach falls between the two extremes by simultaneously priming these two conflicting goals equally.^{9,10} The balanced approach may mitigate potential concerns regarding overemphasis of audit quality goals that could lead to "blind skepticism" and, in turn, compromise audit efficiency. Thus, we first investigate whether a balanced approach can reduce auditors' tendency to agree with management's position compared to the baseline approach of emphasizing commercial goals, and whether this reduction is dependent on the absence versus presence of management's specialist.

Kleiman and Hassin (2011) were among the first to suggest that pursuing conflicting goals can occur nonconsciously. In a follow-up study, Kleiman and Hassin (2013) theorize and find that nonconscious goal conflict, established by simultaneously priming individuals with two competing goals equally, reduces individuals' tendency to neglect contradictory information. This is based on the notion that "nonconscious goal conflicts induce a mode of processing information that increases the likelihood of approaching an issue from opposing perspectives" and broadens the scope of relevant information processed (Kleiman and Hassin 2013, 1). This research suggests that a balanced tone at the top approach can be a promising mechanism to mitigate auditors' tendency to agree with management's position compared to a commercial approach, encouraging the processing of all available information and, thus, the consideration of opposing perspectives. However, additional goal pursuit research in psychology and the JDM expertise research (e.g., Chaiken 1980; Petty and Cacioppo 1986; Chaiken and Maheswaran 1994; Steginga and Occhipinti 2004; Orehek and Vazeou-Nieuwenhuis 2013) suggests that the efficacy of the balanced approach in mitigating auditors' tendency to agree with management's conclusions may be sensitive to whether management uses the work of a specialist (i.e., extent of engagement-level goal temptation).

When encountering momentary temptations, goal pursuit research in psychology suggests that individuals engage in self-regulation (i.e., control), including goal shielding (i.e., the mechanism to inhibit momentary temptations), to pursue and achieve the global goals (Shah and Kruglanski 2002; Shah et al. 2002; Fishbach et al. 2003; Orehek and Vazeou-Nieuwenhuis 2013). Individuals can nonconsciously and automatically engage in goal shielding to inhibit goal temptations (Shah et al. 2002; Fishbach and Shah 2006; Kleiman and Hassin 2011). However, goal shielding requires the use of our limited self-regulatory resources (Orehek and Vazeou-Nieuwenhuis 2013). Based on the expertise/specialist literature discussed earlier, the tendency to agree with management's preferred position is considerably more difficult to overcome in the presence of management's specialist (Giddens 1990; Steginga and Occhipinti 2004; Smith-Lacroix et al. 2012; Anantharaman 2017); thus, goal shielding becomes more challenging. A balanced approach, which requires simultaneous pursuit of two conflicting global goals, further

⁹ To test nonconscious goal pursuit theory in an audit setting, the commercial and audit quality approaches focus only on commercial and audit quality goals, respectively. We acknowledge that firms focusing on commercial goals can also convey some audit quality goals. However, as noted by the PCAOB, evidence exists of overemphasis on commercial goals and underemphasis of audit quality goals in firms' tone at the top (PCAOB 2012b, 2012d, 2015c).

¹⁰ Interestingly, Peecher (1996) investigates three levels of justifiee/supervisor preferences (credence, objectivity, and skepticism) related to a planning analytical procedures task, which can be interpreted to be analogous to the current study's tone at the top approaches (commercial, balanced, and audit quality). Peecher (1996) finds that justifiee preferences/goals established via explicit task instructions influence auditors' assessment of client-provided explanations, as well as the weight auditors assign to different levels of client integrity. We extend this research by holding client integrity constant, and instead investigate whether firm-level goals subtly primed without auditors' awareness can nonconsciously reduce their engagement-level tendency to agree with management's position.

heightens goal-shielding efforts and is computationally more demanding, as one attempts to nonconsciously process a complex array of options to pursue both goals (e.g., [Shah et al. 2002](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)). This increase in self-regulatory resources, along with individuals' tendency to "blindly" trust specialists even when the specialist adds no incremental reliability to management's estimate, suggests that a balanced approach may not be as effective in mitigating auditors' tendency to agree with management's preferred position in the presence of management's specialist than in the absence of management's specialist.

Collectively, we predict that in the absence of management's specialist, auditors' propensity to accept management's position will decrease when a firm uses a balanced approach compared to a commercial approach. Conversely, we anticipate that a balanced approach will not have a material impact on reducing auditors' stronger tendency to accept management's position when in the presence of management's specialist. We formally state this expectation in H1:

H1: The decrease in auditors' propensity to accept management's preferred position when an audit firm uses a balanced tone at the top approach, compared to when the firm uses a commercial tone at the top approach, will be greater in the absence of management's specialist than in the presence of management's specialist.

To the extent that H1 holds, we next investigate whether a tone at the top approach that emphasizes an audit quality goal, as desired by regulators and consistent with protecting the public interest ([Canadian Public Accountability Board \[CPAB\] 2012](#); [PCAOB 2012b, 2012d](#); [FEE 2016](#); [IAASB 2017](#)), can be more effective in reducing the stronger tendency to agree with management's position when in the presence of management's specialist. Therefore, we examine the impact of an audit quality tone at the top approach on auditors' propensity to agree with management's position compared to the baseline commercial approach.

Tone at the top that focuses on audit quality represents subtle priming and nonconscious pursuit of a singular firm-level goal. When a singular global goal is to be pursued, individuals are better at inhibiting momentary temptations via goal shielding ([Kleiman and Hassin 2013](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)). Psychology research finds that the pursuit of a singular global goal can strengthen goal-shielding efforts ([Goschke and Dreisbach 2008](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)). With only one global goal to pursue, goal shielding can be more effective at deterring momentary temptations that will interfere with the achievement of that global goal. Consequently, one important advantage of a tone at the top approach focusing on one firm-level goal is that auditors' self-control/regulatory resources can be directed toward that one goal, thus increasing the likelihood of achieving the firm's goal of enhancing audit quality ([Fishbach and Zhang 2008](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)).

Based on the nonconscious goal pursuit research from psychology ([Shah and Kruglanski 2002](#); [Fishbach and Zhang 2008](#); [Kleiman and Hassin 2011, 2013](#); [Orehek and Vazeou-Nieuwenhuis 2013](#)), we anticipate that when tone at the top emphasizes a singular audit quality goal, goal shielding should be effective in blocking engagement-level temptations, in turn reducing the tendency to agree with management's preferred position even in the presence of management's specialist. Thus, we hypothesize that regardless of the absence/presence of management's specialist, when tone at the top emphasizes audit quality versus commercial goals, auditors will be less likely to accept management's position. We formally state this expectation in H2:

H2: Regardless of the absence or presence of management's specialist, auditors' propensity to accept management's preferred position will be lower when an audit firm uses an audit quality tone at the top approach than when the firm uses a commercial tone at the top approach.

Collectively, based on our predictions in H1 and H2, we graphically present the nature of our expectations in Figure 1.

III. RESEARCH METHOD

We conducted one experiment in two separate administrations, with slightly different case instruments (i.e., the second administration contains a distractor task that we discuss in more detail below). We find consistent results across both administrations. Specifically, when we include a factor controlling for differences between the administrations, we do not find any significant effects related to this factor when it is included in our analysis (i.e., main effect and implied interactions are not significant). Importantly, inferences drawn from our hypothesized effects remain unchanged. Additionally, we find that no significant differences exist for demographic information between the two administrations (all p -values > 0.10). Given that experimental administration does not influence the results and no demographic differences exist between administrations, we present our analyses with the combined data from both administrations.

Participants

Two hundred thirty auditors participated in our study (114 auditors from the first administration and 116 auditors from the second administration). Ninety-five auditors were recruited in coordination with the Center for Audit Quality (CAQ) Research

FIGURE 1
Graphical Representation of Hypotheses

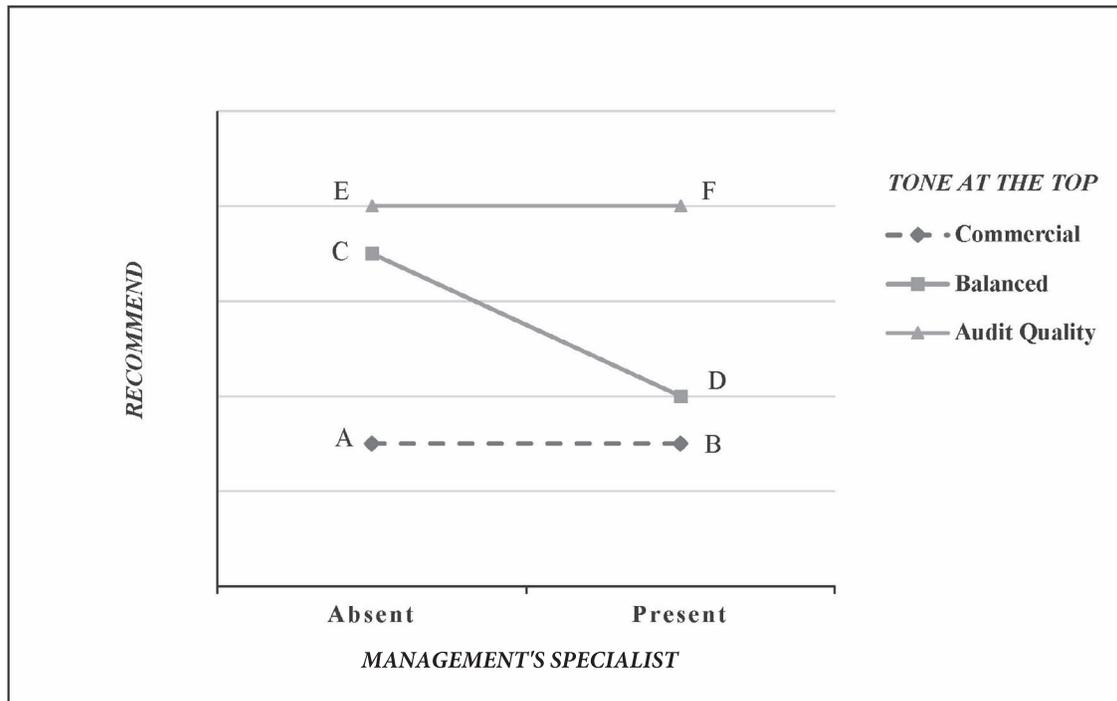


Figure 1 graphically presents our hypotheses. The dependent variable is *RECOMMEND* (likelihood of recommending to the engagement partner that goodwill is impaired: “0% = Definitely Not Recommend” and “100% = Absolutely Recommend”), and the independent variables are *TONE AT THE TOP* (emphasis on commercial goals; balanced [emphasis on both commercial and audit quality goals]; and emphasis on audit quality goals), and *MANAGEMENT’S SPECIALIST* (absent or present).

We predict the following: (1) H1: $C - A > D - B$, and (2) H2: $A < E$ and $B < F$.

Advisory Board and 135 auditors were recruited from professional contacts.¹¹ Table 1 summarizes the auditors’ demographic information. The participant pool includes both Big 4 (53.0 percent) and non-Big 4 (47.0 percent) auditors at the following ranks: experienced associate (2.2 percent; see Panel A), senior associate (63.0 percent), manager (26.1 percent), senior manager (8.3 percent), and partner (0.4 percent). There are no significant differences among auditors’ ranks on our dependent variables (both $p > 0.10$).

Participants have an average of 5.1 years of audit experience, and 90.9 percent are CPAs. In Table 1, Panel B, participants rated their experience auditing FVM and goodwill using an 11-point scale (“0 = Very Little Experience,” “5 = Moderate Experience,” and “10 = Significant Experience”). Means of 5.5 and 4.4, respectively, indicate that they had a moderate level of experience. Participants indicated that they have audited goodwill on an average of 4.1 engagements during their careers.¹² Participants have experience across a wide range of primary and secondary industries (see Panel A). The participants’ experience is consistent with research investigating auditors’ JDM related to complex estimates (Griffith, Hammersley, Kadous, and Young 2015b; Joe et al. 2017), and Griffith et al. (2015a), who find that seniors and managers are most frequently tasked with evaluating assumptions related to complex estimates, including goodwill.

¹¹ IRB approval to use human subjects was granted at our institutions. Participants were instructed to complete the study in one sitting; thus, we ensured that participants in our final sample completed the study in one sitting and also provided adequate effort (e.g., did not quickly click through the study). We compensated participants in the second administration with a \$20 Amazon gift card. They provided an email in a separate survey to maintain anonymity.

¹² No statistically significant differences exist (all p -values > 0.10) across the conditions for the demographic variables, with the exception of: (1) years of auditing experience; (2) experience auditing fair value measurements (FVMs); and (3) experience auditing goodwill. We controlled for all demographic variables, including these three variables, in our analyses and find that none of the variables are statistically significant covariates ($p > 0.10$) with the exception of firm size, which is marginally significant ($F_{1, 223} = 3.267$, $p = 0.072$, two-tailed). Inferences remain unchanged when these variables are included in our hypothesis tests; thus, we do not include them in our analyses.

TABLE 1
Demographics

Panel A: Frequencies (n = 230)

	<u>Frequency</u>	<u>Percent</u>
Auditor rank		
Experienced associate	5	2.2
Senior (in-charge)	145	63.0
Manager	60	26.1
Senior manager	19	8.3
Partner	1	0.4
Big 4 public accounting firm	122	53.0
Certified public accountant (CPA)	209	90.9
Primary industry experience		
Banking and financial services	42	18.3
Consumer products and retail	32	13.9
Healthcare and pharmaceuticals	12	5.2
Insurance	4	1.7
Manufacturing/industrial	78	33.9
Non-profit and governmental	13	5.7
Oil, gas, and utilities	10	4.4
Real estate	21	9.1
Technology	18	7.8
Secondary industry experience		
Banking and financial services	20	8.7
Consumer products and retail	35	15.2
Employee benefit plans	4	1.7
Healthcare and pharmaceuticals	14	6.1
Insurance	4	1.7
Manufacturing/industrial	41	17.9
Non-profit and governmental	25	10.9
Oil, gas, and utilities	4	1.7
Real estate	6	2.6
Technology	16	7.0
NA—Participants do not have a secondary industry	61	26.5

Panel B: Means (n = 230)

	<u>Mean</u>	<u>S.D.</u>
Years of auditing experience	5.13	2.62
Experience auditing fair value measurements ^a	5.53	2.51
Experience auditing goodwill ^a	4.41	2.81
Number of engagements where they have audited goodwill	4.10	5.55

^a Participants responded using the following scale: “0 = Very Little Experience,” “5 = Moderate Experience,” and “10 = Significant Experience.”

Materials and Procedure

Using an online instrument administered by Qualtrics, participants were instructed to complete the case study in one session. We used a between-subjects design and followed the “separate experiments” paradigm from psychology research (Chartrand and Bargh 1996; Bargh et al. 2001; Kleiman and Hassin 2011, 2013) to subtly prime firm-level goals in Stage 1, and then examine auditors’ nonconscious goal pursuit based on the extent of engagement-level temptation (i.e., absence/presence of management’s specialist) in Stage 2. Stage 1 primed tone at the top via a video presentation, and Stage 2 involved a separate

task where participants performed year-end substantive testing (i.e., audited goodwill) for a publicly traded audit client. To enhance the external validity of our design and to examine a quality control mechanism that can be adapted and implemented in practice, the two stages are independent and separate, yet necessarily set in the audit context.¹³

In Stage 1, participants reviewed an email from the U.S. assurance practice leader asking them to watch a video presentation containing an update about several important firm initiatives for the upcoming year.¹⁴ The video, which contained the tone at the top manipulation, automatically started on the next screen and continued until finished. To ensure that the manipulation was presented consistently across all experimental conditions, participants were unable to pause, restart, or bypass the video. We discuss the tone at the top manipulation in more detail below.

Next, in Stage 2, participants assumed the role of a senior (in-charge) for a large publicly traded corporation (Sequoia) in the luxury electronics industry. Participants were asked to complete the year-end substantive testing of goodwill, a material account for the current-year audit (i.e., it exceeds the 5 percent of pretax income materiality). In doing so, they were instructed to make their final audit conclusion regarding the reasonableness of the company's goodwill impairment analysis. Participants were provided with background information on Sequoia and its goodwill balance, as well as audit testing already completed by the audit team. The case also indicated that: (1) no control deficiencies were identified that rose to the level of a material weakness; (2) the discounted cash flow method was appropriate to estimate the value of the reporting unit; (3) the audit team recalculated, tied-out, and tested the completeness of the discounted cash flow model; and (4) in the management's specialist present condition, the audit team noted no issues with the specialist's professional qualifications. We discuss the management's specialist manipulation in detail below.

We use a goodwill scenario because this area has been cited numerous times in regulatory inspection reports suggesting that goodwill is a complex, challenging area for auditors,¹⁵ and that auditors have overlooked biases in management's assumptions despite contradictory evidence (e.g., PCAOB 2012c, 2012d, 2016a). Importantly, we employ a setting similar to previous research where auditors encounter common engagement-level incentives/pressures to agree with management's preferred position despite the presence of contradictory evidence (e.g., Wilks 2002; Kadous et al. 2003; Griffith et al. 2015b; Koch and Salterio 2017). Consistent with prior literature (e.g., Kadous et al. 2003; Earley et al. 2008; Koch and Salterio 2017), these pressures/incentives include: (1) Sequoia is an important audit client for the firm; (2) Sequoia concluded that goodwill is not impaired in the current year; (3) management has already informed the board of directors, including the audit committee, that it does not anticipate any significant issues as the audit is near completion; (4) no issues or disputes have arisen with Sequoia in the past three years, past audit differences have always been resolved, and their firm has always rendered unqualified financial statement and internal controls opinions; and (5) Sequoia and the audit team have tested goodwill annually for impairment and concluded each year that goodwill was not impaired.

Finally, participants were presented with the remaining 20 pieces of evidence that the audit team collected. The evidence consists of ten pieces of supporting evidence and ten pieces of contradictory evidence related to the reasonableness of goodwill across three categories: (1) economic and industry trends, (2) revenues, and (3) expenses (see Appendix A).¹⁶ Participants were instructed to select the eight pieces of evidence that they considered most relevant when evaluating the remaining critical assumptions (i.e., estimated future revenues and expenses) used in the discounted cash flow model to derive the fair value estimate of the reporting unit. Participants were asked to assess the reasonableness of the analysis, rank the eight pieces of

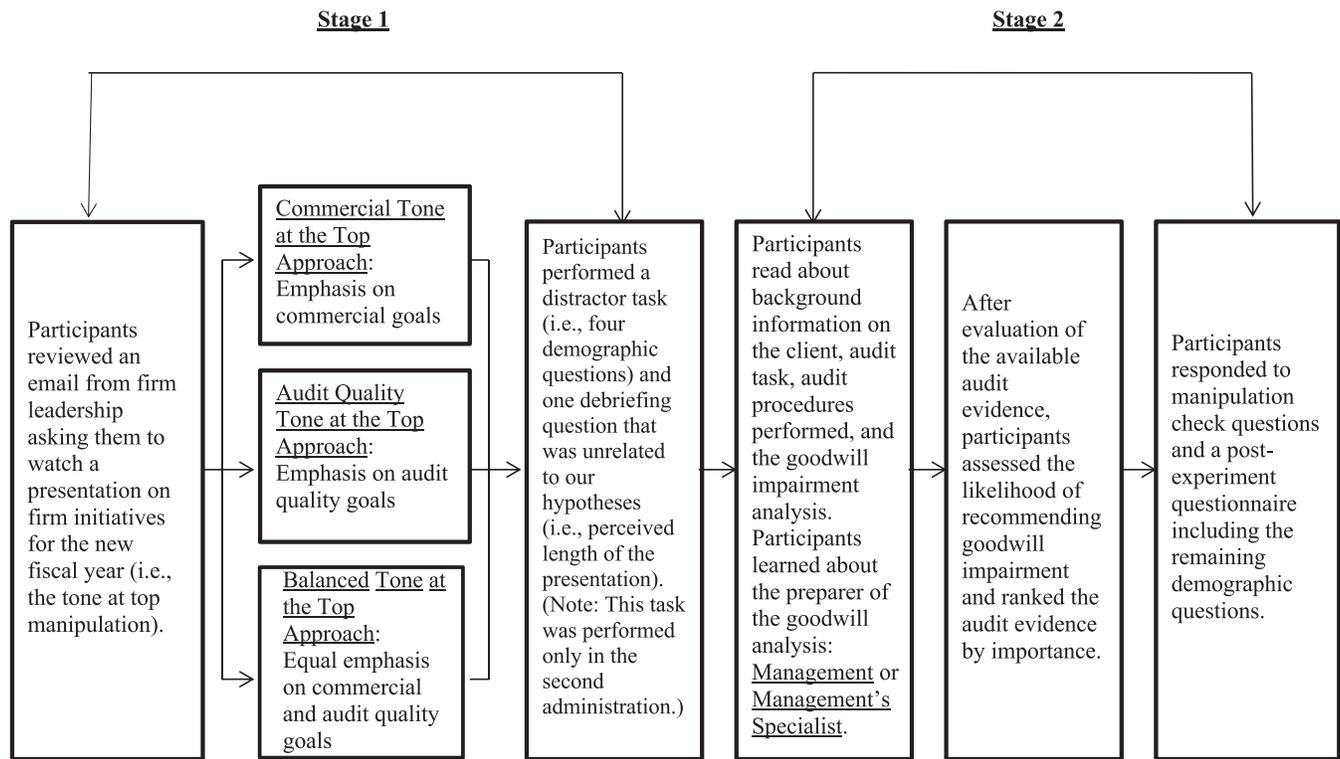
¹³ In the second administration, we further decoupled the subtle priming in Stage 1 and the task in Stage 2 by including a distractor task and separate Qualtrics links for each stage. The distractor task is designed to clear short-term memory after Stage 1, simulate a time interval between the subtle priming in Stage 1 and the task in Stage 2, and provide some closure for Stage 1. Importantly, we designed the distractor task to provide no new information that could affect auditors' JDM in Stage 2. The distractor task includes one debriefing question that is unrelated to H1 and H2 (i.e., perceived length of the presentation) and four demographic questions. Demographics have often been employed in behavioral research as a distractor task to clear short-term memory and simulate time intervals (Bonner, Libby, and Nelson 1997; Ricchiute 1999; Wilks 2002; Borthick, Curtis, and Sriram 2006; S. Tan and H. Tan 2008; Dong, Lui, and Wong-On-Wing 2017). We also created separate links in Qualtrics for Stages 1 and 2. After Stage 1, we asked participants to click forward to be automatically redirected to the separate task in Stage 2. As discussed above and in footnote 18, these two design differences did not change the inferences from our results.

¹⁴ Audit firms use email alerts to communicate firm-level tone at the top goals to their audit personnel, including firm leadership's focus on audit quality (IFAC 2007; CAQ 2013). For example, PricewaterhouseCoopers (PwC 2012) indicated that "they continually emphasized the importance of quality in periodic emails." Similarly, per discussions with a Big 4 senior manager, firms also use internal emails to communicate operational performance and objectives, such as growth, profitability, retention of clients, and engagement of new clients.

¹⁵ Participants' mean rating for the difficulty of the goodwill task was 6.73 ("0 = Not at All Difficult" and "10 = Very Difficult"), with no differences across conditions ($p > 0.10$). The mean (6.73) is significantly higher than the midpoint of the scale ($t_{229} = 12.782$, $p < 0.001$), suggesting that participants perceived the task as being difficult.

¹⁶ We pretested the evidence with one audit manager, four seniors, and four staff auditors from both Big 4 (88.9 percent) and non-Big 4 firms (11.1 percent). We asked whether each piece of evidence supported a potential impairment, did not support a potential impairment, or neither. They successfully selected the appropriate type of evidence 62.2 percent of the time and indicated neither 28.3 percent of the time. Based on the feedback, we modified the evidence that was not identified successfully to be more supporting or contradictory, respectively.

FIGURE 2
Flowchart of Experimental Procedures



evidence that they previously selected by importance, and respond to manipulation check questions and a post-experiment questionnaire. Figure 2 depicts the sequential flow of the experimental procedures discussed above.

Independent Variables

We manipulated tone at the top in Stage 1 at three levels: (1) emphasis of a singular commercial goal; (2) emphasis of a singular audit quality goal; or (3) a balanced approach (equal emphasis of the two conflicting goals). Consistent with the method used in psychology literature (e.g., Kleiman and Hassin 2013), the video presentation presented one goal indicator at a time. Participants were shown only commercial goal indicators in the commercial condition, only audit quality goal indicators in the audit quality condition, or both commercial and audit quality goal indicators (in equal proportion) in the balanced condition (see Appendix B). Thus, the balanced approach, consistent with the manipulation of nonconscious goal conflicts in psychology literature (Kleiman and Hassin 2011, 2013), is manipulated by simultaneously priming two sets of conflicting goals equally.¹⁷ We adapted the commercial goals from PCAOB inspection findings and audit quality goals from the PCAOB's report on audit quality indicators (PCAOB 2012d; 2013a, 2015a).¹⁸

We manipulated management's specialist in Stage 2 at two levels: (1) absent, or (2) present. Holding all else constant, we described in the absent condition that either "Sequoia's management estimated the fair value measurement of the reporting unit and performed its annual goodwill impairment analysis," or in the present condition that "Sequoia hired an independent 3rd

¹⁷ We mixed the goals in the balanced approach such that participants did not see two commercial or audit quality goals consecutively (i.e., commercial goal, audit quality goal, commercial goal, audit quality goal, and so forth).

¹⁸ We pretested the goal indicators with seven undergraduate auditing students, 11 Master's of Accountancy students, and eight recently graduated auditors from a private university. We asked whether each goal indicator related to audit quality, performance (i.e., commercial), or neither. Pretest participants successfully selected the appropriate type of goal indicator 92.3 percent of the time. This verified that the goal indicators were properly created.

party valuation specialist, Banyan Valuation Experts, to estimate the fair value measurement of the reporting unit and performed its annual goodwill impairment analysis.” Importantly, we hold constant management’s evidence across treatment conditions. Therefore, the presence of management’s specialist in our setting should not incrementally increase auditors’ perceived reliability of the client’s goodwill analysis (and the risk that goodwill could be impaired) unless auditors infer that the underlying evidence is more diagnostic and reliable in the presence versus absence of management’s specialist.

Dependent Variable

To test H1 and H2, participants provide their final conclusion regarding their goodwill assessment. Specifically, the dependent variable is their assessment of the likelihood that they will recommend to the engagement partner that a goodwill impairment is required (“0% = Definitely Not Recommend” and “100% = Absolutely Recommend”). This reflects participants’ tendency to accept management’s position. We expect that auditors exhibiting greater directional engagement-level goal pursuit in favor of management’s position will be less likely to recommend impairment. Consistent with the approach taken in prior research, the presence of contradictory evidence indicates an increased likelihood of impairment and greater potential for management bias/aggressiveness in the estimate (e.g., Wilks 2002; Griffith et al. 2015b; Koch and Salterio 2017; Backof, Carpenter, and Thayer 2018). Consequently, a higher likelihood of recommending impairment (i.e., less likely to accept management’s position) represents a higher-quality audit judgment. That being said, as noted earlier, if reliance on the specialist occurs due to perceived higher reliability of the goodwill analysis, then, arguably, a higher likelihood of recommending impairment would not represent a higher-quality judgment. We perform supplemental analyses below to rule out this alternative possibility.

IV. RESULTS

Evidence of Nonconscious Goal Pursuit

Similar to the established questions used in the “separate experiments” paradigm from psychology on establishing nonconscious goal pursuit (e.g., Kleiman and Hassin 2011, 2013), we asked a series of five scale questions and one open-ended question to verify that the auditors were not consciously aware of the firm-level goals subtly primed in the tone at the top approach in Stage 1 when completing the subsequent audit task in Stage 2. We expect to find no significant differences for the five scale questions across the three tone at the top conditions, and that no participants will indicate in the open-ended question that they considered the tone at the top approach from Stage 1 when making their goodwill judgment in Stage 2.¹⁹

We asked two questions to assess conflict phenomenology (i.e., whether participants were consciously aware of any goal conflicts). We asked the extent to which they felt conflicted (“0 = Not at All Conflicted” and “10 = Very Conflicted”) and the extent to which they would describe their state of mind as deliberating between different contradictory alternatives (“0 = Not at All” and “10 = To a Large Extent”) when making judgments regarding the goodwill analysis. The overall means to each of the above questions were 3.64 and 4.84, respectively, with no differences across groups ($p = 0.959$ and $p = 0.719$, respectively), thus providing evidence that there were no differences in conscious conflict among tone at the top conditions. Next, results related to the following three questions further rule out the possibility that participants pursued the firm-level goals primed in Stage 1 intentionally and consciously. Participants first rated whether they believed that the video presentation was relevant for making judgments about the goodwill analysis in Stage 2 (“0 = Not at All” and “10 = To a Large Extent”). The next two questions captured participants’ ratings of the importance that the firm in the case performs well financially and performs high-quality audit work, respectively (“0 = Not at All Important” and “10 = Very Important”). No significant differences exist across the conditions for the relevance of the video (overall mean of 2.92, $p = 0.696$). In addition, no differences exist across conditions for the importance of performing well financially (overall mean of 5.36, $p = 0.585$) and the importance of performing high-quality audit work (overall mean of 8.94, $p = 0.365$).^{20,21} Last, for the open-ended question, participants were

¹⁹ We only asked the open-ended question in the second administration. As no informational differences existed between the two administrations, we rely on the second administration data for the open-ended question analysis.

²⁰ When we control for differences in the two administrations, we find strong theory-consistent evidence across the administrations that participants exhibited nonconscious goal pursuit based on the awareness measures (Hassin et al. 2009; Kleiman and Hassin 2011, 2013).

²¹ We compared the overall means for the five awareness questions to the midpoint of each respective scale. We find that participants were not consciously conflicted, as the mean was significantly less than the midpoint ($p < 0.001$). The mean for deliberating was not different than the midpoint ($p = 0.357$), indicating moderate deliberation. We find that the mean for video relevance is significantly less than the midpoint ($p < 0.001$), providing evidence that auditors did not consider the video to be relevant when completing Stage 2. Last, we find the mean for performing well financially is marginally greater than the midpoint ($p = 0.086$), and the mean for performing high-quality audit work is significantly greater than the midpoint ($p < 0.001$), which is not surprising given the PCAOB’s concerns related to auditors’ overemphasis on commercial goals (e.g., PCAOB 2012b, 2012d, 2015c, 2018a) and the PCAOB’s continued focus on enhancing audit quality (PCAOB 2012d, 2013a, 2015b, 2018a), respectively.

asked to briefly list key factors that most influenced their judgments on the likelihood of impairment. We find that none of the participants listed an item related to the tone at the top video presented in Stage 1.

Collectively, the lack of significant differences across the three tone at the top conditions for the five nonconscious goal awareness questions and the fact that no participants listed any tone at the top-related items from Stage 1 in the open-ended question indicate that participants were not consciously aware of the tone at the top manipulation when subsequently performing an engagement-level task (i.e., auditing goodwill) and, further, that we successfully followed the “separate experiments” paradigm from the psychology literature (Kleiman and Hassin 2011, 2013). Importantly, these results establish that firm-level goals can be subtly primed and activated nonconsciously via a firm’s tone at the top to influence auditors’ tendency to agree with management’s position when performing a complex engagement-level task.

Manipulation Check for Management’s Specialist

The preparer manipulation check question asked participants to indicate who prepared the goodwill impairment analysis for Sequoia (i.e., management or management’s specialist). Participants correctly identified who prepared the impairment analysis 82.6 percent of the time. We include all of the participants in the final sample because in doing so we also take into account the possibility that some participants might not have been concerned with whether management’s specialist is present or not (i.e., did not perceive it to be of relevance, and therefore did not care enough to commit it to memory). Further, the results and inferences drawn from our tests of H1 and H2 are not sensitive to inclusion or exclusion of participants who failed this check question.

Tests of H1 and H2

To test H1 and H2, we examine the influence of tone at the top (*TONE AT THE TOP*) and whether management engages a specialist (*MANAGEMENT’S SPECIALIST*) on auditors’ likelihood of recommending to the engagement partner that goodwill is impaired (*RECOMMEND*). Table 2, Panel A provides descriptive statistics for *RECOMMEND* by treatment conditions; Panel B provides the 3×2 ANOVA results for completeness of presentation; and Panel C presents the tests of H1 and H2. Figure 3 graphically presents the results.

H1 predicts a *TONE AT THE TOP* \times *MANAGEMENT’S SPECIALIST* interaction such that the increase in *RECOMMEND* when a balanced approach (*Balanced*) is used compared to a commercial approach (*Commercial*) will be greater when management does not employ a specialist (*Absent*) than when management employs a specialist to prepare the estimate (*Present*). We perform a series of planned contrasts and pairwise comparisons to test H1. The H1 interaction prediction suggests that the effect of *Commercial* versus *Balanced* will be stronger when there is no specialist (i.e., lower engagement-level temptation) compared to when there is a specialist (i.e., higher engagement-level temptation). As shown in Panel C of Table 2, the planned contrast of (*Balanced/Absent* – *Commercial/Absent*) > (*Balanced/Present* – *Commercial/Present*) is significant ($F_{1, 224} = 4.342, p = 0.019$, one-tailed). We next perform pairwise comparisons to further investigate H1 (see Panel D of Table 2). As anticipated, we find no significant difference between the *MANAGEMENT’S SPECIALIST* conditions in *Commercial* (Panel D, Comparison A: $F_{1, 224} = 0.004, p = 0.953$, two-tailed). In contrast, and consistent with H1, we find a significant difference between *MANAGEMENT’S SPECIALIST* conditions in *Balanced* (Panel D, Comparison B: $F_{1, 224} = 9.479, p = 0.001$, one-tailed). Further, we find that *RECOMMEND* is significantly higher in *Balanced/Absent* (42.70 percent) than in *Commercial/Absent* (29.17 percent) (Panel D, Comparison C: $F_{1, 224} = 6.883, p = 0.005$, one-tailed). Moreover, consistent with expectations, *RECOMMEND* is not significantly different between *Commercial/Present* (28.86 percent) and *Balanced/Present* (27.32 percent) (Panel D, Comparison D: $F_{1, 224} = 0.092, p = 0.762$, two-tailed). Collectively, the evidence supports H1 that the decrease in auditors’ propensity to accept management’s preferred position when a firm uses a balanced approach, compared to when the firm uses a commercial approach, will be greater in the absence versus presence of management’s specialist.

H2 predicts that regardless of the preparer, auditors will be less likely to agree with management’s estimate when an audit quality approach (*Audit Quality*) is used compared to a commercial approach. Overall, we find a main effect of *TONE AT THE TOP* such that *RECOMMEND* is higher with *Audit Quality* (47.16 percent) as compared to *Commercial* (29.01 percent) ($F_{1, 224} = 24.519, p < 0.001$, one-tailed, untabulated). However, consistent with the simple main effects (SMEs) of interest implied by our H2 prediction, we perform two SME tests and a series of pairwise comparisons, as shown in Panel C of Table 2, to more directly test H2. For the first SME, when management does not employ a specialist, we find that *RECOMMEND* is significantly higher in the *Audit Quality/Absent* condition (50.00 percent) than in *Commercial/Absent* condition (29.17 percent) ($F_{1, 224} = 17.873, p = 0.001$, one-tailed). For the second SME, when management’s specialist prepares the estimate, we find that *RECOMMEND* is significantly higher in the *Audit Quality/Present* condition (43.61 percent) than in *Commercial/Present* condition (28.86 percent) ($F_{1, 224} = 7.954, p = 0.003$, one-tailed). Additionally, as presented above (Panel D, Comparison A), we find that the difference between the *MANAGEMENT’S SPECIALIST* conditions in *Commercial* is not significant ($F_{1, 224} =$

TABLE 2

Results for Auditors' Likelihood of Recommending to the Engagement Partner that Goodwill Is Impaired

Panel A: Means (Standard Deviations)

	<i>Absent</i>	<i>Present</i>	<i>Totals</i>
<i>Commercial</i>	29.17 (24.66) n = 36	28.86 (20.40) n = 35	29.01 (22.50) n = 71
<i>Balanced</i>	42.70 (21.17) n = 37	27.32 (22.92) n = 41	34.62 (23.28) n = 78
<i>Audit Quality</i>	50.00 (22.76) n = 45	43.61 (19.59) n = 36	47.16 (21.52) n = 81
<i>Totals</i>	41.36 (24.28) n = 118	33.04 (22.17) n = 112	37.30 (23.60) n = 230

Panel B: Analysis of Variance with *RECOMMEND*

<i>Variable</i>	<i>SS</i>	<i>df</i>	<i>F</i>	<i>p-value</i> ^a
<i>TONE AT THE TOP</i> ^b	12,512.49	2	12.881	0.000
<i>MANAGEMENT'S SPECIALIST</i> ^c	3,091.31	1	6.365	0.012
<i>TONE AT THE TOP</i> × <i>MANAGEMENT'S SPECIALIST</i>	2,151.40	2	2.215	0.112

Panel C: Planned Contrasts

<i>Comparisons</i>	<i>F</i>	<i>p-value</i> ^b
H1: (<i>Balanced/Absent</i> – <i>Commercial/Absent</i>) > (<i>Balanced/Present</i> – <i>Commercial/Present</i>)	4.342	0.019
H2: Specialist Absent: <i>Commercial/Absent</i> < <i>Audit Quality/Absent</i>	17.873	0.001
H2: Specialist Present: <i>Commercial/Present</i> < <i>Audit Quality/Present</i>	7.954	0.003

Panel D: Pairwise Comparisons

<i>Comparisons</i>	<i>F</i>	<i>p-value</i>
A. <i>Commercial/Absent</i> versus <i>Commercial/Present</i>	0.004	0.953
B. <i>Balanced/Absent</i> > <i>Balanced/Present</i>	9.479	0.001 ^c
C. <i>Balanced/Absent</i> > <i>Commercial/Absent</i>	6.883	0.005 ^c
D. <i>Commercial/Present</i> versus <i>Balanced/Present</i>	0.092	0.762
E. <i>Audit Quality/Absent</i> versus <i>Audit Quality/Present</i>	1.681	0.196

^a p-values are two-tailed.^b Given our directional predictions, reported p-values are one-tailed.^c Given our directional predictions, reported p-value is one-tailed.

Variable Definitions:

Absent = management's specialist is absent;*Present* = management's specialist is present;*Commercial* = emphasis on commercial goals in the firm's tone at the top;*Balanced* = emphasis on both commercial and audit quality goals in the firm's tone at the top;*Audit Quality* = emphasis on audit quality goals in the firm's tone at the top;*RECOMMEND* = likelihood of recommending to the engagement partner that goodwill is impaired ("0% = Definitely Not Recommend" and "100% = Absolutely Recommend");*TONE AT THE TOP* = commercial, balanced, or audit quality; and*MANAGEMENT'S SPECIALIST* = absent or present.

FIGURE 3
Results for Auditors' Likelihood of Recommending an Impairment of Goodwill

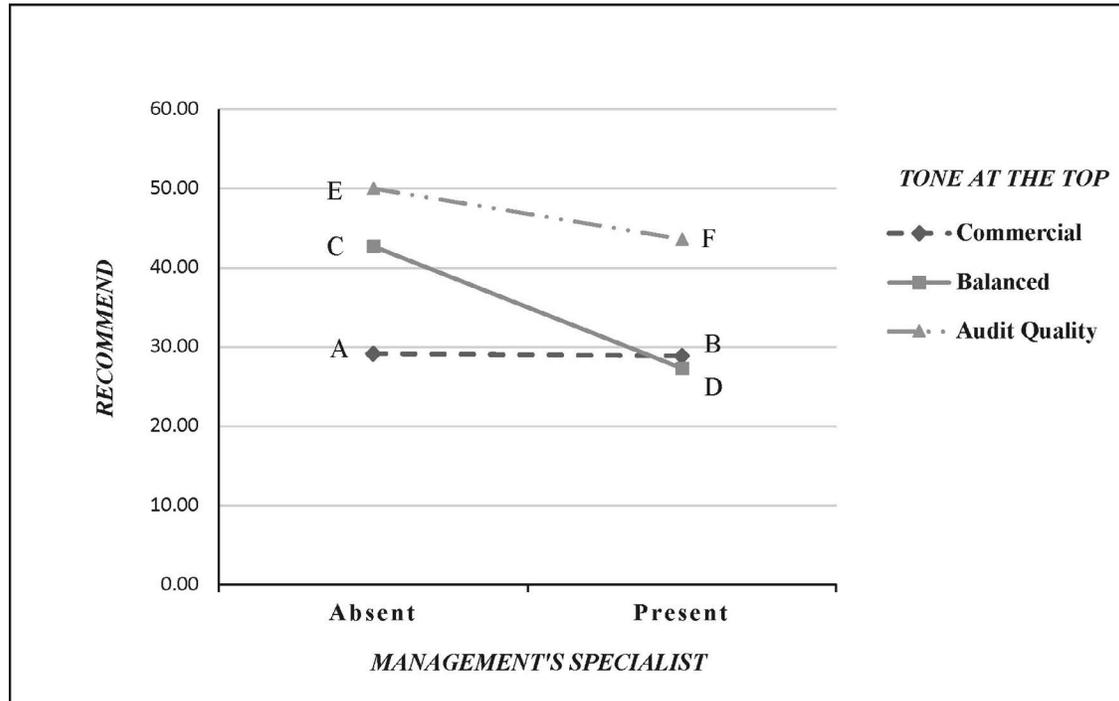


Figure 3 graphically presents our results. The dependent variable is *RECOMMEND* (likelihood of recommending to the engagement partner that goodwill is impaired: “0% = Definitely Not Recommend” and “100% = Absolutely Recommend”), and the independent variables are *TONE AT THE TOP* (emphasis on commercial goals; balanced [emphasis on both commercial and audit quality goals]; and emphasis on audit quality goals), and *MANAGEMENT'S SPECIALIST* (absent or present).

We predict the following: (1) H1: $C - A > D - B$, and (2) H2: $A < E$ and $B < F$.

0.004, $p = 0.953$, two-tailed). Also consistent with expectations, the difference between the *MANAGEMENT'S SPECIALIST* conditions in *Audit Quality* is not significant (Panel D, Comparison E: $F_{1, 224} = 1.681$, $p = 0.196$, two-tailed). These comparisons further lend support to H2. Taken together, the evidence supports H2 that, regardless of the preparer, a tone at the top approach emphasizing audit quality (consistent with protecting the public's interest) can induce auditors to be more skeptical when auditing complex estimates compared to a commercial approach.²²

H1 and H2 do not formally hypothesize whether *Balanced* or *Audit Quality* will lead to higher *RECOMMEND* and whether this effect on *RECOMMEND* will differ by *MANAGEMENT'S SPECIALIST*. However, we perform additional analyses to provide insight regarding the efficacy of *Balanced* versus *Audit Quality*. In untabulated pairwise comparisons, we first find a main effect of *TONE AT THE TOP* where *Audit Quality* is more effective than *Balanced* at increasing *RECOMMEND* (47.16 versus 34.62 percent; $F_{1, 224} = 11.299$, $p = 0.001$, two-tailed). Next, we find that *RECOMMEND* between *Audit Quality* and *Balanced* is not significantly different when *MANAGEMENT'S SPECIALIST* is absent (50.00 versus 42.70 percent; $F_{1, 224} = 2.226$, $p = 0.137$, two-tailed). In contrast, we find that *RECOMMEND* between *Audit Quality* and *Balanced* is significantly different when *MANAGEMENT'S SPECIALIST* is present (43.61 versus 27.32 percent; $F_{1, 224} = 10.478$, $p = 0.001$, two-tailed). Our additional analysis lends further support for H1 and H2. That is, a tone at the top approach focusing on audit quality can be effective in reducing auditors' tendency to agree with management's estimate when the evidence is prepared by management's specialist.

²² As discussed above, nonconscious goal literature finds that goals activated in Stage 1 can be contextually related or unrelated to the Stage 2 task (e.g., Hassin et al. 2009; Kleiman and Hassin 2011, 2013). We perform a supplemental experiment to investigate priming goals in Stage 1 that were contextually *unrelated* to our audit setting in Stage 2 and find consistent results with our primary analysis (see the Online Appendix for more details; see Appendix C for the link to the downloadable file).

We use *RECOMMEND* as the primary dependent variable in our analysis above since it better captures participants' final audit conclusion related to testing of goodwill impairment. However, to provide further support for our findings, we perform additional analyses using participants' assessed likelihood that goodwill should be impaired ("0% = Absolutely Not Impaired" and "100% = Absolutely Impaired") (*LIKELIHOOD*), which is an assessment that participants made prior their final audit conclusion (i.e., *RECOMMEND*). We first find that responses for *RECOMMEND* and *LIKELIHOOD* are highly correlated ($r = 0.83$, $p < 0.001$), but not perfect. Table 3, Panel A provides descriptive statistics for *LIKELIHOOD*, and Panels B and C present results using *LIKELIHOOD*. As shown in Panel C, we find that inferences from our tests for H1 ($p = 0.057$) and H2 ($p < 0.001$ and $p = 0.059$) remain unchanged, providing further support for our predictions. Finally, findings for all pairwise comparisons remain unchanged except for Comparison E in Panel D, where we find a significant difference between *Audit Quality/Present* and *Audit Quality/Absent* ($p = 0.035$). In summary, *LIKELIHOOD* results are by and large consistent with *RECOMMEND*.²³

Supplemental Analysis of Auditors' Evidence Selection

As previously noted, one main challenge that auditors encounter when evaluating management's estimates is the tendency to accept management's position despite the presence of contradictory evidence (PCAOB 2012b, 2012c, 2012d; Griffith et al. 2015b). As a result, both regulators and firms have emphasized the consideration and documentation of contradictory evidence (e.g., Ranzilla, Chevalier, Herrmann, Glover, and Prawitt 2011; PCAOB 2012b, 2017a, 2017b; IAASB 2018). To further explore auditors' selection and documentation of supporting and contradictory evidence, we perform a supplemental analysis of participants' selection and ranking of the evidence that they considered to be most important when making their judgment. Specifically, we analyze auditors' *NET EVIDENCE* (i.e., number of contradictory less number of supporting evidence selected) to investigate whether *TONE AT THE TOP* influences auditors' evidence selection and, in turn, whether *NET EVIDENCE* mediates the relationship between *TONE AT THE TOP* and *RECOMMEND*.²⁴

We find results consistent with Kleiman and Hassin's (2013) theory when a *Balanced* approach is used, i.e., *NET EVIDENCE* in *Balanced* (0.41) is not significantly different from zero ($t_{77} = 1.321$, $p = 0.190$, two-tailed, untabulated). The priming of two conflicting goals appears to enhance auditors' consideration of both supporting and contradictory evidence. In contrast, we find that *NET EVIDENCE* in *Commercial* and in *Audit Quality* is significantly greater than zero (mean = 0.76, $t_{71} = 2.345$, $p = 0.022$, two-tailed, and mean = 1.19, $t_{81} = 4.257$, $p < 0.001$, two-tailed, respectively). Further, we find that there is no difference in *NET EVIDENCE* between the *Commercial* and *Audit Quality* conditions ($t_{150} = 0.993$, $p = 0.322$, two-tailed). This finding is worth noting in that although *NET EVIDENCE* does not differ between the *Commercial* and *Audit Quality* approaches, we find in H2 that auditors' final audit conclusions differ significantly between these two tone at the top approaches. Given these results, it is not surprising that we find that *NET EVIDENCE* does not mediate the effects of *TONE AT THE TOP* on *RECOMMEND*.²⁵

Prior psychology research provides additional insight that may explain, at least in part, why we did not find a mediating effect of *NET EVIDENCE* on the relationship between *TONE AT THE TOP* and *RECOMMEND*. For example, Ditto and Lopez (1992) suggest that individuals may be more likely to scrutinize and document evidence that runs contrary to their conclusion and, therefore, readily accept and not document evidence that supports their preferred conclusion. Arguably, in this current regulatory inspection environment, auditors are even more motivated to scrutinize evidence that counters management's preferred conclusions, as well as document such consideration in workpapers (e.g., Ranzilla et al. 2011; PCAOB 2012b, 2012c, 2012d). Ditto and Lopez (1992) further acknowledge that although an individual may be motivated to scrutinize contradictory evidence and acknowledge its validity, he or she may still engage in information processing that reduces the importance or relevance of such evidence when arriving at a final judgment. Together, this research suggests that scrutiny and documentation of contradictory evidence may not perfectly align with how such evidence is eventually processed and incorporated into one's judgments.

Sensitivity Analyses

As discussed earlier, our theoretical predictions are not without tension as they relate to the diagnostic value or enhancement of reliability of client evidence in the presence of management's specialist. Thus, between the two levels of

²³ Inferences for H1 and H2 remain unchanged when we control for *LIKELIHOOD* in our primary analysis, or if we combine *RECOMMEND* and *LIKELIHOOD*.

²⁴ Prior research that suggests that only a few salient items influence auditors' JDM and that they select evidence sequentially, starting with the most probative and diagnostic (Kida 1984; Knechel and Messier 1990; Weil, Frank, Hughes, and Wagner 2007; Ricchiute 2010). We find results consistent with this prior research, such that *NET EVIDENCE* for the four highest-ranked pieces of evidence is significantly correlated with *RECOMMEND* ($p < 0.001$), whereas *NET EVIDENCE* for items ranked from 5 to 8 are not significantly correlated to *RECOMMEND* ($p = 0.299$). Thus, we limit our analysis of *NET EVIDENCE* to the four highest-ranked pieces of evidence because the last four pieces of evidence selected are not associated with auditors' judgments.

²⁵ We do find that *NET EVIDENCE* is significant ($p < 0.001$) when we control for it in our analyses; however, results for H1 and H2 remain unchanged.

TABLE 3
Results for Auditors' Likelihood that Goodwill Should be Impaired

Panel A: Means (Standard Deviations)

	<u>Absent</u>	<u>Present</u>	<u>Totals</u>
<i>Commercial</i>	33.33 (21.65) n = 36	34.00 (19.73) n = 35	33.66 (20.58) n = 71
<i>Balanced</i>	43.51 (19.47) n = 37	33.41 (23.83) n = 41	38.21 (22.32) n = 78
<i>Audit Quality</i>	51.78 (20.03) n = 45	41.94 (18.64) n = 36	47.41 (19.92) n = 81
Totals	43.56 (21.58) n = 118	36.34 (21.18) n = 112	40.04 (21.65) n = 230

Panel B: Analysis of Variance with LIKELIHOOD

<u>Variable</u>	<u>SS</u>	<u>df</u>	<u>F</u>	<u>p-value^a</u>
<i>TONE AT THE TOP</i>	6,795.06	2	7.942	0.000
<i>MANAGEMENT'S SPECIALIST</i>	2,352.60	1	5.499	0.020
<i>TONE AT THE TOP</i> × <i>MANAGEMENT'S SPECIALIST</i>	2,384.03	2	1.618	0.201

Panel C: Planned Contrasts

<u>Comparisons</u>	<u>F</u>	<u>p-value^b</u>
H1: (<i>Balanced/Absent</i> – <i>Commercial/Absent</i>) > (<i>Balanced/Present</i> – <i>Commercial/Present</i>)	2.514	0.057
H2: Specialist Absent: <i>Commercial/Absent</i> < <i>Audit Quality/Absent</i>	15.905	0.001
H2: Specialist Present: <i>Commercial/Present</i> < <i>Audit Quality/Present</i>	2.618	0.059

Panel D: Pairwise Comparisons

<u>Comparisons</u>	<u>F</u>	<u>p-value</u>
A. <i>Commercial/Absent</i> versus <i>Commercial/Present</i>	0.018	0.892
B. <i>Balanced/Absent</i> > <i>Balanced/Present</i>	4.637	0.016 ^c
C. <i>Balanced/Absent</i> > <i>Commercial/Absent</i>	4.420	0.019 ^c
D. <i>Commercial/Present</i> versus <i>Balanced/Present</i>	0.015	0.902
E. <i>Audit Quality/Absent</i> versus <i>Audit Quality/Present</i>	4.521	0.035

^a p-values are two-tailed.

^b Given our directional predictions, reported p-values are one-tailed.

^c Given our directional predictions, reported p-value is one-tailed.

Variable Definitions:

Absent = management's specialist is absent;

Present = management's specialist is present;

Commercial = emphasis on commercial goals in the firm's tone at the top;

Balanced = emphasis on both commercial and audit quality goals in the firm's tone at the top;

Audit Quality = emphasis on audit quality goals in the firm's tone at the top;

RECOMMEND = likelihood of recommending to the engagement partner that goodwill is impaired ("0% = definitely Not Recommend" and "100% = Absolutely Recommend");

TONE AT THE TOP = commercial, balanced, or audit quality; and

MANAGEMENT'S SPECIALIST = absent or present.

MANAGEMENT'S SPECIALIST, we perform multiple analyses to verify that reliability of management's estimate (and management competence and integrity) is held constant in our experiment and to lend support for the theoretical premise of the current study. For the following three post-experimental questions: auditors' perceived reliability of the company's goodwill analysis ("0 = Extremely Unreliable" and "10 = Extremely Reliable") (overall mean of 5.38), perceived competence of management ("0 = Extremely Low Competence" and "10 = Extremely High Competence") (overall mean of 6.28), and perceived integrity of management ("0 = Extremely Low Integrity" and "10 = Extremely High Integrity") (overall mean of 6.25),²⁶ we find no significant differences between the absence versus presence of a specialist within our H1 and H2 analyses (all $p > 0.10$). We also find that inferences remain unchanged when we control for each factor in our analyses. These results indicate that auditors evaluated the company's goodwill analysis as equally reliable, and management has no perceived differences in integrity and competence between *MANAGEMENT'S SPECIALIST* conditions. Collectively, these results, along with our theory-consistent main findings, provide evidence that auditors encounter greater engagement-level temptation to agree with management's estimate in the presence of a specialist despite the specialist adding no incremental reliability (or competence and integrity) to the estimate.

We also explore whether the absence versus presence of management's specialist influences auditors' evidence selection. Recall that participants were presented with 20 pieces of evidence and, consistent with our *NET EVIDENCE* analysis above, we focus on the top four pieces of evidence selected. First, we find that *NET EVIDENCE* does not differ based on *MANAGEMENT'S SPECIALIST* ($p = 0.760$). Second, as shown in Table 4, we test whether *MANAGEMENT'S SPECIALIST* influences how often each piece of evidence is selected within the top four pieces of evidence and its average ranking therein. We find that the frequency of selection for only two of the 20 evidence items is significantly influenced by *MANAGEMENT'S SPECIALIST* ($p < 0.05$). Last, we find that only one out of the 20 evidence items' importance ranking in the top four is significantly influenced by *MANAGEMENT'S SPECIALIST* ($p < 0.05$). Based on the number of statistical comparisons being made, one would expect some differences by pure chance, so it is not surprising that we find a small number of differences in this analysis. Collectively, these findings are expected in light of our above analyses that show that auditors' perceptions of reliability, competence, and integrity provide theory-consistent evidence that auditors are more prone to agree with management's preferred position despite management's specialist adding no incremental reliability. Consequently, as anticipated, we do not find any noteworthy patterns to suggest that *MANAGEMENT'S SPECIALIST* influences auditors' views regarding the relevance/importance of evidence.

We also perform a series of additional analyses to rule out alternative explanations for our observed results. First, we find that auditors' assessed likelihood of engaging the audit firm's in-house valuation specialist to assist with auditing goodwill ("0 = Not Likely" and "10 = Very Likely") does not differ between *Absent* (7.38) and *Present* (7.57) ($p > 0.54$). This suggests that the presence of management's specialist does not alter auditors' likelihood of engaging the firm's specialist; thus, this variable does not drive our results. A potential explanation for this lack of difference is that auditors usually do not have much discretion on whether they use in-house specialists when auditing complex estimates. That is, prior research finds that firm policies often dictate whether auditors are required to engage an in-house specialist (Cannon and Bedard 2017; Glover, Taylor, and Wu 2017).

Next, by design, participants in *Balanced* were exposed to more goal indicators than participants in both *Commercial* and *Audit Quality*. To rule out the possibility that our results are driven by differences in the perceived length of the presentation²⁷ or perceived quantity of goals presented (i.e., firm initiatives), we asked participants to rate their perceptions for the length of the presentation ("0 = Very Short," "5 = About Right," and "10 = Very Long") and number of initiatives presented ("0 = Very Few," "5 = About Right," and "10 = Very Many"). Participants perceived the length in *Balanced* (5.33) to be longer than *Commercial* (4.00) and *Audit Quality* (4.05) (both $p < 0.01$). Similarly, we find that participants perceived the number of initiatives in *Balanced* (6.27) to be greater than *Commercial* (5.11) and *Audit Quality* (5.26) (both $p < 0.01$). We controlled for perceived length and number of goals and find that inferences drawn from our tests of H1 and H2 remain unchanged. Importantly, we rule out the alternative explanations that *RECOMMEND* was driven by differences in the perceived length of the presentation or number of goals.

Last, we test whether our results are driven by the order in which the evidence categories were presented or the order in which the goal indicators were presented. We randomly assigned which order the evidence categories were presented across the experimental conditions. We find no significant differences based on the order in which the evidence categories were presented on the dependent measures (both $p > 0.62$). Further, we randomly assigned across *Balanced* whether the presentation began with a commercial or audit quality goal. We find no differences based on which type of goal was presented first on the

²⁶ The latter two questions were only asked in the second administration. As there are no informational differences between the two administrations, we rely on the second administration data to rule out this alternative explanation.

²⁷ The presentations displayed each goal for ten seconds before automatically proceeding to the next indicator.

TABLE 4
Evidence Analysis Based on Preparer
Top Four Pieces of Evidence Selected by Participants

Panel A: Economic and Industry Trends Evidence

	Frequency of Selection in Top 4 (%) ^a			Means (Std. Dev.) for Average Importance Ranking in Top 4 ^b		
	<i>Absent</i> ^c	<i>Present</i> ^d	Comparison (p-value)	<i>Absent</i> ^c	<i>Present</i> ^d	Comparison (p-value)
	• The economic outlook is somewhat positive as the economy begins to rebound from a recent downturn.	26.3	25.0	0.825	2.31 (1.38)	2.18 (1.17)
• In the past few years, the industry has experienced a gradual decline in consumer demands.	53.4	50.0	0.607	2.35 (1.05)	2.94 (1.06)	0.034*
• Competition from foreign imports has risen in recent years.	25.4	31.3	0.327	2.95 (0.91)	3.09 (0.70)	0.656
• The products sold by Sequoia are competitive with its top industry rivals.	16.9	10.7	0.175	3.00 (1.41)	3.33 (0.82)	0.680
• The luxury electronics segment's market share has declined in recent years.	35.6	42.9	0.260	2.95 (0.74)	2.18 (1.17)	0.029*
• Raw materials and labor costs for manufacturing electronic products are expected to increase.	63.6	55.4	0.206	3.35 (0.94)	2.88 (0.99)	0.090

Panel B: Revenues Evidence

	Frequency of Selection in Top 4 (%) ^a			Means (Std. Dev.) for Average Importance Ranking in Top 4 ^b		
	<i>Absent</i> ^c	<i>Present</i> ^d	Comparison (p-value)	<i>Absent</i> ^c	<i>Present</i> ^d	Comparison (p-value)
	• The rebranding of Product A started increasing revenues in the current year and Sequoia expects it will continue to increase revenues in future periods.	36.4	43.8	0.259	2.22 (1.18)	2.84 (1.14)
• The revenue growth rate decreased in the prior three-year periods.	62.7	65.2	0.697	1.59 (0.97)	1.62 (1.10)	0.898
• Sequoia introduced new Product C at the end of the fiscal year 2017, and Sequoia anticipates it will begin seeing the benefits of Product C in 2018. The Company has generally been successful with previous product releases.	51.7	47.3	0.507	2.22 (0.94)	2.38 (1.16)	0.556
• One of Sequoia's major customers had not placed an expected order as of the end of the fiscal year 2017.	42.4	53.6	0.090	2.63 (1.00)	2.37 (1.07)	0.322
• Sequoia expects to increase revenues by the synergies created through Product A and new Product C, as we expect many customers to purchase both products at the same time.	29.7	25.0	0.429	3.08 (0.90)	2.71 (0.83)	0.286
• Sequoia indicated that recently proposed legislation might make it more difficult to market new products in future periods.	41.5	33.9	0.236	3.00 (1.23)	2.50 (1.16)	0.256
• Sequoia acquired a patent for a new Product D that the Company expects will increase revenues in future periods when it is released next year.	44.1	43.8	0.961	2.83 (1.05)	2.84 (0.99)	0.981
• The Company is on the verge of securing a significant new customer to purchase its products beginning next year.	19.5	32.1	0.029*	3.00 (1.16)	2.81 (1.05)	0.705

(continued on next page)

TABLE 4 (continued)

Panel C: Expenses Evidence

	Frequency of Selection in Top 4 (%) ^a			Means (Std. Dev.) for Average Importance Ranking in Top 4 ^b		
	Absent ^c	Present ^d	Comparison (p-value)	Absent ^c	Present ^d	Comparison (p-value)
• Sequoia's labor unions are demanding higher wages, which has initiated negotiations between Sequoia and the union.	46.6	42.0	0.479	3.06 (0.73)	2.68 (1.11)	0.239
• Sequoia discontinued Product B at the beginning of fiscal year 2018, which will reduce operating expenses going forward.	45.8	44.6	0.865	2.56 (1.12)	2.62 (1.07)	0.857
• EBITDA margin decreased in the prior three-year periods.	55.1	59.8	0.468	2.18 (0.95)	2.09 (0.77)	0.609
• Sequoia cut costs after consolidating its facilities in the current year.	42.4	28.6	0.030*	3.06 (0.93)	3.18 (1.10)	0.727
• Sequoia indicated that there is a chance of losing one of its low-cost suppliers.	38.1	44.6	0.317	3.00 (1.00)	3.00 (0.93)	1.000
• Sequoia reported positive free cash flows for the past three years.	23.7	20.5	0.560	1.73 (1.22)	1.83 (1.06)	0.752

* Indicates a significant difference ($p < 0.05$) between *MANAGEMENT'S SPECIALIST* conditions.

^a Measured by how often participants ranked an evidence item within their Top 4 pieces of evidence.

^b Average ranking of an evidence item by participants when it was ranked within the Top 4 pieces of evidence.

^c *MANAGEMENT'S SPECIALIST* condition where the specialist is absent.

^d *MANAGEMENT'S SPECIALIST* condition where the specialist is present.

dependent measures (both $p > 0.49$). Thus, we are able to rule out that the order of evidence categories or goal indicators influenced participants' assessments.

V. CONCLUSIONS

Academics have long emphasized the critical role of effective firm-level tone at the top and its impact on encouraging positive employee behaviors and actions (e.g., Brickley et al. 2003; Gronewold and Donle 2011; Gold et al. 2013; Skaife et al. 2013; Patelli and Pedrini 2015). Likewise, regulators, in recent years, have contended that effective tone at the top, an important firm-level quality control mechanism, promotes audit quality goals in line with protecting the public interest (PCAOB 2012d, 2013a, 2013b, 2018a; FRC 2012; IFIAR 2014; McKenna 2016; AICPA 2017; IAASB 2017). Encouraging auditors to pursue firm-level audit quality goals is especially important, given substantial evidence from regulatory inspections and extant research that indicates that auditors often pursue engagement-level goals that are consistent with management's preferred position, but detrimental to audit quality, and that this tendency is compounded in the presence of management's specialist (e.g., Giddens 1990; Steginga and Occhipinti 2004; Kadous et al. 2003; Ng and Tan 2003; Griffith et al. 2015a; Koch and Salterio 2017; PCAOB 2012a, 2012b, 2017a). Drawing from the nonconscious goal pursuit research in psychology (e.g., Kleiman and Hassin 2011, 2013), we adapt the two-stage paradigm to investigate whether tone at the top can be used to subtly prime firm-level goals that can be nonconsciously pursued subsequently while performing an engagement-level task. Consistent with psychology theory, we find that this approach to activate auditors' nonconscious pursuit of firm-level goals at the engagement level can be effective in terms of reducing auditors' tendency to agree with management's preferred positions, thus better aligning auditors' goal pursuit with protecting the public interest (i.e., higher audit quality).

Our findings highlight the important role of firm-level tone at top in promoting auditors' pursuit of audit quality goals and reducing their temptation to agree with management's preferred position when indicators of management opportunism/bias are present. Specifically, we find theory-consistent evidence that the efficacy of a balanced tone at the top approach (i.e., emphasis on two conflicting goals, commercial and audit quality), over a baseline approach of emphasizing commercial goals, is dependent on whether management engages a specialist (i.e., extent of engagement-level temptation). That is, in the absence of management's specialist (i.e., lower engagement-level temptation), a balanced approach reduces auditors' tendency to agree with management's estimate compared to a commercial approach; however, a balanced approach is not as effective when management's specialist is present (i.e., a higher engagement-level temptation). These results suggest that a balanced approach simultaneously emphasizing firm-level commercial and audit quality goals may reduce auditors' tendency to agree with management's preferred position when management does not engage a specialist. Further, consistent with theory, results show

that when tone at the top emphasizes audit quality, auditors' tendency to agree with management is reduced compared to a commercial approach, regardless of the presence or absence of management's specialist. Collectively, our results suggest that tone at the top emphasizing audit quality is effective at reducing the stronger tendency to agree with management's position in the presence of management's specialist. These results provide evidence that firm-level tone at the top can serve as a mechanism for enhancing professional skepticism and, thus, audit quality, consistent with protecting the public interest.

Importantly, we provide evidence supporting a key theoretical premise of this study. We find that auditors evaluate audit evidence as equally reliable across experimental conditions, yet they exhibit a greater propensity to agree with management's position in the presence of management's specialist. These findings, along with our theory-consistent main findings, provide support that in the presence of management's specialist, auditors fall prey to a greater temptation to agree with management's estimate despite the specialist adding no incremental diagnostic value or reliability to the estimate. Such a tendency interferes with firm-level audit quality goals and reflects lower-quality judgments.

This study is subject to limitations that present opportunities for future research. First, we investigate a setting where the presence of management's specialist did not signal a change in the diagnostic value or reliability of the estimate; consequently, care should be taken when extrapolating our findings to a setting where the presence of management's specialist enhances the reliability of management's estimate. Second, our study explores three tone at the top approaches and one delivery method (i.e., a video presentation). Although the approaches and delivery method are consistent with those commonly used in practice (PCAOB 2012d, 2013a, 2013b; CAQ 2013; IFAC 2007), future research could explore the influence of other approaches and delivery methods for conveying firm-level goals. In particular, we take an initial step forward in finding that tone at the top emphasizing audit quality goals reduces auditors' tendency to accept management's position in the presence of management's specialist. Future studies may be able to relax the audit quality approach and explore the extent of firm-level emphasis on audit quality goals required to improve engagement-level performance. Third, we investigate the effect of tone at the top in a higher-risk, more complex audit area, where regulators, practitioners, and researchers have indicated that auditors encounter significant challenges (e.g., PCAOB 2017a; Griffith et al. 2015a; Glover et al. 2017; Cannon and Bedard 2017). Although we find that the effect of the balanced approach is dependent on whether management employs a specialist, future research can investigate whether other factors influence the effectiveness of the balanced approach. Last, results from a supplemental analysis of the evidence that auditors selected/documentated as most relevant when evaluating the reasonableness of management's estimate are consistent with psychology research (e.g., Ditto and Lopez 1992), in that scrutiny of contradictory evidence and acknowledgment of its validity does not necessarily align with how such evidence is processed and incorporated into one's judgments. Future research is needed to explore the important relationship between auditors' evidence selection, documentation, and conclusions.

Notwithstanding the above limitations, our findings have important implications for U.S. and international regulators as they continue to improve firm-level quality control standards (FRC 2011, 2012; PCAOB 2013b, 2014, 2016c, 2018a; FEE 2016; IAASB 2014, 2016, 2017). To our knowledge, we provide the first systematic evidence, using the controlled setting of an experiment, that supports regulators' longstanding claims that firm-level tone at the top influences auditors' performance at the engagement level (PCAOB 2014, 2015a). Notably, we introduce an approach from the psychology literature that has proven to be successful at subtly priming global goals that can be nonconsciously pursued when subsequently performing a complex audit task. This approach can easily be implemented in practice and is promising, as it does not further deplete auditors' very limited conscious resources, especially when completing cognitively taxing tasks such as audits of complex estimates. Further, we provide insights for audit firms regarding a promising firm-level mechanism that can improve audits of complex estimates, including auditors' use of client evidence provided by management's specialists. Specifically, we demonstrate, consistent with regulators' assertions, that tone at the top focusing on audit quality can improve professional skepticism when auditors evaluate complex estimates.

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APPENDIX A

Supporting and Contradictory Evidence

Panel A: Economic and Industry Trends Evidence

	Supporting (+) or Contradictory (–)
• The economic outlook is somewhat positive as the economy begins to rebound from a recent downturn.	+
• In the past few years, the industry has experienced a gradual decline in consumer demands.	–
• Competition from foreign imports has risen in recent years.	–
• The products sold by Sequoia are competitive with its top industry rivals.	+
• The luxury electronics segment's market share has declined in recent years.	–
• Raw materials and labor costs for manufacturing electronic products are expected to increase.	–

Panel A presents evidence related to economic and industry trends that participants used when assessing the reasonableness of goodwill.

Panel B: Revenues Evidence

	Supporting (+) or Contradictory (–)
• The rebranding of Product A started increasing revenues in the current year and Sequoia expects it will continue to increase revenues in future periods.	+
• The revenue growth rate decreased in the prior three-year periods.	–
• Sequoia introduced new Product C at the end of the fiscal year 2017, and Sequoia anticipates it will begin seeing the benefits of Product C in 2018. The Company has generally been successful with previous product releases.	+
• One of Sequoia's major customers had not placed an expected order as of the end of the fiscal year 2017.	–
• Sequoia expects to increase revenues by the synergies created through Product A and new Product C, as we expect many customers to purchase both products at the same time.	+
• Sequoia indicated that recently proposed legislation might make it more difficult to market new products in future periods.	–
• Sequoia acquired a patent for a new Product D that the Company expects will increase revenues in future periods when it is released next year.	+
• The Company is on the verge of securing a significant new customer to purchase its products beginning next year.	+

Panel B presents evidence related to company revenues that participants used when assessing the reasonableness of goodwill.

Panel C: Expenses Evidence

	Supporting (+) or Contradictory (–)
• Sequoia's labor unions are demanding higher wages, which has initiated negotiations between Sequoia and the union.	–
• Sequoia discontinued Product B at the beginning of fiscal year 2018, which will reduce operating expenses going forward.	+
• EBITDA margin decreased in the prior three-year periods.	–
• Sequoia cut costs after consolidating its facilities in the current year.	+
• Sequoia indicated that there is a chance of losing one of its low-cost suppliers.	–
• Sequoia reported positive free cash flows for the past three years.	+

Panel C presents evidence related to company expenses that participants used when assessing the reasonableness of goodwill.

APPENDIX B

Tone at the Top Goal Indicators

Commercial Goal Indicators

1. Maintain our current **earnings** base by improving our client retention rate.
2. Sustain the firm's **income** by being more competitive with audit fees on engagements.
3. Maximize **profit margins** by improving engagement utilization rates to reduce costs.
4. Increase **profitability** by outsourcing more audit procedures to the firm's offshore service center.
5. Increase **revenues** by seeking to win new audit engagements.

Audit Quality Goal Indicators

1. Increase **engagement supervision** by dedicating more audit partner time.
2. Increase the number of **technical professionals** available for audit engagement consultations.
3. Enhance our **quality control** policies by conducting more internal engagement reviews.
4. Enhance firm-wide **audit training** to increase our expertise and technical competence.
5. Ensure compliance with **independence** rules for all assurance professionals.

Appendix B presents the goal indicators used in manipulation of tone at the top. These include the five commercial goal indicators in the following two conditions: emphasis on firm commercial goals and balanced approach; and five audit quality goal indicators in the following two conditions: emphasis on audit quality goals and balanced approach.

To review each of the tone at the top manipulation conditions, we have provided the following links for the presentations in Qualtrics: *Commercial* (<https://tinyurl.com/y8u4m9qs>), *Balanced* (<https://tinyurl.com/y2dq3t8n>) and *Audit Quality* (<https://tinyurl.com/y4t5k9lg>). For review purposes, the presentations can be paused and restarted. The video presentations with these goal indicators began automatically on the screen for the participants and continued until finished. Participants were unable to pause, restart, or bypass the presentation.

APPENDIX C

accr-52732_Online Appendix: <http://dx.doi.org/10.2308/accr-52732.s01>