



Contents lists available at ScienceDirect

Accounting, Organizations and Society

journal homepage: www.elsevier.com/locate/aos

Auditors' comfort with uncertain estimates: More evidence is not always better

Stephen P. Rowe

University of Arkansas, WCOB 401, Fayetteville, AR, 72701, USA

ARTICLE INFO

Article history:

Received 15 February 2017

Received in revised form

3 January 2019

Accepted 5 January 2019

Available online xxx

Keywords:

Auditing estimates

Auditor judgments

Audit evidence

Auditor comfort

Uncertainty

ABSTRACT

Prior research generally presumes that auditors are more comfortable with better-supported management estimates because more support reduces the chance of misstatement; however, information processing theory suggests that auditor comfort is only increasing in evidential support to the extent that they need more support to be confident in their beliefs. Once auditors are confident, more support can make them less comfortable because it presents a potential challenge to their beliefs. I investigate this notion using an experiment with experienced auditors. I find that when estimate uncertainty is *extreme*, auditors are more comfortable with *more* evidential support; however, I find that when estimate uncertainty is *moderate*, auditors are more comfortable with *less* evidential support. Consistent with processing theory, further analyses reveal that *more* support provided in the *moderate* uncertainty condition did not change auditors' confidence in their estimates but was perceived to make their estimates more difficult to defend. These findings highlight how auditors' desires and needs to defend their judgments impact how they evaluate evidential support early in the audit process.

© 2019 Elsevier Ltd. All rights reserved.

1. Introduction

Auditors use evidential support for two separate but related objectives when auditing estimates. First, auditors use evidence to reduce the risk of a material misstatement to a reasonable level, and second, they use evidence to defend their conclusions against criticism (Lambert & Agoglia, 2011; Peecher, 1996; Waller & Felix, 1984). Auditors must defend their judgments to numerous parties, including audit partners, client management, and potentially internal or external quality reviewers. Additionally, evaluators routinely use the evidence accumulated by auditors to criticize the auditors' conclusions. Because of the subjective nature of accounting estimates, evaluators easily can arrive at different point estimates using the same evidence accumulated by auditors. In this study, I seek to investigate how the amount of evidential support available to the auditor differentially influences their attitudes and

judgments pertaining to an uncertain estimate because of their perceptions of the defensibility of their judgments.¹

One way auditors can manage evaluation risk is not gathering more evidence than the amount needed for them to get comfortable that management's estimate is not materially misstated.² Auditor comfort is an important measure because it captures an emotional affective reaction to risks (Pentland, 1993), which helps inform our understanding of professional skepticism (Nolder & Kadous, 2018), and highlights the subjective nature of auditor judgements. While auditor comfort is predominantly driven by obtaining sufficient and appropriate audit evidence, psychology theory about how individuals manage the support they gather (or do not gather) to enhance message persuasiveness supports the notion that auditor comfort can decrease with more evidence (e.g., Chaiken, Giner-Sorolla, & Chen, 1996). This notion is consistent with prior accounting research, which has shown that accumulating less evidence and documenting fewer audit procedures reduces evaluators' perception of auditors' culpability and liability for damages (Backof, 2015; Reffett, 2010). Also, Rich, Solomon, and Trotman (1997) highlight that excluding evidence from audit

¹ E-mail address: sprowe@uark.edu.

¹ While prior research has identified the role of evidence to provide a defense of audit conclusions (Lambert & Agoglia, 2011; Peecher, 1996; Waller & Felix, 1984), less is known about how auditors' perception of defensibility impacts their judgments. This gap in the research is surprising given the PCAOB's inspection efforts and focus on auditors' documentation providing a defense of their conclusions (e.g., Auditing Standard No. 3).

² I conceptualize audit evidence as information and support that informs the audit opinion, whether or not it is eventually included in the audit workpapers.

documentation can increase defensibility.

Auditors' hesitancy to gather more evidence to enhance persuasion and avoid culpability is potentially troubling because evidence, even that which can be perceived as contradictory to the final audit conclusions, is foundational to reliable and effective audits. In this study, I focus on determinants of auditors' comfort with evidential support for an estimate and highlight the potentially troubling notion that auditors' judgments early in the audit process can reflect a discomfort with more evidential support.

To guide my investigation, I rely on the Heuristic-Systematic Model (HSM) of information processing. The HSM posits that individuals evaluate evidential support first with the goal of forming an accurate opinion, but as they become more confident of their opinions they transition to evaluating the support for the purpose of defending their opinions (Chaiken et al., 1996). Under a defense focus, individuals may discount or completely avoid new evidence that they encounter to protect their opinions from evaluators' potential critiques (Chaiken et al., 1996). Based on this theory, I predict that auditors first evaluate the amount of evidential support with a focus on forming an opinion regarding whether an estimate is misstated; then, once auditors have sufficient evidence on which to begin forming their opinion, they focus more on defending their opinion. Importantly, auditors' focus on defending their opinion changes their perception of how helpful or unhelpful additional evidential support would be. I predict that to the extent that additional evidence is introduced, auditors can become less comfortable with management's accounting estimates when auditors would have been similarly confident in their beliefs with less evidential support.

I examine my predictions in an experimental accounting estimate context. I predict that auditors will reach their desired level of confidence with management's estimate more easily when the estimate is less uncertain, and thus they will focus more on defending their judgments when estimate uncertainty is moderate versus when it is extreme. As a result of this defense focus, I predict that more evidential support will make auditors *less* comfortable with management's estimate when estimate uncertainty is moderate versus when it is extreme. When estimate uncertainty is extreme, however, I predict that auditors will be less defense focused and thus more evidential support will make auditors *more* comfortable. That is, the directional influence of greater evidential support differs with moderate versus extreme estimate uncertainty, causing their joint influence on auditor comfort to be in the form of a disordinal interaction.³ I also predict a similar interaction on auditors' expectations about the ultimate financial statement adjustment.

I test my predictions using a 2 × 2 between-subjects experiment where experienced auditors evaluate a warranty estimate early in the audit process. Early audit judgments that influence subsequent evidence acquisition and evaluation can influence auditors' ultimate conclusions about the absence or presence of material misstatements. In my experiment, auditors learn about a hypothetical company's potential need for an adjustment to its warranty accrual for an industrywide issue and receive industry information that reveals the level of uncertainty by providing a range of possible outcomes (*moderate* or *extreme*). Participants then receive management's analysis, which comprises the degree of evidential support (*more* or *less*) and management's final warranty estimate (held constant across conditions as the midpoint of the range

implied by the inputs). After learning of management's support for the estimate, participants indicate their level of comfort with management's estimate, provide their expected financial-statement adjustment, and respond to other control and context questions.

The two manipulated independent variables are estimate uncertainty and evidential support. I operationalize estimate uncertainty as the range of potential warranty losses, either *moderate* (\$2.5 million) or *extreme* (\$10.5 million), which correspond to about two-times or eight-times materiality, respectively.⁴ I operationalize evidential support by management gathering *less* evidential support, which entails inquiry of technicians, or *more* evidential support, which extends evidence-gathering to include review of records and field inspections. I use a judgment scale to measure auditors' comfort with management's estimate and open response for auditors' expected financial statement adjustment.

Results support my predictions. More versus less evidentiary support has an opposite directional influence on auditors' comfort under moderate versus extreme uncertainty, causing the predicted disordinal interaction. Under *extreme* uncertainty auditors are more comfortable with the estimate when management provided *more* evidential support, consistent with auditors being less confident in their judgments and focusing on the role of evidential support to reduce the risk of a material misstatement. However, under *moderate* uncertainty, auditors are more comfortable with the estimate when management provided *less* evidential support, consistent with auditors being more confident in their judgments and preferring to avoid *more* evidential support when the uncertainty is lower. The same pattern of results occurs for the auditors' expected adjustments to the financial statements. In support of the theory, I find that auditors' perception of the defensibility of their estimates mediates auditor comfort when uncertainty is moderate but not when it is extreme.

I also conduct supplemental analyses that highlight the importance of examining auditors' affective feelings of comfort, which complements common judgment-based measures of auditors' beliefs regarding the reasonableness of management's estimate. Examining auditor comfort and assessed reasonableness together reveals several new insights. Principally, auditor comfort is significantly associated with perceptions of assurance and judgment defensibility, while auditor reasonableness is not.

This study has several important implications. First, my findings suggest that auditors' concerns about the defensibility of their judgments when auditing estimates can cause them to discount or potentially even avoid more evidential support, which threatens audit effectiveness and audit quality. This finding complements other accounting studies that show that defense focused review notes (Lambert & Agoglia, 2011), and working papers (Rich et al., 1997) can reduce audit quality. More generally, these findings demonstrate how auditors respond when they are concerned about reviewers second-guessing their judgments for accounting estimates and reinforce prior research demonstrating the benefits of implementing an audit judgment rule (Kang, Trotman, & Trotman, 2015; Peecher, Solomon, & Trotman, 2013). My findings regarding auditor comfort and its relationship to reasonableness assessments in conjunction with my main findings demonstrate the role auditors' affective feelings play in reaching assurance judgments, an

³ From a HSM perspective, auditors' confidence will increase their motivation to defend their assessments by discounting or avoiding additional evidence because additional evidence is viewed as a threat to their already formed assessments (Chaiken et al., 1996).

⁴ The operationalization of estimate uncertainty as the width of the estimate range is similar to Du and Budescu (2005). As discussed more in Section 2, the uncertainty of an estimate with an undefined probability distribution is increasing in the width of the range of potential outcomes. I leave the probability distribution undefined because generally accepted accounting principles dictate the estimate once the probability distribution is known.

area that prior research has not directly examined (Kadous, Nolder, & Peecher, 2018; Nolder & Kadous, 2018).

2. Theory development and hypotheses

2.1. Auditors' comfort with estimates

Auditing standards require auditors to plan and perform an audit to gain comfort that the financial statements are free of material misstatement. The notion of auditor comfort reflects the inherent uncertainty within auditing and the terminology of practicing auditors when referring to the level of assurance (Carrington & Catasús, 2007; Pentland, 1993). Notably, comfort encompasses not just a cognitive evaluation but an emotional affective reaction to the risks inherent in providing assurance over financial statements (Pentland, 1993). Research on professional skepticism has also recognized that "because audits are risk based, emotions must be considered to fully understand auditors' underlying skeptical attitudes" (Nolder & Kadous, 2018). Importantly for this study, comfort captures the auditors' feelings regarding the defensibility of their judgments, and I examine whether these feelings translate into the expected audit adjustment.

While PCAOB releases shy away from the notion of comfort, audit firms (Bell, Peecher, & Solomon, 2005; Ernst & Young, 2006; KPMG, 2011; PwC, 2012) and academics (Biggs, Mock, & Watkins, 1988; Cannon & Bedard, 2017; Kang et al., 2015; Martin, Rich, & Wilks, 2006; Pomeroy, 2013) routinely use comfort to describe the extent to which auditors are willing to accept management assertions. For example, KPMG (2011, 10) states that a question one might ask when trying to identify objectives is, "Are you comfortable at a 'gut level' moving ahead with the judgment process?" Despite the use of comfort to describe the provision of assurance in the presence of uncertainty, research has not extended this notion to the auditing of estimates.

2.2. Auditing estimates

Accounting estimates are an integral part of financial statements and contain some amount of inherent uncertainty that cannot be reduced by audit evidence. Uncertainty exists when the probability of an event occurring is greater than 0 and less than 1 (Bazerman, 2001). I focus on the uncertainty of the outcome because it is a major aspect of accounting estimates and research has found that individuals are more concerned with outcome uncertainty than other types (Du & Budescu, 2005).⁵ Outcome uncertainty refers to the size of the universe of possible outcomes and accounting research has generally identified financial items with a wider range of outcomes as having more outcome uncertainty (c.f. Nelson, Smith, & Palmrose, 2005; Bell & Griffin, 2012).⁶

Estimates with high or extreme uncertainty are frequently subjective because they afford discretion in the selection and interpretation of inputs. The subjectivity that is inherent in uncertain estimates makes auditing the appropriateness of such estimates difficult and requires extensive professional judgment (Christensen, Glover, & Wood, 2012; Glover, Taylor, & Wu, 2017;

Peecher et al., 2013). Despite the level of uncertainty, auditors are required to assess the reasonableness of management's point estimate as part of their standard audit procedures in support of their audit opinion (PCAOB, 2003).

When auditing estimates, the conventional presumption in auditing standards and most audit research is that greater evidentiary support reduces the risk of misstatement; thus, the reasonableness of an estimate should increase when more evidence is available to support the estimate (c.f. Budescu, Peecher, & Solomon, 2012; Elder & Allen, 2003; Mock & Wright, 1993; 1999; PCAOB, 2010b). For instance, Budescu et al. (2012) maintain that auditor sampling from a larger pool of available evidence can reduce noise, and possibly bias if the evidence is of different types. The PCAOB (2003) has highlighted this notion in standards, indicating that, "The risk of material misstatement of accounting estimates normally varies with ... the availability and reliability of relevant data ... and the degree of uncertainty." Research that examines how auditors evaluate the extent of management's evidential support will help inform auditors' evidential judgments for accounting estimates, especially to the extent that more evidence does not always lead to greater auditor comfort.

2.3. The dual role of audit evidence

Auditors achieve comfort with an estimate by gathering evidence to (1) support the amount of the estimate and (2) provide adequate defensibility for their conclusion (Peecher, 1996; Waller & Felix, 1984). Under the first role of audit evidence, auditing standards and practice would generally maintain that more evidence is required to reach the desired confidence level when estimates are more uncertain (PCAOB, 2010a). This is supported by research findings that auditors are more conservative under higher risk and uncertainty (Barron, Pratt, & Stice, 2001; Cannon & Bedard, 2017; Hirst, 1994; Kinney & Martin, 1994; Smith & Kida, 1991), leading to increased sampling rates (Taylor, 2000; Zimbelman & Waller, 1999). Griffin (2014) evaluates the uncertainty and subjectivity of fair value estimates on auditor judgments and finds that auditors are more inclined to require adjustments when fair values are uncertain and subjective.

The second role of evidence is to provide support that helps the auditor defend his or her judgments regarding the estimate. Auditors are continuously required to defend their audit judgments to others, including those they report to in the firm, regulatory and other quality inspectors, and even the client's management. Prior research has found that accounting items with greater uncertainty are more difficult to defend. For instance, research has shown that auditors struggle to defend their point estimate to the audit committee when estimates are more uncertain (DeZoort, Hermanson, & Houston, 2003). Similarly, auditors have difficulty defending their conservative judgments to juries when accounting standards are less precise (Kadous & Mercer, 2014). Auditing standards would suggest that auditors should obtain more and better evidence to increase the defensibility of their judgments; however, prior research has found that more evidential support can make defending judgments even more difficult. For instance, more extensive documentation of audit considerations increases jurors' perception that the auditor is negligent (Backof, 2015), and the closer the auditor's procedures come to uncovering a misstatement, the more jurors find them liable (Reffett, 2010).⁷ An open question

⁵ Notably, I do not actively manipulate probability uncertainty as that would dictate the appropriate accounting treatment under FASB Interpretation No. 14, *Reasonable Estimation of the Amount of a Loss* an Interpretation of FASB Statement No. 5 (FIN 14).

⁶ I follow a subset of earlier accounting research and refer to my construct as uncertainty (Bell & Griffin, 2012; Cannon & Bedard, 2017; Christiansen, Glover, & Wood, 2012; Dennis, Griffin, & Johnstone, 2018; Kelton & Montague, 2018); however, other research has used the terms vagueness and imprecision to refer to the same construct (c.f. Kuhn & Budescu, 1996; Griffin, 2014).

⁷ Similarly, to the extent that more evidentiary support introduces contradictory evidence, auditors could face increased scrutiny from the PCAOB who focus on how auditors evaluate contradictory evidence when seeking evidence for lack of professional skepticism (Modesti, 2018).

in the research is whether auditors' knowledge that they must defend their judgments impacts how they process information.

2.4. Information processing and predictions

I develop my predictions using the Heuristic-Systematic Model (HSM) of information processing. The HSM is a dual-process model developed specifically for settings in which peoples' primary concern is to reach accurate conclusions in accordance with the facts (Chaiken, Liberman, & Eagly, 1989). To engage in systematic processing, one must have the cognitive ability and motivation to do so. The motivation to perform systematic processing is driven by the difference between an individual's actual level of confidence and his or her desired level of confidence; the greater the difference, the greater the motivation to perform systematic processing (Chen, Duckworth, & Chaiken, 1999; Chaiken et al., 1996). In the audit context, the ultimate desired confidence is akin to reasonable assurance and the extent of auditor processing is determined by how far the auditor believes he or she is from achieving reasonable assurance (Kadous et al., 2018).⁸ Throughout the audit, auditors are motivated to evaluate evidential support up to the point at which they are sufficiently confident in their judgments to move on to the next phase (Kadous et al., 2018). HSM refers to this point as the stopping point because at this point individuals stop critically processing the support for that judgment. Importantly for my predictions, HSM discusses the information processing implications when individuals have both an accuracy and a defense motivation.

Using the framework of the HSM of information processing, the first role of evidence is to ensure that the auditor issues an accurate audit opinion (accuracy motivation) (Chaiken et al., 1996). Under this motivation, the auditor will obtain and critically evaluate evidential support in order to reach his or her desired confidence level, at which point he or she will stop systematic processing—I predict that when the auditor is focused on reducing the risk of misstatement he or she will be more comfortable with estimates that have more evidential support; however, as the auditor becomes more confident in his or her assessment of a material misstatement, I predict that he or she will focus more on the second role of audit evidence, to defend his or her judgments.

The more confident auditors are in the accuracy of their judgments, the more they will be motivated to defend those judgments (Chaiken et al., 1996). In contrast to an accuracy-motivated individual, a defense-motivated individual processes information with a self-serving bias directed toward preserving his or her beliefs (Chaiken et al., 1996). Broadly, a defense-motivated individual selectively processes information to defend his or her judgments, which can include strategies such as defensive inattention or selective exposure (Chaiken et al., 1996). Under these notions, auditors would prefer to ignore or avoid more support that could challenge their already formed judgments, and the mere presence of this support can make them less comfortable than when less evidence is available. In short, auditors may prefer to avoid additional evidential support because it represents a potential challenge to their already-formed conclusions⁹; thus, as the auditor becomes more confident in his or her judgments, he or she will be more

motivated to defend those judgments by demonstrating a preference for less additional evidence.

To summarize, I predict that the level of uncertainty of an estimate will interact with the degree of evidential support to change auditors' motivation to defend their judgments. As discussed earlier, greater uncertainty increases the risk of a material misstatement which means that more processing of evidential support is necessary to achieve the desired level of confidence in the accuracy of auditors' judgments; thus, when uncertainty is *extreme*, auditors will perceive more evidential support as a potential to improve their judgments (i.e., accuracy-motivated), and thus will be more comfortable with *more* support. In contrast, when uncertainty is *moderate*, auditors will perceive more evidential support as a potential challenge to their judgments (i.e., defense-motivated), and will be less comfortable with *more* support. Together, these predictions imply a disordinal interaction between uncertainty and support such that the auditors' comfort with an uncertain estimate is contingent on the level of uncertainty and the degree of management's evidential support. Formally stated:

H1. Under *extreme* uncertainty, auditors are more comfortable with management's estimate when management provides *more* evidential support versus *less* evidential support; but under *moderate* uncertainty, auditors are more comfortable with management's estimate when management provides *less* evidential support versus *more* evidential support.

2.5. Auditors' expected adjustment

I also separately hypothesize auditors' expected adjustment because it represents a clear manifestation of auditors' affective comfort. Auditor conservatism as well as specific research on audit adjustments (Wright & Wright, 1997; Keune & Johnstone, 2009) suggest that auditors are more comfortable defending income decreasing errors than income increasing errors. As such, I predict that lower levels of auditor comfort will manifest as higher expected adjustments to the financial statements. This prediction provides a link between auditors' attitudes, feelings, judgments, and anticipated actions (Kadous et al., 2018; Nelson, 2009; Shaub & Lawrence, 1996); thus, I separately hypothesize auditors' expected adjustment to the financial statements. Formally stated:

H2. Under *extreme* uncertainty, auditors will expect a higher adjustment when management provides *less* evidential support versus *more* evidential support; but under *moderate* uncertainty, auditors will expect a lower adjustment when management provides *less* evidential support versus *more* evidential support.

3. Method

I test my predictions using a 2 × 2 between-subjects, experimental design with experienced auditors. The experimental method provides sufficient control over the context to distinguish between the effect of the level of uncertainty and extent of management's evidentiary support even though these factors may correlate in practice. The use of experienced auditors (1) helps alleviate concerns that auditors' training and experience would mitigate my predicted effects; (2) ensures that the participants have the necessary knowledge to recognize the risk of misstatement and appreciate the need to defend their estimates; and (3) ensures that they are familiar with auditing uncertain estimates.¹⁰

I examine auditor judgments in the early (planning and risk assessment) phase of an audit of an uncertain warranty estimate. I

⁸ In their book chapter, Kadous et al. (2018) provide an extensive discussion of how researchers can conceptualize the audit through the structure provided by the HSM.

⁹ While auditors' preference to avoid additional evidence that could potentially challenge their judgments appears unreasonable, there is accounting research that indicates it may be rational because prior research has shown that more evidence and documentation by the auditor can increase legal liability (Backof, 2015; Reffett, 2010).

¹⁰ The level of audit personnel appropriate for this study was chosen in consultation with the audit firm from which participants were recruited.

manipulate estimate uncertainty by varying the range of potential estimate outcomes (*extreme vs. moderate*), and I manipulate management's evidentiary support by varying the number of types of support gathered by management (*more vs. less*). Participants are introduced to the company, read a brief background and update on the current year audit, and are made aware of an industrywide issue that will affect the current year warranty accrual. Participants then receive more detailed industry information along with management's analysis and update to the warranty accrual, and respond to a series of questions that captures their level of comfort and other information.

3.1. Participants

Audit seniors from a U.S. Big Four firm ($n = 95$) completed the experimental task at a firm-sponsored national training session. Auditors at the rank of senior are particularly relevant for this study because they are experienced enough to evaluate the sufficiency of evidence and recognize the importance of defending their judgments, while also being junior enough to routinely defend their judgments.¹¹ Participants had mean (standard deviation) audit experience of 3.6 years (1.1 years)—ranging from 2 to 8 years—and 2.6 years of public company audit experience. Participants took an average of 27 min to complete the task.

I exclude from the primary analyses data from seven auditors who failed to complete all necessary portions of the experiment and one auditor who demonstrated inattentiveness to the experiment by responding with the same point on twenty consecutive scale questions.¹² After these exclusions, there were eighty-seven usable participant responses. Participants indicated they were familiar with the accounting for estimates (6.2 on an 11-point scale with 0 being not familiar and 10 being very familiar) and participated in discussions with management (6.8 on an 11-point scale with 0 being never and 10 being very often).¹³

3.2. Experimental task

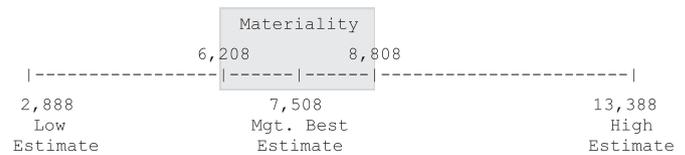
My experimental case involves a hypothetical company, Advanced Network Services (ANS) that sells and installs computer network equipment and provides warranty and servicing under fixed-rate contracts to its customers. In the prior year, the company began installing technologically advanced routers, and management recently discovered that many of the installations were faulty, causing higher-than-average warranty repair costs. Most companies in the industry had also begun installing the new routers and were having similar installation and warranty estimation issues. ANS gathered industry information to develop an initial range of costs and gathered internal evidence that further supported its estimate. In all cases, management estimated the same "most appropriate" amount based on the midpoint of the inputs initially identified across the industry (percent of incorrect installations and the cost to repair each installation).

¹¹ Auditors at other levels within the firm, such as partners, may be more concerned with defending their judgments to regulators such as the PCAOB or company management.

¹² To identify inattentive participants, I performed a response pattern test by identifying the longest string of consecutive responses by each participant. Results are not sensitive to the inclusion of this participant.

¹³ Demographic variables (e.g., work experience, public audit experience, familiarity with warranty accruals, and participation in discussions with management) did not vary significantly across conditions. Additionally, results for H1 and H2 are robust to controlling for these demographic variables.

Extreme Uncertainty (in thousands)



Moderate Uncertainty (in thousands)

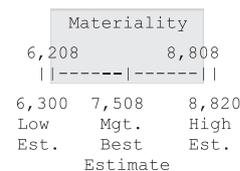


Fig. 1. Graphical Representation of Estimate Uncertainty Manipulation. *Extreme* Uncertainty (in thousands).

Notes: This figure provides graphical illustration of the *extreme* and *moderate* uncertainty manipulation, along with management's best estimate and the quantitative materiality. *Uncertainty* was manipulated by providing information about potential costs to resolve the warranty issue that reveals either *extreme* uncertainty (between \$2.9 million and \$13.4 million) or *moderate* uncertainty (between \$6.3 million and \$8.8 million). The potential costs to resolve the warranty issue were based on two inputs—the percent of incorrect installations and the estimated cost to repair each installation. In the *extreme* uncertainty conditions, the range of the percent of incorrect installations was 25%–85% and the range of cost to repair each incorrect installation was \$550 to \$750. In the *moderate* uncertainty conditions, the range of the percent of incorrect installations was 50%–60% and the range of cost to repair each incorrect installation was \$600 to \$700. In both conditions, management's best estimate is based on the midpoint of the two inputs (55% and \$650), resulting in an estimate of \$7,507,500, given the install base of 21,000 units. Quantitative materiality was \$1.3 million and was communicated to all participants in the background portion of the experimental materials.

3.3. Independent variables

I manipulated the extent of management support and level of estimate uncertainty between subjects. Management support was manipulated as either *more* or *less*. In the *more* support condition, management based its estimate on industry information, inquiry of installation technicians, review of installation records, and field inspections. In the *less* support condition, management based its estimate only on industry information and inquiry of installation technicians. I designed the task to provide a clean manipulation of management's evidentiary support for the estimate that would be perceived as reasonable by the auditor participants. To ensure materials were appropriate, I (1) discussed the manipulation and had the final instrument reviewed by practicing auditors, (2) used an estimate task where audit procedures are not dictated by standards or common practice, (3) pretested my experimental materials, and (4) provided industry benchmarks for evidential support within the case.

I manipulated estimate uncertainty as the industry's range of potential costs associated with repairing the faulty installations (*moderate or extreme*). As illustrated in Fig. 1, in the *moderate* condition, the range of potential costs is \$2.5 million (two-times materiality) and in the *extreme* condition it is \$10.5 million (eight-times materiality).¹⁴ The potential costs to resolve the warranty issue were based on the percent of incorrect installations and the estimated cost to repair each installation. In the *extreme* uncertainty conditions, the range of the percent of incorrect installations

¹⁴ I chose the width of the ranges for this paper to ensure that participants would perceive the adjustment as significant and a strong enough manipulation to give the theory the best chance of manifesting. The range as a multiple of materiality (two- and eight-times materiality) is also consistent with the mean aggregate audit adjustments reported by Kinney and Martin (1994).

was 25%–85%, and the range of costs to repair each incorrect installation was \$550 to \$750. In the *moderate* uncertainty conditions, the range of the percent of incorrect installations was 50%–60%, and the range of costs to repair each incorrect installation was \$600 to \$700. In both conditions, management's best estimate is based on the midpoint of the two inputs (55% and \$650), resulting in an estimate of \$7,507,500 given the install base of 21,000 units.¹⁵

3.4. Dependent variables

After reviewing the company and estimate information, participants responded to a set of questions about the warranty issue and the audit. To capture the auditors' level of comfort with management's estimate, I asked participants "How comfortable are you with management's adjustment to the warranty accrual?" (–5 = Very Uncomfortable, 0 = As Comfortable As Not, 5 = Very Comfortable). To capture participants' expected financial statement adjustment, I asked participants the amount they "believe will most likely be recorded in the financial statements." Lastly, I asked participants a series of questions regarding the context, manipulations, and demographics.

4. Results

4.1. Manipulation and context checks

The experimental context was designed such that participants would generally be less comfortable if they felt management's warranty accrual was too low (i.e., conservatism). The predictions rely on participants feeling less comfortable with warranty estimates they perceive as low, and my predicted relationships may not hold (or be reversed) if participants believed that management's estimate was too high (Barron et al., 2001; Hirst, 1994; Kinney & Martin, 1994). Given the importance of participants not perceiving management's estimate as too high (i.e., too conservative), I excluded three participants who entered amounts far below management's estimate (i.e., participants who think management is understating income).¹⁶ The elimination of these participants resulted in a final sample size of 84.

To check the manipulations, I asked participants to identify the range of potential costs presented in the industry information, and 93 percent answered consistent with their condition. I also asked participants which pieces of information were accumulated and analyzed by management, and 80 percent answered consistent with their condition. Eliminating participants who failed at least one of the manipulation checks does not significantly affect the results.¹⁷

4.2. Hypotheses tests

H1 predicts that the effect of uncertainty on auditors' comfort will be moderated by management's evidential support.

¹⁵ Increasing the range of potential costs also increases the chance that the final actual cost is materially different than the estimate. While this is inherent in any uncertainty manipulation, I measure the auditors' perception of the materiality of the adjustment and do not find any significant difference between conditions (see Section 4).

¹⁶ The results including these observations are not meaningfully different for comfort (H1) (interaction: $F(1,83) = 5.65$; $p_{\text{one-tailed}} < 0.01$). Results for expected adjustment (H2) are weaker, but still significant (interaction: $F(1,83) = 2.15$; $p_{\text{one-tailed}} = 0.07$); consistent with auditors lower likelihood to propose income-decreasing adjustments.

¹⁷ In addition to these direct questions, I asked participants about the amount of available evidence and the range of outcomes. Results of these questions further support the effectiveness of the manipulations.

Specifically, H1 predicts an interaction such that when outcome uncertainty is *extreme*, auditors are more comfortable with an estimate with *more* evidential support; however, when uncertainty is *moderate*, auditors are more comfortable with an estimate with *less* evidential support. Table 1, Panel A reports descriptive statistics for participants' comfort with management's warranty accrual adjustment (see Fig. 2 for a graphical representation). I present the ANOVA and planned simple main-effects tests for auditor comfort in Table 1, Panels B and C.

ANOVA results (Table 1, Panel B) provide support for H1 with a significant interaction of *Uncertainty* and *Support* ($F(1,80) = 4.90$; $p_{\text{one-tailed}} = 0.01$). I present contrast tests in Table 1, Panel C, and these provide additional insight into the predicted interaction. When there was *extreme* uncertainty, participants were more comfortable with the estimate when there was *more* evidential support (mean = –0.23) than when there was *less* evidential support (mean = –1.38) ($F(1,80) = 3.12$; $p_{\text{one-tailed}} = 0.04$). More notably—and in support of my theory—when uncertainty was *moderate*, participants were more comfortable with the estimate when there was *less* evidential support (mean = 0.82) than *more* evidential support (mean = –0.02) ($F(1,80) = 1.84$; $p_{\text{one-tailed}} = 0.09$). Overall, these results support H1.

I present results that provide support for my prediction regarding auditors' expected adjustment (H2) in Table 2. ANOVA results (Panel B) provide empirical support for H2, with a significant interaction of *Uncertainty* and *Support* ($F(1,80) = 6.45$; $p_{\text{one-tailed}} < 0.01$). Contrast tests in Panel C show results similar to those for auditors' comfort. In the *extreme* uncertainty condition, participants' estimates were significantly higher when there was *less* evidential support (mean = 1596) than when there was *more* evidential support (mean = 772) ($F(1,80) = 4.96$; $p_{\text{one-tailed}} = 0.01$). Additionally, participants' estimates in the *moderate* uncertainty condition were significantly higher when there was *more* evidential support (mean = 860) than when there was *less* evidential support (mean = 387) ($F(1,80) = 1.81$; $p_{\text{one-tailed}} = 0.09$). This analysis supports H2 and provides further evidence in support of my theory.¹⁸

4.3. Process analysis

My predictions are based on the notion that *more* evidential support can make auditors less confident in their ability to defend his or her judgments. I examine this notion by first showing that participants perceive that *more* evidential support strengthens the defensibility of their estimate when uncertainty is *extreme* but weakens it when uncertainty is *moderate*. I then perform a moderated mediation analysis and to show that defensibility mediates the relationship between evidential support and auditor comfort when estimate uncertainty is moderate but not when it is extreme.

I measure participants' perception of the defensibility of their estimate by asking them a three-part question about the difficulty defending their estimate to (1) the partner, (2) management, and (3) an audit quality reviewer such as the PCAOB.¹⁹ I combined participants' responses using a principal component analysis (PCA) and took the single component with an eigenvalue greater than 1 as my measure of defensibility. This single component explained

¹⁸ I also find support for my predictions using a MANOVA with auditor comfort and expected adjustment as dependent variables.

¹⁹ The specific question was: "How difficult would it be for you to demonstrate to the following parties that the estimate you provided in question #1 on the previous page should be recorded in the financial statements?" (1) "Partner on the engagement," (2) "ANS management," (3) "Audit quality reviewer (i.e., PCAOB)." The questions were on a scale from 0 to 10, with 0 = Not Very Difficult, 5 = Average Difficulty, and 10 = Very Difficult.

Table 1
Results for H1: Auditors' comfort with Management's estimate.

Panel A: Descriptive statistics for auditor comfort with management's estimate.					
			Support		
			Less	More	Overall
Uncertainty	Extreme	Mean	-1.38	-0.23	-0.78
		Standard Deviation	1.98	2.10	2.10
		Sample size	19	21	40
	Moderate	Mean	0.82	-0.02	0.40
		Standard Deviation	1.92	2.20	2.09
		Sample size	22	22	44
Overall	Mean	-0.20	-0.12	-0.16	
	Standard Deviation	2.22	2.13	2.16	
	Sample size	41	43	84	

Panel B: ANOVA results					
Factor	df	MS	F	p-value	
Support	1	0.50	0.12	0.37	
Uncertainty	1	30.44	7.20	<0.01	
Support*Uncertainty	1	20.74	4.90	0.01	
Residual	80	4.22			

Panel C: Contrast test results					
Contrast	df	F	p-value		
Support, Uncertainty = Extreme	1	3.12	0.04		
Support, Uncertainty = Moderate	1	1.84	0.09		

Notes.

This table presents descriptive statistics, basic ANOVA, and follow-up simple effect test results for auditor comfort. All *p-values* are one-tailed. Auditor comfort is participants' response to the question, "How comfortable are you with management's adjustment to the warranty accrual?" on a scale from -5 being very uncomfortable to +5 being very comfortable. Support is manipulated by varying the evidential support management provides for their estimate. In the more condition, the estimate is based on industry information, inquiry of technicians, review of records, and site inspections, while in the less condition the estimate is based on only industry information and inquiry. Uncertainty is manipulated by providing information about potential costs to resolve the warranty issue that revealed either moderate uncertainty (between \$6.3 million and \$8.8 million) or extreme uncertainty (between \$2.9 million and \$13.4 million).

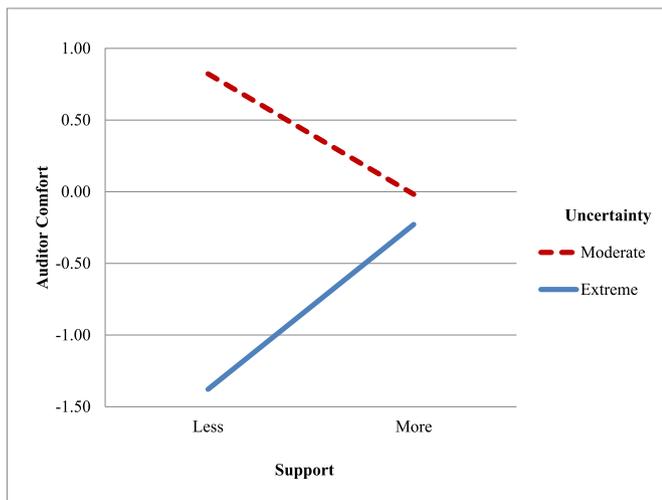


Fig. 2. Results for auditor comfort with Management's estimate. Notes: Auditor comfort is participants response to the question, "How comfortable are you with managements adjustment to the warranty accrual?" on a scale from - 5 being very uncomfortable to +5 being very comfortable. Support is manipulated by varying the evidential support management provides for their estimate. In the more condition the estimate is based on industry information, inquiry of technicians, review of records, and site inspections, while in the less condition, the estimate is based on only industry information and inquiry. Uncertainty is manipulated by providing information about potential costs to resolve the warranty issue that revealed either moderate uncertainty (between \$6.3 million and \$8.8 million) or extreme uncertainty (between \$2.9 million and \$13.4 million).

65 percent of the variation, while the next-largest component explained only 24 percent of the variation.²⁰

I report summary statistics and results for auditors' perceived defensibility of their estimate in Table 3. Panel A provides descriptive statistics for the three defensibility questions and the PCA.²¹ Notably, participant responses to the three questions behave similarly. When uncertainty was extreme, participants perceived that defending their estimate would be more difficult when there was less evidential support; but when uncertainty was moderate, participants perceived that defending their estimate would be more difficult when there was more evidential support. This interactive effect is statistically significant for the principal component as I show in Panel B with a significant interaction of Uncertainty and Support ($F(1,77) = 4.75; p_{two-tailed} = 0.03$).²² Contrast tests in Panel C provide further support by showing that the simple effect of evidential support is directionally consistent in both conditions and significant in the moderate uncertainty condition. This analysis provides initial support for my predicted theory.

I also perform a moderated mediation analysis by testing the indirect effect using a bootstrapped structural equation process

²⁰ I use the primary component from a PCA because I am trying to capture auditors' overall perception of the defensibility of the estimate. Results are similar using MANOVA or a sum of the three defensibility measures.

²¹ Two participants who completed my main measures did not complete the defensibility measures, reducing the sample size for this test to 82.

²² In my test of the defensibility of the auditors' estimates, I control for the auditors' expected adjustment because larger adjustments are going to be more difficult to defend in-and-of themselves; results reported in Table 3 are robust to not controlling for the expected adjustment.

Table 2
Results for H2: Auditors' expected adjustment.

Panel A: Descriptive statistics for auditors' expected adjustment to management's estimate					
			Support		
			Less	More	Overall
Uncertainty	Extreme	Mean	1596	772	1163
		Standard Deviation	1398	1264	1376
		Sample size	19	21	40
	Moderate	Mean	387	860	623
		Standard Deviation	749	1202	1018
		Sample size	22	22	44
	Overall	Mean	947	817	880
		Standard Deviation	1244	1218	1225
		Sample size	41	43	84
Panel B: ANOVA results					
Factor	df	MS	F	p-value	
Support	1	640,725	0.47	0.25	
Uncertainty	1	6,572,919	4.81	0.02	
Support*Uncertainty	1	8,803,963	6.45	<0.01	
Residual	80	1,365,424			
Panel C: Contrast test results					
Contrast	df	F	p-value		
Support, Uncertainty = Extreme	1	4.96	0.01		
Support, Uncertainty = Moderate	1	1.81	0.09		

Notes.

This table presents descriptive statistics, basic ANOVA, and follow-up simple effect test results for auditors' expected adjustments. All *p*-values are one-tailed.

Expected Adjustment, is participants' response to the following question (in thousands): "What adjustment to the warranty accrual do you believe will most likely be recorded in the financial statements?" Responses were adjusted for management's final estimate of \$7,507,500 and thus indicate the expected audit adjustment to management's final estimate.

Support is manipulated by varying the evidential support management provides for their estimate. In the *more* condition, the estimate is based on industry information, inquiry of technicians, review of records, and site inspections, while in the *less* condition the estimate is based on only industry information and inquiry.

Uncertainty is manipulated by providing information about potential costs to resolve the warranty issue that revealed either *moderate* uncertainty (between \$6.3 million and \$8.8 million) or *extreme* uncertainty (between \$2.9 million and \$13.4 million).

model and deriving the bias-corrected bootstrapped confidence interval (Hayes, 2013; Hayes, 2012; Preacher & Hayes, 2008; Shrout & Bolger, 2002; Sobel, 1982). I examine moderated mediation using model 8 from Hayes (2013) with 10,000 bootstrap samples. Following my predictions, evidential support is the predictor variable, auditor's perceived defensibility is the mediator, auditor comfort is the dependent variable, and estimate uncertainty is the moderator (of the path between support and both comfort and defensibility). The analysis provides 95 percent bias-corrected confidence interval (CI) values. The results of the analysis reveal that the conditional indirect effect of evidence on auditor comfort through defensibility is significant when the uncertainty is moderate (-0.335 ; CI $(-0.947, -0.026)$), but not significant when uncertainty is extreme (0.244 ; CI $(-0.116, 0.889)$). The index of moderated mediation (difference between conditional indirect effects) (Hayes, 2015) supports moderated mediation with an index of 0.579 (CI = $0.0023, 1.408$). This analysis further supports my predictions.

5. Supplemental analysis

5.1. Auditor comfort and perceived assurance

I use comfort in my experiment to capture the multidimensional notion of assurance provided by auditors, following the terminology used by auditors in the field (Carrington & Catasús, 2007; Pentland, 1993). To further validate this notion, I examined auditors' perception of the amount of assurance provided to users of the

financial statements.²³ In support of comfort capturing the level of assurance provided, I find a significant association between auditor comfort and assurance ($p_{two-tailed} = 0.04$). I also find similar results as reported in Table 1, Panel B if I use assurance as the dependent variable instead of comfort (interaction: $p_{one-tailed} = 0.09$).²⁴ Overall, these results provide empirical support for my construct of auditor comfort.

5.2. Auditor reasonableness assessment of management's estimate

In addition to my primary dependent measure of auditors' comfort, I also asked auditors to assess the reasonableness of management's estimate. While auditors' assessment of reasonableness and comfort are related, reasonableness does not capture as much *affective* emotion (Pentland, 1993).

Examining auditors' reasonableness assessments reveals four notable insights. First, in my context reasonableness and comfort are highly correlated (0.66), implying that a substantial portion of auditor comfort is explained by their reasonableness assessment. Second, my manipulations of estimate uncertainty and evidential support have similar effects on auditor comfort and auditor

²³ The specific question was, "What level of assurance are you able to provide over the warranty accrual to users of the financial statements?" (0 = Low Assurance, 5 = Reasonable Assurance, and 10 = Almost Absolute Assurance).

²⁴ In the supplemental section, I report one-tailed statistics for tests that have a directional prediction similar to my hypotheses and two-tailed statistics for tests with no clear directional prediction.

Table 3
Auditors' difficulty defending their estimates.

Panel A: Summary Statistics for Components and PCA of Difficulty to Defend					
			Support		Overall
			Less	More	
Uncertainty	<i>Moderate</i>	N	21	22	43
		Partner			
		Mean	4.02	4.62	4.33
		Standard Deviation	2.13	2.17	2.15
		Management			
		Mean	5.31	6.56	5.95
		Standard Deviation	3.33	2.51	2.97
		Reviewer			
		Mean	4.37	5.60	5.00
	Standard Deviation	2.44	2.32	2.43	
	PCA				
	Mean	-0.78	-0.10	-0.44	
	Standard Deviation	1.39	1.10	1.28	
	<i>Extreme</i>	N	19	20	39
		Partner			
		Mean	5.84	5.57	5.70
		Standard Deviation	2.35	2.37	2.33
		Management			
Mean		6.91	6.61	6.76	
Standard Deviation		2.20	2.97	2.59	
Reviewer					
Mean		7.26	6.06	6.64	
Standard Deviation	2.15	2.15	2.21		
PCA					
Mean	0.70	0.27	0.48		
Standard Deviation	1.38	1.37	1.37		
Panel B: ANCOVA results					
Factor	df	MS	F	p-value	
Support	1	0.217	0.13	0.72	
Uncertainty	1	20.098	11.76	<0.01	
Support*Uncertainty	1	8.110	4.75	0.03	
Expected Adjustment	1	2.759	1.61	0.20	
Residual	77	1.709			
Panel C: Contrast test results					
Contrast	df	F	p-value		
Support, Uncertainty = <i>Extreme</i>	1	1.63	0.20		
Support, Uncertainty = <i>Moderate</i>	1	3.52	0.06		

Notes.

This table presents descriptive statistics, basic ANCOVA, and follow-up simple effect test results for auditors' perception of the difficulty of defending their expected adjustment. All *p-values* are two-tailed.

Defensibility PCA, is the principle component from participants' response to the question, "How difficult would it be for you to demonstrate to the following parties that the estimate you provided in question #1 on the previous page should be recorded in the financial statements?" (1) "Partner on the engagement," (2) "ANS management," (3) "Audit quality reviewer (i.e., PCAOB)." Questions were on a scale from 0 to 10, with 0 = Not Very Difficult, 5 = Average Difficulty, and 10 = Very Difficult.

Support is manipulated by varying the evidential support management provides for their estimate. In the *more* condition, the estimate is based on industry information, inquiry of technicians, review of records, and site inspections, while in the *less* condition, the estimate is based on only industry information and inquiry.

Uncertainty is manipulated by providing information about potential costs to resolve the warranty issue that revealed either *moderate* uncertainty (between \$6.3 million and \$8.8 million) or *extreme* uncertainty (between \$2.9 million and \$13.4 million).

reasonableness assessments (i.e., my main results hold using comfort or reasonableness). Third, I find evidence that auditors' reasonableness assessments are less associated with their perception of defensibility than is their level of comfort. For instance, when run in the same model, auditors' comfort is significantly associated with the defensibility PCA ($p_{one-tailed} < 0.01$), while reasonableness is not ($p_{one-tailed} = 0.22$). Lastly, I find that auditors' comfort is a stronger predictor of the level of assurance they believe they are providing. In a model with both comfort and reasonableness as predictors of assurance, I find that comfort has a significant association ($p_{two-tailed} = 0.09$), while reasonableness does not ($p_{two-tailed} = 0.83$). These findings support the notion of auditor comfort as the mechanism by which auditors build confidence and transfer trust to the market, which expands the concept of assurance beyond that of a purely cognitive assessment of reasonableness and

reveals opportunities for future research to investigate other instances when reasonableness and comfort may diverge.

5.3. Additional analysis

My main prediction is based on auditors in my experiment (1) perceiving the risk of misstatement as lower when uncertainty is *moderate*, and (2) being similarly confident in their assessment of the risk of material misstatement in the *moderate* uncertainty condition regardless of whether *more* or *less* support is available.²⁵ I

²⁵ If participants' confidence in the *Moderate* uncertainty condition were higher with *more* evidential support, it would indicate that participants in the *more* evidential support condition were still accuracy-motivated and not defense-motivated.

test these assumptions and find that participants did perceive the risk of material misstatement lower in the *moderate* uncertainty condition than the *extreme* uncertainty condition. Regarding confidence, I find a significant interaction between uncertainty and support ($p_{\text{one-tailed}} = 0.04$).²⁶ Notably, I find that when uncertainty was *moderate*, participants were not significantly more confident with *more* support compared to *less* ($p_{\text{one-tailed}} = 0.33$); however, when uncertainty was *extreme*, participants were significantly more confident with *more* support ($p < 0.01$). This finding helps demonstrate that in my context *more* support was not necessary to increase participant confidence in the *moderate* uncertainty condition, but it was in the *extreme* condition.

5.4. Robustness tests

I asked participants a series of questions related to the case in order to help address alternative explanations. To ensure that participants did not conflate the materiality of the estimate with the manipulated uncertainty of the estimate, I asked participants how likely “is the warranty accrual adjustment decision material to ANS’s financial statements?” (0 = Not Very Likely, 5 = As Likely As Not, 10 = Very Likely; mean = 8.2). Participants believed the adjustment was material (all condition means > 7.88) and there was no significant main or interaction effects (i.e., all $p_{\text{two-tailed}} \geq 0.34$). Further, I tested the effect of the interaction of Support and Uncertainty on auditors’ comfort (H1), controlling for their assessment of the materiality of the estimate and find similar results to those discussed above ($F = 4.79$, $p_{\text{one-tailed}} = 0.02$). Given these results, it is unlikely that participants conflated materiality of the estimate with the manipulated uncertainty of the estimate.

I predict that defensibility mediates the impact of evidential support on auditor’s comfort; however, auditor’s avoidance of additional evidence could be due to the additional work inherent in evaluating more evidence. I test this alternative process by examining participants’ assessment of the extent of additional testwork they anticipate. Using the same moderated mediation test design as performed on defensibility, I find no support for participants’ perceptions of additional testwork mediating the relationship between support and comfort when uncertainty is either high or low.

In my experiment, I manipulate the level of uncertainty in the environment and draw conclusions regarding how auditors respond to that uncertainty. It is important in my study that auditors’ perception of the uncertainty and support not change based on inferences regarding management (e.g., management competence or objectivity). I designed the experiment to mitigate this concern and also measured auditors’ perception of management’s objectivity and competence in follow-up questions. In the experiment, I minimized the possibility that auditors made inappropriate inferences regarding management by (1) providing the initial uncertainty information through industry channels, not through management, and (2) having management make no change to the industry range and choose the midpoint of the inputs for their final point estimate. In follow-up questions, I asked participants their perception of management’s objectivity and competence and find no significant main effects or interactive effects of Support or Uncertainty on either of these two measures (i.e., all $p_{\text{two-tailed}} \geq 0.17$). Further, controlling for participants’ assessments of management’s objectivity and competence in my main test (H1) does not change the inference ($F = 2.42$, $p_{\text{one-tailed}} = 0.06$). Given these results, it seems unlikely that participants’ perception of management drove my results.

²⁶ I measure auditors’ confidence by asking participants “How confident are you of your assessment of a material misstatement of the warranty accrual?” (0 = Not Very Confident, 5 = Reasonably Confident, 10 = Very Confident).

6. Conclusion

In this paper, I predict that in some instances auditors will be less comfortable with estimates that are supported by more evidence because of their desire and need to defend their judgments. Using an experiment with experienced auditors, I show that when estimate uncertainty is *extreme*, auditors are more comfortable with *more*-supported estimates; however, when estimate uncertainty is *moderate*, auditors are more comfortable with *less*-supported estimates. In support of my theory, I find that auditor perception of the defensibility of the estimate mediates the predicted relationship. My theory is based on the HSM of information processing, which predicts that when individuals are defense-motivated they selectively process information through strategies such as inattention or selective exposure (Chaiken et al., 1996).

These findings have several important implications for audit firms and auditor reporting. First, my findings suggest that auditors’ concerns about defensibility can threaten audit effectiveness by leading auditors to discount or potentially avoid additional evidential support. Second, my findings highlight how audit quality can be impacted by auditors’ concerns that reviewers will second-guess their judgments, which complements recent research on the benefits of implementing an auditor judgment rule (Kang et al., 2015; Peecher et al., 2013). Lastly, my findings regarding auditor comfort provide further evidence of the role auditors’ affective feelings play in reaching judgments and exercising professional skepticism (Nolder & Kadous, 2018).

The findings in this paper are subject to several limitations that present opportunities for future research. I test my predictions using a single interaction between the auditor and management. Auditors’ interactions with management could strengthen the results if managers are able to exploit the auditors’ focus on defending their own judgments (e.g., strategically withholding evidentiary support to increase the auditors’ comfort). Alternatively, the impact of defensibility on auditors’ judgments may vary after repeated interactions with those to which they must defend themselves. I used experienced auditors in a familiar context to provide the broadest generalizability; however, future research could examine auditor judgments in a repeated interaction context and test the extent to which auditor judgments may change over time. Also, I recruited participants for this study from a single large public accounting firm and the results may not be generalizable outside of this firm. Lastly, I examine audit judgments at the planning stage to capture auditors’ initial impressions that can influence all future aspects of the audit. Future research could examine the extent to which these judgments impact later aspects of the audit or investigate methods to mitigate the effects of auditors’ defense mindset.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgement

I would like to thank my dissertation committee Mark Peecher (chair), Brad Pomeroy, Mike Regenwetter, and Ken Trotman for their encouragement and helpful comments. I also thank Tim Bauer, Sarah Bonner, Jasmijn Bol, Sean Dennis, Dan Dhaliwal, Brooke Elliott, Lynn Hannan, Jessen Hobson, Kevin Jackson, Jennifer Joe, Brian Mayhew, Kenneth Merchant, Paul Michas, Christine Nolder, Padmakumar Sivadasan, Jeffrey Schatzberg, Charles Swenson, and symposium participants at Georgia State University, Tulane University, University of Arizona, University of Arkansas,

University of Illinois, University of Southern California, and University of Wisconsin for their helpful comments.

References

- Backof, A. G. (2015). The impact of audit evidence documentation on jurors' negligence verdicts and damage awards. *Dx.Doi.org*, 90(6), 2177–2204.
- Barron, O., Pratt, J. H., & Stice, J. D. (2001). Misstatement direction, litigation risk, and planned audit investment. *Journal of Accounting Research*, 39(3), 449–462.
- Bazerman, M. H. (2001). Judgment under uncertainty. In *A normative background to risk* (pp. 41–58). New Jersey: Wiley.
- Bell, T. B., & Griffin, J. B. (2012). Commentary on auditing high-uncertainty fair value estimates. *Auditing: A Journal of Practice & Theory*, 31(1), 147–155.
- Bell, T. B., Peecher, M., & Solomon, I. (2005). The 21st century public company Audit. *Conceptual Elements of KPMG's Global Audit Methodology*, 1–96.
- Biggs, S. F., Mock, T. J., & Watkins, P. R. (1988). Auditor's use of analytical review in audit program design. *The Accounting Review*, 63(1), 148–161.
- Budescu, D. V., Peecher, M., & Solomon, I. (2012). The joint influence of the extent and nature of audit evidence, materiality thresholds, and misstatement type on achieved audit risk. *Auditing: A Journal of Practice & Theory*, 31(2), 19–41.
- Cannon, N. H., & Bedard, J. C. (2017). Auditing challenging fair value measurements: Evidence from the field. *The Accounting Review*, 92(4), 81–114.
- Carrington, T., & Catasús, B. (2007). Auditing stories about discomfort: Becoming comfortable with comfort theory. *European Accounting Review*, 16(1), 35–58.
- Chaiken, S., Giner-Sorolla, R., & Chen, S. (1996). Beyond accuracy. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action Linking cognition and motivation to behavior* (pp. 553–578) (New York, NY, US).
- Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing. In J. S. Uleman, & J. A. Bargh (Eds.), *Unintended thought* (pp. 212–252). New York, NY: The Guilford Press.
- Chen, S., Duckworth, K., & Chaiken, S. (1999). Motivated heuristic and systematic processing. *Psychological Inquiry*, 10(1), 44–49.
- Christensen, B. E., Glover, S. M., & Wood, D. A. (2012). Extreme estimation uncertainty in fair value estimates: Implications for audit assurance. *Auditing: A Journal of Practice & Theory*, 31(1), 127–146.
- Dennis, S. A., Griffin, J. B., & Johnstone, K. M. (2018). *The value relevance of managers' and auditors' disclosures about material measurement uncertainty*. Working Paper, University of Kentucky.
- DeZoort, F. T., Hermanson, D. R., & Houston, R. W. (2003). Audit committee support for auditors. *The effects of materiality justification and accounting precision*, 22(2), 175–199.
- Du, N., & Budescu, D. V. (2005). The effects of imprecise probabilities and outcomes in evaluating investment options. *Management Science*, 51(12), 1791–1803.
- Elder, R. J., & Allen, R. D. (2003). A longitudinal field investigation of auditor risk assessments and sample size decisions. *The Accounting Review*, 78(4), 983–1002.
- Ernst & Young. (2006). *Financial reporting developments* (Vol. 133). FASB Statement.
- Glover, S. M., Taylor, M. H., & Wu, Y.-J. (2017). Current practices and challenges in auditing fair value measurements and complex estimates: Implications for auditing standards and the academy. *Auditing: A Journal of Practice and Theory*, 36(1), 63–84.
- Griffin, J. B. (2014). The effects of uncertainty and disclosure on auditors' fair value materiality decisions. *Journal of Accounting Research*, 52(5), 1165–1193.
- Hayes, A. F. (2012). Beyond baron and kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408–420.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, 50(1), 1–22.
- Hirst, D. E. (1994). Auditor sensitivity to earnings management. *Contemporary Accounting Research*, 11(1), 405–422.
- Kadous, K., & Mercer, M. (2014). Are juries more likely to second-guess auditors under imprecise accounting standards? *Auditing: A Journal of Practice and Theory*, 35(1), 101–117.
- Kadous, K., Nolder, C. J., & Peecher, M. (2018). The role of the attitudes in auditing research and directions for future research. In D. Albarracín, & B. T. Johnson (Eds.) (2nd ed.), *Vol. 2. Handbook of attitudes*. New York: Routledge.
- Kang, Y. J., Trotman, A. J., & Trotman, K. T. (2015). The effect of an Audit Judgment Rule on audit committee members' professional skepticism: The case of accounting estimates. *Accounting, Organizations and Society*, 46, 59–76.
- Kelton, A. S., & Montague, N. R. (2018). The unintended consequences of uncertainty disclosures made by auditors and managers on nonprofessional investor judgments. *Accounting, Organizations and Society*, 65, 44–55.
- Keune, M. B., & Johnstone, K. M. (2009). Staff accounting bulletin No. 108 disclosures: Descriptive evidence from the revelation of accounting misstatements. *Accounting Horizons*, 23(1), 19.
- Kinney, W. R., Jr., & Martin, R. D. (1994). Does auditing reduce bias in financial reporting? A review of audit-related adjustment studies. *Auditing: A Journal of Practice & Theory*, 13(1), 149–156.
- KPMG LLP. (2011). *Elevating Professional Judgment in Auditing*, 1–61.
- Kuhn, K. M., & Budescu, D. V. (1996). The relative importance of probabilities, outcomes, and vagueness in hazard risk decisions. *Organizational Behavior and Human Decision Processes*, 68(3), 301–317.
- Lambert, T. A., & Agoglia, C. P. (2011). Closing the loop: Review process factors affecting audit staff follow-through. *Journal of Accounting Research*, 49(5), 1275–1306.
- Martin, R. D., Rich, J. S., & Wilks, T. J. (2006). Auditing fair value measurements: A synthesis of relevant research. *Accounting Horizons*, 20(3), 287–303.
- Mock, T. J., & Wright, A. M. (1993). An exploratory study of auditors' evidential planning judgments. *Auditing: A Journal of Practice & Theory*, 12(2), 39–61.
- Mock, T. J., & Wright, A. M. (1999). Are audit program plans risk-adjusted? *Auditing: A Journal of Practice & Theory*, 18(1), 55–74.
- Modesti, C. (2018). *Presentation by PCAOB division of enforcement and investigations* (Washington DC).
- Nelson, M. W. (2009). A model and literature review of professional skepticism in auditing. *Auditing: A Journal of Practice & Theory*, 28(2), 1–34.
- Nelson, M. W., Smith, S. D., & Palmrose, Z.-V. (2005). The effect of quantitative materiality approach on auditors' adjustment decisions. *The Accounting Review*, 80(3), 897–920.
- Nolder, C. J., & Kadous, K. (2018). *Grounding the professional skepticism construct in mindset and attitude theory: A way forward*. Accounting, Organizations and Society.
- PCAOB. (2010a). *Auditing standard No. 13: The auditor's response to the risks of material misstatement*. PCAOB release No. 2010-004.
- PCAOB. (2010b). *ACAP committee's recommendation relating to the auditor's reporting model*. Washington DC: Standing Advisory Group Meeting.
- Peecher, M. (1996). The influence of auditors' justification processes on their decisions: A cognitive model and experimental evidence. *Journal of Accounting Research*, 34(1), 125–140.
- Peecher, M., Solomon, I., & Trotman, K. T. (2013). An accountability framework for financial statement auditors and related research questions. *Accounting, Organizations and Society*, 38(8), 596–620.
- Pentland, B. (1993). Getting comfortable with the numbers: Auditing and the micro-production of macro-order. *Accounting, Organizations and Society*, 18(7–8), 605–620.
- Pomeroy, B. (2013). Audit committee member investigation of significant accounting decisions. *Auditing: A Journal of Practice & Theory*, 29(1), 173–205.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891.
- Public Company Accounting Oversight Board (PCAOB). (2003). *AU section 342, auditing accounting estimates*.
- PwC. (2012). *PCAOB proposed auditor reporting model changes*. Point of view may.
- Reffett, A. B. (2010). Can identifying and investigating fraud risks increase auditors' liability? *The Accounting Review*, 85(6), 2145–2167.
- Rich, J. S., Solomon, I., & Trotman, K. T. (1997). The audit review process: A characterization from the persuasion perspective. *Accounting, Organizations and Society*, 22(5), 481–505.
- Shaub, M. K., & Lawrence, J. E. (1996). Ethics, experience and professional skepticism: A situational analysis. *Behavioral Research in Accounting*, 8, 1–35.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445.
- Smith, J. F., & Kida, T. (1991). Heuristics and biases: Expertise and task realism in auditing. *Psychological Bulletin*, 109(3), 472–489.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology*, 13, 290–312.
- Taylor, M. H. (2000). The effects of industry specialization on auditors' inherent risk assessments and confidence judgements. *Contemporary Accounting Research*, 17(4), 693–712.
- Waller, W. S., & Felix, W. L., Jr. (1984). Cognition and the auditor's opinion formulation process: A schematic model of interactions between memory and current audit evidence. In S. Moriarty, & E. J. Joyce (Eds.), *Decision making and accounting: Current research* (pp. 27–48). Norman, OK: University of Oklahoma.
- Wright, A. M., & Wright, S. (1997). An examination of factors affecting the decision to waive audit adjustments. *Journal of Accounting, Auditing and Finance*, 12(1), 15–36.
- Zimelman, M. F., & Waller, W. S. (1999). An experimental investigation of auditor-auditee interaction under ambiguity. *Journal of Accounting Research*, 37, 135–155.