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The unintended consequences of uncertainty disclosures made by auditors and managers on nonprofessional investor judgments

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ABSTRACT

We examine how recent proposals requiring augmented auditor and management disclosures highlighting estimate uncertainty influence investors' judgments and decisions. Specifically, we investigate the effects of auditor emphasis of matter (EOM) paragraphs, both independently and in combination with management disclosures of estimate ranges, on investors' likelihoods to invest. Using an experiment with nonprofessional investor participants, we find that the EOM has the unintended consequence of increasing investors' perceptions of management credibility, leading to higher likelihood of investment. Furthermore, despite the ability of ranges to highlight uncertainty and downside risk, we find that management's disclosure of an estimate range does not impact the positive effect of the EOM on investors' propensities to invest, unless management provides a wide range. In this circumstance, we find that a wide range mitigates the positive influence of the EOM on investment decisions. Our results have important implications for regulators, preparers, and users of financial statements as we find that augmented auditor and management reporting may have unintended consequences on investor perceptions of management credibility and resultant investment decisions.

1. Introduction

A decade of egregious corporate malfeasance, punctuated by the credit crisis of 2007–2008, has highlighted serious concerns in current financial reporting and auditing practices. The public's diminished trust – and resultant demands for transparency – in financial reporting has led standard setters to revisit auditors' and managers' roles in financial reporting. Despite changes in financial reporting resulting from the Sarbanes-Oxley Act of 2002, concerns still exist that investors do not appropriately identify and account for the uncertainty inherent in financial statement estimates when making investment decisions (SEC, 2011; 2006). In light of these concerns, regulators (e.g., FASB, 2014) and academics (e.g., Bell & Griffin, 2012; Bratten, Gaynor, McDaniel, Montague, & Sierra, 2013) have made calls for research investigating ways to enhance the salience of uncertainty inherent in financial reporting.

To address these issues, regulators recommend two changes to current financial reporting practices. First, on the audit side, the Public Company Accounting Oversight Board (PCAOB) and its international counterpart, the International Auditing and Assurance Standards Board (IAASB), suggest that augmented auditor reporting such as emphasis of matter paragraphs in the auditor's report (hereafter, "EOM") will draw attention to and thereby increase the salience of management's uncertainty disclosures (PCAOB, 2016; 2013; IAASB, 2013).[1] Second, on the entity side, the Financial Accounting Standards Board (FASB) submits that providing investors a range of possible outcomes for estimates will highlight the uncertainty inherent in determining financial statement estimates (FASB, 2014). We propose, however, that these effects are not as straightforward as regulators suggest, particularly when they are implemented jointly. Thus, we examine the effects of auditor EOMs, both independently and in combination with management disclosures of estimate ranges, on investor judgments and decisions.

Prior research demonstrates that, consistent with regulators' expectations, EOMs are effective mechanisms for directing investors'

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[1] Emphasis of matter paragraphs are not currently required under existing PCAOB standards but may be added at the auditor's discretion to emphasize a matter regarding the financial statements (PCAOB 2011).

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attentions to specific disclosures (Sirois, Bédard, & Bera, 2017) and that they provide information to investors about financial statement quality (Czerney, Schmidt, & Thompson, 2014). Thus, one might logically expect that if an EOM directs investors' attentions to an entity-provided footnote highlighting estimate uncertainty, given investors' aversions to losses (Tversky & Kahneman, 1991), this would decrease investors' propensities to invest. However, there is evidence to suggest that investors may not respond to EOMs in this manner.

Psychology research shows that when processing information from a variety of sources, individuals' judgments are guided by credibility cues wherein they place greater importance upon information from sources deemed more credible and will often discount information from other sources (Chaiken & Maheswaran, 1994). This credibility heuristic has been observed in the context of auditor reporting such that investors look to the audit opinion as a cue about the credibility of management and its disclosures (Mercer, 2004).[2] Building upon this research, we develop two complementary theoretical arguments to support our expectation that expanded auditor reporting (via an EOM) will produce stronger credibility effects, and more positive investment decisions, than standard auditor reporting (i.e., no EOM).

First, we draw from psychology research showing that repeated exposure to a message enhances the credibility of the message (Chen & Tan, 2013; Hasher, Goldstein, & Toppino, 1977; Koch & Zerback, 2013). Specifically, this literature suggests that as individuals are exposed to a message for a second time, the message becomes more familiar and is perceived as more credible. Given that an EOM draws attention to management's disclosure by both describing the disclosure and referencing where the disclosure can be found in the financial statements, we expect that this repeated exposure engendered by the EOM will enhance investors' perceptions of management credibility. Second, we rely on prior psychology research showing that message length positively impacts judgments. Specifically, we argue that credibility effects will be strengthened when information from the auditor is expanded, as longer messages have a greater impact on judgments than shorter messages (i.e., "length implies strength"; e.g., Wood, Kallgren, & Preisler, 1985). In light of the credibility-enhancing effects of repeated exposure and expanded auditor reporting, we posit that an EOM will increase investors' perceptions of management credibility, thereby increasing their likelihoods to invest.

We also consider the extent to which EOM effects vary in the presence of management's range disclosure. Ranges highlight uncertainty by suggesting multiple possible outcomes (Du, Budescu, Shelley, & Omer, 2011) and lead to a more uncertain information environment (Tang, Zarowin, & Zhang, 2015). Because ranges enhance the salience of uncertainty and downside risk (Du et al., 2011; Tang et al., 2015), one might expect that an EOM highlighting these characteristics will decrease investors' propensities to invest. However, prior research demonstrates that the use of cues as a heuristic is especially evident in situations of uncertainty (Fischhoff, Slovic, & Lichtenstein, 1977). Thus, we suggest that increasing the salience of uncertainty via a range will affirm investors' tendencies to rely on the EOM as a cue about management's credibility, thereby undermining the expected range effects and increasing investors' propensities to invest. That is, we predict that management's disclosure will not influence the effect of the EOM on investors' propensities to invest.

To address these issues, we conduct a 2 × 2 between-participants experiment in which nonprofessional investors read a patent infringement case and related disclosures from management and the auditor.[3] Management's disclosure is a footnote accompanying the financial statements that discloses the recorded estimate for a patent infringement loss and either includes or does not include a range of possible outcomes related to the loss. The auditor's disclosure is an unqualified or "clean" audit report that either provides or does not provide an EOM specifically referencing management's disclosure. Investors then make an investment decision and answer a series of questions regarding management's and the auditor's disclosures.

Consistent with our expectations, we find that an EOM paragraph increases investors' likelihoods to invest in a company. Further, management's provision of a range in its uncertainty disclosure has no impact on the positive effect of the EOM on investment decisions. Mediation analyses show that the effects of the EOM on investment decisions are driven by investors' perceptions of management credibility. Overall, we find that while the EOM has the intended effect of highlighting management's uncertainty disclosure, it also has the unintended consequence of increasing investors' perceptions of management credibility, and resultant investment decisions, even when management highlights uncertainty via a range. In additional investigation, we explore the effect of the EOM when management provides a wide range that presents more uncertainty (i.e., more downside risk) to the investor. Results reveal that enhancing the salience of uncertainty via a wide range mitigates the positive effect of the EOM on investment decisions. These results demonstrate potential tradeoffs that may occur when implementing joint disclosures from auditors and management.

Our results have important implications for both research and practice. Our findings extend a growing body of research exploring the impact of proposed regulatory standards on practice (e.g., Gaynor, McDaniel, & Yohn, 2011; Lachmann, Stefani, & Wöhrmann, 2015) by examining how proposals for expanded auditor and management reporting influence investors' judgments and decisions. Specifically, our study adds to the auditor disclosure literature by showing that EOMs not only influence investors' attentions to highlighted disclosures (Sirois et al., 2017), but they also influence their ultimate investment decisions via perceptions about management credibility. Thus, although we find support for standard setters' claims that the EOM may increase the salience and informativeness of management's uncertainty disclosures, we also detect an unintended positive effect of the EOM on investment decisions. Further, we find that management's provision of a range in its disclosure does not impact the positive effect of the EOM on investment decisions, unless the range is wide. We therefore also contribute to extant literature by shedding light on the efficacy of using ranges in financial reporting. In summary, our findings reveal unintended consequences of implementing joint disclosures from dual sources (i.e., auditors and management), and should therefore be of critical importance to regulators and the parties crafting, reviewing, and utilizing these disclosures.

The remainder of the paper is organized as follows. The next section discusses the previous literature and develops the hypotheses. The third section describes the research method, and the fourth section discusses the results. The final section summarizes the overall findings, implications, and directions for future research.

2. Background and hypotheses development

2.1. Auditor's emphasis of matter (EOM)

The auditor's report is the primary vehicle used to communicate the findings of financial statement audits (PCAOB, 2011). There has been a long-standing debate over whether the current form and content of the auditor's report is sufficient to meet investors' needs and whether expanding the audit report will enhance the communicative value of the audit report. Investors argue that the current reporting model inadequately reflects the growing complexity in business, financial reporting, and auditing and that it would be worthwhile to include information about the audit process and the quality of financial statements, including uncertainties surrounding critical accounting

[2] Specifically, Mercer (2004, 189) suggests "the levels of external and internal assurance provided for a management disclosure also affect the disclosure's credibility."

[3] Nonprofessional investors were selected for the study, primarily because they are more prone to using heuristic processing when making investment decisions (Maines & McDaniel, 2000). For ease of exposition, we refer to nonprofessional investors as "investors."

estimates. For example, a survey of investors reveals that they desire more references and emphasis of matter paragraphs related to uncertainty and future risk (Audit Quality Forum, 2007). Auditors, however, suggest that the current auditor's report clearly communicates the auditor's opinion in a recognized form and that the auditor's report is not the appropriate place for statements relating to the quality of financial statements, including the use of estimates in financial reporting. Rather, auditors advise that the more appropriate source for this information is management or audit committees (PCAOB, 2012).[4]

Despite these prior beliefs, auditors' views toward expanded reporting are evolving and changes to the audit report remain under consideration. The PCAOB has proposed changes to the audit report that could ostensibly increase the transparency and relevance of the report, while not compromising audit quality (PCAOB, 2016; 2013). One proposed change would require EOMs and expand their use in the auditor's report for areas of critical importance to the financial statements, which include "significant management judgments and estimates, areas with significant measurement uncertainty, and other areas that the auditor determines are important for a better understanding of the financial statement presentation" (PCAOB, 2013, 24). For instance, the auditor may use an EOM to draw attention to an uncertainty disclosed by management by describing the uncertainty and referencing where the uncertainty is disclosed in the financial statements (PCAOB, 2016; 2011). The PCAOB suggests that EOMs will not only highlight management's disclosure, but will also enhance the informativeness of management's related disclosure.

The PCAOB recently adopted a standard requiring that auditors expand the audit report to include disclosure of critical audit matters (hereafter, CAMs), which provide information about matters that "(1) relate to accounts or disclosures that are material to the financial statements; and (2) involved especially challenging, subjective, or complex auditor judgment" (PCAOB, 2017, 1). This requirement, which does not preclude the inclusion of EOMs in the audit report, follows from similar international standards promulgated by the IAASB and the Financial Reporting Council (FRC) requiring that the audit report include a description of key audit matters (KAMs) as well as a discussion of how these matters were addressed in the audit (IAASB, 2016; FRC, 2016).[5] As with EOMs, expanded reporting via CAMs/KAMs is intended to enhance the communicative value of the audit report; this study, however, focuses on EOMs because of their potential to highlight an area of audit emphasis without adding additional disclosure of the related audit procedures performed, which could be misunderstood by users. Moreover, examining EOMs informs both current practice, permitting auditors to add EOMs at their own discretion, as well as the growing practice of expanded auditor reporting in the form of CAMs/KAMs.

Although research findings on expanded auditor reporting are mixed (see Bédard, Coram, Espahbodi, & Mock, 2016 for a comprehensive review), extant research provides some evidence to support the proposed attention-directing and information effects of EOMs. For instance, using eye-tracking software, Sirois et al. (2017) demonstrate that emphasis paragraphs influence not only how investors navigate the financial statements, but also increase the attention given to the financial statement disclosures referenced in the emphasis paragraphs. Further, Czerney, Schmidt, and Thompson (2014, 2017) provide archival evidence that audit reports with EOMs are informative to investors. Mock et al. (2013) report that investors perceive value in the heightened awareness prompted by auditors' commentary on management's judgments and estimates.

The above suggests that an EOM referencing an uncertainty disclosure may increase investors' attentions to the disclosure and, given investors' aversions to losses (Tversky & Kahneman, 1991), may decrease their propensities to invest. However, there is evidence to indicate that investors may not respond to the EOM in this manner. Research in psychology suggests that investors will utilize heuristic processing, wherein they rely on easily accessible cues (e.g., credibility cues) to reduce information processing demands associated with the tasks (Chaiken & Maheswaran, 1994).[6] In this paper, we explore the possibility that the presence of an EOM will increase investors' reliance on credibility cues when making judgments and decisions.

Research shows that when processing information from a variety of sources, individuals are more likely to attend to information from more credible sources and often will discount other judgment-related information (Chaiken & Maheswaran, 1994). This credibility heuristic is consistent with source credibility theory (Birnbaum & Stegner, 1979), which suggests that individuals consider the source of the information when making judgments and place more weight on information from sources deemed more credible. Evidence of the credibility heuristic has been observed in the context of investor reliance on audit opinions.[7] Because of auditors' professional responsibilities to provide an independent, unbiased opinion on the financial statements, investors rely on the audit report as a cue about the credibility of management and its disclosures.

We posit that expanding the audit report (via an EOM) will likely produce stronger credibility effects than standard auditor reporting (i.e., no EOM). Psychology research shows that repeated exposure to a message enhances its credibility (Chen & Tan, 2013; Hasher et al., 1977; Koch & Zerback, 2013). Specifically, as individuals are exposed to a message for a second time, the message becomes more familiar and is perceived as more credible (Koch & Zerback, 2013). In addition, when another source (i.e., the auditor) repeats a message, there is a leap in credibility for the originator of the message (i.e., management) because this other source is considered to be a validating point of reference (Koch & Zerback, 2013). Therefore, repeated exposure to management's disclosure, engendered by the EOM, will likely enhance investors' perceptions of management credibility.

This expectation is consistent with psychology research showing that message length positively impacts judgments. That is, when information is expanded, credibility effects are more likely as longer messages have a greater impact on judgments than shorter messages (i.e., "length implies strength"; e.g., Wood et al., 1985). While the EOM in theory does not add new information to (or about) management reporting or change the level of assurance over matters emphasized, its inclusion in the audit report expands the report beyond its traditional boilerplate form and could influence investor judgements. Specifically, an audit report with an EOM (relative to the standard audit report) may lead investors to ascribe greater levels of assurance, and thereby credibility, to management reporting (Kachelmeier, Schmidt, & Valentine, 2017; EY, 2013; Mock et al., 2013; IAASB, 2012).

Prior research supports the argument that investors provided with emphasis paragraphs will think that the auditor's responsibilities for the highlighted area have expanded (Hatherly, Brown, & Innes, 1998; Hatherly, Innes, & Brown, 1991), thereby increasing investors'

[4] Mock et al. (2013) proffer that providing a commentary on key financial information might place the auditor in a role more akin to that of management, which may raise questions about the auditor's independence.

[5] As part of addressing why a matter was of high significance to the audit, ISA 701 suggests that when an entity provides disclosures about its accounting estimates, the auditor may draw attention to these disclosures (highlighting the entity's discussions of key assumptions, ranges of possible outcomes, and sources of estimation uncertainty). Additionally, in describing how the matter was addressed in the audit, the auditor could, for example, note that he or she engaged an expert when evaluating an estimate involving high uncertainty (IAASB, 2016; FRC, 2016).

[6] Additionally, individuals tend to rely on heuristic processing when they do not possess the expertise or motivation to use a more demanding processing system (King, Davis, & Mintchik, 2012); thus, nonprofessional investors are especially susceptible to heuristic processing.

[7] Credibility as a heuristic cue has also been seen in a variety of contexts including auditor judgments (e.g., Hirst, 1994), individual risk perceptions (Krische, Sanders, & Smith, 2013; Trumbo & McComas, 2003) and investment decisions (e.g., Clor-Proell, 2009; Cohen, Gaynor, Krishnamoorthy, & Wright, 2017; Gaynor & Kelton, 2014).

perceptions of credibility. For example, Hatherly et al. (1998) demonstrate that when auditors provide a free-form audit report, which includes constructive recommendations, adjustments, and issues arising during the audit, users report more positive perceptions about the credibility of the financial statements. Similarly, Coram, Monroe, and Woodliff (2009) find that expanded auditor reporting on assurance of voluntary nonfinancial disclosures serves as a credibility-enhancing mechanism and positively influences investors' stock price estimates. In the area of sustainability reporting, studies show that provision of assurance improves the perceived reliability of sustainability reporting (Cohen, Webb, Nath, & Wood, 2011; Hodge, Subramaniam, & Steward, 2009) and investors' willingness to invest (Cheng, Green, & Ko, 2015). Together these studies suggest that expanded auditor reporting may positively impact investors' perceptions about management reporting (i.e., credibility), which in turn will be positively associated with investment related judgments (Gaynor & Kelton, 2014).

Alternatively, Kachelmeier et al. (2017) indicate that investors may interpret additional information in the audit report as a disclaimer of responsibility, leading to perceptions that less assurance is provided over the highlighted area. In an experiment designed to test the effects of CAMs on perceived auditor responsibility for misstatements, Kachelmeier et al. (2017) find that by pointing out the difficulty, subjectivity, and complexity inherent in a CAM, such disclosures lower users' perceptions of confidence in, and auditor responsibility for, the reliability and accuracy of values reported in the CAM area. In other words, users perceive the expanded reporting as a “warning” about the emphasized matter, which may lead users to question management's credibility. Similarly, Christensen, Glover, and Wolfe (2014a) find that a CAM referring to “high estimation uncertainty” resulted in lower willingness to invest.

In summary, although prior studies show some benefits of emphasis paragraphs, some disclosures cause users to perceive the audit as less reliable, to perceive the additional information as a disclaimer of auditor responsibility, and to be less likely to consider the company as an investment. These negative effects, however, may be driven by the warning effects of augmented auditor commentary (e.g., discussions of materiality, reasonable assurance, and/or audit procedures performed).[8] Given that our focus is on EOMs that highlight an area of audit emphasis without adding additional commentary about the related audit procedures, we expect that the EOM will positively impact, rather than decrease, investors' propensities to invest in a company. Consistent with previously documented credibility-enhancing effects of expanded auditor reporting (Coram et al., 2009; Hatherly et al., 1998), as well as the credibility-enhancing effects of repeated exposure (Koch & Zerback, 2013), we predict that investors’ propensities to invest will increase when the audit report includes an EOM paragraph. Our hypothesis is formally stated below.

H1. Investors who receive an EOM paragraph in the audit report, which highlights management's uncertainty disclosure, will be more likely to invest in the company than investors who do not receive an EOM paragraph in the audit report.

Given that EOMs are intended to highlight (or draw attention to) management's disclosure, it is plausible that investors' reactions to the EOM will be influenced by information communicated within management's disclosure. Thus, we next consider EOM effects in combination with management's disclosure of estimate ranges.

2.2. Management's disclosure of estimate ranges

As financial reporting frameworks increasingly gravitate toward more principles-based and fair value reporting, the use of estimates is becoming more widespread. Concerns exist, however, that investors have illusions of precision wherein they fail to identify the inherent uncertainty in estimates reported as a single point on the financial statements (SEC, 2002). To increase the salience of estimate uncertainty to investors, standard setters (e.g., FASB, 2015; 2014) are promoting enhancement of footnote disclosures regarding financial statement estimates. The (FASB (2014), 19) recommends that management provide a qualitative discussion of critical accounting estimates including ranges of possible outcomes around reported point estimates. This recommendation is based on the premise that while a point disclosure suggests only one possible actual outcome, a range disclosure suggests that multiple actual outcomes are possible, highlighting estimate uncertainty more than a point disclosure alone (Du et al., 2011; Tang et al., 2015).

Research in the management earnings forecast context supports this view with evidence that investors perceive point forecasts as more precise than range forecasts (e.g., Baginski, Conrad, & Hassell, 1993; Han & Tan, 2007; Hirst, Koonce, & Miller, 1999).[9] Range disclosures reduce illusions of precision as they communicate not only the extent of uncertainty in management's point estimate but also the reasonable range of other acceptable estimates (Bell & Griffin, 2012; Majors, 2016). Thus, while the actual uncertainty of the estimate remains unchanged, provision of a range disclosure along with the requisite point estimate should heighten investors' awareness of estimate uncertainty.[10]

Although many companies report reasonable ranges for unobservable inputs across a variety of financial statement areas (EY, 2012),[11] relevant research on the use of range disclosures in financial reporting is sparse. Davis-Friday, Liu, and Mittelstaedt (2004) find that the market perceives pension disclosures presented as ranges as less reliable than point disclosures. In addition, to investigate investor preferences for range disclosures, Christensen, Glover, Omer, and Shelley (2014b) rely on congruity theory, which predicts that individuals prefer the disclosure form that best corresponds to their perceptions of the uncertainty of the item being disclosed. Christensen et al. (2014b) find that investors prefer range presentation of a financial statement line item over point presentation when they are informed of increased uncertainty surrounding the item. Absent information about environmental uncertainty, however, Christensen et al. (2014b) find no differences in investor preferences for point versus range disclosures.

As demonstrated by these studies, ranges increase investors' perceptions of the uncertainty of a firm's information environment (Du et al., 2011; Tang et al., 2015) and are perceived as less reliable and less credible than point disclosures (Davis-Friday et al., 2004; Mercer, 2004). In light of these findings, an EOM, by describing and drawing attention to management's range disclosure, may decrease investors' propensities to invest. That is, given investors' aversions to losses (Tversky & Kahneman, 1991), bringing attention to management's disclosure that highlights uncertainty to a greater extent than a point estimate alone may decrease investors' likelihoods to invest.

Notwithstanding this possibility, we suggest that the credibility-enhancing quality of the EOM will trump the expected effects of a range disclosure. As previously argued, investors are likely to rely on heuristic processing when considering information from multiple sources.

[8] For example, the CAM in Christensen et al. (2014a, 91) noted that “the reasonable range of possible values for investment income as of the reporting date exceeds materiality, potentially by multiples of materiality.”

[9] Management forecasts, however, are generally accepted as uncertain estimates; thus, findings in the management forecast context may not generalize to the financial statement reporting context (Christensen et al., 2014b).

[10] Other literature, such as the forecasting literature, investigates investors' reactions to either a point estimate or a range (e.g., Han & Tan, 2007). In our study, consistent with extant financial reporting practice (EY, 2012), we examine the provision of a range disclosure in financial statement footnotes in addition to the point estimate recognized on the financial statements.

[11] Our analyses of range disclosures revealed that companies provide reasonable ranges for estimates in areas including, but not limited to, legal and regulatory matters, environmental accruals, loan losses, and fair value estimations.

Research in the decision making literature suggests that under conditions of uncertainty, individuals default to an even greater reliance on heuristic processing (Tversky & Kahneman, 1974). Thus, given an information set where uncertainty is more salient, as is the case with a range, individuals are more likely to discount the content of the information (Van Dijk & Zeelenberg, 2003) and instead rely on credibility cues to help them make decisions (Chaiken & Maheswaran, 1994; Kelly, Low, Tan, & Tan, 2012; Winchel, 2015). For instance, Winchel (2015) shows that when analysts provide unambiguous arguments to support investment ratings, investors rely on the content of the arguments, as opposed to credibility cues, resulting in lower likelihoods of investment. However, when the analysts provide ambiguous arguments, investors rely on credibility cues instead of the content of the arguments, leading to higher likelihoods of investment.

This discussion above suggests that in spite of a range disclosure enhancing the salience of uncertainty to investors, which may make investors less likely to invest, the salience of uncertainty will affirm investors' tendency to rely on the EOM as a cue about management credibility, thereby mitigating the expected range effect and increasing investors' propensities to invest. Thus, we expect that the positive effect of the EOM on investment decisions will not be influenced by management's disclosure. Our hypothesis is formally stated below.

H2. Management's disclosure will not impact the effect of the EOM paragraph on investment decisions.

In addition, given the theoretical predictions regarding the influence of perceptions of management credibility on investor judgments, we predict the following mediation hypothesis:

H3. Investors' perceptions of management credibility will mediate the effect of the EOM paragraph on investment decisions.

3. Experimental method

3.1. Design

We utilized a 2 × 2 between-participants design to test our hypotheses. The first factor, Auditor Disclosure, relates to whether or not the auditor's report includes an emphasis of matter paragraph highlighting a specific footnote disclosure (EOM vs. no EOM). The second factor, Management Disclosure, relates to whether or not management's footnote disclosure of an accounting estimate includes, in addition to the actual recorded amount of the estimated loss, a range (no range vs. range).

3.2. Participants

We obtained 195 participants from Amazon Mechanical Turk (AMT) who completed our study in exchange for a $1.50 payment.[12] AMT is a popular source of participants for experimental research as it provides easy access to a large subject pool (Rennekamp, 2012). Additionally, AMT participants in accounting research have been shown to exert similar effort as participants recruited from other sources (Farrell, Grenier, & Leiby, 2017).

We used prescreening questions to ensure that participants possess the requisite skills to complete the task. Only individuals who were 18 years of age or older, considered themselves native English speakers, had previously read a company's financial statements including the independent auditor's report, and had purchased or planned to purchase common stocks or mutual funds in the future were permitted to complete the task. Overall, 49.7 percent (33.3 percent) of participants report being between 26 and 34 (35–54) years old, 56.4 percent are male, and 33.3 percent (49.7 percent) have completed a 4-year (2-year) college degree. Of the total participants, 88.2 percent currently own investments in common stocks or mutual funds with an average of 8.16 years personal investing experience. On average, participants have 13.67 years professional work experience and have taken 2.56 (2.36) accounting (finance) courses. Thus, these participants are an appropriate proxy for nonprofessional investors. We focus our investigation on nonprofessional investors as the SEC has expressed concern with the effects of disclosures on this less-sophisticated group of investors and views disclosure reform as particularly beneficial to these investors (e.g., SEC, 2006, 2013).

3.3. Procedures

Participants received a case scenario involving a hypothetical company, a developer and manufacturer of various electronic products, that is currently defending a patent infringement lawsuit. Participants were told to assume the role of a current investor in the company and then given background information about the company and the relevant financial reporting requirements for legal claims. The company in the case determined that an unfavorable outcome to the lawsuit is probable and estimable; thus, the company recorded a $10 million patent infringement loss on the financial statements during the current year.[13] Participants then received the disclosures from management and the auditor, made several judgments, and completed a demographic questionnaire.[14]

Management's disclosures included income statement excerpts and the company's audited financial statement footnote regarding the litigation, which contained the Management Disclosure manipulation. The footnote in all conditions was identical except that the range condition included a range for the patent infringement loss of $7.5 million to $12.5 million (Appendix A). The Independent Auditor's Report in all conditions contained a summarized unqualified audit opinion. The EOM condition also included an emphasis of matter paragraph discussing the patent infringement loss (Appendix B).

Our primary measures are investors' perceptions of management credibility and investment decisions. We measured participants' perceptions of management credibility using six items adapted from Clor-Proell (2009) presented in Appendix C. The six items have a Cronbach's alpha of 0.932, thus management credibility is the sum of the items. Participants indicated how the estimated patent infringement loss affected the likelihood that they would invest in the company using an 11-point scale with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing".[15]

[12] Our initial sample consisted of 210 participants. Four participants were omitted from the analyses due to taking an unusually low amount of time to complete the study (< 3 min) and eleven participants were omitted for failing to accurately answer the attention question. The mean (median) length to complete the study for participants in the final sample was 9.62 (8.17) minutes.

[13] We selected the contingent liabilities context since the account is relatively easy for investors to understand and, since the estimate is based on unknown future events, the account bears uncertainty.

[14] We counterbalanced the order that participants viewed the disclosures. Order is not significant when included in the hypotheses tests, thus it is excluded from further discussion.

[15] Participants also indicated the extent to which the estimated patent infringement loss affects the attractiveness of the company as an investment opportunity. Participants' prior investing experience was significantly correlated with the attractiveness measure ($p = 0.06$) but was not significantly correlated with the investment likelihood measure ($p = 0.27$). Additional analysis showed that participants with more years of investing experience responded differently to the attractiveness measure and management's disclosure than participants with fewer years investing experience ($p = 0.04$). Investing experience did not affect the investment likelihood measure. To remove this noise from our analyses, we use the investment likelihood measure in our hypotheses testing. Results are qualitatively similar when we use the average of the attractiveness and investment likelihood measures and include investing experience as a covariate.

4. Results

4.1. Manipulation checks

Responses collected in the post-experimental questionnaire indicate that our experimental manipulations were successful. One-hundred seventy eight participants (91.3 percent) correctly identified whether management's footnote disclosure included or did not include a range. Participants also indicated whether the auditor's report did or did not specifically mention the issue of the company's patent infringement litigation. Ninety-four participants (92.1 percent) in the EOM condition responded to this question correctly.[16] Additionally, participants rated the extent to which the auditor's report highlighted the company's patent infringement loss and how informative the audit report was about the loss using 11-point scales with (1) "did not highlight at all" ("not at all informative"), (6) "neutral" ("neutral"), and (11) "highlighted to a great extent" ("extremely informative"). Participants in the EOM condition reported that the audit report was more informative (means = 8.03 vs. 6.37, F = 16.016, $p < 0.001$) and highlighted the estimate to a greater extent (means = 8.13 vs. 6.49, F = 22.749, $p < 0.001$) than those in the no EOM condition.

4.2. Hypotheses tests

Table 1 presents the descriptive statistics. H1 predicts that investors who receive an EOM paragraph in the audit report, which highlights management's uncertainty disclosure, will be more likely to invest in the company than investors who do not receive an EOM paragraph in the audit report. As shown in Panel A of Table 2, the main effect of auditor disclosure is significant (F = 6.893, $p = 0.009$). Investors in the EOM condition are significantly more likely to invest than those in the no EOM condition (means = 4.74 vs. 3.89). Thus, H1 is supported.

H2 predicts that management's range disclosure will not impact the effect of an EOM paragraph on investment decisions. As shown in Panel A of Table 2, the interaction between management and auditor disclosure is not significant (F = 0.058, $p = 0.811$). Simple effects tests presented in Panel B of Table 2 show that the EOM has a positive effect on investment decisions in both the no range (means = 3.85 vs. 4.61, $p = 0.047$) and the range (means = 3.93 vs. 4.85, $p = 0.021$) conditions. Hence, the null hypothesis predicted by H2 is not rejected.

H3 predicts that investors' perceptions of management credibility will mediate the effects of the EOM paragraph on investment decisions. Given that both the management disclosure main effect and the interaction between management and auditor disclosures are not significant, we combine the two management disclosure conditions for mediation testing. Fig. 1 presents the results of the mediation analysis for perceptions of management credibility (Baron & Kenny, 1986). Consistent with findings for H1, we find the effect of auditor disclosure on investment decisions is significant (Link 1, F = 7.044, $p = 0.004$). Next, we find that the EOM positively influences perceptions of management credibility (Link 2, F = 5.385, $p = 0.001$). Perceptions of management credibility are positively associated with investment decisions (Link 3, t = 6.212, $p < 0.001$). Finally, we find that the effect of the auditor disclosure on investment decisions remains significant in the presence of management credibility (Link 4, F = 3.495, $p = 0.031$). A Sobel test (Sobel, 1982) confirms that the effect is significantly reduced in the presence of the mediator (Z = 2.131, $p = 0.015$). Thus, management credibility mediates the effect of the auditor disclosure on investment decisions. H3 is supported.

[16] Forty percent of participants in the no EOM condition responded to this question correctly. Consistent with Kachelmeier et al. (2017), we speculate that participants in the no EOM condition were likely confused by the question. Results are qualitatively similar when we exclude participants who failed either manipulation check question. Thus, the analyses include all participants.

Table 1
Descriptive statistics. Means (Standard Deviations).[a]

Management Disclosure	Auditor Disclosure		Row Mean
	No EOM	EOM	
No Range Disclosure			
Investment Decision	3.85 (2.16)	4.61 (2.18)	4.24 (2.19)
Management Credibility	40.30 (13.46)	44.02 (12.46)	42.20 (13.03)
	N = 47	N = 49	N = 96
Range Disclosure			
Investment Decision	3.93 (2.35)	4.85 (2.19)	4.42 (2.30)
Management Credibility	42.39 (13.43)	47.02 (11.73)	44.87 (12.70)
	N = 46	N = 53	N = 99
Column Means			
Investment Decision	3.89 (2.24)	4.74 (2.18)	
Management Credibility	41.33 (13.41)	45.58 (12.12)	
	N = 93	N = 102	

[a] Participants indicated how the estimated patent infringement loss affects the likelihood that they would invest in the company using 11-point scales with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing". Management credibility was measured by the sum of six items adapted from Clor-Proell (2009) shown in Appendix C and has a possible range of 6–66.

Table 2
The effect of management and auditor disclosures on investment decisions.[a]

Panel A: Conventional ANOVA

Source	df	MSE	F	p-value
Management Disclosure	1	1.248	0.252	0.616
Auditor Disclosure	1	34.112	6.893	0.009
Management X Auditor	1	0.285	0.058	0.811
Error	191	4.949		

Panel B: Simple Effects Tests

Conditions compared	df	t-statistic	One-tailed p-value
EOM vs. no EOM for no range	191	1.676	0.047
EOM vs. no EOM for range	191	2.040	0.021

[a] Participants indicated how the estimated patent infringement loss affects the likelihood that they would invest in the company using 11-point scales with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing".

4.3. Additional analyses

We collected additional measures to provide support for our theory, as well as to provide further insights into the debates regarding proposed reform to the audit report and management's disclosures. Participants allocated 100 points among the following items based on the importance they assessed each item when evaluating the company: summary income statement, financial statement footnote, and independent auditor's report. Participants in the EOM condition allocated more importance to the audit report than those in the no EOM condition (means = 36.15 vs. 31.72, t = 1.617, $p = 0.053$) and they perceived the audit report as significantly more important than the footnote disclosure (means = 36.15 vs. 26.28, t = 4.052, $p < 0.001$). In contrast, participants in the no EOM condition did not perceive a significant difference between the importance of the audit report and the footnote disclosure (means = 31.72 vs. 27.20, t = 1.473, $p = 0.144$), suggesting that the EOM triggers greater reliance on the audit report, consistent with our theoretical predictions.

We also examine whether the EOM influenced perceptions of the level of assurance provided by the audit report. Participants rated the level of assurance provided in the independent auditor's report on the

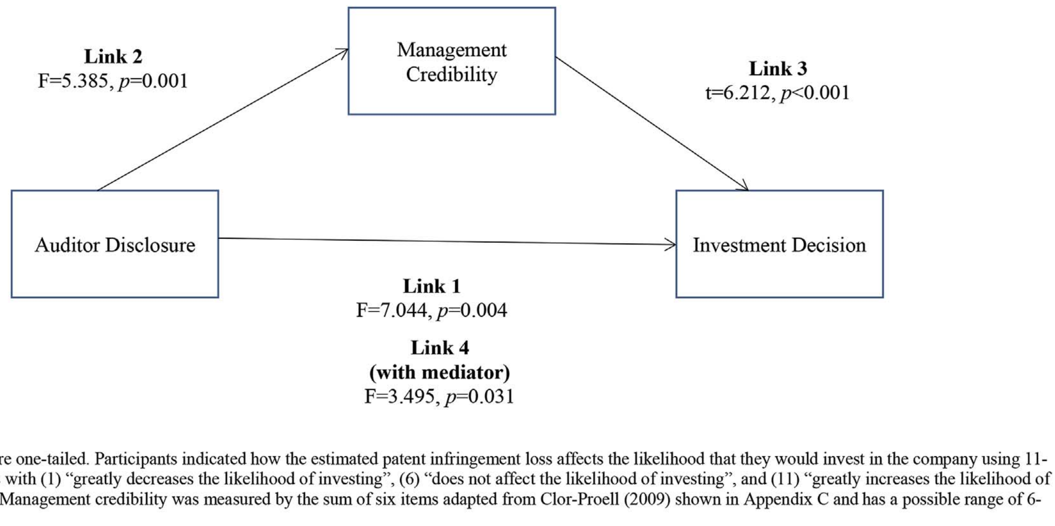

Fig. 1. Mediation analysis for management credibility.[a]

[a] p-values are one-tailed. Participants indicated how the estimated patent infringement loss affects the likelihood that they would invest in the company using 11-point scales with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing". Management credibility was measured by the sum of six items adapted from Clor-Proell (2009) shown in Appendix C and has a possible range of 6–66.

patent infringement loss using an 11-point scale with (1) "no assurance", (6) "moderate assurance", and (11) "high assurance" (Coram et al., 2009). Participants in the EOM condition reported perceptions of greater assurance than those in the no EOM condition (means = 7.27 vs. 6.81, t = 1.376, p = 0.085). This finding is consistent with research suggesting that expanded auditor reporting leads to perceptions that a different level of assurance is provided over the highlighted areas (Kachelmeier et al., 2017).

Next, we conduct additional analyses on the management disclosure conditions. First, participants rated the extent to which management's footnote disclosure highlighted the company's patent infringement loss and the informativeness of the disclosure about the loss using 11-point scales with (1) "did not highlight at all" ("not at all informative"), (6) "neutral" ("neutral"), and (11) "highlighted to a great extent" ("extremely informative"). There was no significant difference in participants' perceptions of the disclosure between the range and no range conditions (both $p > 0.20$). Contrary to regulator claims, provision of a range did not improve perceptions of the informativeness of the estimate or highlight the uncertainty of the estimate to investors. Examining the joint impact of management and auditor disclosures, we find that participants in the EOM condition reported that management's disclosure was more informative (means = 8.27 vs. 7.34, F = 7.827, p = 0.006) and highlighted the loss to a greater extent (means = 7.98 vs. 7.40, F = 3.123, p = 0.079) than those in the no EOM condition. This attention-directing effect was most pronounced in the range condition (both $p < 0.05$). Thus, our findings support claims made by the PCAOB (2013) and accounting research (Sirois et al., 2017) that EOMs highlight management's related disclosure.

Finally, we explore an alternate explanation that the observed credibility-enhancing effects are driven by enhanced disclosures from management (i.e., the range) as opposed to enhanced disclosures from the auditor. To isolate the effect of management's disclosure, we compare differences in management credibility in the no EOM condition. As shown in Table 1, provision of a range disclosure improved perceptions of management credibility, however the difference is not significant (means = 40.30 vs. 42.39, F = 0.563, p = 0.455). Overall, our results show that while the EOM has the intended effect of drawing investors' attentions to management's uncertainty disclosure, the EOM also has the unintended effect of increasing management credibility, thereby increasing investors' propensities to invest. We also find that the provision of a range disclosure has no influence on investor judgments – either independently or in combination with expanded auditor reporting. Thus, the positive effect of the EOM persists when management provides a range in its uncertainty disclosure.

4.4. No point management disclosure condition

In the case where management provides a range of possible outcomes for a recorded estimate in its footnote disclosure, management may or may not also include the recognized estimate in the footnote.[17] While providing the point estimate in the footnote does not introduce new information to the investor (i.e., the estimate is presented on the financial statements), we consider the possibility that this reporting choice influenced our results. Prior research suggests that individuals process information differently when it is presented together as opposed to separately (Rose & Wolfe, 2000). Providing the range disclosures alongside the point estimate could make investors more likely to use the range as a frame of reference with which to evaluate the point estimate (Majors, 2016). Specifically, including the point estimate with the range in the footnote disclosure could communicate that management is providing an unbiased estimate, thus improving perceptions of management credibility. This explanation is consistent with research in the management earnings forecast context that suggests the provision of a range in addition to the estimate at the midpoint of the range indicates an explicit best estimate that may affect investors' perceptions of management (Han & Tan, 2007). To rule out the potential influence of this reporting choice on our results, we examine an additional management disclosure condition ("no point"), where the footnote includes the range of \$7.5 million to \$12.5 million but does not disclose the actual amount of the recorded estimate (Appendix A). Similar to the primary experiment, all participants receive a summary income statement that includes the amount of the estimate.

We obtained 140 additional participants from AMT using the same criterion as the primary experiment. Overall, 41.4 (38.6) percent of participants report being between 26 and 34 (35–54) years old, 60.7 percent are male, and 46.4 (18.6) percent have completed a 4-year (2-year) college degree. Of the total participants, 81.4 percent currently own investments in common stocks or mutual funds and have on

[17] To assess the popularity of providing ranges along with recorded point estimates in loss contingency footnote disclosures, we hand collected a sample of 100 range disclosures included in form 10Ks between January 1, 2011 and December 31, 2014 using the LexisNexis database. Of these, approximately 30 percent included both the range and the amount of the point estimate accrued on the financial statements.

Table 3
Analysis of no point condition. Means (Standard Deviations).[a]

	Auditor Disclosure		t-statistic	One-tailed p-value
	No EOM	EOM		
Investment Decision	4.14 (2.15)	4.81 (2.41)	1.736	0.042
Management Credibility	42.83 (13.00)	46.15 (10.93)	1.630	0.052
	N = 71	N = 69		

[a] Participants indicated how the estimated patent infringement loss affects the likelihood that they would invest in the company using 11-point scales with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing". Management credibility was measured by the sum of six items adapted from Clor-Proell (2009) shown in Appendix C and has a possible range of 6–66.

average 6.58 years personal investing experience. On average, participants have 14.11 years professional work experience and have taken 2.31 (1.76) accounting (finance) courses. Participants were randomly assigned to one of two conditions (EOM vs. no EOM). The experimental materials and procedures were identical to those described previously except for the content of management's disclosure.

Table 3 presents the analyses. Consistent with our primary results, the EOM has a significant positive effect on investment decisions (means = 4.81 vs. 4.14, $p = 0.042$). The EOM also led to more positive perceptions of management credibility (means = 46.15 vs. 42.83, $p = 0.052$). Further analysis (untabulated) shows that management credibility is positively associated with investment decisions ($p < 0.01$) and that the effect of the auditor disclosure on investment decisions is not significant in the presence of management credibility (F = 1.431, $p = 0.234$); thus, management credibility mediates the association between the EOM and investment decisions. In sum, results for the no point management disclosure condition are consistent with those in the primary analysis indicating that reporting the point estimate alongside the range in the footnote did not influence our results.

Table 4
Analysis of wide range condition.

Panel A: Means (Standard Deviations)[a]

Management Disclosure	Auditor Disclosure		Row Mean
	No EOM	EOM	
No Range Disclosure			
Investment Decision	4.56 (1.36)	5.21 (2.25)	4.87 (1.87)
Management Credibility	45.13 (12.94)	47.08 (11.50)	46.08 (12.21)
	N = 36	N = 34	N = 70
Range Disclosure			
Investment Decision	4.44 (1.93)	5.34 (2.21)	4.91 (2.11)
Management Credibility	43.92 (11.75)	45.68 (14.68)	44.83 (13.30)
	N = 41	N = 44	N = 85
Wide Range Disclosure			
Investment Decision	4.75 (2.35)	4.82 (2.40)	4.79 (2.36)
Management Credibility	43.35 (11.65)	46.60 (14.58)	44.97 (13.21)
	N = 40	N = 40	N = 80
Column Means			
Investment Decision	4.58 (1.93)	5.13 (2.28)	
Management Credibility	44.10 (12.01)	46.39 (13.70)	
	N = 117	N = 118	

Panel B: Conventional ANOVA for Investment Decisions

Source	df	MSE	F	p-value
Management Disclosure	2	0.256	0.057	0.945
Auditor Disclosure	1	17.159	3.801	0.052
Management X Auditor	2	3.658	0.810	0.446
Error	229	4.514		

Panel C: Simple Effects Tests for Investment Decisions

Conditions compared	df	t-statistic	One-tailed p-value
EOM vs. no EOM for no range	68	1.471	0.073
EOM vs. no EOM for range	83	1.995	0.024
EOM vs. no EOM for wide range	78	0.141	0.444

[a] Participants indicated how the estimated patent infringement loss affects the likelihood that they would invest in the company using 11-point scales with (1) "greatly decreases the likelihood of investing", (6) "does not affect the likelihood of investing", and (11) "greatly increases the likelihood of investing". Management credibility was measured by the sum of six items adapted from Clor-Proell (2009) shown in Appendix C and has a possible range of 6–66.

4.5. Wide range management disclosure

Notwithstanding our findings, we also consider whether variety in the range, particularly the size of the range, would yield inferences different from those previously observed. Wide ranges convey greater uncertainty and are often perceived as lower quality and less informative than narrow ranges (Yaniv & Foster, 1995) and research suggests that investors prefer narrow ranges over wide ranges (Christensen et al., 2014b; Du et al., 2011). Holding the point estimate constant, a wide range conveys greater downside risk and thus makes the uncertainty of the estimate more salient, offering a potential boundary condition for the EOM effects previously reported. Accordingly, we examine an additional management disclosure condition ("wide range") to determine whether the EOM's positive effect on investment decisions persists when management discloses a wide range.

We obtained 235 participants from AMT using the same criteria as the primary experiment. Overall, 42.1 (37.9) percent of participants report being between 26 and 34 (35–54) years old, 59.6 percent are male, and 49.8 (16.2) percent have completed a 4-year (2-year) college degree. Of the total participants, 84.7 percent currently own investments in common stocks or mutual funds and have on average 8.15 years personal investing experience. On average, participants have 15.64 years professional work experience and have taken 1.88 (1.87) accounting (finance) courses.

Participants were randomly assigned to one of six conditions in a 2 (EOM vs. no EOM) x 3 (no range vs. range vs. wide range) between-participants design. The experimental materials and procedures were identical to those described previously except for the addition of a wide range management disclosure condition. Participants in the wide range condition were provided a range of $3 million to $17 million, along with the recorded point estimate of $10 million (Appendix A).[18] In the post-experimental questionnaire, participants in the range and wide range conditions rated the width of management's disclosed range for the patent infringement loss using an 11-point scale with (1) "relatively narrow", (6) "neutral", and (11) "relatively wide". Participants in the wide range condition perceived management's disclosed range to be significantly wider than those in the range condition (means = 7.79 vs. 6.24, $p < 0.001$). In addition, participants rated the likelihood that the company will eventually settle the patent infringement case for some amount other than $10 million using an 11-point scale with (1) "not very likely", (6) "neutral", and (11) "very likely". Participants in the wide range condition provided significantly higher likelihoods than those in the range (means = 7.45 vs. 6.80, $p = 0.047$) condition, further suggesting that our wide range manipulation was effective.

Table 4 presents the analyses. As shown in Panel B of Table 4, the main effect of auditor disclosure on investment decisions is significant

[18] According to Bell and Griffin (2012), all other things equal, investment risk should be substantially lower for an investment alternative with estimation uncertainty amounting to 50 percent of materiality versus one with estimation uncertainty amounting to 200 percent of materiality. To this end, we use a range that is almost two and a half times larger than materiality using a common threshold of five percent of pre-tax net income.

(F = 3.801, p = 0.052). Consistent with previous results, the effect of management disclosure is not significant (F = 0.057, p = 0.945). Simple effects tests presented in Panel C of Table 4 show that the EOM positively affects investment decisions in the no range (means = 5.21 vs. 4.56, p = 0.073) and range (means = 5.34 vs. 4.44, p = 0.024) conditions, replicating results from our main analysis. However, the EOM has no significant effect on investment decisions in the wide range condition (means = 4.82 vs. 4.75 p = 0.444).

Untabulated results show a significant main effect of auditor disclosure on perceptions of management credibility (means = 46.39 vs. 44.10, one-tailed p = 0.087). Consistent with our prior analyses, the EOM positively affects management credibility.

We conduct additional analyses to provide insight into these results. First, we examine differences in perceived assurance between the range and wide range conditions. In the presence of an EOM, participants in the range condition reported perceptions of greater assurance than those in the wide range condition (means = 7.75 vs. 7.03, p = 0.071). Second, we examine participants' perceptions of the informativeness of management's footnote disclosure and the extent to which the disclosure highlighted the patent infringement loss. Participants in the range condition reported that management's disclosure was more informative (means = 8.24 vs. 7.56, p = 0.025) and highlighted the loss to a greater extent (means = 8.20 vs. 7.56, p = 0.022) than those in the wide range condition. These results, taken together, indicate that while wide ranges are perceived as less informative, they assuage EOM assurance effects and mitigate the positive EOM effect on investment decisions. In sum, enhanced disclosures from management have no impact on the positive effect of the EOM on investors' propensities to invest, unless the range is wide.

5. Conclusion

In this study, we examine the effects of auditor EOMs, both independently and in combination with management disclosures of estimate ranges, on investor judgments and decisions. This study is motivated by strong regulatory interest in improving investors' abilities to recognize and account for uncertainty in audited financial statements. As financial reporting frameworks expand the use of principles-based accounting and fair value estimation, it becomes critical to our capital markets to enhance the salience of uncertainty inherent in financial reporting. While there is tremendous interest from both financial reporting regulatory bodies (e.g., SEC and FASB) and auditing regulatory bodies (e.g., PCAOB and IAASB) in expanding management and auditor communications with investors, timely research is needed to determine how these communications will jointly affect investor judgments and decisions.

Current FASB guidance suggests that the use of range disclosures will enhance the salience of estimate uncertainty to investors; PCAOB guidance suggests that EOMs will highlight and improve the informativeness of management's disclosure. According to Dan Montgomery, deputy chair of the IAASB, “users, even at a minimum, would see value in auditors just highlighting disclosures in a company's financial statement” (Chasen, 2012). We show, however, that the effects of these disclosures are not as clear-cut as regulators have suggested and indeed lead to unintended consequences.

Our results show that when an audit report includes an EOM that highlights management's uncertainty disclosure, consistent with heuristic processing (i.e., using credibility cues), investors provide higher assessments of management credibility relative to when the report does not include an EOM, thereby increasing investors' likelihoods to invest. Furthermore, management's provision of a range estimate in addition to a point estimate has no impact on these EOM effects, unless the range is wide. In this case, we find that a wide range mitigates the EOM's positive influence on investors' propensities to invest. These findings illuminate a critical contingency in the PCAOB's claims that EOMs are effective mechanisms for highlighting entity-provided disclosures to users of the financial statements. We show that the intended benefit of the EOM (to highlight management's disclosure) may be undermined by the unintended increases in investors' perceptions of management credibility, unless management provides a wide range. That is, the EOM has no effect on investment decisions in the presence of a wide range.

Our research contributes to several streams of literature. First, we corroborate findings in psychology and accounting literature showing that investors rely on credibility cues when making investment decisions. Second, we build upon the literature investigating proposed changes to the audit reporting model. We extend the work of Sirois et al. (2017) by examining not only the extent to which the EOM improves the salience and informativeness of the financial statement item emphasized, but also how the EOM influences investor judgments and decisions. We also ascertain an important caveat to this research such that the effects of enhanced auditor disclosure should be considered in conjunction with management disclosures. In light of the similarities between EOMs and CAMs, (i.e., expanded auditor reporting highlighting areas of audit emphasis), our findings also inform the CAM literature (e.g., Christensen et al., 2014a; Kachelmeier et al., 2017). We provide evidence that a simple attention-directing mechanism in the audit report, even one that does not speak directly to the audit process, as do CAMs, can influence investor judgments. Finally, although research finds that changes to the audit reporting model impact investor perceptions of the auditor (e.g., Kachelmeier et al., 2017), we show that enhanced auditor reporting also impacts investor perceptions of management. Thus, our findings inform inquiries made in prior research (e.g., Gaynor, Kelton, Mercer, & Yohn, 2016) about the relationship between characteristics of the audit process (e.g., changes in auditing reporting) and characteristics of the financial reporting process (e.g., management credibility).

Our results have important implications for regulators and standard setters as they strive to supplant the boilerplate nature of the audit report via enhanced disclosures, such as EOMs and CAMs. Our study contributes to the current debate about whether information about the quality of financial reporting (including estimate uncertainty) should be highlighted by the entity in the financial statements and/or by the auditor in the audit report. Critics of expanding the audit report claim that the current reporting model is not the most appropriate place for statements regarding the quality of financial statements. Our findings support this claim by documenting unintended effects that can arise from expanding the audit report, while also taking into consideration how these effects manifest in combination with disclosures from management.

We also find that providing a range alone (i.e., no EOM is provided) is not sufficient in enhancing the saliency of firms' uncertainty disclosures, unless the range is made sufficiently wide. In contrast to prior studies showing a credibility-enhancing effect of expanded management reporting (e.g., Hirst, Koonce, & Venkataraman, 2007), we find that range disclosures have no impact on management credibility. This result could be explained by prior research suggesting that investors are less likely to impound information into their judgments when it is presented in the footnotes versus the financial statements (Maines & McDaniel, 2000), although this remains a matter for future research. Nonetheless, this finding should inform the FASB as they contemplate requiring enhanced disclosures for financial statement estimates (FASB, 2014).

As with all research, our study is subject to limitations, which provide opportunities for future research. For instance, our study focused only on the judgments and decisions of nonprofessional investors; thus, opportunities exist to examine whether professional investors react differently to the uncertainty disclosures provided by management and auditors. Our study also examined only a single form of an EOM that was qualitative and simple in nature. Future research could investigate whether alternative wording or a quantitative disclosure by the auditor (e.g., one that includes the auditor's self-developed range) is more effective in highlighting uncertainty than a direct reference to management's disclosure. This line of inquiry could also consider how expanded auditor reporting (particularly when employed at the auditor's discretion) could influence user perceptions of audit quality. Further, the (IAASB (2009), 713) has warned auditors that widespread use of EOMs "diminishes the effectiveness of the auditor's communication of such matters" and also that "to include more information in an Emphasis of Matter paragraph than is presented or disclosed in the financial statements may imply that the matter has not been appropriately presented or disclosed" by management. The PCAOB (2011) has expressed additional concerns that EOMs have the potential to become boilerplate over time. Thus, variations of qualitative versus quantitative communications should be explored. Finally, our study investigated only two variations of range size. Future research should investigate additional characteristics (e.g., size, format, location) of range disclosures in an effort to better understand the efficacy of ranges in the financial statement context.

Despite these limitations, we provide evidence that EOMs, both individually and jointly with management's disclosure, have unintended consequences on investors' judgments and decisions. Our results indicate that questions remain about how best to increase the salience of uncertainty that is so intrinsic to today's financial reporting.

Appendix A. Financial statement footnote

No range condition

Note 8–legal and other contingencies

CAP is a defendant in litigation involving a major competitor (ABC Company) claiming patent infringement. Discovery has been completed, and CAP is engaged in settlement discussions with the plaintiff. Based on the expressed willingness of the plaintiff to settle the case along with information revealed during discovery and the likely cost and risk to both sides of litigating, CAP believes that it is probable the case will not come to trial. Accordingly, CAP has determined that it is probable that it has some liability. CAP's reasonable estimate of this liability is **$10 million;** thus, a **$10 million** loss and related liability have been recorded.

Range condition

Note 8–legal and other contingencies

CAP is a defendant in litigation involving a major competitor (ABC Company) claiming patent infringement. Discovery has been completed, and CAP is engaged in settlement discussions with the plaintiff. Based on the expressed willingness of the plaintiff to settle the case along with information revealed during discovery and the likely cost and risk to both sides of litigating, CAP believes that it is probable the case will not come to trial. Accordingly, CAP has determined that it is probable that it has some liability **between $7.5 million and $12.5 million**. CAP's reasonable estimate of this liability is **$10 million**; thus, a **$10 million** loss and related liability have been recorded.

No point condition

Note 8–legal and other contingencies

CAP is a defendant in litigation involving a major competitor (ABC Company) claiming patent infringement. Discovery has been completed, and CAP is engaged in settlement discussions with the plaintiff. Based on the expressed willingness of the plaintiff to settle the case along with information revealed during discovery and the likely cost and risk to both sides of litigating, CAP believes that it is probable the case will not come to trial. Accordingly, CAP has determined that it is probable that it has some liability **between $7.5 million and $12.5 million**.

Wide range condition

Note 8–legal and other contingencies

CAP is a defendant in litigation involving a major competitor (ABC Company) claiming patent infringement. Discovery has been completed, and CAP is engaged in settlement discussions with the plaintiff. Based on the expressed willingness of the plaintiff to settle the case along with information revealed during discovery and the likely cost and risk to both sides of litigating, CAP believes that it is probable the case will not come to trial. Accordingly, CAP has determined that it is probable that it has some liability **between $3 million and $17 million**. CAP's reasonable estimate of this liability is **$10 million**; thus, a **$10 million** loss and related liability have been recorded.

Appendix B. Auditor's report

EOM condition

"Independent auditor's report"

During the current year, CAP's independent auditor issued an Unqualified (i.e., "clean") Audit Report with the following "Opinion" and "Emphasis of Matter" paragraphs.Opinion on the financial statements. In our opinion, the financial statements present fairly, in all material respects, the financial position of Capital Advanced Products (CAP) as of December 31, 2013, and the results of their operations and cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.Emphasis of matter. In accordance with the professional standards applicable in the United States, we bring to your attention the following matter because it represents an area of audit emphasis during the period covered by our report:

As discussed in Note 8 to the financial statements, CAP is a defendant in litigation involving a patent claim that was filed in the current year. For the purpose of preparing the consolidated financial statements, CAP's management recorded a loss and a related liability related to patent infringement litigation. While the matter remains outstanding as of December 31, 2013, recording the estimated loss and liability is necessary when the loss is deemed to be probable and can be reasonably estimated as described in Note 8 to the financial statements.

Appendix C. Measures of management credibility

When it comes to providing financial disclosures, I believe CAP's management …

is knowledgeable.
may **not** be competent.
is qualified.
is trustworthy.
is honest.
may **not** be forthcoming.

Note: Participants evaluated each statement using an 11-point scale with (1) "strongly disagree", (6) "neutral", and (11) "strongly agree". Items 2 and 6 were reverse-scored. The management credibility measure used in the analyses is a composite measure formed by summing each participant's response to the six items.

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