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The Role of Incentives to Manage Earnings and Quantification in Auditors' Evaluations of Management-Provided Information

Urton Anderson, Kathryn Kadous, and Lisa Koonce

SUMMARY: We conducted an experiment with 113 experienced auditors to examine the influence of two factors on the persuasiveness of a management-provided nonerror explanation for an unexpected fluctuation in revenue. We expected that auditors' evaluations of a management explanation would depend jointly on whether it is quantified (i.e., put into numbers) and the managers' incentives to manage earnings. Instead, we find that the persuasiveness of managers' explanations is determined solely by their incentives. Focus on managers' incentives is consistent with auditors attending to regulators' recent concerns about earnings management. However, such a focus implies that when the likelihood of earnings management appears low, auditors fail to take into account information about sufficiency that is contained in the quantified explanation when they revise their planning judgments.

Keywords: analytical procedures; management-provided information; earnings quality.

Data Availability: Contact the authors.

INTRODUCTION

uditors must evaluate the information obtained at audit planning to determine the nature, extent, and timing of audit work to be performed. In many cases, planning information takes the form of explanations and other information from client management (Hirst and Koonce 1996). Management-provided information is especially important when the auditor investigates accounts that are subjective and based on estimates, because the auditor's ability to obtain reliable information from other sources is limited in such cases. Given the importance of subjective accounts and estimates in financial reports (e.g., FASB 2001a; Lev and Zarowin 1999; Lundholm 1999), the quality of earnings may be compromised if the auditor fails to appropriately evaluate managementprovided information.

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In this paper, we experimentally examine the effects of two contextual factors on auditors' evaluations of the persuasiveness of a management-provided explanation for a significant fluctuation in an account that requires considerable estimation. These two factors are, first, whether the explanation is quantified (i.e., put into numbers) and, second, whether the client manager is likely to distort the information (i.e., the manager has incentives to manage earnings). These two factors were chosen because they provide important cues to the quality of management-provided information and, in turn, earnings quality. We draw on research on persuasion (Friestad and Wright 1994) to argue that these factors will jointly influence auditors' judgments.

Investigating this issue is important because we know little about how auditors respond to attempts by managers to persuade them as to the acceptability of their financial reports (however, see Nelson et al. 2002). Previous research from a persuasive perspective in auditing has focused on how auditors are persuaded by other audit-team members (e.g., Rich et al. 1997; Tan and Yip-Ow 2001), rather than by management. Previous research on auditors' reactions to management explanations for unexpected fluctuations has largely focused on steps that auditors can take to reduce the extent to which auditors are persuaded by management explanations. For example, Heiman (1990) demonstrated that providing auditors with alterative explanations reduces the persuasiveness of a management explanation. Koonce (1992) demonstrated that auditors are less persuaded after writing down reasons why management's explanation might be incorrect. While research has also examined how the accuracy (Bedard and Biggs 1991) and sufficiency (Anderson and Koonce 1998) of management representations influence auditor judgments, no auditing research that we are aware of manipulates features of the explanation, such as whether it is quantified, that management could use to influence persuasion.

In this study, we examine how auditors react to quantified versus non-quantified management representations for an important, subjective account. A quantified explanation provides potentially important information to the auditor about whether the explanation is sufficient in magnitude to be responsible for the fluctuation. We predict that whether the auditor is more persuaded by a quantified explanation will depend on management's incentives to engage in earnings management. In particular, when a manager has low incentives to manage earnings, we expect that auditors will view the potential for managers to misrepresent information as small. Because the quantified explanation shows sufficiency of the manager's explanation and is unlikely to be misrepresented in this setting, auditors should find a quantified explanation more persuasive than a non-quantified one. In other words, auditors are expected to reduce their judgments about misstatement risk and increase their willingness to rely on the manager's explanation for planning purposes in this case. In contrast, when the client manager has high incentives to manage earnings, we expect that auditors will be skeptical about the motives behind the quantified explanation and, as a result, will expect the numbers to have been manipulated to suit the manager's purposes. In this situation, we expect a quantified explanation demonstrating the sufficiency of the client's explanation will be no more persuasive than a nonquantified explanation. In other words, auditors are not expected to reduce their risk judgments nor increase their reliance on the manager's explanation for planning purposes in this situation because it is likely that the sufficiency information is not credible.

To test our predictions, we conducted an experiment in which 113 experienced auditors observed a significant increase in their client's revenues and inquired with a client manager as to the reason. The manager's explanation indicated that the increase in revenue was the result of a change in accounting estimate. We varied the form of the explanation provided by the manager (i.e., whether it was quantified or not) and the incentives of the manager to manage earnings (high versus low) between participants. Participants made audit-planning judgments about the likelihood of misstatement in revenue and gross margin and their willingness to rely on the manager's representation for purposes of planning the audit.

Our results show clear support for the notion that auditors are sensitive to the potential for earnings management. Specifically, auditors viewed the manager as more likely to be aggressive,



possessing a greater desire to make the financial statements look good and a greater desire to get the auditor to accept the financial statements when incentives for earnings management were high, versus when they were low. Moreover, when incentives to manage carnings were high, auditors were less certain that information from the manager reflected his true beliefs and the underlying facts, and they believed that managers were more likely to manipulate the numbers in a quantified explanation. Our results also showed that auditors receiving a quantified explanation viewed it as more likely to be sufficient to explain the magnitude of the fluctuation than did auditors receiving a non-quantified explanation.

Despite the fact that our manipulations had the predicted effects on auditors' perceptions of explanation sufficiency and potential for earnings management, auditors' planning judgments were influenced solely by incentives to manage earnings rather than by the interaction of incentives and quantification. Focus on client manager incentives is consistent with regulators' vociferous concerns about earnings management, particularly in the area of revenue recognition (Levitt 1998; Bear Stearns 2000). However, such a focus implies that when incentives for earnings management are low, auditors fail to consider important information about explanation sufficiency contained in the quantified explanation. This result indicates an inconsistency between auditors' beliefs about information reliability and their subsequent judgments about misstatement risk and willingness to rely on them for purposes of planning the audit. In particular, auditors are no more willing to change their audit-planning judgments based on sufficiency information provided by managers who they believe are likely to misrepresent their information than on that provided by managers they believe are likely to misrepresent it.

Our paper makes a number of contributions to the existing literature. First, we investigate auditors' reactions to a client's incentives to manage earnings. Surprisingly, there is very little experimental data on this topic. Given recent concerns about auditors failing to discover material instances of earnings management (e.g., Creswell 2002; MacDonald 2002), our research is timely. Second, our study context is important because it involves an area in which the potential for reduced audit effectiveness is high-a subjective account requiring estimation. There are relatively few alternative sources of information available to the auditor in these circumstances, and so the auditor may rely more on management as a source of information than in other circumstances. Given the increasing importance of subjective accounts and estimates in the financial reporting process (e.g., Lev and Zarowin 1999; Lundholm 1999), our study provides much-needed insights into how auditors evaluate management-provided information. Third, our research provides initial evidence regarding how auditors react to quantified communications from their clients. Quantification involves measurement and analysis, and so quantification is the essence of accounting (e.g., Gibbins 1994). Despite the critical role of quantification in accounting, very little research exists regarding how quantification influences judgment, either within or outside of accounting. Our study provides information regarding how quantification affects auditors' planning judgments and, accordingly, takes initial steps toward building a theory of quantification in accounting.

The rest of this paper is organized as follows. In the following section, we present theoretical arguments supporting our predictions. In the third section, we describe an experiment that tests the predictions. The fourth section presents results of the experiment. The final section summarizes our results and provides a discussion and concluding comments.

THEORY AND HYPOTHESIS

Auditors regularly seek information from management to conduct their audits. Managementprovided information is particularly important when the item under investigation is subjective and involves estimation. For example, evaluating the need for an impairment charge for a fixed asset requires subjective estimates of future cash flows from operating the asset (FASB 2001b). Such cash flow projections typically originate with client management, because cash flows depend on management's plans for the asset, and so it is difficult for the auditor to obtain independent, reliable

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estimates. It is important to earnings quality that the auditor use available cues to judge the reliability of the management-provided information. In this study, we investigate how two such cues—the type of explanation provided by the client manager (i.e., quantified or non-quantified) and the client manager's incentives to manage earnings (i.e., high or low)—influence an auditor's evaluation of management-provided information. Below, we develop theoretically based predictions for the effects of these variables on auditor judgments.

Effects of Explanation Type

A client manager's explanation for an unusual financial statement fluctuation can take a variety of forms. For example, the explanation can be verbal or written. If it is written, then the explanation may or may not be quantified. Auditors normally received non-quantified explanations from management at the planning stages of the audit (Hirst and Koonce 1996); however, management may provide quantified explanations at planning in anticipation of auditor inquiry.

We expect that the receipt of a quantified (versus a non-quantified) explanation provides potentially important information about the sufficiency of management's explanation for the observed financial statement fluctuation. That is, while a non-quantified explanation can help the auditor identify whether a manager's explanation is consistent with the *direction* of the misstatement, only a quantified explanation provides information about whether management's explanation can account for the *magnitude* of the observed fluctuation. Anderson and Koonce (1998) find that information about sufficiency causes auditors to revise their planning judgments. Specifically, they report an experiment in which auditors who prepare their own quantified explanations distinguish more clearly between sufficient and insufficient explanations than do auditors who do not prepare quantified explanations. Accordingly, we hypothesize that auditors who receive a quantified explanation are better able to judge the sufficiency of the explanation.

Joint Effect of Explanation Type and Incentives for Earnings Management

Although we expect auditors to interpret quantified analyses as indicative of explanation sufficiency, we do not expect that quantified explanations are always more persuasive than non-quantified explanations. Instead, we expect that a manager's incentives for earnings management will moderate the effect of quantification on an auditor's willingness to revise his audit-planning judgments based on the manager's explanation.

Because earnings management is seen as purposeful or intentional manipulation of the financial reports (Schipper 1989), auditors should view assertions of client managers differently depending on their perceived propensity to manage earnings (e.g., Phillips 1999). In particular, we hypothesize that auditors will view managers who have high incentives to manage earnings as more likely to report aggressively, more desirous of making the financial statements look good and of getting the auditor to accept the manager's explanations, and more likely to provide information that is not consistent with their true beliefs and underlying facts. In other words, we expect that auditors will find statements coming from managers who have high incentives to manage earnings to be less credible than those coming from managers with low incentives.

Drawing on research from the persuasion literature (Friestad and Wright 1994), we hypothesize that incentives to manage earnings and type of explanation will jointly influence the persuasiveness of a client manager's explanation. A fundamental assertion of this literature is that individuals use their knowledge about how persuasion works to recognize persuasion attempts and to manage them to achieve their own goals (e.g., Campbell and Kirmani 2000, 69). Persuasion knowledge includes beliefs about the source's goals and incentives, among other things (Friestad and Wright 1994, 4–5).

Because client managers typically provide non-quantified explanations in response to auditor inquiries (Hirst and Koonce 1996), we expect that a quantified explanation should be salient as a potential persuasion attempt—an indication that the client is going to greater than normal lengths to



persuade the auditor.¹ We further anticipate that how the auditor views this additional effort on the part of the manager (i.e., positively or negatively) will depend on the auditor's perception of the potential for earnings management. The persuasion research argues that, when faced with a persuasion attempt, an individual may rely on other aspects of persuasion knowledge, such as salient ulterior motives of the communicator, to interpret the persuasion attempt (Campbell and Kirmani 2000). For example, a shopper's interpretation of a salesperson's flattery is likely to depend on the shopper's ideas about the salesperson's motives. If the salesperson is not paid on a commission basis, then the shopper may interpret positively such flattery and view the salesperson as friendly and discerning. However, if the salesperson is paid on commission, then the same flattery is likely to be interpreted negatively, and the shopper may view the salesperson as manipulative and insincere.

Similarly, we expect that auditors' interpretations of quantified explanations will depend on the context in which the explanation is made. Recall that quantified explanations signal explanation sufficiency. Auditors facing clients with low incentives to manage earnings will view a quantified explanation and its source positively. That is, because the manager has no apparent ulterior motives, the auditor should judge it likely that the client manager is providing a quantified analysis because he legitimately wants to convince the auditor of the sufficiency and accuracy of his explanation. Under such conditions, the auditor's audit-planning goals are best met by making use of the information provided by the quantified explanation—that is, information about the sufficiency of the client's explanation—and so we expect that auditors will find a quantified explanation more persuasive than a non-quantified explanation in this setting.

However, auditors facing clients with high incentives to manage carnings should view a quantified explanation with suspicion. In such cases, the manager's salient incentives to mislead change the meaning of the quantified analysis. That is, while the quantification may demonstrate sufficiency, the auditor likely would be suspicious that, like the salesperson's compliment, the quantified explanation is an inappropriate attempt to persuade. In this case, the manager may have "fudged" the numbers comprising it. Auditors can best cope with inappropriate persuasion attempts from managers with ulterior motives by discounting their explanations and assessing misstatement risk as high to guard against audit failure. Accordingly, we expect that in this situation, auditors will judge the quantified explanation to be no more persuasive than a non-quantified explanation. In sum, we hypothesize that type of explanation provided in response to an auditor inquiry and potential for earnings management will have an interactive effect on persuasiveness of the explanation.

EXPERIMENT

To test our predictions, we conducted an experiment with 113 senior-level auditors from an international accounting firm. On average, study participants had 41 months of work experience (standard deviation 10.4 months). Auditors with this level of experience routinely conduct or supervise the planning stage of the audit (Hirst and Koonce 1996), which is the setting for our study.² Specifically, their mean use of planning analytical procedures within the last 12 months was 3.4 on a five-point scale with 0 = none of the engagements and 4 = every engagement. The experiment utilized a 2×2 design with explanation type (quantified or non-quantified) and client incentives to manage earnings (high or low) manipulated between participants.

¹ That auditors are able to recognize the strategic behavior of others is consistent with prior models and evidence (see Rich et al. 1997). Although set within a managerial (not auditing) setting, Kadous et al. (2003) find evidence that managers view quantified proposals as potential persuasion tactics.

² General audit experience ranged from 10 to 75 months (and approximately 50 percent of the study participants had direct audit experience with the percentage-of-completion accounting method used in the experimental case). When we added general audit experience to the analyses reported in the results section, audit experience was never significant and inferences did not change. Knowledge tests collected after the primary measures suggested that a large percentage (i.e., 86 percent) of study participants had a high level of understanding of percentage-of-completion method. Excluding the remaining 14 percent did not change any of the inferences reported in the paper.

Participants were asked to assume the role of the in-charge auditor for the hypothetical audit client described in the case. The company in the case was a professional services firm that offered systems- and technology-related consulting services. After reviewing background information about the client company, participants were provided with information about the company's revenue-recognition policies. The company used the percentage-of-completion method to recognize revenues. A detailed description of this method was provided as part of the background information. Following this, the incentives to manage earnings manipulation was introduced. We manipulated incentives to manage earnings via client risk factors (Healy and Wahlen 1999; Phillips 1999). Specifically, at the low incentives for earnings management level, the audit client was described as being privately held, never having violated any debt covenants, always making interest payments, and being a long-standing audit client of the audit firm for which very few problems had been encountered in previous audits. At the high incentives for earnings management level, the company was described as wanting to go public, close to violating its debt covenants, and a first-year audit client.³

Next, participants were given selected financial figures from the current (unaudited) and prior year's (audited) income statement and balance sheet. To facilitate their understanding of these financial data, participants also were provided with both dollar and percentage changes in the following line items: revenue, cost of services sold, gross margin, current assets, and current liabilities.⁴ After participants reviewed this background information, unexpected fluctuations in the company's revenues and gross margin were pointed out to them. Participants were told that they had inquired about the fluctuations with the controller and that he had provided them with an explanation. The explanation revealed that the client manager estimated substantial future cost savings on a long-term systems-consulting project. Such cost savings increased the percentage of completion, which increased the amount of revenue and gross margin to be shown in the current period.⁵

We manipulated explanation type by having the management explanation either quantified or not. In the non-quantified explanation condition, management provided a narrative explanation of the reason for the changes in revenue and gross margin. In the quantified explanation condition, management provided the narrative explanation and supporting calculations. The quantified explanation was of high quality in that the calculations demonstrated that the explanation was sufficient to account for the fluctuation, and it contained no errors in logic or calculations.

Next, participants were asked to make three audit-planning judgments. First, they were asked to assess the likelihood that the current year's revenues were misstated and (separately) to assess the likelihood that the current year's gross margin was misstated. Response scales with endpoints labeled "unlikely to be materially misstated" (0) and "likely to be materially misstated" (100) were used for these two questions.⁶ Following this, participants were asked to indicate the extent to which

³ The change in auditor in the high incentives condition was said to occur because the investment banking firm handling the public offering had recommended use of a higher profile, Big 5 firm. Thus, an auditor-client disagreement did not precipitate the change in auditor.

⁴ Although the company in the case materials was hypothetical, the information was drawn from 10-K reports of several actual companies in the industry. Study materials were pretested with practicing auditors and revised to ensure clarity.

⁵ Anticipated cost savings increase the completion percentage because the percentage is determined by the proportion of total costs incurred to date to total estimated costs for the contract. When total estimated costs (i.e., the denominator of the fraction) decrease, the percentage of completion mechanically increases, increasing revenue recognized for the period. Because costs incurred in the period do not change, the increase in revenue is directly reflected in the period's gross margin.

⁶ To verify that auditors believed an audit client could use a change in estimate associated with the percentage-ofcompletion method to manipulate earnings in a material fashion, we asked our study participants (at the end of the case, after all other relevant measures were elicited) to judge how easy it would be for an audit client to manipulate earnings due to several causes. Results suggested that a change in estimate from the percentage-of-completion method (as used in this case) was a very easy way in which to manipulate earnings, comparable to failing to write off obsolete inventory and underestimating product warranty reserve. Thus, the change in estimate used in our study was consistent with auditors' beliefs about potential earnings management behavior.

they would be willing to rely on the statements made by the controller in planning the remainder of the audit.⁷ A response scale with endpoints "not at all willing" (0) and "completely willing" (10) was employed for this question. Because management's explanation addressed a nonerror cause, we considered lower likelihoods of material misstatement to be indicative of higher persuasion. Higher willingness to rely on management's explanation for planning purposes also implies higher persuasion.

Additional questions included items designed to check whether participants attended to our manipulations as well as items designed to allow us to test our predictions about how the explanation type and earnings management variables influence auditors' perceptions of explanation sufficiency and earnings management potential. These questions are described in detail in the "Results" section below. Participants also provided demographic data.

RESULTS

Checks on Explanation Type

The results of a manipulation check question reveal that study participants attended to the explanation type manipulation. In particular, 97 percent (55/57) of those receiving a non-quantified explanation correctly answered "no" to a question asking whether they had received a quantitative analysis as part of their explanation, while 88 percent (49/56) who received a quantified explanation correctly answered "yes" to this same question. A Chi-square test verifies that the responses were significantly associated with explanation type condition ($\chi^2 = 80.47$, p < 0.01), indicating that participants attended to the manipulation.

Our predictions presume that auditors will recognize provision of a quantified explanation as out-of-the-ordinary behavior on the part of the client manager. That is, the more typical situation is that management provides a non-quantified explanation in response to an auditor inquiry. To determine whether this presumption is correct, we tested whether auditors viewed receipt of a quantified explanation as more unexpected than receipt of a non-quantified explanation. Specifically, we asked auditors to evaluate the amount of information provided by the manager compared with that which they normally receive at the planning stage of the audit on a scale ranging from 0 = less information than normal to 10 = more information than normal. Consistent with our expectations, the effect of explanation type was significant ($F_{1,110} = 21.59$, p < 0.01) and no other effects were significant in an ANOVA model. In the non-quantified explanation condition, participants' ratings were not different from the mid-point of the scale (4.99 versus 5.00, $t_{55} = 0.01$, p > 0.99), indicating that auditors viewed the explanation to approximate the information they normally receive. However, participants receiving the quantified explanation indicated that they received significantly more information than they normally receive at the planning stage of the audit (6.76 versus 5.00, $t_{55} = 6.34$, p < 0.01). These results are consistent with auditors viewing the quantified explanation as indicating out-of-theordinary manager effort.

We predicted that auditors receiving a quantified explanation from a manager would be better able to judge the sufficiency of the explanation than auditors receiving a non-quantified explanation. To test this prediction, we examined post-test responses to a question asking participants whether the client's explanation was sufficient to account for the all of the financial statement fluctuations. We used a scale with endpoints labeled "very unlikely" (0) and "very likely" (100). Results indicated a main effect for explanation type ($F_{1,110} = 7.82$, p < 0.01). Auditors receiving a quantified explanation from the client manager considered the cause described in the explanation to be more likely to account for substantially all of the observed fluctuation (mean of 51.50) than did those auditors

⁷ Note that our reliance question captures reliance on the client's explanation for purposes of making planning judgments. Auditors use information obtained at planning to make risk assessments and to help them to determine the nature, timing, and extent of substantive audit work to be done. Because the focus of our paper is on audit planning, we do not examine reliance on the client's explanation for purposes of obtaining substantive evidence and the role of corroborating information in this process.

receiving a non-quantified explanation (mean of 39.05). Consistent with theory, the presence of a quantified explanation allowed auditors to more clearly ascertain the sufficiency of the client's explanation.⁸ In sum, auditors' assessments of explanation sufficiency were higher when the explanation received from the manager was quantified than when it was not. This result supports our theory and indicates that our quantification manipulation was strong.⁹

Checks on Incentives for Earnings Management

To examine whether participants attended to the manipulation of incentives for earnings management, we asked participants three questions. We asked them (1) if the company had plans to go public, (2) if the company was a first year audit client for the firm, and (3) if the company had come close to violating its debt covenants. For the first and second questions, all participants responded appropriately. That is, all of the participants in the low incentives condition indicated that the company was not planning to go public and it was a not a first-year audit client. Those in the high incentives condition indicated the affirmative to these same questions. For the loan covenant question, all but one participant in the high incentives condition answered this question appropriately; all of the auditors in the low incentives condition answered it correctly. A Chi-square test indicated that the responses to this question were significantly associated with the experimental condition (χ^2 = 109.07, p < 0.01). These results indicate that our manipulation of incentives to manage earnings was successful.¹⁰

Our theory presumes that auditors are sensitive to variations in the potential for earnings management driven by their client's incentives. To test this precondition, we collected five measures of auditors' views of earnings management potential. When we have multiple measures of a single dependent construct, as we do here, we verified that the measures were significantly correlated and then we estimated a MANOVA as our main test. We then report follow-up tests for each dependent variable only for effects that were significant in the MANOVA.

Table 1 shows cell means (Panel A), correlations (Panel B), and the MANOVA results (Panel C) for five measures of auditors' views of the potential for earnings management—auditors' impressions of the manager's desire to make the financial statements look good, his desire to be aggressive in preparing the financial statements, his desire to get the auditor to accept the explanation, whether his explanation reflects his true beliefs, and whether his explanation reflects the underlying facts about cost savings. The main effect of incentives for earnings management was significant in the MANOVA ($F_{5,104} = 9.60$, p < 0.01). Separate follow-up ANOVAs revealed that the main effect of earnings management incentives was statistically significant at p < 0.01 for all questions except for the question about the manager's desire to get the auditor to accept his explanation, which was significant at p = 0.10.¹¹ These results show that, as we anticipated, auditors discriminate between low and high incentives.

⁸ To ensure that the quantified explanation was viewed as being of high quality, we also asked auditors in the two quantified explanation conditions to rate "the logic behind the computational analysis" on a scale ranging from 0 = highly inaccurate to 10 = highly accurate. The mean responses in both conditions were significantly above the midpoint of the scale (high incentives mean = 6.39; low incentives mean = 6.75, both p < 0.01). Further, means did not differ between the two incentives conditions, as expected (p > 0.40).

⁹ We also expected explanation type to influence auditors' views of manager competence. MANOVA results confirmed that auditors receiving a quantified explanation rated the client manager as better prepared, more knowledgeable, and having applied more effort than did auditors receiving a non-quantified explanation ($F_{3,107} = 6.95$, p < 0.01). Neither incentives for earnings management nor the interaction of explanation type and incentives for earnings management were significant in the MANOVA (p = 0.70 and 0.43, respectively). These results provide additional evidence that the quantification manipulation was perceived as intended and that it was strong.

¹⁰ Excluding those who failed the checks for the explanation type and incentives for carnings management manipulations does not change any inferences reported in the paper.

¹¹ A potential explanation for weaker results for the acceptance question is that auditors may believe that managers *always* have incentives to get the auditor to accept their explanations—regardless of whether they have personal or situational incentives. For example, firm managers may desire to get the auditor to accept explanations in order to minimize audit fees.

| | | ation ing ıtial | Row Means | 6.20 (2.29) | 5.68 (2.28) | | | ion fs | | | | page) |
|--|---|---|---|-----------------------------------|---------------------------|-----------------|--|---|---|--|--|--|
| | | Manager's Explanation Reflects Underlying Facts about Potential Cost Savings | High Incentives 1 | 5.17 (2.29) | 5.50 (2.33) | 5.34 (2.30) | | Manager's Explanation Reflects True Beliefs about Potential Cost Savings | | | | 0.75 (< 0.01) (continued on next page) |
| | | Manage Refleo Facts : Co | Low High Row Incentives Incentives Means | 7.20 (1.82) | 5.86 (2.26) | 6.54 (2.14) | | Manager Reflects abou Cos | | | |) (continu |
| | | lation liefs al | Row Means I | 5.71 (2.28) | 5.56 (2.29) | | | get t | | | | |
| iable ^a | | Manager's Explanation Reflects True Beliefs about Potential Cost Savings | High Incentives | 4.60 (2.38) | 4.89 (2.22) | 4.75 (2.29) | | Manager's Desire to get Auditor to Accept His Explanation | | | -0.30 (< 0.01) | -0.21 (0.02) |
| ement Var | | Manag Refle abo C | Low Incentives | 6.78 (1.59) | 6.23 (2.20) | 6.51 (1.92) | ent | Manager Audit His I | | | | |
| s Manag | Ļ | to Get cept ion | | 6.66 (2.15) | 6.73 (2.02) | | anageme | | 1 | | | |
| 1 r Earnings | anagemen | Manager's Desire to Get Auditor to Accept His Explanation | High Incentives | 7.19 (1.72) | 6.72 (2.10) | 6.96 (1.92) | trnings M | Desire to be n Preparing (ear's cials | | 0.40 0.01) | -0.52 < 0.01) | -0.38 < 0.01) |
| TABLE centives for | arnings M: | Manag Au Hi | Low High Row Incentives Incentives Means | 6.15 (2.42) | 6.74 (1.97) | 6.44 (2.21) | ntial for Ea | Manager's Desire to be Aggressive in Preparing This Year's Financials | | 0.40 (< 0.01) | -0.52 (< 0.01) | -0.38 (< 0.01) |
| o the Inc | ial for Ea | to Be aring cials | Row Means | 5.75 (2.62) | 6.01 (2.30) | | of Poter | | 1 | | | |
| TABLE 1 Auditors' Reactions to the Incentives for Earnings Management Variable ^a | of) Measures of Potential for Earnings Management | Manager's Desire to Be Aggressive in Preparing This Year's Financials | High Incentives | 7.12 (2.32) | 7.13 (1.83) | 7.13 (2.07) | g Measures | e to Make ements od | | | | |
| Auditors'] |) Measure | Manag Aggres This Y | Low Incentives | 4.44 (2.20) | 4.84 (2.18) | 4.63 (2.18) | ues) among | Manager's Desire to Make Financial Statements Look Good | 0.85 (< 0.01) | 0.39 (< 0.01) | -0.57 (< 0.01) | -0.37 (< 0.01) |
| | ations of | sire cial | Row Means | 6.07 (2.50) | 6.36 (2.55) | | is (p-val | Man Fi | | | | |
| | dard Devi | Manager's Desire to Make Financial Statements Look Good | High Row Incentives Means | 7.42 (1.95) | 7.64 (1.80) | 7.55 (1.86) | orrelation | | This | Auditor ion | vings | ets vings |
| | ean (Stan | to Ma | Low Incentives | 4.77 (2.30) | 5.06 (2.54) | 4.92 (2.40) | Pearson C | | sire to be n Preparing cials | sire to get . s Explanati | planation e Beliefs ial Cost Sav | planation erlying Fac ial Cost Sa |
| | Panel A: Mean (Standard Deviations | | I | Non- quantified Explanation | Quantified Explanation | Column Means | PANEL B: Pearson Correlations (p-values) among Measures of Potential for Earnings Management | | Manager's Desire to be Aggressive in Preparing This Year's Financials | Manager's Desire to get Auditor to Accept His Explanation | Manager's Explanation Reflects True Beliefs about Potential Cost Savings | Manager's Explanation Reflects Underlying Facts about Potential Cost Savings |

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| Panel C: Multivariate Analysis of Variance | | | |
|--|--------|-------------|---------|
| Source | df | F-statistic | p-value |
| Incentives for earnings management | 5, 104 | 9.60 | < 0.01 |
| Explanation type | 5, 104 | 0.49 | 0.78 |
| Incentives for earnings management * | 5, 104 | 1.17 | 0.33 |
| explanation type | | | |

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This table shows analysis for the five questions designed to capture auditors' views of the potential for earnings management. Panel A shows the means and standard deviations by experimental condition. Panel B shows correlations among the measures, and Panel C shows the multivariate analysis of variance

manager's desire to make the financial statements look good, (2) the manager's desire to be aggressive in preparing this year's financial statements, (3) the manager's desire to get the auditor to accept his explanation. (4) the extent to which the manager's explanation reflected his true beliefs, and (5) the extent to which management's explanation The questions asked participants to rate how the following five factors might have influenced the client manager when he explained the reason for the fluctuations (1) the reflected the underlying facts about potential cost savings. The response scale indicated "very little influence" for 0 and "very large influence" for 10

tion variable represents whether management's explanation for an unexpected increase in revenues contained only narrative discussion (non-quantified) or both narrative discus-The incentives for earnings management variable captures client risk factors. In the low incentives condition the audit client was described as being privately held, never having violated any debt covenants, always making interest payments, and a long-standing audit client of the audit firm for which very few problems had been encountered in previous audits. In the high incentives level, the company was described as wanting to go public, close to violating its debt covenants, and a first-year audit client. The type of explanasion and quantified analyses (quantified)

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To verify that auditors receiving a quantified explanation in the high incentives condition viewed the quantification as more likely to be "fudged" than those in the low incentives condition, we asked participants in the two quantified explanation conditions to rate how likely it was that the manager would have "fudged" the numbers in the explanation.¹² On the response scale, 0 = "very unlikely" and 10 = "very likely." Results show that auditors in the high incentives, quantified explanation condition considered the manager to be more likely to "fudge" the numbers than auditors in the low incentives, quantified explanation condition (6.23 versus 4.93, $F_{1.54} = 7.23$, p = 0.01). As expected, auditors' views of whether managers used quantification inappropriately depended on the manager's incentives.

Persuasiveness of the Manager's Explanation

We predicted that explanation type and client incentives would interact to determine how persuasive auditors found client-provided explanations. We used three dependent measures to test this prediction. Specifically, we asked the auditors to assess the likelihood of a misstatement in the client's revenues and in the client's gross margin, as well as the extent to which they would rely on the client's explanation when planning the rest of the audit work.

We anticipated that when managers have low incentives to manage earnings, auditors would be more persuaded by (i.e., would assess misstatement risk as lower and indicate greater reliance on the explanation for planning purposes) a quantified explanation than a non-quantified explanation. In contrast, when managers have high incentives to manage earnings, auditors were hypothesized to find the quantified explanation no more persuasive than the non-quantified explanation.

Panel A of Table 2 presents cell means for our three measures of persuasiveness. Correlations among the measures are in Panel B, and the MANOVA analysis is shown in Panel C of Table 2. The MANOVA showed a significant main effect of incentives to manage earnings ($F_{3,107} = 3.63$, p = 0.02). However, neither explanation type (p = 0.24) nor the posited interaction of explanation type and incentives to manage earnings (p = 0.85) were significant, and so our hypothesized interaction is not supported.

Follow-up ANOVAs indicate that auditors judged the likelihood of revenue and gross margin misstatement to be higher in the high earnings management incentives condition than in the low earnings management incentives condition (55.93 versus 47.74, $F_{1,109} = 3.47$, p = 0.07 for revenue misstatement; 59.61 versus 48.93, $F_{1,109} = 5.83$, p = 0.02 for gross margin misstatement). In addition, auditors in the high earnings management incentives condition were less willing to rely on the manager's explanation than were auditors in the low earnings management incentives condition (4.01 versus 5.09, $F_{1,109} = 7.89$, p < .01). No effects other than these main effects of incentives were significant in the separate ANOVAs (smallest p = 0.31). These results indicate that auditors found managers' explanations less persuasive when the manager had high incentives to manage earnings, and that this effect was not moderated by explanation type.¹³ We provide additional discussion of these results in the next section of the paper.

¹² "Fudging the numbers" implies claiming sufficiency of an explanation when in reality it is not sufficient. Since sufficiency can only be demonstrated in quantified explanations, we were able to ask this question of participants in the two quantification conditions only.

¹³ The auditors' responses may have been influenced by their general perceptions about whether one cause alone could explain a material unexpected difference. To check this, we asked them to assess the likelihood, for a hypothetical client situation, that a cost reduction in *one* project could explain a material revenue (and gross margin) increase. Our results show that the responses to this post-experimental question are correlated with our primary experiment responses but that they do not fully explain those responses. That is, the more that auditors believed that a change in estimate for a single project could cause a material change in revenue (or gross profit), the less likely they were to judge that a revenue (or gross margin) misstatement occurred and the more likely they were to rely on management's explanation for the company in our experimental case (all p-values < 0.10). Importantly, though, the primary results we show in the paper (that incentives for earnings management explanation (all p-values < 0.05).</p>

| Persuasiveness of the Client Explanation ^a Panel A: Mean (Standard Deviations of) Assessments of the Persuasiveness of the Client Explanation Trivitional of Concernants | eviations of) Asse | Persuasiven ssments of the Persua | less of the Cli siveness of th | Persuasiveness of the Client Explanation ^a f the Persuasiveness of the Client Explana T the the Advention | n ^a nation | | To Dol | |
|---|---------------------------------------|--|-----------------------------------|--|--|--------------------------|--|----------------|
| | Likelihood of Kevenue Misstatement | evenue | Mai | Likelihood of Gross Margin Misstatement | ss ent | Clie | Willingness to Kely on Client's Explanation | y on ion |
| Low Incentives | High es Incentives | Row Means | Low Incentives | High Incentives | Row Means | Low Incentives | High Incentives | Row Means |
| Von- 44.93 quantified (24.40) Explanation n = 29 | 54.32 (22.83) n = 28 | 49.54 (23.91) | 47.52 (24.07) n = 29 | 60.79 (23.72) n = 28 | 54.04 (24.61) | 5.15 (2.05) n = 29 | 3.81 (1.81) n = 28 | 4.51 (2.04) |
| Quantified 50.64 Explanation (22.74) n = 28 n = 28 | 57.54 (22.80) n = 28 | 54.09 (22.83) | 50.39 (23.00) n = 28 | 58.43 (22.93) n = 28 | 54.41 (23.11) | 5.03 (2.06) n = 28 | 4.20 (2.18) n = 28 | 4.62 (2.14) |
| 47.74 (23.57) | 55.93 (22.67) | | 48.93 (23.38) | 59.61 (23.14) | | 5.09 (2.04) | 4.01 (1.99) | |
| Pearson Correlatio | ns (p-values) amo | Panel B: Pearson Correlations (p-values) among Persuasiveness Measures | sasures | | | | | |
| | Γ | Likelihood of Revenue Misstatement | | Likelihood of Missta | Likelihood of Gross Margin Misstatement | | | |
| Likelihood of Gross Margin Misstatement Willingness to Rely on Client's Explanation | | 0.88 (< 0.01) -0.21 (0.03) | | Υ v | -0.30 (< 0.01) | | | |
| Panel C: Multivariate Analysis of Variance | sis of Variance | | | | | | | |
| | | df | | F-statistic | 1 | p-value | | |
| Incentives for earnings management Explanation type | çement | 3, 107 3, 107 | | 3.63 1.41 | | 0.02 0.24 | | |
| Incentives for earnings management * | gement * | 3, 107 | | 0.27 | | 0.85 | | |

ss of the Client Evulanation^a **TABLE 2**

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Anderson, Kadous, and Koonce

(contintued on next page)

explanation type

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| TABLE 2 (continued)TABLE 2 (continued)nel D: Multivariate Analysis of Covariancedf f -statistic p -valueourcedf F -statistic p -valueource 3 , 105 0.11 0.00 centives for earnings management 3 , 105 0.11 0.95 centives for earnings management 3 , 105 0.11 0.95 centives for earnings management 3 , 105 0.11 0.95 centives for earnings management * 3 , 105 0.11 0.95 centives for earnings management * 3 , 105 0.11 0.95 centives for earnings management * 3 , 105 0.09 0.24 This table shows analysis for the three questions designed to capture the persuasiveness of the manager's explanation for an unexpected increase in revenues. Panel A shows the other than the variables. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses. Panel C contains the multivariate analysis of variance for tests of hypotheses.The revenue mistratement of variables. Panel C contains the multivariate analysis of variance for tests of hypotheses. | Panel D: Multivariate Analysis of Covariance Source Factor score for potential for earnings management Incentives for earnings management Explanation type Incentives for earnings management * explanation type a This table shows analysis for the three questions designed hypotheses. Panel D repeats the Panel C analysis but The revenue misstatement question asked naricinants |
|--|--|
| The recenture massive materially an unstantial of the massive massive massive massive material material and a second and you the recent massive material to see a second and you the recent massive material to see a second and you the recent massive material and the second and you the recent massive material and the second and you the recent massive material and the second and you the recent massive material and the second and you the recent massive material and the second and you the recent and the second and you the | eventing "likely to be materially misstated". The |
| and norticinants to rate the libelihood of a misstatement in revenues with 0 rene | revenue misstatement question asked participants |
| C analysis but includes the potential for earnings management covariate needed | otheses. Panel D repeats the Panel C analysis but |
| srimental condition. Panel B shows the correlations among the variables. Panel C | ns and standard deviations by experimental condi |
| questions designed to capture the persuasiveness of the manager's explanation fi | table shows analysis for the three questions desig |
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| | ination type |
| 3, 105 | ives for earnings management * |
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| | |
| | ives for earnings management |
| | igement |
| 3, 105 | · score for potential for earnings |
| df F-statistic | e |
| Covariance | D: Multivariate Analysis of Covariance |
| TABLE 2 (continued) | |
| | |

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See Table 1 for a description of the incentives for earnings management and explanation type variables. The earnings management factor score was derived from a confirmatory

factory analysis using the five dependent measures from Table 1.

which they would rely on the manager's explanation as they planned their audit work, with 0 representing "not at all willing" and 10 representing "completely willing."

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Finally, we performed a mediation analysis (Baron and Kenney 1986) to determine whether variation in auditors' perceptions of the potential for earnings management was responsible for the main effect of incentives observed for our dependent measures. Because we collected multiple measures of potential for earnings management, we performed confirmatory factor analysis using the five measures in Table 1 to create a composite score for use in the mediation analysis. Consistent with the items measuring a unitary construct, only one factor had an eigenvalue greater than 1.0. The factor explained 59 percent of the variance in the five measures.

Next, we confirmed that the factor score was influenced by the incentives for earnings management manipulation ($t_{110} = 6.10$, p < 0.01) and that it was associated with the three measures of the persuasiveness of the manager's explanation (r = 0.39, 0.45, -0.46 for likelihood of revenue misstatement, likelihood of gross margin misstatement, and willingness to rely on the explanation, respectively, all p < 0.01). Finally, we included this factor as a covariate in a MANCOVA for the three persuasiveness measures (Table 2, Panel D). In that analysis, the factor score was significant ($F_{3,105} = 11.94$, p < 0.01) and the incentives for earnings management variable was no longer significant ($F_{3,105} = 0.11$, p = 0.95).¹⁴ This analysis indicates that auditors' impressions of the potential for earnings management do, in fact, explain the influence of incentives for earnings management on the persuasiveness of the client's explanation.¹⁵

SUMMARY, DISCUSSION, AND LIMITATIONS

In this study, 113 experienced senior-level auditors made audit-planning judgments based on a management explanation provided in response to an observed unusual increase in an important, yet subjective, financial statement account. We varied whether the manager's explanation was quantified (i.e., put into numbers) and whether the manager had incentives to manage earnings. Based on the persuasion knowledge model, we developed theory regarding how these two factors would influence auditors' evaluation of management's explanation for the unexpected increase in revenue.

Consistent with our expectations, the results support the notion that incentives for earnings management influence auditors' perceptions of management's actions and beliefs. That is, we demonstrate that auditors view a client manager with high incentives to manage earnings as more likely to report aggressively and more desirous of making the financial statements look good and getting the auditor to accept the financial statements. Further, auditors view a manager with high incentives to manage earnings as more likely to provide information that does not reflect his true beliefs and the underlying facts and more likely to manipulate the numbers in the quantification. Also consistent with our predictions, we find that auditors consider a quantified, management-provided explanation as an out-of-the-ordinary attempt at persuasion, the appropriateness of which depended on management's incentives. Further, we show that auditors believe that quantification provided information about the sufficiency of a client manager's explanation for a financial-statement fluctuation. These results support our theoretical development.

Despite these results for both our earnings management and quantification variables, we do not observe an interaction of explanation type and incentives to manage earnings for three audit-planning judgments. In particular, auditors did not consider a quantified explanation to be more persuasive than a non-quantified explanation when incentives to manage earnings were low, despite the fact that auditors recognized the sufficiency information in the quantified explanation and that the manager was unlikely to manipulate the numbers. Thus, our manipulation clearly had the intended impact on how auditors view quantified explanations, yet auditors did not incorporate the sufficiency effect into their audit judgments. Rather, the persuasiveness of both quantified and non-quantified client explanations was solely affected by the manager's incentives to manage earnings.



¹⁴ The factor score did not significantly interact with incentives for earnings management, explanation type, or the interaction of these two variables.

¹⁵ Because we did not observe a significant effect of explanation type on persuasion, we were not able to test whether any effects of explanation type were mediated by explanation sufficiency. When we added the sufficiency variable to the Table 2, Panel D MANCOVA, it was not significant ($F_{3, 104} = 0.70$, p = 0.56) and inferences were not changed.

One potential explanation for auditors' failure to find quantified explanations more persuasive in the low incentives condition may be that practicing auditors do not expect to receive a quantified explanation from management at the planning stage of the audit. That is, auditors may be unwilling to use the sufficiency information that a quantified explanation embodies, especially if their goal at planning is merely to identify *problem* areas. Further, that the quantified explanation originated from a client manager, instead of an independent source, may have limited the amount of reliance that the auditor was willing to place on it (Hirst 1994).¹⁶ Thus, by studying an audit setting in which corroborating information was not readily available, we may have limited the opportunities for quantification to influence auditor judgment. Future work could address this issue by replicating the study in later stages of the audit or in settings in which collaborating information is available to participants.

A second potential explanation for auditors' failure to find quantified explanations more persuasive in the low incentives condition is that auditors may be less willing to rely on sufficiency information provided by someone else versus that which was developed themselves. That is, while we did not find an effect of quantification on auditors' planning judgments, Anderson and Koonce (1998) did report such an effect in conditions where auditors self-generated a quantified explanation derived from management-provided information (and, interestingly, where corroborating information was not present). Research from psychology has shown that self-generated information is better recalled and better understood than information that is not self-generated (Gardiner and Rowley 1984; Slamecka and Graf 1978). Based on this research, it is possible that the reason auditors in Anderson and Koonce (1998) reacted to sufficiency information while those in this study did not may be that auditors have greater comprehension of a self-generated quantification. That is, the process of constructing the causal arguments to explain a client-provided cause may create a deeper understanding of its plausibility, thereby enhancing its persuasive power. Without going through that self-construction process, auditors may feel less confident about the plausibility of the explanation and may, therefore, be less willing to rely on the information to adjust their audit-planning risk judgments.¹⁷ Future research that varies whether a quantified explanation is self-generated or provided to the auditor, holding constant the source and content of the information, could address this possibility. Such research also would provide insights into whether our theory will generalize to new audit approaches in which auditors develop their own highly quantified expectations for financial statement numbers. For example, both KPMG's strategic-systems approach to auditing and PricewaterhouseCoopers' revised audit approach place high importance on auditors developing precise numerical "knowledge-laden expectations" for financial statement accounts (Bell et al. 2002; PricewaterhouseCoopers 2002).

Finally, it is possible that the auditors in our study focused their attention on incentives for earnings management such that the effects of this factor were deemed more important than the type of explanation provided by management. Auditors' focus on managers' incentives would not be surprising given the publicity about earnings management in general, and management of revenues, in particular. For example, the SEC (1999) recently clarified guidance regarding revenue recognition, apparently because of its belief that inappropriate revenue recognition is the most common

¹⁶ On the other hand, additional data collected in our study suggested that auditors may not have immediately dismissed the information from the client. Specifically, we asked the auditors to indicate how willing managers would be to put in writing statements or analyses that they know are not accurate, with 0 (10) indicating very unwilling (very willing). The mean response to this question was 3.23 (and was not affected by our experimental manipulations), suggesting that auditors did not consider it likely that managers will put incorrect information in writing.

¹⁷ Professional standards indicate that management representations should be viewed with professional skepticism. Given this, one might argue that it is of no surprise that the auditors relied to a greater extent on a self-generated quantified explanation (versus one that was not quantified) in Anderson and Koonce (1998) than in this study where the explanations were provided to the auditor. It should be noted, though, that the auditors in the Anderson and Koonce (1998) study generated their explanations from *management-provided* data, suggesting that concerns about management representations also were relevant in their study.

form of earnings management (Bear Stearns 2000). In addition, the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2001) recently reported that over half of the financial reporting frauds during the ten-year period ending in 1997 involved overstatements of revenue. In many of the recent SEC charges against individuals and entities, the problems involved revenue recognition abuses (Bear Stearns 2000). In light of these highly publicized tendencies for managers to manage earnings via revenue recognition practices and in light of the equally well-publicized enforcement actions, it may be prudent for auditors to focus on their clients' incentives to manage revenues when planning the audit (AICPA 2002).

Although auditor focus on the potential for earnings management may have benefits, it also has potential costs. One such cost is that when incentives to manage earnings are low, auditors apparently do not properly utilize the sufficiency cue inherent in the quantified explanation in assessing the persuasiveness of a management-provided explanation. The auditors in our study recognized that the quantified explanation showed that the client's reason was sufficient to account for the revenue increase. Given this belief, it is surprising that auditors apparently ignored the sufficiency information in their audit-planning judgments when client incentives to manage earnings were low and, thus, auditors believed the manager was unlikely to misrepresent his information. Future work could further examine the conditions under which auditors use audit information about sufficiency, as well as the more general conditions under which quantification influences auditor behavior.

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