

The Role of Reporting Incentives and Quantification in Auditors' Evaluations of Earnings Fluctuations

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Abstract

Company managers frequently provide explanations in response to auditor inquiries about unexpected earnings fluctuations. Client inquiry is a particularly important source of evidence for subjective accounts that require estimation, as auditors' ability to obtain reliable evidence from other sources often is limited for such accounts. In this study, we examine two factors that we expect to affect how auditors evaluate client-provided explanations for an important account that requires significant estimation (i.e., revenue): whether the explanation is quantified (i.e., put into numbers) and the strength of the client manager's incentives to manage earnings. We expected that auditors' evaluations of client-provided explanations for unexpected financial-statement fluctuations would be jointly influenced by these factors. Instead, we found that the persuasiveness of client explanations is primarily determined by the client's incentives to manage earnings. Focus on client incentives is consistent with auditors attending to regulators' recent and vociferous concerns about earnings management. However, such a focus implies that when the likelihood of earnings management is low, auditors fail to take into account information in the quantified explanation that is relevant to the quality of the evidence.

KEY WORDS: Earnings management, quantification, auditing

I. INTRODUCTION

Auditors must assess the inferential value of evidence to determine the nature, extent, and timing of audit work to be performed. In many cases, audit evidence takes the form of explanations and other information from client management (Hirst and Koonce 1996). Management-provided evidence is especially important when the auditor investigates accounts that are subjective and based on estimates, because the auditor's ability to obtain reliable evidence 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 effectiveness of the audit and the quality of earnings may be compromised if the auditor fails to appropriately evaluate management-provided information.

In this paper, we experimentally examine two contextual factors that we expect to affect auditors' evaluations of a client-provided explanation for a significant fluctuation in an account that requires considerable estimation (i.e., revenue). 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., his incentives to manage earnings). We draw on the persuasion knowledge model (Friestad and Wright 1994) to develop a preliminary theory of how these two factors should jointly influence auditors' judgments and decisions.

Investigating these two factors 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 under conditions that vary in their likelihood for high-quality reporting. While some research has examined how auditors are persuaded by others, most has focused on how auditors are persuaded by other audit-team members (e.g., Rich et al. 1997; Tan and Yip-Ow forthcoming), rather than by clients. In our study, we examine whether auditors recognize

quantified explanations as persuasion tactics that client managers use in their interactions with auditors and whether auditors respond appropriately. Although anecdotal evidence suggests that quantified messages are persuasive (Porter 1995), little or no empirical evidence exists on this issue. The paucity of evidence on the topic of quantification is surprising in light of the prevalence of quantified communications in auditing and accounting contexts.¹

Drawing on the persuasion knowledge model, we hypothesize that auditors will view a quantified explanation provided by a client manager in response to an unexpected financial-statement fluctuation as a persuasion tactic. Whether the persuasion tactic is viewed positively or negatively, however, is hypothesized to depend on the client manager's incentives to engage in earnings management (and so, his perceived objectivity). In particular, when the manager has low incentives to manage earnings, an auditor should view a quantified explanation as more persuasive than a non-quantified explanation because the former demonstrates that the client's explanation is sufficient to account for the observed fluctuation and it indicates higher competence of a relatively objective source. 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 quantification to have been manipulated to suit the manager's purposes. In this situation, we expect a quantified explanation will be no more persuasive, and may even be *less* persuasive, than a non-quantified explanation.

To test our predictions, we conducted an experiment in which practicing auditors planning an audit observed a significant increase in their client's revenues and inquired with a client manager as to the reason. The client 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 client manager (i.e., whether it was quantified or not) and the incentives of the client manager to

manage earnings (high versus low) between participants. Participants made audit planning judgments and decisions, and they also assessed the sufficiency of the explanation and the manager's competence and objectivity.

Consistent with our theory, auditors view the client manager with high incentives to manage earnings as less objective than the client manager with low incentives. In addition, auditors receiving a quantified explanation judge the explanation as more likely to be sufficient to explain the magnitude of the fluctuation and the client manager to be more competent than do auditors receiving a non-quantified explanation. Finally, auditors apparently view the quantified explanation as a potential persuasion tactic in that they view it more likely to have been manipulated when incentives to manage earnings are high, versus low. Despite these results, we do not observe the predicted interaction of explanation type and incentives to manage earnings for explanation persuasiveness. Rather, auditors' judgments about the explanation and their willingness to rely on it are strongly influenced by the client manager's incentives to manage earnings. Focus on client manager incentives is consistent with auditors' and regulators' recent and vociferous concerns about earnings management, particularly in the area of revenue recognition (Levitt 1998; Bear Stearns 2000). However, such a focus implies that when client manager incentives for earnings management are low, auditors fail to consider important information about explanation sufficiency and about the manager's competence that is present in the quantified explanation.

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 provides a discussion and concluding comments.

II. THEORY AND HYPOTHESIS

Auditors regularly seek out evidence from management to conduct their audits. Client-provided 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 from client management, as it is difficult for the auditor to obtain independent, reliable estimates. In such situations, it is important that the auditor use available cues to judge the reliability of the client-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 behavior.

Explanation Type

Client manager explanations for unusual fluctuations can take a variety of forms. For example, the explanation may be verbal or written. If it is written, the explanation may be in text, and it may or may not be quantified. Despite the pervasiveness of quantified communications in accounting contexts, the effects of quantification have not been extensively studied.

We expect that the existence of a quantified (versus a non-quantified) explanation speaks to two important aspects of the persuasiveness of client-provided evidence. First, a quantified explanation provides information about the sufficiency of the client's explanation for the observed financial-statement fluctuation. That is, it shows whether the explanation can account for the magnitude of the observed fluctuation. Anderson and Koonce (1998) find that information about sufficiency influences auditors' judgments and decisions. Specifically, they

report an experiment in which auditors who prepare their own quantified explanations more clearly distinguish between sufficient and insufficient explanations than do auditors who do not prepare quantified explanations. Assuming the quantification is reliable, a quantified explanation that shows the client's explanation is sufficient to account for substantially all of the observed financial-statement fluctuation is more persuasive than a non-quantified explanation, which provides no information about sufficiency.²

Second, the provision of a high-quality quantified explanation – that is, one that contains no apparent errors in logic or calculations and demonstrates sufficiency – implies that the source possesses the knowledge required to perform the calculations and logical analysis, is willing to exert the effort to do so, and is prepared for discussions with the auditor (e.g., Jones and Davis 1965). Accordingly, we expect that an auditor will view a client manager who presents him with a high-quality quantified explanation as more competent than a manager who provides a non-quantified explanation.³ Assuming the manager is trustworthy, an auditor should be more willing to rely on evidence from a more competent manager than from a less competent manager. Consistent with this assertion, prior research indicates that auditors rely more heavily on evidence from a more competent source than evidence from a less competent source (e.g., Bamber 1983; Hirst 1994; Rebele et al. 1988). In sum, the presence of a high-quality, quantified explanation provides auditors with information that the client's explanation is sufficient to account for the fluctuation and that management is highly competent. Absence of a quantified explanation leaves the auditor with less information about these two important aspects of evidence quality.

Incentives for Earnings Management

We expect that auditors' views of the persuasiveness of a manager's explanation will be influenced by the manager's incentives for earnings management. Because earnings management is seen as purposeful or intentional manipulation of the financial reports (Schipper 1989), auditors should differentially judge the objectivity of client managers depending on their perceived propensity to manage earnings (e.g., Hackenbrack and Nelson 1996). That is, we hypothesize that auditors will view managers who have high incentives to manage earnings as being less objective than managers with low incentives to manage earnings.

Prior research has shown that auditors are sensitive to the objectivity of the source of evidence, where objectivity is defined as the likelihood that an individual will report his measurement or interpretation truthfully. For example, auditors consider evidence from a fellow auditor to be more persuasive than evidence from client management, presumably because the fellow auditor is seen as more objective than client management (Hirst 1994). As described below, we expect that perceived objectivity (i.e., incentives for earnings management) will moderate the effects of information about sufficiency and client-manager competence (i.e., explanation type) on auditors' evaluations of client explanations.

Joint Effect of Explanation Type and Incentives for Earnings Management

Drawing on the persuasion knowledge model (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 the persuasion knowledge model is that individuals use their knowledge about how persuasion works to recognize persuasion attempts and to manage persuasion attempts to achieve their own goals (e.g., Campbell and Kirmani 2000, 69). Persuasion knowledge includes beliefs about *persuasion*

tactics and 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 an auditor will view a quantified analysis from the client manager as a potential persuasion tactic. In other words, a quantified explanation should serve as an indication that the client is going to greater than normal lengths to persuade the auditor.⁴ We further anticipate that how the auditor views this potential persuasion tactic (i.e., positively or negatively) will depend on the auditor's perception of the client manager's objectivity. When faced with a potential persuasion tactic, an individual may turn to other aspects of persuasion knowledge, such as salient ulterior motives of the communicator, to identify whether the persuasion attempt is appropriate and to determine how best to interpret the persuasion attempt (Campbell and Kirmani 2000). For example, a shopper's interpretation of a salesperson's flattery (a potential persuasion tactic) is likely to depend on the shopper's ideas about the salesperson's motives. If the salesperson is not paid on a commission basis, the shopper may interpret positively such flattery and view the salesperson as friendly and discerning. However, if the salesperson is paid on commission, 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 facing clients with low incentives to manage earnings will view a quantified explanation and its source positively. The auditor is expected to view such a client manager as highly competent and relatively objective. Accordingly, 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 acceptability of his explanation. The auditor's goals are best met by making use of the evidence provided by the high-quality quantified explanation – that is,

information about the sufficiency of the client's explanation and the manager's competence – and so we expect that auditors will find a high-quality quantified explanation more persuasive than a non-quantified explanation in this setting.

However, auditors facing clients with high incentives to manage earnings should view a quantified explanation with suspicion. In light of the manager's salient incentives to mislead the auditor, the auditor should be more skeptical of an out-of-the-ordinary attempt at persuasion (i.e., an inappropriate persuasion tactic). That is, while the quantification may demonstrate sufficiency and the client manager's competence, the auditor likely would be suspicious that 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 gathering extensive additional evidence on the issue to protect their firms against misstatement risk and business risk. Accordingly, we expect that in this situation, auditors will judge the quantified explanation to be no more persuasive, and perhaps even less persuasive, than a non-quantified explanation.

In sum, based on the persuasion knowledge model, we predict an interaction between client manager incentives (which is expected to drive objectivity assessments) and type of explanation provided in response to an auditor inquiry (which is expected to drive sufficiency and competence assessments). Specifically, explanation sufficiency and perceived client competence will be positively associated with message persuasiveness when client manager incentives to mislead the auditor are low, but not when client manager incentives to mislead the auditor are high.

III. EXPERIMENT

To test our predictions, we conducted an experiment with 113 senior-level Big Five auditors at a national training program. 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 of the audit (Hirst and Koonce 1996), which is the setting of our study. The experiment utilized a 2 x 2 design with explanation type (quantified or non-quantified) and client incentives to manage earnings (high or low) manipulated between participants.

Participants were asked to assume the role of the in-charge auditor of 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. Because the focal point of the case was the company's use of the percentage-of-completion method, a description of this method was provided. Following this, the incentives-to-manage-earnings manipulation was introduced. We manipulated incentives to manage earnings via client risk factors (Hackenbrack and Nelson 1996; 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 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.

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.⁵ 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 audit client 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.⁶

The client-provided explanation was 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. See Figure 1 for details of the manipulation.

Insert Figure 1 here

Next, participants 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. Following this, participants were asked to indicate the extent to which they would be willing to rely on the

statements made by the controller in planning the remainder of the audit. A response scale with endpoints “not at all willing” (0) and “completely willing” (10) was employed for this question.

The post-experimental questionnaire asked participants several questions designed to check our manipulations. Further, the post-test also asked about the sufficiency of the client’s explanation, along with several questions regarding the client manager’s competence and objectivity. Responses to these questions were elicited using 11-point Likert scales. Participants also responded to a series of general questions about the case and provided demographic data.

IV. RESULTS

Manipulation and Other Checks

Manipulation Checks

The results of our manipulation check questions reveal that study participants saw the manipulations as intended. For the explanation type manipulation, 97% (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% (49/56) who received a quantified explanation correctly answered “yes” to this same question. A chi-square test indicates that the responses are significantly associated with the experimental condition ($\chi^2 = 80.47, p < 0.01$). These results indicate that participants appropriately attended to our explanation-type manipulation.

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 being audited 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 to the questions 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 indicates that the responses to this question are significantly associated with the experimental condition ($\chi^2 = 109.07, p < 0.01$). These results indicate that the incentives-to-manage-earnings manipulation was successful.

Checks on Whether the Quantified Explanation was Viewed as a Persuasion Tactic

To test whether auditors viewed the quantified explanation as a persuasion tactic, we first examined whether quantification was unexpected in the context. In the post-test, 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. The scale ranged 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 receipt of a quantified explanation as an out-of-the-ordinary attempt at persuasion.

To ascertain whether those receiving a quantified explanation in the high-incentives condition viewed the quantification as a less-appropriate persuasion tactic 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. On the response scale, 0 corresponded to “very unlikely” and 10 represented “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 quantification was used as an inappropriate persuasion tactic depended on the manager’s incentives.

Auditor Assessments of Explanation Sufficiency

To verify that the quantified explanation allowed the auditors to discern the sufficiency of an explanation for an observed financial statement fluctuation, 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). As expected, the results indicate 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 receiving a non-quantified explanation (mean of 39.05). Consistent with theory, the presence of a quantified explanation allows auditors to more clearly ascertain the sufficiency of the client’s explanation.⁷

Auditor Assessments of Manager Competence

We hypothesized that auditors’ assessments of client manager competence would be more favorable for managers providing a quantified message than for those providing a non-quantified message. We asked three questions about competence. Specifically, we asked the auditor to

judge the manager's level of preparedness, knowledge, and effort. Table 1 shows cell means (Panel A) and MANOVA results (Panel B) for these three measures. Consistent with the hypothesis, the main effect of explanation type is significant in the MANOVA ($F_{3,107} = 6.95, p < 0.01$). Also as expected, neither earnings management incentives nor the interaction of explanation type and incentives significantly influenced perceptions of competence (smallest $p = 0.43$). Follow-up ANOVAs reveal similar patterns of results for each dependent measure in that the explanation type main effect is significant for each measure (all $p < 0.01$, one-tailed tests) and no effects other than these main effects of explanation type are significant (smallest $p = 0.12$). Further, as shown in Table 2, explanation type had no effect on auditor's assessments of manager objectivity ($p = 0.79$). Consistent with our theory, auditors' assessments of manager competence are higher when the explanation received from the manager is quantified, and assessments of manager objectivity are not affected by explanation type.

Insert Tables 1 and 2 about here

Auditor Assessments of Manager Objectivity

We hypothesized that auditors' assessments of the client manager's objectivity would be based on the level of the manager's incentives to engage in earnings management. We collected five measures of objectivity. Table 2 shows cell means (Panel A) and the MANOVA results (Panel B) for these five measures – 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 is significant in the MANOVA ($F_{5,104} = 9.60, p < 0.01$). Neither

explanation type nor the interaction of explanation type and incentives are significant (smallest $p = 0.33$). Separate follow-up ANOVAs reveal a similar pattern of results for each dependent measure; that is, the main effect of earnings management incentives is significant ($p < 0.01$ for all measures except management's desire to get the auditor to accept the explanation, for which $p = 0.10$, one-tailed tests). Further, as shown in Table 1, managers' incentives to manage earnings do not influence auditors' assessments of manager competence ($p = 0.70$). Consistent with theory, auditors' assessments of manager objectivity are lower when the manager has higher incentives to manage earnings, and assessments of manager competence are not affected by earnings management incentives.

Persuasiveness of the Manager's Explanation

We predicted that explanation type and client incentives would interact to determine how auditors evaluate client-provided explanations, which, in turn, would influence auditors' planning judgments and decisions. In particular, we expected that when managers have low incentives to manage earnings, auditors would be more persuaded by (i.e., more likely to rely on) a quantified explanation than a non-quantified explanation. In contrast, when managers have high incentives to manage earnings, auditors were hypothesized to rely on a quantified explanation no more, and possibly less than, they rely on a non-quantified explanation. Further, our theory presumes that the effects of explanation type and incentives to manage earnings on auditors' judgments and decisions are mediated by auditors' assessments of explanation sufficiency, manager competence, and manager objectivity.

We used three dependent measures (two judgments and one decision) to test our hypotheses. We asked auditors to assess the likelihood of a misstatement in the client's revenues and the likelihood of a misstatement in the client's gross margin. We also asked auditors to determine the

extent to which they would rely on the client's explanation when planning the rest of the audit work. Panel A of Table 3 presents cell means for these three measures of persuasiveness and Panel B of shows the MANOVA results relevant to the interaction hypothesis. MANCOVA results for the mediation analysis are provided in Panel C.

The Panel B MANOVA shows a significant main effect of incentives to manage earnings ($F_{3,107} = 3.63, p = 0.02$). However, the table also reveals that neither explanation type ($p = 0.25$) nor the posited interaction between explanation type and incentives to manage earnings ($p = 0.85$) are significant, and so our hypothesized interaction is not supported.

 Insert Table 3 about here

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. We provide additional discussion of these results in the concluding section of the paper.

Finally, to provide evidence about whether the effects of incentives for earnings management on explanation persuasiveness were caused by auditors' assessments about client manager

objectivity, we performed a mediation analysis (Baron and Kenney 1986). First, we used factor analysis to obtain a unitary measure of objectivity.⁸ Next, we confirmed that this factor is correlated with the incentives for earnings management variable ($r = 0.49, p < 0.01$) and the three measures of the persuasiveness of the manager's explanation ($r = 0.39, 0.44, -0.45$ 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 the manager objectivity factor as a covariate in a MANCOVA for the three persuasiveness measures (Table 3, Panel C). In that analysis, manager objectivity is significant ($F_{3,103} = 11.59, p < 0.01$) and incentives for earnings management are no longer significant ($F_{3,103} = 0.14, p = 0.94$). This analysis indicates that the influence of the manager's incentives for earnings management on the persuasiveness of a management explanation operates via the effect of incentives on auditors' assessments of manager objectivity.⁹

V. DISCUSSION AND CONCLUSIONS

In this paper, we examine two factors that we expect to affect how auditors evaluate explanations received from client managers: whether the explanation is quantified (i.e., put into numbers) and the extent to which the client manager is likely to distort the information (i.e., his incentives to manage earnings). We investigate these factors within the context of the auditor observing an unusual increase in an important, subjective financial-statement account – revenue. Drawing on the persuasion knowledge model, we develop theory regarding how these factors will influence auditors' assessments of the sufficiency of the client-provided explanation, the client manager's competence and objectivity, and how these assessments, in turn, will affect how the auditor evaluates the client manager's explanation for the unexpected increase in revenue. We hypothesize that a quantified explanation will be seen as a potential persuasion tactic and

that whether it is viewed as appropriate or inappropriate will depend on the client manager's incentives to manage earnings.

We find empirical support for our notion that auditors recognize the strategic behavior of their audit clients. Specifically, we find evidence consistent with auditors viewing a quantified, client-provided explanation as a persuasion tactic whose appropriateness depends on manager incentives. Accordingly, our study contributes to the view of the audit as a process involving persuasion (Rich et al. 1997). While most of the prior research in this area has investigated how auditors persuade each other (e.g., Tan and Yip-Ow forthcoming), our focus is on how the auditor is persuaded by client personnel. Understanding how the audit client can persuade the auditor is particularly important when the account under investigation is subjective and involves estimates. We believe that the potential for a compromise of audit effectiveness is the greatest in these situations, as there are relatively few alternative sources of evidence available. Given the increasing importance of subjective accounts and estimates in the financial reporting process (e.g., FASB 2001a; Lev and Zarowin 1999; Lundholm 1999), it is critical that we understand how auditors evaluate client-provided evidence about such accounts and estimates.

Consistent with our predictions, we find that quantification provides information about the sufficiency of a client manager's explanation for a financial-statement fluctuation, and it also provides information about the manager's competence. We also find support for our prediction that the source's incentives for earnings management provide information about the source's objectivity. We did not, however, observe the predicted interaction of explanation type and incentives to manage earnings for auditors' planning judgments and decisions. Rather, auditors' views of the persuasiveness of client explanations are primarily affected by the manager's incentives to manage earnings.

One potential reason for the lack of significant interaction between explanation type and incentives for earnings management is that the auditors in our study may have focused their attention on manager incentives for earnings management, and so the effects of manager incentives were deemed as more important than the type of persuasion tactic used by the client manager (i.e., non-quantified versus quantified explanation). Auditors' focus on manager's incentives would not be surprising given recent publicity about earnings management in general, and management of revenues, in particular. For example, the SEC recently clarified guidance regarding revenue recognition (SEC 1999), apparently because of its belief that inappropriate revenue recognition is the most common form of earnings management (Bear Stearns 2000). In addition, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) recently reported that over half of the financial reporting frauds during the ten-year period ending in 1997 involved overstatements of revenue (COSO 2001). Further, in September of 1999, the SEC announced charges against 68 individuals and entities for abuses of the financial reporting process. The vast majority of these 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. Consistent with such a focus, in a recent survey, auditors claimed that although their clients attempt to manage revenues fairly frequently, they are less likely to allow management of revenues than other types of earnings management (Nelson et al. 2001).

Although focus on the likelihood for earnings management variable may have benefits, it also may have costs. One cost is that when incentives to manage earnings are low, auditors apparently do not properly utilize the cues inherent in the quantified explanation in assessing the

quality of evidence. The auditors in our study recognized that the quantified explanation showed that the client's explanation was sufficient to account for the revenue increase. Moreover, they viewed the manager who provided the quantified explanation for the unexpected increase in revenue as more competent than the manager who provided the non-quantified explanation and unlikely to misrepresent his information. Given these beliefs, it is surprising that auditors ignored these cues when client incentives to manage earnings were low. The lack of a competence effect in this setting is particularly surprising in light of Hirst's (1994) finding that when the reliability of an information source is high, auditors rely more heavily on a more competent source of information when planning an audit. Auditors may be less able to use competence information extracted from contextual cues than competence information provided more directly (e.g., Bamber 1983; Hirst 1994). Future work could further examine the conditions under which auditors use audit evidence about sufficiency and competence, as well as the more general conditions under which quantification influences auditor behavior.

ENDNOTES

- ¹ For example, managers explain the need for new equipment by quantifying the future expected cash flows. Auditors quantify proposed audit adjustments to determine their materiality. Tax accountants selling consulting work quantify projected tax savings.
- ² The study by Anderson and Koonce (1998) differs from this one in a number of ways. First, that study dealt with how auditors engage in quantification themselves, rather than how they evaluate quantified messages from others – the focus of this study. Second, Anderson and Koonce manipulated whether the quantified explanation was sufficient or insufficient. In our study, we examine two types of explanations – one that is quantified and clearly shows sufficiency and the other is not quantified and, thus, provides no information about sufficiency.
- ³ Note that this prediction is expected to hold only when the quantified explanation is of high quality. If a quantified analysis contains logical and/or computational errors or is insufficient to explain the magnitude of an observed fluctuation, auditors should not increase, and may even decrease, assessments of manager competence.
- ⁴ That auditors are able to recognize the strategic behavior of others is consistent with prior models and evidence (e.g., see Rich et al. 1997).
- ⁵ Although the company in the case materials was hypothetical, the information was drawn from 10K reports of several real companies in the industry. Study materials were pre-tested and revised to ensure clarity.
- ⁶ 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.
- ⁷ To ensure that the quantified explanation was viewed as being of high quality, we also asked auditors in the two quantified explanation conditions about the logic of the quantified analysis. Responses were generally above the midpoint of the scale (mean of 6.6 on an 11-point scale with 0 representing "highly inaccurate" and 10 representing "highly accurate") and, as expected, were not different between the two incentives conditions ($p > 0.40$).
- ⁸ We performed confirmatory factor analysis on the eight measures designed to capture assessments of client manager characteristics (i.e., our measures of manager objectivity and competence). A scree plot and examination of eigenvalues confirmed that there were two important factors. These two factors explain 64% of the variance in the eight measures. After a varimax rotation, the five measures described in Table 2 (i.e., the manager's desire to make the financials look good, his desire to be aggressive, his desire to get the auditor to accept the explanation, the extent to which his explanation reflected true beliefs, and the extent to which his explanation reflected the actual facts) loaded on the first factor and the three measures described in Table 1 (i.e., the manager's effort, knowledge, and preparedness) loaded on the second factor. Accordingly, we labeled the first factor "manager objectivity" and the second factor "manager competence."
- ⁹ Because we did not observe a significant effect of explanation type, we were not able to test whether any effects of explanation type were mediated by manager competence and explanation sufficiency. When we add the competence factor score described in footnote 8 and the sufficiency variable to the Table 3, Panel C MANCOVA, neither is significant and inferences are not changed.

REFERENCES

- Anderson, U., and L. Koonce. 1998. Evaluating the sufficiency of causes in audit analytical procedures. *Auditing: A Journal of Practice and Theory* 17 (1): 1-12.
- Bamber, E. M. 1983. Expert judgment in the audit team: A source reliability approach. *Journal of Accounting Research* 21 (2): 396-412.
- Baron, R., and D. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 51: 1173-1182.
- Bear Stearns. 2000. Revenue recognition 101. Accounting Issues Report, March 10, 2000.
- Campbell, M. D., and A. Kirmani. 2000. Consumers' use of persuasion knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent. *Journal of Consumer Research* 27 (June): 69-83.
- Committee of Sponsoring Organizations of the Treadway Commission (COSO). 2001. *Fraudulent Financial Reporting: 1987-1997 An Analysis of U.S. Public Companies*. New York, NY: American Institute of Certified Public Accountants.
- Financial Accounting Standards Board (FASB). 2001a. *Improving Business Reporting: Insights into Enhancing Voluntary Disclosures*. Norwalk, CT: Financial Accounting Standards Board.
- Financial Accounting Standards Board (FASB). 2001b. *Accounting for the Impairment or Disposal of Long-Lived Assets*. Norwalk, CT: Financial Accounting Standards Board.
- Friestad, M., and P. Wright. 1994. The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research* 21 (June): 1-31.
- Hackenbrack, K., and M. Nelson. 1996. Auditors' incentives and their application of financial accounting standards. *The Accounting Review* 71 (1): 43-59.
- Healy, P., and J. Wahlen. 1999. Commentary: A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13 (4): 365-383.
- Hirst, E. 1994. Auditors' sensitivity to source reliability. *Journal of Accounting Research* 32 (1): 113-126.

- Hirst, E., and L. Koonce. 1996. Audit analytical procedures: A field investigation. *Contemporary Accounting Research* 13 (2): 457-487.
- Jones, E., and D. Davis. 1965. A Theory of correspondent inferences: From acts to dispositions. In L. Berkowitz (Ed.) *Advances in Experimental Social Psychology* 2: 219-266.
- Lev, B., and P. Zarowin. 1999. The boundaries of financial reporting and how to extend them. *Journal of Accounting Research* 37: 353-385.
- Levitt, A. 1998. *The Numbers Game*. Speech delivered at the New York University Center for Law and Business. New York, NY, September 28, 1998.
- Lundholm, R. 1999. Reporting on the past: A new approach to improving accounting today. *Accounting Horizons* 13 (4): 315-322.
- Nelson, M., J. Elliott, and R. Tarpley. 2001. Evidence from auditors about managers' and auditors' earnings-management decisions. Working paper, Cornell University.
- Phillips, F. 1999. Auditor attention to and judgments of aggressive financial reporting. *Journal of Accounting Research* 37 (1): 167-189.
- Porter, T. 1995. *Trust in Numbers*. Princeton, NJ: Princeton University Press.
- Rebele, J., J. Heintz, and G. Briden. 1988. Independent auditor sensitivity to evidence reliability. *Auditing: A Journal of Practice and Theory* 8 (1): 43-52.
- Rich, J., I. Solomon, and K. Trotman. 1997. The audit review process: A characterization from the persuasion perspective. *Accounting, Organizations and Society* 22 (July): 481-505.
- Schipper, K. 1989. Commentary: Earnings management. *Accounting Horizons* 3 (4): 91-102.
- Securities and Exchange Commission. 1999. *Staff Accounting Bulletin 101—Revenue Recognition in Financial Statements*. Washington DC: Securities and Exchange Commission.
- Tan, H., and J. Yip-Ow. Forthcoming. Are reviewers' judgments influenced by memo structure and conclusions documented in audit workpapers? *Contemporary Accounting Research*.

FIGURE 1
Manipulation of Type of Explanation^a

EMAIL FROM BOB JENNINGS, 8:14 AM, ANSWER TO YOUR QUESTION

The revenue and gross margin increase during 1997 was due to estimated cost reductions on our Johnson Corporation project that we started in 1996. This project should be done in about 15 months from now. We are using the percentage of completion method on this project and anticipate that our remaining costs on this project will be considerably less than we initially predicted. These anticipated cost reductions increase our percentage of completion number as its denominator is now reduced, which bumps up the fraction of our “percentage complete.” This is legitimate, as we are closer to being done so we should show more of the revenue.

Certain implementation aspects that we thought would take many months will now take only one or two months. We just signed a new licensing agreement with one of our vendors that allows us to purchase certain computer-code modules to include in our systems implementation work. This is going to save us time because we will not have to develop and write the code ourselves. These modules will reduce our costs because the modules are cheaper than our consultants doing the programming, and also because the modules reduce implementation time and the amount of testing and documentation that is necessary. Because this is a fixed-price contract, we are still entitled to the entire contract price. So, nothing will be violated in our original agreement with Johnson.

These cost reductions, of course, improve our anticipated gross margin on this project – dollar for dollar with our revenue increases. Actual costs are actual costs for 1997 so they are unaffected by our future estimated costs to complete...so they stay the same. This explains the increases in revenue and our gross margins for 1997 that you were asking about. I’ve also got some numbers for you on this.

Johnson Corporation project	Numbers for 1996	1997— assuming our prior cost estimates had remained the same	1997— assuming our new cost estimates
Contract price	\$90,000,000	\$90,000,000	\$90,000,000
Costs incurred to date	\$10,210,103	\$45,210,477	\$45,210,477
Total estimated costs	\$70,560,000	\$70,560,000	\$64,000,836
% of completion	14.47%	64.07%	70.64%
Revenue (cumulative)	\$13,023,091	\$57,666,425	\$63,576,403
Costs (cumulative)	<u>10,210,103</u>	<u>45,210,477</u>	<u>45,210,477</u>
Gross margin (cumulative)	\$2,812,988	\$12,455,948	\$18,365,926
Revenue to be shown (per period*)	\$13,023,091	\$44,643,334	\$50,553,312
Costs to be shown (per period*)	<u>10,210,103</u>	<u>35,000,374</u>	<u>35,000,374</u>
Gross margin to be shown (per period*)	\$ 2,812,988	\$ 9,642,960	\$15,552,938

*Per period numbers determined by taking the cumulative figure and then subtracting out the relevant figure (i.e., revenue, costs, or gross margin) recognized in previous years. Project began in 1996.

^a This figure shows the type-of-explanation manipulation. The information above constitutes the quantitative explanation. The non-quantitative condition includes everything but the quantitative schedule and the “I’ve also got some numbers for you on this” sentence.

TABLE 1
Assessments of Manager Competence^a

PANEL A: Means (Standard Deviations of) Measures of Client Manager Competence

	Management's Level of Effort			Management's Level of Knowledge			Management's Level of Preparedness		
	Low Incentive	High Incentives	Row Means	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means
Non-quantified Explanation	5.26 (2.23)	4.86 (2.48)	5.07 (2.34)	6.77 (1.29)	6.32 (1.95)	6.56 (1.64)	6.86 (1.87)	6.24 (1.88)	6.56 (1.88)
Quantified Explanation	6.56 (1.99)	7.09 (1.62)	6.83 (1.82)	7.13 (1.55)	7.64 (1.13)	7.39 (1.50)	7.63 (1.72)	7.76 (1.33)	7.69 (1.52)
Column Means	5.89 (2.20)	5.97 (2.36)		6.95 (1.42)	6.98 (1.82)		7.23 (1.82)	6.99 (1.79)	

PANEL B: Multivariate Analysis of Variance

Source	df	F-statistic	p-value
Incentives for earnings management	3, 107	0.47	0.701
Explanation type	3, 107	6.95	0.000
Incentives for earnings management * explanation type	3, 107	0.93	0.428

^a This table shows the results for the three questions designed to capture auditors' assessments of the manager's competence. Panel A shows the means and standard deviations by experimental condition. Panel B shows the multivariate analysis of variance results for the three measures of manager competence.

The effort question asked participants to rate the amount of effort the manager put into generating the explanation, with 0 representing "little effort" and 10 representing "considerable effort." The knowledge question asked participants to rate the manager's level of knowledge of the financial reporting process, with 0 representing "not at all knowledgeable" and 10 representing "extremely knowledgeable." The preparedness question asked participants about the manager's level of preparation for the auditor's questions, with 0 representing "not at all prepared" and 10 representing "fully prepared." 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 explanation variable represents whether management's explanation for an unexpected increase in revenues contained only narrative discussion (non-quantified) or both narrative discussion and quantified analyses (quantified).

TABLE 2
Assessments of Manager Objectivity^a

PANEL A: Mean (Standard Deviations of) Measures of Client Manager's Objectivity

	Management's Desire to Make Financial Statements Look Good			Management's Desire to be Aggressive in Preparing This Year's Financials			Management's Desire to get Auditor to Accept His Explanation			Management's Explanation Reflect True Beliefs About Potential Cost Savings			Management's Explanation Reflect Underlying Facts About Potential Cost Savings		
	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means
Non-quantified Explanation	4.77 (2.30)	7.42 (1.95)	6.07 (2.50)	4.44 (2.20)	7.12 (2.32)	5.75 (2.62)	6.15 (2.42)	7.19 (1.72)	6.66 (2.15)	6.78 (1.59)	4.60 (2.38)	5.71 (2.28)	7.20 (1.82)	5.17 (2.29)	6.20 (2.29)
Quantified Explanation	5.06 (2.54)	7.64 (1.80)	6.36 (2.55)	4.84 (2.18)	7.13 (1.83)	6.01 (2.30)	6.74 (1.97)	6.72 (2.10)	6.73 (2.02)	6.23 (2.20)	4.89 (2.22)	5.56 (2.29)	5.86 (2.26)	5.50 (2.33)	5.68 (2.28)
Column Means	4.92 (2.40)	7.55 (1.86)		4.63 (2.18)	7.13 (2.07)		6.44 (2.21)	6.96 (1.92)		6.51 (1.92)	4.75 (2.29)		6.54 (2.14)	5.34 (2.30)	

PANEL B: Multivariate Analysis of Variance

Source	df	F-statistic	p-value
Incentives for earnings management	5, 104	9.60	0.000
Explanation type	5, 104	0.49	0.785
Incentives for earnings management * explanation type	5, 104	1.17	0.330

^aThis table shows the results for the five questions designed to capture auditors' assessments of the manager's objectivity. Panel A shows the means and standard deviations by experimental condition. Panel B shows the multivariate analysis of variance for the five measures of manager objectivity.

These 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 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 on his explanation, (4) the extent to which the manager's explanation reflected his true beliefs, and (5) the extent to which management's explanation reflected the underlying facts about potential cost savings. The response scale indicated "very little influence" for 0 and "very large influence" for 10. See Table 1 for a description of the independent variables.

TABLE 3
Persuasiveness of the Client Explanation^a

PANEL A: Mean (Standard Deviations of) Assessments of the Persuasiveness of the Client Explanation

	Likelihood of Revenue Misstatement			Likelihood of Gross Margin Misstatement			Willingness to Rely on Client's Explanation		
	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means	Low Incentives	High Incentives	Row Means
Non-quantified Explanation	44.93 (24.40) 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)	3.81 (1.81)	4.51 (2.04)
Quantified Explanation	50.64 (22.74) 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)	4.20 (2.18)	4.62 (2.14)
Column Means	47.74 (23.57)	55.93 (22.67)		48.93 (23.38)	59.61 (23.14)		5.09 (2.04)	4.01 (1.99)	

PANEL B: Multivariate Analysis of Variance

Source	df	F-statistic	p-value
Incentives for earnings management	3, 107	3.63	0.015
Explanation type	3, 107	1.41	0.245
Incentives for earnings management * explanation type	3, 107	0.27	0.849

PANEL C: Multivariate Analysis of Covariance

Source	df	F-statistic	p-value
Objectivity	3, 104	11.22	0.000
Incentives for earnings management	3, 104	0.15	0.927
Explanation type	3, 104	1.40	0.244
Incentives for earnings management * explanation type	3, 104	0.10	0.961

^a This table shows the results for the three questions designed to capture the persuasiveness of the manager's explanation for an unexpected increase in revenues. Panel A shows the means and standard deviations by experimental condition. Panel B shows the multivariate analysis of variance for these three measures. Panel C repeats the Panel B analysis but includes the objectivity covariate needed to test the mediation hypothesis.

The revenue misstatement question asked participants to rate the likelihood of a misstatement in revenues, with 0 representing "unlikely to be materially misstated" and 100 representing "likely to be materially misstated." The gross margin misstatement question was similarly worded. The reliance question asked participants to assess the extent to 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." See Table 1 for a description of the incentives for earnings management and explanation type variables. The objectivity variable is the factors score derived from a confirmatory factor analysis including the three dependent measures from Table 1 (which loaded primarily on a "competence" factor) and the five dependent measures from Table 2 (which loaded primarily on an "objectivity" factor).