AN EXPERIMENTAL INVESTIGATION OF THE INFLUENCE OF QUALITATIVE RISK FACTORS ON THE DETERMINATION OF PERFORMANCE MATERIALITY

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ABSTRACT

This paper presents the results of a field experiment that tested the effects of various qualitative factors, those suggested by auditing standards and prior literature, on practicing auditors' estimates of performance materiality with respect to the audit of specific accounts in an audit of financial statements.

On a macro level, for six of the six scenarios, on average, the auditors revised performance materiality downwards on the basis of the "bad" scenarios, and upwards on the basis of the "good" scenarios. However, a substantial number of respondents were quite inconsistent in their revisions. Our conclusion is that the concept of performance materiality, and the relationship between overall materiality and performance materiality requires additional clarification to provide appropriate guidance for auditors to make these performance materiality judgments.

INTRODUCTION

U.S., Canadian and International auditing standards discuss materiality at the overall level and at the individual transaction stream/account balance level. The latter approach is referred to in International and Canadian Auditing Standards as performance materiality ([4], [3]), and appears similar to the US Standards' concept of tolerable error ([2]). This paper presents the results of a field experiment that examined performance materiality by testing the effects of various qualitative factors, those suggested by auditing standards and prior literature, on practicing auditors' estimates of performance materiality with respect to the audit of specific accounts in an audit of financial statements.

Overall materiality is unambiguously a user concept. The commonly accepted definitions refer to an item or items being material if they could reasonably be expected to influence the economic decision(s) of a user of financial statements who had knowledge of the item or items. However, performance materiality is an auditing concept. The definition of performance materiality in CAS 320 refers to "the amount or amounts set by the auditor at less than the materiality level or levels for particular classes of transactions, account balances or disclosures" ([1], paragraph 9.). This is consistent with the wording of SEC Staff Accounting Bulletin No. 99 – Materiality, which says, "…exclusive reliance on certain quantitative benchmarks to assess materiality is inappropriate" ([5]).

RESEARCH QUESTION

RQ1: Will the auditors revise the preliminary performance materiality estimates upwards based on additional positive information/downwards based on additional negative information regarding qualitative risk factors concerning the client?

THE EXPERIMENT

Participants

The participants were 80 practicing partners, managers and seniors from three major public accounting firm offices in a major European city. The average number of years' experience for the partners/managers was 12.3 years. For the seniors, the average number of years' experience was 4.1. Ninety percent indicated experience with planning and with making materiality judgments.

Experimental Design

There were four different, independent, transaction streams/account balances – Sales Revenues, General and Administration Expenses, Inventory of Raw Materials, Work in Process and Finished Goods, and Construction in Progress. The experimental design was a 6 X 2 repeated measures ANOVA. For each of the four independent scenarios, the independent variables were (the same) six qualitative risk factors, representing a cross-section of economy-wide, industry-wide and firm-specific factors, each of which was presented in a positive and a negative version. The dependent variable was the amount of increase or decrease by which the participants adjusted the initial estimate of performance materiality in each of the 12 cells in response to the risk factor information.

Experimental Material

The hardcopy package given to the participants asked them to assume the role of Manager of the audit of a hypothetical company that had been a client for three previous years. They were informed that preliminary performance materiality percentages had been established for four separate account balances/transactions streams based on the expectation that misstatements in these particular account balances/transaction streams could influence the decisions of users of the financial statements. The participants were told to assume that they had the authority to modify or not, as they deemed appropriate, the engagement partner's preliminary performance materiality amount, based on the additional information that they received.

For each of the four account balances/transaction streams, there were the same six items of additional information. They were factors that would be thought of as affecting assessments of risk – e.g., the degree of cooperation, or lack thereof, from management, industry conditions, the results of analytical review procedures, and so on. Each factor had a positive and a negative version. The participants were asked to indicate the amounts of their increases/decreases to the respective performance materiality amounts in response to the items of additional information for each of the four scenarios in turn.

RESULTS

The research question related to the amounts, if any, by which the participants would adjust the preliminary figures for performance materiality based on the combinations of risk factor and positive/negative form.

Analysis by Transaction Stream/Account Balance

Overall, the results were consistent with the expectation that positive information regarding risk factors would lead to an increase in the estimate of performance materiality and negative information would lead to a decrease in the estimate of performance materiality (note that an increased estimate means looser materiality and a decreased estimate means tighter materiality).

To test whether the responses of the two groups were similar, a MANOVA was performed each of the four scenarios. In all four scenarios there was no statistically significant difference between the sets of responses of the manager/partner and the senior cells. Therefore in the following analysis we use the combined results of the 80 participants.

In the Revenue transaction stream the pattern of increases/decreases to performance materiality was perfectly correlated with the positive/negative forms of the items of information. The pattern was “anti-conservative”. A series of t-tests showed that the increases to performance materiality on the basis of positive items of information all were significantly different from zero in the “expected” direction (adjusted for multiple comparisons). In contrast, decreases to performance materiality on the basis of negative items of information were all non-significant, even before adjusting for multiple comparisons.

In the Expenses transaction stream, the pattern of positive/negative changes to performance materiality was less strong than that in the Revenue transaction stream. The same positively correlated pattern of increases/decreases to performance materiality in response to positive/negative items of information was present but the significance of the changes was not consistent. Both the increases and decreases to performance materiality were significantly different from zero for four of the six information items but neither the increases nor decreases were significant, even before adjustment for multiple comparisons, for item one (industry conditions), and only the decrease was significantly different from zero for item six (nature of account).

In the Inventories account, nine of the twelve revisions to performance materiality were highly significant in the expected direction. All decreases to performance materiality were statistically significant – the three that were not statistically significant were responses to positive items of information.

In the Construction in Progress account, the pattern was similar to that in the Expenses transaction stream, including a bias towards conservatism. Again, all changes were positively correlated with the positive/negative form of the items of information. All decreases to performance materiality were statistically significant, but not all increases. Four increases were statistically significant and two increases were not significant.

Analysis by Item of Information

It is difficult to conclude whether participants responded more strongly to the positive form of the items of information or to the negative form. Two of the six items in positive form (items three and five) resulted in significant revisions to the initial performance materiality figure in all accounts (see Table 3). This "across the board" effect did not occur as a result of the negative form of any items of information, although a three/one, significant/non-significant split did occur with respect to five of the six items of information in negative form. Overall, there were 34 significant mean changes to the initial estimates and they were divided evenly, 17 positive and 17 negative.

The largest mean relative increase to performance materiality across the four transaction streams/account balances, 34% of the base value, occurred in response to the positive piece of additional information related to internal control. The largest mean decrease across the four transaction streams/account balances, 26% of the base value, occurred twice, on the basis of the negative piece of additional information related to the company's internal control system and also on the basis of the negative piece of additional information related to company management.

The largest single increase to performance materiality, 72% of the base, was in the Revenue stream, related to positive internal control information, and the largest single decrease, 34% of the base, was in the Inventory account related to negative management information.

Looking at the changes from the perspective of the transaction streams/account balances "crossed with" the items of information, the Revenue stream results were quite different from the other three, which were more similar to each other. In the Revenue stream the average increase due to positive information was approximately four times the size of the average decrease due to negative information and much greater than the average increase in the other three accounts.

In contrast to this "anti-conservatism" tendency in the Revenue stream, in the other three accounts the average reaction could be characterized as conservative – there was a greater percentage change in response to negative information related to the base amount than was the case in response to positive information. This was most evident in the Inventory account where the mean reaction to negative information was approximately four times as great as the mean reaction to positive information.

Analysis by Participants' Responses

The responses were analyzed by transaction stream/account balance for the group as a whole to get an indication of the levels of agreement within the participants regarding increases/decreases to the preliminary estimates of performance materiality. Individually, the coefficients of variation ranged from a low of .70 to a high of 54.9. The highest level of within-participant agreement was associated with the largest recommended decrease to performance materiality, which occurred in the inventory account in response to the negative form of the item of information about company management. The lowest level

of within-participant agreement was associated with the positive form of the item of information about industry conditions.

Averaged across accounts, the four mean coefficients of variation ranged from a low of 2.7 for Construction in Progress to a high of 6.8 in Inventory (at least partially driven, no doubt, by the value of 54.9 referred to in the preceding paragraph).

The patterns of responses appear to be consistent with a bias towards conservatism. There are a total of 480 individual observations, the product of 80 participants crossed with six information items. There are nine possible combinations of changes to any particular (positive/negative pair of) information item and each can be characterized as representing a particular type of decision behavior.

The most frequent response, accounting for 36% of the responses, we label “anxious”. If the participant received negative information, he or she reduced performance materiality, but if the participant received positive information, he or she did not decrease performance materiality.

If the respondent increased his or her estimate for performance materiality based on the positive version of the item of information and decreased his or her estimate based on the negative version of the item, we labeled that response “flexible”. The “flexible” cell contains approximately 30 percent of the responses.

The pessimistic cell contains those responses that decreased performance materiality on the basis of both positive and negative information. The “anxious”, “flexible” and “pessimistic” cells together account for approximately 73 percent of the responses. Approximately 13 percent of the responses neither increased nor decreased performance materiality in response to any of the items of information.

DISCUSSION AND CONCLUSION

Our analysis of the experimental results shows that in aggregate, participants tended to respond to additional items of information regarding risk factors by adjusting performance materiality. They were most sensitive to *positive* risk factor information, as measured by the average magnitude of adjustments, as it pertained to the Revenue stream and most sensitive to *negative* risk factor information, as it pertained to the Construction in Progress account.

The positive information item having the greatest impact in terms of the magnitude of adjustment to performance materiality across the four accounts was the item related to the positive results of the internal control evaluation, and the negative information item having the greatest impact in terms of the magnitude of adjustment to performance materiality across the four accounts was tied between the item related to the negative results of the internal control evaluation and the negative information about the company management.

So what are we to make of these results? We would suggest that the glass is half-full. It appears that the implicit message of CAS 320, that risk factors should be a factor in the determination of performance materiality, is being heeded. However, the wide variability

in the response patterns, even within a single participant, suggests that the interpretation of that message may not be clear as could be desired. In particular, IAS/CAS 320, paragraphs 10., 11., and A12 may require clarification to provide appropriate guidance for auditors to make performance materiality judgments.

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