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Does Mandated Audit Communication Reduce Opportunistic Corrections to Manage Earnings to Forecasts?

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ABSTRACT: This paper reports two experiments in which Big 5 audit managers estimate reported (audited) earnings conditional on analysts' consensus forecast, auditing standards, and auditor discovery of a quantitatively immaterial earnings overstatement. We find that auditors judge overstatement correction less likely if it would cause a missed forecast, even for objectively measured misstatements. This behavior is consistent with SEC Chairman Levitt's concerns about opportunistic corrections to manage earnings to forecasts. Also, SAS No. 89's mandated representations and communications do not increase corrections that would cause a missed forecast, indicating that the Auditing Standards Board has limited ability to reduce opportunistic corrections through such regulations.

Key Words: *Audit regulation, Analysts' forecasts, Earnings management, Opportunism, Misstatement correction.*

Data Availability: *Contact the authors.*

I. INTRODUCTION

In a major speech, SEC Chairman Arthur Levitt (1998) lists what he calls ''abuse of materiality'' as one of the five most common ''gimmicks'' used to manage earnings to meet analysts' consensus forecasts. He suggests that some companies fail to correct

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misstatements less than a *quantitative* materiality guideline such as 5 percent or 3 percent of net income, if correcting the misstatement would cause earnings to fall below (or ''miss'') the consensus forecast. Differential correction of misstatements to meet forecasts is a form of earnings management because it reflects opportunistic accounting for realized outcomes.[1]

In response to Chairman Levitt's concern, in April 1999, the Auditing Standards Board (ASB) issued an exposure draft (ED) of an auditing standard designed to ''encourage audit clients to record financial statement adjustments proposed by auditors,'' and ''clarify management's responsibility for the disposition of financial statement misstatements brought to its attention'' (AICPA 1999a, 5). The ED's essence was adopted in December 1999 as Statement on Auditing Standards (SAS) No. 89 (AICPA 1999b).[2] The SAS requires that, in its representation letter to the auditor, management express its belief that any misstatements aggregated by the auditor that are not corrected in the financial statements are immaterial to the statements taken as a whole. It also requires that the auditor inform the audit committee about any misstatements brought to management's attention that remain uncorrected in the financial statements.

The ASB intended SAS No. 89 to increase misstatement correction by increasing the disutility to management of issuing audited financial statements containing quantitatively immaterial misstatements. It is unusual in that it (1) specifies actions of company management and auditor communication rather than audit evidence or report modification, (2) applies to items that are deemed quantitatively immaterial as well as to material items, and (3) arose in response to SEC officials' concerns about possible management of reported (audited) earnings toward an unregulated target—analysts' forecasts. The speed with which SAS No. 89 developed is also unusual since it progressed from an exposure draft to final form within nine calendar months.

This paper reports results of two experiments that assess the degree to which auditors believe that (1) correction of a quantitatively immaterial earnings overstatement depends upon whether the correction would cause reported earnings to fall below the consensus forecast, and (2) implementation of SAS No. 89 requirements would increase correction of such overstatements. Healy and Wahlen's (1999) review of earnings management research notes that recent archival studies conclude that firms manage earnings to meet or exceed forecasts (e.g., Degeorge et al. 1999; Burgstahler and Eames 1999; Brown 1999), but do not reveal the particular methods that firms use to increase reported earnings to meet this benchmark or test whether more stringent standards can mitigate earnings management.

Our study complements archival research through an experiment in which we manipulate the forecast benchmark and auditing standards while holding all else constant. This allows us to: (1) test for opportunistic misstatement correction, a specific form of earnings management, (2) establish baseline data for assessing the prevalence of this form of earnings management under prior auditing standards (testing the validity of Chairman Levitt's concerns), and (3) provide *ex ante* evidence about the new standard's potential effectiveness.

Based on a case scenario, participating Big 5 firm audit managers estimate reported (audited) earnings that would result from any management-auditor negotiation given analysts' consensus earnings per share (EPS) forecast, auditing standards, and objectivity of

[1] Earnings management has been defined as ''a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)'' (Schipper 1989, 92).

[2] Audit opinions under Generally Accepted Auditing Standards (GAAS) contain the qualifier ''in all material respects'' when referring to compliance with Generally Accepted Accounting Principles (GAAP), and auditors may issue unqualified audit opinions even if the financial statements are known to contain misstatements that the auditor believes are immaterial, individually and in the aggregate.

measurement of an earnings overstatement noted by the auditor.[3] We manipulate the consensus EPS forecast such that full (negative) correction results in earnings slightly above or below the forecast, and we manipulate auditing standards as pre-SAS No. 89 or SAS No. 89. Both manipulations are between-subjects. To assess the effect of measurement objectivity, the misstatement in experiment 1 involves an accounting estimate beyond the limits of a ''reasonable'' estimate and, in experiment 2, a data-accumulation-based misstatement.

In experiment 1, few auditors applying pre-SAS No. 89 auditing standards expect correction of any portion of a misstated accounting estimate that leads to overstated earnings, and the consensus EPS forecast does not affect their expectations. This suggests that under prior standards management did not correct quantitatively immaterial earnings overstatements, regardless of the forecast. Under SAS No. 89, more audit managers estimate that some correction would be made, but only when it does not cause a missed forecast. When faced with the data-accumulation-based misstatement in experiment 2, more auditors expect correction. However, the amount corrected depends on the forecast, and SAS No. 89 has no additional effect on expected correction. Auditors expect a majority of clients to make full correction only if the forecast will not be missed.

Our results imply opportunistic correction of quantitatively immaterial misstatements to manage earnings to forecasts, and auditor acceptance of the practice. They also indicate that SAS No. 89 is unlikely to eliminate this opportunistic behavior. By implication, these results suggest that SEC regulation of registrant management in correcting misstatements (e.g., SAB No. 99) and regulation of audit committee oversight regarding quantitatively immaterial misstatements may be needed.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Managing Earnings to Forecasts

Regulators (e.g., Turner 1998), journalists (e.g., Byrnes et al. 1998; Vickers 1999), and archival researchers have investigated earnings management aimed at meeting implicit and explicit earnings benchmarks. For example, archival research by Degeorge et al. (1999), Burgstahler and Eames (1999), and Brown (1999) concludes that profitable companies manage earnings to avoid reporting earnings lower than analysts' consensus forecasts.[4]

To the degree that management sees the consensus earnings forecast as a target or benchmark, the benefit of earnings management should be greatest when it moves earnings from below, to, at, or above the consensus forecast. Consequently, we expect auditors to estimate less frequent and smaller corrections of misstatements when correction would move earnings below the forecast. This suggests the following hypothesis:

H1: The average correction of a quantitatively immaterial earnings overstatement will be smaller when full correction would move reported earnings below the consensus forecast.

SAS No. 89

Archival research provides indirect evidence that high-quality auditors and audit committees limit *non-GAAP* manipulation of earnings (DeFond and Jiambalvo 1993; Dechow

[3] By estimating actual reported earnings, they are implicitly estimating the portion of the misstatement that management would correct.

[4] Burgstahler and Dichev (1997) and Degeorge et al. (1999) also find evidence of earnings management to avoid losses and earnings decreases.

et al. 1996). However, many interpret the manipulation targeted by Chairman Levitt as *within-GAAP* because the differences are *quantitatively* immaterial. Prior to SAS No. 89, auditing standards were silent concerning both management's representation letter reference to *immaterial* uncorrected misstatements and the auditor's presentation of the misstatements to the audit committee. Since pre-audit earnings reflect management's preferred use of accounting discretion and neither auditing standards nor the U.S. Securities Acts require that the auditor insist on correcting quantitatively immaterial misstatements, we expect few such misstatements to be corrected under pre-SAS No. 89 standards.

SAS No. 89 is the first regulation that might limit opportunistic correction of quantitatively immaterial misstatements as an earnings management tool. SAS No. 89 requires management to take one of two actions concerning misstatements aggregated by the auditor. Management can: (1) correct the misstatements, or (2) represent to the auditor in writing that any uncorrected misstatements are, individually and in the aggregate, immaterial. Specifically, the management representation letter would contain the statement:

> We believe that the effects of the uncorrected financial statement misstatements summarized in the accompanying schedule are immaterial, both individually and in the aggregate, to the financial statements taken so as a whole. (AICPA 1999b, 5)

The standard also requires that the auditor inform the client's audit committee about the uncorrected misstatements (AICPA 1999b, 7).

SAS No. 89 could increase the disutility to management of not correcting misstatements. This is due to the increased threat of audit committee challenge of uncorrected misstatements, and possible future legal and regulatory actions based on management's written claim that misstatements are immaterial. This suggests the following hypothesis:

> **H2:** The average correction of a quantitatively immaterial earnings overstatement will be larger under SAS No. 89 than under prior auditing standards.

Quantitative and Qualitative Materiality

Chairman Levitt's (1998) speech and Chief Accountant Turner's (1998) letter to the AICPA were not the first warnings of the importance of qualitative factors in judging the materiality of a misstatement. In Statement of Financial Accounting Concepts No. 2, the FASB states that a financial statement omission or misstatement is material if:

> in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying on the report would have been changed or influenced by the inclusion or correction of the item. (FASB 1980, para. 132)

Auditing texts discuss ''surrounding circumstances'' or qualitative factors that can make small misstatements ''material.'' For example, Stettler (1977, 112) and Arens and Loebbecke (1997, 250) suggest considering whether the misstatement affects earnings trends and the relation of earnings to other benchmarks. This is consistent with the SEC's position, and suggests that opportunistic correction of discovered misstatements, such as not correcting when the correction would move earnings below a target, would likely affect a reasonable person's judgment.

The literature also mentions the precision with which misstatement can be estimated as a qualitative materiality factor (e.g., Stettler 1977, 112). Hackenbrack and Nelson (1996), Kennedy et al. (1997), Phillips (1999), and others suggest that aggressive reporting is more likely when significant judgment is required. Braun (2000) suggests that auditors are more

likely to insist on correcting *material* misstatements that are more objectively determined. Similarly, the ''reasonableness'' standard in Section 13(b)(2) of the Securities Exchange Act can be interpreted to allow ''reasonable minds'' to differ more when the correct amount is less-objectively determined. Experiment 1 tests for opportunistic correction of a subjectively measured misstatement, while in experiment 2, the misstatement is objectively measured.

Experimental Approach

In the experiments, we elicit Big 5 audit managers' estimates of reported (audited) earnings that would result from any management-auditor negotiation of audit findings. Although management should be in the best position to predict corrections they would record, management's experience is limited to relatively few correction negotiations. More important, as Chairman Levitt's (1998) speech indicates, management's own interests are served by maintaining the option not to correct quantitatively immaterial misstatements. Consequently, we did not ask client management to participate both because management likely lacks broad experience and they may have incentives not to respond truthfully in estimating corrections they would record.

Auditors are in the best position to estimate their own behavior (e.g., what uncorrected misstatements they would accept when applying GAAS), and they have second-best knowledge of management's response to existing and proposed reporting regulations. Also, they are likely to have experience negotiating corrections across several client contexts, and they do not have management's direct incentives to bias their responses. Therefore, we rely on auditors' relatively informed and unbiased estimates of reported (audited) earnings.

We conducted the experiments in December 1998 and March 1999. We wanted to act before auditors were conditioned by the ASB's April 1999 ED or the essentially similar language of SAS No. 89 adopted in December 1999. The short time frame restricted the available participant pool. Ideally, we would have run experiments 1 and 2 simultaneously with audit partners as participants. Due to the speed with which the ASB acted, our access was limited to two groups of audit managers, and the groups were not available simultaneously. However, we were able to run both experiments before the ED became public and potentially affected judgments of those in the available participant pool.

The short time frame also limited research controls that we could apply. For example, we could not administer a separate debriefing questionnaire or follow up on the responses of particular auditors. We also agreed not to divulge respondents' affiliation to minimize potential effects of litigation and client pressures. The final section of the paper discusses resulting limitations.

III. EXPERIMENT 1

Each participating audit manager reads background materials for the case and estimates the final reported (audited) earnings for the year based on: (1) pre-audit earnings and other financial statement items, (2) misstatement magnitude, sign, and objectivity of measurement, (3) analysts' consensus forecast, and (4) auditing standards in place. The general company background and the first two factors (which determine quantitative materiality) are held constant. The forecast and auditing standards are manipulated between-subjects to test our hypotheses.

The case involves earnings overstatement in a firm reporting positive earnings. We do not suggest to participants that management intended to manipulate earnings because management's intent might affect the auditor's assessments of engagement risk as well as affect their responsibilities under Section 13(b)(2) and the Foreign Corrupt Practices Act. We do

not specify other important company attributes such as last year's earnings, the existence or future need for ''cookie jar reserves,'' and other historical factors, so the participants relied on their average experiences to make further assumptions. Since participants are randomly assigned to treatments, any between-subjects differences in those assumptions should not bias our results.

Method

Participants

Seventy audit managers (mean assurance services experience = 4.7 years, mean total business experience = 7.6 years) from various offices of a Big 5 CPA firm participated in experiment 1. All of the auditors had primary responsibilities for nonfinancial clients. On average they spent 27 percent of their time with public clients,[5] of which an average of 67 percent were followed by financial analysts. Participants completed the experimental task during a firm-sponsored training course under the supervision of firm personnel and one of the authors' assistants.

Design and Procedures

All participants viewed a short case based on a medium-sized public auto parts manufacturer, Capital Auto Parts, Inc. (CAP), which has a single discovered misstatement due to an accounting estimate.[6] The instrument was pilot tested by ten faculty and Ph.D. students at the University of Texas at Austin, as well as the five practitioner members of the Big 5 Audit Materiality Task Force, and we made minor wording changes to clarify the instructions.

In experiment 1, the auditor of CAP believes that management's estimate of the allowance for inventory obsolescence is less than the closest ''reasonable estimate'' for the allowance, and the understated allowance results in overstated pre-audit earnings. According to SAS No. 47 (AICPA 1984, para. 29) the difference between the recorded estimate and the closest reasonable estimate is ''likely misstatement.'' Auditors with responsibilities for nonfinancial clients should be familiar with this type of subjectively measured misstatement.

The sign and magnitude of the misstatement (minus $0.03 per share) is held constant across all experimental conditions, as are the pre-audit values determining quantitative materiality of the misstatement (sales, assets, inventories, and earnings per share). Consequently, all typical quantitative measures of a material amount and overstatement magnitude are constant across conditions. We set sales, assets, inventories, and earnings so each measure of materiality falls just below the minimum quantitative materiality limits cited in the authoritative literature (less than 3 percent of earnings, less than 1 percent of inventory, and less than 0.3 percent of total assets).[7] All Big 5 Materiality Task Force members serving as pilot subjects assessed the misstatement as quantitatively immaterial.[8] Since pre-audit EPS and the misstatement are held constant, fully corrected EPS is also held constant.

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[5] Inferences are unaffected by deletion of the 15 participants who have spent less than 10 percent of their time with public companies.

[6] Braun (2000) suggests that auditors are more likely to insist on recording a single (material) misstatement than one or both of two misstatements that total to the same amount.

[7] Chairman Levitt's (1998) speech describes 5 percent, and to a lesser extent 3 percent, of earnings as typical benchmarks.

[8] We did not ask for the auditors' opinions about the quantitative or qualitative materiality of the misstatements. Since we were unable to administer a separate debriefing questionnaire, our concern that such questions may produce demand effects led us not to include them in our instrument. Instead, we relied upon our pilot subjects (including Task Force members) and authoritative literature to assure that the misstatements were quantitatively immaterial. To the extent that some participants did judge the misstatements to be quantitatively material, they would be more likely to require correction of the misstatement. Thus, our results may understate the prevalence of this form of earnings management for quantitatively immaterial amounts.

Auditing standards and the consensus EPS forecast are manipulated in a 2 × 2 between-subjects design. The case first presents audit managers with a short request to participate and guarantee of confidentiality. A description of either the then current (pre-SAS No. 89) or the proposed (SAS No. 89) auditing standards is presented on the same page (see Figure 1, Panels A and B, respectively). *Current standards* are quoted from SAS Nos. 61 and 85. The descriptions note that current auditing standards are silent about both reference to

FIGURE 1
Auditing Standards Presented to Participants

Panel A: Current Standards

Auditing Standards

On the next page, you will be asked to estimate your typical public client's response to a set of circumstances. When making that assessment, assume that the following (current) auditing standards and firm policies are in place.

Auditing standards and your firm's policies require, among other things, that the auditor obtain from management a representation letter that indicates:

> there are no material transactions that have not been properly recorded in the accounting records underlying the financial statements. (SAS No. 85, AICPA 1998, App. A, para. 6)

and that the auditor shall:

> inform the audit committee about adjustments arising from the audit that could, in his judgment, either individually or in the aggregate, have a significant effect on the entity's financial reporting process. (SAS No. 61, AICPA 1989, para. 9)

Current auditing standards are silent concerning management's representation letter reference to immaterial unrecorded audit differences. Auditing standards are also silent concerning presentation to the audit committee of immaterial unrecorded audit differences.

Panel B: Proposed Standards

Auditing Standards

On the next page, you will be asked to estimate your typical public client's response to a set of circumstances. When making that assessment, assume that the following (proposed) auditing standards and firm policies are in place (*changes are in italics*).

Auditing standards and your firm's policies require, among other things, that the auditor obtain from management a representation letter that indicates:

> there are no material transactions that have not been properly recorded in the accounting records underlying the financial statements. *All financial statement misstatements identified and discussed with us in the course of the audit have been recorded except for those summarized in the accompanying [Schedule of Unrecorded Audit Adjustments]. In our opinion, the effects of not recording such identified financial statement misstatements are, both individually and in the aggregate, immaterial to the financial statements of the Company taken as a whole.* (SAS No. 85, AICPA 1998, App. A, para. 6)

and that the auditor shall:

> inform the audit committee about adjustments arising from the audit that could, in his judgment, either individually or in the aggregate, have a significant effect on the entity's financial reporting process, *and present to the audit committee the [Schedule of Unrecorded Audit Adjustments] that management has represented as immaterial.* (SAS No. 61, AICPA 1989, para. 9)

immaterial misstatements in management's representation letter and presentation to the audit committee. This assures that audit managers in both conditions are fully informed of the relevant standards for both material and immaterial misstatements. *Proposed standards* append to the relevant passages of existing auditing standards the wording from a preliminary version of the ED available at the time the experiment was administered.[9] These additions appear in italics, as they normally would when the firm distributes amended standards to its auditors.

On the following page, participants are presented with a brief description of the client, its summarized financial data, the analysts' consensus forecast, and a description of the misstatement (see Figure 2; manipulated amount is in brackets). The consensus forecast is either \$1.05 or \$1.09. Pre-audit earnings are \$1.10, a \$0.03 overstatement is discovered, so full correction would lead to final reported earnings of \$1.07. Consequently, when the consensus EPS forecast is \$1.05 (the *\$0.02 above condition*), full misstatement correction leaves reported earnings at \$0.02 above the forecast. When consensus EPS is \$1.09 (the *\$0.02 below condition*), full misstatement correction moves reported earnings \$0.02 below the forecast. The relationships among pre-audit EPS, fully corrected EPS, and the consensus forecast in the two conditions appear in Figure 3.

By holding pre-audit and fully corrected earnings constant and manipulating the forecast, we separate the effects of intent to meet or beat the consensus forecast from the general motivation to report higher earnings, and at the same time hold constant all quantitative materiality measures. As noted earlier, we investigate earnings management in a manner similar to recent archival studies by assessing estimates of the distribution of reported (audited) earnings given the consensus forecast. If the distribution differs across levels of the forecast, we *infer* earnings management (and auditor acceptance) through opportunistic misstatement correction.

Participants make two judgments about likely magnitudes of reported EPS (see Figure 2). First, participants estimate the ''most likely EPS amount a public client such as CAP would *finally report* in the audited financial statements for the year'' (emphasis in the original). Second, participants provide a *complete probability distribution* over the feasible values of reported (audited) EPS. This allows assessment of distribution changes across other reported values even if the most likely (modal) value does not change. Limits to both scales are set at pre-audit EPS and fully corrected EPS based on the assumption that pre-audit EPS already reflects management's preferred use of accounting discretion and there is no reason to report EPS outside these amounts. Participants also complete a questionnaire requesting background information.

Results

Seventy audit managers estimated the most likely reported EPS value, while 65 also estimated the probability distribution.[10]

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[9] There is no significant change in wording of the ED. Experiment 1 was administered in December 1998, before any of the Big 5 firms had provided guidance on recording immaterial audit differences or the importance of analysts' forecasts. The final version of SAS No. 89 deleted the first italicized sentence for SAS No. 85 (referencing management-auditor discussions), substituted ''We believe'' for ''In our opinion,'' and included the representation as a separate item in the letter. Also, the final version changed and augmented the SAS No. 61 guidance to read:

> We believe that the effects of the uncorrected financial statement misstatements summarized in the accompanying schedule are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.

[10] One of the five did not complete requirement 2 in the current standards conditions, and four in the proposed standards conditions. Requirement 2 is a more difficult task than requirement 1.

FIGURE 2
Case Information for Experiment 1

Company Information

An audit client, Capital Auto Parts, Inc. (CAP), is a medium-sized automobile parts manufacturer that sells to automakers and to auto parts wholesalers. For the current year, relevant ***pre-audit*** balances are:

Sales	$1,300 million
Total assets	$1,100 million
Inventories	$375 million
Net earnings	$110 million
EPS	$1.10 per share

Analysts' Consensus Forecast

CAP stock is publicly traded, and has attracted a modest following by financial analysts. For the current year, financial analysts' consensus EPS forecast for CAP is:

Forecasted EPS $1.05[$1.09] per share

Audit Differences

Only one potentially important audit difference has been uncovered by the audit staff. The difference is due to management's estimate of the inventory obsolescence allowance. The audit staff believes that the recorded allowance is outside a reasonable range by an amount that ***overstates current earnings per share by $.03***. This amount is less than 3% of earnings, less than 1% of inventory, and less than .3% of total assets.

Required: *Assuming auditing standards and firm policies described on the previous page are in force, answer the following questions.*

1. The most likely EPS amount a public client such as CAP would ***finally report*** in the audited financial statements for the year is (circle one):

$1.07	$1.08	$1.09	$1.10
All of audit difference recorded			None of audit difference recorded

2. The proportion of public clients in similar circumstances that would ***finally report*** each of these audited EPS amounts for the year is (fill in each blank; amounts should total to 100%):

EPS	$1.07	$1.08	$1.09	$1.10
Percent Reporting	_____%	_____%	_____%	_____%

Most Likely Reported EPS

We test Hypotheses 1 and 2 using ANOVA to compare participants' estimates of the most likely reported EPS across treatments. Hypothesis 1 predicts a larger (downward) correction, and thus a smaller reported (audited) EPS amount, when full correction results in EPS *above* as opposed to *below* the forecast. We test this prediction via the main effect of forecast manipulation. Hypothesis 2 predicts a larger correction, and thus a smaller reported EPS, under the *proposed standards* than under the *current standards.* We test this

FIGURE 3
Relations among Pre-Audit EPS, Fully Corrected EPS, and the Consensus EPS Forecast for Experimental Conditions

Consensus Forecast $1.05: $0.02 *Below* Fully Corrected EPS	**Consensus Forecast $1.09: $0.02 *Above* Fully Corrected EPS**
Pre-audit EPS = 1.10	Pre-audit EPS = 1.10
	Forecasted EPS = 1.09
Fully corrected EPS = 1.07	Fully corrected EPS = 1.07
Forecasted EPS = 1.05	

prediction via the main effect of the standards manipulation. If the effectiveness of SAS No. 89 depends on whether the correction results in EPS above as opposed to below the forecast, the interaction of the standards and forecast manipulations could be significant.

Table 1, Panel A reports descriptive statistics on audit managers' estimates of the most likely reported EPS, and Panel B reports ANOVA results. The main effects of forecast ($p = 0.007$) and standards ($p = 0.012$) are significant in the expected directions and their interaction ($p = 0.036$) is significant.[11] The equality of variance assumption is violated based on Levine's test. However, inferences based on the Brown-Forsythe modified ANOVA are identical.

Since the interaction is significant, we examine the simple main effects of auditing standards at each level of the forecast. Recall that in all conditions, pre-audit EPS is $1.10. When the consensus forecast is $1.05 (so full correction would still produce earnings *$0.02 above* the forecast), the mean estimated EPS is significantly lower under *proposed standards* ($1.083) than under *current standards* ($1.095) ($F = 12.01$, $p = 0.001$). However, when the consensus forecast is $1.09 (so full correction would move earnings *$0.02 below* the forecast), the mean estimated EPS is not significantly different between the *proposed standards* ($1.096) and *current standards* ($1.097) indicating that the new standard has no effect ($F = 0.09$, $p = 0.76$). Overall, these results suggest that SAS No. 89 will be effective in increasing the proportion of immaterial misstatements that are corrected only when the correction does not cause earnings to miss the forecast.

Because participants' responses for the most likely reported EPS could take on one of only four values, we also analyze the data using log-linear models that treat participant responses as categorical data. Table 2, Panel A presents a three-way contingency table detailing participants' responses, while Panel B presents the likelihood ratio tests of partial association of the log-linear models.

Panel A of Table 2 details the effect of the analysts' forecast and proposed standards based on frequencies of particular responses. The consensus forecast has a major effect on misstatement correction magnitudes. Only one auditor predicts a correction that causes a missed forecast. In addition, the new standards lead more auditors to expect at least partial correction in both forecast conditions. However, under the proposed standards, when the consensus forecast is $1.05, auditors who expect a correction expect the full $0.03 correction, but when the consensus forecast is $1.09, auditors who expect a correction estimate only a $0.01 correction. Thus, even the proposed standards do not cause audit managers to expect a correction that would cause a missed forecast.

[11] All reported test probabilities are two-tailed. This interpretation is conservative for main effects because we make directional predictions.

TABLE 1
Experiment 1 (Accounting Estimate Misstatement)
Auditors' Estimates of the Most Likely Reported (Audited)
EPS across Experimental Conditions

Panel A: Descriptive Statistics [mean, *standard deviation*, (n)]

		Auditing Standards[b]		
		Current	*Proposed*	*Overall*
		$1.095[c]	$1.083	$1.089
	$1.05	*0.010*	*0.015*	*0.014*
		(19)	(18)	(37)
Analysts'		$1.097	$1.096	$1.096
Consensus	$1.09	*0.008*	*0.005*	*0.006*
Forecast[a]		(19)	(14)	(33)
		$1.097	$1.089	
	Overall	*0.009*	*0.013*	
		(38)	(32)	

Panel B: ANOVA

Effect	*F*	*df*	*Prob.*
Forecast	7.66	1,66	0.007
Standards	6.70	1,66	0.012
Interaction	4.59	1,66	0.036

[a] Analysts' consensus forecast took one of two values: $1.05 where full correction of the overstatement would result in reported earnings $0.02 above the forecast and $1.09 where full correction of the overstatement would result in reported earnings $0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participant responses could take on any of the four values limited by pre-audit EPS of $1.10 and fully corrected EPS of $1.07.

Since EPS represents the four values that the dependent variable can take, the EPS × Forecast and EPS × Standards interactions provide tests of Hypotheses 1 and 2, respectively, that are comparable to main effects tests in the ANOVA. The three-way interaction provides a test comparable to the two-way interaction in the ANOVA. Consistent with the ANOVA, the EPS × Forecast ($p = 0.000$) and EPS × Standards ($p = 0.025$) interactions are significant, and the three-way interaction ($p = 0.073$) is marginally significant. To reduce the potential effect of some small-expected cell frequencies and to more directly test our hypotheses about corrections that result in missing vs. making the forecast, we combine the cells where earnings miss the higher consensus forecast of $1.09 ($1.07 and $1.08) into one group and those that make that forecast ($1.09 and $1.10) into a second group. This cutoff is directly relevant to testing the effects of forecast-based earnings manipulation. The results are virtually identical ($p = 0.000$, $p = 0.032$, and $p = 0.074$, respectively).

Probability Distribution of Reported EPS

The second measure requires participating audit managers to estimate the complete probability distribution over feasible values of final reported EPS. Descriptive statistics on the auditors' estimates appear in Table 3, Panel A, and we report MANOVA results in Panel

TABLE 2
Experiment 1 (Accounting Estimate Misstatement)
Frequencies of Auditors' Estimates of the Most Likely Reported (Audited) EPS across Experimental Conditions

Panel A: Contingency Table

			Most Likely Reported (Audited) EPS[c]				
		Auditing Standards[b]	*$1.07*	*$1.08*	*$1.09*	*$1.10*	*Total*
Analysts' Consensus Forecast[a]	$1.05	Current	2	1	1	15	19
		Proposed	10	0	0	8	18
		Total	12	1	1	23	37
	$1.09	Current	1	0	3	15	19
		Proposed	0	0	6	8	14
		Total	1	0	9	23	33

Panel B: Log-Linear Model: Tests of Partial Association

Effect	*df*	*Likelihood Ratio Chi-Square*	*Prob.*
EPS	3	64.27	0.000
Forecast	1	0.23	0.632
Standards	1	0.51	0.473
EPS × Forecast	3	19.23	0.000
EPS × Standards	3	9.32	0.025
Stan. × Forecast	1	0.01	0.922
EPS × F × S	2	5.23	0.073

[a] Analysts' consensus forecast took one of two values: $1.05 where full correction of the overstatement would result in reported earnings $0.02 above the forecast and $1.09 where full correction of the overstatement would result in reported earnings $0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participant responses could take on any of the four values limited by pre-audit EPS of $1.10 and fully corrected EPS of $1.07.

B. Since the four responses must add to 100 percent, one value is redundant and is excluded from the MANOVA analysis.[12]

The MANOVA results are consistent with the analyses of the most likely reported EPS presented in the prior section. Overall, the expected correction magnitudes depend on the consensus forecast ($F = 7.72$, $p = 0.000$) and auditing standards ($F = 2.27$, $p = 0.089$). In addition, the significant interaction reveals that the effect of auditing standards depends on the level of the forecast ($F = 2.65$, $p = 0.057$). Tests for simple main effects show that when the consensus forecast is $1.05, auditing standards have a significant effect on the distribution of expected correction ($F = 2.68$, $p = 0.054$). The most significant change is

[12] The significance tests are not affected by which value is excluded.

TABLE 3
Experiment 1 (Accounting Estimate Misstatement)
Auditors' Estimates of the Proportion of Clients Reporting Each EPS Amount across Experimental Conditions

Panel A: Descriptive Statistics

			Mean Estimate of Proportion[c] of Clients Reporting EPS =			
		Auditing Standards[b]	*$1.07*	*$1.08*	*$1.09*	*$1.10*
Analysts' Consensus Forecast[a]	$1.05	Current	16.9	9.7	12.5	60.8
		Proposed	37.5	6.4	5.4	50.7
	$1.09	Current	7.8	1.4	15.3	75.5
		Proposed	12.5	7.2	33.1	47.3

Panel B: MANOVA

Effect	*F*	*df*	*Prob.*
Forecast	7.72	3,59	0.000
Standards	2.27	3,59	0.089
Interaction	2.65	3,59	0.057

Panel C: Simple Effects of Standards

	F	*df*	*Prob.*
Forecast = $1.05	2.68	3,59	0.054
Forecast = $1.09	2.25	3,59	0.092

[a] Analysts' consensus forecast took one of two values: $1.05 where full correction of the overstatement would result in reported earnings $0.02 above the forecast and $1.09 where full correction of the overstatement would result in reported earnings $0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participants provided estimates of the complete probability distribution over the four values limited by pre-audit EPS of $1.10 and fully corrected EPS of $1.07.

that SAS No. 89 increases the percentage expected to correct the entire $0.03 overstatement ($F = 7.31$, $p = 0.009$). When the consensus forecast is $1.09, auditing standards have a marginally significant effect ($F = 2.25$, $p = 0.092$). For the $1.09 forecast, the effect of standards is most apparent in the percentage of companies expected to correct only $0.01 of the overstatement ($F = 5.06$, $p = 0.028$), which would still allow making the forecast. As noted above, these results support our prior conclusion that SAS No. 89 promotes misstatement correction only by amounts that still allow management to make the consensus forecast.

Discussion

Our analyses of both dependent measures paint a consistent picture. First, regardless of the relationship between pre-audit EPS and the consensus analyst forecast, when overstatement is due to an insufficient accounting estimate, audit managers believe that most

quantitatively immaterial earnings overstatements are not corrected under current standards. Second, the evidence suggests that corrections are made only if they do not move earnings below the consensus forecast. This finding is consistent with opportunistic correction of quantitatively immaterial misstatements (a form of earnings management) that is accepted by the auditor.

The results also indicate that SAS No. 89 standards are likely to increase the number of immaterial corrections of misstated accounting estimates only when correction does not cause earnings to fall below the forecast. As a consequence, the standards are not likely to be effective in meeting the SEC's goals of reducing opportunistic correction of quantitatively immaterial earnings overstatements to meet analysts' forecasts.

IV. EXPERIMENT 2

Experiment 2 tests the generalizability of the experiment 1 results to situations where the correct GAAP value is objectively determined. Because objectivity of misstatement measurement has long been considered an important qualitative materiality factor, we expect an objectively measured misstatement to be more frequently corrected.

Method

Participants

An additional 43 audit managers (mean assurance services experience = 8.3 years, mean total business experience = 11.7 years) from various offices of the same Big 5 CPA firm participated in experiment 2. All have primary responsibilities for nonfinancial clients. On average they spent 33 percent of their time with public clients,[13] of which an average of 66 percent were followed by financial analysts. Since no firm training was in process at the time this experiment was prepared, the experimental task was mailed from and returned to the firm's executive office. Forty-four percent of the auditors responded to the mailing, and they performed the task approximately 16 weeks after participants in the first experiment.[14] We discuss potential effects of differences in participant experience, timing, and form of administration in Section V.

Design and Procedures

Experiment 2 is identical to experiment 1 except that we use an objectively determined[15] inventory overstatement described as: ''The difference is due to an inadvertent duplication of counts establishing the ending inventory of finished auto parts.'' All other aspects of the case are the same. We manipulate the same two variables (consensus forecast and auditing standards) between-subjects, and auditors respond to the same two estimation requirements. Experiment 2 participants are also asked slightly different questions in the debriefing questionnaire and are asked to explain their responses to the case.

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[13] Inferences are unaffected by deletion of the nine participants who have spent less than 10 percent of their time with public companies.

[14] During the winter of 1998–99, some firms began to issue internal guidance to implement the essence of the ED. While some participants in experiment 2 mentioned SEC interest in the topic, none mentioned receiving such guidance from their firm.

[15] Our selection of this type of misstatement as objectively determined is supported in the FEI Materiality Conference Call. During that call, Joe Bernadino, managing partner, North American Assurance and Business Advisory Services at Arthur Andersen, cited an equivalent example related to the physical inventory.

Results

Most Likely Reported EPS

Table 4, Panel A reports descriptive statistics on the audit managers' estimates of the most likely reported EPS, and Panel B reports ANOVA results. The effect of the forecast is marginally significant ($p = 0.07$), and the effects of standards and the interaction are not significant. As predicted by H1, participants expect a larger correction when it does not cause a missed forecast. Levine's test indicates that the equality of variance assumption is not violated. Recall that in all conditions, pre-audit EPS is \$1.10. When the consensus forecast is \$1.05, auditors' mean estimate of reported EPS is \$1.083. However, when the forecast is \$1.09, the mean estimates are \$1.090, indicating a smaller correction. Thus, even though the overstatement is objectively determined, on average, our auditors do not expect corrections that would cause earnings to miss the forecast.

Table 5, Panel A presents the three-way contingency table detailing participants' responses, and Panel B presents the likelihood ratio tests of partial association of the log-linear models. The EPS × Forecast interaction is the only significant effect ($p = 0.03$).

TABLE 4
Experiment 2 (Data Accumulation Misstatement)
Auditors' Estimates of the Most Likely Reported (Audited) EPS across Experimental Conditions

Panel A: Descriptive Statistics [mean, *standard deviation*, (n)]

		Auditing Standards[b]		
		Current	Proposed	Overall
Analysts' Consensus Forecast[a]	\$1.05	\$1.082[c] *0.014* (9)	\$1.083 *0.015* (10)	\$1.083 *0.014* (19)
	\$1.09	\$1.091 *0.012* (14)	\$1.090 *0.012* (10)	\$1.090 *0.012* (24)
	Overall	\$1.087 *0.013* (23)	\$1.086 *0.014* (20)	

Panel B: ANOVA

Effect	*F*	*df*	*Prob.*
Forecast	3.57	1,39	0.066
Standards	0.00	1,39	0.994
Interaction	0.03	1,39	0.856

[a] Analysts' consensus forecast took one of two values: \$1.05 where full correction of the overstatement would result in reported earnings \$0.02 above the forecast and \$1.09 where full correction of the overstatement would result in reported earnings \$0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participant responses could take on any of the four values limited by pre-audit EPS of \$1.10 and fully corrected EPS of \$1.07.

TABLE 5
Experiment 2 (Data Accumulation Misstatement)
Frequencies of Auditors' Estimates of the Most Likely Reported (Audited) EPS across Experimental Conditions

Panel A: Contingency Table

			Most Likely Reported (Audited) EPS[c]				
		Auditing Standards[b]	*$1.07*	*$1.08*	*$1.09*	*$1.10*	*Total*
Analysts' Consensus Forecast[a]	$1.05	Current	4	2	0	3	9
		Proposed	5	1	0	4	10
		Total	9	3	0	7	19
	$1.09	Current	3	0	4	7	14
		Proposed	2	1	2	5	10
		Total	5	1	6	12	24

Panel B: Log-Linear Model: Tests of Partial Association

Effect	*df*	*Likelihood Ratio Chi-Square*	*Prob.*
EPS	3	14.13	0.003
Forecast	1	0.58	0.445
Standards	1	0.21	0.647
EPS × Forecast	3	10.98	0.027
EPS × Standards	3	0.23	0.972
Stan. × Forecast	1	0.22	0.636
EPS × F × S	2	2.24	0.326

[a] Analysts' consensus forecast took one of two values: $1.05 where full correction of the overstatement would result in reported earnings $0.02 above the forecast and $1.09 where full correction of the overstatement would result in reported earnings $0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participant responses could take on any of the four values limited by pre-audit EPS of $1.10 and fully corrected EPS of $1.07.

Combining responses with EPS estimates of $1.07 and $1.08 (those less than the higher forecast of $1.09) and $1.09 and $1.10 (those greater than or equal to $1.09) produces similar results ($p = 0.01$). Panel A indicates that when the forecast is $1.05, 12 of the 19 audit managers (63.2 percent) expect correction of $0.02 or more. However, when the forecast is $1.09, only six of the 24 audit managers (25 percent) expect correction of $0.02 or more. Again, the new auditing standards have no significant effect on expected correction when the misstatement is objectively determined.

Probability Distribution of Reported EPS

Table 6, Panel A reports descriptive statistics for auditors' estimates of the complete probability distribution over feasible values of final reported EPS, and Panel B reports

TABLE 6
Experiment 2 (Data Accumulation Misstatement)
Auditors' Estimates of the Proportion of Clients Reporting Each EPS Amount across Experimental Conditions

Panel A: Descriptive Statistics

Analysts' Consensus Forecast[a]		Auditing Standards[b]	Mean Estimate of Proportion[c] of Clients Reporting EPS = $1.07	$1.08	$1.09	$1.10
	$1.05	Current	31.7	18.3	10.6	39.4
		Proposed	35.6	8.9	8.3	47.2
	$1.09	Current	26.1	6.1	29.6	38.2
		Proposed	24.0	9.0	26.0	41.0

Panel B: MANOVA

Effect	F	df	Prob.
Forecast	4.70	3,36	0.007
Standards	0.20	3,36	0.899
Interaction	0.66	3,36	0.375

[a] Analyst' consensus forecast took one of two values: $1.05 where full correction of the overstatement would result in reported earnings $0.02 above the forecast and $1.09 where full correction of the overstatement would result in reported earnings $0.02 below the forecast.

[b] The auditing standards presented included relevant excerpts from then current (pre-SAS No. 89) standards or those same excerpts with proposed standards appended to the relevant excerpts.

[c] Participants provided estimates of the complete probability distribution over the four values limited by pre-audit EPS of $1.10 and fully corrected EPS of $1.07.

results of the MANOVA. Results are consistent with the above analyses. Only the forecast is significant ($p = 0.007$).

Responses to Debriefing Questions

Since experiment 2 was conducted by mail using a single mailing, we could not follow up with debriefing questions regarding materiality judgments and other important process elements without potentially inducing demand effects. However, we did obtain related results from an open-ended question. After completing experiment 2, participants were asked to ''Please explain your reasoning behind your answers to questions 1 and 2 in the short exercise.''[16] All 43 participants responded to the question, with 29 auditors mentioning that the item is immaterial, and only four judging it to be material. Three of the latter four were in the $1.05 forecast condition, and they all indicated that complete correction is required, but the one in the $1.09 forecast condition indicated that only a $0.01 correction would be required, still allowing earnings to make the forecast (inferences are not changed by deleting these four participants' responses). Overall, these results suggest that our inferences are not attributable to differential perceptions of materiality across treatments.

[16] Experiment 1 asked participants for their general comments on the experiment, but did not ask for explanations of their responses.

Twenty-six auditors specifically mentioned the relationship between the forecast EPS and fully corrected EPS in their reasoning. Twenty-one suggested that management would resist correction, find offsetting amounts elsewhere in the financial statements, or seek a compromise correction. Twelve audit managers reported that the relationship between forecast and audited EPS has been a contentious issue with at least one of their clients. Only one suggested managements generally prefer to be accurate.

Six of the 20 auditors in the SAS No. 89 condition mentioned communication with the audit committee as a potentially contentious issue, while two indicated it would be ineffective (one reasoned that *both* management and board members are compensated with stock options, and thus face the same incentives). Only four auditors mentioned increased SEC scrutiny of earnings management as a reason for their response, and no one in the current standards condition mentioned the proposed auditing standards.

We also asked all participants whether the provisions of SAS No. 89 would cause clients to place more pressure on auditors to aggregate fewer small misstatements on their workpapers. Of the 42 participants who answered this question, 29 indicated that the standards would increase such pressure. This pressure could lessen the effectiveness of any new regulation related to quantitatively immaterial misstatements.

Discussion

Results from both dependent measures in experiment 2 suggest that audit managers believe that, even when a misstatement is an acknowledged error in a physical count, most quantitatively immaterial overstatements would not be corrected if doing so would cause the firm to miss the consensus forecast. The results also indicate that the proposed standards will not increase corrections in these circumstances.

In responses to the debriefing questionnaire, the auditors indicate that management has strong preferences for making the consensus forecast and will use opportunistic correction of quantitatively immaterial misstatements if necessary to meet the forecast, consistent with Chairman Levitt's concerns. Since the ASB has no authority over registrant managements, more direct regulation of registrants by the SEC may be necessary to mitigate this opportunistic misstatement correction practice.

V. GENERAL DISCUSSION

Conclusions

Although the results of the two experiments differ somewhat and the experiments differed by necessity in timing, administration, and participant pool, they provide consistent answers to our primary research questions. Both experiments support the SEC's concern that some registrants manage earnings by failing to correct quantitatively immaterial earnings overstatements when correction causes the company to miss the consensus forecast. The results are also consistent with archival studies suggesting more general management of earnings toward earnings benchmarks.

SAS No. 89 can be seen as an attempt to increase management's disutility resulting from possible lawsuits and sanctions when known or likely misstatements are not corrected. Our results suggest that SAS No. 89 will not prompt correction of quantitatively immaterial misstatements if the correction causes the company to miss the consensus forecast. Specifically, in experiment 1, where the misstatement magnitude is subjectively determined, SAS No. 89 increases the proportion of companies expected to make corrections, but only in amounts that allow resulting earnings to equal or exceed the forecast. In experiment 2, where misstatement magnitude is objectively determined, SAS No. 89 has no effect on correction behavior.

Direct comparisons of the results of the two experiments should be made with care because of differences in the timing, administration, and participant pool. However, a combined analysis of the two experiments in a single three-way ANOVA reveals that the effects of misstatement type and forecast are highly significant ($p = 0.006$ and $p = 0.002$, respectively), and the main effects of standards and the interactions become insignificant ($p > 0.15$). This combined analysis suggests (1) misstatements are less likely to be corrected if they cause earnings to fall below analysts' forecasts, (2) the new standards have no effect on this phenomenon, and (3) although objectively measured overstatements are more likely to be corrected, if the corrections reduce earnings below forecast, they are still deemed unlikely.

Subsequent Developments

After we conducted experiment 2, the SEC issued Staff Accounting Bulletin (SAB) No. 99, entitled *Materiality* (Securities and Exchange Commission 1999). Although SAB No. 99 is presented as a comprehensive *restatement* of existing standards, it contains specific guidance on the inappropriateness of purely quantitative approaches to materiality assessment, and is the first authoritative guidance to explicitly address the issues examined in this study. Specifically, it states ''Among the considerations that may well render material a quantitatively small misstatement of a financial statement item are:

- whether the misstatement arises from an item capable of precise measurement or whether it arises from an estimate and, if so, the degree of imprecision inherent in the estimate...
- whether the misstatement hides a failure to meet analysts' consensus expectations for the enterprise''[17]

along with seven other factors. SAB No. 99 could dramatically affect the behavior exhibited in experiment 2, and to a lesser extent that exhibited in experiment 1, if registrant management applies the SAB (or it is rigorously enforced by their auditor). Its potential effect is reinforced by an August 20, 1999 Financial Executives Institute (FEI) conference call on SAB No. 99 with the SEC Chief Accountant and SEC General Counsel. More than 300 individuals took part in this call. It was thus the best-attended FEI conference call to date, an indication of the level of interest in qualitative materiality within corporate financial management.

SAB No. 99 may enhance the effectiveness of SAS No. 89 because it focuses management and auditors on qualitative materiality factors. Requiring representation letter documentation from management and implicit audit committee approval of immaterial uncorrected misstatements more clearly places responsibility for corrections with management and the board of directors, in addition to the auditors. Future research can compare post-SAB No. 99 results with our pre-SAS No. 89 results and the effect of the ASB's private sector initiative.

Limitations

Differences between Experiments 1 and 2

As noted earlier, direct comparisons between experiments 1 and 2 should be made with care. The difference in administration (classroom vs. mail), the difference in experience

[17] Our experiment found that overstatement correction was *less* likely if the overstatement would cause a missed forecast. Inclusion of missing the forecast as a special consideration for correction implies that, all else equal, overstatement correction should be *more* likely, not less likely, if correction would cause a missed forecast. This implies that application of SAB No. 99 would not just reduce the behavior exhibited in our study, but also would change the sign of the bias.

level between the two participant groups,[18] and especially the 16-week interval between the conduct of experiments 1 and 2, all limit our ability to directly compare results of the two experiments.

When we ran experiment 1, SEC Chairman Levitt's speech had been reported (see MacDonald 1998a, 1998b, 1998c). However, the audit managers still believed that few corrections would be made if correction meant that earnings would miss the forecast, indicating that they were unaware or had not fully realized the implications of those views. For experiment 2, anticipation of increased SEC scrutiny may have dominated the impact of SAS No. 89, leading to the insignificant effect for auditing standards. However, only four audit managers in experiment 2 mentioned SEC scrutiny in their response explanations, and the strong forecast effect in experiment 2 suggests lack of awareness or a small impact. The exposure draft itself was not issued until well after experiment 2 was conducted and no participant indicated knowledge of its impending arrival. So prior knowledge of the exposure draft is not a likely explanation for our results in experiment 2.

The timing difficulties we encountered characterize a more general problem of conducting policy-relevant experiments *ex ante*. Since public announcements of deliberations on proposed regulations inevitably contaminate the relevant participant pools, such experiments are most appropriate when policy-making boards begin considering new issues.[19]

General Limitations

Our experiments made participants aware of current standards or both current and proposed standards. Thus, it is not clear from our results how salient these standards would be in normal practice. In addition, the need to act quickly and our resulting inability to separate the administration of the experimental instrument from the debriefing questionnaire meant that we were unable to conduct typical manipulation tests. In particular, we were unable to assess the salience of qualitative or quantitative materiality and possible differences in judgments of participating auditors. Furthermore, we were unable to ask questions about participants' knowledge of current developments or experience with management's opportunistic correction of earnings or their views on objectivity of measurement as a factor in judging qualitative materiality. Such measures would have been useful in ruling out alternative explanations for our results.

Implications for Additional Research

Our results suggest many avenues for research in accounting measurement, forecasting, regulation, and corporate governance. Here we discuss four extensions and a general implication for conducting *ex ante* policy-evaluation research.

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[18] The differences in experience between the two participant groups, in particular the relative inexperience of participants in experiment 1, are also a concern. To provide some evidence about possible experience effects, we performed two analyses. First, to make the participant samples more similar in experience across the two experiments, we reanalyzed the data after deleting the four managers with less than 2.5 years of assurance services experience from experiment 1 and the 12 managers with more than 10 years of assurance services experience from experiment 2. This reduces the difference in mean experience from 3.6 years to 1.9 years. Results for both experiments are virtually identical. Second, we analyzed the data from each experiment using years of experience in assurance services as a covariate. The covariate is marginally significant ($p = 0.08$) in experiment 1 and is not significant ($p = 0.29$) in experiment 2, and the effects for the experimental treatments are unchanged. The distribution of experience across each of the firm's five industry groupings for the two groups of auditors was very similar across the two experiments. These tests suggest that experience differences do not explain the differences in the effects of the standards between experiments.

[19] Policy-making boards rarely elicit, invite, or commission such studies that might provide insights *ex ante*. To our knowledge, the only *ex ante* policy-evaluating research that the ASB has ever sponsored is research to support possible quantitative materiality guidance for SAS No. 47 (see Warren and Elliott 1986).

First, our study avoided any mention of prior intent by management to manage pre-audit earnings. Knowledge of prior intent would likely affect the auditor's evaluation of management integrity and the risk of undetected misstatement, as well as willingness to allow detected misstatements to remain uncorrected. Also, knowledge of management's intent might increase the perceived effectiveness of audit committee communication. On the other hand, prior intent might mean management would be more resistant to correction. Experiments manipulating intent to manage earnings may yield greater insights into the effects of representation and communication regulation.

Second, our results on the limited effectiveness of required management representations and communication of misstatements raise questions about the effectiveness of similar requirements in other corporate governance settings. As an example, Independence Standards Board Standard No. 1 (1999) requires auditors to disclose and discuss with the audit committee all relationships between the auditor and the client. Comparative studies across contexts may yield insight into when audit committee communication regulation will likely be an effective corporate governance tool.

Third, regulators are considering auditor and audit committee evaluation of earnings ''quality,'' ''preferability'' of accounting choices, and the role of accounting estimates (e.g., Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committee 1999, recommendation 8). Our finding that a small accounting estimate misstatement is more likely to remain uncorrected than a data-accumulation misstatement of the same magnitude suggests the need for studies of how audit committee members perceive qualitative materiality and misstatements in accounting estimates. The findings also indicate the possible need for different standards for evaluating and auditing accounting estimates.

Fourth, we considered the first-order effect of regulation on misstatement correction, but we ignored possible second-order effects such as increased management of information provided to financial analysts and less stringency by auditors in aggregating small misstatements. Studies of these possible second-order effects might affect conclusions about SAS No. 89 because they may alter both the need for corrections toward the consensus forecast, and the list of aggregated (and communicated) misstatements.

Finally, the speed with which the exposure draft and adoption of SAS No. 89 proceeded imposed several limitations on our instrument and methods. *Ex ante* policy-evaluation research requires timely availability of proposed policies and access to relevant personnel for testing. Future *ex ante* policy-evaluation research may require a mechanism for timely assemblage of research resources and recognition by those in the editorial-review process of the practical timing and methodological limitations of such research.

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