The Materiality of Accounting Errors: Evidence from SEC Comment Letters*

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ABSTRACT

We gain unique insights into materiality judgments about accounting errors by examining SEC comment letter correspondence. We document that managers typically use multiple quantitative benchmarks in their materiality analyses, with earnings being the most common benchmark. In most of the cases we review, managers deem the error immaterial despite its exceeding the traditional "5 percent of earnings" rule of thumb, often in multiple periods and by a large degree. Instead of attempting to conceal these overages, managers tend to forthrightly acknowledge them, often asserting that the benchmark is abnormally low during the violation period. We find that 17–26 percent of these "low benchmark" assertions are suspect (although none of these "low benchmark" assertions are challenged by the SEC). We also document substantial variation in the extent to which qualitative factors are mentioned as considerations. The SEC generally is deferential toward managers' arguments and judgments but is more likely to challenge immateriality claims when managers admit there are qualitative factors that indicate errors are material.

L'importance relative des erreurs comptables : données provenant des lettres de commentaires de la SEC

RÉSUMÉ

Les auteurs recueillent de précieux renseignements au sujet des jugements portés sur l'importance relative des erreurs comptables en analysant les lettres de commentaires de la SEC. Les gestionnaires, constatent-ils, utilisent habituellement de multiples indices de référence quantitatifs dans leurs analyses de l'importance relative, l'indice des résultats étant le plus fréquemment employé. Dans la plupart des cas étudiés par les auteurs, les gestionnaires jugent l'erreur négligeable en dépit du fait qu'elle excède la règle empirique des « 5 pour cent des bénéfices », souvent de beaucoup et à plusieurs reprises. Plutôt que de tenter de dissimuler ces dépassements, les gestionnaires tendent à les reconnaître sans ambages, affirmant dans bien des cas que l'indice de référence est anormalement bas pour la période de transgression. Les auteurs constatent que 17 à 26 pour cent de ces affirmations quant au niveau faible des indices sont suspectes (bien qu'aucune desdites affirmations ne soit mise en doute par la SEC). Ils notent aussi une variation appréciable de la mesure dans laquelle les facteurs qualitatifs sont allégués. La SEC respecte généralement

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les arguments invoqués et les jugements portés par les gestionnaires, mais elle est davantage susceptible de remettre en question leurs affirmations quant au caractère négligeable des écarts lorsque les gestionnaires admettent que certains facteurs qualitatifs indiquent que les erreurs sont importantes.

1. Introduction

A key step for management when preparing financial statements is to assess the materiality of accounting errors discovered by the auditor or through the firm's own internal controls. Accounting guidance does not provide "bright-line" rules for assessing materiality, instead treating materiality as a matter of professional judgment. The guidance provides a nonexhaustive list of quantitative and qualitative factors to consider, but it tasks management with weighing the often inconsistent evidence presented by the factors subject to auditor approval.

Materiality judgments determine whether errors are corrected and how financial statement users are notified. Errors deemed material to prior periods are corrected through restatements and are announced in "non-reliance" 8-Ks that warn investors not to rely on prior financial statements. Errors deemed immaterial to prior periods can be left uncorrected or can be corrected through less conspicuous catch-up adjustments or "revisions." Catch-up adjustments involve recognizing the cumulative effect of the error in current earnings and ending net assets, without recasting prior period amounts. "Revisions," also known as "little r restatements," are similar to formal restatements in that prior periods are corrected and the corrections are detailed in a footnote. However, the firm is able to avoid filing a "non-reliance" 8-K and the concomitant negative publicity. Revisions can be used in lieu of restatements when errors are immaterial to individual past periods but have cumulative effects that would render a catch-up entry material to the current period (SEC 2006; Tan and Young 2015).

When the SEC performs a comment letter review on a filing that discloses a catch-up adjustment or revision, the comment letter sometimes requires management to furnish a narrative explaining how the error's materiality was assessed. Management has 10 days to furnish the requested materiality narrative along with responses to other issues the SEC raises. If the SEC is not satisfied with the responses, then more rounds ensue. When all issues have been resolved, the correspondence between SEC staff and management becomes public on the SEC EDGAR platform and provides a unique glimpse into how preparers and a securities regulator grapple with complex and subjective materiality judgments.

To better understand the considerations involved, our study systematically reviews materiality narratives provided in response to 108 SEC comment letters (pertaining to errors disclosed between 2009 and 2015, as identified by Audit Analytics). We convert the unstructured narratives into rich descriptive statistics that capture nuances of managers' materiality judgments that cannot be gleaned from prior archival approaches. We also investigate whether managers strategically omit or mischaracterize relevant attributes and circumstances of the errors to give the appearance of immateriality.

Finally, we investigate how the SEC attempts to impose discipline on preparers' materiality judgments, by examining the factors that lead the SEC to inquire about a particular materiality judgment and the factors that lead the SEC to challenge a judgment. It is important to understand the SEC's behavior because managers and auditors likely make materiality judgments with the SEC's reaction in mind.

We find that the SEC is more likely to request a materiality narrative when the errors involve large cumulative magnitudes and multiple issues. Thus, the SEC appears to be targeting errors that are not obviously immaterial. The SEC may be interested in understanding how management weighed conflicting factors or may be attempting to signal to registrants that it will scrutinize aggressive materiality judgments. We also find that the SEC is more likely to request materiality

narratives for errors corrected via catch-up adjustment (as opposed to revision). The SEC naturally may have more questions about catch-up adjustments because the period-by-period effects are not initially observable by agency staff. Further, catch-up adjustments may be more disputable because both the cumulative and period-by-period effects must be immaterial.

Our examination of comment letter correspondence reveals that a typical materiality narrative compares the impact of the error to multiple quantitative benchmarks (earnings, assets, the affected line item, etc.). This finding of multiple benchmark usage contrasts with studies of audit firm policies and working papers, which generally find that auditors use a single earnings-based benchmark for public clients (e.g., Friedberg et al. 1989; Messier et al. 2005; May et al. 2013; Eilifsen and Messier 2015, 13–14). Earnings, as a widely accepted measure of aggregate performance, is a natural single benchmark for auditors because their conclusion about the financial statements is primarily based on the aggregate effect of the errors. This difference in benchmark usage between preparers and auditors has not been documented previously due to prior lack of access to primary data sources produced by preparers.

Among the many benchmarks used by management, earnings is the most common. For errors deemed *immaterial*, the "5 percent of earnings" rule of thumb is commonly exceeded and often by a large degree. About 50 (75) percent of the narratives divulge that one period's earnings were misstated by at least 23.7 (7.9) percent. These findings are surprising because prior audit literature gives the impression that auditors adhere to the "5 percent of earnings" threshold. Eilifsen and Messier (2015, 12) report that the policy manuals of six of the eight largest audit firms "expect, suggest, or require the use of 5 percent of income before taxes" to set overall materiality. Furthermore, the manuals limit detected, or "tolerable," misstatements to only 50–90 percent of this threshold to ensure that any remaining undetected misstatements would not push the total misstatement above the 5 percent threshold. Thus, the audit firm manuals give the impression of a relatively inflexible 5 percent cutoff.

The apparent contradiction between the audit manuals' seeming inflexibility toward the 5 percent cutoff and our empirical finding of frequent overages can be partially reconciled by low or breakeven earnings benchmarks. We find that abnormally low or breakeven earnings characterize about half of the sample quarters and years that exhibit 5 percent overages.

It is more difficult to explain the other half of the quarters and years that exhibit 5 percent overages (which represent 25 percent of all periods misstated by our sample errors). A possible explanation is that, during the current year's audit, auditors are more lenient in judging the materiality of a misstatement's impact on *prior* periods. Consistent with this explanation, in the Audit Analytics universe, we find that when firms correct errors by adjusting the *current* year (via catch-up adjustments), only 12.6 percent of those years exhibit 5 percent overages. In contrast, when firms correct errors by adjusting *prior* years (via revisions), 25.9 percent of those years exhibit 5 percent overages. By this measure, auditors appear twice as likely to waive high *prior* year impacts compared to high *current* year impacts. As discussed below, the SEC rarely directly challenges 5 percent overages despite their frequency, and thus it appears that, among managers, auditors, and regulators, the 5 percent "rule of thumb" is not as meaningful as audit firm policy manuals suggest.

We find that management typically self-reports the high percentage impacts of misstatements in the materiality narratives rather than attempting to conceal the impacts by omitting periods. Instead, management transparently reports the high impacts but sometimes downplays their significance by asserting that the benchmark is abnormally small or breakeven in those periods. However, we find that 17–26 percent of these assertions are suspect when we compare the benchmarks in those periods to their levels in other periods. The overall picture that emerges is that managers generally are forthcoming about large error impacts but sometimes are aggressive in attempting to explain away the impacts that they disclose.

Turning to qualitative materiality considerations, 90 percent of the narratives consider at least one of the nine qualitative factors identified in Staff Accounting Bulletin No. 99 (SAB No. 99),

and 52 percent mention all nine factors. The most commonly omitted factor is whether the misstated item is "capable of precise measurement" (i.e., requires little or no estimation). This factor is omitted from 79 percent of the narratives that omit at least one of the nine factors. About 40 percent of the narratives acknowledge violating at least one of the nine qualitative factors while still deeming the error immaterial. Besides the nine SAB No. 99 factors, other commonly mentioned qualitative considerations include the error's effect on important business metrics or on investor perceptions.

Finally, we examine the SEC's decisions to challenge preparers' assertions of immateriality. We find that the SEC is generally deferential in evaluating narrative content and only challenges about 16 percent of the narratives. The SEC is more likely to challenge when a narrative admits violating SAB No. 99 qualitative criteria. In only 6.4 percent of the episodes does the SEC explicitly dispute quantitative materiality, despite the fact that most episodes involve errors that exceed the "5 percent of earnings" threshold in at least one period. The SEC's deferential approach is defensible in light of the subjectivity of the task, the lack of professional guidance, and the fact that we find limited evidence of strategic manipulation by preparers. Our results suggest, however, that the SEC could more closely scrutinize preparers' claims about abnormally low benchmarks in particular periods (we identified no cases in which the SEC challenged a claim that a benchmark is abnormally low).

A potential limitation of our methodology is that the materiality narratives we examine may be more thorough than what registrants prepare for a typical error, either because the SEC is more likely to inquire about difficult judgment calls or because the registrant retroactively enhances the narrative it provides to the SEC. We do not believe that the SEC's tendency to select difficult judgment calls would lead to false impressions of preparers' diligence in assessing materiality, because less ambiguous circumstances would be valid grounds for less thorough materiality analyses. Furthermore, a sample weighted toward difficult judgment calls enhances our ability to understand the considerations that underlie materiality judgments. We do acknowledge that registrants could retroactively enhance their materiality analyses and thus inauthentically portray their original considerations to the SEC. On the other hand, auditors typically require extensive documentation to support an accounting error materiality determination at the time the determination is made. We thus believe that the narratives provide a unique and informative window into materiality judgments.

2. Institutional background and literature review

Accounting errors and their correction

Material errors in previously issued financial reports must be corrected through restatement (FASB ASC 250-45-23). Accounting standards do not apply to immaterial items (FASB ASC 105-10-05-6), meaning that accounting errors deemed by management to be immaterial to prior periods may be left uncorrected, may be corrected by informal revision of the prior period columns in current period financial statements, or may be corrected by a catch-up adjustment to current period financial statements. The SEC allows informal revision when the error is immaterial to prior periods, but a catch-up adjustment would be material to the current period (SEC 2006; Tan and Young 2015).

Disclosure of the error is more circumspect when correction occurs through a revision or catch-up adjustment rather than restatement because the firm is not required to (i) file a "non-reliance" 8-K disclosure, (ii) file an amended 10-K or 10-Q, or (iii) label the prior period columns in the current filing as "restated."[1] The following excerpt from a 10-K about a catch-up adjustment

1. When immaterial errors are corrected by revision, prior period columns usually are not labeled as "restated." In untabulated analysis, we sample 10 revisions per year to provide evidence about how firms label the face of the financial statements. We find that 83 percent of the sampled firms leave the financial statements unlabeled, 10 percent use labels such as "revised" or "adjusted," and 7 percent use the label "restated." Over the sample period, firms become more likely to leave the financial statements unlabeled.

typifies the limited disclosure made when immaterial accounting errors are corrected. We italicize the sentence explaining that management deemed the error immaterial:

> During 2009, the corporation corrected income tax expense and certain balance sheet accounts for errors which, on a year-to-date basis, decreased net income by $12 comprised of $19 of additional tax expense related to adjustments of taxes previously provided on the 2008 earnings of the corporation partially offset by $7 of income related to the correction of individually insignificant balance sheet amounts. The correction of these items in 2009 decreased third quarter year-to-date net income by $8 and decreased fourth quarter net income by $4. The impact of correcting these errors in 2008 would have decreased net income by $12 while the impact on periods prior to 2008 would have been de minimis. We evaluated these errors in relation to the current period, which is when they were corrected, as well as the periods in which they originated. *Management believes these errors are immaterial to both the consolidated quarterly and annual financial statements.*" (Sara Lee Corporation, 2009 10-K filing, dollar amounts in millions; emphasis added)

The two catch-up adjustments at Sara Lee produced a $12 million reduction to 2009 earnings, of which $8 million was recognized in the third quarter and another $4 million in the fourth quarter. If Sara Lee had instead used the revision or restatement approach to correct these errors, there would be no impact on reported earnings for 2009 because the errors occurred in earlier periods. If a formal restatement approach had been used, a "non-reliance" 8-K (Item 4.02) would have been filed. Also, prior period SEC filings would have been amended, or the current filing would contain a detailed restatement footnote, and the financial statements would have prior period columns labeled as "restated."

Materiality judgments

Accounting and auditing guidance does not provide "bright-line" rules for determining if a specific item is material (see Acito et al. 2009). The guidance views materiality as a matter of professional judgment, listing quantitative and qualitative factors to consider, but does not specify how much weight each factor should be given. Quantitative considerations involve comparing the impact of the accounting error to a benchmark such as revenue, net income, total assets, or stockholders' equity. Staff Accounting Bulletin No. 108 (SAB No. 108) requires companies to use a dual approach to quantify materiality. The *cumulative* approach compares the total amount of misstatement existing at the end of the period (i.e., the amount needed to correct the balance sheet) to the benchmark. The *current-period* approach compares the incremental amount of misstatement for a given period to the benchmark.

The SEC (SAB No. 99; SAB No. 108) and the PCAOB (CAS14) stress the importance of qualitative considerations in addition to quantitative considerations. In SAB No. 99, the SEC states that quantitative considerations are "only the beginning of an analysis of materiality" (SEC 1999, 2). This guidance was issued in response to concerns that managers were relying too heavily on rules of thumb such as "5 percent of earnings" and abusing the discretion afforded by materiality guidance to hide errors that were quantitatively small yet still had the potential to be important to investors (Levitt 1998). SAB No. 99 identifies several qualitative factors that could render a quantitatively small error material. These include whether the error masks a change in earnings or other trends, hides a failure to meet analysts' forecasts, increases management compensation, or conceals an unlawful transaction.

SEC correspondence

The SEC through its comment letter process sometimes inquires about firms' error correction approaches and the materiality judgments involved. In Sara Lee's case, the SEC comment letter states:

> We note you concluded that the errors you discovered in your financial statements for the fiscal year ended June 28, 2008 were not material and that it was appropriate to correct the errors in your 2009 financial statements. With respect to this disclosure, please: fully describe to us the

> nature of each of the errors you identified; tell us what items or transactions you believe should have been recorded in your financial statements and specify the period(s) in which they should have been recorded; tell us what out-of-period adjustments were instead recorded in the financial statements and the period in which the adjustments were recorded; and *provide us with your materiality analysis so we may better understand your conclusion.* (SEC comment letter correspondence, November 30, 2009; emphasis added)

Sara Lee's response runs 13 pages, describing management's evaluation of quantitative and qualitative materiality considerations.[2] The response reveals the percentage impact of each error individually and in the aggregate on reported net income, on certain balance sheet totals, and on cash flows for the misstatement and correction periods. An analysis of most of the specific qualitative factors mentioned in SAB No. 99 guidance is also provided. Even though the error's impact on reported net income exceeds 5 percent in several fiscal periods, management concludes that "the judgment of a reasonable person relying on the corporation's previously issued reports would not have been changed or influenced by the originating errors or correcting adjustments that are the subject of this analysis." The SEC appears to have been satisfied with this detailed analysis and explanation, because there is no further correspondence on the matter.

Literature review

Most prior archival studies of materiality decisions infer the decision factors using an indirect regression-based approach. Usually the dependent variable is a binary indicator of whether or not a reporting item is disclosed, with disclosure (nondisclosure) indicating that the item was judged material (immaterial). This dependent variable is regressed on materiality factors that management or the auditor potentially considered. A statistically significant coefficient is interpreted as evidence that the factor is indeed considered in the judgment process. Studies in this vein include Liu and Mittelstaedt (2002) on retiree healthcare costs, Fesler and Hagler (1989) and Gleason and Mills (2002) on contingent losses, and Heitzman et al. (2010) on advertising costs. Other studies use financial statement location or disclosure method as the observable indicator of materiality. Chewning et al. (1998), for example, use financial statement classification as either an extraordinary item (material) or as "other income" (immaterial) to infer the judged materiality of gains and losses arising from equity-for-debt swaps. Acito et al. (2009) infer materiality judgments of lease accounting errors by whether they are corrected through restatements (material) or catch-up adjustments (immaterial).

A common finding is that the disclosure outcome is associated with the disclosed item's size relative to a benchmark such as annual sales revenue (Heitzmann et al. 2010) or annual "normal income" (Gleason and Mills 2002). Acito et al. (2009) evaluate several benchmarks, finding the most powerful benchmark to be the absolute value of annual earnings.

Acito et al. (2009) is the only one of these studies to explicitly test the role of *qualitative* materiality considerations. One reason is that materiality guidance on qualitative factors (SAB No. 99) is specifically aimed at errors. Materiality decision outcomes in that setting were found to be statistically associated with the presence of multiple identified errors and the importance of the misstated item to firm operations, measured by the size of the item to total assets. A comprehensive analysis of SAB No. 99 qualitative factors was infeasible because of data limitations.

Other archival studies draw inferences about *error* materiality decisions but use nonpublic internal documentation from *audit* firms. It is unclear whether findings from these studies generalize to *management's* materiality judgments about individual detected errors because auditors are bound by a different set of materiality standards focused on accumulated misstatements.[3] Some

2. The response is available at: http://www.sec.gov/Archives/edgar/data/23666/000119312510006417/filename1.htm.
3. Although auditors have more interest in accumulated misstatements than does management, auditors cannot ignore individually material misstatements that happen to be offset by other misstatements (Statement on Auditing Standard No. 122, A21).

studies rely on the audit firms' policy manuals that establish materiality guidelines for practice (Steinbart 1987; Friedberg et al. 1989; Martinov and Roebuck 1998; Eilifsen and Messier 2015), while others use audit work papers that document materiality judgments involving actual misstatements (Robinson and Fertuck 1985; Icerman and Hillison 1991; Wright and Wright 1997). Messier et al. (2005) summarize this literature as showing that earnings-based benchmarks play a dominant role in auditor materiality assessments for public clients.[4] Qualitative factors also are taken into account, such as whether the misstatement is objectively verifiable, its directional impact on income, and the firm's debt load.

In concurrent auditor materiality studies that take advantage of newly available archival data, Hallman et al. (2017) use the new audit report format in the United Kingdom to examine how auditors adjust earnings benchmarks. They find that about half of the sample audits increase the earnings benchmark by adding back special and/or noncash items. Auditors are more likely to adjust the earnings benchmark when the client has losses or also reports an adjusted earnings figure to investors. Choudhary et al. (2017, 18) obtain the overall audit materiality levels, measured in dollars, from PCAOB inspection data and find that the dollar materiality levels scaled by pre-tax earnings exhibit significant variation—around 5 percent. The study provides evidence that this variation stems primarily from adjustments to earnings or from the use of benchmarks besides earnings.

Our research departs from earlier studies in that we exploit the rich descriptions of materiality decisions contained in SEC comment letter correspondence to gain insight about management's perspective on the determinants of materiality. These narratives offer a unique window into preparers' judgment processes, providing an improved understanding of the metrics used and complex considerations involved.

3. Sample identification

To identify preparers' accounting error materiality narratives, we begin with the 1,597 catch-up adjustments and 1,151 informal revisions disclosed between 2009 and 2015 and captured by Audit Analytics. The sample period starts in 2009 because Audit Analytics' coverage of catch-up adjustments in earlier years is incomplete.[5] We end the sample period in 2015 to allow time for the SEC to review filings that contain the error disclosures, resolve issues with the registrants, and publish the correspondence.

We use Audit Analytics' SEC comment letter database to identify comment letters that inquire about accounting errors in the three years following a firm's disclosure of an immaterial error.[6] We manually inspect these comment letters and the related correspondence to confirm instances in which the firm furnished a materiality narrative. Our selection process identified 116 SEC comment letter episodes in which management furnished materiality narratives (61 catch-up episodes and 55 revision episodes). The SEC honors companies' confidentiality requests in 8 of these episodes, resulting in 108 usable episodes.

4. In summarizing the pre-1982 audit research on materiality judgments, the authors state: "The percentage effect of the item on income was the single most important quantitative factor in determining materiality. A distant second in importance was the effect of the item on earnings trend. Results for total assets or net assets were mixed" (Messier et al. 2005, 157). In summarizing the post-1982 audit research, the authors conclude that "some version of income continues to be the major factor in determining the materiality of a misstatement" (Messier et al. 2005, 163).

5. The database contains a relatively small number of catch-up adjustments made before 2009, and our independent searches for catch-up adjustments prior to 2009 identified many that were not captured by Audit Analytics. The database assigns catch-up adjustments a "restatement type" equal to 2. Revisions have "restatement type" equal to 1 and a missing value for 8-K filing date.

6. Relevant comment letters are identified by searching the ISS_EVNT_DISC_TEXT variable for "error" and the ISS_SABGUIDE_TEXT variable for "99" or "108," indicating a reference to SEC materiality guidance. The comment letters are required to involve firms domiciled in the United States and with CIKs, total assets, and sales data available on COMPUSTAT.

4. Results

The SEC's decision to request materiality narratives

We use the following logistic model to examine factors associated with the SEC's decision to request materiality narratives about disclosed immaterial errors:

$$\begin{aligned}\Pr(NARRATIVE = 1) = {} & \beta_1 ERR\_NI + \beta_2 MULTIPLE + \beta_3 REVREC + \beta_4 MISCLASS \\ & + \beta_5 CATCHUP + \beta_6 LNLEN + \beta_7 IMCLAIM + \beta_8 GUIDEREF \\ & + \beta_9 10Q + \beta_{10} LAF + \beta_{11} AF + \beta_{12} AGE + \beta_{13} BIG4 + \beta_{14} LOSS \\ & + \beta_{15} MA + \sum \beta_j Office_j + \sum \beta_k Year_k + \varepsilon_{it}, \end{aligned} \quad (1)$$

where *NARRATIVE* is a binary indicator denoting whether the SEC requests a materiality narrative for a given immaterial error disclosure. The model contains three sets of potential determinants: attributes of the error, attributes of the error disclosure, and controls for the SEC's decision to select a given firm or filing for review. Variable definitions are given in Appendix 1.

Regarding error attributes, we expect that the SEC is more likely to request a materiality narrative when the error's cumulative effect on net income (*ERR_NI*) is large or when errors involve multiple issues (*MULTIPLE*) or revenue recognition (*REVREC*).[7] We expect that the SEC is less likely to inquire about financial statement classification errors (*MISCLASS*) because these errors do not affect net income.

Regarding error disclosure attributes, we expect that the SEC is more likely to inquire about errors corrected via catch-up adjustment (*CATCHUP*). Compared to revisions, catch-up adjustment disclosures are less informative about prior period financial statement effects. The use of this approach also requires two separate materiality hurdles to be met, in that both the period-by-period error impact and the cumulative error impact must be deemed immaterial. We expect that the SEC is less likely to inquire about materiality decisions when the firm provides more thorough disclosure about the error (*LNLEN*), explicitly declares that the error is immaterial (*IMCLAIM*)—thus eliminating confusion about why the firm is not formally restating—or references materiality guidance (*GUIDEREF*). *GUIDEREF* measures whether the original error disclosure contains any reference to materiality guidance. Virtually no registrants include detailed arguments for immateriality in the original error disclosure.[8]

Finally, we control for factors related to the SEC's decision to select a firm or filing for a comment letter review. The Sarbanes-Oxley Act of 2002 requires the SEC to review the filings of every registrant at least once every three years, and in practice the SEC typically reviews about half of all registrants each year (EY 2016). The Act specifies that the SEC should more frequently review the filings of firms with large market capitalizations; thus, we control for firm size using indicator variables for large accelerated filers (*LAF*) and accelerated filers (*AF*).[9] We control for

7. We define *ERR_NI* as the cumulative impact of the errors on net income (measured in dollars and absolutized) scaled by the absolute value of quarterly earnings cumulated over the 12 quarters leading up to the materiality decision (divided by 3 to annualize). Basing the scalar on 12 quarters reduces the influence of short periods of abnormal or breakeven earnings. In untabulated tests, we find there is no significant difference between income increasing and income decreasing errors in explaining the likelihood of an SEC request for a materiality narrative.

8. The following 10-Q excerpt illustrates an original error disclosure where both *IMCLAIM* and *GUIDEREF* are coded as 1. We bold the phrases that led us to code these variables as 1: "The Company concluded that these **errors were not material** to any of its prior period financial statements under the guidance of **Staff Accounting Bulletin No. 99**, '*Materiality.*' Although the **errors were and continue to be immaterial to prior periods**, because of the significance of the out-of-period correction in the current period, the Company applied the guidance of **Staff Accounting Bulletin No. 108**, '*Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements*,' and revised its prior period financial statements" (10-Q for Sanmina Corp. filed on February 5, 2010).

9. Our inferences are robust to using log market capitalization in place of the *LAF* and *AF* indicators.

TABLE 1
Immaterial error corrections and materiality narrative requests by year

Year	Materiality narrative requests	Immaterial error corrections	Percentage
2009	20	243	8.2
2010	17	307	5.5
2011	15	304	4.9
2012	23	450	5.1
2013	22	480	4.6
2014	12	535	2.2
2015	7	429	1.6
Total	116	2,748	4.2

Notes: This table reports the number of immaterial error corrections (catch-up adjustments plus revisions) in the Audit Analytics database by year as well as the number of these corrections for which the SEC requests materiality narratives. The year is based on the date the error is disclosed.

whether the error is disclosed in a quarterly (*10Q*) or annual filing but do not predict the coefficient sign. The SEC may focus on annual filings because they are more expansive and cover the entire year or may focus on quarterly filings because they receive less auditor scrutiny. We base other control variables and their predicted coefficient signs on those that Cassell et al. (2013) find to explain SEC comment letter selection: firm age (*AGE*), Big 4 auditor indicator (*BIG4*), net loss indicator (*LOSS*), and merger and acquisition indicator (*MA*). Following Cassell et al. (2013), we also include fixed effects for year and SEC Disclosure Operations Office. Because SEC offices are organized by industry, the office fixed effects also function as a control for differences across industries.[10]

Table 1 reports the number of immaterial error disclosures (catch-up adjustments plus revisions) in the Audit Analytics database by year from 2009 to 2015 as well as the number of these errors for which the SEC requests a materiality narrative. The SEC requests materiality narratives for 4.2 percent of the errors. In general, the number of immaterial errors increases over the sample period, while the percentage that the SEC inquires about declines. The number of SEC comment letters issued across all topics has also declined since 2012, despite the percentage of filers reviewed each year staying relatively constant (EY 2016).

Table 2, panel A, presents descriptive statistics for the variables in regression (1), partitioned by whether the SEC requests a materiality narrative for the errors. Data requirements reduce the sample to 2,682 total error disclosures, with 112 involving an SEC request for a materiality narrative. Mean comparisons indicate that the SEC is more likely to request a materiality narrative for errors that are larger (*ERR_NI*), involve multiple issues (*MULTIPLE*), are corrected via catch-up adjustment (*CATCHUP*), do not involve misclassification (*MISCLASS*), and are disclosed in annual filings (*10Q* = 0). Notably, the mean error magnitude (*ERR_NI*) is 58 percent higher among SEC narrative requests (4.6 percent of earnings versus 2.9 percent of earnings). SEC narrative requests are also more common among older firms (*AGE*) and firms audited by Big 4 auditors (*BIG4*). Panel B of Table 2 presents a correlation matrix. In general, correlations among the independent variables are low.

10. As an alternative way to control for the SEC's decision to review a particular filing, we also reestimate our model on the subsample of firms that receive a comment letter within one year of the error disclosure. Inferences from this untabulated analysis are similar to those in Table 3.

TABLE 2
Descriptive statistics for materiality narrative request model

Panel A: Sample partitioned by whether the SEC requests a materiality narrative

	SEC narrative request (n = 112)					No SEC narrative request (n = 2,570)					Significance
Variable	Mean	SD	Q1	Median	Q3	Mean	SD	Q1	Median	Q3	*t*-test
ERR_NI	0.046	0.068	−0.002	0.023	0.049	0.029	0.054	0.000	0.008	0.034	***
MULTIPLE	0.482	0.502	–	–	–	0.363	0.481	–	–	–	**
REVREC	0.125	0.332	–	–	–	0.117	0.321	–	–	–	
MISCLASS	0.223	0.418	–	–	–	0.362	0.481	–	–	–	***
CATCHUP	0.536	0.501	–	–	–	0.413	0.493	–	–	–	**
LNLEN	7.002	0.700	6.577	6.994	7.451	6.945	0.665	6.522	6.934	7.370	
IMCLAIM	0.804	0.399	–	–	–	0.768	0.422	–	–	–	
GUIDEREF	0.295	0.458	–	–	–	0.232	0.422	–	–	–	
10Q	0.438	0.498	–	–	–	0.579	0.494	–	–	–	***
LAF	0.616	0.489	–	–	–	0.553	0.497	–	–	–	
AF	0.366	0.484	–	–	–	0.335	0.472	–	–	–	
AGE	25.071	14.143	14	22	38	21.541	14.514	9	18	31	**
BIG4	0.955	0.207	–	–	–	0.863	0.344	–	–	–	***
LOSS	0.545	0.500	–	–	–	0.508	0.500	–	–	–	
MA	0.464	0.501	–	–	–	0.466	0.499	–	–	–	

Panel B: Correlation matrix

	NARRATIVE	*ERR_NI*	*MULTIPLE*	*REVREC*	*MISCLASS*	*CATCHUP*	*LNLEN*	*IMCLAIM*	*GUIDEREF*	*10Q*	*LAF*	*AF*	*AGE*	*BIG4*	*LOSS*	*MA*
NARRATIVE		**0.063**	**0.049**	0.005	**−0.058**	**0.050**	0.017	0.017	0.030	**−0.057**	0.025	0.013	**0.049**	**0.055**	0.015	−0.001
ERR_NI	**0.088**		**−0.057**	**0.061**	**−0.264**	−0.032	**0.192**	**0.071**	**0.143**	**−0.110**	**−0.113**	**0.040**	**−0.070**	**−0.147**	**0.038**	−0.021
MULTIPLE	**0.049**	**−0.099**		**0.196**	**0.075**	**−0.082**	**0.212**	0.012	−0.007	−0.037	**0.087**	**−0.051**	**0.058**	**0.047**	0.015	**0.053**
REVREC	**0.005**	**0.102**	**0.196**		**−0.087**	0.030	**0.083**	**0.070**	**0.075**	−0.026	0.031	−0.018	−0.008	0.020	0.007	−0.014
MISCLASS	**−0.058**	**−0.539**	**0.075**	**−0.087**		**−0.448**	**0.130**	**−0.039**	**−0.084**	0.029	0.033	−0.028	−0.004	**0.049**	**−0.046**	0.005
CATCHUP	**0.050**	**0.305**	**−0.082**	0.030	**−0.448**		**−0.280**	**0.105**	**−0.063**	0.140	0.073	−0.009	0.069	0.108	−0.019	−0.019
LNLEN	0.018	**0.099**	**0.214**	**0.077**	**0.131**	**−0.292**		**0.195**	**0.274**	**−0.061**	**−0.040**	0.022	−0.034	**−0.054**	**0.038**	**0.039**
IMCLAIM	0.017	**0.155**	0.012	**0.070**	**−0.039**	**0.105**	**0.184**		**0.282**	**0.044**	**0.058**	0.024	**0.038**	**0.129**	−0.025	**0.046**
GUIDEREF	0.030	**0.187**	−0.007	**0.075**	**−0.084**	**−0.063**	**0.280**	**0.282**		−0.023	**−0.069**	**0.055**	**−0.042**	**−0.109**	0.001	−0.018
10Q	**−0.057**	**−0.089**	−0.037	**−0.026**	0.029	0.140	**−0.062**	**0.044**	−0.023		0.006	0.020	0.001	0.018	−0.019	0.030
LAF	0.025	**−0.087**	**0.087**	**0.031**	0.033	0.073	−0.034	**0.058**	**−0.069**	0.006		**−0.796**	**0.248**	**0.360**	**−0.359**	**0.133**
AF	0.013	**0.060**	**−0.051**	−0.018	−0.028	−0.009	0.017	0.024	**0.055**	0.020	**−0.796**		**−0.184**	**−0.092**	**0.237**	−0.028
AGE	**0.055**	**−0.039**	**0.059**	**−0.012**	−0.003	0.060	−0.023	**0.042**	−0.036	−0.007	**0.247**	**−0.177**		**0.159**	**−0.164**	0.018
BIG4	**0.055**	**−0.075**	**0.047**	**0.020**	**0.049**	0.108	**−0.052**	**0.129**	**−0.109**	0.018	**0.360**	**−0.092**	**0.162**		**−0.151**	**0.079**
LOSS	0.015	**0.053**	0.015	0.007	**−0.046**	−0.019	**0.038**	−0.025	0.001	−0.019	**−0.359**	**0.237**	**−0.170**	**−0.151**		**0.030**
MA	−0.001	−0.030	**0.053**	−0.014	0.005	−0.019	**0.039**	**0.046**	−0.018	0.030	**0.133**	−0.028	0.032	**0.079**	**−0.065**	

Notes: This table reports summary statistics for the variables in the materiality narrative request model (1). The SEC requests materiality narratives for 112 of the 2,682 immaterial error disclosures identified by Audit Analytics. Panel A reports descriptive statistics partitioned by whether the SEC requests a materiality narrative through its comment letter process, and panel B provides a correlation matrix. The *t*-statistics in panel A refer to two-sample *t*-tests with significance (two-tailed) at the 5 and 1 percent levels, denoted as ** and ***, respectively. In panel B, correlations significant at the 5 percent level are in bold. All continuous variables are winsorized at the 1 and 99 percent levels. Variable definitions are given in Appendix 1.

TABLE 3
Model of materiality narrative requests

	Predicted sign	Coefficient
Intercept	?	−6.102***
		(1.419)
ERR_NI	+	4.836***
		(1.630)
MULTIPLE	+	0.537**
		(0.214)
REVREC	+	−0.231
		(0.311)
MISCLASS	−	−0.277
		(0.276)
CATCHUP	+	0.515**
		(0.249)
LNLEN	−	0.061
		(0.173)
IMCLAIM	−	−0.128
		(0.272)
GUIDEREF	−	0.317
		(0.245)
10Q	?	−0.675***
		(0.207)
LAF	+	1.921**
		(0.769)
AF	+	1.985***
		(0.757)
AGE	+	0.015**
		(0.007)
BIG4	−	0.711
		(0.498)
LOSS	+	0.328
		(0.216)
MA	+	0.049
		(0.216)
SEC office fixed effects		Included
Year fixed effects		Included
Sample size		2,682
Pseudo R^2		0.045
AUC		0.787

Notes: This table reports the results for logistic regression model (1) of whether the SEC requests from management a materiality narrative for a disclosed immaterial error. The SEC requests narratives for 112 of the 2,682 immaterial error disclosures identified by Audit Analytics. Standard errors are reported in parentheses. Significance (two-tailed) at the 5 and 1 percent levels is denoted as ** and ***, respectively. All continuous variables are winsorized at the 1 and 99 percent levels. Variable definitions are given in Appendix 1.

Table 3 reports the results of regression (1) examining factors associated with the SEC's decision to request a materiality narrative. We find that two error attributes increase the likelihood of SEC request: the magnitude of the error relative to net income (*ERR_NI*; $p < 0.01$) and the existence of *MULTIPLE* issues ($p < 0.05$). Holding all other explanatory variables at their medians, increasing *ERR_NI* from the 25th to the 75th percentile increases the estimated

probability of an SEC narrative request by 17.6 percent.[11] The presence of multiple errors increases the estimated probability of an SEC narrative request by 66.5 percent.

Two attributes of the error disclosure increase the likelihood of an SEC request: correction via catch-up adjustment ($p < 0.05$) and disclosure in an annual filing ($p < 0.01$). Holding all other explanatory variables at their medians, correction via catch-up adjustment (*CATCHUP*) increases the estimated probability of an SEC narrative request by 63.1 percent. An error disclosed in a 10-Q (*10Q*) decreases the estimated probability of an SEC narrative request by 47.2 percent, suggesting that the SEC reviews quarterly filings less thoroughly. Two firm attributes increase the likelihood of an SEC narrative request: accelerated filing status (*LAF*, *AF*) and *AGE*. These findings are consistent with the results in Cassell et al. (2013) and in Johnston and Petacchi (2017), two studies that examine the likelihood of receiving a comment letter in general.

In summary, the results are consistent with the notion that SEC requests for materiality narratives function as fact-finding mechanisms that impose discipline on preparers' materiality judgment processes. Targeting errors that are not obviously immaterial (i.e., those that involve larger magnitudes and multiple mistakes) may allow the SEC to better understand how management weighs conflicting considerations as well as place other firms on notice that aggressive materiality judgments will be questioned. Similarly, the SEC may request materiality narratives for errors corrected via catch-up adjustment because it initially cannot observe the period-by-period effects (a fact-finding motive) or because it wants to ensure that the catch-up adjustments were immaterial on both a cumulative and a period-by-period basis (a disciplinary motive). Discipline is also imposed because responding to an SEC materiality narrative request is a costly activity.

Detailed analysis of materiality narratives

The remainder of the study focuses on the unredacted materiality narratives made public through the 108 SEC comment letter inquiries. We analyze the narratives' content and examine the SEC's reaction to the content. Narrative length is typically the equivalent of 5–10 manuscript pages. Our main unit of analysis is an "episode" which encompasses all of the materiality narratives furnished by management during the course of a given SEC comment letter cycle. About 80 percent of episodes consist of a single round in which the firm furnishes just one narrative that satisfies the SEC, but an episode may involve multiple rounds in which multiple narratives pertaining to the same underlying error are furnished.

The sample episodes pertain to errors affecting a host of financial statement items, as shown in Table 4. The total number of individual errors (159 "issues") exceeds the number of episodes (108) because some episodes involve multiple errors or a single error that affects multiple financial statement items. The largest category is tax errors, which are present in 30.6 percent of the episodes.[12] Errors are relatively evenly dispersed across other categories. Errors related to tax are marginally overrepresented and errors related to cash flow misclassifications are underrepresented relative to the population of revisions and catch-up adjustments on Audit Analytics during this time period (population frequencies of 25.1 and 16.9 percent). The frequencies for all other types of errors are within 5 percentage points of the corresponding population frequencies on Audit Analytics.

11. In untabulated analysis, we explore the effects of including an indicator variable for whether *ERR_NI* exceeds 5 percent and an interaction of that indicator with *ERR_NI*. The indicator (without including the interaction) is insignificant, suggesting no discontinuity in the SEC's propensity to request a narrative around the 5 percent threshold. The interaction is negative and significant, indicating that the positive effects of *ERR_NI* on narrative requests diminish at some level above the 5 percent threshold. Alternative scalars for the error magnitude variable *ERR_NI* either produce results qualitatively similar to those reported in Table 3 (total assets) or result in an insignificant error magnitude coefficient (sales and total equity).

12. These categories for financial statement errors are provided by Audit Analytics. Tax errors involve *direct* miscalculation or misapplication of income tax-related accounting standards. Tax-related errors that arise as byproducts of errors affecting nontax accounts are not included in this category.

TABLE 4
Comment letter episodes by type of issue

Type of issue	Total issues	Percent of total issues	Percent of episodes
Tax expense/benefit/deferral/other (SFAS 109) issues	33	20.8	30.6
Revenue recognition issues	14	8.8	13.0
Cash flow statement (SFAS 95) classification errors	12	7.5	11.1
Expense (payroll, SGA, other) recording issues	11	6.9	10.2
Inventory, vendor, and/or cost of sales issues	11	6.9	10.2
Liabilities, payables, reserves, and accrual estimate failures	10	6.3	9.3
Accounts/loans receivable, investments, and cash issues	8	5.0	7.4
Acquisitions, mergers, disposals, re-org accounting issues	6	3.8	5.6
Deferred, stock-based, and/or executive compensation issues	6	3.8	5.6
Depreciation, depletion, or amortization errors	5	3.1	4.6
PPE intangible or fixed asset (value/diminution) issues	5	3.1	4.6
Other (fewer than five instances each)	38	23.9	
Total	159	100.0	

Notes: This table reports the frequency of errors by issue type for the 108 comment letter episodes where a materiality narrative is disclosed.

Quantitative materiality considerations

We begin the analysis of quantitative materiality considerations by identifying the benchmarks described in materiality narratives. The materiality narratives mention a variety of benchmarks, including revenue, assets, liabilities, or equity; various earnings metrics, such as net income, pre-tax earnings, EBITDA, or non-GAAP earnings; and individual line items, such as cost of sales, gross profit, and income tax expense. Panel A of Table 5 reports the number of times each flow or stock benchmark is mentioned across episodes.

The most common *flow* benchmark is after-tax earnings, which is mentioned in 61 percent of the episodes, while other forms of earnings (e.g., pre-tax, non-GAAP, EBITDA) are mentioned in 46 percent of the episodes. Untabulated results reveal that only 30 percent of the episodes use a pre-tax net income benchmark. Managers' greater use of an after-tax earnings benchmark contrasts with Eilifsen and Messier's (2015) finding that *audit firms* tend to evaluate materiality based on pre-tax earnings. There is no dominant *stock* benchmark. Commonly used stock benchmarks are total assets, total equity, and specific asset line items, which are used in 28, 27, and 21 percent of episodes, respectively.

In addition to selecting which benchmarks to employ in materiality determinations, managers must also decide the duration over which each benchmark and error are to be measured. The two durations do not always match. Across episodes, we identify a total of 692 combinations of benchmark/benchmark duration/error duration, an average of 6.4 per episode. Panel B of Table 5 presents frequency counts of the combinations of error and benchmark durations. The cumulative error duration is most common—accounting for 47 percent of the combinations—followed by annual (31 percent), quarterly (19 percent), and year-to-date (3 percent) durations. When errors are evaluated on an annual, quarterly, or year-to-date basis, firms typically use flow benchmarks such as earnings or revenue over the same duration. When evaluating errors on a cumulative basis, firms exhibit more balanced usage of flow and stock benchmarks (60 percent flow benchmarks, 40 percent stock benchmarks).

Table 5, panel C, reports descriptive statistics for the *maximum* error impact, as a percentage of a given benchmark, mentioned by firms in their materiality narratives.[13] The self-reported

13. For errors corrected via revision, we ignore in this analysis any *cumulative* error impacts reported in the narratives because revisions do not require management to establish the immateriality of cumulative impacts.

TABLE 5
Quantitative benchmarks

Panel A: Frequency counts of benchmarks used

Flow benchmarks	Count	Percentage of flow benchmarks	Percentage of all benchmarks	Percentage of episodes (n = 108)
Total revenue	41	8.2	5.9	19.4
Specific revenue	1	0.2	0.1	0.9
Specific expense	77	15.3	11.1	23.1
After-tax earnings	178	35.4	25.7	61.1
Pre-tax or adjusted earnings	154	30.6	22.3	46.3
Net cash flow from operating, investing, or financing activities	25	5.0	3.6	5.6
Other (e.g., gross profit, discontinued operations, OCI)	27	5.4	3.9	12.0
Total flow benchmarks	503	100.0	72.7	

Stock benchmarks	Count	Percentage of stock benchmarks	Percentage of all benchmarks	Percentage of episodes (n = 108)
Total assets	41	21.7	5.9	27.8
Specific assets	47	24.9	6.8	21.3
Total liabilities	23	12.2	3.3	13.9
Specific liabilities	20	10.6	2.9	11.1
Total equity	42	22.2	6.1	26.9
Specific equity	16	8.5	2.3	5.6
Total stock benchmarks	189	100.0	27.3	
Total benchmarks	692		100.0	

Panel B: Frequency counts of error durations, by benchmark type

Error duration	Benchmark type	Count	Percentage of error duration	Percentage of all combinations
Annual	Stock	38	17.9	5.5
	Flow—same duration	173	81.6	25.0
	Flow—other duration	1	0.5	0.1
	Total	212	100.0	30.6
Quarterly	Stock	18	13.8	2.6
	Flow—same duration	107	82.3	15.5
	Flow—other duration	5	3.8	0.7
	Total	130	100.0	18.8
Cumulative	Stock	131	39.9	18.9
	Flow—same duration	0	0.0	0.0
	Flow—other duration	197	60.1	28.5
	Total	328	100.0	47.4
Year-to-date	Stock	2	9.1	0.3
	Flow—same duration	20	90.9	2.9
	Flow—other duration	0	0.0	0.0
	Total	22	100.0	3.2
Grand total of all combinations		692		100.0

(The table is continued on the next page.)

TABLE 5 (continued)

Panel C: Maximum self-reported percentage impact of the error on benchmarks

Benchmark	Mean (%)	SD (%)	Min (%)	Q1 (%)	Median (%)	Q3 (%)	Max (%)	*n*
Assets	1.38	2.02	0.10	0.20	0.60	1.30	8.60	27
Equity	2.55	3.41	0.13	0.80	1.10	2.70	14.70	24
Revenue	4.95	20.26	0.00	0.14	0.95	1.19	100.00	24
Earnings	136.35	514.47	0.40	7.90	23.70	70.90	4250.00	76
Specific line item affected	66.85	190.36	0.00	1.10	5.00	32.82	1380.00	76

Notes: This table reports frequencies of quantitative benchmarks used in materiality narratives provided to the SEC. Panel A reports on the frequency with which different benchmarks are used. Panel B provides evidence on the duration over which errors are analyzed by benchmark type. Panel C displays descriptive statistics for the errors' maximum percentage impacts that firms self-report in materiality narratives. The panel focuses on the largest self-reported percentage impact of the error, by benchmark, in each episode.

maximum error impacts tend to be large and frequently exceed the "5 percent of earnings" threshold by a substantial degree (even though the errors were deemed immaterial). The cross-sectional *median* self-reported maximum error is 23.7 percent of earnings, and three-quarters of the disclosed maximum errors exceed 7.9 percent of earnings. That is, 50 percent of the narratives divulge that one period's earnings were misstated by at least 23.7 percent, and 75 percent of the narratives divulge that one period's earnings were misstated by at least 7.9 percent. Furthermore, the "5 percent of earnings" threshold tends to be exceeded in more than just the maximally impacted period. Analyses described later in the study reveal that the 5 percent threshold is exceeded in roughly half of all earnings-revised quarters and years.

It is surprising that the self-reported earnings impacts so often exceed the 5 percent cutoff. These errors may be common in our sample precisely because of the SEC's skepticism about their immateriality. However, the SEC ultimately concurs with the firm's immateriality determination in the vast majority of these episodes, which indicates that the SEC often agrees with management that *large* errors can be deemed *immaterial* for qualitative reasons. This view is unaddressed by SAB No. 99, which only specifies that quantitatively *small* errors can be *material* for qualitative reasons.[14] In later analysis, we examine the mitigating circumstances cited by managers and the SEC's response to these arguments.

In untabulated analysis, we examine the frequency with which preparers mention various rule-of-thumb cutoffs, such as "5 percent of earnings." Preparers mention cutoffs in only 17 episodes and self-report cutoff overages in 13 of these episodes. Across episodes, cutoffs are mentioned 38 times, of which 20 relate to earnings. All but one of the earnings cutoffs is 5 percent regardless of whether the benchmark involves GAAP net income, pre-tax earnings, operating earnings, non-GAAP earnings, or EBITDA. On 9 occasions, preparers also mention 5 percent cutoffs for assets, liabilities, equity, revenue, or total expenses, despite the large-scale differences between these benchmarks and earnings. A 5 percent cutoff translates into widely disparate *dollar* cutoffs when applied to benchmarks that starkly differ in scale. For example, applying a 5 percent cutoff to the sample median value of earnings versus assets translates into dollar cutoffs of $3 million versus $84 million. This disparity in dollar cutoffs is difficult to

14. Although not considered official policy, the SEC's practice of recognizing mitigating circumstances for large errors has been acknowledged in speeches by the SEC Associate Chief Accountant (Hardiman 2006, 2007). Hardiman's 2006 speech conceives of only two mitigating circumstances: breakeven earnings years (i.e., a small denominator problem) and errors that only affect discontinued operations. Hardiman's 2007 speech, however, attempts to convey openness to other circumstances, citing the Supreme Court's view that materiality depends on the total mix of information available.

rationalize given that accounting errors typically have similar dollar impacts across earnings and net assets.[15] On 7 occasions, preparers mention lower percentage cutoffs, ranging from 0.5 to 3 percent, for benchmarks such as assets, liabilities, equity, or revenue. Overall, the inconsistent narrative discussions of cutoffs, the frequent overages of what are thought to be standard cutoffs, and the SEC's deferential approach to cutoff overages indicate that cutoffs tend not to be a decisive factor in managements' quantitative materiality assessments.

Strategic portrayal of quantitative considerations

Although we observe many cases in which managers self-report large percentage impacts, it may also be the case that managers attempt to conceal large percentage impacts by strategically omitting incriminating periods from narratives. To investigate this possibility, we use period-specific earnings impacts from Audit Analytics to compute the absolute percentage earnings impact of the errors on each quarter and year.[16] Then we test whether materiality narratives are more likely to omit quarters or years with larger percentage earnings impacts. The periods tested are the misstated quarters and years that are corrected via revision, resulting in a sample of 54 annual periods and 100 quarterly periods across 29 revision episodes.

Table 6 shows that the median percentage impact is similar across omitted and included periods. The median percentage impact in quarters (years) that managers include in the narratives is 7.0 (4.1) percent, compared to a median impact of 4.8 (5.6) in quarters (years) that managers omit from the narratives. Thus, compared to omitted quarters (years), the impacts in included quarters (years) tend to be slightly higher (lower), but the differences are not statistically significant. Table 6 also assesses whether managers are more likely to omit quarters or years that exceed the "5 percent of earnings" cutoff. The percentage of periods exceeding the cutoff is similar across omitted and included periods (around 50 percent), again providing no evidence that managers strategically omit overages from materiality narratives.

In the last row of Table 6, we conduct an analogous test to assess whether managers tend to omit large *cumulative* percentage earnings impacts from narratives. We confine this test to catch-up adjustments because revisions do not require management to establish the immateriality of cumulative effects. We find that managers omit the cumulative percentage impact for only 6 of the 49 catch-up adjustments, indicating that omission is not a common strategy. Furthermore, the cumulative percentage impact is similar across the omitted and included impacts. Thus, managers do not exhibit a tendency to strategically omit large cumulative impacts from materiality narratives.

In untabulated analysis, we find that 78 of the 154 quarterly or annual periods (51 percent) shown in Table 6 have impacts that exceed 5 percent of earnings. About half of these periods exceed 5 percent because of "small denominator" issues; that is, the earnings scalar for the period is near a breakeven level and/or is abnormally low.[17] Later we show that management frequently cites breakeven or abnormally low earnings as factors that mitigate large percentage impacts.

For the other half of the periods with 5 percent overages, it is more difficult to explain why auditors accept managers' immateriality assertions, given that audit policy manuals portray a relatively inflexible 5 percent earnings threshold (Eilifsen and Messier 2015). In practice, auditors may exercise leniency toward 5 percent overages because of management's qualitative arguments and/or because the overages involve prior periods rather than the current period under audit.

15. For example, failure to recognize a $1 million asset impairment would overstate both assets and pre-tax earnings by $1 million. Premature sales recognition would overstate both assets and pre-tax earnings by the gross profit of the sales.

16. We use original rather than revised earnings as the scalar because preparers overwhelmingly use original earnings as benchmarks (we find that 19 of 20 randomly selected narratives use original earnings as the benchmark).

17. We define a "near breakeven" period as one that has an annualized return on assets of less than 1 percent in absolute value. We define an "abnormally low" period as one whose error impact would not exceed the 5 percent threshold if the period's actual earnings scalar were replaced with the average of the earnings scalar over the prior 3 years (or 12 quarters if the period in question is a quarter).

TABLE 6
Strategic omission of periods or cumulative impacts from materiality narratives

	Periods omitted from narratives			Periods included in narratives			Differences	
	Median	Percentage exceeding cutoff	*n*	Median	Percentage exceeding cutoff	*n*	Median	Percentage exceeding cutoff
Revisions								
Impact on annual earnings	0.056	53.8	26	0.041	46.4	28	0.015	7.4
Impact on quarterly earnings	0.048	49.3	75	0.070	56.0	25	−0.022	−6.7
Catch-up adjustments								
Cumulative impact on earnings	0.161	83.3	6	0.154	86.0	43	0.007	−2.7

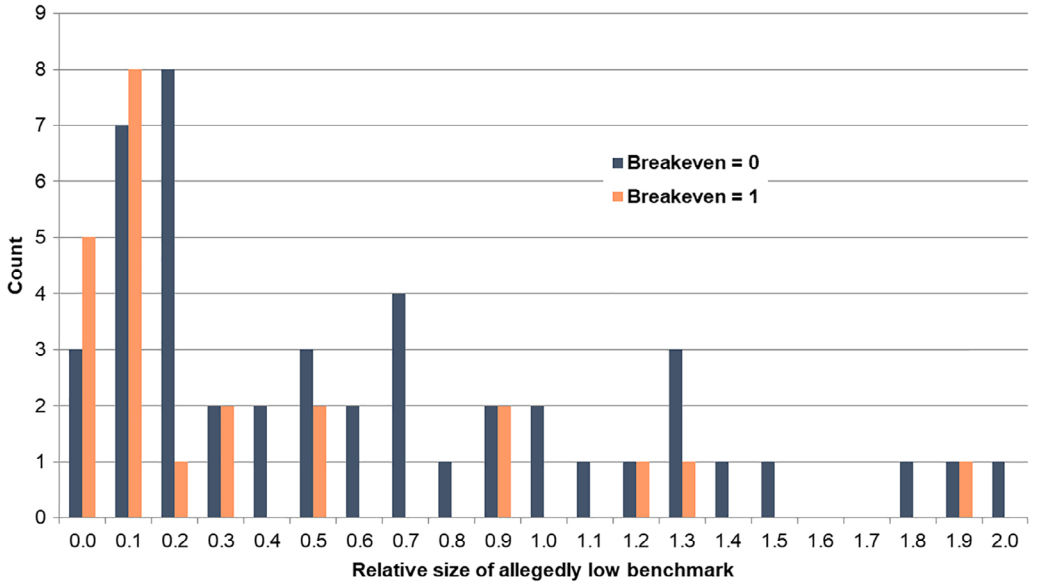
Notes: This table reports on whether materiality narratives tend to omit large quarterly, annual, or cumulative earnings impacts. The sample for the first two rows is confined to the 29 revision episodes that have non-zero quarterly or annual earnings impacts available in Audit Analytics (resulting in a sample of 100 quarterly and 54 annual periods). The sample for the last row is confined to the 49 catch-up adjustment episodes that have non-zero cumulative earnings impacts. "Median" is the median percentage impact on earnings. "Percentage exceeding cutoff" is the percentage of quarters, years, or cumulative periods that have impacts exceeding 5 percent of earnings. We compute the percentage earnings impacts on quarters and years using the after-tax error impacts and originally reported after-tax earnings obtained from Audit Analytics. We compute the percentage earnings impacts of catch-up adjustments using cumulative after-tax error impacts obtained from Audit Analytics and after-tax earnings from COMPUSTAT in the quarter that the catch-up adjustment was recognized. All percentage impacts reflect absolute values of both the error impact and the earnings scalar. The statistical significance of the differences in median (Percentage exceeding cutoff) is assessed using Wilcoxon rank-sum tests (two-sample *t*-tests). No difference is significant at the 10 percent level. All continuous variables are winsorized at the 1 and 99 percent levels.

Untabulated analysis of the Audit Analytics universe shows that when errors are corrected by adjusting the current year (via catch-up adjustments), only 12.6 percent of current years involve 5 percent overages. In contrast, when errors are corrected by adjusting prior years (via revisions), 25.9 percent of prior years involve 5 percent overages. Thus, auditors appear twice as likely to consider prior year overages immaterial compared to current year overages.[18] Overall, the high proportion of periods with 5 percent overages in Table 6 indicates that the 5 percent threshold is more flexible than research on auditor policy manuals suggests.

Given management's tendency to transparently report the large percentage impacts of errors, Figure 1 assesses whether managers then downplay those impacts by aggressively characterizing the benchmark denominators as abnormally small. Across the sample episodes, there are 69 firm-quarters or firm-years that managers allege to have abnormally low benchmarks, consisting of 66 cases of allegedly low earnings and 3 cases of allegedly low operating, investing, or financing cash flows.

18. In another version of this untabulated analysis, we exclude years from the Audit Analytics universe that have break-even or abnormally low earnings. We find that the overage rate is 1.9 percent among the current years that are corrected and 12.2 percent among the prior years that are corrected. Thus, in this test, auditors appear six times more likely to consider prior year overages immaterial compared to current year overages. This tendency to be more lenient about prior years was confirmed to us by a Big 4 audit partner, citing the SEC's desire to reduce the number of formal restatements and thus make it easier to qualify for informal revisions despite relatively large prior period effects.

Figure 1 Relative sizes of allegedly low annual and quarterly benchmarks



Notes: This figure presents a histogram of the relative sizes of the 69 quarterly or annual benchmarks that managers claim to be abnormally low. The benchmarks are quarterly or annual originally reported earnings or cash flows. The relative size of a given period's benchmark is computed by scaling the benchmark's absolute value for the period by the mean of the benchmark's absolute values over the three prior years. Light (dark) bars pertain to firms with breakeven (non-breakeven) performance, where breakeven is defined as below 1 percent in absolute annual return-on-assets (or cash return-on-assets, when the benchmark is a cash flow)

To evaluate management's low benchmark claims, we scale the benchmark value for each allegedly abnormal period by the firm's mean benchmark value in the three years prior to the allegedly abnormal period. All benchmark values reflect absolutized, originally reported amounts of quarterly or annual earnings or cash flows. A ratio at or above one casts doubt on management's basis for downplaying the period as abnormally low, because it means that the benchmark value in the supposedly low period is greater than or equal to its average value during the prior three years. Figure 1 presents the ratios for the allegedly abnormal periods. The data reveal that 15 of 69 (22 percent) of the ratios are at or above one, suggesting that a nontrivial fraction of management's allegations of abnormally low benchmarks is exaggerated.

One potential shortcoming of the above analysis involves firms operating at breakeven levels of performance. As previously mentioned, the SEC considers breakeven performance to be a mitigating factor in materiality assessments. Figure 1 shows that among the 15 ratios at or above one, only 3 involve firms that are below 1 percent in absolute annual return-on-assets (or cash return-on-assets, when the benchmark is a cash flow). Consequently, the other 12 periods (17 percent of the 69 total periods) appear to represent aggressive framing by management. As a sensitivity test, we rerun the analysis, this time basing the ratio denominator on the periods immediately before and after the allegedly abnormal period rather than the three years prior. We find 18 of the 69 periods (26 percent) appear to represent aggressive framing after filtering out breakeven periods (untabulated). We identify no cases in which the SEC challenges management's claim that a benchmark is abnormally small.

To summarize our findings about quantitative materiality considerations, multiple quantitative benchmarks are mentioned as being integral to materiality determinations, with after-tax and other forms of earnings being the most common benchmarks. Firms commonly match error and

benchmark duration in their analyses but also frequently compare cumulative error effects to period-specific flow benchmarks. The "5 percent of earnings" rule of thumb is frequently exceeded, often by a considerable degree. Managers transparently report these overages while deeming the errors immaterial, often claiming that the benchmarks are at abnormally low levels. Larger percentage impacts are also more likely to be considered immaterial if their correction affects prior years as opposed to the current year. There is no evidence that managers strategically omit large percentage impacts from materiality narratives, but managers do appear to exaggerate the abnormality of the benchmark scale in a nontrivial number of narratives.

Qualitative materiality considerations

SAB No. 99 specifies a nonexhaustive list of nine qualitative factors that managers should consider when evaluating accounting error materiality. These are whether the error relates to an item that can be precisely measured or estimated; masks a change in earnings or other trends; hides a failure to meet analyst forecasts; changes a loss into income or vice versa; affects an important segment or portion of the business; affects compliance with regulations; affects compliance with loan covenants or contracts; increases management compensation; or conceals an unlawful transaction. We extract from materiality narratives evidence about whether and how qualitative considerations are used in the materiality determinations. The results are presented in Table 7.

One or more SAB No. 99 factors is omitted from 48 percent of episodes (Table 7, panel A), and firms admit violating one or more factors in 41 percent of episodes (untabulated). Managers may omit factors strategically or simply believe that the omitted factor is unimportant. The common practice of omitting the "capable of precise measurement or estimation" factor (panel B) could be a strategic attempt to avoid discussing a factor that often weighs in favor of materiality. Firms appear to violate the "precise measurement" factor most often, representing 62 percent of all admitted SAB No. 99 criteria violations and 35 percent of all episodes (panel C).[19]

Managers also cited non-SAB No. 99 considerations in 89 of the episodes (82 percent). These considerations are summarized in panel D of Table 7 and fall into three predominate lines of argument: (i) the error has little or no effect on important business metrics or quantities (56 percent), (ii) the quantitative materiality benchmarks have shortcomings (17 percent), or (iii) the error did not affect investor perceptions at the time it was committed or at present (16 percent). Appendix 2 contains examples of these and other non-SAB No. 99 considerations.[20]

The first broad line of argument about the error's effect on important metrics or quantities takes on a variety of forms. Managers assert that the error did not affect key metrics (47 percent of episodes) or non-GAAP earnings measures used by investors (22 percent of episodes), or that the item is excluded from analyst forecasts (13 percent of episodes). Some firms also point out that the error involves only accruals and not cash flows (19 percent of episodes) or involves a reclassification with no bottom-line effects (17 percent of episodes).

Claims asserting shortcomings of quantitative benchmarks take two forms: management argues that a benchmark is abnormally small in a particular period (31 percent of episodes) or that the line items affected by the error are volatile (7 percent of episodes). Both assertions thus downplay the large relative size of the error in some periods. Claims based on investor perceptions most commonly argue that (i) there was no stock price effect upon disclosure of the error or upon disclosure by other firms that committed a similar error (17 percent of episodes) or (ii) the error had no effect on investor perception when committed (8 percent of episodes).

To summarize, while qualitative considerations are integral to materiality assessments, there is considerable variation across episodes in the specific factors mentioned. Some narratives

19. Among firms that evaluate all nine SAB No. 99 factors (and hence have not strategically omitted any factors), the "precise measurement" factor remains the most commonly admitted violation.

20. No manager argues that the error is immaterial because its correction favorably affects reported financial performance or condition.

TABLE 7
Qualitative materiality considerations

Panel A: Frequency counts of how comprehensively the SAB No. 99 factors are evaluated

	Count	Percent of episodes
Firm mentions all SAB No. 99 factors	56	51.9
Firm mentions some but not all SAB No. 99 factors	41	38.0
Firm mentions no SAB No. 99 factors	11	10.2
Total	108	100.0

Panel B: Frequency counts of SAB No. 99 factors not mentioned in episodes when at least some factors are mentioned

SAB No. 99 criterion	Count	Percentage of the 41 cases of incomplete criteria	Percentage of episodes (n = 108)
Capable of being precisely measured or estimated	33	78.6	30.6
Masks a change in earnings or other trends	6	14.3	5.6
Hides failure to meet analyst forecasts	10	23.8	9.3
Changes loss into income or vice versa	21	50.0	19.4
Important segment or portion of business	25	59.5	23.1
Affects compliance with regulations	15	35.7	13.9
Affects compliance with loan covenants or contracts	11	26.2	10.2
Increases management compensation	13	31.0	12.0
Conceals an unlawful transaction	15	35.7	13.9

Panel C: Frequency counts of admitted violations of SAB No. 99 factors

SAB No. 99 criterion	Count	Percentage of violations	Percentage of episodes (n = 108)
Capable of being precisely measured or estimated	38	62.3	35.2
Masks a change in earnings or other trends	0	0.0	0.0
Hides failure to meet analyst forecasts	2	3.3	1.9
Changes loss into income or vice versa	3	4.9	2.8
Important segment or portion of business	8	13.1	7.4
Affects compliance with regulations	1	1.6	0.9
Affects compliance with loan covenants or contracts	0	0.0	0.0
Increases management compensation	8	13.1	7.4
Conceals an unlawful transaction	1	1.6	0.9
Total	61	100.0	

Panel D: Frequency counts of non-SAB No. 99 qualitative considerations mentioned

	Count	Percentage of all considerations	Percentage of episodes (n = 108)
Error had no or little effect on important quantities			
No/little effect on key metrics	51	21.98	47.2
No/little effect on non-GAAP earnings	24	10.34	22.2

(The table is continued on the next page.)

TABLE 7 (continued)

Panel D: Frequency counts of non-SAB No. 99 qualitative considerations mentioned

	Count	Percentage of all considerations	Percentage of episodes (n = 108)
No/little effect on cash (i.e., error involved accruals only)	20	8.62	18.5
No effect on earnings or equity balance (i.e., reclassifications)	18	7.76	16.7
Analysts exclude the item from forecasts	14	6.03	13.0
Did not affect the trend or sign of cash flow from operating activities (used for cash flow statement errors only)	4	1.72	3.7
Subtotal	131	56.47	
Shortcomings in quantitative materiality measures			
Abnormally small denominator	33	14.22	30.6
The line items affected by the error are volatile	7	3.02	6.5
Subtotal	40	17.24	
Error has no effect on investor perceptions then or now			
No effect on the stock price	18	7.76	16.7
No effect on investor perceptions at the time error was committed	9	3.88	8.3
No predictive value	6	2.59	5.6
Affects only long-ago periods	3	1.29	2.8
Subtotal	36	15.52	
Our auditor agrees that the error is immaterial	10	4.31	9.3
The error is "not pervasive"	5	2.16	4.6
The errant procedure was applied consistently over time	3	1.29	2.8
The error involves a technical matter or the accounting guidance is vague	3	1.29	2.8
The error was committed for relatively few periods	2	0.86	1.9
Other considerations	2	0.86	1.9
Total considerations	232	100.0	

Notes: This table reports frequency counts of qualitative considerations mentioned in materiality narratives provided to the SEC. Panels A and B focus on the use of SAB No. 99 factors in the narratives. Panel C reports on the frequency with which the narratives disclose violations of SAB No. 99 factors, and panel D reports on the frequency with which narratives mention non-SAB No. 99 qualitative considerations.

acknowledge one or more violations of SAB No. 99 factors even though the error is still deemed immaterial. Firms additionally cite other (non-SAB No. 99) qualitative considerations, such as the error's effect on important metrics or quantities, shortcomings in the quantitative benchmarks, such as small denominators, and the error's effect on investor perceptions.

SEC challenges to materiality narratives

We next provide exploratory evidence about factors associated with the SEC's decision to challenge the content of materiality narratives. We caution about drawing strong inferences from this analysis, however, because the generalizability of this evidence is constrained by small sample size due to infrequent SEC challenges. SEC staff challenge narrative content in 17 of the 108 episodes (15.7 percent). In 10 of these episodes, the SEC requests a more thorough description of the materiality determination, including period-by-period analyses or disaggregated analyses

when multiple errors are present. In the remaining seven challenged episodes, the SEC explicitly disagrees with managements' assessments that the errors are immaterial.

We use the following logistic regression model to investigate factors associated with the SEC's decision to challenge the first materiality narrative furnished in an episode:

$$\begin{aligned}\Pr(CHALLENGE = 1) = {} & \lambda_0 + \lambda_1 QUANT\_OMIT + \lambda_2 ALLDURATIONS + \lambda_3 SAB99\_OMIT \\ & + \lambda_4 SAB99\_VIOL + \lambda_5 NONSAB99 + \lambda_6 ERR\_NI + \lambda_7 MULTIPLE \\ & + \lambda_8 CATCHUP + \lambda_9 MISCLASS + \eta_{it}. \end{aligned} \quad (2)$$

Variable definitions are given in Appendix 1.

The explanatory variables capture error characteristics and the content of the first narrative in an episode. Regarding quantitative content, we expect that the SEC is more likely to challenge narratives that omit a quantitative analysis (*QUANT_OMIT*) and less likely to challenge narratives that consider all three error durations (cumulative, quarterly, and annual) (*ALLDURATIONS*). Regarding qualitative content, we expect that the SEC is more likely to challenge narratives that omit (*SAB99_OMIT*) or admit to violating SAB No. 99 qualitative criteria (*SAB99_VIOL*) and is less likely to challenge narratives that consider qualitative criteria additional to those in SAB No. 99 (*NONSAB99*). Regarding error characteristics, we expect that the SEC is more likely to challenge an immateriality conclusion if the error is large relative to net income (*ERR_NI*), there are multiple errors (*MULTIPLE*), or the errors are corrected through catch-up adjustment rather than revision (*CATCHUP*). We expect that the SEC is less likely to challenge a classification error (*MISCLASS*).

Untabulated univariate results suggest that a challenge is more likely when a firm acknowledges violating SAB No. 99 qualitative factors (*SAB99_VIOL*). About 53 percent of the challenged narratives admit an SAB No. 99 violation, compared to 13 percent of unchallenged narratives. None of the other variable means statistically differ between challenged and unchallenged narratives. Untabulated logistic regression results are consistent with the univariate comparisons in that *SAB99_VIOL* is the only statistically significant explanatory factor.[21] Inferences are unchanged when controlling for the firm characteristics included in our model of SEC materiality narrative requests (equation (1)).[22]

Table 8 provides the details about the seven SEC challenges that express clear disagreement with management's immateriality conclusion. The SEC's disagreements primarily involve quantitative materiality. The large quantitative impacts that the SEC cites range from 5 to 222 percent, with several between 26 and 39 percent. The SEC ultimately does not accept management's immateriality conclusion in three of these seven episodes, which involve percentage impacts of 59, 93, and 222 percent. However, many other sample firms have errors of similar magnitude that are not challenged by the SEC.

The small number of SEC disagreements could mean that firms generally comply with professional guidance on materiality determinations or that SEC enforcement is lax. Another interpretation, however, is that the SEC avoids challenging firms' immateriality conclusions for practical reasons. In the wake of the Sarbanes-Oxley Act, the SEC's Advisory Committee on Improvements to Financial Reporting (CIFR) along with other regulators expressed concern about

21. In untabulated analysis, we run several sensitivity tests. First, we include an indicator variable for whether *ERR_NI* exceeds 5 percent and an interaction of that indicator with *ERR_NI.* The indicator and the interaction are insignificant, and none of the other inferences from the model are changed. Second, we find no evidence of an interactive effect between *QUANT_OMIT* and *ERRI_NI.* Third, we find that the sign of *ERR_NI* has no incremental explanatory power. Fourth, we examine models where the cumulative absolute value of the errors' effects on net income is scaled by total assets, sales, and total equity. Inferences are unchanged, with the exception of the negative coefficient on *NONSAB99* becoming marginally significant.

22. We suppress *AF* in the model because the joint inclusion of *AF* and *LAF* prevents the model from converging. *AF* is not significant in the model when it is included and *LAF* is suppressed.

TABLE 8
Details of SEC challenges with explicit disagreements

Episode	Year	Error description	Correction method	Cumulative earnings impact as a percentage of earnings (*ERR_NI*)	Cumulative earnings impact as a percentage of assets	Max self-reported error as percentage of earnings	Reason for SEC challenge	Resolution
1	2009	Foreign currency translation	Revision	0.00	0.00	–	Operating cash flow changes from a positive to a negative value	SEC accepts
2	2009	Liabilities and stock compensation	Catch up	18.99	0.46	195.4	Impacts on quarterly EBITDA of 59 and 26%	No SEC response
3	2010	Acquisition accounting	Revision	2.89	1.15		Cumulative impact on net income in two quarters (which we compute to be 222 and 33%)	SEC requests that an Item 4.02 8-K is filed and firm complies
4	2010	Noncontrolling interest	Catch up	2.24	0.15	87.9	Cumulative impact of 39% of quarterly net income.	SEC accepts
5	2012	Tax expense	Catch up	11.17	0.30	10.0	Impact of 33% to annual tax expense	SEC accepts
6	2012	Cash classification	Revision	0.00	0.00		Reclassification from cash to restricted cash (which we compute to be 93% of the cash balance)	SEC requests the firm files an Item 4.02 8-K and labels the financial statements "restated" in next 10-K filing. Firm does not file an Item 4.02 8-K and labels the financial statements "revised." SEC takes no further action
7	2013	Revenue recognition	Revision	26.65	0.41	4.9	Impact on annual EPS of greater than 5%	SEC accepts

Notes: This table reports details of seven comment letter episodes in which the SEC challenges the materiality narrative and explicitly disagrees with management's assessment that the error is immaterial. The SEC eventually accepts four of the assessments of immateriality.

the possibility that too many small restatements confuse investors and delay the filing of more relevant information (CIFR 2008).[23] The SEC may maintain a low frequency of challenges to firms' immateriality conclusions, so that managers do not become prone to restating for small errors.

5. Concluding remarks

Managers' narrative responses to SEC inquiries about error materiality afford a unique opportunity to examine the factors that managers consider when judging the materiality of accounting errors. Our approach to understanding this important accounting decision stands in sharp contrast to prior materiality judgment research in which estimated associations between observed outcomes and variables conjectured to affect materiality judgments are used to infer the relevant decision factors. Examining managers' materiality assessment narratives is incrementally beneficial because these assessments involve complex professional judgments, and there is no comprehensive list of rules or considerations for such decisions.

Evidence from these narratives reveals that managers typically use multiple benchmarks when making materiality decisions and that earnings is the most commonly used benchmark. Surprisingly, managers frequently deem an error immaterial while acknowledging that it exceeds the common 5 percent threshold in one or more periods, often by a large degree. Managers often defend this conclusion by arguing that the benchmark is abnormally low. Also surprisingly, we find that managers are not consistent in mentioning the nine SAB No. 99 qualitative considerations, but they do cite many other qualitative considerations.

The study reveals ways in which managers are transparent or conservative in their materiality determinations as well as ways in which they are strategic or aggressive. Managers tend to transparently acknowledge large error impacts rather than omit them from their analyses. In contrast, managers sometimes are aggressive in characterizing particular periods' benchmarks as abnormally low (in order to downplay relatively large error impacts in those periods). They also often omit the "capable of precise measurement" qualitative consideration from their analyses, likely because it tends to weigh in favor of the error's materiality.

The study also sheds light on factors associated with the SEC's decision to inquire about an immateriality conclusion and to challenge management's initial analysis. We find that the SEC is more likely to inquire about immateriality conclusions when the error is larger relative to net income, involves multiple accounting issues, or is corrected via a catch-up adjustment. When reviewing firms' materiality narratives, the SEC is more likely to challenge a narrative that admits one or more of the SAB No. 99 qualitative criteria were violated. The SEC tends to be deferential toward the narrative content. Possible reasons for the deference include laxity, agreement with narrative content and conclusions, or a desire to reserve formal restatements for clearly material errors (CIFR 2008). Future research could examine whether the SEC takes a similar "query but seldom overrule" approach to disciplining other complex accounting choices and judgments.

Our findings should be of interest to financial statement preparers, auditors, and users. Given the judgments involved and lack of rules-based guidance, preparers may benefit from learning how materiality is assessed in other firms. Both preparers and auditors may benefit from understanding the types of materiality judgments that have been deemed acceptable or challenged by the SEC. Finally, given that a host of accounting standards and disclosure requirements are subject to materiality judgments, our evidence may help users understand the behind-the-scenes forces that shape disclosures.

23. For analyses of CIFR's claims of investor confusion and filing delays caused by restatements after SOX, see Badertscher and Burks (2011) and Burks (2011).

Appendix 1

Variable definitions

Variable	Definition
10Q	Indicator variable that equals one if the error was disclosed in a 10-Q filing, and zero otherwise. Data are from Audit Analytics
AF	Indicator variable that equals one if the firm has a market capitalization (CSHOQ×PRCCQ) between $75 and $700 million, and zero otherwise. Data are from COMPUSTAT
AGE	The number of years the firm has had data on COMPUSTAT starting from 1965
ALLDURATIONS	Indicator variable that equals one if the firm's materiality narrative examines quarterly, annual, and cumulative error durations, and zero otherwise
BIG4	Indicator variable that equals one if the firm is audited by a Big 4 accounting firm, and zero otherwise. Data are from COMPUSTAT
CATCHUP	Indicator variable that equals one if the error was corrected through catch-up adjustment, and zero otherwise. Data are from Audit Analytics
CHALLENGE	Indicator variable that equals one if the SEC requests additional information about a materiality assessment after reviewing the firm's initial response to the comment letter, and zero otherwise. Data are from Audit Analytics
ERR_NI	Cumulative absolute value of errors' effects on net income (Audit Analytics) scaled by the sum of the absolute value of quarterly earnings (COMPUSTAT) in the 12 quarters leading up to the materiality decision, divided by 3 to annualize. The current quarter's earnings are adjusted to eliminate the effect of the correction on earnings for catch-up adjustments
GUIDEREF	Indicator variable that equals one if the firm references materiality guidance (SAB 99, SAB 1.M, SAB 108, SAB 1.N, SFAS 154, ASC 250) in its initial disclosure of the error, and zero otherwise
IMCLAIM	Indicator variable that equals one if the firm explicitly claims the error is immaterial in its initial disclosure of the error, and zero otherwise. A firm claims an error to be immaterial if the error disclosure text captured by Audit Analytics contains the words "immaterial" or "not material" or if it contains the word "material," excluding three specific cases: (i) the word "materiality," which indicates only that materiality was assessed; (ii) the phrase "material weakness," which indicates an internal control assessment; and (iii) the phrases "would be material" and "would have been material," which indicate the error is material to the current period but is not material to individual periods
LAF	Indicator variable that equals one if the firm has a market capitalization (CSHOQ×PRCCQ) over $700 million, and zero otherwise. Data are from COMPUSTAT
LNLEN	Natural log of the number of words discussing the error in the firm's filing. Data are from Audit Analytics
LOSS	Indicator variable that equals one if the firm's income before extraordinary items (IB) is negative, and zero otherwise. Data are from COMPUSTAT
MISCLASS	Indicator variable that equals one if the firm's error includes a misclassification, and zero otherwise. An error is determined to contain a misclassification if any of the Audit Analytics restatement category fields contain the term "classif"
MULTIPLE	Indicator variable that equals one if the firm's error involves multiple issues, and zero otherwise. An error is determined to involve multiple issues if the Audit Analytics restatement category fields contain more than one term
NARRATIVE	Indicator variable that equals one if the firm receives a comment letter request for a narrative about a materiality judgment related to an accounting error, and zero otherwise. Data are from Audit Analytics

(The Appendix is continued on the next page.)

Appendix 1 (continued)

Variable	Definition
NONSAB99	Indicator variable that equals one if the firm cites factors outside the SAB No. 99 criteria in its materiality narrative, and zero otherwise
QUANT_OMIT	Indicator variable that equals one if the firm does not provide a quantitative assessment in its materiality narrative, and zero otherwise
REVREC	Indicator variable that equals one if the firm's error involves revenue recognition issues, and zero otherwise. An error is determined to involve revenue recognition issues if the Audit Analytics restatement category fields contain the term "revenue recognition"
SAB99_OMIT	Indicator variable that equals one if the firm omits one or more of the qualitative criteria in SAB No. 99 from its materiality narrative, and zero otherwise
SAB99_VIOL	Indicator variable that equals one if the firm admits its error violates one or more of the qualitative criteria in SAB No. 99, and zero otherwise

Appendix 2

Examples of materiality considerations outside of SAB No. 99

Categories (***bold italics***) and subcategories (*italics*) correspond to those listed in Table 7, panel D.

Error had no or little effect on important quantities

No/little effect on key metrics

Black Hills Corp. 9/29/15: The oil and gas business is much more volatile from an earnings perspective than our core utility and utility-like businesses, and investors are primarily interested in the cash flows of the oil and gas business and the value of its assets at a given point in time. Related to our BHEP oil and gas business, our investor presentations and analyst reports do not focus on the GAAP basis financial statements but rather focus on proved reserves, undeveloped acreage, development activity, well costs and oil and gas commodity prices, none of which are impacted by the errors. We do not believe the reported GAAP basis financials of BHEP are a primary measure or focus by analysts and investors as to the evaluation of BHEP's value or operating results based on these factors.

No/little effect on non-GAAP earnings

Albany International Corp. 1/8/13: While we acknowledge that the out-of-period error exceeds 10 percent of reported net income, we believe that investors and other users of our financial statements place much greater emphasis on other metrics, including Adjusted EBITDA and earnings excluding certain gains and losses such as income tax adjustments. In our communications with investors (including press releases, quarterly reports, annual reports, and investor presentations), the primary metric used for performance is Adjusted EBITDA which is unaffected by the correction of the error. We also provide Adjusted EBITDA in our MD&A included in Form 10-K. In 2011, our Adjusted EBITDA exceeded $150 million, and therefore the corrected item represents less than 3 percent of our primary financial performance metric.

No/little effect on cash (i.e., error involved accruals only)

United Continental Holdings, Inc. 8/26/11: The item was noncash and had no impact on the cash flow statement for any year presented.

No effect on earnings or equity balance (i.e., reclassifications)

GAIN Capital Holdings 12/3/12: As illustrated in the table above, the amount excluded from *Cash and cash equivalents* in the statement of cash flows was quantitatively significant relative to the previously reported amounts. However, the error did not impact *Total assets* in the Balance Sheet, *Net Income* in the Statement of Operations and Comprehensive Income, nor Earnings per share in any previously reported period.

Analysts exclude the item from forecasts

Animal Health International, Inc. 3/28/11: Any impairment adjustment between the market cap and the balance of equity would not have been a surprise to the analysts that report on the stock. This impairment of $25.2 million was excluded by analysts and investors when determining profitability or valuation as discussed above.

Did not affect the trend or sign of cash flow from operating activities

Keynote Systems, Inc. 2/12/10: Adjusting for the correction would not have materially impacted the trend of the Company's operating and free cash flow (defined as cash flow from operations less purchases of property, equipment, and software), or changed its operating cash flows from a negative to a positive position (see table after first paragraph to this response).

Shortcomings in quantitative materiality measures

Abnormally small denominator

Viavi Solutions, Inc. 2/25/10: The impact of the out of period adjustments was $1.5 million or 5.7 percent of FY07 net loss. In FY07, we had a nonrecurring, non-core business event of recognizing net gains on sale of certain equity investments in our portfolio of $29.0 million. If the impact of this event was excluded from the net loss, the adjusted FY07 net loss would be $55.3 million and the impact of the out of period adjustment on FY07 adjusted net loss would be immaterial, 2.7 percent of adjusted net loss.

The line items affected by the error are volatile

Franklin Resources, Inc. 2/21/12: The overall effects of the errors did not exceed the quantitative threshold for operating cash flows for all periods with the exception of the three-month period ended December 31, 2010, and fiscal year 2009….The impacts in fiscal years 2010 and 2009 resulted from high levels of volatility affecting the reported amounts.

Error has no effect on investor perceptions then or now

No effect on the stock price

Altria Group, Inc. 5/17/13: The relevance of Altria's investment in SABMiller to the external world is fair market value rather than carrying value. The SABMiller investment is considered a significant component of Altria's balance sheet and an important source of liquidity for Altria based on market value, while the carrying value is relevant only for accounting purposes.

No effect on investor perceptions at the time error was committed

Diversified Restaurant Holdings, Inc. 4/17/12: Further, the swap transaction was recorded in our 2010 balance sheet and separately disclosed so that investors were aware of the amount and potential variability of this fair value measure.

No predictive value

Ormat Technologies 9/20/13: Given this misstatement…was the result of a nonrecurring event… we believe, qualitatively, it has diminished importance to our investors.

Affects only long-ago periods

Albany International Corp. 1/8/13: Since the error occurred in a period prior to any period that is presented in our 2011 Form 10-K, there is no effect on the income statement for any period presented in that report.

Our auditor agrees that the error is immaterial

Lear Corp. 4/19/12: The Company also consulted with its external advisors, including Winston & Strawn LLP ("W&S"), its external legal counsel, and E&Y, in assessing the impact of this matter on the predecessor financial statements and the treatment of the revision. Both W&S and E&Y concurred with the Company's assessment and treatment of the revision.

The error is "not pervasive"

PMC-Sierra, Inc. 6/21/13: As disclosed in Note 19 to the Company's consolidated financial statements, the statement of operations impact of the errors was solely related to income taxes, such correction did not have a pervasive effect on the consolidated financial statements and previously reflected (loss) income before provision for income taxes remained unchanged in the years presented.

The errant procedure was applied consistently over time

Viavi Solutions, Inc. 2/25/10: *Consistency of Application of the Error.* Although SAB 99 does not suggest consistent application as a qualitative factor, we considered whether the out-of-period adjustment impact has been consistent over the prior periods and whether the failure to apply certain accounting principles was used to manipulate any reported results or trends. Based on our review, we do not believe the failure to apply certain accounting principles was used to manipulate any reported results or trends.

The error involves a technical matter or the accounting guidance is vague

Lear Corp. 4/19/12: In connection with its assessment of ASC 852, the Company reviewed the illustrative examples, journal entries, and other guidance within ASC 852 noting the lack of guidance specific to its circumstances. The Company consulted with Ernst & Young LLP ("E&Y"), its external auditors, and they concurred with the Company's accounting treatment. In addition, the Company reviewed other companies' registration statements and annual reports noting diversity in practice and a varying level of disclosure….As outlined above, the Company respectfully asserts that it made good faith and reasonable interpretations of the available literature relating to this issue following a deliberative internal process.

The error was committed for relatively few periods

Microsemi Corp. 3/8/13: We incorporated our assessment of FASB ASC 250-10 and SAB No. 99 in our evaluation and prepared a schedule with the quantitative impacts on previously filed consolidated statements of cash flows and noted no impact to cash flows in years other than fiscal year 2011.

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