

Materiality Decisions and the Correction of Accounting Errors

Andrew A. Acito^{a*}, Jeffrey J. Burks^b, and W. Bruce Johnson^a

^a*Tippie College of Business, University of Iowa, Iowa City, IA 52242*

^b*Mendoza College of Business, University of Notre Dame, Notre Dame, IN 46556*

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Abstract

We test conjectures about the determinants of materiality judgments by examining a financial reporting choice made by firms that depends on an underlying materiality assessment. Specifically, from late 2004 to early 2006, over 250 firms were required to correct errors in their accounting for operating leases. The method chosen to correct the errors reflects the assessed materiality of the errors, as formal restatements are required to correct material errors while catch-up adjustments can be used to correct immaterial errors. We test the role of materiality considerations outlined in authoritative guidance as well as factors outside the guidance in explaining the correction method chosen. We find that quantitative and qualitative materiality considerations cited in authoritative guidance explain a large portion of the variation in firms' error correction decisions. We also find evidence that materiality assessments are influenced by the assessments of other firms and that the probability that a firm restates varies by auditor.

JEL Classification: M40, M41

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* Corresponding author: Andrew-Acito@uiowa.edu, 108 John Pappajohn Business Bldg., Ste. W350, Iowa City, IA 52212-1994. Office (319) 335-0910. Fax (319) 335-1956.

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1 Introduction

Beginning in late 2004 through early 2006, more than 250 U.S. firms disclosed that the operating lease accounting methods they had been using violated generally accepted accounting principles (GAAP). The accounting errors involved failing to accrue rent expense during rent holidays, amortizing too slowly leasehold improvements, or misclassifying incentive consideration received from landlords.¹ Two distinctly different approaches were used to correct these errors. While some firms formally restated previously issued financial statements, others opted instead to record current period “catch-up” adjustments. GAAP permits firms to avoid restatement when correcting past accounting errors but only if the error is deemed immaterial by management and the independent auditor.

While pronouncements issued by various accounting and auditing regulatory bodies (including the SEC) provide general guidelines for assessing materiality, these pronouncements do not specify “bright-line” criteria for determining if a particular accounting error is material.² Instead, preparers and auditors assess materiality based on professional judgment and in light of the particular circumstances surrounding the error. The absence of bright-line criteria means that some materiality decisions may be strategic in their purpose; i.e., influenced by factors beyond regulatory intent and designed to achieve financial reporting goals such as avoiding formal restatement. Legislators and trade groups have called on the SEC to issue a more concrete definition of materiality, criticizing current materiality guidance as too vague (Johnson 2007). Our study informs this discussion by testing the ability of the factors cited in the current guidance to explain a financial reporting decision that hinges on materiality assessments.

¹ We use the term “error” to refer to these lease accounting mistakes and remain agnostic about whether financial statements were intentionally misstated.

² For example, the Financial Accounting Standards Board (FASB) in Statement of Financial Accounting Concepts No. 2 defines materiality as: “The magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement” [FASB 1980, p. 10]. Other authoritative pronouncements pertinent to materiality judgments are described later in the paper.

The lease accounting errors discovered during 2004-2006 provide fertile ground for testing conjectures about the determinants of materiality judgments and their role in shaping firms' error correction decisions. Several features of the setting are advantageous to archival research: (a) a large number of firms concluded that their accounting methods violated GAAP; (b) similar mistakes were made at each firm; (c) the mistakes were uncovered and corrected during a relatively short span of time; and (d) two quite different approaches were used to correct the mistakes. The inherent homogeneity of this setting enhances our ability to statistically identify the determinants of materiality judgments and their influence on accounting error correction decisions. This setting also enables us to test conjectures about the unfolding sequence of materiality judgments and error correction decisions.

We find that several materiality considerations cited in the authoritative guidance are strong predictors of the chosen accounting error correction approach. These include (scaled) error magnitude, the presence of other identified errors, and the importance of leasing activities to firm operations. Our results thus support the notion that materiality judgments reflect both quantitative and qualitative considerations (as suggested in SAB No. 99) rather than simple rules-of thumb; e.g. 5% of net income. Net income is however the dominant quantitative benchmark for explaining error correction decisions in our study, not sales or total assets. This result corroborates earlier research that documents the importance of earnings as a materiality benchmark, but is inconsistent with SEC guidance on the use of a revenue benchmark for determining when to disclose lease rent expense.

We also find that firms' materiality assessments are influenced by the actions of other firms. In particular, formal restatement is *less likely* to occur when other firms have already used catch-up adjustments to correct larger errors and when relatively few firms have used restatement to correct smaller errors. The likelihood of formal restatement also varies across Big Four audit firms, which may reflect clientele effects or disparate application of authoritative guidance.

This study contributes to the extant materiality literature in three ways. First, while other archival studies of materiality focus on gains, expenses, or contingent liabilities, we investigate the materiality of accounting errors. Much of the authoritative guidance on materiality (e.g., SAB No. 99) focuses on accounting errors, so it is important to test whether the materiality considerations outlined in the guidance are used in practice. Assessing the materiality of an accounting error is a crucial audit process step because error correction decisions presumably affect financial statement informativeness and credibility. Second, our study investigates the influence of several quantitative and qualitative materiality considerations cited in authoritative pronouncements. In contrast, prior studies tend to focus on quantitative materiality considerations and the question of which benchmark (assets, sales, or earnings) best predicts whether the item will be deemed material. Finally, the study provides evidence on whether other firms' earlier error correction decisions exert an influence on materiality assessments.

The remainder of the paper is organized as follows. Section 2 describes the lease accounting errors that underlie our sample and pertinent institutional details regarding the financial reporting choices firms could make. Section 3 presents our hypotheses. Sample selection procedures, measurement issues, and descriptive statistics are discussed in Section 4. Section 5 reports our findings and Section 6 offers concluding remarks.

2 Background

"When it comes to bookkeeping snafus, lease accounting may be the new revenue recognition." (D. Gullapalli, *Wall Street Journal*, April 20, 2005).

In November 2004, Emeritus Corporation and CKE Restaurants both announced accounting restatements to correct improperly recognized rent expense and other operating lease accounting errors uncovered by their auditor, KPMG. Financial press articles described the Emeritus restatement as a \$15 million after-tax error correction and the CKE Restaurants restatement as nearly \$46 million, a figure that included several small non-lease errors. By April 2005, more than 250 U.S. firms disclosed

lease accounting errors similar to those uncovered at Emeritus and CKE Restaurants. While many firms restated previously issued financial statements, others considered their errors immaterial and opted instead to record a current period catch-up adjustment. Telephone and Data Systems, Inc. (TDS) and Target Corporation (clients of PricewaterhouseCoopers and Ernst & Young, respectively) were the first to use this approach when in November 2005 they corrected lease accounting errors totaling \$3.4 and \$10.8 million.

Three areas of improper operating lease accounting were uncovered by the firms and their auditors: (1) amortization of leasehold improvements over a term that includes assumed future renewals even though renewal is not reasonably assured; (2) postponement of rent expense during construction and pre-opening periods of the lease term when those periods are rental payment “holidays”; and (3) misclassification of tenant/landlord incentives related to leasehold improvements. Divergent interpretations of GAAP contributed to improper accounting in each area.³ The Securities and Exchange Commission (SEC) issued in February 2005 a letter reiterating existing GAAP and clarifying its views on the accounting issues. In October 2005, the Financial Accounting Standards Board (FASB) provided further guidance (Staff Position 13-1) on proper accounting for postponement of rent expense during a construction period.

2.1 Correction of accounting errors

Under U.S. securities laws, management must correct inaccurate, incomplete or misleading financial disclosures in a timely manner.⁴ Strict rules govern public disclosure of errors corrected via

³ The authoritative pronouncements on lease accounting include: Statement of Financial Accounting Standards (SFAS) No. 13, *Accounting for Leases* (November 1976); SFAS No. 98, *Accounting for Leases* (May 1988); FASB Technical Bulletin (FTB) 85-3, *Accounting for Operating Leases with Scheduled Rent Increases* (November 1985); FTB 88-1 *Issues Relating to Accounting for Leases* (December 1988); and FASB Staff Position (FSP) 13-1 *Accounting for Rental Costs Incurred during a Construction Period* (October 2005). FSP 13-1 is effective for fiscal periods beginning after December 15, 2005.

⁴ The SEC has ruled that “there is a duty to correct statements made in any filing...if the statements either have become inaccurate by virtue of subsequent events or are later discovered to have been false or misleading from the outset, and the issuer knows or should know that persons are continuing to rely on all or any material portion of the statements” (Sec. Act. Rel. 6084, 17 SEC Dock. 1048, 1054 (1979)).

formal restatement.⁵ Firms that restate past financial statements must first disclose the error and impending restatement in a Form 8-K (Current Events) filing. Although not required by GAAP or the SEC, most restating firms also issue press releases that describe the error and its impact on past financial statements. The restatement process then culminates in the issuance of amended annual or quarterly financial statements for the affected prior periods.⁶

GAAP requires that material errors in previously issued financial reports be corrected by means of a formal restatement.⁷ Errors deemed immaterial may be corrected by formal restatement of past financial statements or by means of a catch-up adjustment to current period financial statements.⁸ Disclosure of the accounting error is more circumspect when correction occurs through a current period catch-up adjustment. A Form 8-K filing is not required nor does the firm issue amended prior period financial statements. Instead, disclosure occurs (if at all) in the current quarterly or annual financial statement or as part of a routine earnings press release. The following excerpt typifies the limited disclosure made by non-restatement firms when correcting their lease accounting errors:

“Like many companies in the retail industry, we recently reviewed our lease accounting policies. This review revealed that we should synchronize the assumptions used to calculate our straight-line rent expense and to estimate useful lives for leased assets. This synchronization resulted in an earnings adjustment of \$42 million in the 2004 fourth quarter, of which \$36 million corrects prior years. This adjustment has no cash flow effect and includes \$26 million for non-cash rent and \$16 million for depreciation.” (May Department Stores’ Q4 2004 earnings release, February 10, 2005)⁹

⁵ See Turner and Weirich (2006) and the requirements for Item 4.02 of SEC Release No. 33-8400, *Additional Form 8-K Disclosure Requirements and Acceleration of Filing Date*, effective August 23, 2004.

⁶ The term “stealth restatement” has been used by the financial press to refer to certain prior period error corrections booked as restatements and disclosed as such in current period financial statements but without the requisite 8-K and amended 10-Q or 10-K filings (Reilly 2006). Sample observations with these characteristics are assigned to the “restatement” group in our study because the financial statements recast past reported amounts and label the revised figures as “restated” amounts. Past financial statements are not recast when firms use a current period catch-up adjustment to correct accounting errors.

⁷ See Accounting Principles Board Opinion 20; Statement of Financial Accounting Standards (SFAS) No. 16; and SFAS No. 154 (issued in May, 2005) among others.

⁸ From a bookkeeping perspective, the distinction between a restatement and a current period catch-up adjustment is that the restatement corrects the accounting error by altering the beginning-of-period balance in Retained Earnings whereas the catch-up adjustment does not.

⁹ The catch-up adjustment at May Department Stores involved a \$42 million reduction to 2004 fourth quarter earnings. If instead the company had opted to restate prior period financial statements, the correcting entry would have required two

Correction of a past accounting error may entail legal liability for both management and the external audit firm because it constitutes *de facto* admission that previously issued financial statements contained misstatements (Kellogg, 1984; Francis, Philbrick and Schipper, 1994). Financial statement credibility may also be reduced if the disclosed error raises questions within the investment community about management integrity, internal control weaknesses, audit committee oversight, external auditor independence, and so on. Formal restatement calls attention to the existence and severity of the error. Catch-up adjustments, on the other hand, entail less stringent disclosure requirements and thus may avoid the negative publicity that often accompanies restatement (Palmrose, Richardson and Scholz 2004). Moreover, use of the catch-up adjustment approach implies that management and the firm's outside auditors have judged the accounting error to be immaterial.

2.2 Materiality judgments

Accounting and auditing standard setters have promulgated guidelines for assessing financial statement materiality but these pronouncements do not provide "bright-line" rules for determining if a specific accounting error is material. Standard setters have instead opted to view materiality as a matter of professional judgment and to identify both qualitative and quantitative factors relevant to the decision.¹⁰

Quantitative materiality assessments gauge the magnitude of the accounting error and are made by comparing error magnitude to revenues, gross profit, pretax and net income, total assets,

adjustments: (i) a \$36 million correction for prior periods booked as a reduction to the opening fourth quarter 2004 balance of retained earnings ; and (ii) a \$6 million correction for the current period booked as a direct reduction to fourth quarter 2004 earnings.

¹⁰ For examples of such discussions see Statement of Financial Accounting Concepts No. 2 (FASB 1980), Staff Accounting Bulletin (SAB) No. 99, (SEC 1999), and the Auditing Standards Board's Interpretations of AU Section 312, Audit Risk and Materiality (AICPA 2004).

stockholders' equity, or individual line items in the financial statement.¹¹ Although quantitative thresholds such as 5% of net income have long been used in practice (Nelson, Smith and Palmrose 2005), recent guidance from the SEC (SAB No. 99) and the Public Company Accounting Oversight Board (AU Sec. 312) emphasizes the importance of both qualitative and quantitative materiality considerations. The SEC, for example, cautions against the use of quantitative "rules of thumb" for materiality assessment because exclusive reliance on percentage or numerical threshold has no basis in the accounting literature or the law:

"Quantifying, in percentage terms, the magnitude of a misstatement is only the beginning of an analysis of materiality; it cannot appropriately be used as a substitute for a full analysis of all relevant considerations." (SAB No. 99, SEC 1999 ¶12)

The SEC continues to oppose providing explicit quantitative "rules of thumb" for materiality assessments despite recent requests to do so from Committee on Capital Markets Regulation (CCMR) and other groups.¹²

SAB No. 99 (SEC 1999) identifies several qualitative considerations pertinent to assessing the materiality of an accounting error. These include whether the error masks a change in earnings or other trends; hides a failure to meet Wall Street analysts' consensus sales or earnings forecasts; changes a loss into profit; increases management compensation; affects compliance with loan covenants, contracts, or regulatory requirements; involves concealment of an unlawful transaction; and whether management or the outside auditor expects that the known error may result in a significant positive or negative stock market reaction. How much these considerations should factor into a materiality decision is left open,

¹¹ Two alternative approaches are used in practice 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 net income or some other benchmark. By contrast, the *current-period* approach compares the incremental amount of misstatement added in the period to net income or other benchmark. There is no requirement for either management or the auditor to disclose externally which approach is applied, and voluntary disclosure is nonexistent (Nelson, Smith and Palmrose 2005). SAB No. 108, issued by the SEC in September 2006, now requires companies to use both methods.

¹² In particular, the CCMR expressed hope that the SEC or the Public Company Accounting Oversight Board (PCAOB) would use the issuance of Auditing Standard No. 5, approved in July 2007, as an opportunity to provide more detailed quantitative guidance on materiality (Johnson 2007). See comment letter to the PCAOB regarding Auditing Standard No. 5 by Hal S. Scott, director of CCMR, at http://www.ccapmktreg.org/pdfs/Committee_PCAOB_404_Comment_2.26.pdf.

however, making it possible that some assessments are opportunistic and designed to achieve specific financial reporting and disclosure goals. This might occur, for example, when SAB No. 99 qualitative factors are used to justify *ex post* the materiality determination or when the judgment is influenced by contextual considerations beyond those identified in regulatory guidelines.

2.3 Prior research

There is an extensive archival and experimental literature on whether auditors' materiality judgments reflect simple income statement and balance sheet thresholds (see Holstrum and Messier 1982; Messier, Martinov-Bennie, and Eilifsen 2005; Nelson 2005). In general, this literature highlights the importance of the error amount relative to net income as a determinant of materiality, with additional evidence that materiality decisions are sometimes affected by the error amount relative to gross or net assets. Auditors are more likely to waive correction of a detected error when the amount is small, current-period-income decreasing, or subjectively determined, (e.g., Braun 2001; Nelson 2003; Nelson, Smith, and Palmrose 2005). Even when the error amount is objective, auditors do not expect management to make a full correction if doing so would cause the firm to fall short of analysts' consensus earnings forecasts (Libby and Kinney 2000). Auditors are more likely to require correction of errors in recognized amounts than in the equivalent footnote amounts (Libby, Nelson and Hunton 2006). Auditors' materiality judgments are also sensitive to client importance, client preferences, and client pressure (e.g., Beeler and Hunton 2002; Libby and Kinney 2000; Nelson, Elliot, and Tarpley 2002).

More closely related to our study is the archival research on materiality and disclosure choice. This research finds a positive association between item magnitude (i.e., quantitative materiality) and the likelihood of disclosing retiree healthcare costs (Liu and Mittelstaedt 2002) or a contingent liability (Fesler and Hagler 1989; Gleason and Mills 2002). Income statement classification decisions in equity-for-debt swap transactions also seem to closely follow rules-of-thumb based on quantitative materiality

considerations (Chewning, Wheeler, and Chan 1998).^{13,14} Quantitative materiality assessments alone do not, however, fully explain firms' disclosure choices in these settings. Liu and Mittelstaedt (2002), for example, find that profitability, ownership concentration, and firm size influence the decision to disclose retiree health care costs. Gleason and Mills (2002) find that contingent liability disclosure decisions are affected by whether firms' are issuing equity or operate in a litigious industry.

We extend earlier archival research on the materiality of accounting errors using a sample of corrections made after promulgation of SAB No. 99 guidelines in 1999. Given the emphasis placed on accounting errors in the authoritative guidance on materiality, it is important to test whether the considerations outlined in SAB No. 99 are used in practice. We also differ from prior studies in that we test conjectures about both quantitative and qualitative materiality considerations.

A limiting feature of most archival research on materiality and financial reporting decisions is that amounts deemed immaterial by management and auditors are not typically revealed outside the firm. As a result, researchers must instead estimate the undisclosed (and thus unobservable) immaterial item amount. Any measurement error introduced by the researcher's estimation process can either mask a true underlying correlation or introduce spurious correlation with the variables of interest. Our study avoids this problem because firms retained in the sample provide financial statement narrative disclosure of the presumably immaterial amounts of catch-up adjustments made to correct their lease accounting errors. Our setting is also unique in that we can investigate how materiality assessments are influenced by the prior corrective actions of other firms that uncover similar accounting errors.

¹³ Equity-for-debt swaps were popular in the early 1980s and enabled firms to retire debt in a tax advantageous way by issuing stock. The transactions usually (but not always) produced a "gain on early retirement of debt" for the swap firm. SFAS No. 4 requires such gains to be classified as extraordinary income if material and as "other income" if immaterial. The gain amount was typically disclosed in the financial statement footnotes.

¹⁴ Evidence obtained directly from audit engagement work papers confirms that the importance of quantitative considerations to materiality assessments involving accounting errors (Icerman and Hillison 1991; Wright and Wright 1997) but these studies predate the SAB No. 99 qualitative guidelines.

3 Research Questions

Materiality considerations are likely to be the dominant influence behind the decision to correct operating lease accounting errors using formal restatement because prevailing professional standards require formal restatement if the error is deemed material. We accordingly develop predictions about the quantitative and qualitative determinants of materiality judgments applicable to this research setting. Prevailing standards also allow firms to avoid formal restatement and opt instead for a catch-up adjustment if the error is deemed immaterial. To investigate this financial reporting choice, we develop predictions about the circumstances that may favor one correction approach over the other.

3.1 Quantitative Materiality Considerations

The likelihood of formal restatement is predicted to increase with the magnitude of the error. This prediction follows from prevailing quantitative guidelines: the larger the error, the more likely it is to be deemed material by management and outside auditors. The financial statement benchmark for quantifying materiality in this setting may not be net income or assets, however. SEC registrant firms are required to separately disclose lease rent expense when gross rents exceed one percent of revenue (Accounting Series Release No. 147, SEC 1973). Whether firms use revenue, assets, net income, or “normal” income as the benchmark for quantifying the materiality of their lease accounting errors is thus an empirical question.¹⁵

3.2 Qualitative Materiality Considerations

Prevailing guidelines dictate that even small accounting errors may be deemed material based on qualitative factors and the circumstances of misstatement. Accordingly, we investigate the influence on materiality judgments of three qualitative factors identified in SAB No. 99: operating lease intensity, disruption of an earnings trend, and leverage. Consistent with SAB No. 99’s emphasis on “importance to

¹⁵ “Normal” income is defined by Gleason and Mills (2000) as the greater of annual net income or 5% of total assets. We adapt their approach to our setting and use the maximum of four times quarterly net income or 5% of total assets at the beginning of the quarter.

operations” as a qualitative materiality consideration, the likelihood of formal restatement is predicted to increase in operating lease intensity. The likelihood of restatement is also predicted to be greater when the alternative error correction approach (i.e., catch-up adjustment) would disrupt the quarterly earnings trend. Catch-up adjustments receive scant financial statement disclosure and thus may be overlooked by analysts and investors as a source of a profit decline or loss. Management may prefer restatement in such circumstances because doing so helps to meet these important benchmarks (Burgstahler and Dichev 1997; DeGeorge, Patel, and Zeckhauser 1999).

High levels of financial leverage exacerbate agency conflicts that arise naturally between owners and creditors (Jensen and Meckling, 1976). Debt covenants—including those tied to financial statement figures—constrain the ability of shareholders and managers to expropriate creditor wealth. Covenants tend to become more stringent as leverage increases. Consistent with SAB No. 99’s inclusion of loan covenant compliance as a qualitative material consideration, the likelihood of restatement is predicted to be increasing in financial leverage.

The likelihood of formal restatement is also predicted to increase in the presence of other (non-lease related) accounting errors. Such errors add to the size and severity of the total misstatement and thus increase the likelihood that the aggregate error will be deemed material.

3.3 Contextual Considerations

Factors beyond those mentioned in the professional literature may also influence materiality assessments and the decision to correct lease accounting errors using formal restatement or catch-up adjustment. In particular, we suspect that materiality judgments in this setting will reflect a form of herding behavior (Banerjee 1992) where decision makers begin to ignore their private information and instead base their decisions on what others have already done.¹⁶ Specifically, the likelihood of formal restatement is predicted to increase with the number of prior smaller restatements but decrease with

¹⁶ Herding is inefficient in this setting if an error that would have been deemed material is instead judged immaterial based on the pattern of correction decisions made by other firms.

the number of prior larger catch-up adjustments. The intuition behind this prediction is that frequent smaller restatements reduce the implicit quantitative materiality threshold for managers and auditors who are reluctant to go against the herd. Frequent larger catch-up adjustments, on the other hand, raise this same threshold and thus can serve as an excuse for why formal restatement is not required.

Other firms' prior actions may also be relevant to understanding error correction decisions if the pervasiveness of the error influences materiality judgments. Comparatively low thresholds may be used in gauging the materiality of accounting errors that are isolated events because idiosyncratic errors are indicative of weak financial reporting and control processes. By contrast, high thresholds may be used once it becomes clear that the error is pervasive and thus attributable in part to widespread confusion about the relevant accounting standards. To investigate this issue, we use a time trend variable to test whether materiality thresholds for lease accounting errors change over time as more firms disclose the errors.

We use growth opportunities and financial distress to proxy for litigation risk, and predict that the likelihood of restatement decreases with litigation risk. High growth opportunity firms experience a larger share price decline in response to negative earnings news than do low growth opportunity firms (Skinner and Sloan 2002). Large share price declines are also associated with an increased probability that shareholder class action and derivative suits will be filed. Managers and auditors who believe that formal restatement might trigger a share price decline may opt for the less visible catch-up adjustment to reduce their perceived exposure to litigation risk. A similar argument motivates our conjecture about financial distress. In addition, Braun (2001) finds that auditors are more likely to waive error correction when the client is in good financial health.¹⁷

¹⁷ We do not adopt the "litigious industry members" approach used in Gleason and Mills (2002) and elsewhere because only 12 firms in our sample operate in such industries.

We also investigate whether error correction decisions are affected by a recent restatement, low earnings quality, auditor membership in the Big Four, or firm size. We conjecture that recent restatement firms prefer to avoid the potentially negative financial press coverage that may accompany another restatement and so are likely to instead opt for a catch-up adjustment. Formal restatement is also predicted to be less likely among firms with low quality earnings.¹⁸ Firms with low quality earnings are conjectured to prefer the less visible catch-up adjustment approach and thus avoid attracting investor or analyst attention to their other accounting practices. We do not make directional predictions about the effects of Big Four auditor and firm size on the likelihood of formal restatement but include these variables as controls because they are common to the literature.¹⁹

3.4 Speed of Error Correction

Restatements by Emeritus Corporation and CKE Restaurants led other firms to investigate their own lease accounting. Firms that identified errors not only had to decide how to correct the errors, but also when to publicly announce the results of their investigations. Consequently, we augment our examination of the choice of error correction approach (restatement or catch-up adjustment) by providing evidence concerning the speed with which firms uncover and corrected their lease accounting errors. Duration analysis is used to investigate whether clerical considerations, strategic motives, or auditor influence the length of time before a firm announce its error correction.

The first factor predicted to influence the timing of correction announcements is the number of weeks remaining until an SEC form 10-Q or 10-K filing deadline (DEADLINE)²⁰. As the sample window

¹⁸ In addition to aggregating errors that have been detected, auditors must consider the possibility that other errors remain undetected when they estimate the “aggregate likely misstatement” amount (SAS 47, ¶130). If low earnings quality is a proxy for undetected errors, it may well be associated with an increased likelihood of formal restatement.

¹⁹ Gleason and Mills (2002) find that firm size is unrelated to materiality judgments but Constigan and Simon (1995) find that firm size does influence auditors’ willingness to modify the audit opinion for inconsistencies in the application of accounting principals.

²⁰ SEC filing deadlines depend on filer status and whether the filing is annual or quarterly. For non-accelerated filers, quarterly (annual) filings are due 45 (90) days after the fiscal period end. Filing periods are shorter for

advances by week, DEADLINE decreases by one until the firm's filing deadline passes. When a filing deadline passes, DEADLINE is reset to the number of weeks until the next filing deadline and a new countdown begins. We expect the probability of announcing a lease correction decision in a given week to increase as the deadline variable gets smaller. In other words, we expect firms facing impending filing deadlines to announce their correction decisions sooner than firms with distant filing deadlines, resulting in a negative coefficient on DEADLINE. An advantage of hazard models is their ability to accommodate explanatory variables like DEADLINE that vary over time.

Variables that capture clerical aspects of the investigation are lease intensity (LEASE), the magnitude of the lease errors (ERR_TA), the presence of other errors (ERR_OTHR), and firm size (SIZE)²¹. Lease intensity proxies for the scope of the investigation as the time and effort devoted to the investigation likely increases in the firm's reliance on operating leases. Firms with high lease intensity are predicted to announce later because they must devote more time to identifying the extent and amount of the error. Alternatively, high lease-intensity firms may begin their investigations earlier so as to quickly resolve uncertainty over the financial statement impact of the lease errors. Thus, the directional effect of lease intensity on the speed of correction is an empirical question.

The magnitude of the lease error (ERR_TA) and the presence of other errors (ERR_OTHR) proxy for the complexity of the investigation. Greater complexity reduces the probability of announcing in a given week, so the coefficients for these variables are predicted to be negative. Firm SIZE proxies for the resources that can be devoted to the investigation, and is predicted to increase the probability of announcing in a given week.

accelerated and large accelerated filers, and vary during our sample period. Using market value to proxy for filing status, these differences in filing deadlines are reflected in the DEADLINE variable.

²¹ For the duration analysis, LEASE is multiplied by 100 and ERR_TA is multiplied by 1000. The variables are rescaled to ease interpretation of the hazard ratios in Table 5.

Firms may attempt to strategically time the announcements to minimize the correction's impact on reported financial results. We predict that firms prefer to announce in quarters when the catch-up adjustment would neither transform a quarterly profit into a LOSS nor produce a DECLINE in year-over-year quarterly earnings. To test this prediction, we use LOSS and DECLINE dummy variables. Each firm's weekly values of LOSS and DECLINE vary based on the quarter in which the week falls and earnings for that quarter relative to the magnitude of the lease errors. Finally, we test the role of the auditor in the timing of correction announcements by including auditor fixed effects.

4 Data and Methods

4.1 Sample selection procedures and sample statistics

Our preliminary sample is from *Analysts' Accounting Observer*, an investment newsletter that published a list of U.S. firms disclosing lease accounting errors from November 2004 through April 2005. The sample is augmented by firms identified from electronic text queries of wire service press releases and SEC filings spanning the period from August 2004 through August 2006.²² The pertinent SEC filings and press releases of each potential sample firm are reviewed to confirm the discovery of an error in the accounting for operating leases. We discard firms if the dollar amount of the error is indeterminate, the error involves capital leases or lessor revenue recognition but not lessee operating lease accounting, or the firm also discloses pervasive financial statement errors or irregularities unrelated to operating leases. The final sample is comprised of 244 firms with data available on Compustat. Of these, 150 firms (61.5%) use formal restatement to correct their lease accounting errors and the remaining 94 firms

²² The text query strings identified business press releases or SEC filings containing variations of the terms "lease" or "rent" in close proximity to "accounting" and to variations of "correction", "adjustment", "review", "revision", "error", "adoption", "change", "13-1", or "restate."

(38.5%) use a catch-up adjustment. The first lease accounting error in our sample was uncovered at Telephone and Data Systems (TDS) and disclosed on November 9, 2004.²³

Table 1 provides descriptive information on the magnitude and timing of the lease accounting error corrections comprising our sample. Among firms that use formal restatement, the mean dollar error is \$13.2 million. This dollar amount represents 1.2% of annual sales, 1.1% of assets, 32.4% of previous year net income, and 38.4% of “annualized” quarterly net income in the correction quarter.²⁴ By contrast, the mean dollar error is only \$6.137 million among firms that use a catch-up adjustment. This smaller error is 0.5% of annual sales, 0.3% of assets, 4.0% of prior year net income, and 4.6% of “annualized” quarterly income in the correction quarter. The average formal restatement is announced 20 weeks after the first (TDS) error is revealed whereas the mean for catch-up adjustment is 24 weeks.

Figure 1 provides additional descriptive information about the timing and magnitude of the lease accounting errors in our sample. Panel A depicts the relative frequency of errors disclosed each week between November 2004 and March 2006 grouped by accounting treatment (Restatement or Catch-up Adjustment). Each column in the figure shows the proportion of restatement (or correction) sample firms that disclosed the correction of lease accounting errors in a given calendar week. Key dates are also shown. There are two significant features of the data in Panel A. First, there is substantial cross-sectional variation in the timing of error correction disclosure within each accounting treatment group. Second, there is also considerable overlap in the two frequency distributions.

Panel B of Figure 1 compares the scaled magnitude of the lease accounting errors across the two accounting treatment groups (Restatement or Catch-up Adjustment). Each column shows the proportion of restatement (or correction) sample firms assigned to one of 47 earnings impact bins that

²³ The November 2004 lease error restatements by Emeritus Corporation and CKE Restaurants described in section 2 do not survive our sample selection criteria.

²⁴ “Annualized” quarterly net income is adjusted to eliminate any current period component of the error correction, and then multiplied by 4 to approximate annual earnings. The absolute value of quarterly net income is used to preserve the sign of the accounting error (numerator) in the presence of quarterly losses (denominator).

range from -5% to 41%. Earnings impact is the dollar amount of the error correction, divided by the absolute value of “annualized” quarterly net income for the quarter in which the error is corrected. This approach is used so that error magnitude is displayed relative to the familiar “5% of net income” rule-of-thumb. Observations outside the range of -5% to 41% are grouped in the far left or right bin, respectively. There are several noteworthy features of the data. First, errors corrected by means of formal restatement tend to be larger than those corrected using catch-up adjustments. This feature is consistent with the quantitative guidelines found in the professional literature and the descriptive statistics in Table 1. Second, nearly one-half of the restatements correct errors smaller than 5% of annualized quarterly net income. This feature is consistent with firms’ use of some other denominator benchmark for quantifying materiality (e.g, revenue) or the use of qualitative considerations described in the professional literature. The most noteworthy feature of the data, however, is that many errors corrected via restatement are smaller than those corrected via catch-up adjustment.

4.2 Estimating the Probability of Formal Restatement

To isolate the influence of quantitative and qualitative materiality considerations and contextual factors on firms’ accounting error correction decisions, we estimate a logistic regression of a binary variable denoting formal restatement (RESTATE = 1 or 0) on explanatory variables conjectured to predict the accounting choice. The estimation equation has the following general form:

$$\ln \frac{P_{Formal}}{1 - P_{Formal}} = \alpha + \beta X + \varepsilon$$

where $\ln \frac{P_{Formal}}{1 - P_{Formal}}$ is the probability that formal restatement is used to correct the errors, and

$$\beta X = \beta_1 VAR_1 + \beta_2 VAR_2 + \dots$$

is the vector of coefficient estimates and explanatory variables. Quantitative materiality considerations are captured by the six error magnitude metrics in Table 1. The metrics reflect the aggregate dollar lease error scaled by one of six financial benchmarks: annual net income (ERR_ANI); “annualized”

quarterly net income (ERR_QNI); normalized quarterly net income (ERR_NQNI); annual sales (ERR_ASALES); quarterly sales (ERR_QSALES); or total assets (ERR_TA).²⁵ The analysis isolates the aggregate and incremental contribution of each quantitative materiality metric to the probability of formal restatement. We predict a positive logit coefficient estimate for each individual metric but have no *a priori* opinion about which of the six quantitative materiality measures will be most influential.

Qualitative materiality considerations are captured by: operating lease intensity (LEASE); financial leverage (LVRG); catch-up adjustments that would either transform a quarterly profit into a LOSS or produce a DECLINE in a year-over-year quarterly earnings; and by the firms' discovery of other accounting errors (ERR_OTHR). We predict that a positive logit coefficient estimate will be associated with each qualitative materiality variable.

Contextual factors include: the number of larger catch-up adjustments (PRIOR_C) or smaller restatements (PRIOR_R) already made by other firms; the number of weeks that have elapsed since the first lease error correction (WEEKS); whether the firm recently restated for other reasons (RECENT); earnings quality as measured by discretionary accruals (ACCRLS); financial distress (Z_SCORE); growth opportunities measured as the market-to-book ratio (MTB); audit firm membership in the Big Four (BIG4); and firm size measured as the natural logarithm of total assets (SIZE). The coefficient estimate associated with PRIOR_C is predicted to be negative reflecting the idea that frequent larger catch-up adjustments provide management and outside auditors with an excuse for non-restatement. By contrast, a positive coefficient estimate is predicted for PRIOR_R because frequent smaller restatements make it difficult for management and outside auditors to deviate from the actions of other firms. The remaining contextual variables are predicted to decrease the likelihood of formal restatement, except for firm size and BIG4 where we have no directional prediction about the logit coefficient estimate.

²⁵ Operational definitions of these and other explanatory variables appear in the Appendix.

Table 2 reports descriptive statistics for the explanatory variables. The data in Panel A show that the average lease error is 21.4% of annual net income, 25.4% of annualized quarterly net income, 0.8% of assets, and almost 1% of annual sales. Other accounting errors occur in 16% of the sample. Over 10% of the errors would result in a quarterly loss if corrected by the catch-up adjustment, and 21% would result in a quarterly earnings decline. Recent accounting restatements occur in only 5% of the sample, and more than 90% of the firms use a Big Four auditor. The correlations in Panel B reveal that extreme multicollinearity is present among the quantitative materiality metrics. The remaining explanatory variables are, however, characterized by moderate or low colinearity.

5 Empirical Results

5.1 Materiality and the choice of correction approach

Table 3 reports the results obtained from estimating a logistic regression model of the likelihood that formal restatement is used to correct discovered lease accounting errors. Panel A reports evidence on the influence of quantitative materiality considerations; Panel B includes qualitative considerations mentioned in SAB No. 99; and Panel C includes contextual factors hypothesized to influence firms' error correction decisions. Each panel displays logistic regression results for the six quantitative error metrics considered individually (Models 1 through 6) and on a combined basis (Model 7). Tests for coefficient significance are based on White-corrected standard errors.

The results in Panel A confirm the influence of quantitative materiality considerations on firms' error correction decisions. Two of the six error measures, ERR_ANI and ERR_TA, exhibit a highly significant positive association with the likelihood of formal restatement. The predicted association is strongest when the error magnitude is scaled by annual net income (ERR_ANI, pseudo-R² of 31.6%) and weakest when scaled by sales (ERR_ASALES and ERR_QSALES, pseudo-R² of about 3%). Results for the combined logistic regression (Model 7) underscore the dominant influence of ERR_ANI and ERR_TA in

our sample because the coefficient estimates associated with both variables remain positive and significant when the other error metrics are added to the model.

The results in Panel B confirm the predicted incremental influence on firms' error correction decisions of two qualitative materiality considerations: lease intensity (LEASE) and the presence of other accounting errors (ERR_OTHR). These variables exhibit positive and highly significant coefficient estimates in all models. The LOSS dummy variable exhibits occasional statistical significance when coupled with quantitative materiality proxies that lack explanatory power (ERR_ASALES in Model 4 and ERR_QSALES in Model 5). The pseudo-R² in the combined logistic regression (Model 7) increases from 37.6% in Panel A to 53.4% in Panel B.

There are several messages in the contextual factor results reported in Panel C. First, consistent with our conjecture about the influence of other firms correction decisions, formal restatement is less likely when other firms have already made larger catch-up adjustments (PRIOR_C). There is mixed evidence that formal restatement is more likely when other firms have made smaller restatements (PRIOR_R). The coefficient estimate for Prior_R is positive and significant except in Model 1 and the combined logistic regression (Model 7). The coefficient estimate for PRIOR_C, on the other hand, remains highly significant in these two models. Market-to-book (MTB) exhibits a modest negative association with the likelihood of restatement but, as with PRIOR_R, the MTB coefficient estimate is statistically insignificant in Models 1 and 7.

As in Panel B, both lease intensity (LEASE) and the presence of other errors (ERR_OTHR) are highly significant in the predicted direction when contextual factors are included in the logistic regression model (Panel C). Only one of the quantitative materiality metrics (ERR_ANI) exhibits incremental statistical significance in Panel C. One interpretation of this result is that quantitative materiality assessments are unrelated to correction decisions in our sample when qualitative and contextual variables are also included in the logistic regression. An alternative interpretation is that

quantitative considerations still matter, but this influence is conditioned by the correction decisions of other firms (PRIOR_C and PRIOR_R) in our setting.

5.2 Auditor effects

Audit firms may differ in their preference for formal restatement over catch-up adjustment as an accounting error correction approach. To investigate this possibility, we repeat the logistic regression analysis using auditor fixed effects and a reduced set of explanatory variables from Table 3. We retain variables that are statistically significant in the logistic regressions and the quantitative materiality measure with the highest pseudo- R^2 in Panel A of Table 3 (ERR_ANI).

Table 4 reports the results of this analysis. The coefficient estimate for Auditor 2 is reliably positive and the coefficients for the other Big Four auditors are statistically indistinguishable from zero. These findings mean that, after controlling for other factors that influence error correction decisions, Auditor 2 favors formal restatement.²⁶

Audit firms may also differ in how much weight each quantitative, qualitative, and contextual factor receives when forming materiality assessments and making error correction decisions. Sample size limitations (roughly 50 observations per audit firm) unfortunately preclude rigorous examination of this question. Use of a reduced set of explanatory variables proved problematic for maximum likelihood estimation because two important retained binary variables were not adequately distributed in the sample. Consequently, we cannot test for differences across auditors in the determinants of error correction decisions and materiality assessments.

²⁶ These results should be interpreted with caution. Because our tests cannot disentangle effects uniquely attributable to audit firms from those attributable to audit engagement clients, it is inappropriate to draw inferences about audit firm behavior from our data. The negative fixed effect coefficient for non-Big Four auditors, for example, may simply indicate that these audit firms' clients tend to have small lease accounting errors and thus use catch-up adjustments more often than is the case for clients of other audit firms.

5.3 Duration Test Results

To implement the hazard model we define the duration of interest as the number of weeks that elapse between the Emeritus Corporation announcement and each sample firm's subsequent announcement. The hazard rate $h(t_i)$ is the probability that firm i announces its error correction in a certain week t , given that it has not previously announced. The form of the hazard model is

$$h(t_i) = h_0(t_i) \exp[\beta_1 \text{DEADLINE}(t)_i + \beta_2 \text{LEASE}_i + \beta_3 \text{ERR_TA}_i + \beta_4 \text{ERR_OTHR}_i + \beta_5 \text{SIZE}_i \\ + \beta_6 \text{LOSS}(t)_i + \beta_7 \text{DECLINE}(t)_i + \beta_8 \text{RESTATE}_i + \beta_9 \text{Auditor1}_i + \beta_{10} \text{Auditor2}_i \\ + \beta_{11} \text{Auditor3}_i + \beta_{12} \text{Auditor4}_i]$$

where $h_0(t_i)$ is a baseline hazard. We use the Cox (1972) method of partial likelihood to estimate the model parameters because this method provides unbiased and asymptotically normal estimates of the β s without the need to specify a functional form for $h_0(t_i)$. The estimates are not as efficient as those that employ the true baseline hazard function, but the true baseline hazard function is not known.

The results of the duration analysis are provided in Table 5. Three models are estimated: a pooled sample model and two conditional models corresponding to the restatement and catch-up adjustment subsamples. As expected, the coefficient on DEADLINE is significantly negative in all three models. The hazard ratio shown for each explanatory variable in Table 5 captures the proportional change in the hazard rate when the explanatory variable increases by one and all other variables are held constant. The hazard ratio of 0.84 for DEADLINE in the pooled sample means that if two firms' filing deadlines differ by one week, the firm with the later deadline is 16% ($1 - 0.84$) less likely to announce its lease correction decision in a given week, *ceteris paribus*.

Results for the other explanatory variables differ by sample. The coefficient on lease intensity (LEASE) is positive in all three models, but statistically significant only in the catch-up adjustment sample. Consistent with our predictions, the presence of other errors (ERR_OTHR) decreases the probability of announcement in the restatement sample. Firm size is associated with an increase the probability of announcement among catch-up adjustment firms. Finally, the auditor fixed effect

variables have no influence on the speed of correction except for Auditor 2 in the pooled sample. In summary, filing deadlines are the only factor that consistently affects the timing of firms' error correction announcements.

6 Concluding Remarks

Beginning in late 2004 through early 2006, more than 250 U.S. firms disclosed that the operating lease accounting methods they had been using violated generally accepted accounting principles (GAAP). Some firms corrected the error by restating previously issued financial statements, others opted instead to record a current period "catch-up" adjustment and thereby avoid potential negative publicity associated with formal restatement. Authoritative guidance requires formal restatement when an accounting error is deemed material. The chosen error correction approach thus reflects the underlying materiality assessments of auditors and preparers. This study tests conjectures about the determinants of these materiality judgments and their role in shaping firms' error correction decisions.

We find that several quantitative and qualitative materiality considerations cited in authoritative guidance explain a large portion of the variation in firms' error correction decisions. These include the scaled magnitude of the error; the presence of other identified accounting errors; and the importance of leasing activities to firm operations. Our results thus support the notion that materiality judgments reflect both quantitative and qualitative considerations (as suggested in SAB No. 99) rather than simple rules-of-thumb; e.g., 5% of net income.

We also find that materiality judgments in this setting are influenced by factors outside the scope of regulatory intent. Specifically, firms' lease accounting error correction decisions appear to be influenced by the actions of other firms. Formal restatement is less likely to occur when other firms have used catch-up adjustments to correct larger errors and relatively few firms have used restatement to correct smaller errors. We also document differences in the likelihood of formal restatement across

audit firms that represent either clientele effects or disparate application of authoritative guidance. None of the contextual variables hypothesized provide robust evidence of opportunistic behavior in firm's decisions.

Our finding that materiality assessments may depend on the prior actions of other firms has an important policy implication for accounting regulators. An unsound decision by an early mover may induce widespread bias in materiality assessments. Public disclosure of a large error deemed immaterial by that firm (and thus corrected by means of a catch-up adjustment) may raise the threshold by which other firms judge the materiality of their own errors. This threshold ratcheting can result in fewer firms using restatement to correct accounting errors that would have otherwise been deemed material. The SEC does not currently require firms to disclose immaterial accounting errors. Nondisclosure may indeed be beneficial because it reduces the likelihood of threshold ratcheting.

References

- Accounting Principles Board (APB). 1971. Accounting Principles Board Opinion No. 20, Accounting Changes.
- Ahmed, A.S., B.K. Billings, R.M. Morton, and M. Stanford-Harris. 2002. The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review* 77: 867-890.
- American Institute of Certified Public Accountants (AICPA). 2004. *Interpretations of AU Section 312, Audit Risk and Materiality in Conducting an Audit*. Auditing Standards Board of the AICPA.
- Banerjee, A. 1992. A Simple Model of Herd Behavior. *The Quarterly Journal of Economics* 107(3): 797-817.
- Beaver, W., M. McNichols, and K. Nelson. 2004. An alternative interpretation of the discontinuity in earnings distributions. Working paper, Stanford University.
- Beeler, J. and J. Hunton. 2002. Contingent Economic Rents: insidious Threats to Audit Independence. *Advances in Accounting Behavioral Research* 5: 21-50.
- Braun, K. 2001. The disposition of audit-detected misstatements: An examination of risk and reward factors and aggregation effects. *Contemporary Accounting Research* 18 (1): 71-100.
- Burgstahler, D. and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24: 99-126.
- Chewning, E.G., S.W. Wheeler, and K.C. Chan. 1998. Evidence on auditor and investor materiality thresholds resulting from equity-for-debt swaps. *Auditing: A Journal of Practice & Theory* 17(1): 39-53.
- Chewning, E., K. Pany, and S. Wheeler. 1989. Auditor reporting decisions involving accounting principle changes: Some evidence on materiality thresholds. *Journal of Accounting Research* 27(1): 78-96.
- Costigan, M., and D. Simon. 1995. Auditor materiality judgment and consistency modifications: Further evidence from SFAS No. 96. *Advances in Accounting* 13: 207-222.
- DeGeorge, F., J. Patel, and R. Zeckhauser. 1999. Earnings management to exceed thresholds. *Journal of Business* 72: 1-33.
- Durtschi, C. and P. Easton. 2005. Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto. *Journal of Accounting Research* 43: 557-592.
- Fesler, R.D. and J.L. Hagler. 1989. Litigation disclosures under SFAS No. 5: a study of actual cases. *Accounting Horizons* 3(1): 10-20.
- Fields, T., T. Lys and L. Vincent. 2001. Empirical research on accounting choice. *Journal of Accounting and Economics* 31: 255-308.
- Financial Accounting Standards Board (FASB). 1977. Statement of Financial Accounting Standards No. 16, Prior period adjustments.
- Financial Accounting Standards Board (FASB). 1980. Statement of Financial Accounting Concepts No. 2, Qualitative characteristics of accounting information.

- Financial Accounting Standards Board (FASB). 2005. Statement of Financial Accounting Concepts No. 154, Accounting changes and error corrections—a replacement of APB Opinion No. 20 and FASB Statement No. 3.
- Gleason, C. and L. Mills. 2002. Materiality and contingent tax liability reporting. *The Accounting Review* 77(2): 317-342.
- Gullapalli, D. 2005. Outside Audit: Lease Restatements are Surging. *The Wall Street Journal*, April 20, 2005.
- Holstrum, G. and W. Messier. 1982. A review and integration of empirical research on materiality. *Auditing: A Journal of Practice & Theory* (Fall): 45-63.
- Icerman, R. C. and W. A. Hillison. 1991. Disposition of audit-detected errors; Some evidence on evaluative materiality. *Auditing: A Journal of Practice & Theory* 10(1): 22-34.
- Johnson, S. 2007. SEC, PCAOB Pushed to Define Materiality. *CFO.com* (June 20).
- Jones, J. 1991. Earnings management during import relief investigation. *Journal of Accounting Research* 29: 193-228.
- Kinney, W., D. Burgstahler, and R. Martin. 2002. Earnings Surprise Materiality as Measured by Stock Returns. *Journal of Accounting Research* 40: 1297-1329.
- Libby, R., M. Nelson, and J. Hunton. 2006. Recognition v. Disclosure, Auditor Tolerance for Misstatement, and the Reliability of Stock-Compensation and Lease Information. *Journal of Accounting Research* 44 (3): 533-560.
- Libby, R. and W. Kinney. 2000. Does mandated audit communication reduce opportunistic corrections to manage earnings to forecasts? *The Accounting Review* 75: 383-404.
- Liu, C. and H.F. Mittelstaedt. 2002. Materiality judgments and disclosure of retiree health care costs under SFAS No. 81. *Review of Accounting Studies* 7(4): 405-434.
- Messier, W.F., N. Martinov-Bennie, and A. Eilifsen. 2005. A review and integration of empirical research on materiality: two decades later. *Auditing: A Journal of Practice and Theory* 24(2): 153-187.
- Nelson, M. 2003. Behavioral evidence on the effects of principles-and rules-based standards. *Accounting Horizons* 17 (1): 91-104.
- Nelson, M. 2005. A review of experimental and archival conflicts-of-interest research in auditing. *Conflicts of Interest: Problems and Solutions in Law, Medicine, and Organizational Settings*, edited by D. A. Moore, D. M. Cain, G. Loewenstein, and M. H. Bazerman. Cambridge: Cambridge University Press: 41-69.
- Nelson, M., J. Elliott, and R. Tarpley. 2002. Evidence from Auditors About Managers' and Auditors' Earnings Management Decisions." *The Accounting Review* 77 (Supplement): 175-202.
- Nelson, M, S. Smith, and Z. Palmrose. 2005. The effect of quantitative materiality approach on auditors' adjustment decisions. *The Accounting Review* 80: 897-920.
- Palmrose, Z., V. Richardson and S. Scholz. 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* 37: 59-90.

Reilly, D. 2006. No More 'Stealth Restating'—SEC Forces Companies to Highlight Earnings Changes, Not Just Tack Them On to Their Newest Filings, *Wall Street Journal* (September 21, 2006).

Securities and Exchange Commission (SEC). 1999. Staff Accounting Bulletin No. 99, Materiality.

Securities and Exchange Commission (SEC). 2006. Staff Accounting Bulletin No. 108, Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements.

Skinner, D. and R. Sloan. 2002. Earnings Surprises, Growth Expectations, and Stock Returns or Don't Let an Earnings Torpedo Sink Your Portfolio. *Review of Accounting Studies* 7: 289-312.

Tuttle, B., M. Collier, and R. Plumlee. 2002. The effect of misstatements on decisions of financial statement users: An experimental investigation of auditor materiality thresholds. *Auditing: A Journal of Theory and Practice*: 11-27.

Turner, L. and T. Weirich. 2006. A closer look at financial statement restatements, *The CPA Journal* 76: 12-23.

Watts, R. 2003. Conservatism in accounting part I: Explanations and implications. *Accounting Horizons* 17: 207-221.

Appendix. Variable Definitions and Mnemonics

Mnemonic	Definition
Quantitative Considerations	
ERR_	Error magnitude, the after-tax dollar amount of the lease accounting error ("catch-up" adjustment or restatement).
ERR_ANI	Error magnitude scaled by annual net income as reported in the most recent 10-K published prior to the lease error correction. The absolute value of annual net income is used to preserve the sign of the accounting error (numerator) in the presence of losses.
ERR_QNI	Error magnitude scaled by net income for the fiscal quarter in which correction occurred ("catch-up" adjustment or restatement), adjusted to eliminate the effect of correction and annualized by multiplying the scale factor by 4. The absolute value of quarterly net income is used to preserve the sign of the accounting error (numerator) in the presence of losses.
ERR_NQNI	Error magnitude scaled by "normalized" quarterly net income, defined as the maximum of QNI as defined above or 5% of total assets as defined below.
ERR_ASALES	Error magnitude scaled by sales as reported in the most recent 10-K published prior to the lease correction.
ERR_QSALES	Error magnitude scaled by "annualized" sales for the fiscal quarter in which the correction occurred.
ERR_TA	Error magnitude scaled by total assets for the fiscal quarter in which correction occurred.
Qualitative Considerations	
ERR_OTHR	An indicator variable that equals 1 if the firm also corrected other (non-lease related) accounting errors, and zero otherwise.
LEASE	Operating lease intensity, defined as total operating lease commitments plus current lease expense divided by total assets, both as reported in the most recent 10-K published prior to the lease error correction.
LVRG	Financial leverage, defined as the sum of short-term and long-term debt divided by total assets using values reported in the most recent 10-K published prior to the lease error correction.
LOSS	Indicator variable that equals 1 if the "catch-up" adjustment would have triggered a loss for the quarter, and zero otherwise.
DECLINE	Indicator variable that equals 1 if the "catch-up" adjustment would have triggered an earning decline when compared to the same quarter one year earlier, and zero otherwise.
Contextual Factors	
PRIOR_C	Natural logarithm of the number of larger "catch-up" adjustments (ERR_TA) made prior to the firm's error correction decision announcement.
PRIOR_R	Natural logarithm of the number of smaller restatements (ERR_TA) made prior to the firm's error correction decision announcement.
WEEKS	Natural logarithm of the number of weeks between the correction and the first correction in the sample.
RECENT	Dummy variable equal to 1 if the firm had restatement in the 12 months prior to the lease correction.
ACCRLS	Abnormal (discretionary) accruals as estimated by the Modified Jones Model (Dechow et al., 1995) at the two-digit SIC level. Variables are measured from the fiscal year-end prior to the lease correction.
Z_SCORE	Financial distress, measured using Altman's Z-Score (Altman, 1993) applied to annual financial statement figures from the last 10-K published prior to the lease error correction.
MTB	Growth opportunities, as measured by the market-to-book ratio corresponding the fiscal year-end prior to the lease error correction.
BIG4	Indicator variable that equals 1 if the financial statements are audited by a Big-4 audit firm.
SIZE	Natural logarithm of total assets for the fiscal quarter of the lease correction.

Figure 1. The Frequency and Corrections Magnitude of Lease Accounting Errors

Panel A describes the relative frequency of lease accounting errors disclosed each week between November 2004 and March 2006 grouped according to accounting treatment (Restatement or Catch-up Adjustment) for the 244 errors in our sample. Panel B describes the magnitude of these accounting errors, expressed as a percentage of net income for the quarter in which the restatement or catch-up adjustment was made.

Panel A. Frequency of lease accounting errors expressed as a percentage of the sample

Each column in the figure represents the proportion of restatement (or catch-up adjustment) sample firms that disclosed the correction of lease accounting errors in a given calendar week.

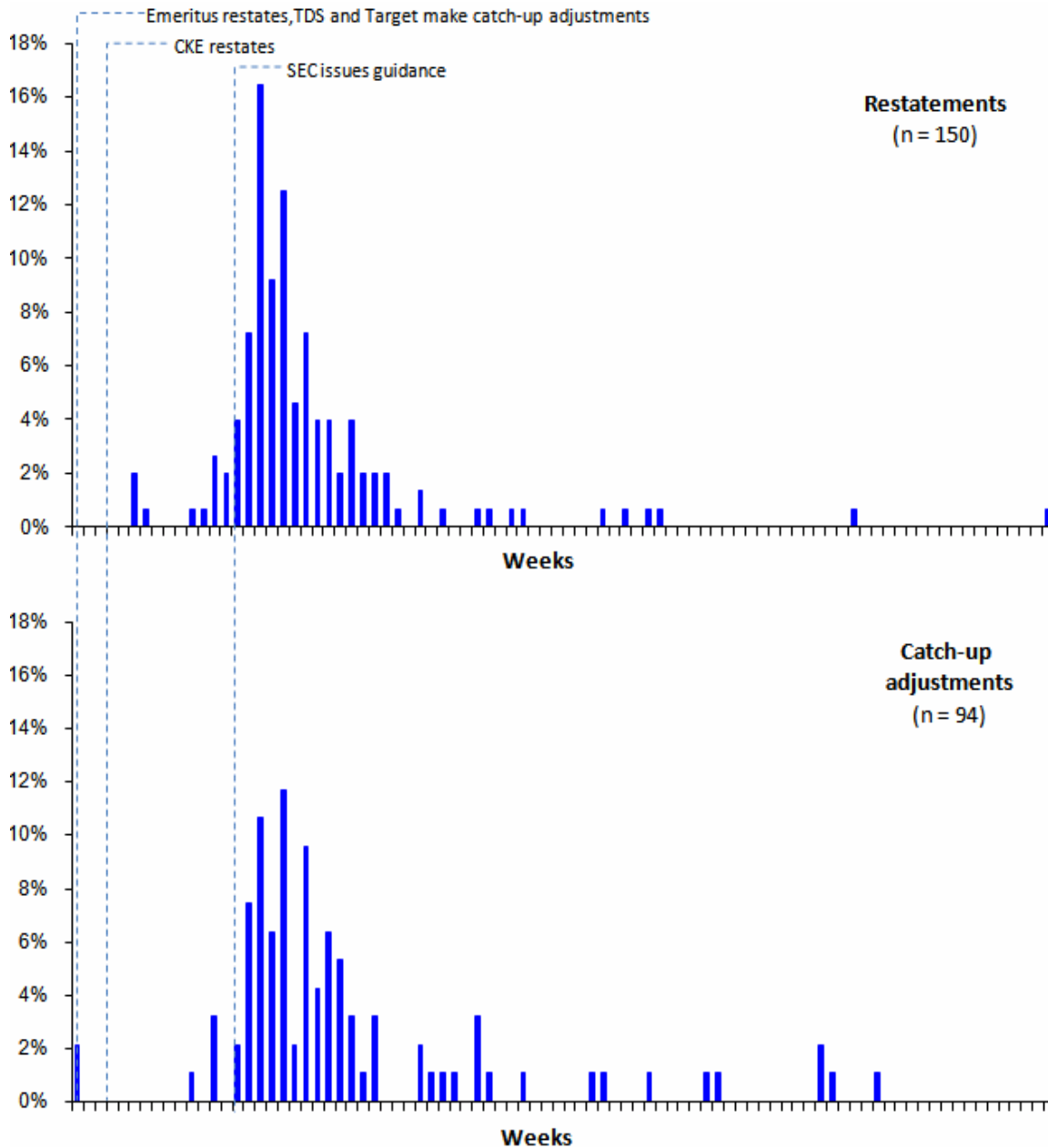


Figure 1 continued.

Panel B. Magnitude of lease accounting errors

This figure shows the relative frequency of lease accounting errors assigned to each of 47 earnings impact bins that range from -5% to 41%. Earnings impact is calculated as the dollar amount of the error correction (Restatement or Catch-up Adjustment), divided by the absolute value of “annualized” quarterly net income for the quarter in which the error is corrected. Quarterly earnings is adjusted to eliminate any current period component of the error correction, and then multiplied by 4 to approximate annual earnings. Absolute value of quarterly net income is used to preserve the sign of the accounting error (numerator) in the presence of quarterly losses (denominator). Each column in the figure represents the proportion of restatement (or catch-up adjustment) sample firms in a given earnings impact bin. Observations outside the range of -5% to 41% have been grouped in the far left or right bin, respectively.

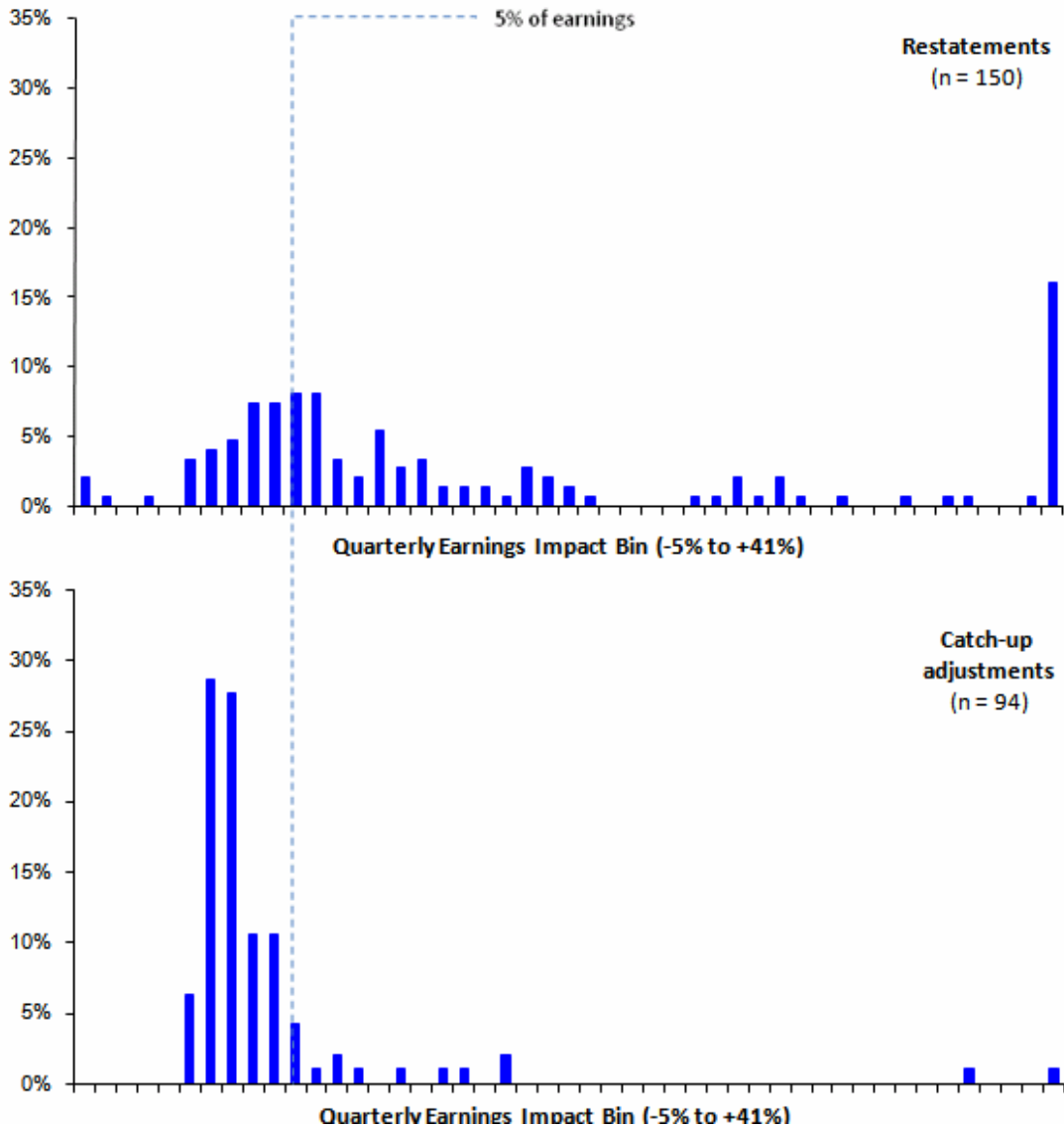


Table 1. Descriptive Statistics on Lease Accounting Error Corrections

This table shows the magnitude and timing of 244 lease accounting errors disclosed between November 2004 and March 2006 grouped by accounting treatment (Formal Restatement or Catch-up Adjustment). A positive error denotes the overstatement of past earnings. The first error in our sample was disclosed by Telephone and Data Systems on November 9, 2004. Annual net income (NI) and sales are from the most recent fiscal year ended prior to the correction quarter. Quarterly NI and sales are from the correction quarter and multiplied by four to approximate annual values. Variables using NI are adjusted to eliminate any current period component of the error correction. The absolute value of NI is used to preserve the sign of the accounting error (numerator) in the presence of losses (denominator). "Normalized" quarterly NI equals the greater of adjusted "annualized" quarterly NI or 5% of assets. Significance levels for between-sample test of mean equality are denoted as ***, **, and * for rejection at the 1%, 5%, and 10% level, respectively.

	Formal Restatement (n=150)				Catch-up Adjustments (n=94)				T-test significance
	Mean	Q1	Median	Q3	Mean	Q1	Median	Q3	
Magnitude of accounting error (overstatement of past earnings)									
\$ millions	13.283	1.316	3.586	10.711	6.137	0.480	1.365	4.800	***
<i>Scaled by:</i>									
Annual net income (ERR_ANI)	0.324	0.061	0.119	0.260	0.040	0.011	0.027	0.047	***
Quarterly net income (ERR_QNI)	0.384	0.034	0.074	0.246	0.046	0.007	0.016	0.031	***
Normalized quarterly net income (ERR_NQNI)	0.170	0.030	0.060	0.185	0.032	0.007	0.014	0.025	***
Annual sales (ERR_ASALES)	0.012	0.002	0.005	0.009	0.005	0.000	0.001	0.003	**
Quarterly sales (ERR_QSALES)	0.011	0.002	0.003	0.008	0.004	0.000	0.001	0.002	**
Total assets (ERR_TA)	0.011	0.003	0.007	0.013	0.003	0.001	0.001	0.003	***
Timing of error correction disclosure									
Number of weeks since the first correction	20	16	18	22	24	16	20	24	**
<i>Firms with fiscal years ending Nov-Feb</i>									
% announce in fiscal 2004, Q3	0.7%				2.1%				
% announce in fiscal 2004, Q4	70.0%				62.8%				
% announce in fiscal 2005, Q1	4.0%				4.3%				
% announce in fiscal 2005, Q2	1.3%				4.3%				
% announce in subsequent quarter	2.7%				4.3%				
<i>Firms with fiscal years not ending Nov-Feb</i>									
Total	100.0%				100.0%				
Other Firm Characteristics									
Operating lease intensity (LEASE)	0.853	0.328	0.739	1.224	0.464	0.123	0.340	0.725	***
Log of total assets (SIZE)	6.411	5.488	6.429	7.412	7.157	5.926	7.131	8.532	***
% Big Four auditor (BIG4)	90.0%				91.5%				
% of firms correcting errors in addition to leases (ERR_OTHR)	24.0%				3.2%				***
Magnitude of additional errors scaled by total assets (conditional on announcing additional errors)	0.002	0.000	0.000	0.003	0.000	0.002	0.000	-0.002	

**Table 2. Descriptive Statistics for Quantitative, Qualitative, and Contextual Variables
Hypothesized to Influence Lease Accounting Error Correction Decisions**

This table reports summary statistics for the explanatory variables in our logistic regression analysis of the decision to correct lease accounting errors using formal restatement or a current period catch-up adjustment. Sample size varies with data availability. Quantitative Considerations are variables that measure the scaled magnitude of the accounting error. Qualitative Considerations are variables that capture information about other materiality considerations mentioned in SAB No. 99. Contextual Factors are variables not mentioned in SAB No. 99. Variable definitions appear in the Appendix. All variables are winsorized at the 1% and 99% level.

Panel A: Summary Statistics for Univariate Distributions

Q1 and Q3 denote the upper bound of the first and third quartile, respectively, of the distribution.

Variable	N	Mean	StDev	Q1	Median	Q3
Quantitative Considerations						
Error magnitude scaled by:						
Annual net Income (ERR_ANI)	244	0.214	0.552	0.023	0.064	0.156
Quarterly net income (ERR_QNI)	244	0.254	0.806	0.015	0.040	0.111
Normalized quarterly net income (ERR_NQNI)	244	0.117	0.243	0.012	0.037	0.099
Annual sales (ERR_ASALES)	244	0.009	0.028	0.001	0.003	0.007
Quarterly sales (ERR_QSALES)	244	0.008	0.025	0.001	0.002	0.006
Total assets (ERR_TA)	244	0.008	0.013	0.001	0.004	0.009
Qualitative Considerations						
Presence of other errors (ERR_OTHR)	244	0.160	0.367	0.000	0.000	0.000
Operating lease intensity (LEASE)	244	0.703	0.604	0.219	0.521	1.053
Financial leverage (LVRG)	239	0.223	0.256	0.025	0.151	0.324
"Catch up" would trigger a quarterly loss (LOSS)	244	0.102	0.304	0.000	0.000	0.000
or a quarterly earnings decline (DECLINE)	244	0.213	0.410	0.000	0.000	0.000
Contextual Considerations						
Number of larger "catch-up" corrections (PRIOR_C)	244	1.889	1.375	0.693	1.609	3.157
Number of smaller restatement corrections (PRIOR_R)	244	2.693	1.051	1.946	2.708	3.511
Number of weeks since the first correction (WEEKS)	244	3.023	0.462	2.842	2.959	3.175
Recent restatement by this firm (RECENT)	244	0.053	0.225	0.000	0.000	0.000
Abnormal accruals over the prior four quarters (ACCRLS)	231	-0.275	2.375	-0.047	-0.003	0.047
Financial distress (Z_SCORE)	231	4.937	4.028	2.619	4.067	6.314
Market-to-book ratio (MTB)	222	3.064	2.628	1.480	2.376	3.595
Audited by a Big Four firm (BIG4)	244	0.906	0.293	1.000	1.000	1.000
Firm size (SIZE)	244	6.698	1.572	5.627	6.630	7.644

Table 2 continued.

Panel B: Bivariate Spearman (above diagonal) and Pearson (below diagonal) Correlation Coefficients.

Correlation coefficients shown in bold are statistically different from zero at the 5% level. Correlation coefficients greater than 0.50 in absolute value are denoted by a shaded background.

Variables	Error magnitude (ERR) scaled by						ERR_OTHR	LEASE	LVRG	LOSS	DECLINE	PRIOR_C	PRIOR_R	WEEKS	RECENT	ACCRLS	Z_SCORE	MTB	BIG4	SIZE
	_ANI	_QNI	_NQNI	_ASALES	_QSALES	_TA														
ERR_ANI		0.78	0.81	0.74	0.74	0.81	0.09	0.28	0.01	0.34	0.36	-0.63	0.44	-0.25	0.12	0.09	-0.07	-0.24	-0.10	-0.23
ERR_QNI	0.23		0.89	0.73	0.76	0.78	0.11	0.18	0.03	0.47	0.34	-0.55	0.45	-0.16	0.11	0.06	-0.13	-0.14	-0.08	-0.16
ERR_NQNI	0.43	0.47		0.85	0.87	0.92	0.08	0.25	-0.03	0.39	0.36	-0.69	0.55	-0.22	0.08	0.06	-0.05	-0.06	-0.10	-0.26
ERR_ASALES	0.13	0.23	0.63		0.99	0.91	0.06	0.16	-0.11	0.32	0.34	-0.68	0.54	-0.21	0.09	0.06	-0.08	0.05	-0.11	-0.21
ERR_QSALES	0.13	0.25	0.64	1.00		0.90	0.07	0.14	-0.08	0.34	0.35	-0.68	0.55	-0.19	0.10	0.05	-0.11	0.02	-0.14	-0.21
ERR_TA	0.45	0.42	0.96	0.61	0.62		0.07	0.36	-0.16	0.33	0.38	-0.78	0.60	-0.27	0.06	0.04	0.05	0.02	-0.13	-0.28
ERR_OTHR	0.15	-0.02	0.07	-0.05	-0.04	0.07		0.02	0.08	0.00	0.05	-0.04	0.15	0.09	0.10	-0.11	-0.11	0.02	0.03	-0.06
LEASE	0.21	0.08	0.17	-0.05	-0.05	0.22	0.01		-0.28	0.09	0.12	-0.35	0.21	-0.20	-0.07	-0.07	0.31	0.09	0.05	-0.27
LVRG	0.01	0.13	0.10	0.14	0.15	0.04	0.04	-0.20		0.01	0.01	0.07	-0.12	0.00	0.00	-0.05	-0.65	-0.10	0.03	0.24
LOSS	0.28	0.29	0.40	0.10	0.11	0.40	0.00	0.09	-0.04		0.22	-0.24	0.14	-0.07	0.22	0.03	-0.12	-0.06	-0.08	-0.15
DECLINE	0.24	0.12	0.34	0.24	0.24	0.41	0.05	0.09	-0.04	0.22		-0.33	0.13	-0.18	0.01	-0.04	-0.05	-0.10	0.07	0.04
PRIOR_C	-0.30	-0.27	-0.46	-0.31	-0.31	-0.55	-0.04	-0.30	0.04	-0.23	-0.32		-0.26	0.67	-0.06	-0.13	-0.04	-0.07	0.04	0.18
PRIOR_R	0.24	0.17	0.29	0.21	0.21	0.34	0.15	0.14	-0.08	0.14	0.13	-0.23		0.46	0.08	-0.07	0.04	0.02	-0.20	-0.34
WEEKS	-0.03	-0.09	-0.12	-0.07	-0.08	-0.16	0.07	-0.13	-0.05	-0.07	-0.09	0.53	0.46		0.05	-0.17	-0.04	-0.08	-0.14	-0.09
RECENT	0.18	0.01	0.13	0.00	0.00	0.11	0.10	-0.07	0.00	0.22	0.01	-0.06	0.08	-0.06		0.00	-0.09	-0.02	-0.05	-0.11
ACCRLS	0.01	0.01	-0.15	-0.22	-0.22	-0.13	-0.14	0.05	-0.03	0.07	-0.09	-0.01	-0.09	-0.05	-0.01		-0.01	-0.09	0.03	0.00
Z_SCORE	-0.12	-0.16	-0.22	-0.22	-0.23	-0.15	-0.08	0.16	-0.52	-0.11	-0.09	-0.02	0.05	0.06	-0.06	0.13		0.44	0.06	-0.15
MTB	-0.17	-0.12	-0.07	-0.01	-0.02	-0.05	0.09	0.09	0.17	-0.05	-0.13	-0.02	-0.02	-0.03	-0.02	-0.02	0.30		0.08	0.03
BIG4	-0.11	-0.05	-0.16	0.01	0.01	-0.16	0.03	0.06	0.01	-0.08	0.07	0.03	-0.20	-0.13	-0.05	-0.01	-0.02	0.07		0.30
SIZE	-0.22	-0.13	-0.30	-0.09	-0.09	-0.31	-0.10	-0.26	0.10	-0.17	0.04	0.18	-0.38	-0.17	-0.11	0.02	-0.18	-0.04	0.32	

Table 3. Logistic Regression Results

This table reports the results of estimating a logistic regression model of the likelihood that formal restatement is used to correct discovered lease accounting errors. The sample is comprised of 244 lease accounting errors disclosed between November 2004 and March 2006 grouped by accounting treatment and subject to data availability. The dependent variable (*RESTATE*) is an indicator variable that equals one if the firm adopts formal restatement, and zero if a current period catch-up adjustment is instead used. Quantitative Considerations introduced in Panel A are variables that measure the scaled magnitude of the accounting error. Qualitative Considerations introduced in Panel B are variables that capture information about other materiality considerations mentioned in SAB No. 99. Contextual Factors introduced in Panel C are variables not mentioned in SAB No. 99. Variable definitions appear in the Appendix. All explanatory variables are winsorized at the 1% and 99% level. A ***, ** and * denote logistic coefficient estimates significantly different from zero at the 1%, 5%, and 10% level, respectively, based on two-tailed t-test using White-corrected standard errors.

Panel A: Quantitative Materiality Considerations Only

Variable	Predicted							
	Sign	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept	?	-0.579 **	-0.023	-0.124	0.331	0.325	-0.445	-0.788 ***
Annual net income (ERR_ANI)	+	12.708 ***						6.660 **
Quarterly net income (ERR_QNI)	+		5.538					0.567
Normalized net income (ERR_NQNI)	+			9.119 *				-1.658
Annual sales (ERR_ASALES)	+				19.870			-103.600
Quarterly sales (ERR_QSALES)	+					25.591		80.065
Total assets (ERR_TA)	+						183.800 ***	195.400 **
Sample size		244	244	244	244	244	244	244
Pseudo-R ²		31.6%	16.5%	19.6%	3.1%	3.4%	26.1%	37.6%

Table 3 continued.

Panel B: Quantitative and Qualitative Materiality Considerations

Qualitative Considerations introduced in Panel B are variables that capture information about other materiality considerations mentioned in SAB No. 99. The dependent variable (*RESTATE*) is an indicator variable that equals one if the firm adopts formal restatement, and zero if a current period catch-up adjustment is instead used. Variable definitions appear in the Appendix. All explanatory variables are winsorized at the 1% and 99% level. A ***, ** and * denote logistic coefficient estimates significantly different from zero at the 1%, 5%, and 10% level, respectively, based on two-tailed t-test using White-corrected standard errors.

Variable	Predicted Sign	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
		Intercept	?	-2.126 ***	-1.425 ***	-1.626 ***	-1.338 ***	-1.336 ***
ERR_ANI	+	13.412 ***						7.681 **
ERR_QNI	+		4.336					0.628
ERR_NQNI	+			7.891				-0.254
ERR_ASALES	+				11.671			-109.400
ERR_QSALES	+					13.732		83.214
ERR_TA	+						173.600 **	189.500 *
Other errors (ERR_OTHR)	+	2.945 ***	2.449 ***	2.630 ***	2.437 ***	2.434 ***	2.793 ***	3.182 ***
Lease intensity (LEASE)	+	1.660 ***	1.623 ***	1.694 ***	1.696 ***	1.698 ***	1.553 ***	1.573 ***
Financial leverage (LVRG)	+	0.853	0.537	0.761	0.789	0.778	1.114	1.300
Trigger quarterly loss (LOSS)	+	0.799	0.289	1.026	0.871 **	1.863 **	1.103	0.114
Trigger earnings decline (DECLINE)	+	0.017	0.478	0.270	0.534	0.534	0.017	-0.295
Sample size		239	239	239	239	239	239	239
Pseudo-R ²		50.0%	39.3%	41.9%	35.8%	35.8%	45.7%	53.4%

Table 3 concluded.

Panel C: Materiality Considerations and Contextual Factors

Contextual Factors introduced in Panel C are variables not mentioned in SAB No. 99. The dependent variable (*RESTATE*) is an indicator variable that equals one if the firm adopts formal restatement, and zero if a current period catch-up adjustment is instead used. Variable definitions appear in the Appendix. All explanatory variables are winsorized at the 1% and 99% level. A ***, ** and * denote logistic coefficient estimates significantly different from zero at the 1%, 5%, and 10% level, respectively, based on two-tailed t-test using White-corrected standard errors.

Variable	Predicted Sign	Model						
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept	?	-0.910	-0.066	0.062	0.326	0.291	-0.001	-0.328
ERR_ANI	+	9.456 **						7.789
ERR_QNI	+		1.018					0.431
ERR_NQNI	+			-0.157				7.320
ERR_ASALES	+				-7.461			-376.300
ERR_QSALES	+					-7.977		395.500
ERR_TA	+						2.436	0.338
ERR_OTHR	+	3.084 ***	2.828 ***	2.745 ***	2.712 ***	2.714 ***	2.750 ***	3.307 ***
LEASE	+	1.574 ***	1.532 ***	1.557 ***	1.537 ***	1.539 ***	1.559 ***	1.672 ***
LVRG	+	0.690	1.512	2.000	2.212	2.197	1.962	0.358
LOSS	+	1.618 *	1.663	2.198 *	2.054 *	2.072 *	2.187 *	0.984
DECLINE	+	-0.471	-0.334	-0.308	-0.273	-0.279	-0.316	-0.649
Larger "catch-up" corrections (PRIOR_C)	-	-0.769 ***	-0.956 ***	-0.996 ***	-1.043 ***	-1.038 ***	-0.982 ***	-0.877 ***
Smaller restatements (PRIOR_R)	+	0.394	0.485 *	0.520 *	0.545 *	0.542 *	0.511 *	0.355
Time since first correction (WEEKS)	-	0.298	0.330	0.343	0.349	0.349	0.342	0.377
Recent restatement by this firm (RECENT)	-	0.704	0.960	0.835	0.799	0.803	0.849	0.922
Abnormal accruals (ACCRLS)	-	-0.914	-1.049	-0.863	-0.754	-0.766	-0.867	-0.907
Financial distress (Z_SCORE)	-	-0.049	-0.031	-0.029	-0.041	-0.040	-0.227	-0.065
Market-to-book (MTB)	-	-0.129	-0.210 *	-0.228 *	-0.225 *	-0.226 *	-0.277 *	-0.103
Auditor (BIG4)	-	0.160	0.340	0.257	0.317	0.309	0.244	0.305
Firm size (SIZE)	?	-0.099	-0.152	-0.162	-0.195	-0.191	-0.156	-0.185
Sample size		210	210	210	210	210	210	210
Pseudo-R ²		61.9%	59.4%	59.0%	59.3%	59.3%	59.0%	63.6%

Table 4. Auditor Fixed Effects Logistic Regression Results

This table reports the results of estimating an auditor fixed effects logistic regression model of the likelihood that formal restatement is used to correct discovered lease accounting errors. The sample is comprised of 222 lease accounting errors disclosed between November 2004 and March 2006 grouped by accounting treatment and subject to data availability. The dependent variable (*RESTATE*) is an indicator variable that equals one if the firm adopts formal restatement, and zero if a current period catch-up adjustment is instead used. In addition to Big Four audit firm fixed effects (Auditor 1 through Auditor 4), the logistic regression model uses a reduced set of explanatory variables comprised of those variables that are statistically significant in the logistic regressions in Table 3. Variable definitions appear in the Appendix. All explanatory variables are winsorized at the 1% and 99% level. A ***, ** and * denote logistic coefficient estimates significantly different from zero at the 1%, 5%, and 10% level, respectively, based on two-tailed t-test using White-corrected standard errors.

Variable	Predicted		
	Sign	Model 1	Model 2
Intercept (non-Big Four)	?	-1.220	-2.091 **
Annual net income (ERR_ANI)	+	8.058 *	7.723 *
Other errors (ERR_OTHR)	+	3.116 ***	3.492 ***
Lease intensity (Lease)	+	1.404 ***	1.613 ***
Trigger quarterly loss (LOSS)	+	0.941	1.570
Larger "catch-up" corrections (PRIOR_C)	-	-0.578 ***	-0.610 ***
Smaller restatements (PRIOR_R)	+	0.472 **	0.669 ***
Market-to-book (MTB)	-	-0.112	-0.103
Auditor 1	?		-0.868
Auditor 2	?		1.532 **
Auditor 3	?		0.851
Auditor 4	?		-0.163
Sample size		222	222
Pseudo-R ²		59.3%	64.5%

Table 5. Duration Analysis Results

This table reports the results of estimating a duration analysis. The duration for each firm is the number of weeks that elapse between the announcement by Emeritus Corporation and the announcement of firm *i*. The sample is comprised of 244 lease accounting errors disclosed between November 2004 and March 2006 grouped by accounting treatment (Formal Restatement or Catch-up Adjustment). The LEASE variable has been rescaled (x100) so that an increase of 1 means an increase of 1% in leases as a percentage of assets and the ERR_TA variable has been rescaled (x1000) so that an increase of 1 means an increase of 0.1% percentage points in the lease error as a percentage of total assets. No other variables have been rescaled. Variable definitions appear in the Appendix. All explanatory variables are winsorized at the 1% and 99% level. A ***, ** and * denote logistic coefficient estimates significantly different from zero at the 1%, 5%, and 10% level, respectively.

Variable	Predicted Sign	Pooled Sample		Formal Restatements		Catch-up Adjustments	
		Coefficient Estimate	Hazard Ratio	Coefficient Estimate	Hazard Ratio	Coefficient Estimate	Hazard Ratio
Weeks until deadline (DEADLINE)	-	-0.170 ***	0.844	-0.132 ***	0.876	-0.236 ***	0.789
Lease intensity (LEASE)	?	0.002	1.002	0.002	1.002	0.006 **	1.006
Lease error magnitude (ERR_TA)	-	0.012	1.012	0.011	1.011	0.042	1.042
Other errors (ERR_OTHR)	-	-0.364	0.695	-0.402 **	0.669	-0.098	0.907
Firm size (SIZE)	+	0.096 **	1.101	0.082	1.086	0.158 **	1.172
Trigger quarterly loss (LOSS)	-	0.087	1.091	0.001	1.001	1.189	3.282
Trigger earnings decline (DECLINE)	-	0.225	1.253	0.325	1.385	0.146	1.157
Restatement dummy (RESTATE)	?	0.240	1.271				
Auditor 1	?	0.074	1.077	0.078	1.081	0.044	1.045
Auditor 2	?	0.617 **	1.853	0.558	1.748	0.510	1.665
Auditor 3	?	0.305	1.357	0.196	1.217	0.392	1.479
Auditor 4	?	0.219	1.245	0.165	1.179	0.133	1.142
Number of firms		244		150		94	
Number of firm-weeks		5,454		3,152		2,302	
Likelihood ratio		99.2 ***		45.8 ***		56.3 ***	