Do Analysts Account for Earnings Management?

Dan Givoly,* Carla Hayn** and Timothy Yoder***

December 2010

Corresponding Author:
Dan Givoly
dgivoly@psu.edu

---

* The Pennsylvania State University
** University of California, Los Angeles
*** Mississippi State University

Do Analysts Account for Earnings Management?

<u>Abstract</u>

We examine whether analysts anticipate earnings management and include the managed earnings component in their forecasts or are surprised by the managed earnings component. We also investigate whether analysts' earnings forecasts for future periods and their stock recommendations are affected by earnings management in the current period. The results, based on a sample of 583 restatements and a much larger sample of cases where earnings are likely to have been managed upward, are consistent with analysts anticipating earnings management and forecasting the managed earnings number. Further, the managed earnings component appears to influence analysts' subsequent earnings forecasts, leading to upward forecast revisions and upgraded stock recommendations which appear to be unwarranted given the firms' subsequent operating performance.

Do Analysts Account for Earnings Management?

1. Introduction

Earnings information plays an important role in firm valuation, creating a demand for earnings forecasts. This demand is met by the financial analysts' industry which generates, as one of its most important products, quarterly, annual and multi-year earnings forecasts. Given the ample evidence that reported earnings are often managed by firms to achieve various reporting benchmarks, the objective of this paper is to assess the extent to which analysts (1) anticipate earnings management in future earnings reports; (2) are able to detect earnings management in reported earnings and consider its presence when forming their future forecasts and stock recommendations.

If analysts anticipate earnings management, they will most likely forecast the managed earnings number (rather than the unmanaged one) even when they are aware of the presence of managed earnings in an attempt to minimize their forecast errors so as to maintain their reputation and compensation.[1]

Irrespective of whether or not analysts *anticipate* earnings management and incorporate the managed component in their forecasts, once earnings are released analysts should consider the presence of any detected managed earnings component in making their future earnings forecasts and stock recommendations. For example, analysts should be less inclined to upgrade their stock recommendations in the wake of good earnings news if they believe that this good news is likely to be attributable to an earnings management component that is transitory.[2]

---

[1] Hong and Kublick (2003), Mikhail, Walther and Willis (1999) and Stickel (1992), among others, discuss the importance of forecast accuracy for analysts' reputation and compensation.

[2] We investigate later in the paper whether, and the extent to which, the managed earnings component is less persistent and less informative about the firm's future performance than are other components of reported earnings.

Past studies, as discussed in the next section, provide conflicting evidence on whether analysts anticipate earnings management or take account of earnings management in past periods when forming their current and future period earnings forecasts. Our study extends previous research on these issues by improving the power of the tests by a more accurate identification of instances of earnings management and by examining attributes of analysts' earnings forecasts and their stock recommendations subsequent to periods of earnings management and relating analysts' outputs to firms' subsequent operating performance.

The results indicate that during periods for which earnings are eventually restated or where earnings management is otherwise likely to be present, analysts forecast the "managed" earnings number. The evidence further indicates that in the wake of upward earnings management, analysts issue more optimistic forecasts and upgrade their stock recommendations. However, , the performance of firms following periods of upward earnings management is inferior to their respective control groups, inconsistent with the notion that earning management is used by management to signal future improved performance.

These results have implications for investors. In particular, the findings that analysts forecast the managed earnings number and issue upward-biased earnings forecast and stock recommendations in the wake of upward earnings management suggests that the usefulness of these forecasts and recommendations for valuation purposes is limited..

The paper proceeds as follows. In the next section we review related research on analysts' forecasts. The hypotheses are presented in section 3, followed by a description of the empirical design in section 4. The data and sample are described in section 5. The results are presented and discussed in section 6. Limitations of the paper are discussed in section 7. Concluding remarks are provided in the last section.

2. Related Research, Improvements and Extensions

Prior studies provide conflicting evidence regarding analysts' ability to anticipate earnings management and the extent to which they reflect this information in their future forecasts. Abarbanell and Lehavy (2003a) find that firms with buy (sell) stock recommendations are more (less) likely to engage in earnings management yet this tendency is not fully incorporated in analysts' earnings forecasts. In a related study, Abarbanell and Lehavy (2003b) document that analysts' forecast errors are correlated with extreme unexpected accruals. These results suggest that analysts either do not anticipate earnings management or, perhaps less likely, that they choose to exclude the managed earnings component from their forecasts at the cost of their forecasts' accuracy.

There is also evidence suggesting that market participants anticipate at least the most egregious cases of earnings management and GAAP violations. Beneish (1999) and Dechow et al. (2010) show that certain firm and reporting characteristics allow for the prediction of fraudulent reporting. Consistent with this evidence, Desai et al. (2006) find that short-sellers increase their position in the month preceding announcement of earnings restatements.

Building on the previous findings of a discontinuity of the distribution of earnings around zero (Hayn (1995); Burgstaher and Dichev (1997)) which has been interpreted as an indication of earnings management, Burgstahler and Eames (2003) explore the distribution of *analysts' earnings forecasts* around zero. They find a similar "kink" in this distribution, suggesting that analysts anticipate earnings management and try to incorporate its effect in their forecasts. However, while analysts appear to foresee such "threshold beating" behavior by firms, the

evidence suggests that they often fail to *ex ante* identify the firms that will meet or beat the zero earnings threshold.

With respect to detection of earnings management by analysts, Bradshaw et al. (2004) show that analysts do not fully recognize the reversing nature of accruals. To the extent that extreme accruals correspond to earnings management, their finding is consistent with analysts being unable to detect earnings management or, if they do detect it, they assign undue permanence to the managed earnings component.

In contrast, other studies provide evidence consistent with the detection of earnings management by analysts and of their discounting the managed earnings component. Jones et al. (2008) show that accrual estimation errors are associated with both the existence and magnitude of accounting restatements, suggesting that analysts and investors are capable of detecting the presence of earnings management.

Liu (2005) finds that analysts bias their forecasts downward relative to hypothetical "non-strategic" forecasts when forecasting firm's earnings in periods where earnings are likely to be managed downward. Ettredge et al. (1995) find that analysts only partially discount overstated earnings (as identified by their eventual restatement) in revising their earnings expectations. While close in spirit to our examination, Ettredge et al. (1995) examine a very small sample (34 firms) from the 1980s. Shane and Stock (2006) find that analysts fail to anticipate earnings management arising from tax-motivated income shifting. Further evidence consistent with analysts being either unable or unwilling to adjust their forecasts for earnings management is provided by Hanna and Orpurt (2006) who document an association between special items reported on the income statement and analysts' forecast errors.

The question of whether analysts identify the managed component of earnings relates to the broader issue of the efficiency of analysts' forecasts and recommendations. Some empirical evidence suggests that analysts do not incorporate relevant publicly-available information in their forecasts or do not fully account for the implications of these forecasts in making their stock recommendations. For example, analysts were found to assign undue permanence to extreme accruals leading to biased forecasts (Barth and Hutton (2004); Teoh and Wong (2002)) and to ignore differences in discretionary and nondiscretionary accruals in making their forecasts (Bannister and Newman (1998)). Analysts were also found to only partially incorporate in their forecasts the implications for future earnings of important information such as the predictable future earnings declines associated with the reversal of high positive accruals in the current period (Bradshawet al. (2001)), earlier earnings announcements made by related firms (Ramnath (2002)), predictive pension footnote information (Picconi (2006)), the aggressive accrual behavior in pre-merger reports by acquiring firms (Louis (2004)) and restructuring charges (Chaney et al. (1999)). The evidence further suggests that analysts do not use their own earnings forecasts efficiently in making stock recommendations (Bradshaw (2004)), seldom use present value techniques in their firm evaluations (Block (1999)), react to, rather than anticipate, earnings corrections (Griffin (2003)), and produce cash flow forecasts that are no better than a naïve transformation of their earnings forecasts (Givoly et al. (2009)).

2.1. Detecting earnings management

To examine whether analysts account for earnings management, it is necessary to identify instances where it occurs. This is difficult and likely to be fraught with considerable measurement error. One approach to identify cases of earnings management is through the presence of special items or large "unexpected" accruals. While reasonable, this approach has

some drawbacks. Specifically, since special items are often excluded from analysts' forecasts of earnings, the actual earnings number should be adjusted before computing the forecast error. If the reported earnings number is not fully adjusted for these items, a spurious correlation will exist between the special items and analysts' forecast errors.[3] Detection of "unexpected" accruals, , in turn, requires a well-specified model for non-discretionary accruals, a daunting task, raising the prospect that large "discretionary" accruals reflect operational factors or measurement errors rather than earnings management. In some cases meeting earnings thresholds can be achieved with only a small amount of discretionary accruals, thus making it difficult to detect earnings management detection through accruals. Further, given the high cost of managing earnings through the use of a relatively large amount of discretionary accruals (in terms of political cost and balance sheet constraints – see Barton and Simko (2002)), the inference that large accruals are due to earnings management is questionable.

Inferring earnings management when reported earnings are just above a certain threshold may also be unreliable as suggested by a number of recent studies. For example, Dechow et al. (2003) shows that the so-called "kink" in the earnings distribution around zero is unrelated to unexpected accruals. In fact, small profits may well be the result of downward earnings management designed to smooth an otherwise large positive surprise, a possibility suggested by Collins and Hribar (2000). Moreover, other explanations have been offered for the existence of the kink in the distribution of earnings levels and earnings changes around zero that do not

---

[3] In reporting a firm's actual EPS, I/B/E/S excludes those items that most individual analysts exclude from their individual forecasts of the firm's earnings. To the extent that such exclusions are not consistent across analysts, the forecast error based on the consensus forecast will be correlated with those items.

involve earnings management (see Durtschi and Easton (2005), Beaver et al. (2007), and Dechow et al. (2003))[4].

In addition to concerns about interpreting small profits or small earnings increases as indicators of earnings management, there is a question about whether loss and earnings decline avoidance are considered by management to be important earnings thresholds. Brown and Caylor (2005) suggest that at least since the mid-1990s, these thresholds have become less important whereas avoiding negative analyst surprises has become more important.

In this study, we refine the methodology to identify the presence of earnings management and extend the analyses of past studies in three important respects. First, we mitigate the methodological difficulties of identifying earnings management by using two samples where earnings management can be more safely assumed to be present. One sample consists of periods where earnings were subsequently restated. The earnings originally reported for these periods are likely to reflect some form of earnings management as evidenced by their subsequent restatement. Our finding of a significant negative correlation between unexpected accruals and the restated amounts reinforces the notion that these restatements represent corrections of previous earnings management. The other sample consists of periods in which the firm narrowly

---

[4] Durtschi and Easton (2005) provide evidence that the kink is likely due to the fact that the earnings variable in these distributions is deflated by price and to certain sample selection criteria. Beaver et al. (2007) suggest that the discontinuity in the earnings frequency distribution around zero arises from the availability of tax loss carryforwards and carrybacks as well as to the fact that losses tend to be associated with large special items. Other explanations for these kinks (such as real manipulations, exchange listing or reporting conservatism) are offered by Dechow et al. (2003). On the other hand, there is also some evidence supporting the notion that the kink in the earnings distribution is indeed related to earnings management. For example, Jacob and Jorgensen (2007) show that the kink in the earnings distribution is primarily observed in the annual result for the fiscal year (as compared with the results of any other four-quarter sequence), the period when management is likely to be more concerned with loss or decline avoidance.

avoided a loss or an earnings decline and, importantly, could not have achieved these thresholds without the presence of positive unexpected accruals.[5]

Second, we extend the analysis to the examination of analysts' ability to *detect* the managed earnings component in reported earnings by exploring the formation of subsequent analysts' forecasts and recommendations. Note that the association or lack thereof between the current period's forecast error and the managed component of earnings does not indicate unambiguously whether or not analysts are capable of anticipating earnings management. Analysts may be capable of anticipating earnings management yet still include the managed earnings component in their forecasts in order to enhance their forecast accuracy. Therefore, to assess analysts' ability to detect earnings management, we further examine the properties of analysts' earnings forecasts and stock recommendations made following the release of earnings that are likely to contain a managed component. If analysts are able to detect earnings management and view managed earnings as less persistent than other components of earnings, they will discount the managed component in forecasting future periods and in making stock recommendations. Finally, to facilitate the interpretation of the findings regarding analysts' forecasting and recommendation behavior in the wake of earnings management, we examine the operating performance of firms in periods subsequent to earnings management.

3. Hypotheses

3.1 Analysts' forecasts

Our first hypothesis relates to the question of whether or not analysts' earnings forecasts include the managed earnings component.

---

[5]In identifying cases of earnings management to test H1, we could not use the third threshold commonly cited as a management objective, meeting or beating analysts' forecasts, for the simple reason that such managerial actions were taken in response to analysts' forecasts and so, by definition, could not affect the forecasts.

H1: Analysts do not include the managed earnings component in their earnings forecasts.

H1 is tested against the alternative that analysts include the managed earnings component in their forecasts of future earnings. [6] Results consistent with the null of H1 would suggest that analysts do not anticipate earnings management.

Note that whenever earnings management occurs *in response* to analysts' forecasts (e.g., in an attempt to meet these forecasts), analysts forecasts would appear to include the managed earnings component regardless of whether the analysts actually anticipated earnings management. For this reason (and as explained in more detail later) , we examine forecasts that are made late in the quarter, often days before the earnings release, thus minimizing the possibility that reported earnings are managed so as to be aligned with analysts' forecasts.

Next we examine analysts' ability to detect earnings management in reported earnings based on their subsequent forecasts and stock recommendations. As explained below, this examination also helps in interpreting the results from testing H1.

Assuming that the managed earnings component is more transitory than the other earnings components, any upward earnings management in the current period, unless identified as such and adjusted for by analysts, will result in upward biased earnings forecasts for future periods. Accordingly, we hypothesize:

H2: Analysts' earnings forecasts for periods following a period of upward earnings management are not biased upward.

H2 is tested against the alternative that there is an upward bias in analysts' forecasts of future earnings following periods of managed earnings.

---

[6] Strictly speaking, results consistent with H1 could also suggest that analysts anticipate earnings management yet prefer to issue a forecast that is more consistent with the firm's true performance and/or their own recommendation. We view this possibility as implausible. :It is unlikely that analysts would sacrifice forecast accuracy for the sake of forecasting a more "correct" measure of the firm's true performance without communicating this information to their clients.

Evidence inconsistent with both H1 and H2 would suggest that analysts' failure to exclude the managed earnings component from their forecasts does not stem from their concern about the accuracy of their forecasts but rather from their inability to anticipate the managed component of earnings or from their assessment that the managed earnings component is persistent.

3.2. Earnings management and analysts' stock recommendations

To shed more light on analysts' ability to detect earnings management in reported earnings, we examine analysts' stock recommendations following the release of managed earnings. As noted above, even if analysts anticipate earnings management and include the managed earnings component in their forecasts, they are likely to discount the managed component of earnings in projecting future performance and in their stock recommendations. To illustrate this point, suppose that an analyst believes that the unmanaged EPS of a firm is $0.95 even though the firm reports EPS for the quarter of $1.00. If the managed component of $0.05 is deemed to be transitory then, *ceteris paribus*, the analyst would be less likely to issue a "buy" recommendation for the coming periods. Building on this logic, we assess whether analysts respond differently to managed and unmanaged earnings in forming their stock recommendations by testing the following hypothesis:

> **H3: Analysts' propensity to upgrade their stock recommendations does not increase following periods with upward earnings management.**

H3 is tested against the alternative that analysts' propensity to upgrade their stock recommendations increases in the presence of upward earnings management in recent earnings.

Evidence inconsistent with H1 yet consistent with H2 and H3 would indicate that while analysts correctly anticipate the managed earnings component in the forthcoming earnings report, they nonetheless choose to include it in their forecasts for the sake of accuracybut

discount it when forecasting future periods and providing stock recommendations. Evidence

inconsistent with all three hypotheses would suggest that analysts are unable to distinguish

between the managed and unmanaged components of earnings (or believe that they have the

same persistence) and thus do not weigh these components differently in forecasting earnings or

in issuing stock recommendations.

Evidence consistent with H1 yet inconsistent with H2 and H3 would suggest that analysts

are capable of distinguishing between the managed and unmanaged components of earnings and

do so when forecasting current earnings, but assign the same weight to the managed and

unmanaged earnings components of recently reported earnings when forecasting future periods

or making stock recommendations. Depending on whether or not the managed earnings

component is predictive of the firm's future performance, such forecasting behavior might either

indicate inefficient forecasting or some degree of accounting fixation. To distinguish between

these two interpretations, we test the following hypothesis:

> **H4: The managed earnings component is associated with improved operating performance in subsequent periods.**

4. Empirical Design

4.1. Forecasts and forecast errors

To determine whether analysts anticipate earnings management and incorporate its effect

in their forecasts, we test H1 in two ways. The first test is based on the correlation between the

managed earnings component and the signed forecast error, where the latter is defined as the

difference between the latest earnings forecast for the period[7] and, alternatively, the reported

(managed) number and the unmanaged earnings number Under the null of H1, we expect the

---

[7] For most of our analyses, we use the latest analyst forecast in the period defined as that made just prior to the release of the actual earnings. Use of the earliest forecast or the consensus forecast produces essentially the same results.

correlation between the managed earnings component and the forecast error to be 1 when the forecast error is computed with respect to reported earnings and 0 when the forecast error is computed with respect to the true, unmanaged, earnings number. Under the alternative to H1, we expect the opposite result, namely a correlation of 0 and -1, respectively, for the two error measures. In the intermediate situation where the forecast includes only a fraction, α $(0 < \alpha \leq 1,$ of the managed earnings component, the above correlations under the null of H1are expected to be 1- α and $-\alpha$, respectively. The derivation of these correlations is provided in the Appendix.

The second and related test of H1 is based on the proximity of analysts' forecasts to the reported (managed) earnings as compared to their proximity to the restated (unmanaged) earnings number, as measured by the forecast error computed from, alternatively, the reported and restated earnings. Two deflated forecast error measures are employed--the absolute forecast error deflated by the absolute value of reported earnings and the absolute forecast error deflated by the stock price at the end of the period.

4.2. Identification of earnings management cases

As noted earlier, we test the hypotheses on two samples of firm-periods in which earnings management is likely to be present. The first sample consists of firm-periods for which earnings are eventually restated. For this "restatement sample," the presumption is that the originally reported earnings were managed, hence their subsequent restatement.[8] The managed earnings component for this sample is calculated as the originally reported number minus the restated one.

In examining this sample, we use only the earliest reporting period (typically a quarter) in any given sequence of successive restated periods. The reason for this is that analysts' forecasts

---

[8] This presumption is reinforced by our finding (not tabulated) of a negative and significant correlation between the restated amounts and unexpected accruals (a correlation coefficient of around -0.5, depending on whether price or absolute earnings is the deflator).

for any period subsequent to the first restated period rely in part on earnings numbers that prove, in retrospect, to be inconsistent with GAAP. Our test of H1 which focuses on the object of analysts' predictions is thus "cleaner" in the sense that it does not use forecasts that are likely to be "contaminated" by previous reports of managed earnings.

The second sample used to test H1 consists of quarters in which firms' earnings are likely to have been managed. This "managed earnings sample" consists of quarters in which firms met or barely passed an earnings threshold. Two earnings thresholds are considered – loss avoidance and avoidance of an earnings decline relative to the same quarter in the previous year. Earnings are identified as meeting or being "just above" these thresholds when they exceed the thresholds by no more than k% of the end-of-quarter market values of equity where k is, alternatively, 0.25%, 0.50% and 1.0%. These cases are denoted as "loss avoiders" or "earnings decline avoiders."[9]

Not all firms that meet or just beat the two thresholds are regarded as having manipulated earnings. To identify which of the loss or decline-avoiders were most likely to have achieved the earnings threshold by managing earnings, we introduce three additional criteria that must be met for earnings to be considered as likely managed:

(1) the period has positive unexpected accruals,

(2) the amount of positive unexpected accruals is greater than the amount by which the earnings threshold is exceeded and

(3) the positive unexpected accruals are not "too large" as to be reasonably explained by earnings management.

---

[9] The results tabulated in the paper are those obtained where k is equal to 1%. Using the lower values of k reduces considerably the number of cases defined as "manipulators" but leaves the results intact.

The first two criteria ensure that there is a link between unexpected accruals and the outcome of meeting a threshold. The second criterion goes a step further, ensuring that the earnings threshold was met only as a result of the presence in the reported numbers of unexpected positive accruals. The third criterion is introduced to eliminate cases where the magnitude of unexpected accruals is "too large" and therefore, due to their potential costs (e.g., political costs, increased public scrutiny and balance sheet constraints), would not reasonably be expected to emanate from earnings management but rather from measurement errors or factors unrelated to earnings management. Unexpected accruals are considered "too large" when they exceed 1% of the market value of the equity for firms that avoid losses and 0.5% of the market value of the equity for firms that avoid reporting an earnings decline.[10] Loss avoiders or earnings decline avoiders that meet these additional criteria constitute the "managed earnings sample." This sample is divided into two subsamples of "loss manipulators" and "earnings decline manipulators". In analyzing these samples, the managed component of earnings is estimated, alternatively, as the excess of reported earnings over the threshold and as the amount of unexpected positive accruals.

4.3. Measuring unexpected accruals

Unexpected accruals are derived using the modified Jones model which relates the accruals each period to the level of activity (measured by revenues, accounts receivable and investment in property plant and equipment as specified in Jones (1991) and modified by Dechow et al. (1995)). For this derivation, we use as the earnings variable income from continuing operations. Because analysts' forecasts of earnings and the actual earnings numbers reported by I/B/E/S typically exclude some or all of the items defined as "special items" (Compustat data item #17), we conduct all of the

---

[10] The use of the third criteria does not suggest that all earnings management cases involve small amounts. However, because this procedure of identifying earnings management is mechanical, a screen is required to prevent the magnitude of abnormal accruals from being excessive. Such a screen safeguards against misidentification of large measurement error cases as earnings management. In cases where the identification of earnings management is contextual, e.g., restatements, such a screen is not required.

tests using a measure of accruals (and unexpected accruals) that excludes the net-of-tax effect of "special items."[11] The modified Jones model is estimated for each firm from its time series consisting of all quarters preceding the quarter being forecasted. At least 18 quarters of data prior to that quarter are required for the estimation. [12]

4.4. Assessing the sensitivity of analysts' stock recommendations to the unmanaged components of earnings

To test analysts' propensity to upgrade their stock recommendations in the wake of upward earnings management as posited by H3, we determine the change in the mean stock recommendation (buy, hold or sell) from the month just prior to the month in which the current period's earnings are released to the first, second and third months following that earnings release. The change in recommendation is gauged by the change in the relative frequency of "buy," "hold" and "sell" stock recommendations. We compare the difference in the changes in stock recommendations between firms where earnings are likely to have been managed upward in the current period and the changes in stock recommendation for a matched sample of non-earnings-management firms.[13]

5. Sample and Data

The restatement sample was derived from the Financial Statement Restatement database produced by the U.S. General Accounting Office in 2003 which contains a list of firms that issued restated financial statements between January 1, 1997 and June 30, 2002 and the supplement which contains restatements from July 1, 2002 through June 30, 2006. In addition,

---

[11] In computing the after-tax effect of special items, we use the firm's effective tax rate defined as the current portion of the tax expense divided by pretax income.

[12] To derive as reliable of a sample as possible, cases were eliminated if the discretionary accruals appeared to be unreasonable. "Unreasonableness" was gauged by the size of the discretionary accruals relative to total accruals, total accounts receivable and total earnings.

[13] The formation of the control subsample is described in section 6.3.

we identified companies that restated data from July 1, 2007 through December 31, 2009 based on press releases in the Dow Jones database. We include in our sample only firms that restated earnings due to revenue or expense recognition issues.[14] To ensure adequate data availability and analysts' coverage, we exclude firms on regional exchanges. For each restatement event, we identify the reporting periods in the sequence (quarters, years) that were subsequently restated.

The final restatement sample consists of 583 instances in which firms restated their earnings in the 1997 to 2009 period. For firms that had more than one restatement incident, we include the first restated period as long as it is not included in subsequent restatement incidents.[15] As a result of this selection procedure, the number of restatement incidents (each representing potentially a sequence of periods) equals the number of distinct firms in the sample.

A description of the final restatement sample is presented in Table 1. The 583 instances of restatements encompass restatements of 2,982 quarterly results (typically representing a component of the annual restatement) and restatements of 405 annual results (i.e., some firms had to restate more than one year of earnings). On average, restatement incidents cover slightly more than three quarters (3.86) and span roughly 1.15 fiscal years. A substantial number of restatement incidents (13.9%) apply to three or more fiscal years and over a fourth of the restatements (28.8%) cover six or more quarters.

The second sample, referred to as the "managed earnings sample," consists of cases where quarterly earnings are likely to have been managed in the years 1988 to 2009. To be included in this sample, firms had to have sufficient data to compute unexpected accruals using

---

[14] We exclude restatements in the GAO database that are not related to earnings management. These include restatements arising because of acquisitions, restatements related to in-process research and development write-offs, restatements made as a result of applying SAB 101, restatements resulting from the clarification of a "grey area" of accounting, and restatements that are merely a correction of a recent preliminary earnings announcements that have no effect on any previously reported numbers.

[15] Firms with more than one restatement incident where the restated periods overlap (i.e., the same period is restated on more than one occasion) are excluded from the analysis. A total of 15 firms fell into this category.

the modified Jones model and to meet the three criteria discussed above. Due to their potential

unique accrual behavior, we exclude from this sample firms in the following industries: utility

(SIC 4911-4940), financial (SIC 6022-6200) insurance (SIC 6312 – 6400) and real estate (SIC

6500-6799).

Financial statement data required for the various analyses were derived from Compustat.

Analysts' earnings forecasts and recommendations were obtained from the Thomson Reuters

I/B/E/S database. Return data were retrieved from the Center for Research on Security Prices

(CRSP) database.

6. Results

6.1. Descriptive statistics of the restatement sample

Table 2 provides descriptive statistics on the magnitude of the restated amounts relative

to reported earnings for the restatement sample. Panel A shows the magnitude of the cumulative

effect of the restatements measured over the sequence of reporting periods that were restated.

Note that the cumulative restatement amount is quite large, averaging (having a median value of)

41.2% (26.5%) of the absolute value of earnings and 7.1% (1.2%) of the market value of equity.

About 87% of the observations in the sample (506 out of 583) involve a cumulative downward

restatement. Interestingly, the first restated quarter in the sequence of the restated periods (which

is not shown separately in the table) is invariably restated downward. This strongly suggests that

all restatements in the sample, regardless of the sign of their cumulative effect, are a result of an

initial earnings overstatement. The cumulative amount of downward restatements has a mean

(median) value of 46.7% (30.1%) of absolute earnings and 8.0% (1.3%) of equity, and is, on

average, significantly larger (at the 1% significance level) than that of the upward restatements.

The mean effect on individual quarters in the restated period, shown in Panel B, is similarly

sizeable. The mean (median) ratio of the absolute value of the quarterly restatement to the

absolute value of the quarterly earnings is 60.7% (25.4%) and the mean (median) absolute

magnitude of the quarterly restatement to the market value of the equity is 1.5% (0.6%). The

large amounts involved in the restatements make this sample potentially powerful in identifying

the object of analysts' earnings forecasts.

6.2. Testing H1 on the restatement sample

Results from testing H1 which posits that analysts exclude the earnings management

component from their forecasts are presented in Tables 3 and 4. Table 3 shows the correlation

between the earnings forecast error and the amount of restatement, the proxy for the managed

earnings component. Under H1, no significant correlation is expected between the restatement

amount and the forecast error defined with respect to restated earnings.

The results are inconsistent with the null. For all restated periods, the correlation

coefficients between the forecast error based on *restated* earnings and the restatement amount are

positive and significant. The Pearson correlation coefficients are 0.202 and 0.234, both

significant, when the deflator is the absolute earnings and price, respectively. There is no

significant correlation between the forecast error based on *reported* earnings and the restatement

amounts, with the Pearson correlation coefficients being -0.067 and -0.085 for the two alternative

deflators, respectively. Similar results are obtained for the Spearman rank-order correlations. The

results are essentially the same when conducted separately on the annual and quarterly

restatement periods. These findings are consistent with analysts' forecasts being more aligned

with the originally reported ("managed") earnings numbers than with the restated amounts.

While the null of H1 is clearly rejected, the results do not fully support the alternative

that predicts that the forecast errors, when computed with respect to the restated amounts, would

be perfectly correlated with the amount of the restatement. Specifically, the correlations of 0.202 or 0.234 are still significantly smaller then 1.0. It thus appears that analysts do exclude, or anticipate only, a portion of the managed component in current earnings in making their forecasts.[16]

The same conclusion is reached when the proximity of the forecasts to these two numbers is examined. As shown in table 4, analysts' forecasts are significantly closer to the reported earnings than to the restated earnings. When both annual and quarterly observations are considered and errors are deflated by price, the absolute forecast error is 0.026 when computed from restated earnings but only 0.014 when computed from reported earnings. This difference is significant at the 1% significance level. This result is obtained for, separately, annual and quarterly observations and when absolute earnings serve as the deflator.

The findings presented in Tables 3 and 4 are consistent with analysts being either unable to anticipate earnings management and extract the managed earnings from their forecast or, perhaps more likely, unwilling (e.g., in order to produce a more accurate forecast) to remove the "incorrect" or "managed" component of earnings from their forecasts even when they are aware of its existence.

6.3. Testing H1 on the managed earnings sample

As explained earlier, we construct a "managed earnings" sample using the more refined procedure described in section 4.2. Specifically, we identify a group of observations (firm-quarters) where earnings just meet or slightly exceed either the earnings threshold of reporting a loss or of reporting an earnings decline relative to the same quarter in the previous year. Within this group of loss or earnings decline avoiders, we identify those observations where the

---

[16] We are hesitant to assign too much importance to the exact magnitude of the correlation coefficient between the forecast error and the restated amount because this coefficient, while invariably positive and significant, varies, depending on the truncation rule applied to the forecast error.

unexpected accruals are large enough to "boost" the earnings to (or slightly over) the threshold but are not "too large" relative to their presumed target (i.e., meeting or slightly exceeding the threshold) to raise the prospect that they are due to measurement errors. These cases are considered to represent likely earnings management cases and are denoted as the "manipulators" sample.

We then conduct a correlation analysis for this sample, similar to that provided in Table 4, in which we correlate the managed earnings component with the forecast error defined alternately as the reported earnings and the unmanaged earnings. Under the null of H1, the forecast error is not expected to be correlated with the managed earnings component (or with the signed restatement amount) when the error is computed using the reported earnings and to be perfectly correlated with that component (or negatively correlated with the signed restatement amount) when the error is computed with respect to the unmanaged earnings.

The results from this correlation analysis are exhibited in Table 5. Panel A shows the results when the managed earnings component is defined as unexpected accruals. The Spearman correlation coefficient between the forecast error deflated by absolute earnings and the unexpected accruals (i.e., the managed earnings component) is small (0.031) and insignificant when defined with respect to reported earnings. In contrast, when the error is defined relative to the unmanaged earnings, the correlation with unexpected accruals is quite a bit larger (0.186) and significant. Similar results are obtained for the forecast error deflated by price.

More pronounced results are obtained when the managed earnings component is defined as the excess of reported earnings over the earnings threshold as shown in Panel B. For the combined sample of manipulators (identified from the groups of loss avoiders and earnings decline avoiders), the respective Spearman correlation coefficients between the forecast errors

deflated by absolute earnings and the managed earnings component are 0.047 (and insignificant) and 0.281 (and highly significant) when the error is defined with respect to reported earnings and unmanaged earnings, respectively. Similar results are obtained for the forecast error deflated by price.

Figure 1 presents the distribution of the earnings forecasts in the standardized range between the originally reported earnings and the restated earnings. As the figure shows, the forecasts are clustered around the earnings originally reported. About two thirds of the forecasts are in the upper 20% of the range or exceed the upper limit of the range and 53% of them (1,873 out of 3,567) are equal or exceed the reported earnings. Only 0.5% of the forecasts (18/3,567) are equal to or fall below the restated earnings number.

The proximity results for the sample of restatements are presented in the form of the magnitude of the analysts' forecast errors when computed alternatively from the reported earnings number and the unmanaged earnings number. The proximity is measured by the absolute error deflated by either the absolute earnings or price. The results are presented in Table 6. The table shows that for cases where earnings are likely to be manipulated, analysts' forecasts are significantly closer to the reported numbers than they are to the "unmanaged" earnings numbers. The "managed earnings" component is defined as the discretionary accruals contained in reported income. To illustrate, the mean absolute forecast error deflated by absolute earnings of all "manipulators" (identified among both loss avoiders and earnings decline avoiders) is significantly higher when computed from unmanaged earnings (0.201) than when computed from reported (managed) earnings (0.106). The results are similar when loss manipulators and earnings decline manipulators are analyzed separately. Similar findings (not tabulated) are obtained when the managed earnings component is defined as the excess of reported earnings

over the threshold. These results are consistent with the alternative of H1. That is, analysts appear to incorporate the managed earnings component in their earnings forecasts.

Taken together, the results in Tables 5 and 6 as well as those in Figure 1 are inconsistent with H1. That is, the findings do not support the notion that analysts remove the managed earnings component from their forecasts. However, similar to our conclusion based on the correlations reported in Table 3, although the findings lead to the rejection of H1, they do not support the alternative of a perfect correlation between managed earnings and the forecast error (defined based on reported earnings). A reasonable conclusion from the findings is thus that analysts either do not anticipate the full impact of earnings management on earnings or do anticipate earnings management but prefer excluding some portion of the anticipated managed earnings component from their forecasts.

6.4. Results from testing H2: Bias in earnings forecasts in periods subsequent to periods of earnings management

If analysts are unable to detect earnings management in reported earnings, H2 holds that their earnings forecasts following periods of upward earnings management will be unduly influenced by the reported (managed) numbers and therefore biased upward. We test H2 initially by identifying managed earnings cases based on unexpected accruals. To do this, we rank firm-quarters by their unexpected accruals and then partition them into 10 portfolios from the most negative to the most positive unexpected accruals. We then compute the forecast errors for three subsequent quarters, denoted as quarters t+1, t+2 and t+3 where quarter t is the earnings management quarter. The forecast error is defined with respect to the latest earnings forecast issued before the release of earnings release.

Table 7 shows that the mean and median forecast errors are generally positive for all unexpected accruals portfolios. This is in line with previous research showing a pessimistic bias

in forecasts made late in the reporting period (see Brown (2001)). [17] A systematic pattern that

emerges, however, is that analysts are less pessimistic in periods following quarters with a high

level of unexpected accruals. By way of illustration, the mean (median) of the forecast error for

quarter t+1 deflated by the absolute actual earnings is 0.074 (0.028) for portfolio 10 (consisting

of the firm-quarters with the 10% most positive unexpected accruals) as opposed to 0.097

(0.045) for portfolio 1 (which consists of firm-quarters with the 10% most negative unexpected

accruals). These differences are significant at the 1% significance level. The same trend

continues in quarter t+2 but dissipates in quarter t+3. The results reported in Table 7 are thus

consistent with upward earnings management leading to an upward bias in analysts' earnings

forecasts in subsequent periods. [18]

Because unexpected accruals may be only weakly related to earnings management, we

next conduct the same analysis for the managed earnings sample which contains cases that are

more likely to reflect earnings management, as explained in section 4.2. The results, reported in

Table 8, are consistent with those in Table 7. Specifically, earnings forecasts issued in the two

quarters following a quarter with likely earnings management are, on average, more optimistic

than forecasts issued following quarters where earnings management is less likely to have

occurred. The mean forecast error deflated by the absolute reported earnings (market value of

equity) in quarter t+1 is 0.078 (0.044) for the full sample (line 1a), lower for the group identified

in quarter t as loss or earnings decline avoiders (0.073 and 0.042, respectively when the error is

deflated by absolute reported earnings and price as shown on line 2a), and the lowest (least

pessimistic) for firm-quarters identified as loss or earnings decline manipulators (0.063 and

---

[17] This pessimistic bias no longer exists when we use the first forecast after the earnings release for the previous quarter rather than the last forecast before the earnings release of the current period (not tabulated).
[18] The results in Table 7 are based on the last forecast before the earnings release of the current quarter. When we use instead the first forecast following the earnings release for the previous quarter we obtain similar results (not tabulated).

0.034, respectively, as shown on line 3a). Similar differences exist between the groups of loss avoiders and loss manipulators and between the groups of earnings decline avoiders and earnings decline manipulators. Most of the above differences between the groups are significant at the 5% significance level. Such differences persist in quarter t+2 but, similar to the results reported in Table 7 for the unexpected accruals portfolios, dissipate in quarter t+3. This finding regarding earnings forecasts issued subsequently to quarters with upward earnings management is consistent with Ettridge et al. (1995) who find that analysts, in revising their forecasts, only partially discount overstatements in previously reported earnings.

A possible explanation for the finding of a greater propensity of analysts to issue more optimistic forecasts for firms that have managed their earnings upward in the recent quarter is that these firms actually have better earnings performance in that quarter. However, this explanation is inconsistent with the fact that the two compared groups ("avoiders" versus "manipulators") have the same earnings performance in the sense that the earnings of both are "just-above" an earnings threshold. To further test for differences in the operating performance of the compared groups, we examine their earnings growth (change in EPS divided by price) and sales growth (change in sales per share divided by price). The results (not tabulated) do not indicate any significant difference in these operating performance measures between the compared groups. In fact, in most comparisons, the operating performance of the "manipulators" is lower (sometimes significantly so) than that of the "avoiders." The bias in analysts' forecast in the wake of incidents of earnings management cannot therefore be explained by a better operating performance by the "manipulators."

We do not test H2 on the restatement sample for the following reason. Note that the period immediately following the first period of the restatement interval may itself be restated.

Unbiased forecasts for this subsequent period may therefore be subject to a number of different interpretations, depending on whether the immediate subsequent period is itself restated. Using the managed earnings sample not only avoids this problem but has another advantage. Namely, it sets a "lower bar" for analysts when testing their ability to detect earnings management. This is so because recent earnings in this sample have barely met some earnings threshold, a fact known to the analysts when forming their forecasts. In contrast, the earnings number that is later restated does necessarily exhibit an obvious pattern that could suggest the presence of earnings management.

6.5. Results from testing H3: Stock recommendations in periods subsequent to periods of earnings management

We next examine the stock recommendations issued by analysts following the release of earnings likely to be affected by earnings management. H3 posits that analysts' propensity to upgrade their recommendations is unaffected by whether or not recent earnings have been managed upward. To test this hypothesis, we compare the frequencies of Buy, Hold and Sell recommendations between the period immediately preceding the period of likely earnings management and the period immediately following it. For the restatement sample, the period of likely earnings management extends from the earliest restated quarter to the latest restated quarter in the sequence of restated periods. For the sample of manipulators, we compare the frequencies of the different types of recommendation between the last month of the quarter of likely earnings management (denoted as m=0) to the corresponding frequencies observed one, two and three months following the earnings management quarter. Under the null of H3, the change in the relative frequency of the three types of recommendations is unrelated to the likelihood that earnings were managed in the current quarter.

Table 9 shows the change in the relative frequency (in percentage points) of each type of recommendation between the quarter preceding the restatement period and the quarters following it. The results indicate that analysts significantly upgrade their recommendations following incidents of upward earnings management. The percentage of Buy recommendations in the first and second quarter following the restatement period increases by, respectively, 4.68 and 3.97 percentage points relative to the quarter immediately preceding the restatement period while the percentage of Hold and Sell recommendations declines. This change is significantly larger as compared with that for a control group consisting of the two firms in the restating firm's industry (based on four-digit SIC codes) closest in size to the restated firm.

The same result is obtained when we examine the change in analysts' recommendations around quarters of likely earnings management as exemplified by the earnings manipulators group. Table 10 shows the frequency of recommendations in the first, second and third months following the quarter of earnings management for the different groups formed on the basis of the likelihood of earnings management in the current quarter. As before, the group of interest is the manipulators, which consists of firms that just achieved an earnings threshold (loss or decline avoidance) but would not have done so without the presence of unexpected accruals.

The results in Table 10 suggest that analysts not only do not discount managed earnings but are even more inclined to upgrade their stock recommendations in the wake of periods where earnings are managed upward. The relative frequency of Buy recommendations following periods in which the earnings are likely to have been managed upward for the manipulators (line 3 in the table) increased by 0.69%, 0.40% and 0.18% in months +1, +2 and +3 respectively, while the percentage of Buy recommendations for the full sample decreased. The difference between the two groups is statistically significant at the 1% significance level for the first quarter

and at the 5% for the second quarter after the "managed" quarter. Correspondingly, there is a decline among the likely-earnings-management cases in the relative frequency of Hold or Sell recommendations while the frequency of Hold or Sell recommendation in the full sample increased. Very similar results (not tabulated) are obtained when we analyze, separately, the manipulators that avoided reporting a loss and those that avoided reporting an earnings decline. Note that the manipulators also exhibit a greater increase in the proportion of Sell recommendations over months +1, +2 and +3. However, the increase in the proportion of Sell recommendations is small and statistically insignificant.

The propensity of analysts to upgrade their recommendations in the wake of the release of quarterly earnings that are considered to be managed upward is unlikely to be driven by better operating performance in the current quarter by the "manipulators" relative to their comparison group (the "avoiders") given the evidence that the operating performance of the two groups is essentially the same as noted in section 6.4 above.

The positive association between the frequency of Buy recommendations and the presence of earnings management is consistent with Lehavy and Abarbanell (2003a). However, whereas Lehavy and Abarbanell use the level of recommendation to proxy for price sensitivity, hypothesizing that the presence of a better recommendation increases the firm's incentive and thus propensity to manage its earnings, our explanation reverses the causality. Specifically, our results suggest that upward managed earnings prompts analysts to upgrade their recommendations. These two explanations for the observed association between earnings management and stock recommendations are not inconsistent and may be, in fact, both valid.

These results relating analysts' forecasting and recommendation behavior reinforce each other. Collectively they suggest that analysts, in forming their earnings forecasts and stock

recommendations, do not discount earnings that are achieved through upward earnings manipulation but rather give them greater prominence: They appear to revise their earnings forecasts upward and to upgrade their recommendations in the wake of earnings numbers that are likely to have been managed upward.[19]

6.6. Results from testing H4: Operating performance subsequent to incidents of earnings management

Testing H4 is designed to distinguish between two interpretations of the findings of less pessimistic earnings forecasts and upgraded recommendations in the wake of upward earnings management – accounting fixation on the part of analysts or performance signaling by management.   For the purpose of this test we examine the operating performance of firms subsequent to restatements or incidents of likely earnings management and compare it to the performance of control groups. Three measures of operating performance are considered: return on sales, return on assets and sales growth. We compare the future performance of the restaters and the manipulators with that of their respective control groups. For the restatement sample, the subsequent period consists of the first and second fiscal years after the end of the last restated period. The control group consists of firms operating in the same industry (based on the four-digit SIC code) of the restatement firms and that are closest in size (based on total assets) to the respective restated firm.

For the "likely earnings management" sample, we construct a similar industry-size matched group as well as two other control groups, one consisting of cases where the firm

---

[19] Palmrose et al. (2004) report downward revisions in analysts' earnings forecasts in the wake of restatement announcements. This result is not inconsistent with our finding of upward revisions in analysts' forecasts following instances of upward earnings management for two reasons. First, we examine the actual periods in which earnings management took place while Palmrose et al. (2004) examine the later event of *announcing* the restatement. Second, restatement announcements have negative implications beyond the information they convey about earnings such as those relating to internal control and corporate governance weaknesses, potential fraud, as well as potential litigation and regulatory actions.

operated just above the earnings threshold (the loss or earnings avoiders) and the other of all firm-quarters.

The results reported in Table 11 indicate that both types of firms with likely earnings management, the restaters and the manipulators, exhibit inferior operating performance in subsequent periods than do their comparison groups. Panel A contains the results for the restatement sample. Over the first full fiscal year following the sequence of restated periods, the restaters report a median return on sales, return on assets and sales growth of 0.029, 0.013 and 0.038 as compared with 0.038, 0.030 and 0.049, respectively, for the control group. The difference between the groups in the median return on sales and return on assets as well as in the mean of all three performance measures is significant at the 1% or 5% significance levels. The same inferior performance relative to the control group is exhibited in the second year after the restatement period.

As shown in Panel B of Table 11, similar results are obtained for the likely earnings management sample. Over the a one-year (four-quarter) period following the quarter with likely earnings management, the manipulator sample has a median return on sales, return on assets and sales growth of 0.060, 0.057 and 0.106, respectively. The respective comparative performance measures for the control sample consisting of industry-matched firms are 0.078, 0.064 and 0.135 and for firms that just met an earnings threshold (the avoiders) the measures are 0.076, 0.057 and 0.131, respectively. The discrepancy in profitability is generally significant at the conventional level. The results are similar when we analyze separately loss manipulators and earnings decline manipulators. As the results indicate, the inferior performance of manipulators continues in the second year after the earnings management quarter. The differences in operating performance dissipate however in the third and fourth year (not tabulated).

These findings are inconsistent with H4 and suggest that, at least in the cases investigated in this study earnings management does not appear to be used as a vehicle to signal future performance. They are further consistent with the notion that the earnings management component is less persistent than the other components of earnings.[20]

7. Some Caveats

Two important caveats of this paper should be emphasized. First, the identification of earnings management cases is based on alternately, firms that restated earnings and firms that used unexpected positive accruals to meet earnings thresholds. While we believe that our identification of earnings management cases, particularly the one based on restatements, is powerful, it is obviously not perfect. Identification errors would tend to make the testing of H1 less reliable. However, a poor identification of earnings management cases works against rejecting H2 and H3, both of which are resoundingly rejected by the empirical results.

The second caveat relates to our ability to infer from analysts' forecasting and recommendation behavior in periods following earnings management on their capability to detect earnings management when it exists. Such inferences depend heavily on whether or not the managed earnings component is transitory, or at least more transitory than the unmanaged component of earnings. We do not provide direct evidence on this issue even though the evidence from testing H4 regarding future performance of manipulators suggests a lower degree of persistence of the managed earnings component.

---

[20] The results of an inferior performance in periods subsequent to earnings management are also consistent with the finding of Keung et al. (2010) that small earnings surprises (presumably a result of earnings management) are negatively correlated with future earnings surprises.

8. Concluding Remarks

We examine whether analysts behave as if they anticipate earnings management and incorporate the managed amount in their forecasts. We then test the effect of earnings management on future forecasts and recommendations. We use two samples of likely earnings management cases where the existence of earnings management is assumed from earnings restatements or through accrual behavior around earnings thresholds. The results are consistent with analysts anticipating earnings management and including the managed earnings component in their forecasts. The results further indicate that analysts react positively to instances of upward earnings management by issuing more optimistic earnings forecasts and more positive recommendations. Firms' performance subsequent to instances of upward earning management, however, does not support such optimism.

The findings of this paper add to the evidence on the forecasting behavior of analysts. In line with previous research, we find that analysts fail to detect earnings management and to properly consider the managed component in their forecasts and recommendations. The results are also consistent with analysts being able to detect earnings management, yet expect upward earnings management to persist and affect the reported income during the horizon period for their forecasts and recommendations. An interesting extension of this study that may shed further light on these results is the evaluation of the quality of analysts' recommendations made in the wake of upward earnings management periods.

References

Abarbanell, J. and R. Lehavy, 2003a, "Can Stock Recommendations Predict Earnings Management and Analysts' Earnings Forecast Errors?" <u>Journal of Accounting Research</u>, v. 41 (1), pp. 1-31.

_____ and R. Lehavy, 2003b, "Biased Forecasts or Biased Earnings? The Role of Reported Earnings in Explaining Apparent Bias and Over/Underreaction in Analysts' Earnings Forecasts," <u>Journal of Accounting and Economics</u>, v. 36 (1-3), pp. 105-146.

Bannister, J. and H. Newman, 1998, "Do Financial Analysts Decompose Past Earnings When Making Future Earnings Forecasts?" <u>Managerial Finance</u>, v. 24 (6), pp. 10-25.

Barth, M. and A. Hutton, 2004, "Analyst Earnings Forecast Revisions and the Pricing of Accruals," <u>Review of Accounting Studies</u>, v. 91, pp. 59-96.

Barton J. and P.J. Simko, 2002, "The Balance Sheet as an Earnings Management Constraint," <u>The Accounting Review</u>, v. 77, pp. 1-25.

Beaver, W., McNichols, M. and K. Nelson, 2007, "An Alternative Interpretation of the Discontinuity in the Earnings Distribution," <u>Review of Accounting Studies</u>, v. 12(4), pp. 525-556..

Beneish, M. D. 1999. "The Detection of Earnings Manipulation," <u>Financial Analysts Journal</u> 55 (5), pp. 24-36.

Block, K., 1999, "A Study of Financial Analysts: Practice and Theory," <u>Financial Analysts Journal</u>, v. 55(4), pp. 86-95.

Bradshaw M.T., 2004, "How Do Analysts Use their Earnings Forecasts in Generating Stock Recommendations?" <u>The Accounting Review</u>, v. 79, pp. 25-50.

_____., Richardson, S. and R. Sloan, 2001, "Do Analysts and Auditors Use Information in Accruals?" <u>Journal of Accounting Research</u>, v. 39 (1), pp. 45-74.

Brown L.D., 2001, "A Temporal Analysis of Earnings Surprises: Profits versus Losses," <u>Journal of Accounting Research</u>, Autumn, v. 32 (2), pp. 221 – 242.

_____ and M. L. Caylor. 2005. "A Temporal Analysis of Quarterly Earnings Thresholds: Propensities and Valuation Consequences," <u>The Accounting Review</u> v. 80 (2), pp. 423-440.

Burgstahler D. and I. Dichev, 1997, "Earning Management to Avoid Earnings Decreases and Losses," <u>Journal of Accounting and Economics, v.</u> 24, pp. 99-126.

_____. and M. Eames, 2003, "Earnings Management to Avoid Losses and Earnings Decreases: Are Analysts Fooled?" <u>Contemporary Accounting Research</u>, Summer, pp. 253–294.

Chaney, P.K., Hogan, C.E. and D.C. Jeter, 1999, "The Effect of Reporting Restructuring Charges on Analysts' Forecast Revisions and Errors," Journal of Accounting and Economics, v. 70, pp. 261-284.

Collins D. and P. Hribar, 2000. "Earnings-based and Accrual-based Market Anomalies: One Effect or Two?" Journal of Accounting and Economics, v. 29, pp. 101-123.

Dechow, P. M., W. Ge, C.R.. Larson, and R. Sloan, 2010, "Predicting Material Accounting Mistatements." Forthcoming, Contemporary Accounting Research.

_____, R. Sloan, and A. Sweeney, 1995, "Detecting Earnings Management," The Accounting Review, v.70 (2), pp. 193-226.

_____ , S.A. Richardson, and A.I. Tuna, 2003, "Why are Earnings Kinky? An Examination of the Earnings Management Explanation," Review of Accounting Studies, v. 8, pp. 355-384, June-September.

Desai H., S. Krishnamurthy, and K. Venkataraman, 2006, "Do Short Sellers Target Firms with Poor Earnings Quality? Evidence from Earnings Restatements," Review of Accounting Studies, v. 11, pp. 71-90.

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, v. 43, pp. 557-592.

Ettredge, M., Shane, P. and D. Smith, 1995, "Overstated Quarterly Earnings and Financial Analysts' Earnings Forecast Revisions," Decision Sciences, November/December 1995, pp. 781-801.

Givoly, D., C. Hayn, and R. Lehavy, 2009, "The Quality of Analysts' Cash Flow Forecasts," The Accounting Review, Vol. 84 (6), pp.1877-1912.

Griffin P.A., 2003, "A League of Their Own? Financial Analysts' Responses to Restatements and Corrective Disclosures," Journal of Accounting, Auditing and Finance, v. 18, pp. 479-518.

Hanna, D. and S. Orpurt, 2006, "Analysts' Earnings Forecasts and the Recognition of Nonrecurring Charges," Working Paper, Southern Methodist University.

Hayn, C., 1995, "The Information Content of Losses," Journal of Accounting and Economics, v. 20, pp. 125-153.

Hong, H. and J. Kubik, 2003, "Analyzing the Analysts: Career Concerns and Biased Earnings Forecasts," Journal of Finance, v. 58 (1), pp. 313-351.

Jacob, J. and B. Jorgensen, 2007, "Earnings Management and Accounting Income Aggregation," Journal of Accounting and Economics, v. 43(2-3), 369-390.

Jones, J., 1991, "Earnings Management During Import Relief Investigations, Journal of Accounting Research," v. 29 (2), pp. 193-228.

Jones, K.L. G.V. Krishnan, and K.D. Melendrez, 2008, "Do Models of Discretionary Accruals Detect Actual Cases of Fraudulent and Restated Earnings? An Empirical Evaluation," Contemporary Accounting Research, v. 25.2

Louis, H., 2004, "Earnings Management and the Market Performance of Acquiring Firms," Journal of Financial Economics, v. 74, pp. 121-148.

Keung, Edmund C., Lin, Zhi-Xing and Shih, Michael S. H., 2010. "Does the Stock Market See a Zero or Small Positive Earnings Surprise as a Red Flag? Forthcoming. Journal of Accounting Research,

Liu, X., 2005, "Analysts' Response to Earnings Management", Working Paper, University of Texas at Dallas.

Mikhail M., Walther, B. and R. Willis, 1999, "Conflict of Interest and the Credibility of Underwriter Analyst Recommendations," Review of Financial Studies, v. 12(4), pp. 653-686.

Palmrose, Z., V.J. Richardson V, and S. Sholz, 2004, "Determinants of market reactions to restatement announcements," Journal of Accounting and Economics, v. 37, pp. 59-89.

Picconi, M., 2006, "The Perils of Pensions: Does Pension Accounting Lead Investors and Analysts Astray?" The Accounting Review, v. 81(4), pp. 925-955.

Ramnath, S., 2002, "Investor and Analyst Reactions to Earnings Announcements of Related Firms: An Empirical Analysis," Journal of Accounting Research, v. 40, pp. 1351-1376.

Shane T.B. and T. Stock, 2006, "Security Analysts and Stock Market Efficiency in Anticipating Tax-Motivated Income Shifting," The Accounting Review, v. 81(1), pp. 227-250.

Stickel, S., 1992, "Reputation and Performance among Security Analysts," Journal of Finance, v. 47 (5), pp. 1811-1836.

Teoh, S. and T. Wong, 2002, "Why New Issues and High-Accrual Firms Underperform: The Role of Analysts' Credulity," Review of Financial Studies, v. 15, pp. 869-900.

Appendix
Association between Forecast Errors and the Managed Earnings Component

Denote the sum of the "true" unmanaged components in reported earnings as E^T, the managed component as E^M, and the earnings forecast as F, which can be either the forecast of the "true" unmanaged earnings, denoted as F^T, or the forecast of the reported (managed) earnings, denoted as F^R. The forecast error defined with respect to the reported (i.e., managed) earnings number as FE^R and the forecast error defined with respect to the true (i.e., unmanaged) earnings as FE^T.

Under the null of H1:
$F^T = E^T + \varepsilon_1$, where ε_1 is an independent random error with an expected value of zero, and
$FE^R = (E^T + E^M) - (E^T + \varepsilon_1) = E^M - \varepsilon_1.$

The correlation between the managed earnings component, E^M, and the forecast error, FE^R, under the null is expected thus to be 1 (assuming that ε_1 is uncorrelated with E^M).

In contrast, under the alternative of H1:
$F^R = (E^T + E^M) + \varepsilon_2$, where ε_2 is an independent random error with an expected value of zero, and
$FE^R = (E^T + E^M) - [(E^T + E^M) + \varepsilon_2] = -\varepsilon_2.$

The correlation between the managed earnings component and the forecast error FE^R under the alternative is expected to be 0 (assuming that ε_2 is uncorrelated with E^M).

If analysts include the managed earnings only partially so that $F^P = E^T + \alpha E^M + \varepsilon_3$ then:
$FE^P = (E^T + E^M) - [(E^T + \alpha E^M) + \varepsilon_3 = (1-\alpha) E^M - \varepsilon_3.$

The correlation between the managed earnings component and the forecast error FE^P in this case is expected to be $(1-\alpha)$.

If the forecast error is defined with respect to the "true" (unmanaged) earnings number then under the null:
$FE^T = E^T - (E^T + \varepsilon_1) = -\varepsilon_1.$

The correlation between the managed earnings component, E^M, and the forecast error, FE^T, under the null is expected thus to be zero (assuming that ε_1 is uncorrelated with E^M).

Under the alternative:
$F^R = (E^T + E^M) + \varepsilon_2$, where ε_2 is a random error with an expected value of zero, and
$FE^T = E^T - [(E^T + E^M) + \varepsilon_2] = -E^M - \varepsilon_2.$

The correlation between the managed earnings component and the forecast error FE^T under the alternative is expected to be -1.0 (assuming that ε_2 is uncorrelated with E^M).

Appendix (continued)
Association between Forecast Errors and the Managed Earnings Component

If analysts include the managed earnings only partially so that $F^P = ET + \alpha E^M + \varepsilon_3$, then

$FE^P = E^T - [(E^T + \alpha E^M) + \varepsilon_3] = -\alpha E^M - \varepsilon_3$, and its correlation with EM is expected to be $- \alpha$.

The correlation between the managed earnings component and the forecast error FE^P in this case is expected to be $-\alpha$.

In the above setting, the predicted correlation of the magnitude of the restatement (**which is set equal to $-E^M$**) is provided in the following table.

	Error computed as:	
	Reported (managed) Earnings less Forecast	True (unmanaged) Earnings less Forecast
Null of H1: Analysts predict the "true" (unmanaged) earnings	-1	0
Alternative to H1: Analysts predict the reported (managed) earnings	0	1
Intermediate Situation: Analysts include in their forecast a fraction α of the managed earnings component	α -1	α

Figure 1

Distribution of Observations in the Standardized Range
Between the Restated and Reported Earnings[*]
(n = 3,567)

% of
Cases

| | 0 to 0.10 | 0.10 to 0.20 | 0.20 to 0.30 | 0.30 to 0.40 | 0.40 to 0.50 | 0.50 to 0.60 | 0.60 to 0.70 | 0.70 to 0.80 | 0.80 to 0.90 | 0.90 to 1.00 |

Value of 0

Forecast ≤ Restated Earnings

(18 cases)

Value of 1

Forecast ≥ Reported Earnings

(1873 cases)
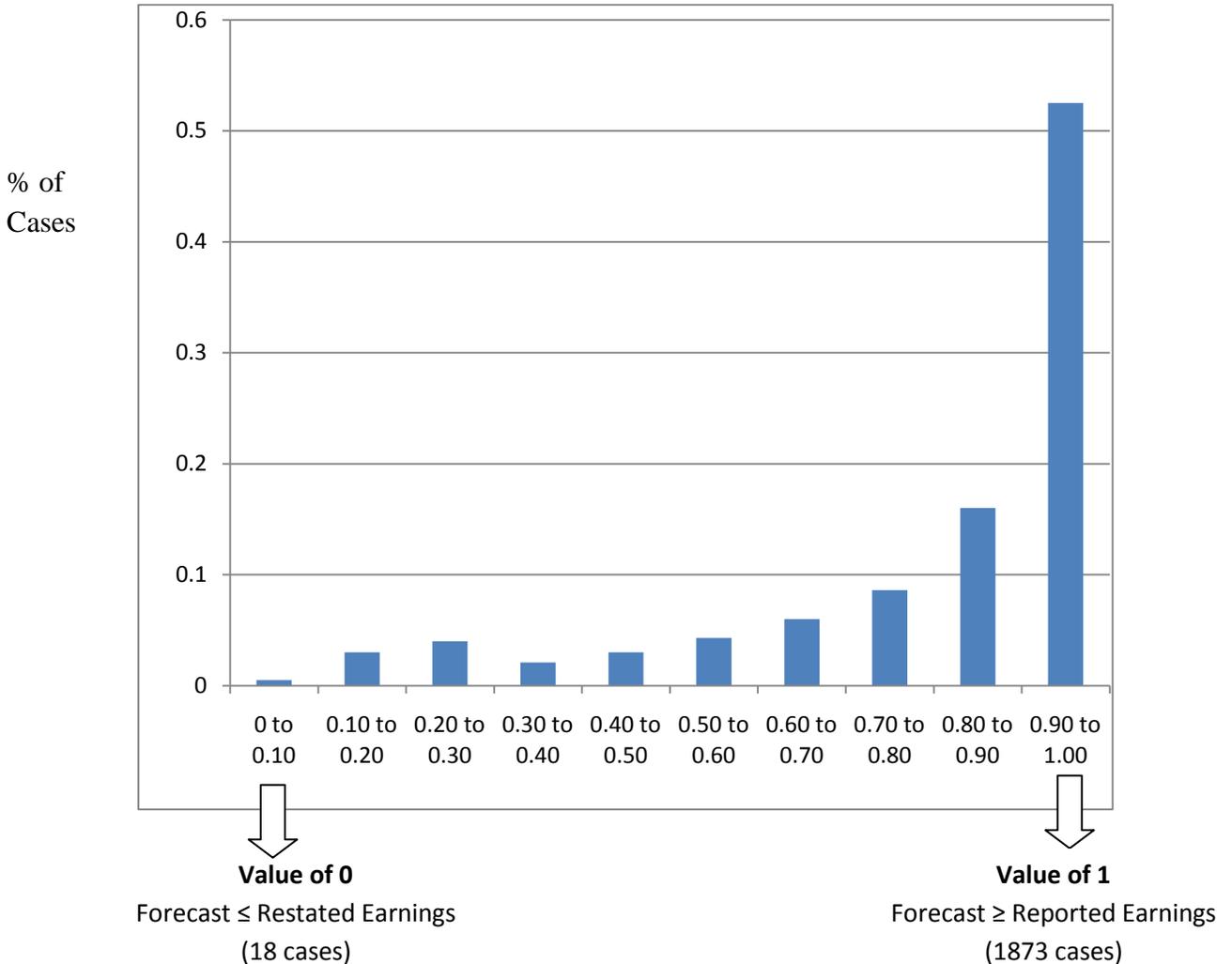
[*] The standardized value of a forecast in the range is equal to the ratio (Forecast – Restated Earnings) / (Actual – Restated Earnings) for cases in which Actual ≥ Forecast ≥Restated Earnings. This ratio is set equal to 0 when Restated Earnings > Forecast and to 1.0 when Forecast >Actual. Only cases with downward restatements are considered. Only cases with downward restatements are considered

Table 1
Restatement Sample

	No. of observations	% of observations
Number of firms issuing restated results	583	
Total number of periods for which earnings were restated[a]	3,567	
Quarterly Reports		
Total number of quarters for which earnings were restated	2,982	
Number of firms restating quarterly results	544	100.0
Average number of restated quarters per firm	3.86	
No. of firms restating: one quarter	144	26.5
two quarters	73	13.4
three quarters	91	16.7
four quarters	52	9.6
five quarters	27	5.0
six or more quarters	157	28.8
Annual Reports		
Total number of years for which earnings were restated	405	
Number of firms restating yearly results	353	100.0
Average number of restated years per firm	1.15	
No. of firms restating: one year	212	60.0
two years	92	26.1
three or more years	49	13.9

[a] All reporting periods (both quarters and years) for which restated numbers are provided are included. A restatement of quarterly results of prior years' earnings will generally give rise to two restatement periods, the quarter and the corresponding year.

Table 2
Magnitude of Earnings Restatements

A. Magnitude of Cumulative Restatements
(Computed over the sequence of periods affected by a restatement incident)

	All Restatement Incidents: Absolute Value (n = 583)			Downward Restatements (n = 506)		Upward Restatements (n = 77)	
	Value (in $ 000)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=522)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=472)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=70)
Mean	$ 35,420	0.412	0.071	0.467	0.080	0.232	0.018
Std. Dev.	$ 139,276	0.463	0.485	0.589	0.492	0.212	0.023
Quartile 1	$ 780	0.034	0.003	0.064	0.004	0.033	0.003
Median	$ 4,361	0.265	0.012	0.301	0.013	0.115	0.009
Quartile 3	$ 15,842	0.657	0.041	0.729	0.047	0.328	0.021

B. Magnitude of Quarterly Restatements

	All Restatement Incidents: Absolute Value (n = 2,940)			Downward Restatements (n = 2,411)		Upward Restatements (n = 529)	
	Value (in $ 000)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=2,764)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=2,291)	Deflated by absolute earnings[1]	Deflated by market value[2] (n=508)
Mean	$10,021	0.607	0.015	0.698	0.021	0.407	0.011
Std. Dev.	$54,589	0.693	0.269	0.729	0.276	0.558	0.049
Quartile 1	$ 462	0.082	0.003	0.102	0.003	0.062	0.002
Median	$ 1,568	0.254	0.006	0.324	0.007	0.149	0.006
Quartile 3	$ 4,673	1.013	0.017	1.267	0.026	0.387	0.014

[1] Absolute earnings is measured as the average between the absolute values of the reported earnings and the restated earnings.
[2] Market value is measured at the beginning of the restated period.

Table 3
Correlation between the Amount of Restatement and Analysts' Earnings Forecast Errors for the First Period in the Restatement Sequence[1]

Period and Correlation Coefficients	Error and Restated Amounts[2]			
	Deflated by Absolute Earnings Per Share[3]		Deflated by Price[4]	
	Forecast Error Based on Earnings as: Reported	Restated	Forecast Error is Based on Earnings as: Reported	Restated
All Periods				
No. of Obs.	566		538	
Pearson	-0.067	0.202	-0.085	0.234
	(0.167)	(<0.001)	(0.194)	(<0.001)
Spearman	-0.051	0.232	0.018	0.262
	(0.228)	(<0.001)	(0.461)	(<0.001)
Annual Periods				
No. of Obs.	232		215	
Pearson	-0.049	0.219	-0.037	0.318
	(0.574)	(0.015)	(0.712)	(<0.001)
Spearman	-0.062	0.263	0.029	0.287
	(0.681)	(<0.001)	(0.748)	(<0.001)
Quarterly Periods				
No. of Obs.	334		334	
Pearson	-0.009	0.182	-0.043	0.291
	(0.825)	(0.026)	(0.645)	(<0.001)
Spearman	-0.018	0.237	-0.035	0.314
	(0.721)	(<0.001)	(0.716)	(<0.001)

[1] The first (earliest) restated period in the sequence of periods covered by a restatement is a year for the annual periods and a quarter for the quarterly periods.
[2] p-values are provided in parentheses
[3] Absolute earnings per share is measured as the average between the absolute values of the reported earnings per share and the restated earnings per-share.
[4] Price is measured at the beginning of the restated period.
[5] The forecast error is defined as the reported (or restated) earnings per-share less the last forecast of earnings per-share for the period.

Table 4
Difference between the Earnings Forecast Error Based on Reported Earnings and
That Based on Restated Earnings
for the First Period in the Restatement Sequence[1,2]

	Absolute Error Deflated by Absolute Earnings Per Share[3]				Absolute Error Deflated by Price[4]			
	Forecast Error Based on Earnings as:				Forecast Error Based on Earnings as:			
	n	Reported	Restated	Mean Difference[a]	n	Reported	Restated	Mean Difference[a]
All Periods	566	0.102	0.151	-0.049 *(-4.57)*	538	0.014	0.026	-0.012 *(-2.94)*
Annual Periods	232	0.092	0.136	-0.044 *(-3.97)*	215	0.017	0.032	-0.015 *(-3.57)*
Quarterly Periods	334	0.116	0.160	-0.048 *(-4.82)*	323	0.010	0.022	-0.012 *(-2.81)*

[a] t-values are provided in parentheses

[1] The forecast error is defined as the absolute value of the difference between reported (or restated) earnings and last analyst forecast made just prior to the announcement of the next period's earnings.

[2] The first (earliest) restated period in the sequence of periods covered by a restatement could is a year for the annual periods and a quarter for the quarterly periods.

[3] The denominator is the average between the absolute values of the reported earnings per share and the restated earnings per share. Deflated values are truncated at ±1.

[4] The denominator is the price at the beginning of the restated period. Deflated values are truncated at ±0.1%.

Table 5
Correlation between the Managed Earnings Component and
Analysts' Earnings Forecast Errors for the "Manipulators"

Panel A: "Managed Earnings Component" is Defined as Abnormal Accruals (n=1,389)[1]

Correlation	Forecast Error (Deflated by Absolute Earnings Per Share) Based on Earnings as:		Forecast Error (Deflated by Price[3]) Based on Earnings as:	
	Reported	"Unmanaged"	Reported	"Unmanaged"
Pearson	0.023 *(0.871)[2]*	0.165 *(0.010)*	0.020 *(0.713)*	0.150 *(<0.0001)*
Spearman	0.031 *(0.610)*	0.186 *(<0.0001)*	0.024 *(0.657)*	0.201 *(<0.0001)*

Panel B: "Managed Earnings Component" is Defined as the Amount by which Earnings Exceed the Threshold[4]

(1) Loss and Decline Manipulators (1,389)

Pearson	0.047 *(0.055)*	0.281 *(<0.0001)*	0.067 *(0.058)*	0.303 *(<0.0001)*
Spearman	0.049 *(0.052)*	0.336 *(<0.0001)*	0.063 *(0.061)*	0.267 *(<0.0001)*

(2) Loss Manipulators (n=926)

Pearson	0.069 *(0.094)*	0.217 *(<0.0001)*	0.045 *(0.154)*	0.241 *(<0.0001))*
Spearman	0.083 *(0.078)*	0.301 *(<0.0001)*	0.051 *(0.172)*	0.256 *(<0.0001)*

(3) Decline Manipulators (n=463)

Pearson	0.078 *(0.114)*	0.327 *(<0.0001)*	0.104 *(0.046)*	0.352 *(<0.0001)*
Spearman	0.069 *(0.125)*	0.314 *(<0.0001)*	0.115 *(0.058)*	0.314 *(<0.0001)*

[1] Abnormal accruals are derived from the modified Jones model as explained in section 4.3.
[2] p-values are given in parentheses
[3] Price is measured at the beginning of the period.
[4] The managed earnings component for Loss Manipulators is equal to actual earnings minus the amount by which earnings exceed zero. The managed earnings component for the Earnings Decline Manipulators is equal to the EPS for the same quarter in the previous.

Table 6

**Difference between the Earnings Forecast Error Based on
the Reported (Managed) Earnings and the Unmanaged Earnings[1,2]
for the "Managed Earnings" Sample**

	Group[a]	No. of Obs.	Absolute Forecast Error Deflated by Absolute Earnings Per Share[3]			Absolute Forecast Error Deflated by Price[4]		
			Reported (Managed)	Unmanaged	Mean Difference	Reported (Managed)	Unmanaged	Mean Difference
1	Full Sample	65,164	0.081	0.093	**-0.012**	0.017	0.026	**-0.009**
2	Loss or Earnings Decline Avoiders	25,143	0.076	0.123	**-0.047***	0.019	0.043	**-0.024**
3	Loss or Decline Manipulators	1,389	0.106	0.201	**-0.095****	0.021	0.088	**-0.067****
4	Loss Avoiders	16,938	0.099	0.142	**-0.043***	0.017	0.032	**-0.015**
5	Loss Manipulators	926	0.136	0.195	**-0.059****	0.019	0.079	**-0.060****
6	Earnings Decline Avoiders	10,057	0.038	0.091	**-0.053****	0.022	0.063	**-0.041***
7	Earnings Decline Manipulators	463	0.047	0.212	**-0.165****	0.020	0.117	**-0.118****

  * significant at the 5% significance level
** significant at the 1% significance level.

[a] Loss or earnings decline "avoiders" and "manipulators" are defined in section 4.2.
[1] The forecast error is defined as the absolute value of the difference between reported (managed) earnings per share and the last analyst forecast made just prior to the announcement of the next period's earnings.
[2] The unmanaged earnings are the earnings per share that would have been reported in the absence of the discretionary accruals.
[3] The denominator is the average between the absolute values of the reported earnings per share and the unmanaged earnings per share. Deflated values are truncated at ± 1.
[4] The denominator is the price at the beginning of the quarter. Deflated values are truncated at $\pm 0.1\%$.

Table 7
Analysts' Forecast Errors for Forecasts of Future Quarters' Earningsby the Sign and
Magnitude of Unexpected Accruals in the Current Quarter:
Results by Portfolio of Unexpected Accruals

Portfolio of unexpected accruals[a]	Median Unexpected Accruals	MEAN		MEDIAN		SIGN OF ERROR		
		(Error/|Actual|)*100	Error/Price	(Error/|Actual|)*100	Error/Price	% Pos.	% Zero	% Neg.
Quarter t+1								
1 (smallest)	-0.281	0.097	0.042	0.045	0.030	60.5	14.7	24.8
2	-0.132	0.093	0.044	0.042	0.030	60.2	14.4	25.4
3	-0.068	0.089	0.041	0.04	0.027	59.3	13.8	26.9
4	-0.026	0.087	0.038	0.037	0.024	58.4	13.9	27.7
5	-0.007	0.084	0.036	0.039	0.025	57.2	15.5	27.3
6	0.006	0.082	0.039	0.034	0.022	56.9	14.6	28.5
7	0.021	0.081	0.031	0.032	0.020	56.5	14.4	29.1
8	0.051	0.083	0.019	0.03	0.019	55.8	13.9	30.3
9	0.074	0.078	0.021	0.029	0.019	55.9	14.5	29.6
10 (largest)	0.263	0.074	0.019	0.028	0.018	55.4	14.4	30.2
Difference ([10] – [1])		*-0.023** *	*-0.033* *	*-0.017** *	*-0.012* *	*-5.1** *	*-0.3*	*5.4** *
Quarter t+2								
1 (smallest)	-0.281	0.081	0.047	0.031	0.028	59.9	14.6	25.5
2	-0.132	0.082	0.048	0.028	0.026	59.2	14.4	26.4
3	-0.068	0.078	0.05	0.028	0.024	58.9	14.9	26.2
4	-0.026	0.076	0.049	0.028	0.022	57.4	15.2	27.4
5	-0.007	0.074	0.045	0.025	0.023	57.6	15.4	27
6	0.006	0.065	0.039	0.026	0.020	57.2	14.6	28.2
7	0.021	0.067	0.04	0.029	0.022	56.8	15.1	28.1
8	0.051	0.065	0.041	0.025	0.021	56.4	14.8	28.8
9	0.074	0.062	0.038	0.026	0.023	57.1	14.6	28.3
10 (largest)	0.263	0.059	0.035	0.024	0.02	55.8	14.5	29.7
Difference ([10] – [1])		*-0.022** *	*-0.012* *	*-0.015** *	*-0.008*	*-4.1** *	*-0.1*	*4.2** *
Quarter t+3								
1 (smallest)	-0.281	0.073	0.032	0.049	0.027	59.9	14.2	25.9
2	-0.132	0.075	0.039	0.045	0.024	59.2	14.4	26.4
3	-0.068	0.068	0.032	0.042	0.024	59.4	14.0	26.6
4	-0.026	0.066	0.030	0.035	0.022	58.6	13.8	27.6
5	-0.007	0.062	0.029	0.037	0.021	58.2	13.6	28.2
6	0.006	0.058	0.025	0.029	0.019	59.2	14.0	26.8
7	0.021	0.061	0.031	0.032	0.021	57.8	13.7	28.5
8	0.051	0.055	0.028	0.028	0.018	57.4	13.9	28.7
9	0.074	0.053	0.022	0.029	0.018	56.5	14.0	29.5
10 (largest)	0.263	0.059	0.025	0.022	0.017	56.3	14.0	29.7
Difference ([10] – [1])		*-0.014* *	*-0.007*	*-0.035* *	*-0.010* *	*-3.6* *	*-0.2*	*3.8* *

[a]There are approximately 6,550 observations in each portfolio. Unexpected accruals are estimated from the modified Jones' model.

Table 8
Analysts' Forecast Errors for Forecasts of Future Quarters' Earnings
by the Likelihood of Earnings Management in the Current Quarter

	Period and Group	MEAN		MEDIAN	
		(Error/ |Actual|)	Error/ Price	(Error/ |Actual|)	Error/ Price
	Quarter t+1				
1a	Full Sample	0.078	0.044	0.058	0.038
2a	Loss or Earnings Decline Avoiders	0.073	0.042	0.054	0.039
3a	Loss or Decline Manipulators	0.063	0.034	0.051	0.028
	Difference [(3a)-(2a)]	*-0.010**	*-0.008*	*-0.003*	*-0.011***
	Difference [(3a)-(1a)]	*-0.015***	*-0.010**	*-0.007*	*-0.010**
4a	Loss Avoiders	0.076	0.034	0.059	0.027
5a	Loss Manipulators	0.069	0.031	0.049	0.023
	Difference [(5a)-(4a)]	*-0.007*	*-0.003*	*-0.010**	*-0.004*
	Difference [(5a)-(1a)]	*-0.009*	*-0.013***	*-0.009*	*-0.015***
6a	Earnings Decline Avoiders	0.068	0.055	0.060	0.041
7a	Earnings Decline Manipulators	0.053	0.034	0.050	0.028
	Difference [(7a)-(6a)]	*-0.015***	*-0.021***	*-0.010**	*-0.013***
	Difference [(7a)-(1a)]	*-0.025***	*-0.010**	*-0.008*	*-0010**
	Quarter t+2				
1b	Full Sample	0.074	0.040	0.055	0.028
2b	Loss or Earnings Decline Avoiders	0.066	0.033	0.051	0.028
3b	Loss or Decline Manipulators	0.051	0.024	0.045	0.021
	Difference [(3b)-(2b)]	*-0.014***	*-0.009*	*-0.006*	*-0.007*
	Difference [(3b)-(1b)]	*-0.0238**	*-0.016***	*-0.010**	*-0.007*
4b	Loss Avoiders	0.079	0.033	0.054	0.024
5b	Loss Manipulators	0.062	0.021	0.047	0.014
	Difference [(5b)-(4b)]	*-0.017**	*-0.012**	*-0.007*	*-0.010*
	Difference [(5b)-(1b)]	*-0.012**	*-0.019***	*-0.008*	*-0.014***
6b	Earnings Decline Avoiders	0.067	0.034	0.051	0.023
7b	Earnings Decline Manipulators	0.057	0.029	0.047	0.024
	Difference [(7b)-(6b)]	*-0.010**	*-0.005*	*-0.004*	*0.001*
	Difference [(7b)-(1b)]	*-0.017***	*-0.011**	*-0.008*	*-0.004*

Table 8 (Cont.)
Analysts' Forecast Errors for Forecasts of Future Quarters' Earning
by the Likelihood of Earnings Management in the Current Quarter

	Period and Group	MEAN		MEDIAN	
		(Error/ |Actual|)	Error/ Price	(Error/ |Actual|)	Error/ Price
	Quarter t+3				
1c	Full Sample	0.076	0.045	0.056	0.031
2c	Loss or Earnings Decline Avoiders	0.068	0.033	0.053	0.024
3c	Loss or Decline Manipulators	0.069	0.032	0.05	0.022
	Difference [(3c)-(2c)]	*0.001*	*-0.001*	*-0.003*	*-0.002*
	Difference [(3c)-(1c)]	*-0.007*	*-0.013**	*-0.006*	*-0.009*
4c	Loss Avoiders	0.066	0.028	0.055	0.023
5c	Loss Manipulators	0.071	0.034	0.065	0.028
	Difference [(5c)-(4c)]	*0.005*	*0.006*	*0.010**	*0.005*
	Difference [(5c)-(1c)]	*-0.005*	*-0.011**	*0.009*	*-0.003*
6c	Earnings Decline Avoiders	0.072	0.040	0.059	0.031
7c	Earnings Decline Manipulators	0.069	0.042	0.055	0.034
	Difference [(7c)-(6c)]	*-0.003*	*0.002*	*-0.004*	*0.003*
	Difference [(7c)-(1c)]	*-0.007*	*-0.003*	*-0.001*	*0.003*

Table 9
Revisions in Analysts' Recommendations
from the Pre-Restatement Period to the Post-Restatement Period

	Sample	Mean Change in the Relative Frequency of the Recommendation between the Quarter Immediately Preceding the Restatement Period and:							
		The First Quarter Following the Restatement Period[a]				The Second Quarter Following the Restatement Period[a]			
		No. of firms	Buy	Hold	Sell	No. of firms	Buy	Hold	Sell
1	Restatement Firms	578	4.68% (3.89)**	-3.76% (2.77)*	-0.92% (-1.14)	567	3.97% (3.47)**	-3.12% (-2.71)	-0.85% (-0.83)
2	Control Group of Firms in Same Industry[b]	1,148	2.47% (2.63)	1.93% (1.58)	-0.54% (-0.82)	1,133	2.11% (2.38)	-1.59% (-1.40)	0.52% (0.71)
	Difference: ([1] – [2])		*2.21% (2.87)** *	*-1.83% (-1.98)** *	*-0.38% (-0.69)*		*1.86% (2.04)** *	*-1.53% (-1.60)*	*-0.33% (--0.64)*

** Significant at the 0.01 level; * significant at the 0.05 level

[a] Observations for which the restatement announcement occurs within the two quarters following the restatement period are excluded.

[b] The control group is constructed by matching each observations with two firms in the same industry (based on four-digit SIC code) that are closest in size to the restatement firm based on total assets at the end of the quarter preceding the first restatement quarter. The change in the analysts' recommendations is computed for the same quarters as for the matched sample firm.

Table 10
Revisions in Analysts' Recommendations in the Months Following the End of the Quarter with Likely Earnings Management:
Results for Firm Groups Based on the Likelihood of Earnings Management in the Quarter[a]

		No. of firms	First Month after the "Managed" Quarter			Second Month after the "Managed" Quarter			Third Month after the "Managed" Quarter		
			Buy	Hold	Sell	Buy	Hold	Sell	Buy	Hold	Sell
1	Full Sample	65,164	-0.21	0.54	-0.33	-0.27	0.31	-0.04	-0.32	0.53	-0.21
2	Loss or Earnings-Decline Avoiders	24,143	-0.09	0.23	-0.14	-0.19	0.13	0.06	-0.14	0.25	-0.11
3	Loss or Earnings-Decline Manipulators	1,359	0.69	-0.10	-0.59	0.40	-0.42	0.02	0.18	-0.61	0.43
	Difference ([3] – [2])		*0.78***	*-0.33*	*-0.45*	*0.59**	*-0.55*	*-0.04*	*0.32*	*-0.86***	*0.13*
	Difference ([3] – [1])		*0.90***	*-0.64**	*-0.26*	*0.67**	*0.73**	*0.06*	*0.50*	*-1.14***	*0.64**

[**] Significant at the 0.01 level; [*] significant at the 0.05 level
[a] Values reported in the table are the change in the percentage of analysts' Buy, Hold and Sell recommendations.

Table 11
Future Operating Performance of Earnings Management Groups Relative to Control Groups

	Earnings Management Group	No. of Obs.	Annual Performance: One-Year-Ahead						Annual Performance: Two-Years-Ahead					
			Return on Sales		Return on Assets		Sales Growth		Return on Sales		Return on Assets		Sales Growth	
			Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
A. Restatement Sample														
1	Restaters	526	-0.058	0.029	-0.045	0.013	0.029	0.038	-0.019	0.020	-0.024	0.016	-0.045	0.024
2	Control Sample[a]	526	-0.030	0.038	-0.022	0.030	0.049	0.049	0.014	0.024	-0.008	0.022	0.013	0.047
	Test of differences: [1]-[2]		*(-2.34)***	*(-2.09**)*	*(-2.28)***	*(-1.68)**	*(-2.47)***	*(-1.42)*	*(-1.72)**	*(-0.89)*	*(-2.64)**	*(-0.75)*	*(-3.19)***	*(-2.42)***
B. Managed Earnings Sample														
3	All Cases	65,164	0.075	0.076	0.068	0.056	0.153	0.131	0.080	0.079	0.063	0.061	0.130	0.125
4	Control Sample[a]	1,363	0.079	0.078	0.073	0.064	0.149	0.135	0.087	0.081	0.070	0.064	0.135	0.124
5	Loss or Earnings Decline Avoiders	22,612	0.075	0.076	0.068	0.057	0.154	0.132	0.080	0.079	0.062	0.061	0.129	0.125
6	Loss or Earnings Decline Manipulators	1,374	0.065	0.060	0.058	0.057	0.119	0.106	0.069	0.071	0.065	0.058	0.137	0.127
	Test of differences: [6] – [5] [b]		*(-2.47)***	*(-2.91)***	*(-1.81)**	*(0.23)*	*(-3.58)***	*(-2.89)***	*(-1.78)**	*(-1.01)*	*(0.43)*	*(-0.16)*	*(0.97)*	*(0.17)*
	[6] – [4]		*(-2.27)***	*(-2.81)***	*(-2.36)***	*(-1.40)*	*(-3.19)***	*(-3.32)***	*(-2.18)***	*(-1.19)*	*(-0.34)*	*(-0.58)*	*(0.39)*	*(-0.26)*
	[6]- [3]		*(-2.04)***	*(-2.97)***	*(-1.98)***	*(0.34)*	*(-3.25)***	*(-2.69)***	*-(1.65)*	*(-1.09)*	*(0.24)*	*(-0.47)*	*(0.85)*	*(0.12)*
7	Loss Avoiders	14,427	0.075	0.072	0.069	0.055	0.151	0.128	0.076	0.078	0.056	0.053	0.119	0.121
8	Loss Manipulators	857	0.068	0.061	0.061	0.062	0.112	0.10	0.069	0.068	0.064	0.056	0.142	0.133
	Test of differences: [8]-[7]		*(-1.66)**	*(-1.78)**	*(-1.76)**	*(1.43)*	*(-3.24)***	*(-2.89)***	*(-1.12)*	*(-0.26)*	*(0.92)*	*(0.37)*	*(1.79)**	*(1.67)**
9	Earnings Decline Avoiders	8,185	0.076	0.084	0.067	0.058	0.159	0.138	0.087	0.081	0.073	0.074	0.148	0.131
10	Earnings Decline Manipulators	497	0.062	0.061	0.056	0.051	0.136	0.119	0.073	0.080	0.069	0.064	0.135	0.122
	Test of differences: [10]-[9]		*(-2.12)**	*(-2.94)**	*(-1.61)*	*(-1.48)*	*(-2.32)***	*(-2.07)***	*(-1.54)*	*(-0.31)*	*(-0.47)*	*(-0.59)*	*(-1.62)*	*(-1.34)*

[a] Control sample consists of firms in the same industry (defined as the four-digit SIC code) as the restaters (or the loss or earnings decline manipulators) that are closest in size (based on total assets) to the manipulators in the year examined. If no matched firm with assets within +/-20% of the firm's assets could be found, the observation was excluded from the analysis.

[b] T-statistics are provided for the mean differences; Wilcoxon Z scores are provided for the median differences.

** significant at the 0.05 level; * significant at the 0.01 level

Legend: (Variables below are truncated at +/- 1% of the distribution.)

Return on Sales: Income from continuing operations divided by sales

Return on Assets: Income from continuing operations divided by the average value of assets over the recent four quarter ends

Sales Growth: Change in sales from year 0 to year +1 or from year +1 to year +2, divided by base year's sales.