

# Accounting Restatements: Are They Always Bad News for Investors?

Jeffrey L. Callen\*, Joshua Livnat\*\*, Dan Segal\*\*\*

\*Rotman School of Management  
University of Toronto  
Toronto, Ontario M5S 3E6  
Canada  
e-mail: [callen@rotman.utoronto.ca](mailto:callen@rotman.utoronto.ca)

\*\*Stern School of Business  
New York University  
New York, NY 10012  
USA  
e-mail: [jlivnat@stern.nyu.edu](mailto:jlivnat@stern.nyu.edu)

\*\*\*Rotman School of Management  
University of Toronto  
Toronto, Ontario M5S 3E6  
Canada  
e-mail: [dsegal@rotman.utoronto.ca](mailto:dsegal@rotman.utoronto.ca)

We gratefully acknowledge the Social Sciences and Humanities Research Council of Canada for financial support.

## **Accounting Restatements: Are They Always Bad News for Investors?**

### **ABSTRACT**

This study investigates a large sample of financial statement restatements over the period 1986-2001, and compares restatements caused by changes in accounting principles to those caused by errors. Typically, investors perceive restatements as negative signals due to three potential reasons: (i) the restatement indicates problems with the accounting system that may be manifestations of broader operational (and managerial) problems, (ii) the restatement causes downward revisions in future cash flows expectations, and (iii) the restatement indicates managerial attempts to cover up income decline through “cooking the books”.

We provide evidence that market reactions to restatements due to errors are generally negative. We show that these restatements come in periods of declining profits and lower profits than industry peers for the restating firms, consistent with both opportunistic managerial behavior and operational problems. However, investors’ reactions to **income-increasing** restatements due to errors are not different from zero, suggesting that the perceived failure of the accounting system is just offset by the upward revisions in future cash flow expectations in these cases of income-increasing errors. Thus, our combined results show that not all restatements are alike; users of the information need to carefully assess the existence and potential effects of the three factors that typically cause the downward revisions in stock prices on a case by case basis.

## **Accounting Restatements: Are They Always Bad News for Investors?**

### **1. Introduction**

The academic accounting literature documents fairly extensively the negative impact on equity returns of accounting restatements arising out of accounting errors and (possibly, in anticipation of) SEC involvement.<sup>1</sup> In recent years, investors began to pay particular attention to companies that restate earnings; several sources now track restatements (e.g., Wall Street Journal, Huron Consulting Group) and some services began using restatements to assess the quality of earnings (e.g. Criterion LLC). We conjecture that the negative market reactions to restatements are caused by the following three factors, either singly or in tandem: (i) the downward revision of future cash flows expectations induced by the revelation of new information; (ii) the indication that the restating company has a weak accounting information (and reporting) system, possibly signaling broader managerial problems in the firm; and (iii) the suggestion of opportunistic behavior by managers as evidenced by their efforts to increase reported profits using unacceptable methods, estimates or other intentional errors.

The primary purpose of this study is to shed light on the existence of these factors and their relative contribution to the market's reaction by focusing on market reactions to restatement announcements where not all three factors are present simultaneously. Specifically, we assess market reactions to announcements of income-increasing

---

<sup>1</sup>Kinney and McDaniel (1989), DeFond and Jiambalvo (1991), Feroz, Park and Pastena (1991), Dechow, Sloan and Sweeney (1996), Beneish (1997), Griffin, Grundfest and Perino (2001), Palmrose, Richardson and Scholtz (2001), Turner, Dietrich, Anderson and Bailey (2001), Richardson, Tuna, and Wu (2002) and Wu (2002).

restatements due to errors and compare them to income-decreasing restatements and to income-increasing restatements due to changes in accounting principles. We also assess changes in earnings and cash flows from the period before the restatement to the period of the restatement, and compare the financial performance of restating firms relative to their industry peers. Separate evidence is presented regarding “legitimate” restatements – those due to changes in accounting principles as well as “illegitimate” restatements that are caused by accounting errors or misapplication of accounting standards.

This study finds that the market reaction to announcements of income-increasing restatements due to errors is not statistically different from zero. Since we find that the cash flows for such firms improve significantly over the three-year period prior to the restatement, both in absolute terms and relative to industry peers, managerial opportunistic behavior is not at issue. Rather, the evidence suggests that the two other factors act in opposition to each other. Specifically, the accounting/operating system breakdown inherent in the error restatement appears to offset potential positive revisions in future cash flows, yielding an insignificant market reaction.<sup>2</sup> Our results also show that market reactions to announcements of income-increasing restatements due to changes in accounting principle are not statistically different from zero. Since there is no breakdown in the accounting system for restatement arising out of changes in accounting principle and since we present evidence consistent with managerial opportunistic behavior for these restating firms, the insignificant market reaction suggests that the upward revisions in future cash flow expectations for these income-increasing announcements just offset the negative effects of managerial opportunistic behavior.

---

<sup>2</sup> Another possible explanation is that there is no effect on the expected cash flows and the “system breakdown” is perceived to be an innocent non-recurring incident.

While this study confirms the general apprehension financial statement users have towards restatements, it also points out that restatements do not always have negative effects on income, are not always motivated by declining cash flows or profits, and are not necessarily associated with significant negative market reactions. This suggests that investors and other financial statement users should carefully examine the specific context of the restatement, and analyze its potential motivations before taking action.

## **2. Restatement Types**

There are two broad scenarios under GAAP that require the restatement of financial statements, namely, changes in accounting principle and accounting errors.<sup>3</sup> Specifically, APB Opinion No. 20 (APB, 1971) requires the restatement of financial statements in five situations involving changes in accounting principle: a change from LIFO inventory valuation to another method; a change in the method of accounting for long-term construction-type contracts; a change to or from the full-cost method of accounting in the extractive industries; issuance of financial statements by a (closely held) company for the first time to obtain additional equity capital, to effect a business combination, or to register securities; and a new accounting pronouncement recommends that a change in accounting principle be treated retroactively. Under APB 20, accounting errors are treated as prior period adjustments, so comparative financial statements are restated. Accounting errors include mathematical mistakes, oversights, changes from accounting principles that are not in accordance with GAAP, changes in estimates not

---

<sup>3</sup>Financial statements are also restated when there is a change in entity such as a pooling of interest or a change in the companies (subsidiaries) included in the combined (consolidated) financial statements. In addition, companies must restate their financial statements when discontinuing business segments. These restatements are not included in our sample.

prepared in good faith, misuse of facts and misclassifications.

Accounting errors are clearly of concern to the firm's stakeholders, and to regulators such as the SEC, especially if the error appears to be a premeditated attempt by management to mislead some if not all of the firm's stakeholders. Changes in accounting principle that lead to restatements are less likely to be an indication of earnings management. First, many if not most changes in accounting principle arise out of a legitimate requirement to disclose changing circumstances that may affect the firm's performance. Second, even if changes in accounting principle are used to manage the firm's earnings, earnings management is not necessarily pernicious since it may be one means of providing capital markets with information about the firm's future prospects.<sup>4</sup> On the other hand, to the extent that earnings are managed to mislead stakeholders or are perceived as such, changes in accounting principle, like accounting errors, may have negative implications about the firm's future performance as compared with prior performance. Evidence on whether restatements are caused by managerial opportunistic behavior can be gleaned from comparisons of restatements due to changes of accounting principles and those due to accounting errors.

### **3. The Sample**

The sample was obtained by downloading all 10-K reports for the years 1986 to 2001 where the word "restatement" appears within three words of "financ" (short version of financial, finance, etc.). The sample was then limited to include all companies that restated their financial statements due to accounting errors or changes in accounting

---

<sup>4</sup> Schipper (1989), Healy and Whalen (1999), Dechow and Skinner (2000) and Parfet (2000).

principle. Accounting restatements because of changes in accounting principle arising out of new accounting standards or new SOPs were excluded because these are not under management discretion.<sup>5</sup> Restatement announcement dates were obtained from company related news articles using Lexis-Nexis. If the restatement announcement date could not be found from news articles, the filing date (the date on which the restated 10-K was submitted to the SEC, and presumably the date it became public) of the first 10-K that discusses the restatement was used instead.

The final sample comprises 695 restatements due to accounting errors and 165 due to changes in principle. The sample is further broken down by the specific reason for the restatement (see Table 1). Thirteen categories of restatement were defined based on the reason for the restatement, four involving changes in principle and nine involving accounting errors. Given the importance of revenues to firm value, we separate revenue related errors into two categories: restatements due to revenue errors alone and restatements due to revenue errors and other errors. Otherwise, restatements involving multiple accounting errors of more than one category are included in the catchall category “other errors.” The compensation error category consists primarily of restatements arising out of the failure to account properly for stock awards and stock options. The categories denoted “errors related to other income statement items” and “errors related primarily to balance sheet accounts” are defined by their description in the 10-K report.<sup>6</sup> Errors

---

<sup>5</sup> Several new SOP's during the sample period included revenue recognition and in-process R&D.

<sup>6</sup> While from a double-entry bookkeeping perspective the error may concurrently involve both the income statement and the balance sheet, if the 10-K report states, for instance, that the error entails the underreporting of an expense item, then the error is categorized as an “other income statement” error rather than as a “balance-sheet” error. The assumption underlying this approach is that the manner in which the error is reported in the 10-K not only reflects the genesis of the error but also provides potential information to the market about management’s incentive to err.

related to mergers and acquisitions consist primarily of errors related to the allocation of the purchase price. Innocent errors are cases of mathematical or computational error.

Table 1 shows that the largest category of restatements arising out of changes in accounting principle are changes from LIFO (46.1%) followed by changes to or from full cost to successful efforts (23.0%). The largest accounting error categories, excluding the “other error” category, involve income statement accounts, namely, accounting errors involving only revenues (19.0%), errors related to revenues and other items (17.1%), and errors related to other income statement items (16.9%). These three categories cover over 50% of sample restatements due to accounting errors. Untabulated results indicate that companies that commit accounting errors, especially errors involving revenues and mergers and acquisitions, are younger by comparison to companies that restate because of a change in accounting principle. This suggests that companies in their initial growth phase are more likely either to manipulate their accounts, especially revenues, possibly to mitigate negative earnings and cash flows, or to suffer from inadequate managerial controls during their growth stages.<sup>7</sup>

Table 1 also shows the distribution of the sample restatements by year and by category. The year is defined as the year of the restatement announcement date. The sample comprised of changes in accounting principle shows cyclical behavior with an overall increasing trend. In contrast, the sample of accounting errors shows an almost

---

<sup>7</sup> See also Table 4 below. For other evidence that growth and age help to characterize error restating firms, see Beneish (1997), Callen, Segal and Robb (2003) and Richardson, Tuna and Wu (2002). See Kinney and McDaniel (1989) and DeFond and Jiambalvo (1991), for contrary evidence in the case of growth.



monotonic sharply increasing trend until 1999.<sup>8</sup> The reason for the limited number of restatement cases for both samples in 2000 and in 2001 is probably that Lexis did not update all the 10-K cases for those years.

As far as changes in accounting principle are concerned, only changes from LIFO show a clear upward trend (until 1999).<sup>9</sup> In contrast, the data indicate a sharp upward trend in accounting errors of all types, but especially errors involving revenues, errors involving other income statement items, errors related to mergers and acquisitions, errors related to balance sheet accounts, and other errors.<sup>10</sup> Untabulated results show that a significant proportion of the restatements due to accounting errors occurred in the software and the electronic (and electric) equipment manufacturers industries.

Restatements are often followed by or initiated by regulatory involvement, primarily of the Security and Exchange Commission (SEC). Untabulated results show that changes in accounting principle rarely result in SEC involvement. In contrast, SEC involvement is ubiquitous in the case of accounting errors. Out of the 695 accounting errors in our sample, 181 or 30.2% led to or were generated by SEC involvement. Moreover, SEC involvement increased quite dramatically from 1996 to 1999, especially for the revenue error categories. Indeed, we find that restatements involving revenues had a 57% chance of SEC involvement, whereas the likelihood of SEC involvement for each of the other categories was 11% or less.

Table 2 provides information about the frequency of restatements as a percentage

---

<sup>8</sup> Unlike restatements arising out of changes in accounting principle, the trend in accounting error restatements is widely documented. See Turner et al (2001), for example.

<sup>9</sup> Most LIFO changes were to FIFO – out of the total number of LIFO restatements, 69 involved changes to FIFO and 7 involved changes to other methods.

<sup>10</sup> Note again that the data for 1999-2001 may not be complete because some firms may have delayed the submission of the restated 10-K.

of all firms covered by Compustat. Prior to 1996, the number of restatements in our sample constitutes less than 1% of all firms listed on Compustat. This ratio increases subsequently, reaching 1.77% in 1998. When computing the ratio of restatements to the number of companies in the same 4-digit SIC industry on Compustat, we find the ratio increasing through 1998, reaching over 2% in 1997-1999. These findings indicate that restatements, while infrequent, involve a not insignificant proportion of firms, and are comparable in frequency to other extreme events such as audit qualifications, auditor changes and bankruptcies.

#### **4. The Impact of Restatements on Net Income**

Table 3 (Panel A) shows the number of restatements broken down by the sign of their effect on net income, as well as by restatement category. Restatements defined as having a zero change effect on net income either had no effect on net income, or the effect could not be determined from the available data. Abstracting from zero-effect earnings restatements, Table 3 (Panel A) shows that approximately 20% of all restatements had a positive effect on net income, with 40% of changes in accounting principle and 15% of accounting errors resulting in income increasing restatements. Palmrose, Richardson and Scholtz (2001) report that 35% of all restatements in their sample are income increasing, a greater proportion than in our sample. However, their sample selection process involves (among other criteria) targeting companies with restatements due to changes in accounting for In-Process-R&D (IPRD). Such restatements (which accounted for 23% of the Palmrose and Scholz (2000) original sample) are primarily income-increasing restatements. Our sample selection process

excludes companies that changed their accounting for IPRD since these changes are not discretionary.<sup>11</sup>

Table 3 (Panel B) shows that revenue and compensation expense restatements yield the smallest proportion of positive accounting error restatements relative to the total number of restatements, whereas M&A related errors exhibit the largest proportion of positive restatements (27%).

Table 4 shows the cumulative effect of the restatements on net income over a three-year period (scaled by total assets in the year prior to the restatement announcement date) categorized by the reason for the restatement.<sup>12</sup> The revenue restatements have the greatest negative impact on net income-- on average – 11% and – 6.4% of total assets. Excluding the catchall “other errors” category, the next largest impact on net income derives from balance sheet errors and other income statement errors, – 5.3% and – 4.4%, respectively. The effect is typically small and oftentimes close to zero for the other categories, especially for changes in accounting principle.

Untabulated results show that the effect of restatement on net income is generally negative for both SEC and non-SEC cases across all categories. However, contrary to our prior intuition, there appears to be little difference between the effects on net incomes of SEC cases relative to non-SEC cases. In fact, non-SEC cases had a greater negative effect on net incomes than SEC cases for a number of categories. Only when the accounting errors are due to revenues alone, does SEC involvement result in a substantially larger negative impact on cumulative net income by comparison to non-SEC cases.

---

<sup>11</sup> Richardson, Tuna and Wu (2002) also exclude these data.

<sup>12</sup> The table shows the results for the restatement cases for which we found Compustat data item 6 (total assets). Turner et al (2001) and Palmrose and Scholz (2002) also provide data concerning the effect on net income of accounting error restatements but not by the categories listed in this study.

## 5. Restatements and Financial Statement Performance

The earnings management literature suggests that opportunistic managers manipulate earnings in order to mask poor performance by selecting income-increasing accounting methods and estimates.<sup>13</sup> Since income-decreasing restatements due to accounting errors may indicate opportunistic behavior by managers, we should be able to determine whether restatements are due to earnings management, by comparing the performance of restating firms prior to and during the period affected by the restatement using the restated financial information.<sup>14,15</sup> Specifically, if earnings management is the primary motivation for the overly aggressive accounting methods leading to restatements or the change in accounting method, then we should observe for the income decreasing restatement cases that firm performance deteriorated during the restatement period from the prior period, either in absolute terms or relative to the performance of other companies in the same industry.<sup>16</sup> In contrast, we should not observe declining performance for firms with income-increasing error restatements since the latter reported lower income during the restatement period.

---

<sup>13</sup> Another motivation for managers to manipulate earnings is to smooth earnings, usually by accrual manipulation. One common method for accrual manipulation is through changes in estimates. Changes in estimates, however, are not considered errors and therefore do not require restatement of financial statements.

<sup>14</sup> Note that when comparing the performance of the restating firms across periods (in Table 5 below) we are forced to use a two-tail test. For instance, suppose that the firm inflated its revenues and was forced to restate them. One cannot know a priori whether the inflated revenues are larger than the revenues reported in the pre-restatement period. Even though the inflated revenues are larger than the true revenues, the inflated revenues may be still lower than the revenues reported in the pre-restatement period.

<sup>15</sup> We repeated the analysis using pre-restatement data. The results are qualitatively the same.

<sup>16</sup> This is consistent with the Callen, Robb and Segal (2003). They provide evidence of ex ante revenue management by restatement firms that have suffered a string of losses. Dechow, Sloan and Sweeney (1996) and Richardson, Tuna and Wu (2002) also provide evidence that capital market pressures, such as the desire to attract external financing, induce earnings management via aggressive accounting.

We focus on two performance variables, net operating cash flow and net income before extraordinary items.<sup>17</sup> We calculate the 3-year sum of each of these performance measures and divide it by the 3-year sum of total assets. We examine these ratios in the three-year period prior to the restatement and for the period covered by the restatement. For example, if the company filed the restated 10-K for 1995-1997 in 1998, we examine the performance in the periods 1992-1994 (prior to the restatement) and 1995-1997 (during the restatement).

Panel A of Table 5 shows the means of the two performance measures for three categories of restatements, those due to changes in accounting methods, those due to accounting errors, and for the entire sample. It also shows the income-increasing and income-decreasing restatements separately. As can be seen from the table, both for restatements due to errors and for changes in accounting principles, the ROA deteriorated from the three-year period prior to the restatement to the period covered by the restatement. The positive restatements panel shows that there is no difference in ROA and OCF before and during the restatement. However, for the income decreasing restatements we find that both ROA and OCF during the restatement period are significantly lower. These findings are consistent with earnings management as the primary driver for the overly aggressive accounting method or the change in accounting method.

Panel B of Table 5 contrasts the performance measures of restating firms and the median firm in their 2-digit SIC industry. As the table indicates, the entire sample of

---

<sup>17</sup> Note that the analysis in this paper is based on financial statement data as reported by the firm prior to restatement. Compustat does not change the original data after the restatement. Although Compustat does provide additional information about restated income, we cannot use these data because they may include the effects of subsequent restatements, accounting changes, acquisitions and divestitures.

error-related restating firms had significantly lower levels of operating cash flows and lower ROA in the three-year period prior to the restatement relative to their industry peers, and also in the period of the restatement. For firms with error-related income-decreasing restatements, we find lower operating cash flows than their industry peers during the period of restatement but not in the period prior to the restatement period. In addition, the ROA is lower than their industry peers' ROA both prior to and during the period of restatement, but the difference in ROA (between the restating firms and the industry peers) is greater during the period of restatement. These findings point to the deterioration in financial performance of firms with error-related income decreasing restatements, as both the restating firm's cash flows and profitability have decreased relative to their industry peers in the period of restatement. Hence, these findings also suggest that the primary motive for the change in accounting method and the earnings manipulation is to mask poor financial performance.

In the case of income-increasing restatement, where opportunistic managerial behavior is not expected (barring potential "big bath" behavior), we find that OCF in the period of the restatement is not significantly different from the median OCF in the industry, but the industry adjusted OCF prior to the restatement is negative and significant. The industry adjusted ROA is negative and significant both in the period prior to and of the restatement. These findings suggest that for the income-increasing restatements there was no deterioration in financial performance during the restatement period and perhaps even an improvement if we look at cash flows.

Summarizing these results, we find that firms that restated their income downwards experienced deteriorating financial performance both compared to their past

performance and to their industry peers, and therefore, this evidence is consistent with managerial opportunistic behavior. Firms that restated their income upwards did not experience deteriorating financial performance. In the next section, we examine the market reactions to these announcements.

## **6. Market Reactions**

Table 6 reports the size-adjusted returns for the three-day window centered on the announcement date of the restatement. To calculate the size-adjusted returns, each individual return is assigned to a size decile (based on market value of equity) and the equally-weighted average size-decile return is subtracted from it. As can be seen in the table, and consistent with many prior studies referenced above, market reaction to the average error restatement is negative and significantly different from zero. In contrast, the average market reaction to the announcement of restatements arising out of changes in accounting principle is not significantly different from zero. The table further breaks down the market reactions to income-increasing and income decreasing restatements. It reports market reactions that are insignificantly different from zero for income-increasing restatements, both for accounting errors and changes in accounting principle.<sup>18</sup> In contrast, market reactions are negative and significant for income-decreasing error announcements, but insignificantly different from zero for income-decreasing restatements due to changes of accounting principle.

These results are consistent with the following conjectures:

---

<sup>18</sup> This is consistent with Kinney and McDaniel (1989) and Palmrose et al (2001) in the case of accounting errors.

1. The market reacts negatively and significantly to income-decreasing restatements due to errors, most probably because all three potential factors underlying the market reaction to restatements are present and pointing in the same negative direction. In particular, there are likely negative future cash flow implications, indications that the accounting systems (and potentially other operations) are weak, and indications (as we saw in Table 5) of managerial opportunistic behavior in attempting to increase income.
2. The market does not react negatively to income-increasing restatements due to errors, probably because failure in the accounting systems (and other operations), as evidenced by the restatement error, just offsets but does not outweigh the potential positive future cash flow implications of the upward income restatements. Note that in this case we do not suspect managers of opportunistic behavior, because income was not significantly lower during the restatement period relative to the prior period or relative to industry peers. (See Table 5). Thus, only two of the three factors are present here – weaknesses in the accounting systems (expected to negatively affect prices) and the (positive) revisions in future cash flows.
3. The market seems not to penalize firms than engage in income-increasing restatements through changes in accounting methods, although the evidence reported in Table 5 for these firms indicates potential opportunistic behavior by managers. Apparently, the negative effects of this opportunistic behavior are offset by upward revisions in future cash



flow expectations since weakness in the accounting system is not an issue here.

## **7. Summary and Conclusions**

This study investigates the potential factors that may affect perceptions of investors and other financial statement users upon the announcement of restatements of previously issued financial statements. We posit three such potential factors: (i) weaknesses in the accounting systems (and possibly operational systems as well), (ii) future cash flow implications of the newly restated information, and (iii) opportunistic managerial behavior as evidenced by the attempt to report higher profits than warranted. Of these three factors, we are able to provide direct evidence only regarding opportunistic managerial behavior by comparing income during the restatement period to the prior period and to the income of company peers; evidence of lower profits is consistent with opportunistic managerial behavior. However, by investigating restatements where not all three factors are present, we are able to shed some light, albeit indirectly, on the relative importance of these factors. This is done by examining market reactions to income-increasing restatements due to errors and to changes in accounting principle.

Consistent with the literature, we find that when all three factors are likely to be present, that is, in cases of income-decreasing restatements due to errors, market reactions are significantly negative. In contrast, when only two of the three factors are likely to be present, market reactions are insignificant. In particular, in the case of income-increasing restatements due to accounting errors, only two factors are likely present, the upward revisions in cash flows and the weaknesses in accounting (and operating) systems that led

to the errors. Opportunistic managerial behavior is unlikely to be present because income does not differ significantly from the prior period or from industry peers. The insignificant market reaction in this case suggests that the signal conveyed by the restatement concerning the weakness in the accounting system offsets but does not outweigh the potential upward revisions in cash flows. A similar analysis holds when firms restate their financial statements by making (legitimate) changes of accounting principle. Here weakness in the accounting system is not at issue. Rather, when these restatements increase income, the potential factors at work are upward revisions in future cash flow expectations and opportunistic managerial behavior, as evidenced by deterioration in cash flows over time and relative to peers. The insignificant market reaction in this case suggests that opportunistic managerial behavior just offsets but does not outweigh upward revisions in future cash flow expectations.

Overall, the evidence provided in this study suggests that investors, creditors, and other financial statement users should carefully analyze the specific restatement announcement, and assess the potential existence and direction of the three factors posited in this study in order to determine the market impact of the restatement. Our results indicate that these factors do not always act in tandem and that there may be tradeoffs among them. As a consequence, while the market often reacts negatively to the announcements of restatements, this is not always the case. Indeed, we have shown that there are classes of restatements where not all three factors apply and those that do appear to offset each other. Knowledge concerning the context of the restatement and the potential factors underlying the restatement are potentially crucial inputs for investors and other stakeholders of the firm in their decision making processes.



## References

Accounting Principles Board (APB), 1971, Opinion No. 20, "Accounting Changes".

Beneish, M. D. 1997. "Detecting GAAP Violation: Implications For Assessing Earnings Management Among Firms With Extreme Financial Performance," *Journal of Accounting and Public Policy* 16: 271-309.

Beneish, M. D. 1999. "Incentives And Penalties Related To Earnings Overstatements That Violate GAAP," *Accounting Review* 74: 425-457.

Callen, J.L. S. Robb and D.Segal. 2003. "Revenue Manipulation and Restatements by Loss Firms," Working Paper, University of Toronto.

Dechow, P. M. and D. J. Skinner. 2000. "Earnings Management: Reconciling The Views Of Accounting Academics, Practitioners, And Regulators," *Accounting Horizons*, 14: 235-250.

Dechow, P., R. Sloan and A. Sweeney.1996. "Causes And Consequences Of Earnings Manipulation: An Analysis Of Firms' Subject To Enforcement Actions By The SEC," *Contemporary Accounting Research* 13: 1-36.

DeFond, M. L. and J. Jiambalvo.1991. "Incidence And Circumstances Of Accounting Errors," *Accounting Review* 66: 643-655.

Feroz, E. H., K. Park and V. S. Pastena. 1991. "The Financial And Market Effects Of The SEC's Accounting And Auditing Enforcement Releases," *Journal of Accounting Research* 29 (Supp): 107-142.

Griffin, Grundfest and Perino .2001."Stock Price Response to News of Securities Fraud Litigation: Market efficiency and the Slow Diffusion of Costly Information," Working Paper, University of California-Davis.

Healy, P. M. and J. M. Wahlen. 1999. "A Review Of The Earnings Management Literature And Its Implications For Standard Setting," *Accounting Horizons* 13: 365-383.

Kinney, W. R., Jr. and L. S. McDaniel. 1989. "Characteristics Of Firms Correcting Previously Reported Quarterly Earnings," *Journal of Accounting and Economics* 11: 71-93.

Palmrose, Z., and S. Scholtz. 2000. "The Circumstances and Legal Consequences of Non-GAAP Reporting: Evidence from Restatements," accepted to the 2002 *Contemporary Accounting Research* Conference.

Palmrose, Z., V.J. Richardson and S. Scholtz. 2001. "Determinants of Market Reactions to Restatement Announcements," Working Paper, University of Kansas.

Parfet, W. U. 2000. "Accounting Subjectivity And Earnings Management: A Preparer Perspective," *Accounting Horizons* 14: 481-487.

Richardson, S., I.Tuna, and M. Wu. 2002. "Predicting Earnings Management: The Case of Earnings Restatements," Working Paper, University of Pennsylvania.

Schipper, K. 1989. "Commentary on Earnings Management," *Accounting Horizons* 3: 91-102.

Turner, L., J.R. Dietrich, K. Anderson, and A.D. Bailey, Jr. 2001. "Accounting Restatements," Working Paper, University of Illinois.

Wu, M. 2002. "Earnings Restatements: A Capital Market Perspective," Working Paper, New York University.

**Table 1: Restatements by Year and Reason for the Restatement**

<b>Reason</b>															
<b>Year</b>	<b>110</b>	<b>120</b>	<b>130</b>	<b>140</b>	<b>Total</b>	<b>201</b>	<b>202</b>	<b>203</b>	<b>204</b>	<b>205</b>	<b>206</b>	<b>207</b>	<b>208</b>	<b>209</b>	<b>Total</b>
1986	0	1	0	0	<b>1</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
1987	3	0	0	0	<b>3</b>	1	0	0	0	1	0	2	0	0	<b>4</b>
1988	4	2	0	1	<b>7</b>	3	1	0	0	2	0	4	1	2	<b>13</b>
1989	0	1	0	4	<b>5</b>	2	1	0	2	1	0	1	2	2	<b>11</b>
1990	2	1	0	2	<b>5</b>	4	2	1	0	3	0	2	2	1	<b>15</b>
1991	4	5	0	2	<b>11</b>	1	3	0	0	4	0	2	2	1	<b>13</b>
1992	5	5	1	1	<b>12</b>	3	4	1	1	4	0	1	2	5	<b>21</b>
1993	5	1	1	2	<b>9</b>	5	5	0	0	2	2	4	2	7	<b>27</b>
1994	7	2	2	1	<b>12</b>	4	11	1	2	4	1	4	3	3	<b>33</b>
1995	4	4	2	1	<b>11</b>	6	5	1	3	4	2	5	0	13	<b>39</b>
1996	8	2	2	6	<b>18</b>	16	7	6	4	7	1	10	1	10	<b>62</b>
1997	11	3	5	2	<b>21</b>	27	11	6	3	12	4	10	1	16	<b>90</b>
1998	13	9	2	1	<b>25</b>	26	23	5	1	23	11	7	0	25	<b>121</b>
1999	5	2	3	4	<b>14</b>	17	19	6	4	23	14	12	2	26	<b>123</b>
2000	5	0	4	2	<b>11</b>	16	24	8	1	20	8	13	2	15	<b>107</b>
2001	0	0	0	0	<b>0</b>	1	3	1	0	2	1	6	0	2	<b>16</b>
<b>Total</b>	<b>76</b>	<b>38</b>	<b>22</b>	<b>29</b>	<b>165</b>	<b>132</b>	<b>119</b>	<b>36</b>	<b>21</b>	<b>112</b>	<b>44</b>	<b>83</b>	<b>20</b>	<b>128</b>	<b>695</b>
<b>% of Total</b>	<b>46%</b>	<b>23%</b>	<b>13%</b>	<b>18%</b>	<b>100%</b>	<b>19%</b>	<b>17%</b>	<b>5%</b>	<b>3%</b>	<b>16%</b>	<b>6%</b>	<b>12%</b>	<b>3%</b>	<b>18%</b>	<b>100%</b>

1XX - Change in Accounting Policy:

- 110 - Change from LIFO
- 120 - FULL to SUCCESSFUL EFFORT and vice versa
- 130 - Change in REVENUE RECOGNITION policy
- 140 - OTHER changes in accounting method

2XX - Errors:

- 201 - Errors involving revenues only
- 202 - Errors involving revenues and other items
- 203 - Errors related to compensation expense
- 204 - Errors related to capitalization and expensing
- 205 - Errors related to other income statement items
- 206 - Errors related to application of accounting for mergers and acquisitions
- 207 - Errors related primarily to balance sheet accounts
- 208 - Innocent Errors
- 209 - Other Errors

**Table 2**  
**Pervasiveness of Restatement Cases**

Year	N	By Year		By 4-digit SIC	
		RES_FREQ	ERR_FREQ	RES_FREQ	ERR_FREQ
1986	5298	0.02%	0.00%	0.03%	0.00%
1987	5113	0.14%	0.08%	0.20%	0.11%
1988	5323	0.38%	0.24%	0.70%	0.34%
1989	5237	0.31%	0.21%	0.37%	0.27%
1990	5250	0.38%	0.29%	0.50%	0.43%
1991	5276	0.45%	0.25%	0.63%	0.42%
1992	5557	0.59%	0.38%	0.87%	0.65%
1993	6223	0.58%	0.43%	0.87%	0.73%
1994	6832	0.66%	0.48%	1.11%	0.81%
1995	7217	0.69%	0.54%	1.26%	1.04%
1996	7506	1.07%	0.83%	1.32%	0.91%
1997	8250	1.35%	1.09%	2.01%	1.64%
1998	8265	1.77%	1.46%	2.23%	1.61%
1999	7878	1.74%	1.56%	2.04%	1.91%
2000	7568	1.56%	1.41%	1.78%	1.58%
2001	6636	0.24%	0.24%	0.20%	0.20%

Notes:

1. N is the total number of companies on Compustat
2. RES\_FREQ is the ratio of restatement cases to the total number of companies on Compustat (N)
3. ERR\_FREQ is the ratio of restatement cases due to errors to the total number of companies on Compustat (N)
4. By Year shows the simple average of restatement cases to the number of companies on Compustat
5. By 4-digit SIC columns are computed as the average (over all 4-digit SIC industries) of the number of restatement cases divided by the number of companies for each 4-digit SIC code.

Table 3: Sign of the Earnings Restatement by Category

**Panel A**

	<b>Number of Restatements</b>	<b>Zero Change Earnings Restatements</b>	<b>Negative Earnings Restatements</b>	<b>Positive Earnings Restatements</b>	<b>Proportion of Negative Earnings Restatements*</b>	<b>Proportion of Positive Earnings Restatements*</b>
<b>Total</b>	<b>860</b>	<b>118</b>	<b>599</b>	<b>143</b>	<b>80.8%</b>	<b>19.2%</b>
<b>Changes of Principle</b>	<b>165</b>	<b>24</b>	<b>85</b>	<b>56</b>	<b>60.3%</b>	<b>39.7%</b>
<b>Accounting Errors</b>	<b>695</b>	<b>94</b>	<b>514</b>	<b>87</b>	<b>85.5%</b>	<b>14.5%</b>

\* The proportions in the last two columns do not include zero change earnings restatements.

**Panel B**

<b>Reason for Restatement</b>	<b>Number of Positive Total Restatements</b>	<b>Percentage of Total Restatements</b>
Change from LIFO	26	34%
FULL to SUCCESSFUL EFFORT and vice versa	10	26%
Change in REVENUE RECOGNITION policy	7	32%
OTHER changes in accounting method	13	45%
Errors involving revenues only	13	10%
Errors involving revenues and other items	8	7%
Errors related to compensation expense	2	6%
Errors related to capitalization and expensing	4	19%
Errors related to other income statement items	21	19%
Errors related to application of accounting for M&A	12	27%
Errors related primarily to balance sheet accounts	11	13%
Innocent Errors	3	15%
Other Errors	13	10%

The table shows whether the restatement had a negative or positive (Positive Restatements) effect on net income. Zero change earnings restatements either had no effect on net income or the effect could not be determined from the available data.



**Table 4**  
**Cumulative Effect of the Restatement on Net Income by Reason**  
**For the Restatement**

<b>Reason for Restatement</b>	<b>Cumulative Effect of Restatements</b>	<b>Number of Restatements</b>
Change from LIFO	-0.002	64
FULL to SUCCESSFUL EFFORT and vice versa	-0.026	34
Change in REVENUE RECOGNITION policy	-0.013	21
OTHER changes in accounting method	0.017	21
Errors involving revenues only	-0.064	113
Errors involving revenues and other items	-0.110	98
Errors related to compensation expense	-0.016	20
Errors related to capitalization and expensing	-0.006	17
Errors related to other income statement items	-0.044	77
Errors related to application of accounting for M&A	-0.022	37
Errors related primarily to balance sheet accounts	-0.053	54
Innocent Errors	-0.008	17
Other Errors	-0.060	85

The cumulative effect of the restatements on net income is computed over a three-year period scaled by total assets in the year prior to the restatement announcement date.

**Table 5**  
**Comparison of Financial Statement Performance Before and During the Restatement Period**

<b>Panel A:</b>	<b>All Restatements</b>			<b>Positive Restatements</b>			<b>Negative Restatements</b>		
<b>Variable</b>	Acct. Chg.	Acct. Err.	Total	Acct. Chg.	Acct. Err.	Total	Acct. Chg.	Acct. Err.	Total
<b>OCF Before</b>	<b>0.01</b>	-0.00002	0.002	-0.0004	-0.014	-0.009	<b>0.0121</b>	0.0019	<b>0.0037</b>
<b>OCF During</b>	<b>0.0005</b>	-0.0024	-0.0017	0.0008	-0.003	-0.002	<b>0.0002</b>	-0.0025	<b>-0.0020</b>
<b>Difference</b>	<b>-0.009</b>	-0.0024	-0.0038	0.001	0.010	0.007	<b>-0.0120</b>	-0.0044	<b>-0.0057</b>
t-statistic	<b>1.99**</b>	0.90	1.62	0.19	-1.90*	-1.49	<b>1.82*</b>	1.24	<b>1.82*</b>
N	<b>86</b>	297	383	26	43	69	<b>49</b>	229	<b>278</b>
<b>ROA before</b>	<b>0.008</b>	<b>-0.0003</b>	<b>0.017</b>	-0.0052	-0.017	-0.012	<b>0.0083</b>	<b>-0.0016</b>	<b>0.0003</b>
<b>ROA During</b>	<b>-0.006</b>	<b>-0.06</b>	<b>-0.049</b>	0.01	-0.045	-0.023	<b>-0.014</b>	<b>-0.067</b>	<b>-0.058</b>
<b>Difference</b>	<b>-0.015</b>	<b>-0.06</b>	<b>-0.05</b>	0.015	-0.028	-0.01	<b>-0.022</b>	<b>-0.066</b>	<b>-0.058</b>
t-statistic	<b>1.78*</b>	<b>5.68**</b>	<b>5.9**</b>	-0.94	0.69	0.43	<b>2.08**</b>	<b>5.9**</b>	<b>6.17**</b>
N	<b>100</b>	<b>325</b>	<b>425</b>	31	46	77	<b>57</b>	<b>249</b>	<b>306</b>
<b>Panel B: Differences from Industry Medians</b>									
<b>OCF Before</b>	<b>0.007</b>	<b>-0.008</b>	-0.005	0.002	<b>-0.017</b>	<b>-0.01</b>	0.009	-0.0045	-0.0023
t-statistic	<b>1.80*</b>	<b>-1.88*</b>	-1.35	0.41	<b>-2.25**</b>	<b>-1.90*</b>	1.35	-0.99	-0.58
<b>OCF During</b>	0	<b>-0.003</b>	<b>-0.003</b>	<b>0.001</b>	-0.003	-0.002	-0.0003	<b>-0.003</b>	<b>-0.003</b>
t-statistic	0.3	<b>-3.65**</b>	<b>-3.58**</b>	<b>1.76*</b>	-1.52	-1.35	0.63	<b>-3.23**</b>	<b>-3.27**</b>
<b>ROA before</b>	<b>-0.02</b>	<b>-0.04</b>	<b>-0.03</b>	<b>-0.03</b>	-0.04	<b>-0.04</b>	-0.017	<b>-0.04</b>	<b>-0.036</b>
t-statistic	<b>-2.52**</b>	<b>-3.91**</b>	<b>-4.38**</b>	<b>-2.81**</b>	-1.19	<b>-1.82*</b>	-1.53	<b>3.8**</b>	<b>-4.05**</b>
<b>ROA During</b>	<b>-0.03</b>	<b>-0.08</b>	<b>-0.07</b>	-0.02	<b>-0.05</b>	<b>-0.04</b>	<b>-0.03</b>	<b>-0.089</b>	<b>-0.078</b>
t-statistic	<b>-3.35**</b>	<b>-7.20**</b>	<b>-7.66**</b>	-1.56	<b>-2.47**</b>	<b>-2.81**</b>	<b>-2.48**</b>	<b>-6.71**</b>	<b>-7.02**</b>
N	124	465	589	40	61	101	70	363	433

Notes:

1. OCF before (during) is the ratio of operating cash flow to total assets in the three years before (during) the period of the restatement. It is computed as the sum of operating cash flows over the three years period divided by the sum of the total assets for the same period. Panel B reports the ratio minus the median ratio for the 2-digit SIC industry.
2. ROA before (during) is the ratio of income before extraordinary items to total assets in the three years before (during) the period of the restatement. It is computed as the sum of the income over the three years period divided by the sum of the total assets for the same period. Panel B reports the ratio minus the median ratio for the 2-digit SIC industry.
3. DIFFERENCE measures the mean difference in the performance metric from the period prior to the period during the restatement for all firms for which data are available for both periods. DIFFERENCE does not generally measure the difference between the reported means of the performance metric because of different sample sizes in the two periods.
4. \* (\*\*\*) indicates a significance level of 10% (5%).
5. N is the number of observations
6. Total includes both error-related and accounting-change restatements cases.

**Table 6**  
**Abnormal Returns in the Three-Day Event Period**

	All Restatements		Negative Restatements		Positive Restatements	
	N	CAR	N	CAR	N	CAR
<u>Change in Accounting Policy</u>						
Change from LIFO	67	0.003	36	-0.003	22	0.020
FULL to SUCCESSFUL EFFORT and vice versa	35	-0.009	20	-0.001	9	<b>-0.014*</b>
change in REVENUE RECOGNITION policy	21	-0.013	10	-0.045	7	<b>0.021**</b>
OTHER changes in accounting method	18	0.001	6	-0.012	8	0.002
Total	141	-0.003	72	-0.009	46	0.010
<u>Errors:</u>						
Errors involving revenues only	109	<b>-0.108**</b>	89	<b>-0.104**</b>	8	-0.033
Errors involving revenues and other items	100	<b>-0.126**</b>	86	<b>-0.142**</b>	8	0.017
Errors related to compensation expense	22	-0.004	17	-0.002		
Errors related to capitalization and expensing	18	-0.043	11	-0.101	4	<b>0.081*</b>
Errors related to other income statement items	78	-0.007	50	-0.002	17	-0.020
Errors related to application of accounting for M&A	37	0.013	22	0.041	9	-0.014
Errors related primarily to balance sheet accounts	61	<b>-0.058**</b>	38	<b>-0.079**</b>	9	0.003
Innocent Errors	18	<b>-0.075*</b>	14	<b>-0.072*</b>	2	0.071
Other Errors	80	<b>-0.080**</b>	58	<b>-0.104**</b>	12	0.010
Total	523	<b>-0.070**</b>	385	<b>-0.083**</b>	69	0

Notes:

1. CAR is the cumulative size-adjusted returns over the three day period centered on the announcement date. Size-adjusted returns are cumulative returns on the firm's stock minus the equally-weighted average return on all firms assigned to the same size (market value) decile.
2. N is the number of restatement cases.
3. \* (\*\*) indicates significance level of 10% (5%).