Do Firms Manage Earnings Downward in a Book-Tax Conforming Manner?

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**ABSTRACT:** We investigate whether firms that manage their earnings downward do so in a manner that minimizes their current tax costs. We utilize a sample of firms that restated their earnings upward, since such firms likely engaged in downward earnings management activities. We test our main hypothesis through both in-sample and out-of-sample analyses and consistently find that our sample of income-decreasing earnings management restatement firms relied on relatively more book-tax conforming than temporarily or permanently nonconforming earnings management strategies. Combined with the evidence from Phillips et al. (2003) and Badertscher et al. (2006), our results support the conclusion that firms generally manage earnings in ways that minimize their current income tax costs, regardless of whether the earnings management seeks to increase or decrease reported earnings.

**Keywords:** Earnings management; current tax expense; deferred tax expense; earnings restatements.

**Data Availability:** All data used in this research are from publicly available sources.
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INTRODUCTION

This study investigates whether firms that manage their earnings downward do so in a manner that minimizes their current tax costs and thus furthers our understanding of how firms manage the earnings they report to investors. Phillips et al. (2003) find that deferred tax expense, which reflects temporary differences between book and taxable incomes, is incrementally useful beyond accrual-based measures in detecting income-increasing earnings management to avoid reporting a loss or an earnings decline. Their results suggest firms manage earnings upward in a book-tax nonconforming manner to minimize current tax costs. Badertscher et al. (2006) extend this research by demonstrating that deferred tax expense has incremental explanatory power beyond abnormal accruals in predicting earnings restatements that are due to upward earnings management. In contrast to these previous studies, the present study focuses on whether firms that manage earnings downward engage in tax-efficient book-tax conforming earnings management.

We utilize a sample of firms that restated their earnings (hereinafter, restatement firms), since such firms likely engaged in earnings management activities (e.g., Palmrose et al. 2004). We then focus on the subset of firms that restated their earnings upward, and thus presumably managed earnings downward. We hand-collect data that enable us to measure the amounts of three types of earnings management, specifically, book-tax conforming, temporarily nonconforming, and permanently nonconforming earnings management.¹ We examine whether restatement firms employed more book-tax conforming than nonconforming downward earnings management strategies (i.e., an in-sample analysis). We also investigate whether current tax

¹ As discussed below, book-tax conforming earnings management has current tax consequences, temporarily nonconforming earnings management has deferred tax consequences, while permanently nonconforming earnings management does not have income tax consequences.
expense is associated with the probability of restatement (i.e., an out-of-sample analysis), where current tax expense proxies for book-tax conforming earnings management.

Our in-sample analysis suggests that income-decreasing earnings management firms rely on relatively more book-tax conforming than temporarily or permanently nonconforming earnings management strategies, consistent with firms minimizing their current income tax costs. This result contrasts the finding in Badertscher et al. (2006) that income-increasing earnings management restatement firms rely on relatively more book-tax temporarily nonconforming than conforming earnings management. The results also suggest that the prevalence of book-tax conforming versus nonconforming earnings management varies across the reasons for restatement and across industries.

Our out-of-sample analysis demonstrates that our proxy for book-tax conforming earnings management (i.e., current tax expense) is negatively associated with the probability of restatement, consistent with our prediction that firms manage earnings downward in a book-tax conforming manner to minimize current tax costs. Also as expected, deferred tax expense, our proxy for temporarily nonconforming earnings management, is not associated with the probability of upward earnings restatements, and discretionary accruals are significantly negatively related to the probability of such restatements. These results are again in contrast to those in Badertscher et al. (2006). The latter study finds that deferred tax expense, but not current tax expense, is positively associated with the probability of downward earnings restatements. Overall, our multivariate results suggest that restatement firms manage earnings downward in a book-tax conforming manner and in the process record lower discretionary accruals relative to a matched control sample of non-restatement firms.
Our research is important for several reasons. Most importantly, our paper is the first to document in a broad setting that firms manage earnings downward in a rational manner.\(^2\) We find that our sample of firms that managed earnings downward in a book-tax conforming manner not only reduced their current income tax costs, but also were more likely to meet or beat the current year’s consensus analyst forecast. Moreover, our research: (1) documents that firms managing earnings downward are fundamentally different from firms that manage their earnings upward, (2) validates the ability of discretionary accrual models to reliably reflect downward earnings management,\(^3\) and (3) explores the prevalence of a previously undocumented type of earnings management, namely, permanently nonconforming earnings management.

Our main results regarding the prevalence of book-tax conforming downward earnings management complement the findings in Phillips et al. (2003) and Badertscher et al. (2006) regarding book-tax nonconforming upward earnings management, and thus further our understanding as to how firms manage earnings. Our results combined with the evidence from these prior studies support the conclusion that firms generally manage earnings in a manner that minimizes their current income tax costs, regardless of whether the earnings management is upward or downward.

This paper proceeds as follows. In the next section we summarize the prior literature and state our hypotheses. That section is followed by discussions of the research design and sample selection. We then present the results, and conclude in the last section.

\(^2\) Our “broad setting” contrasts prior research that examines specific accruals (e.g., inventory reserves, gains/losses related to security sales, etc.) and specific earnings management contexts (e.g., seasoned equity offerings, stock option issuances, earnings targets, etc.).

\(^3\) Beneish (2001, 12) proposes that researchers utilize restatement firms to “assess the external validity of aggregate accrual models.” We show that a sample of firms known to have managed their earnings downward recorded lower discretionary accruals on average compared to a matched, control sample.
PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

Mills and Newberry (2001) and Phillips et al. (2003) note there is typically greater
discretion under generally accepted accounting principles (GAAP) than under income tax rules
(e.g., Plesko 2002), and argue that discretionary financial accounting choices determine, at least
in part, the difference between book and taxable income (i.e., book-tax differences). Mills and
Newberry use confidential tax return data to measure actual book-tax differences, and link such
differences to earnings management to avoid reporting a negative earnings change.

Phillips et al. (2003) use publicly-available information to investigate whether book-tax
differences are associated with earnings management activity. They use deferred tax expense,
which proxies for temporary differences between book and taxable income, as their measure of
book-tax differences. Deferred tax expense increases when managers use their discretion to
manage pretax earnings upward in a book-tax nonconforming manner, e.g., by aggressively
booking unearned revenue, lowering the allowance for doubtful accounts, or lowering the reserve
for post-retirement benefits, none of which has current income tax consequences. Phillips et al.
assess the incremental ability of deferred tax expense over accrual-based measures of managerial
discretion to detect earnings management activity, and find that deferred tax expense is generally
incrementally useful in detecting earnings management to avoid reporting a loss or a negative
earnings change. Phillips et al. (2004) show the deferred tax component related to revenue and
expense accruals and reserves explains, in large part, the ability of deferred tax expense to detect
upward earnings management.

Badertscher et al. (2006) analyze a sample of earnings restatements that reflect upward
earnings management. They find that deferred tax expense (1) is incrementally useful beyond
abnormal accruals in predicting such restatements, (2) that, in general, firms engage in more
temporarily nonconforming than conforming upward earnings management, and (3) that firms trade off the net present value of tax benefits against the net expected detection costs associated with temporarily nonconforming upward earnings management. The results from these studies suggest that financial analysts and other financial statement users can use deferred tax expense to improve their ability to detect upward earnings management and evaluate earnings quality. This improved ability to evaluate earnings is particularly important given the results of prior accounting research (e.g., Dechow et al. 1995; Guay et al. 1996) that suggest accrual-based measures reflect measurement error and generally lack power in detecting earnings management activity.

We extend these studies by considering downward earnings management, a topic less explored in the accounting literature relative to upward earnings management.4 Prior research examines the circumstances in which firms manage earnings downward, including: (1) to reduce the likelihood of asset expropriation by the government (e.g., Watts and Zimmerman, 1978); (2) to dampen stock prices prior to issuing stock options (e.g., Coles, Hertzel, and Kalpathy, 2005); (3) to reveal private value-relevant information about future prospects of the firm (e.g., Holthausen and Leftwich 1983; Dechow 1994; Badertscher, Collins, and Lys, 2006), or (4) to build ‘cookie jar’ reserves for the future when current earnings are unexpectedly high (e.g., Nelson et al., 2003).

In contrast to upward earnings management, we expect that managers engaging in downward earnings management prefer to do so in ways that are book-tax conforming such that downward conforming earnings management would not only reduce book income but would also reduce current taxable income and thus generate current tax benefits. That is, we would

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4 See Beneish (2001), Nelson et al. (2002), or Nelson et al. (2003) for discussions of downward earnings management.
generally not expect firms to manage earnings downward in ways that generate temporary book-tax differences since such actions would reduce book income without reducing taxable income. Hence, with regard to the prevalence of types of income-decreasing earnings management, we hypothesize (stated in the alternative) that:

H1: All else equal, firms rely on relatively more book-tax conforming than nonconforming downward earnings management strategies.

One might ask: Why would firms not manage earnings downward in a book-tax conforming manner? First, if a firm has sufficient net operating loss carryforwards or has negative earnings and wishes to manage income downward (e.g., take a “big bath”), then it is likely the firm is not primarily concerned with the tax benefits associated with book-tax conforming downward earnings management. Second, the most convenient method to manage earnings downward would be to increase reserve accounts or to conservatively recognize contingent liabilities and other expenses, methods which would generally be book-tax nonconforming. Thus, a firm has to go out of its way to manage its earnings downward in a book-tax conforming manner; e.g., defer revenue recognition or incur “real” operating expenses, such as advertising, R&D, training, etc. Hence, it is an empirical question whether book-tax conforming downward earnings management is the norm.

**RESEARCH DESIGN**

**Measuring Types of Earnings Management and Our ‘In-Sample’ Analysis**

H1 predicts that all else equal, firms generally engage in more book-tax conforming than nonconforming downward earnings management strategies. While conforming earnings management includes any transaction that has the same impact on the current period’s financial and taxable incomes, nonconforming earnings management includes any transaction that has a

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5 We test the net operating loss conjecture in supplemental analyses.

6 Nelson et al. (2003) provide specific examples of income-decreasing earnings management strategies.
different impact on current financial and taxable incomes. Thus, nonconforming earnings management can have deferred tax consequences (hereinafter, temporarily nonconforming earnings management) or no income tax consequences (hereinafter, permanently nonconforming earnings management).\(^7\) Permanently nonconforming earnings management, which occurs when firms manage their financial accounting income upward or downward in a manner that does not affect their taxable income, has received little attention in prior research, likely due to the limited opportunities for such earnings management.\(^8\) Nonetheless, we segregate total earnings management into three categories – book-tax conforming, temporarily nonconforming, and permanently nonconforming.

Prior research uses current tax expense as a proxy for book-tax conforming earnings management (e.g., Erickson et al. 2004), and deferred tax expense as a proxy for temporarily nonconforming earnings management (e.g., Phillips et al. 2003). However, Badertscher et al. (2006) note several technical issues regarding these proxies. More specifically, NOL carryforwards and changes in the deferred tax asset valuation allowance account (VAA) add measurement error to these earnings management proxies. NOL carryforwards can contaminate current tax expense as a measure of conforming earnings management. In particular, whenever firms manage earnings upward in a conforming manner but have NOL carryforwards to offset the accompanying increase in taxable income, current tax expense will contain measurement error. Similarly, changes in deferred tax assets related to NOL carryforwards and changes in the VAA can contaminate deferred tax expense as a measure of temporarily nonconforming earnings

\(^{7}\) Note that we focus on pretax earnings management, which excludes management of the income tax accrual.

\(^{8}\) Areas that present the most obvious opportunities for permanently nonconforming earnings management include: foreign operations (which are typically not consolidated for tax purposes but are consolidated for financial reporting purposes, often leading to permanent book-tax differences) and in-process research and development (R&D). For example, when firms acquire in-process R&D as part of an acquisition, they can write-off such R&D for financial reporting purposes, while for tax reporting purposes no such asset exists, since firms expense R&D as it is incurred for tax purposes. Thus, the write-off of in-process R&D for financial reporting purposes would have no income tax consequences and would generate a permanent book-tax difference.
management. That is, whenever the restatement of a firm’s VAA or deferred tax assets related to NOLs are not related to nonconforming pretax earnings management, deferred tax expense will contain measurement error.

Accordingly, we follow Badertscher et al. (2006) and adjust our proxies for conforming and nonconforming earnings management using hand-collected NOL and VAA data as follows:

\[
CONFORM_{EM} = \frac{(CTE_{EM} - \Delta NOL_{EM})}{STR}; \quad (1)
\]

\[
TEMPNC_{EM} = \frac{(DTE_{EM} + \Delta NOL_{EM} - \Delta VAA_{EM})}{STR}. \quad (2)
\]

\[
PERMNC_{EM} = PTI_{EM} - \frac{[(CTE_{EM} + DTE_{EM} - \Delta VAA_{EM})}{STR}] \quad (3)
\]

We represent differences between originally reported and restated amounts as follows: \(PTI_{EM}\) reflects differences in pretax income; \(CTE_{EM}\) is for differences in current tax expense; \(DTE_{EM}\) is for differences in deferred tax expense; \(\Delta NOL_{EM}\) is for differences in the change in deferred tax assets relating to NOL carryforwards; \(\Delta VAA_{EM}\) denotes differences in the change in VAA; and \(STR\) is the maximum corporate statutory tax rate, which for our sample period was 35 percent.

We estimate \(CONFORM_{EM}\) based on current tax expense adjusted for changes in a firm’s NOL carryforwards. We use the statutory income tax rate to gross-up adjusted current tax expense (i.e., \(CTE_{EM} - \Delta NOL_{EM}\)), so that \(CONFORM_{EM}\) represents the dollar amount of conforming earnings management. We similarly measure the dollar amount of temporarily nonconforming earnings management, denoted as \(TEMPNC_{EM}\), which we base on deferred tax expense adjusted for changes in a firm’s NOL carryforwards and changes in its VAA. Finally, we compute the dollar amount of permanently nonconforming earnings management.
\( (PERMNC\_EM) \) as total book-tax differences less temporary book-tax differences.\(^9\) Thus, \( PERMNC\_EM \) is effectively the portion of the pretax earnings restatement \((PTI\_EM)\) that is not due to conforming \((CONFORM\_EM)\) or temporarily nonconforming \((TEMPNC\_EM)\) earnings management.\(^{10}\)

We compute proportions of conforming \((C\_RATE)\), temporarily nonconforming \((T\_NC\_RATE)\), and permanently nonconforming \((P\_NC\_RATE)\) earnings management by scaling \(CONFORM\_EM, TEMPNC\_EM,\) and \(PERMNC\_EM\) by the total amount of earnings management \((PTI\_EM)\). We first test H1 ‘in-sample’ by comparing the mean and median values of \(C\_RATE, T\_NC\_RATE,\) and \(P\_NC\_RATE\) for our sample of firms that restated their earnings upward (and thus presumably managed their earnings downward). H1 predicts for firms that manage earnings downward, the mean and median values of \(C\_RATE\) are significantly greater than the mean and median values of \(T\_NC\_RATE\) and of \(P\_NC\_RATE\), consistent with firms relying on more book-tax conforming than temporarily or permanently nonconforming transactions to manage their earnings downward.

**Our ‘Out-of-Sample’ Analysis**

We also test H1 by investigating whether our sample of upward restatement firms report lower current tax expense than a matched control sample (described below), which would be consistent with restatement firms relying on book-tax conforming downward earnings management strategies. We test H1 out-of-sample in two ways. First, we compare the mean and

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\(^9\) We are concerned with pretax earnings management (i.e., managing revenue and expense accruals that affect pretax income), whereas Dhaliwal et al. (2004), Krull (2004), and Frank and Rego (2006) focus on managing the income tax accrual, which affects after-tax net income. The possibility of managing earnings using income tax accruals contaminates our proxies for pretax earnings management since income tax accrual management affects either current or deferred tax expense (but not pretax income) in a manner opposite to pretax earnings management. (See Badertscher et al. 2006.) Thus, to the extent firms manage earnings via income tax accruals (such as managing the tax cushion), our proxies for pretax earnings management contain some measurement error.

\(^{10}\) Thus, by definition, the sum of conforming \((CONFORM\_EM)\), temporarily \((TEMPNC\_EM)\), and permanently \((PERMNC\_EM)\) nonconforming earnings management equals total earnings management \((PTI\_EM)\).
median values of current tax expense for our upward restatement sample relative to a matched control sample. Second, we estimate the following probit regression model (adapted from Badertscher et al. 2006) based on pooled cross-sectional data for firms that restated their earnings upward and a matched control sample of non-restatement firms:

\[
\text{RESTATE}_i = \alpha_0 + \alpha_1 \text{CTE}_i + \alpha_2 \text{DTE}_i + \alpha_3 \text{MJAC}_i + \alpha_4 \text{MBE}_i + \alpha_5 \text{MB}_i + \alpha_6 \text{FIN}_R_i \\
+ \alpha_7 \text{LEV}_i + \alpha_8 \text{EPS}_G_i + \alpha_9 \text{STRING}_i + \alpha_{10} \Delta \text{CFO}_i + \alpha_{11} \text{FCF}_i \\
+ \alpha_{12} \text{BIG}_\text{AUDIT}_i + \alpha_{13} \text{AF}_i + \alpha_{14} \log \text{LAG}_\text{TA}_i + \alpha_j \sum_j \text{INDUS}_{it} + \varepsilon_i
\]

where:

- \( \text{RESTATE} = 1 \) if firm \( i \) appears in the GAO restatement report and restated earnings upward (i.e., has income-decreasing earnings management) for the restatement period beginning with year \( t \), and 0 otherwise;
- \( \text{CTE} \) = Current tax expense, which is federal current tax expense (\textit{Compustat} data item #63) plus foreign current tax expense (#64) in year \( t \), scaled by total assets (#6) at year-end \( t-1 \);
- \( \text{DTE} \) = Firm \( i \)'s deferred tax expense (#50) in year \( t \), scaled by total assets (#6) at year-end \( t-1 \);
- \( \text{MJAC} \) = Firm \( i \)'s abnormal accruals in year \( t \) computed using the modified Jones model (Dechow et al. 1995);
- \( \text{MBE} \) = Dummy variable equal to 1 if the firm meets or beats the consensus annual analyst earnings forecasts in year \( t \); and 0 otherwise;
- \( \text{MB} \) = Market-to-book ratio, calculated as market value of equity (#25 \times #199) at year-end \( t-1 \) divided by the book value of equity (#60) at year-end \( t-1 \);
- \( \text{FIN}_R \) = Sum of additional cash raised from the issuance of common and preferred stock (#108) and the issuance of long-term debt (#111) during year \( t \), scaled by average total assets for year \( t \);
- \( \text{LEV} \) = Short term debt (#34) plus long term debt (#9) at year-end \( t-1 \), scaled by total assets (#6) at year-end \( t-1 \);
- \( \text{EPS}_G \) = Earnings per share (EPS) growth, which equals the number of consecutive quarters of growth in EPS, ending at quarter 4 of the
year prior to the restatement year, where EPS growth is $EPS_{Q4_{t-1}} - EPS_{Q4_{t-1}}$;

$STRING = Number of consecutive quarters with small positive forecast errors ending at quarter 4 of the year prior to the restatement year, where forecast error for a quarter is actual earnings for that quarter less the last consensus analyst forecast for that quarter from I/B/E/S;

$\Delta CFO = Change in firm i’s cash flows from continuing operations (#308 - #124) from year $t-1$ to $t$, scaled by total assets at year-end $t-1$;

$FCF = Cash flow from operating activities (#308) minus capital expenditures (#128) plus sales of property, plant, and equipment (#107) minus acquisitions (#129) in year $t-1$, scaled by total assets at year-end $t-1$;

$BIG_AUDIT = 1$ if the firm is audited by a Big 4/5/6 auditor (#149) in year $t$, and zero otherwise;

$AF = 1$ if the firm has analyst following in year $t$, and 0 otherwise;

$LogLAG_TA = Natural log of total assets (#6) at year-end $t-1$;

$\Sigma_j INDUS = 1 (0)$ if firm $i$ is (is not) in industry $j$ in year $t$, based on three-digit SIC codes;

and year $t$ is the year for which firm $i$ restates its financial statements. When firm $i$ restates multiple years’ financial statements, year $t$ is the first restatement year.

$RESTATE$ is an indicator variable equal to 1 if firm $i$ restates its earnings. We use non-restatement firms matched on industry (three-digit SIC code) and year as our control sample. Based on Phillips et al. (2003), Richardson et al. (2002), and Badertscher et al. (2006), the explanatory variables in equation (4) represent factors that reflect the following: (a) earnings management activity, as captured by $CTE, DTE$, and $MJAC$; (b) incentives (or lack thereof) to currently manage earnings, as reflected by $MBE, BM, FIN_R, LEV, EPS_G, STRING$, and $LogLAG_TA$; (c) the probability that earnings management is detected by third parties, as
captured by \textit{BIG\_AUDIT} and \textit{AF}; and (d) firm performance and industry membership, as proxied by \textit{ACFO}, \textit{FCF}, and \textit{\Sigma INDUS}.

We capture downward earnings management activity that leads to an upward earnings restatement using the following variables: \textit{CTE}, to proxy for conforming earnings management; \textit{DTE}, to proxy for temporarily nonconforming earnings management; and \textit{MJAC}, modified Jones model abnormal accruals.\textsuperscript{11} H1 predicts the coefficient on \textit{CTE} in equation (4) will be negative, consistent with restatement firms managing earnings downward in ways that reduce current tax expense. H1 also implies that the coefficient on \textit{DTE} should not be significant, consistent with restatement firms managing earnings in ways that do not affect deferred tax expense. Moreover, downward earnings management implies lower abnormal accruals and thus a negative coefficient on \textit{MJAC}.

We include several sets of control variables. The first set is for incentives (or lack thereof) to manage earnings. These include: \textit{MBE}, which indicates whether a firm meets or beats analyst earnings forecasts in the current period; \textit{MB}, market-to-book ratio, which proxies for growth opportunities; \textit{FIN\_R}, which indicates whether a firm issues debt or equity; \textit{LEV}, which reflects the extent of debt; \textit{EPS\_G} and \textit{STRING}, which proxy, respectively, for how long a firm reported increasing earnings or met analysts’ forecasts prior to the earnings restatement; and \textit{LogLAG\_TA}, our proxy for firm size and thus political costs.\textsuperscript{12}

We also control for the probability that earnings management is detected by third parties. We assume that external auditors and financial analysts can function as external monitors of

\textsuperscript{11} In our out-of-sample tests we do not examine firms’ reliance on permanently nonconforming earnings management strategies as we would need information from non-restatement as well as restatement firms’ income tax footnotes to accurately measure that type of earnings management. Thus, equation (4) does not include a proxy for permanently nonconforming earnings management.

\textsuperscript{12} Watts and Zimmerman (1978) predict larger firms are more vulnerable to governmental expropriation of assets and thus have incentives to minimize their visibility. One way to reduce visibility is to manage earnings downward.
earnings quality (Francis and Wilson, 1988; Liu, 2006), and thus expect that the presence of higher quality external auditors (i.e., Big 4/5/6 firms as proxied by BIG_AUDIT) and greater analyst following (AF) increase the chances that earnings management will be detected. Finally, we include controls for operating performance, as proxied by the change in cash flow from operations (ΔCFO) and the amount of free cash flow (FCF), and industry membership (INDUS).

RESTATEMENT SAMPLE SELECTION

We identify restatement firms from a report prepared by the GAO in October 2002. The GAO report includes 845 firms that made 919 public announcements of restatements during the period from January 1, 1997, to June 30, 2002. The restatements corrected previous material misstatements of financial statement numbers caused by accounting irregularities. Such irregularities occur when financial reports are not presented in accordance with GAAP and reflect aggressive accounting practices, material errors, misinterpretation of accounting rules, or the intentional or unintentional misuse of facts and fraud.

The 845 firm announcements in the GAO report consist of restatements of annual or quarterly data. Because we require original and restated annual income tax data, we restrict our analysis to restatements of annual data, which eliminates 407 observations. For each year a firm restated its earnings, we hand collect the following variables from both the originally reported and restated financial statements: total assets, pretax net income, current tax expense, deferred tax expense, current and prior year deferred tax assets related to net operating losses, current and prior year deferred tax asset valuation allowance amounts, income before extraordinary items,

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13 The GAO database excludes “restatements resulting from mergers and acquisition, discontinued operations, stock splits, issuance of stock dividends, currency-related issues, changes in business segment definitions, changes due to transfers of management, changes made for presentation purposes, general accounting changes under generally accepted accounting principles (GAAP), litigation settlements, and arithmetic and general bookkeeping errors” (GAO 2002). Also note that a given restatement announcement can refer to a restatement that affects only a single year or to one that affects multiple years.
net income, and cash flow from operations. We lose 202 restatement announcements for which there were incomplete original or restated balance sheet, income statement, statement of cash flow, and/or income tax footnote data. Thus, our complete restatement sample originating from the GAO report consists of 381 restatement-years representing 236 firms.14 Of these 236 firms, we can classify only 26 as consistently income-decreasing earnings managers.15 Thus, we supplemented the GAO restatement data by hand-collecting additional restatements occurring between July 1, 2002 and December 31, 2003. This supplemental data collection added 14 additional upward restatement firms, resulting in a total of 40 (54) firms (firm-years) that we classify as consistently income-decreasing earnings managers. To maximize our restatement sample size we replace missing prior year Compustat data with the industry median of the respective variable.

To identify the additional restatement firms that engaged in income-decreasing earnings management but were not included in the GAO database, we conducted an extensive keyword search on Lexis-Nexis Business and 10kWizard.com. Specifically, we conducted a keyword search for “restate,” “restated,” “restates,” “restating,” and “restatement” on all firms’ press releases and financial statements from July 1, 2002 to December 31, 2003. This additional sample, similar to the GAO sample, does not include restatements related to dividend distributions, stock splits, discontinued operations, change in accounting periods, and application of new accounting principles or policies. Additionally, we used the same accounting

14 To ensure we have independent observations for our statistical analyses, our unit of analysis is a firm. In cases of multiple consecutive restatements by the same firm we obtain a single observation by averaging across its restatement-years.
15 The remainder of our complete GAO restatement sample also includes 159 firms that we can classify as consistently income-increasing earnings managers, 29 firms with multiple year restatements reflecting both increasing and decreasing earnings effects, and 22 firms with restatements that did not affect pretax net income. See Badertscher et al. (2006) for more details.
irregularities classification scheme as the GAO to identify the cause of the income-decreasing earnings management.

Table 1, Panel A identifies the number of consecutive years a firm restated its income. We find that 67.5 percent of the firms restated their financial statements for just one year, compared to 30 percent that restated two years and 2.5 percent that restated three years of earnings. Table 1, Panel B summarizes the types of accounting irregularities acknowledged by our sample of income-decreasing earnings management restatement firms. Because some restatements reflect multiple accounting irregularities, there are 49 reasons provided for the 40 restatement firms. The most common accounting irregularities are ones that include revenue recognition (37 percent) and expense recognition (24 percent). Panel B also presents statistics for the entire GAO sample, which indicate a similar percentage of restatements involving revenue recognition irregularities and a somewhat lower percentage (16 percent) involving expense recognition. The percentages of restatements related to in-process R&D also differ across the two samples, where approximately 14 percent of our upward restatements but just 3.5 percent of all GAO restatements are related to that category. This difference is not surprising, since in-process R&D restatements are due solely to write-offs that reduce pretax income but do not affect taxable income.

RESULTS

We begin by providing descriptive statistics for the restatement sample of downward earnings managers and a matched control sample of 6,109 firms that are not in the GAO restatement database. We use non-restatement firms matched on industry (three-digit SIC code) and year as our control sample. Our descriptive analysis also provides comparative statistics for
the sample of 159 restatement firms from the GAO report that consistently managed their earnings upward. We then estimate the rates of conforming and nonconforming earnings management for our sample of downward earnings managers. Lastly, we present the multivariate probit results based on the consistently income-decreasing earnings management restatement and matched-control samples.

**Descriptive Statistics**

Table 2, Panel A, presents summary statistics for the independent variables included in equation (4). Panel A reflects two comparisons: our restatement sample of downward earnings managers with (a) the matched control sample of non-restatement firms that we use in our multivariate analysis, shown in the middle columns, and (b) the sample of restatement firms that managed their earnings upward, shown in the right-hand columns.

**INSERT TABLE 2 HERE**

The descriptive results suggest firms that restated their financial results due to income-decreasing earnings management are fundamentally different from both the matched control sample and firms that restated due to income-increasing earnings management. Specifically, relative to the matched control sample of non-restatement firms, income-decreasing earnings management firms: have lower current tax expense, lower discretionary accruals, are more likely to meet or beat the current year’s consensus analyst earnings forecast\(^{16}\), are more leveraged, exhibit more consecutive quarters of earnings growth and more consecutive quarters of meeting or beating consensus analyst forecasts, report a higher change in cash flow from operations and more positive free cash flow, are more likely to have a Big 4/5/6 auditor and to have analyst following. Their lower current tax expense is consistent with income-decreasing earnings management.

\(^{16}\) For the restatement firms with analyst following (25), 92 percent meet or beat the current year’s consensus analyst forecast compared to just 60 percent for the matched control sample, even though the restatement firms engaged in income-decreasing earnings management.
earnings management restatement firms managing earnings downward in a book-tax conforming manner, to minimize current tax costs.

Relative to income-increasing earnings management firms that restated earnings downward, our sample of income-decreasing earnings managers: exhibit lower discretionary accruals, are more likely to meet or beat the current year’s consensus analyst forecast, are less leveraged, exhibit more consecutive quarters of both earnings growth and meeting or beating the consensus analyst forecast, report a higher change in cash flow from operations and more positive free cash flow, are more likely to have a Big 4/5/6 auditor, and are larger. Overall, our sample of income-decreasing earnings management restatement firms appear to engage in book-tax conforming downward earnings management but nonetheless consistently meet or beat their earnings targets, consistent with earnings smoothing.

Table 2, Panel B displays correlations for our sample of downward earnings managers and the matched control sample. Consistent with our predictions, \( RESTATE \) is negatively correlated with \( CTE \) but not with \( DTE \). \( RESTATE \) is also negatively correlated with abnormal accruals (\( MJAC \)).

**Results on the Prevalence of Conforming Downward Earnings Management**

In Table 3, we focus on the sample of income-decreasing earnings management restatement firms for our in-sample analysis and report rates of total, conforming, temporarily nonconforming, and permanently nonconforming downward earnings management. In Panel A, the results indicate that across the sample, the mean (median) total amount of downward earnings management (\( PTI \)) is -6.0 (-2.8) percent of total assets. The mean (median) rate of conforming downward earnings management (\( C\_RATE \)) is 53.6 (51.0) percent, the mean (median) rate of temporarily nonconforming earnings management (\( T\_NC\_RATE \)) is 37.3 (30.1)
percent, and the mean (median) rate of permanently nonconforming earnings management 
\( (P\_NC\_RATE) \) is 9.1 (10.1) percent. Consistent with H1, the mean and median \( C\_RATE \) are 
significantly greater (p-value < 0.01) than the mean and median \( T\_NC\_RATE \) and the mean and 
median \( P\_NC\_RATE \). These results contrast with those in Badertscher et al. (2006, 36), who 
report that temporarily nonconforming earnings management dominates their sample of income-
increasing earnings management restatement firms (mean rate of 63.1 percent), and they note 
that the rate of permanently nonconforming earnings management is less than 1 percent. The 
permanently nonconforming downward earnings management in this paper is primarily 
attributable to cases of in-process R&D (see Panel B discussion below). Also notice that the 
typical firm uses both conforming and nonconforming earnings management strategies, but that 
conforming earnings management is the dominant strategy for downward earnings 
management.\(^\text{17}\)

**INSERT TABLE 3 HERE**

Panel B of Table 3 shows rates of downward earnings management strategies by reason 
for the restatement. Pure revenue recognition earnings management was accomplished in a 
book-tax conforming manner (\( C\_RATE \)) a mean 62.1 percent of the time, which is significantly 
greater than the corresponding means of 37.2 percent for temporarily (\( T\_NC\_RATE \)) and 0.7 
percent for permanently (\( P\_NC\_RATE \)) nonconforming downward earnings management. Pure 
expense recognition irregularities reflect conforming earnings management 54.1 percent of the 
time, versus 45.1 percent for temporarily and 0.8 percent for permanently nonconforming 

\(^{17}\) We tested whether \( C\_RATE \) (53.6 percent) in Panel A is greater than the total amount of nonconforming earnings management, i.e., the sum of \( T\_NC\_RATE \) and \( P\_NC\_RATE \) (46.4 percent) in Panel A. The one-tailed p-value for the mean (median) difference is 0.26 (0.18). The lack of statistical significance is likely due, at least in part, to our small sample size. Moreover, we believe that comparisons of \( C\_RATE \) and \( T\_NC\_RATE \) are more relevant than comparing \( C\_RATE \) to total nonconforming earnings management, given the limited opportunities firms have to engage in permanently nonconforming earnings management. Examples of frequently-used earnings management strategies, as revealed by experienced auditors in Nelson et al. (2003), support this contention.
earnings management. The difference between $C\_RATE$ and $T\_NC\_RATE$ is not statistically different, but that is likely due to the small number of such observations (nine). The most common type of earnings management involved both revenue and expense recognition, and firms were significantly more likely to employ conforming rather than temporarily or permanently nonconforming strategies (59.8 versus 37.7 or 2.5 percent, respectively). We note that three firms restated their earnings upward due solely to in-process R&D, which we classify as permanently nonconforming earnings management.

We present industry data in Panel C, using Barth et al.’s (2001) industry classifications for descriptive purposes. The largest industry representation in the GAO sample (62 percent) is from the computer industry, and that industry also has the largest representation in our sample of downward earnings managers (40 percent). The next two most highly represented industries in our sample, at 17.5 percent each, are durable manufacturers and retail firms, which make up, respectively, 10.5 percent and 1.7 percent of the GAO sample. Focusing on industries with at least four firms in our sample, the rate of conforming downward earnings management is higher than the rate of temporary nonconforming earnings management among retail, computer, and financial firms, but is lower among durable manufacturers.

**Multivariate Results**

We report the results of estimating equation (4) for the sample of income decreasing earnings management restatement firms and its matched control sample in Table 4 (our out-of-sample analysis). H1 predicts a negative coefficient on $CTE$, and the results are consistent with this prediction (p-value = 0.057). We also predict an insignificant coefficient on $DTE$, and the results support this contention, as well (p-value = 0.270). Also as expected, the coefficient on modified Jones model abnormal accruals ($MJAC$) is significantly negative (p-value = 0.098).
Thus, our results suggest that firms manage earnings downward with book-tax conforming abnormal accruals, since our proxy for conforming earnings management, $CTE$, has explanatory power beyond that of our proxy for abnormal accruals ($MJAC$), while our proxy for nonconforming earnings management, $DTE$, does not. These results contrast those in Badertscher et al. (2006), who find that current tax expense is not associated with the probability of downward earnings restatements (and thus upward earnings management), while deferred tax expense is associated with the probability of such restatements.

**INSERT TABLE 4 HERE**

With regard to the control variables, we find that the probability of restating earnings in light of having managed earnings downward increases with: meeting or beating analysts’ forecasts in the year of restatement ($MBE$) and longer strings of meeting or beating consensus analyst forecasts prior to the year of restatement ($STRING$). These characteristics, which are often associated with income-increasing earnings management in accounting research, suggest that downward earnings managers are able to reduce both financial and taxable incomes and still achieve several earnings targets. It would appear they are “having their cake and eating it, too.” Finally, the probability of an upward earnings restatement is decreasing in the amount of financing raised ($FIN_R$), increasing in the level of free cash flow ($FCF$), and increasing in firm size ($LogLAG_TA$).

In supplemental analyses, we examine the conjecture that firms with net operating loss carryforwards have less incentive to manage earnings downward in a book-tax conforming manner, since they have less need for the tax benefits associated with such earnings management strategies. Table 5 reports the results of estimating equation (4) separately for firms with ($NOL = 1$) and without ($NOL = 0$) net operating loss carryforwards available at the beginning of the
restatement period. We expect that firms without net operating loss carryforwards are more likely to engage in book-tax conforming downward earnings management, and our results are consistent with this prediction. In particular, the coefficient on $CTE$ is significantly negative for $NOL = 0$ firms but insignificant for $NOL = 1$ firms. The coefficients on $DTE$ are not significant in either regression, while the coefficient on $MJAC$ is significant only for firms without net operating loss carryforwards.

INSERT TABLE 5 HERE

CONCLUSION

Based on a sample of firms that restated their earnings upward due to accounting irregularities and thus can be presumed to have managed their earnings downward, we investigate (1) whether such firms predominantly engaged in book-tax conforming downward earnings management, and (2) whether current tax expense, a proxy for conforming earnings management, is useful in predicting the restatement of downward managed earnings. We find that our sample of income-decreasing earnings management restatement firms employed conforming earnings management strategies to manage earnings downward to a greater extent than they used nonconforming strategies. The results also indicate that, as expected, current tax expense is incrementally useful beyond abnormal accruals (which is also incrementally useful) in predicting whether a firm restates earnings upward and thus engaged in downward earnings management, whereas (also as expected) deferred tax expense is not incrementally useful. These results are consistent with managers choosing to manage earnings downward in ways that reduce their current tax costs.

Combined with the evidence from Phillips et al. (2003) and Badertscher et al. (2006), our results support the conclusion that firms generally manage earnings in ways that minimize their
current income tax costs, regardless of whether the earnings management seeks to increase or decrease reported earnings. These results suggest that earnings management researchers can enhance not only the power of their tests by isolating upward and downward earnings management, but also the ability to detect earnings management by using deferred tax expense where upward earnings management is suspected and current tax expense where downward earnings management is suspected.
REFERENCES


### TABLE 1

**Restatement Sample Description**

**Panel A: Frequencies of Firms/Firm-Years Partitioned by Number of Restatements Due to Income-Decreasing Earnings Management**

<table>
<thead>
<tr>
<th>Number of Years of Consecutive Restatements</th>
<th>Firms</th>
<th>Percent of Firms</th>
<th>Firm-Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year</td>
<td>27</td>
<td>67.5%</td>
<td>27</td>
</tr>
<tr>
<td>Two years</td>
<td>12</td>
<td>30.0%</td>
<td>24</td>
</tr>
<tr>
<td>Three years</td>
<td>1</td>
<td>2.5%</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100%</td>
<td>54</td>
</tr>
</tbody>
</table>

**Panel B: Types of Accounting Irregularities Causing the Restatements for Income-Decreasing Earnings Management**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>388</td>
<td>36.09%</td>
<td>18</td>
<td>36.73%</td>
</tr>
<tr>
<td>Expense</td>
<td>208</td>
<td>15.70%</td>
<td>12</td>
<td>24.49%</td>
</tr>
<tr>
<td>Mergers and Acquisitions</td>
<td>64</td>
<td>5.93%</td>
<td>5</td>
<td>10.20%</td>
</tr>
<tr>
<td>In-Process Research and Development</td>
<td>36</td>
<td>3.57%</td>
<td>7</td>
<td>14.29%</td>
</tr>
<tr>
<td>Reclassification</td>
<td>48</td>
<td>5.27%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Related Third Party</td>
<td>31</td>
<td>3.01%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Restructuring</td>
<td>124</td>
<td>8.94%</td>
<td>1</td>
<td>2.04%</td>
</tr>
<tr>
<td>Securities</td>
<td>65</td>
<td>5.36%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Other</td>
<td>111</td>
<td>14.21%</td>
<td>6</td>
<td>12.24%</td>
</tr>
<tr>
<td>Total Firm Irregularities</td>
<td>1075</td>
<td></td>
<td>49</td>
<td>100%</td>
</tr>
<tr>
<td>Total Firms</td>
<td>845</td>
<td></td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Income-Decreasing Earnings Management Restatement Firms</td>
<td>Non-Restatement Control Sample for Income-Decreasing Earnings Management Restatement Firms</td>
<td>Income-Increasing Earnings Management Restatement Firms</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Median</td>
<td>N</td>
</tr>
<tr>
<td><strong>CTE</strong></td>
<td>40</td>
<td>0.017a</td>
<td>0.005</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>DTE</strong></td>
<td>40</td>
<td>-0.001</td>
<td>0.000</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>MJAC</strong></td>
<td>40</td>
<td>-0.089ab</td>
<td>-0.049b</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>MBE</strong></td>
<td>40</td>
<td>0.575ab</td>
<td>1.000b</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>MB</strong></td>
<td>40</td>
<td>3.440</td>
<td>2.340</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>FIN_R</strong></td>
<td>40</td>
<td>0.199</td>
<td>0.054</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>LEV</strong></td>
<td>40</td>
<td>0.198ab</td>
<td>0.160ab</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>EPS_G</strong></td>
<td>40</td>
<td>2.620ab</td>
<td>3.000ab</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>STRING</strong></td>
<td>40</td>
<td>4.080ab</td>
<td>4.000ab</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>ΔCFO</strong></td>
<td>40</td>
<td>0.013ab</td>
<td>0.011ab</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>FCF</strong></td>
<td>40</td>
<td>-0.027ab</td>
<td>-0.003</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>BIG_AUDIT</strong></td>
<td>40</td>
<td>0.854ab</td>
<td>1.000</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>AF</strong></td>
<td>40</td>
<td>0.625a</td>
<td>1.000</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>LAG_TA</strong></td>
<td>40</td>
<td>2.721b</td>
<td>419ab</td>
<td>6,109</td>
</tr>
<tr>
<td><strong>LogLAG_TA</strong></td>
<td>40</td>
<td>6.032</td>
<td>6.011</td>
<td>6,109</td>
</tr>
</tbody>
</table>

* Income-decreasing earnings management restatement firms are significantly different from the control sample for income-decreasing earnings management restatement firms (income-increasing earnings management restatement firms) at the 0.10 level.

Variable definitions:

- **RESTATE** = 1 if firm i appears in the GAO restatement report and restated earnings upward (i.e., has income-decreasing earnings management) for the restatement period beginning with year t, and 0 otherwise;
- **DTE** = Firm i’s deferred tax expense (Compustat data item #50) in year t, scaled by total assets (#6) at year-end t-1;
- **CTE** = Current tax expense, which is federal current tax expense (#63) plus foreign current tax expense (#64) in year t, scaled by total assets (#6) at year-end t-1;
- **MJAC** = Firm i’s abnormal accruals in year t computed using the modified Jones model (Dechow et al. 1995);
- **MBE** = Dummy variable equal to 1 if the firm meets or beats the consensus annual analyst earnings forecasts in year t; and 0 otherwise;
$MB$ = Market-to-book ratio, calculated as market value of equity ($#25 \times #199$) at year-end $t-1$ divided by the book value of equity ($#60$) at year-end $t-1$;

$FIN\_R$ = Sum of additional cash raised from the issuance of common and preferred stock ($#108$) and the issuance of long-term debt ($#111$) during year $t$, scaled by average total assets for year $t$;

$LEV$ = Short term debt ($#34$) plus long term debt ($#9$) at year-end $t-1$, scaled by total assets ($#6$) at year-end $t-1$;

$EPS\_G$ = Earnings per share (EPS) growth, equal to the number of consecutive quarters of growth in EPS, ending at quarter 4 of the year prior to the restatement, where EPS growth is $EPS\_Q4t - EPS\_Q4t-1$;

$STRING$ = Number of consecutive quarters with small positive forecast errors ending at quarter 4 of the year prior to the restatement year, where forecast error is actual earnings minus the most recent consensus analyst forecast from I/B/E/S;

$\Delta\_CFO$ = Change in firm $i$’s cash flows from continuing operations ($#308 - #124$) from year $t-1$ to $t$, scaled by total assets at year-end $t-1$;

$FCF$ = Cash flow from operating activities ($#308$) minus capital expenditures ($#128$) plus sales of property, plant, and equipment ($#107$) minus acquisitions ($#129$) in year $t-1$, scaled by total assets at year-end $t-1$;

$BIG\_AUDIT$ = 1 if the firm is audited by a Big 4/5/6 auditor in year $t$, and zero otherwise;

$AF$ = 1 if the firm has analyst following in year $t$, and 0 otherwise;

$Log\_LAG\_TA$ = Natural log of total assets ($#6$) at year-end $t-1$;

Year $t$ is the year for which firm $i$ restates its financial statements. When firm $i$ restates multiple years’ financial statements, year $t$ is the first restatement year.
## TABLE 2 (Continued)

Panel B: Pearson (above diagonal) and Spearman (below diagonal) Correlations (p-values shown below correlations) for Income-Decreasing Earnings Management Restatement Firms (N = 40) and a Matched Control Sample (N = 6,109)

<table>
<thead>
<tr>
<th></th>
<th>RESTATE</th>
<th>CTE</th>
<th>DTE</th>
<th>MJAC</th>
<th>MBE</th>
<th>MB</th>
<th>FIN_R</th>
<th>LEV</th>
<th>EPS_G</th>
<th>STRING</th>
<th>ACFO</th>
<th>FCF</th>
<th>BIG_AUDIT</th>
<th>AF</th>
<th>LogLAG_TA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESTATE</td>
<td>---</td>
<td>-0.039</td>
<td>-0.008</td>
<td>-0.077</td>
<td>0.087</td>
<td>-0.023</td>
<td>0.022</td>
<td>0.026</td>
<td>0.037</td>
<td>-0.001</td>
<td>-0.041</td>
<td>0.022</td>
<td>0.015</td>
<td>-0.055</td>
<td>0.019</td>
</tr>
<tr>
<td>CTE</td>
<td>-0.024</td>
<td>---</td>
<td>-0.129</td>
<td>0.183</td>
<td>0.284</td>
<td>0.382</td>
<td>-0.363</td>
<td>-0.161</td>
<td>-0.157</td>
<td>0.412</td>
<td>-0.221</td>
<td>0.052</td>
<td>0.153</td>
<td>0.211</td>
<td>0.147</td>
</tr>
<tr>
<td>DTE</td>
<td>-0.065</td>
<td>0.048</td>
<td>---</td>
<td>0.028</td>
<td>-0.177</td>
<td>-0.045</td>
<td>-0.168</td>
<td>-0.032</td>
<td>-0.05</td>
<td>0.075</td>
<td>-0.12</td>
<td>-0.013</td>
<td>0.027</td>
<td>-0.581</td>
<td>0.489</td>
</tr>
<tr>
<td>MJAC</td>
<td>-0.072</td>
<td>0.203</td>
<td>0.119</td>
<td>---</td>
<td>0.121</td>
<td>-0.091</td>
<td>-0.109</td>
<td>-0.002</td>
<td>0.046</td>
<td>0.081</td>
<td>-0.034</td>
<td>0.047</td>
<td>0.148</td>
<td>-0.036</td>
<td>-0.069</td>
</tr>
<tr>
<td>MBE</td>
<td>0.087</td>
<td>0.187</td>
<td>-0.137</td>
<td>0.072</td>
<td>---</td>
<td>0.250</td>
<td>0.001</td>
<td>-0.181</td>
<td>0.045</td>
<td>0.280</td>
<td>0.132</td>
<td>0.165</td>
<td>0.023</td>
<td>0.648</td>
<td>-0.140</td>
</tr>
<tr>
<td>MB</td>
<td>-0.041</td>
<td>0.497</td>
<td>0.317</td>
<td>0.008</td>
<td>0.159</td>
<td>---</td>
<td>-0.336</td>
<td>0.622</td>
<td>0.019</td>
<td>0.287</td>
<td>0.065</td>
<td>-0.128</td>
<td>-0.052</td>
<td>0.196</td>
<td>0.051</td>
</tr>
<tr>
<td>FIN_R</td>
<td>0.003</td>
<td>0.001</td>
<td>0.001</td>
<td>0.579</td>
<td>0.001</td>
<td>0.001</td>
<td>0.128</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>LEV</td>
<td>0.025</td>
<td>-0.207</td>
<td>-0.073</td>
<td>0.028</td>
<td>0.045</td>
<td>0.166</td>
<td>-0.087</td>
<td>0.235</td>
<td>---</td>
<td>0.065</td>
<td>0.223</td>
<td>0.134</td>
<td>0.111</td>
<td>0.022</td>
<td>0.01</td>
</tr>
<tr>
<td>EPS_G</td>
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<td>0.001</td>
<td>0.001</td>
<td>0.028</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.042</td>
<td>0.42</td>
</tr>
<tr>
<td>STRING</td>
<td>-0.001</td>
<td>0.42</td>
<td>0.441</td>
<td>0.065</td>
<td>0.280</td>
<td>0.493</td>
<td>-0.213</td>
<td>-0.119</td>
<td>0.087</td>
<td>---</td>
<td>-0.059</td>
<td>0.185</td>
<td>0.188</td>
<td>0.227</td>
<td>0.077</td>
</tr>
<tr>
<td>ACFO</td>
<td>-0.084</td>
<td>-0.233</td>
<td>0.071</td>
<td>-0.141</td>
<td>0.117</td>
<td>0.358</td>
<td>-0.194</td>
<td>0.029</td>
<td>0.210</td>
<td>0.013</td>
<td>---</td>
<td>-0.043</td>
<td>-0.083</td>
<td>0.094</td>
<td>-0.541</td>
</tr>
<tr>
<td>FCF</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.277</td>
<td>0.088</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>BIG_AUDIT</td>
<td>0.015</td>
<td>0.153</td>
<td>0.027</td>
<td>0.113</td>
<td>0.273</td>
<td>0.023</td>
<td>-0.073</td>
<td>-0.141</td>
<td>0.112</td>
<td>0.193</td>
<td>-0.033</td>
<td>0.102</td>
<td>---</td>
<td>0.170</td>
<td>-0.311</td>
</tr>
<tr>
<td>AF</td>
<td>0.134</td>
<td>0.001</td>
<td>0.032</td>
<td>0.156</td>
<td>0.091</td>
<td>0.099</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.005</td>
<td>0.001</td>
<td>---</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>LogLAG_TA</td>
<td>-0.055</td>
<td>0.114</td>
<td>-0.252</td>
<td>0.012</td>
<td>0.648</td>
<td>0.316</td>
<td>0.143</td>
<td>-0.201</td>
<td>0.032</td>
<td>0.227</td>
<td>0.195</td>
<td>0.225</td>
<td>0.170</td>
<td>---</td>
<td>-0.107</td>
</tr>
</tbody>
</table>

See Panel A for variable definitions.
### TABLE 3
Proportions of Conforming and Nonconforming Earnings Management in the Income-Decreasing Earnings Management Restatement Sample

**Panel A: Means, Medians, Percentiles, and Standard Deviations**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>75th</th>
<th>Median</th>
<th>25th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$PTI_{EM}$</td>
<td>-0.060</td>
<td>0.174</td>
<td>-0.006</td>
<td>-0.028</td>
<td>-0.089</td>
</tr>
<tr>
<td>$C_RATE$</td>
<td>53.6%</td>
<td>0.704</td>
<td>80.8%</td>
<td>51.0%</td>
<td>15.4%</td>
</tr>
<tr>
<td>$T_{NC_RATE}$</td>
<td>37.3%***</td>
<td>0.491</td>
<td>71.4%</td>
<td>30.1%***</td>
<td>0.0%</td>
</tr>
<tr>
<td>$P_{NC_RATE}$</td>
<td>9.1%***</td>
<td>0.942</td>
<td>90.1%</td>
<td>10.1%***</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

***Significantly different from $C_RATE$ at the 0.01 level, based on a one-tailed test of differences in proportions between $C_RATE$, $T_{NC_RATE}$, and $P_{NC_RATE}$.

**Variable Definitions:**

- $PTI_{EM}$ = Originally reported pretax income less restated pretax income, scaled by total assets at year-end $t-1$.
- $C_RATE$ = Proportion of book-tax conforming earnings management throughout the restatement period $= (CTE_{EM} - \Delta NOL_{EM}) / (STR \times PTI_{EM})$; where: $CTE_{EM}$ is originally reported current tax expense less restated current tax expense; $\Delta NOL_{EM}$ is originally reported change in deferred tax assets related to net operating loss (NOL) carryforwards from year $t-1$ to $t$ less restated change in deferred tax assets related to NOL carryforwards from year $t-1$ to $t$; and $STR$ is the statutory income tax rate (35 percent).
- $T_{NC_RATE}$ = Proportion of nonconforming earnings management throughout the restatement period $= (DTE_{EM} + \Delta NOL_{EM} - \Delta VAA_{EM}) / (STR \times PTI_{EM})$; where: $DTE_{EM}$ is originally reported deferred tax expense less restated deferred tax expense; and $\Delta VAA_{EM}$ equals originally reported change in VAA from year $t-1$ to $t$ less restated change in VAA from year $t-1$ to $t$.
- $P_{NC_RATE}$ = Proportion of permanently nonconforming earnings management throughout the restatement period $= PERMNC_{EM} = \{PTI_{EM} - [(CTE_{EM} + DTE_{EM} - \Delta VAA_{EM}) / STR]\} / PTI_{EM}$.

**Panel B: By Reason for Restatement**

<table>
<thead>
<tr>
<th>Reason for Restatement</th>
<th>Observations</th>
<th>$C_RATE$</th>
<th>$T_{NC_RATE}$</th>
<th>$P_{NC_RATE}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Only</td>
<td>8</td>
<td>62.1%*</td>
<td>37.2%***</td>
<td>0.7%***</td>
</tr>
<tr>
<td>Expense Only</td>
<td>9</td>
<td>54.1%</td>
<td>45.1%</td>
<td>0.8%***</td>
</tr>
<tr>
<td>In-Process R&amp;D Only</td>
<td>3</td>
<td>0.0%</td>
<td>0.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>All Other Combinations</td>
<td>20</td>
<td>59.8%*</td>
<td>37.7%***</td>
<td>2.5%***</td>
</tr>
<tr>
<td>Total Firms</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***Significantly different from $C_RATE$ at the 0.01 level, based on a one-tailed test of differences in proportions within each row. For example, $C_RATE$ for Revenue Only (62.1%) is compared to $T_{NC_RATE}$ for Revenue Only (37.2%).

* $C_RATE$ is significantly different from $T_{NC_RATE} + P_{NC_RATE}$ (i.e., total nonconforming earnings management) at the 0.10 level, based on a one-tailed test of differences in proportions within each row. For example, $C_RATE$ for Revenue Only (62.10%) is compared to $T_{NC_RATE} + P_{NC_RATE}$ for Revenue Only (37.20% + 0.70%).
TABLE 3 - Continued

Panel C: By Industry Classification

<table>
<thead>
<tr>
<th>Industry</th>
<th>Non-Restatement Sample</th>
<th>Income-Decreasing Earnings Management Restatement Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
</tr>
<tr>
<td>Transportation</td>
<td>52</td>
<td>0.9%</td>
</tr>
<tr>
<td>Retail</td>
<td>104</td>
<td>1.7%</td>
</tr>
<tr>
<td>Extractive</td>
<td>136</td>
<td>2.2%</td>
</tr>
<tr>
<td>Textiles and Printing/Publishing</td>
<td>5</td>
<td>0.1%</td>
</tr>
<tr>
<td>Computers</td>
<td>3,781</td>
<td>61.9%</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>768</td>
<td>12.6%</td>
</tr>
<tr>
<td>Durable Manufacturers</td>
<td>642</td>
<td>10.5%</td>
</tr>
<tr>
<td>Financials</td>
<td>621</td>
<td>10.2%</td>
</tr>
<tr>
<td>Total Observations</td>
<td>6,109</td>
<td>100%</td>
</tr>
</tbody>
</table>

For descriptive purposes, we use Barth et al.’s (2001) industry classifications: Agriculture (0100-0999), Mining & Construction (1000-1999, excluding 1300-1399), Food (2000-2111), Textiles & Printing/Publishing (2200-2780), Chemicals (2800-2824, 2840-2899), Pharmaceuticals (2830-2836), Extractive (2900-2999, 1300-1399), Durable Manufactures (3000-3999, excluding 3570-3579 and 3670-3679), Computers (7370-7379, 3570-3579, 3670-3679), Transportation (4000-4899), Utilities (4900-4999), Retail (5000-5999), and Services (7000-8999), excluding 7370-7379.

See Panel A for variable definitions.
### TABLE 4
Results for Probit Regression of \( RESTATE \) Indicator Variable on \( DTE, CTE, \) Abnormal Accruals, and Other Control Variables

\[
RESTATE_i = \alpha_0 + \alpha_1 CTE_i + \alpha_2 DTE_i + \alpha_3 MJAC_i + \alpha_4 MBE_i + \alpha_5 MB_i + \alpha_6 FIN_R_i + \alpha_7 LEV_i + \alpha_8 EPS_G_i + \alpha_9 STRING_i + \alpha_{10} \Delta CFO_i + \alpha_{11} FCF_i + \alpha_{12} BIG_AUDIT_i + \alpha_{13} AF_i + \alpha_{14} \text{LAG}_TA_i + \alpha_j \sum_j \text{INDUS}_{it} + \varepsilon_i
\]  

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-5.08</td>
</tr>
<tr>
<td>CTE</td>
<td>-30.42</td>
</tr>
<tr>
<td>DTE</td>
<td>-59.45</td>
</tr>
<tr>
<td>MJAC</td>
<td>-4.57</td>
</tr>
<tr>
<td>MBE</td>
<td>3.48</td>
</tr>
<tr>
<td>MB</td>
<td>-0.01</td>
</tr>
<tr>
<td>FIN_R</td>
<td>-0.84</td>
</tr>
<tr>
<td>LEV</td>
<td>0.93</td>
</tr>
<tr>
<td>EPS_G</td>
<td>0.55</td>
</tr>
<tr>
<td>STRING</td>
<td>0.88</td>
</tr>
<tr>
<td>( \Delta CFO )</td>
<td>-8.89</td>
</tr>
<tr>
<td>FCF</td>
<td>1.05</td>
</tr>
<tr>
<td>BIG_AUDIT</td>
<td>1.63</td>
</tr>
<tr>
<td>AF</td>
<td>-0.31</td>
</tr>
<tr>
<td>LogLAG_TA</td>
<td>0.29</td>
</tr>
</tbody>
</table>

-2*Log Likelihood 501
R-squared 0.10
Restated Sample 40
Control Sample 6,109

Industry coefficients are included but not reported.
See Table 2, Panel A for variable definitions.
One-tailed p-values.
TABLE 5
Results for Probit Regression of RESTATE Indicator Variable on DTE, CTE, Abnormal Accruals, and Other Control Variables for Firms with (NOL = 1) and without (NOL = 0) Net Operating Loss Carryforwards

\[ RESTATE_i = \alpha_0 + \alpha_1CTE_i + \alpha_2DTE_i + \alpha_3MJAC_i + \alpha_4MBE_i + \alpha_5MB_i + \alpha_6FIN_R_i + \alpha_7LEV_i + \alpha_8EPS_G_i + \alpha_9STRING_i + \alpha_{10}\Delta \text{CFO}_i + \alpha_{11}FCF_i + \alpha_{12}\text{BIG}\_\text{AUDIT}_i + \alpha_{13}\text{AF}_i + \alpha_{14}\text{LAG}\_\text{TA}_i + \alpha_j \sum \text{INDUS}_{it} + \varepsilon_i \]  

(4)

<table>
<thead>
<tr>
<th></th>
<th>NOL = 1 Firms</th>
<th>p-value</th>
<th>NOL = 0 Firms</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.46</td>
<td>0.015</td>
<td>-4.16</td>
<td>0.019</td>
</tr>
<tr>
<td>CTE</td>
<td>10.23</td>
<td>0.233</td>
<td>-29.33</td>
<td>0.068</td>
</tr>
<tr>
<td>DTE</td>
<td>-19.17</td>
<td>0.375</td>
<td>-15.65</td>
<td>0.743</td>
</tr>
<tr>
<td>MJAC</td>
<td>-1.65</td>
<td>0.326</td>
<td>-6.28</td>
<td>0.079</td>
</tr>
<tr>
<td>MBE</td>
<td>1.71</td>
<td>0.182</td>
<td>4.05</td>
<td>0.074</td>
</tr>
<tr>
<td>MB</td>
<td>-0.03</td>
<td>0.534</td>
<td>-0.04</td>
<td>0.532</td>
</tr>
<tr>
<td>FIN_R</td>
<td>-0.65</td>
<td>0.411</td>
<td>-0.69</td>
<td>0.114</td>
</tr>
<tr>
<td>LEV</td>
<td>0.84</td>
<td>0.303</td>
<td>0.61</td>
<td>0.400</td>
</tr>
<tr>
<td>EPS_G</td>
<td>-1.06</td>
<td>0.041</td>
<td>-0.77</td>
<td>0.622</td>
</tr>
<tr>
<td>STRING</td>
<td>0.19</td>
<td>0.805</td>
<td>0.24</td>
<td>0.413</td>
</tr>
<tr>
<td>( \Delta \text{CFO} )</td>
<td>5.04</td>
<td>0.755</td>
<td>-9.29</td>
<td>0.221</td>
</tr>
<tr>
<td>FCF</td>
<td>0.69</td>
<td>0.177</td>
<td>4.06</td>
<td>0.029</td>
</tr>
<tr>
<td>BIG_AUDIT</td>
<td>-0.63</td>
<td>0.215</td>
<td>1.33</td>
<td>0.039</td>
</tr>
<tr>
<td>AF</td>
<td>-0.43</td>
<td>0.099</td>
<td>-1.17</td>
<td>0.001</td>
</tr>
<tr>
<td>LogLAG_TA</td>
<td>0.47</td>
<td>0.013</td>
<td>0.14</td>
<td>0.044</td>
</tr>
</tbody>
</table>

-2*Log Likelihood 233 251  
R-squared 0.05 0.06  
Restated Sample 16 24  
Control Sample 6,109 6,109

Industry coefficients are included but not reported.  
See Table 2, Panel A for variable definitions.  
One-tailed p-values.