

Evidence on Motivations for Downward Earnings Management

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ABSTRACT:

We analyze a set of firms that restated earnings upward because of accounting irregularities and thus presumably had managed earnings downward. Our results are consistent with the restatement sample firms having managed earnings downward in their original financial statements to create cookie jar reserves, to depress share prices prior to corporate and insider stock purchases, and to minimize political costs. There is no evidence these firms managed earnings downward to reduce income taxes, which is consistent with tax-motivated downward earnings management being accomplished via real transactions that typically do not give rise to accounting irregularities. We estimate that taxable firms (i.e., profitable restatement sample firms without NOL carryforwards) left an average of 23 cents per dollar of pre-tax managed earnings on the table by engaging in book-tax *nonconforming* downward earnings management. The forgone tax savings represent a lower bound on the incremental costs associated with real transactions management.

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I. INTRODUCTION

An extensive body of accounting literature is devoted to earnings management, broadly defined as the opportunistic exercise of managerial discretion that causes reported earnings to differ from earnings that would have resulted from a neutral application of generally accepted accounting principles (e.g., Dechow and Skinner 2000). Most studies in this line of research, however, have focused on firms' motives to engage in, and the detection and quantification of, *upward* earnings management. We extend prior earnings management research by considering *downward* earnings management, a topic less thoroughly explored in the accounting literature relative to upward earnings management.¹ Specifically, we investigate the relation between the motives for, and the ensuing strategies to accomplish, downward earnings management. Our research thus contributes to a more complete understanding of earnings management activity.

The relative scarcity of research examining downward earnings management is somewhat surprising in light of concerns expressed by regulators. For example, former SEC Chairman Levitt, in his widely cited "numbers game" speech (Levitt 1998), made explicit the SEC's concerns that earnings management raises questions about the integrity of financial reporting. Relevant to our setting, Levitt highlighted five common "accounting gimmicks," of which three were examples of downward earnings management. (Also see Turner 1999.)

We analyze firms that restated their earnings (hereinafter, misstatement firms), focusing on the subset of firms that restated earnings upward due to accounting irregularities and thus

¹ See Beneish (2001), Nelson et al. (2002), and Nelson et al. (2003) for discussions of downward earnings management, and Ronen and Sadan (1980) and Buckmaster (2001) for analyses of the income smoothing literature.

presumably had managed earnings downward (e.g., Palmrose et al. 2004; Hennes et al. 2008).² The restatement setting allows us to quantify the amount of pretax earnings management as the difference between original and restated pre-tax income. This setting also allows us to study how tax and non-tax motivations for downward earnings management affect the way earnings are managed, and consequently, the probability of an upward restatement. We first distinguish between book-tax conforming and nonconforming accruals and note that, in general, accruals with little discretion, such as receivables, prepaid expenses, and payables, are conforming but accruals with the most discretion, such as bad debt reserves, unearned revenues, and post-retirement benefits, are nonconforming. Because tax-motivated downward earnings management must be book-tax conforming (i.e., reduces both book and taxable income), we thus conjecture that firms managing earnings downward for tax reasons cannot rely primarily on accounting choices (hereinafter nominal earnings management). Instead, to reduce taxes firms must rely primarily on conforming real transactions management, such as the acceleration of research and development and advertising expenditures and the deferral of revenue transactions to future periods. In general, real transactions management strategies do not violate GAAP, resulting in a near zero probability of an earnings restatement. We thus hypothesize that firms managing earnings downward for *tax* reasons are not likely to subsequently restate earnings.

Real transactions management, however, alters a firm's operations and thus is arguably more costly than nominal earnings management. We expect that firms engaging in downward earnings management for non-tax reasons (which we discuss in detail below) rely primarily on

² Sample descriptive statistics are consistent with this presumption. Although using abnormal accruals to detect or measure earnings management activity is problematic (e.g., Dechow et al. 1995; Guay et al. 1996), our sample of misstatement firms has significantly lower abnormal accruals than a matched control sample. In addition, 32 of the 45 sample firms reported annual earnings that met or beat analyst forecasts (or, in the absence of analyst following, reported earnings that were higher than the previous year's earnings) and 6 other firms reported restated earnings that were at least five cents per share below the earnings target. Taken together, the descriptive evidence suggests that managers at these firms were cognizant of their actions (i.e., were aware of how far *unmanaged* earnings were from earnings targets), and thus that the misstatements were unlikely the result of unintentional accounting errors.

less costly nominal accrual management methods, such as the inflation of reserve accounts, including the allowance for doubtful accounts, restructuring reserves, and contingent liabilities. These types of downward earnings management strategies more frequently violate GAAP (relative to real transactions management) and thus are more likely to attract the attention of auditors and regulators, resulting in a non-zero probability of an earnings restatement. Hence, we predict that firms managing earnings downward for *non-tax* reasons are more likely to subsequently restate their earnings.

We test these predictions by comparing our sample of misstatement firms that restated earnings upward to a matched control sample of non-restatement firms. We develop proxies for tax and non-tax motivations for downward earnings management, and test whether each of the motivations is associated with a higher probability of restatement. First, we predict firms that are currently profitable and do not have tax loss carryforwards have a tax incentive to manage earnings downward. However, based on the above discussion, we do *not* expect our tax incentive proxy to be associated with a higher probability of restatement.

In contrast, we hypothesize that the following non-tax motivations for downward earnings management should be associated with a higher probability of restatement: (1) reducing earnings to lower stock prices prior to granting stock options (e.g., Coles et al. 2005; Baker et al. 2003; McNally et al. 2008), prior to repurchasing stock on the open market (e.g., Gong et al. 2008), and prior to insider trading that increases the insiders' stockholdings in the firm (e.g., Dechow et al. 1996); (2) managing earnings downward to build "cookie jar" reserves for the future when unmanaged current earnings exceed earnings targets (e.g., Healy 1985; Levitt 1998; Nelson et al. 2003); (3) taking a "big bath" when unmanaged current earnings are far below earnings targets; and (4) being a very large firm that lowers earnings to reduce the

likelihood of asset expropriation by governments (e.g., Watts and Zimmerman 1978; Zimmerman 1983), i.e., to reduce political costs.

As expected, we find no evidence that our misstatement firms managed earnings downward to reduce taxes, but we find strong evidence supporting the non-tax motivations to manage earnings downward. Specifically, the results from our multivariate analysis indicate a higher probability of upward earnings restatements for firms that meet or beat current earnings targets, are larger in size, repurchase shares in the following period, and have greater insider purchases in the following period. These results are consistent with firms managing earnings downward to create cookie jar reserves, reduce political costs, and depress stock prices in anticipation of future stock transactions.

We also investigate how firms manage earnings (Healy and Whalen 1999). Based on the argument that managers should prefer to manage earnings downward in a book-tax conforming manner to reduce taxes, one would expect that *downward* earnings management firms use more conforming strategies than misstatement firms that managed earnings *upwards*. We observe differences between the downward and upward earnings management restatement firms on a variety of firm-specific characteristics. However, consistent with tax-motivated downward earnings management strategies primarily being limited to real, and not nominal, actions, we find no difference in the proportion of conforming earnings management between downward and upward earnings management misstatement samples. This finding represents additional evidence of the lack of a tax motive among restatement firms to engage in downward earnings management.

Finally, we estimate that for our sample of downward earnings management misstatement firms, managing earnings downward in book-tax nonconforming ways left an average of 14 cents

per dollar of pre-tax managed earnings on the table, compared to the tax savings that could have been achieved via conforming earnings management. The forgone tax savings per dollar of pre-tax earnings management increases to 23 cents for our sample firms that were profitable and did not have NOL carryforwards – i.e., for taxable firms that would immediately benefit from tax-motivated downward earnings management. These forgone tax savings serve as a lower bound on the incremental costs associated with real transactions management; i.e., taxable firms appear willing to trade off tax savings against managing earnings in real ways, which alter operations.

Our research contributes to the accounting literature on earnings management in several ways. We consider tax and non-tax motivations for downward earnings management in a single setting – restatements – and seek to determine which motivations for downward earnings management dominate others. We believe our study is the first to exploit the restatement setting to document that firms manage earnings downward in response to a variety of incentives to do so.³ We find our sample of misstatement firms that managed earnings downward is more likely to have met or beat the current year’s earnings target, to depress stock price in advance of stock repurchases and insider net purchases, and to lower political costs. In contrast, these misstatement firms do not appear to manage earnings downward to reduce current taxes; instead, the results suggest that these firms manage earnings downward in ways that leave tax benefits on the table, but avoids the costs associated with real transactions management. Our results thus complement those of Erickson et al. (2004) who document that just over one-half of their sample firms that fraudulently managed earnings upward did so by incurring current tax costs. Our misstatement firms appear to have been willing to forgo tax savings to achieve other, non-tax

³ We searched SSRN and identified 91 studies involving restatements and examined the 88 working papers and articles we could access. This analysis revealed the following: 83 of the studies deal with income-decreasing restatements or with both income-decreasing and income-increasing restatements; four studies deal with restatements involving individual accounting methods; but only one study (an earlier version of the present study) focuses on income-increasing restatements.

objectives when managing earnings downward. Our research also demonstrates that misstatement firms that manage earnings downward appear to differ in fundamental ways from misstatement firms that manage earnings upward, which suggests that researchers should distinguish between upward and downward earnings management.

This study proceeds as follows. We develop our hypotheses in section II and discuss the research design and sample selection in the following two sections. We present the results in section V, and conclude in section VI.

II. HYPOTHESES

In this section, we develop hypotheses concerning the probability that a firm restates earnings upward due to tax and non-tax motivations for downward earnings management. In addition, we consider how firms manage earnings downward and develop a prediction regarding the tax implications of managers' downward earnings management strategies.

Probability of Restating Earnings Upwards

We predict that the motivation for downward earnings management affects how earnings are managed and, consequently, the probability of restatement. Figure 1 depicts the impact of downward earnings management motivations on how earnings are managed and the probability of a restatement. Prior research suggests that firms manage earnings downward for both tax and non-tax reasons. With respect to tax-motivated downward earnings management, several studies show that firms managed book earnings downward to exploit the reduction in corporate income tax rates in the Tax Reform Act of 1986 to shift taxable income from one time period to another to generate permanent tax savings (e.g., Scholes et al. 1992; Guenther 1994).⁴ Because tax-motivated earnings management must be book-tax conforming and, barring fraud, accrual-based

⁴ There are also several studies that investigate downward nonconforming earnings management in response to the book-tax difference adjustment for computing the alternative minimum tax in TRA86 (e.g., Gramlich 1991; Boynton et al. 1992; Dhaliwal and Wang 1992).

nominal earnings management is largely nonconforming, we conjecture firms that manage earnings downward for tax reasons are forced to rely primarily on real transactions management. These methods include the acceleration of research and development and advertising expenditures and deferral of revenue transactions to future periods.⁵ In most cases, these downward earnings management strategies do not give rise to accounting irregularities that violate GAAP, nor do they generally attract the attention of auditors or regulators, resulting in a near zero probability of earnings restatement. Thus, our first hypothesis is:

H1: Tax-motivated downward earnings management is not associated with earnings restatements.

INSERT FIGURE 1 HERE

On the other hand, we predict firms that manage earnings downward for non-tax reasons (which we discuss below), more frequently rely on nominal, i.e., accrual-based, earnings management methods rather than real transactions management. Nominal earnings management is less costly than real transactions management (provided it is not detected by regulators), since it does not affect current operations of the firm (i.e., it only involves accruals). Examples include the inflation of reserve accounts, including the allowance for doubtful accounts, restructuring reserves, and other contingent liabilities. These types of downward earnings management strategies more frequently violate GAAP. In addition, they are more likely to attract the attention of auditors and regulators due to the resulting difference between book and taxable incomes that is recognized as deferred taxes and/or disclosed as permanent book-tax differences. As a result, there is a non-zero probability of earnings restatements associated with nominal nonconforming earnings management strategies. Our second hypothesis is as follows:

⁵ A large body of research examines the choice of LIFO due to its statutory book-tax conformity requirement. See, e.g., Sunder 1973, Biddle (1980), Ricks (1982), Dopuch and Pincus (1988), Hunt et al. (1996), Pincus (1997).

H2: Non-tax motivated downward earnings management is positively associated with earnings restatements.

To test our second hypothesis, we identify non-tax motivations for downward earnings management and (as with H1) compare the downward earnings management misstatement firms to a matched control sample of non-restatement firms. We initially focus on settings in which managers temporarily and opportunistically manage earnings downward to depress their firms' share prices. Previous research provides evidence that managers engage in downward earnings management to reduce stock prices and thus attain lower exercise prices for subsequent period stock option grants (e.g., Baker et al. 2003; Coles et al., 2005; McAnally et al. 2008). Prior research also documents that firms have incentives to manage earnings downward to decrease their own stock prices prior to subsequent period stock repurchases (e.g., Gong et al. 2008). Similarly, there is evidence of downward earnings management in advance of insider stock purchases (e.g., Dechow et al., 1996). Given these findings, we expand H2 and hypothesize (in the alternative) as follows:

H2a: All else equal, a net increase in subsequent year stock option grants over current year grants is positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.

H2b: All else equal, a net decrease in outstanding shares in the subsequent year is positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.

H2c: All else equal, net insider stock purchases in the subsequent year are positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.⁶

⁶ An alternative explanation is that firms manage earnings downward for other reasons, causing the share price to decline and, consequently, motivating the firm to grant more stock options or repurchase more shares, or motivating insiders to purchase more shares. Further, it is possible that the presence of any of these actions gives rise to increased SEC scrutiny, thus increasing the probability of restatement. Given our limited sample, we are unable to address these alternative explanations.

We next consider incentives to manage earnings downward to create “cookie jar” reserves. Prior research demonstrates a strong tendency for firms to avoid negative earnings changes and surprises (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999; Barth et al. 1999; Bartov et al. 2002). These findings suggest that when the current year’s unmanaged earnings exceed target earnings, managers have an incentive to report lower current earnings and create cookie jar reserves, thereby enabling them to smooth income and “bank” income that can then be available for future periods (e.g., Ronen and Sadan 2001, Nelson et al. 2003). Accordingly, we expect that downward earnings management is more likely to occur when firms with pre-managed (i.e., restated) earnings that exceed the earnings target meet or beat the target in their originally reported (i.e., managed) financial statements. Our hypothesis (stated in the alternative) is as follows:

H2d: All else equal, meeting or beating earnings targets is positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.

Another motivation to manage earning downward is related to, but a more extreme form of, creating cookie jar reserves. If pre-managed earnings are well below an earnings target and there is little chance of meeting the target, managers may choose to manage earnings further downward, perhaps substantially so, i.e., take a “big bath” (Bernstein 1972; Healy 1985). Such behavior essentially front-loads expenses, which makes it easier to meet or beat future periods’ earnings targets. Hence, we hypothesize (in alternative form):

H2e: All else equal, having pre-managed earnings that are well below an earnings target is positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.

Our final incentive for firms to manage earnings downward is based on the Watts and Zimmerman (1978) political cost hypothesis that predicts large firms face greater political

scrutiny when they report high earnings. To avoid political scrutiny, legislation, or administrative actions that could impair firm value, managers of the largest firms have an incentive to manage earnings downward. Moreover, such firms are likely to manage earnings downward in nonconforming ways, forgoing tax savings to avoid political costs (Zimmerman 1983) while also creating cookie jar reserves. Based on this discussion, we present the following hypothesis (in the alternative):

H2f: All else equal, being a very large firm is positively associated with the probability of being a downward earnings management firm that subsequently restates earnings upward.⁷

Downward Earnings Management Strategies and Tax Implications

Given that firms engage in downward earnings management, we also investigate *how* they do so (Healy and Wahlen 1999); i.e., whether they manage earnings downward in a book-tax conforming or nonconforming manner. Badertscher et al. (2009) investigate how firms manage earnings upward and utilize a sample of misstatement firms that restated their earnings downward. They find that their sample firms trade off the net present value of tax benefits against the net expected detection costs associated with nonconforming upward earnings management, but in general employ more book-tax nonconforming than conforming upward earnings management.

⁷ Our study does not directly relate to the accounting conservatism literature, as we focus on restatements, which generally involve violations of GAAP. In contrast, conservatism (as defined in Watts 2003a) is not a GAAP violation but more like a long-term accounting choice. First, the only aspect in which our study may be relevant to the conservatism literature is with respect to taxation as a cause of conservatism. Figure 1 portrays tax-motivated downward earnings management as requiring book-tax conforming, real transactions management. Regularly engaging in such transactions to reduce taxes would be consistent with the idea of tax-motivated accounting conservatism in Watts (2003a, b). Second, while a political cost argument does suggest a kind of long-term accounting choice, that argument does not preclude period-by-period manipulations. The extent to which firms manage earnings downward to avoid political costs can vary from period-to-period, perhaps as a function of current performance and/or changes in the political environment. LIFO is an analogous case. Hunt et al. (1996) demonstrate that LIFO firms trade off annual tax benefits against achieving other objectives.

In contrast to upward earnings management, however, it is reasonable to expect that managers seeking to manage earnings downward would generally prefer to do so in ways that are book-tax conforming, consistent with the findings in Plesko (2007). Downward conforming earnings management not only reduces book income but also reduces taxable income and thus can generate current tax savings (depending on the existence of prior and current year losses). Hence, relative to upward earnings management firms, we generally would not expect firms to manage earnings downward in ways that generate book-tax differences because such actions would reduce book income without reducing taxable income. Accordingly, we take a closer look at how firms manage earnings by analyzing downward and upward earnings management misstatement firms to test a final hypothesis (stated in the alternative):

H3: Downward earnings management firms rely on relatively more book-tax conforming strategies than do upward earnings management firms.

In the restatement setting, there are several reasons why we may find that our sample of downward earnings management misstatement firms did *not* manage earnings downward in a book-tax conforming manner. First, if a sample firm has sufficient net operating loss carryforwards or has negative current earnings, then it is likely the firm is not primarily concerned with the tax benefits associated with book-tax conforming downward earnings management. Second, as discussed above in connection with H1, we conjecture that tax-motivated downward earnings management likely relies on more real transactions management (e.g., the acceleration of discretionary expenses such as R&D and advertising) that are typically book-tax conforming but are unlikely to cause earnings restatements. Thus, our sample of firms that restated earnings upward likely does *not* include significant amounts of tax-motivated downward earnings management. Third, if our sample of misstatement firms is dominated by non-tax motivated downward earnings management, then we would expect that the most

convenient accounts used to manage earnings downward (i.e., those accounts with the most discretion) would generally be book-tax *nonconforming*, e.g., increasing reserve accounts, recognizing asset impairment write-downs, or conservatively recognizing contingent liabilities. Hence, it is an empirical question whether book-tax conforming downward earnings management is the norm.

III. RESEARCH DESIGN

Probability of Restating Earnings Upwards

To test our hypotheses regarding the probability of restating earnings upward (i.e., H1 and H2), we estimate the following probit regression model based on pooled cross-sectional data for firms that restated earnings upward and a matched control sample of non-restatement firms:

$$\begin{aligned}
 RESTATE_{it} = & \alpha_0 + \alpha_1 TAXABLE_{it} + \alpha_2 \Delta OPTION_GRANTS_{it} + \alpha_3 REPURCHASE_{it} + \\
 & \alpha_4 INSIDER_TRADING_{it} + \alpha_5 MBE_{it} + \alpha_6 BIG_BATH_{it} + \alpha_7 POL_COST_{it} + \\
 & \alpha_8 BIG_AUDIT_{it} + \alpha_9 AF_{it} + \alpha_{10} CFO_{it} + \alpha_{11} \Delta CFO_{it} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

Each misstatement firm i is included only for year t , the year for which the firm restates its financial statements. If firm i restates multiple years' financial statements, then year t is the first restatement year.⁸ (Appendix A provides complete variable definitions.)

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. To test H1 and H2 (i.e., H2a – H2f), we include proxies for tax and non-tax motivations to manage earnings downward in equation (1). Positive and significant coefficients on any of these variables would suggest that a particular downward earnings management motivation is associated with a higher probability of an earnings restatement. Our proxy for tax-motivated

⁸ Some of our misstatements involve multiple years (ten firms restated two years, two restated three years, while the remaining 33 firms restated only one year). We use the first misstatement year in our analysis since subsequent years likely reflect a mix of earnings management reversals from prior years' earnings management activities.

downward earnings management is *TAXABLE*, which equals 1 if the firm is both currently profitable and does not have NOL carryforwards, and zero otherwise.⁹ H1 predicts that tax-motivated downward earnings management is unrelated to the probability of an earnings restatement (i.e., $\alpha_l = 0$).¹⁰

We include the following proxies for non-tax motivated downward earnings management. *ΔOPTION_GRANTS*, *REPURCHASE*, and *INSIDER_TRADING* proxy for incentives to temporarily depress a firm's stock price prior to the following: (1) an increase in the value of stock option grants to the CEO from year t to year $t+1$; (2) a net decrease in the number of shares outstanding in year $t+1$; and (3) net insider stock purchases in year $t+1$, respectively. *MBE* is an indicator variable equal to 1 if the firm meets or beats the current period earnings target (i.e., I/B/E/S mean consensus analyst earnings per share (EPS) forecast in year t , or if there is no analyst following, then the prior year's EPS) in its original financial report. This variable captures a firm's incentive to manage earnings downward to smooth earnings and create cookie jar reserves but not miss the current earnings target. *BIG_BATH*, an indicator variable, equals 1 if a firm's unmanaged EPS is at least five cents below the current period earnings target.¹¹ Thus, *BIG_BATH* equals 1 for firms that have little chance of sufficiently managing earnings upward to meet the earnings target, and thus have an incentive to front-load expenses in the current year. *POL_COST* is an indicator variable that equals 1 if firm i is in the top ten percent of the *Compustat* population in terms of total assets as of the end of year $t-1$, and captures the incentive to manage earnings downward to avoid political costs. Overall, H2

⁹ We do not use the Graham (1996) or Shevlin (1990) marginal tax rates because these measures are based on the present value of taxes paid in the current and future years whereas we are only interested in current year taxes paid.

¹⁰ We could alternatively express H1 as *TAXABLE* being unrelated or negatively related to *RESTATE* and predict $\alpha_l \leq 0$ since only a positive relation between *TAXABLE* and *RESTATE* is inconsistent with H1.

¹¹ While "unmanaged EPS" is earnings per share as reported in the financial statements for control firms, unmanaged EPS is restated earnings per share for misstatement firms.

predicts that the coefficients ($\alpha_2 - \alpha_7$) on the non-tax earnings management motivations in equation (1) are positive.

We also include several control variables in equation (1). First, we control for the probability that earnings management is constrained by the risk of detection by third parties. We assume that external auditors and financial analysts can function as external monitors of earnings quality (Francis and Wilson 1988; Liu 2006). Thus, we expect that the presence of higher quality external auditors (i.e., Big 4/5/6 firms as proxied by *BIG_AUDIT*) and analyst following (*AF*) increases the risk that a firm will be identified as an earnings manager and thus reduces the likelihood that the firm manages earnings.¹² Second, we control for operating performance, as proxied by the level and change in cash flows from operations (*CFO* and Δ *CFO*, respectively).

Downward Earnings Management Strategies and Tax Implications

H3 predicts that downward earnings management firms generally engage in more book-tax conforming earnings management strategies than do upward earnings management firms. 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 transactions that have no impact on current taxable income.

We use the difference between originally reported and restated current tax expense that is disclosed in firms' original and restated Form 10Ks to estimate the amount of book-tax conforming earnings management (e.g., Erickson et al. 2004). More specifically, we adopt the approach in Badertscher et al. (2009) and use hand-collected financial report information to compute the amount of conforming earnings management, as follows:

$$CONFORM_EM = \frac{(\Delta FED_CTE - \Delta FEDNOL_DTA)}{FED_RATE} + \frac{(\Delta FOR_CTE - \Delta FORNOL_DTA)}{FOR_RATE} \quad (2)$$

¹² We acknowledge, however, that an auditor's loss function may make her/him less concerned with a client reporting lower earnings, relative to higher earnings.

where $CONFORM_EM$, the amount of conforming earnings management, reflects current federal and foreign tax expense adjusted for changes in a firm's deferred tax assets resulting from NOL carryforwards (ΔNOL_DTA).¹³ We use the U.S. statutory tax rate (FED_RATE) and the estimated foreign tax rate (FOR_RATE) to gross-up, respectively, the adjusted changes in federal and foreign current tax expense, i.e., ($\Delta FED_CTE - \Delta FEDNOL_DTA$) and ($\Delta FOR_CTE - \Delta FORNOL_DTA$). The result is that $CONFORM_EM$ is our estimate of the dollar amount of book-tax conforming earnings management.¹⁴

We estimate the proportion (or rate) of conforming earnings management (C_RATE) by scaling $CONFORM_EM$ by PT_EM , which is the difference between originally reported and restated earnings and represents the total amount of pre-tax earnings management. We compute the proportion of total earnings management that was book-tax *nonconforming* (NC_RATE) as 1 minus C_RATE .¹⁵ We test H3 by comparing the mean and median values of C_RATE for our sample of misstatement firms that managed earnings downward to a sample of misstatement

¹³ There are several technical issues regarding the use of the difference between original and restated current tax expense to estimate book-tax conforming earnings management (Badertscher et al. 2009). Originally reported and restated current tax expense measure conforming earnings management with error if firms that manage earnings downward in a book-tax conforming manner have NOL carryforwards that reduce, if not eliminate, the tax benefits of such earnings management. In addition, multinational corporations can manage U.S. and/or foreign pre-tax income. Thus, changes in current tax expense can be attributable to differences between originally reported and restated U.S. and/or foreign earnings. We attempt to address these issues in our analysis.

¹⁴ We use deferred tax assets related to NOLs since our sample firms disclose this amount, but do not always disclose the gross amount of NOL carryforwards; thus, we use the total amount of deferred tax assets related to NOL carryforwards to adjust current tax expense. We allocate the total amount of deferred tax assets related to NOL carryforwards (ΔNOL_DTA) between the U.S. and foreign tax jurisdictions by multiplying ΔNOL_DTA by the ratios of U.S. or foreign pre-tax incomes to total pre-tax income, respectively. We estimate FOR_RATE , the foreign tax rate that applies to any restated foreign earnings, as the change in total foreign tax expense scaled by the amount of restated foreign earnings. The maximum U.S. corporate tax rate (FED_RATE) was 35 percent for the sample period.

¹⁵ Our focus is *pre-tax* earnings management (i.e., managing revenues and expenses that affect pre-tax income), and we note that restated earnings may still reflect earnings management that a firm did not acknowledge. Other studies (e.g., Dhaliwal et al. 2004; Krull 2004; Frank and Rego 2006) focus on income tax accrual management, which affects *after-tax* income. We assume changes in current and deferred tax accounts only reflect the tax effects associated with pre-tax earnings management. We note, however, that if firms directly manipulated tax expense (e.g., the tax cushion), then the difference between originally reported and restated tax expense will reflect pre-tax earnings management with error. There is no indication, however, that such manipulation occurred in our sample.

firms that managed their earnings upward. H3 predicts that the mean and median values of *C_RATE* are significantly greater for the downward versus upward earnings management firms, consistent with downward earnings managers relying on more book-tax conforming strategies.

IV. SAMPLE SELECTION

Table 1, Panel A summarizes the misstatement sample selection process. We initially identify restatement firms from an October 2002 report prepared by the GAO. The GAO (2002) report identifies 845 firms that made 919 public announcements of restatements during the period from January 1, 1997, to June 30, 2002. These restatements corrected prior material financial misstatements that led to financial reports not adhering to GAAP. These misstatements include accounting irregularities, aggressive accounting practices, material errors, misinterpretation of accounting rules, or the intentional or unintentional misuse of facts, and fraud.¹⁶ We restrict our analysis to restatements of annual data since we require original and restated annual income tax data, and this eliminates 407 observations. We hand-collect the following variables from both the original and restated financial reports for the first year a firm restated its earnings: total assets, federal and foreign pre-tax income, federal and foreign current tax expense, and current and prior year deferred tax assets related to net operating losses. We lose 224 restatements for which there is incomplete original or restated balance sheet, income statement, and/or income tax footnote information, leaving 214 misstatement firms from the GAO (2002) report, of which 37 restated their earnings upward.

¹⁶ The GAO database excludes “restatements resulting from mergers and acquisitions, 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). Restatements announced during our sample period were more likely caused by accounting irregularities and aggressive accounting practices vis-à-vis more recent restatements (i.e., GAO 2006) that were more likely caused by errors. See Hennes et al. (2008) and footnote 2 above.

We supplement the GAO restatement sample by hand-collecting additional restatements occurring between July 1, 2002 and December 31, 2003. To identify the additional restatement firms that engaged in downward earnings management in this period, we conduct an extensive keyword search on Lexis-Nexis Business and 10kWizard.com. Specifically, we search for “restate,” “restated,” “restates,” “restating,” and “restatement” in all firms’ press releases and financial statements. Similar to the GAO sample, we exclude restatements related to dividend distributions, stock splits, discontinued operations, changes in accounting periods, and applications of new accounting principles or policies. We also use the same accounting irregularities classification scheme as the GAO report to identify the cause of the downward earnings management. As reflected in Table 1, Panels A and B, this supplemental search added eight income-decreasing misstatement firms, resulting in a total of 45 firms that we classify as downward earnings managers.¹⁷

Table 1, Panel C summarizes the types of accounting irregularities that the downward earnings management misstatement firms acknowledged. Because some restatements reflect multiple irregularities, there are 60 reasons provided for the 45 misstatement firms. The most common accounting irregularities are ones that involve revenue recognition (32 percent) and expense recognition (25 percent). Panel C also presents statistics for the entire GAO (2002) sample; these indicate a slightly higher percentage of restatements in the full GAO sample involving revenue recognition irregularities and a somewhat lower percentage (19 percent) involving expense recognition irregularities. The percentages of restatements related to in-process R&D also differ across the two samples: approximately 15 percent of our upward restatements but just 3 percent of all GAO restatements are related to that category. This

¹⁷ Table 1, Panel B indicates that the remainder of our GAO misstatement sample includes 151 firms that we can classify as income-increasing earnings managers and 26 firms with restatements that did not affect pre-tax net income. See Badertscher et al. (2009) for additional details.

difference is not surprising since in-process R&D restatements are due solely to write-offs that reduce pre-tax income.¹⁸ Finally, earnings management that involves restructuring charges, which is one of the five “accounting gimmicks” mentioned by former SEC Chairman Arthur Levitt in his “numbers game” speech (Levitt 1998), represents 10 percent of our downward earnings management irregularities.

INSERT TABLE 1 HERE

V. RESULTS

We begin by providing descriptive statistics for the misstatement sample of downward earnings managers and a matched control sample of 4,225 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 151 restatement firms from the GAO report that managed their annual earnings upward. Next, we present summary statistics for the explanatory variables in equation (1) for both the downward earnings management and matched control samples. Equation (1) models the effect of our test and control variables on the probability that a firm restates earnings upward. We then report the multivariate probit results of estimating equation (1) to test H1 and H2. Finally, we discuss the results of comparing the types of earnings management strategies – book-tax conforming and nonconforming – between the upward and downward earnings management firms (i.e., H3), and report estimates of tax savings the downward earnings managers appear willing to forgo to avoid managing earnings in real, rather than nominal, ways.

¹⁸ Banyai (2006, 1) investigates the use of in-process R&D write-offs as an earnings management technique used by firms operating in certain industries, and notes the “SEC believed the IPR&D charges reported by many companies were unreasonable and misleading to investors, and began challenging the financial statements of companies reporting significant IPR&D charges.” Also see Turner (1999), Nelson et al. (2003), and Dowdell and Press (2004). The IPR&D observations in our misstatement sample are from fiscal years prior to 1999, and thus precede the SEC’s scrutiny of IPR&D.

Descriptive Statistics – Misstatement Firms and Control Sample

Table 2 displays summary statistics for numerous firm characteristics. The table reflects two comparisons: our misstatement sample of downward earnings managers with (1) the matched control sample of 4,225 non-misstatement firms that we use in our multivariate analysis, shown in the middle columns, and (2) the sample of 151 misstatement firms that managed earnings upward and that we use to test H3, shown in the right-hand columns.

INSERT TABLE 2 HERE

The descriptive statistics suggest firms that restated their financial results due to income-decreasing earnings management are fundamentally different on several dimensions from both the matched control sample and from firms that restated due to income-increasing earnings management. First, relative to the matched control sample of non-misstatement firms, the downward earnings management firms: have lower abnormal accruals (*MJAC*), but are more profitable (*ROA*), report higher cash flows from operations (*CFO*), and are larger (*LAG_TA*).¹⁹

Next, relative to upward earnings management misstatement firms, our sample of downward earnings management misstatement firms: exhibit lower book-tax differences (*BTD*) and abnormal accruals, have lower mean but higher median profitability, report a higher level and change in cash flows from operations (Δ *CFO*), have lower interest coverage (*INT_COV*) and less external financing (*FIN_R*), are larger, and have smaller changes in accounts receivable (Δ *AR*) and inventory (Δ *INV*). These differences between downward and upward earnings management firms suggest the following. First, because there is no difference in deferred tax

¹⁹ As illustrated in Figure 1, we predict that tax-motivated downward earnings management is generally accomplished via real transactions management, which should not be associated with earnings restatements. In untabulated results, we estimate the amount of real transactions management, based on the methodology in Roychowdhury (2006) and Badertscher (2008). We find that the mean and median amounts of real transaction management are significantly higher in the downward earnings management sample (-0.003 and -0.002, respectively) compared to the mean and median amounts in the matched control sample (-0.011 and -0.006, respectively), which is consistent with the downward earnings management misstatement sample containing little tax-motivated downward earnings management.

expense (*DTE*) but significant differences in total book-tax differences, our sample of downward earnings management misstatement firms likely have greater permanent book-tax differences. Second, based on differences in financing needs and the levels and changes in cash flows from operations, the downward earnings managers appear to have less of an incentive to manage earnings upward. Third, the differences in the changes in accounts receivable and inventory may suggest that downward earnings managers are not growing as much as the upward earnings management firms,²⁰ or possibly that the downward earnings management is concentrated in these accounts.

Untabulated results indicate that the mean amount of pre-tax earnings management scaled by lagged total assets for the 45 downward earnings management firms is -0.1398, or approximately 14 percent of total assets (median = -0.023). In contrast, the comparable percentage for the 151 upward earnings managers is 0.068 or 6.8 percent of total assets (median = 0.025). Note that while the magnitudes of the median scaled downward and upward earnings management effects are virtually identical, the mean magnitude of downward earnings management is substantially larger than that of upward earnings management. This suggests the presence of several large downward earnings management observations, consistent with some firms taking a big bath.

Descriptive Statistics – Incentives to Manage Earnings Downward

Table 3 presents descriptive statistics for the explanatory variables included in equation (1), which models the impact of various incentives to engage in downward earnings management on the probability that a firm restates its earnings upwards. Descriptive statistics are presented for the misstatement sample in the left-hand columns and for the matched control sample of non-restatement firms in the right-hand columns. Consistent with hypothesis H1, we observe no

²⁰ Average market-to-book ratios are not significantly lower for downward earnings management firms.

difference between downward earnings managers and the control sample with respect to the incentive to engage in tax-motivated downward earnings management (*TAXABLE*). Regarding non-tax motivations, Table 3 indicates support for hypotheses H2a, H2b, and H2c, which respectively predict that downward earnings management firms have (in the subsequent period) a greater increase in the value of options granted to the CEO (Δ *OPTION_GRANTS*), a greater net decrease in shares outstanding (*REPURCHASE*), and more net insider purchases of shares (*INSIDER_TRADING*), relative to the matched control sample. Furthermore, consistent with H2f, downward earnings managers are more likely to be very large firms (*POL_COST*).

INSERT TABLE 3 HERE

Consistent with hypothesis H2d, the misstatement firms are also more likely to meet or beat earnings targets (*MBE*). Figure 2 plots analysts forecast errors based on originally report (managed) and restated (unmanaged) earnings. In Figure 2, 32 of the 45 restatement firms that managed earnings downward met or beat their earnings target based on originally reported earnings. Further, on a restated basis the analyst forecast error distribution shifts markedly to the right, indicating that had the firms initially reported their unmanaged (i.e., restated) earnings, a majority of them would have beat the earnings target by a clear margin. Finally, Table 3 reveals that 6 firms (13.3 percent of 45) reported restated (i.e., unmanaged) earnings that were at least five cents per share below the earnings target, which is evidence consistent with these firms taking a “big bath” (also see Figure 2).

INSERT FIGURE 2 HERE

In Figure 3 we plot the mean return on assets (*ROA*) over the five years centered on the misstatement year for the downward earnings managers – based on both their original and restated numbers – and for the matched control sample of non-restatement firms. The *ROA* plot

based on misstatement firms' originally reported earnings is located between their restated *ROA* plot (which is higher) and the control sample's *ROA* plot (which is lower). That is, the *ROA* plot based on originally reported – i.e., managed – earnings is closer to the control sample's plot, consistent with misstatement firms originally reporting *ROA* that is more similar to peer firms. Furthermore, in untabulated results we find that over the five-year period surrounding the year of misstatement, both the mean and median misstatement firms' ratios of standard deviation of earnings to standard deviation of operating cash flows are significantly smaller for the originally reported time-series of earnings than for the restated values. Both of these results are consistent with downward earnings managers engaging in income smoothing to create cookie jar reserves.

Pair-wise correlations among the regression variables (untabulated) reveal that, on a bivariate basis, *RESTATE* is positively and significantly associated with *REPURCHASE*, *INSIDER_TRADING*, *MBE*, and *POL_COST*.

INSERT FIGURE 3 HERE

Multivariate Results

We report the results of estimating equation (1) for the sample of downward earnings management misstatement firms and the matched control sample in Table 4. The left-hand columns present the results of estimating equation (1) for the full sample. This sample includes all 45 misstatement firms, but excludes the stock option grants and net insider trading variables because data for these items are not available for all control firms. The right-hand columns present the results of estimating equation (1) for the 45 misstatement firms and a limited sample of control firms having data for all variables.

Consistent with the univariate analyses above, the coefficient on *TAXABLE* is not significant. This result is consistent with H1 and suggests that being taxable (i.e., having a

strong incentive to manage earnings downward to reduce taxes) is not associated with accounting irregularities that would result in a subsequent earnings restatement.

In both the full and limited sample estimations, the coefficients on *REPURCHASE* are significantly positive at the 10 percent level, consistent with H2b that misstatement firms manage earnings downward to depress stock prices prior to corporate stock repurchases. In the limited sample, the coefficient on *ΔOPTION_GRANTS* is insignificant, and thus H2a is not supported. However, the coefficient on *INSIDER_TRADING* is positive and significant at approximately the 5 percent level, which provides evidence that firms manage earnings downward prior to insiders purchasing stock (H2c). The coefficient on *MBE* is highly significantly positive in both the full sample estimation (p-value = 0.000) and the limited sample estimation (p-value = 0.003), consistent with firms managing earnings downward when pre-managed earnings are above the earnings target (H2d) to create cookie jar reserves for future periods. While positive, the coefficient on *BIG_BATH* is not significant in either estimation, and thus H2e is not supported. Finally, the coefficient on *POL_COST* in the full sample is positive and significant (p-value = 0.005), but it is not significant in the limited sample estimation. This latter result likely reflects the fact that we obtain options grant data from *Execucomp* and insider trading data from *Thomson Financial*; both of these databases include only relatively large firms, which reduces variability in the *POL_COST* variable in the limited sample. Hence, the *POL_COST* results provide partial support for the hypothesis that the largest firms manage earnings downward to avoid political costs (H2f).²¹

²¹ As an alternative proxy for political costs we compute a market share variable that equals 1 if the firm is in the top 10 percent of the *Compustat* population in terms of market share for its industry. Market share is defined as firm *i*'s sales in year *t-1* divided by the sum of the sales of all firms in the same 3-digit SIC industry in year *t-1*. The results are quantitatively similar to those when we use *POL_COST* as the proxy for political costs.

With regard to the control variables, we find that the probability of restating earnings upward (i.e., managing earnings downward) decreases in the limited sample when firms are audited by a Big 4/5/6 auditor (*BIG_AUDIT*) and decreases in both samples with the presence of analyst following (*AF*). These results are consistent with external monitoring being somewhat effective in constraining downward earnings management.

INSERT TABLE 4 HERE

Downward versus Upward Earnings Management and Book-Tax Conformity

In Table 5, Panel A, we report the results of comparing the rates (i.e., proportions) of book-tax conforming and nonconforming earnings management strategies between the samples of downward and upward earnings managers. There is no statistically significant difference in the proportions of conforming (and nonconforming) rates of earnings management between the downward and upward earnings managers. The mean (median) proportion of conforming earnings management, *C_RATE*, for the downward earnings management firms is 0.310 (0.000), while mean (median) *C_RATE* is 0.349 (0.018) for the upward earnings management firms. This result is in stark contrast to the notion of tax-efficient earnings management that predicts managers should prefer to manage earnings downward in a conforming manner to reduce taxable income (as upward earnings managers prefer to use nonconforming methods (Badertscher et al. 2009)). As reported in Panel B of Table 5, considering only firms that are most likely to be in a taxable position (*TAXABLE* = 1) and thus have the greatest incentive to manage earnings in a tax-efficient manner, the downward earnings managers' mean *C_RATE* is significantly lower, not greater, than that of the upward earning management firms. Moreover, when *TAXABLE* = 0, i.e., when firms either have net operating loss carryforwards and/or current losses and thus have a lower tax incentive to manage earnings downward, the mean amount of conforming earnings

management is actually greater for the downward earnings managers (Panel C). Taken together, the results reported in Table 5, Panels A, B, and C do not support H3. However, this evidence provides additional support for the prediction that we do not expect to find tax savings as a motive for downward earnings management in a sample of firms that restated earnings upward because of accounting irregularities.

INSERT TABLE 5 HERE

Additional Analyses

Given our result that downward earnings management firms do not manage earnings in a book-tax conforming manner more than upward earnings managers, we estimate the tax savings “left on the table”; i.e., we estimate tax savings forgone because firms did not opt to manage earnings downward in a conforming, i.e., a tax-efficient, manner. Table 6, Panel A indicates that 58 percent of the downward earnings management misstatement sample (i.e., 26 of the 45 firms) did not restate current tax expense when they restated their financial statements. Of these 26 firms, 16 firms had positive (original and thus restated) current tax expense, consistent with all of their earnings management being conducted in a nonconforming manner despite having insufficient NOLs and/or current losses to offset taxable income. Only 15, or one-third, of the downward earnings management firms restated current tax expense upward. Curiously, four firms restated current income taxes downward when they restated income upward.

INSERT TABLE 6 HERE

In Panel C of Table 6, we provide estimates of the tax savings forgone because firms did not manage earnings downward in a conforming manner. We calculate the maximum amount of tax savings that could have been achieved had all earnings management been conducted in a conforming manner. The estimate of tax savings forgone is the difference between this

maximum amount and the change in current tax expense due to the restatement.²² (We summarize the methodology used to calculate the maximum tax savings in Panel B.) As shown in the right-hand (i.e., the total) column of Panel C, the mean (median) amount of tax savings forgone for the full sample is 14 (0) cents per dollar of pre-tax earnings management. For taxable firms ($TAXABLE = 1$), the mean (median) tax savings forgone is 23 (32) cents per dollar of pre-tax earnings management.²³

If we assume for simplicity that the majority of our sample firms were taxable at the U.S. statutory corporate tax rate of 35 percent, then, on average, the downward earnings managers left approximately 38 percent (i.e., 14/35) of the available tax benefits from downward earnings management on the table. Considering only profitable firms without NOL carryforwards, this percentage increases to 66 percent (23/35).²⁴ Overall, the results in Table 6 provide strong evidence that the downward earnings management firms left tax dollars on the table by engaging in nonconforming earnings management. Given that restatements involve accounting irregularities, our sample firms presumably chose to engage in nominal earnings management (which is generally nonconforming) instead of real transactions management (which is generally conforming). Accordingly, these forgone tax savings represent a lower bound for the incremental costs associated with real transactions management.²⁵ This result complements the

²² As in Erickson et al. (2004), during our sample period stock option tax deduction benefits were recorded as increases to stockholders' equity and did not reduce current tax expense. None of the firms we estimate as having forgone tax savings have stock option tax benefits greater than current tax expense reflected in their original 10K filing. Hence, we are able to use the change in current tax expense as a measure of taxes paid due to the restatement.

²³ The result that firms for which $TAXABLE = 1$ have the highest tax savings forgone is due to these firms having the highest maximum tax savings possible if all of their earnings management had been book-tax conforming. Firms for which $TAXABLE = 0$ have less, and possibly zero, maximum tax savings possible.

²⁴ If the firms were taxed at a rate lower than 35 percent, the percentages of tax savings forgone would be higher.

²⁵ Real transactions management can involve significant operational and efficiency costs that can persist over a number of periods. For example, firms that accelerate R&D costs into the current year likely engage in less productive and/or efficient R&D, which can have longer-term implications for firm performance, thus leading to higher incremental costs of real transactions management.

findings in Erickson et al. (2004) that firms engaging in fraudulent upward earnings management were willing to incur tax costs to do so. By choosing to engage in accrual-based / nominal earnings management, our sample of downward earnings management misstatement firms were willing to forgo tax savings to avoid managing earnings in ways that would disrupt operations and thus generate operating costs.

VI. CONCLUSION

Utilizing a sample of firms that restated earnings upward due to accounting irregularities and thus presumably managed earnings downward, we investigate the tax and non-tax motivations for firms to engage in downward earnings management. As predicted, we find no evidence that the misstatement firms managed earnings downward to reduce taxes. That is, we expect that tax-motivated downward earnings management is typically accomplished via real transactions management, which should not give rise to accounting irregularities and thus is unlikely to lead to a restatement. In contrast, our results provide considerable evidence for non-tax motivations for downward earnings management. In particular, downward earnings management misstatement firms typically met or beat their earnings targets despite managing earnings downward, consistent with smoothing earnings to create cookie jar reserves. The results also suggest that managers opportunistically managed earnings downward to depress share prices in the anticipation of stock repurchases and in anticipation of net insider purchases of stock. Finally, there is evidence that very large firms were more likely to be classified as downward earnings managers, consistent with these firms seeking to avoid political costs.

Given that a firm manages earnings, we fail to find a difference in the proportion of book-tax conforming earnings management between the downward earnings management misstatement firms and a sample of misstatement firms that had managed earnings upward. This

result indicates that the downward earnings managers generally did not manage earnings in a tax-efficient manner, consistent with our finding of an absence of tax-motivated downward earnings management in our misstatement sample. In fact, we document that more than one-half of our sample firms did not restate current tax expense when restating their earnings; i.e., none of their earnings management was book-tax conforming and thus was not tax-efficient. On average, our sample firms left 14 cents per dollar of pre-tax earnings management on the table by using nonconforming strategies in lieu of tax-efficient, conforming, downward earnings management strategies. The average amount of tax savings forgone increases to 23 cents per dollar of pre-tax earnings management for the sample firms that did not have NOL carryforwards or current losses, i.e., for the subset that presumably would have the greatest incentive to manage earnings downward in a tax-efficient manner.

Our results complement those of Erickson et al. (2004). They analyze a sample of 27 firms that fraudulently overstated their earnings for financial statement purposes and find that 15 of their sample firms paid an average of 20 cents of current income tax for every dollar of overstated pre-tax income they reported. Their results are consistent with such firms being willing to incur the tax costs associated with upward conforming earnings management to avoid the financial reporting or other costs of reporting lower earnings and/or to reduce the likelihood (*ex ante*) of detection. We conjecture that many firms in our sample were willing to leave tax savings on the table because the costs of accrual-based (i.e., nominal) earnings management are lower than those associated with real transactions management. Moreover, we hypothesize that a particular firm's motivation to manage earnings downward determines *how* it manages its earnings. Tax-motivated downward earnings management must involve book-tax conforming transactions. In contrast, although firms with non-tax motivations may have some choice of

engaging in nominal or real earnings management, the data indicate that they overwhelmingly choose nominal earnings management, consistent with the costs of real transactions management being perceived as outweighing the forgone tax savings associated with nominal earnings management. Thus, forgone tax savings represent the lower bound for the incremental costs associated with real transactions management and its impact on operations.

Our results lead to a better understanding of both the motivations for, and the strategies associated with, downward earnings management, a topic less thoroughly explored in the literature than income-increasing earnings management. Specifically, we utilize the restatement setting to link incentives for non-tax-motivated downward earnings management to strategies involving accrual-based nominal earnings management strategies. To the extent firms engage in tax-motivated downward earnings management, our results suggest they do so in ways that involve real transactions management. While our results are based on firms that restated their earnings and may not generalize to the wider population of firms, the evidence indicates the relative importance of the various non-tax motivations for downward earnings management and identifies the way that tax-motivated downward earnings management most likely is accomplished.

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TABLE 1
Misstatement Sample Selection and Description

| Panel A: Misstatement Sample Selection | |
|--|-------------------|
| | <u>N</u> |
| All GAO (2002) Misstatements Firms | 845 |
| Less: | |
| Exclusion of quarterly restatements | (407) |
| Exclusion of firms for insufficient financial, tax footnote, and/or restatement data | <u>(224)</u> |
| GAO (2002) Misstatement Firms | 214 |
| Plus: Eight additional income-decreasing earnings management firms that announced a restatement between July 1, 2002 and December 31, 2003 | <u>8</u> |
| Total Misstatement Firms | <u><u>222</u></u> |

| Panel B: Misstatement Firms Partitioned by First Year Direction of Earnings Management | |
|---|-------------------|
| Direction of Earnings Management | Firms |
| First-Year Income Increasing | 151 |
| First-Year Income Decreasing | 45 |
| No Effect on Pre-tax Income | <u>26</u> |
| Total Misstatement Firms | <u><u>222</u></u> |

TABLE 1 (continued)

| Panel C: Types of Accounting Irregularities Causing the Upward Restatements | | | | |
|--|-------------------|--------------------------------|--|--------------------------------|
| Reason for Restatement | GAO Report | Percent of Observations | Downward Earnings Management Sample | Percent of Observations |
| Revenue only or revenue and other irregularities | 388 | 36.1% | 19 | 32% |
| Expense only or expense and other irregularities | 208 | 19.3% | 15 | 25% |
| Mergers and Acquisitions | 64 | 6.0% | 3 | 5% |
| In-Process R&D | 36 | 3.3% | 8 | 13% |
| Reclassifications | 48 | 4.5% | 1 | 2% |
| Related Third Party | 31 | 2.9% | 2 | 3% |
| Restructurings | 124 | 11.5% | 6 | 10% |
| Securities | 65 | 6.0% | 2 | 3% |
| Other | <u>111</u> | <u>10.3%</u> | <u>4</u> | <u>7%</u> |
| Total Irregularities | 1,075 | 100% | 60 | 100% |
| Total Misstatement Firms | 845 | | 45 | |

TABLE 2
Descriptive Statistics of Firm Characteristics Based on Originally Reported Data for Firms that Managed Earnings Downward Compared to a Matched Control Sample and to a Sample of Firms that Managed Earnings Upward

| Variable | Firms that Managed Earnings Downward | | | Matched Control Sample | | | Firms that Managed Earnings Upward | | |
|-------------------|--------------------------------------|---------------|---------------|------------------------|--------|--------|------------------------------------|--------|--------|
| | N | Mean | Median | N | Mean | Median | N | Mean | Median |
| <i>DTE</i> | 45 | -0.004 | 0.000 | 4,225 | -0.001 | 0.000 | 151 | -0.003 | 0.001 |
| <i>BTD</i> | 45 | <i>-0.078</i> | <i>-0.026</i> | 4,225 | -0.075 | -0.035 | 151 | 0.018 | 0.004 |
| <i>MJAC</i> | 45 | -0.092 | <i>-0.042</i> | 4,225 | -0.032 | -0.020 | 151 | 0.048 | 0.031 |
| <i>MTB</i> | 45 | 3.402 | 2.453 | 4,225 | 3.796 | 2.190 | 151 | 4.242 | 3.886 |
| <i>ROA</i> | 45 | -0.146 | 0.008 | 4,225 | -0.261 | -0.045 | 151 | -0.033 | -0.023 |
| <i>FIN_R</i> | 45 | <i>0.121</i> | <i>0.038</i> | 4,225 | 0.175 | 0.062 | 151 | 0.311 | 0.115 |
| <i>LEV</i> | 45 | 0.374 | 0.137 | 4,225 | 0.198 | 0.068 | 151 | 0.250 | 0.221 |
| <i>INV_INTCOV</i> | 45 | <i>0.179</i> | <i>0.080</i> | 4,225 | 0.056 | 0.000 | 151 | 0.541 | 0.259 |
| <i>CFO</i> | 45 | 0.033 | 0.031 | 4,225 | -0.086 | -0.022 | 151 | -0.022 | 0.018 |
| <i>ΔCFO</i> | 45 | <i>0.007</i> | <i>0.008</i> | 4,225 | 0.010 | 0.004 | 151 | -0.049 | -0.019 |
| <i>BIG_AUDIT</i> | 45 | 0.867 | 1.000 | 4,225 | 0.800 | 1.000 | 151 | 0.748 | 1.000 |
| <i>AF</i> | 45 | 0.667 | 1.000 | 4,225 | 0.537 | 1.000 | 151 | 0.682 | 1.000 |
| <i>MNC</i> | 45 | 0.378 | 0.000 | 4,225 | 0.347 | 0.000 | 151 | 0.319 | 0.000 |
| <i>LAG_TA</i> | 45 | 3,842 | 582 | 4,225 | 923 | 46 | 151 | 1,275 | 115 |
| <i>ΔAR</i> | 45 | <i>-0.059</i> | <i>-0.007</i> | 4,225 | -0.063 | -0.006 | 151 | 0.059 | 0.032 |
| <i>ΔINV</i> | 45 | <i>-0.017</i> | <i>0.000</i> | 4,225 | -0.058 | 0.000 | 151 | 0.037 | 0.006 |

See Appendix A for variable definitions. **Bold** indicates firms that managed earnings downward are significantly different from the matched control sample at the 10% level or better. *Italics* indicate firms that managed earnings downward are significantly different from firms that managed earnings upward at the 10% level or better.

TABLE 3
Descriptive Statistics for Equation (1) Variables Based on Originally Reported Data of Proxies for Motivations to Manage Earnings Downward for Firms that Managed their Earnings Downward and a Matched Control Sample

| | Firms that Managed Earnings Downward | | | Matched Control Sample | | |
|------------------------|--------------------------------------|--------------|--------------|------------------------|--------|--------|
| | N | Mean | Median | N | Mean | Median |
| <i>TAXABLE</i> | 45 | 0.467 | 0.000 | 4,225 | 0.390 | 0.000 |
| <i>ΔOPTION_GRANTS</i> | 45 | 1.139 | 0.141 | 2,844 | 0.207 | -0.030 |
| <i>REPURCHASE</i> | 45 | 0.060 | 0.000 | 4,225 | 0.013 | 0.000 |
| <i>INSIDER_TRADING</i> | 45 | 0.124 | 0.000 | 2,530 | -0.121 | 0.000 |
| <i>MBE</i> | 45 | 0.711 | 1.000 | 4,225 | 0.430 | 0.000 |
| <i>BIG_BATH</i> | 45 | 0.133 | 0.000 | 4,225 | 0.112 | 0.000 |
| <i>POL_COST</i> | 45 | 0.310 | 0.000 | 4,225 | 0.061 | 0.000 |
| <i>BIG_AUDIT</i> | 45 | 0.867 | 1.000 | 4,225 | 0.800 | 1.000 |
| <i>AF</i> | 45 | 0.667 | 1.000 | 4,225 | 0.537 | 1.000 |
| <i>CFO</i> | 45 | 0.033 | 0.031 | 4,225 | -0.086 | -0.022 |
| <i>ΔCFO</i> | 45 | 0.007 | 0.008 | 4,225 | 0.010 | 0.004 |

See Appendix A for variable definitions. **Bold** indicates that the firms that managed earnings downward are significantly different from the matched control sample at the 10% level or better.

TABLE 4
Results for Probit Regressions of *RESTATE* Indicator Variable on Incentives to Manage Earnings

| | Predicted | Total Sample | | Limited Sample | |
|------------------------|-----------|--------------|--------------|----------------|--------------|
| | | Coefficient | P-Value | Coefficient | P-Value |
| <i>Intercept</i> | | -4.522 | 0.000 | -0.740 | 0.227 |
| <i>TAXABLE</i> | 0 | -0.050 | 0.439 | -0.135 | 0.359 |
| <i>ΔOPTION_GRANTS</i> | + | | | 0.000 | 0.435 |
| <i>REPURCHASE</i> | + | 0.764 | 0.086 | 1.908 | 0.069 |
| <i>INSIDER_TRADING</i> | + | | | 0.310 | 0.051 |
| <i>MBE</i> | + | 3.162 | 0.000 | 1.426 | 0.003 |
| <i>BIG_BATH</i> | + | 0.076 | 0.374 | 0.056 | 0.398 |
| <i>POL_COST</i> | + | 1.052 | 0.005 | 0.308 | 0.241 |
| <i>BIG_AUDIT</i> | - | -0.393 | 0.431 | -1.631 | 0.015 |
| <i>AF</i> | - | -1.716 | 0.080 | -1.617 | 0.001 |
| <i>CFO</i> | + | 1.030 | 0.126 | -0.522 | 0.478 |
| <i>ΔCFO</i> | + | -1.915 | 0.924 | -1.156 | 0.738 |
| -2*Log Likelihood | | 397.33 | | 285.02 | |
| Pseudo R ² | | 0.1951 | | 0.1680 | |
| N Restated Sample | | 45 | | 45 | |
| N Control Sample | | 4,225 | | 2,530 | |

See Appendix A for variable definitions.

TABLE 5
A Comparison of Conforming and Nonconforming Rates

Panel A: Full Sample

| | N | <i>C_RATE</i> | | <i>NC_RATE</i> | |
|------------------------------|-----|---------------|--------------|----------------|--------|
| | | Mean | Median | Mean | Median |
| Upward Earnings Management | 151 | 0.349 | 0.018 | 0.651 | 0.983 |
| Downward Earnings Management | 45 | 0.310 | 0.000 | 0.690 | 1.000 |

Bold indicates *C_RATE* is significantly different from *NC_RATE* within the same row at the 10% level or better.
Italics indicate *C_RATE* (*NC_RATE*) is significantly different from *C_RATE* (*NC_RATE*) within the same column at the 10% level or better.

Panel B: TAXABLE = 1

| | N | <i>C_RATE</i> | | <i>NC_RATE</i> | |
|------------------------------|----|---------------|--------------|----------------|--------------|
| | | Mean | Median | Mean | Median |
| Upward Earnings Management | 47 | 0.286 | 0.000 | <i>0.714</i> | <i>0.627</i> |
| Downward Earnings Management | 21 | 0.188 | 0.000 | 0.812 | 1.000 |

Bold indicates *C_RATE* is significantly different from *NC_RATE* within the same row at the 10% level or better.
Italics indicate *C_RATE* (*NC_RATE*) is significantly different from *C_RATE* (*NC_RATE*) within the same column at the 10% level or better.

Panel C: TAXABLE = 0

| | N | <i>C_RATE</i> | | <i>NC_RATE</i> | |
|------------------------------|-----|---------------|--------------|----------------|--------------|
| | | Mean | Median | Mean | Median |
| Upward Earnings Management | 104 | 0.378 | 0.137 | <i>0.622</i> | <i>0.511</i> |
| Downward Earnings Management | 24 | 0.418 | 0.000 | 0.582 | 1.000 |

Bold indicates *C_RATE* is significantly different from *NC_RATE* within the same row at the 10% level or better.
Italics indicate *C_RATE* (*NC_RATE*) is significantly different from *C_RATE* (*NC_RATE*) within the same column at the 10% level or better.

See Appendix A for variable definitions.

TABLE 6
Descriptive Statistics on the Restatement of Current Tax Expense and the Amount Tax Savings Forgone By Not Managing Earnings Downward in a Conforming Manner

Panel A: Current Tax Expense Originally Reported Compared to Current Tax Expense Restated for Firms that Managed Earnings Downward

| | <i>CTE_O</i> > <i>CTE_R</i> | <i>CTE_O</i> = <i>CTE_R</i> | <i>CTE_O</i> < <i>CTE_R</i> |
|---------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| <i>CTE_O</i> > 0 and <i>CTE_R</i> > 0 | 3 | 16 | 13 |
| <i>CTE_O</i> > 0 and <i>CTE_R</i> = 0 | 0 | 0 | 0 |
| <i>CTE_O</i> > 0 and <i>CTE_R</i> < 0 | 1 | 0 | 0 |
| <i>CTE_O</i> = 0 and <i>CTE_R</i> = 0 | 0 | 9 | 0 |
| <i>CTE_O</i> < 0 and <i>CTE_R</i> > 0 | 0 | 0 | 1 |
| <i>CTE_O</i> < 0 and <i>CTE_R</i> = 0 | 0 | 0 | 0 |
| <i>CTE_O</i> < 0 and <i>CTE_R</i> < 0 | 0 | 1 | 1 |
| Total Firms | 4 | 26 | 15 |
| Percentage of Firms | 8.89% | 57.79% | 33.33% |

Panel B: Maximum Amount of Tax Savings From Conforming Earnings Management

| Pre-Tax Income: Original (<i>PTI_O</i>) and Restated (<i>PTI_R</i>) | <i>NOL</i> | Maximum Amount of Tax Savings From Conforming Earnings Management |
|--|--|--|
| <i>PTI_O</i> > 0 and <i>PTI_R</i> > 0 | <i>NOL</i> = 0 <i>NOL</i> < <i>PTI_O</i> <i>PTI_O</i> < <i>NOL</i> < <i>PTI_R</i> <i>NOL</i> > <i>PTI_R</i> | <i>PTI_EM</i> × tax rate <i>PTI_EM</i> × tax rate (<i>PTI_EM</i> - <i>NOL</i>) × tax rate 0 |
| <i>PTI_O</i> < 0 and <i>PTI_R</i> > 0 | <i>NOL</i> = 0 <i>NOL</i> < <i>PTI_R</i> <i>NOL</i> > <i>PTI_R</i> | <i>PTI_R</i> × tax rate (<i>PTI_R</i> - <i>NOL</i>) × tax rate 0 |
| <i>PTI_O</i> < 0 and <i>PTI_R</i> < 0 | N/A | 0 |

The U.S. tax rate is 35%. Estimated foreign tax rate is change in total foreign tax scaled by change in foreign pre-tax income.

Panel C: Tax Savings Forgone Due to Nonconforming Earnings Management

| | TAXABLE | | Total |
|---------------|----------------|----------|--------------|
| | 0 | 1 | |
| Mean | 0.042 | 0.234* | 0.136* |
| Median | 0.000 | 0.318* | 0.000 |

* Indicates the value is significantly different from zero at the 5% level. See Appendix A for variable definitions.

FIGURE 1

Diagram of the Impact of Downward Earnings Management Motivations on How Earnings are Managed and the Probability of Restatement

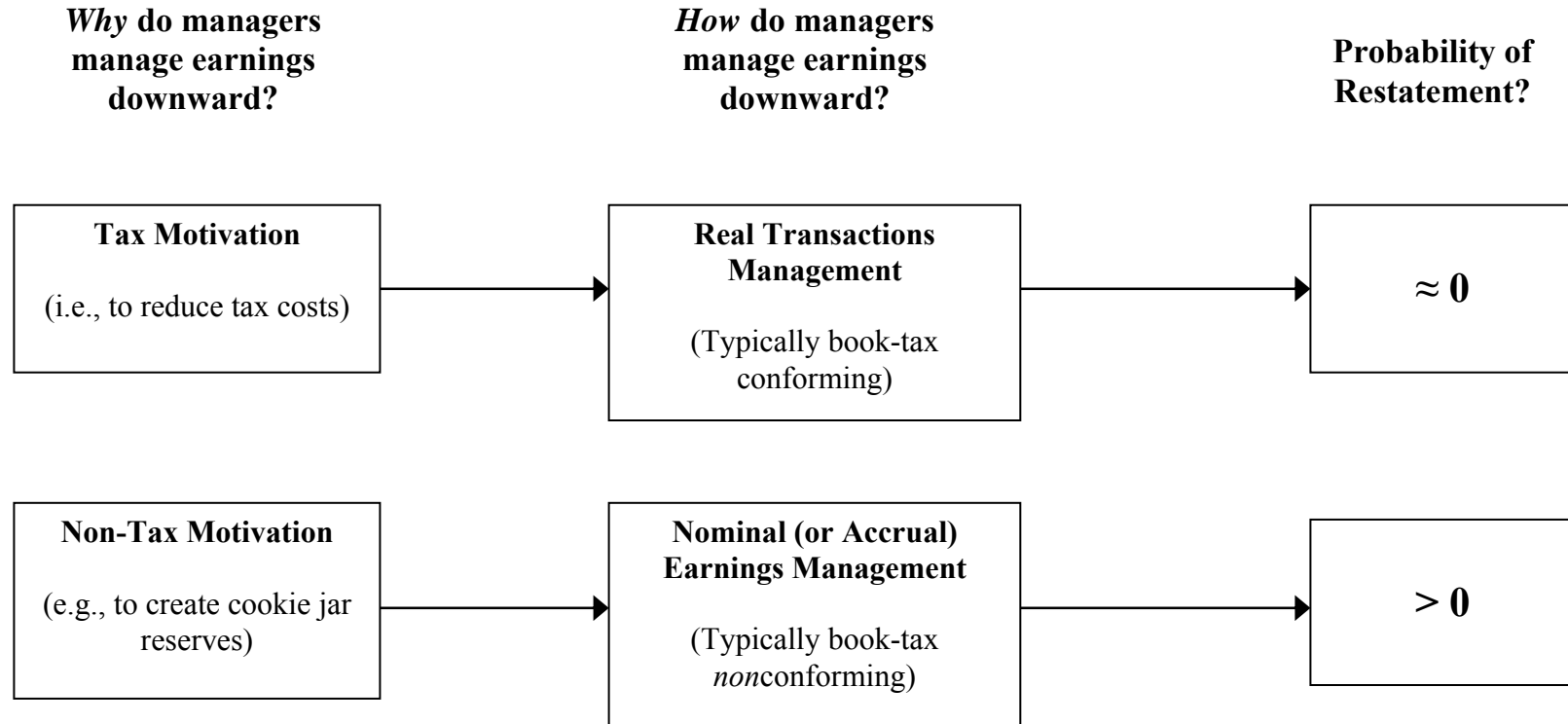
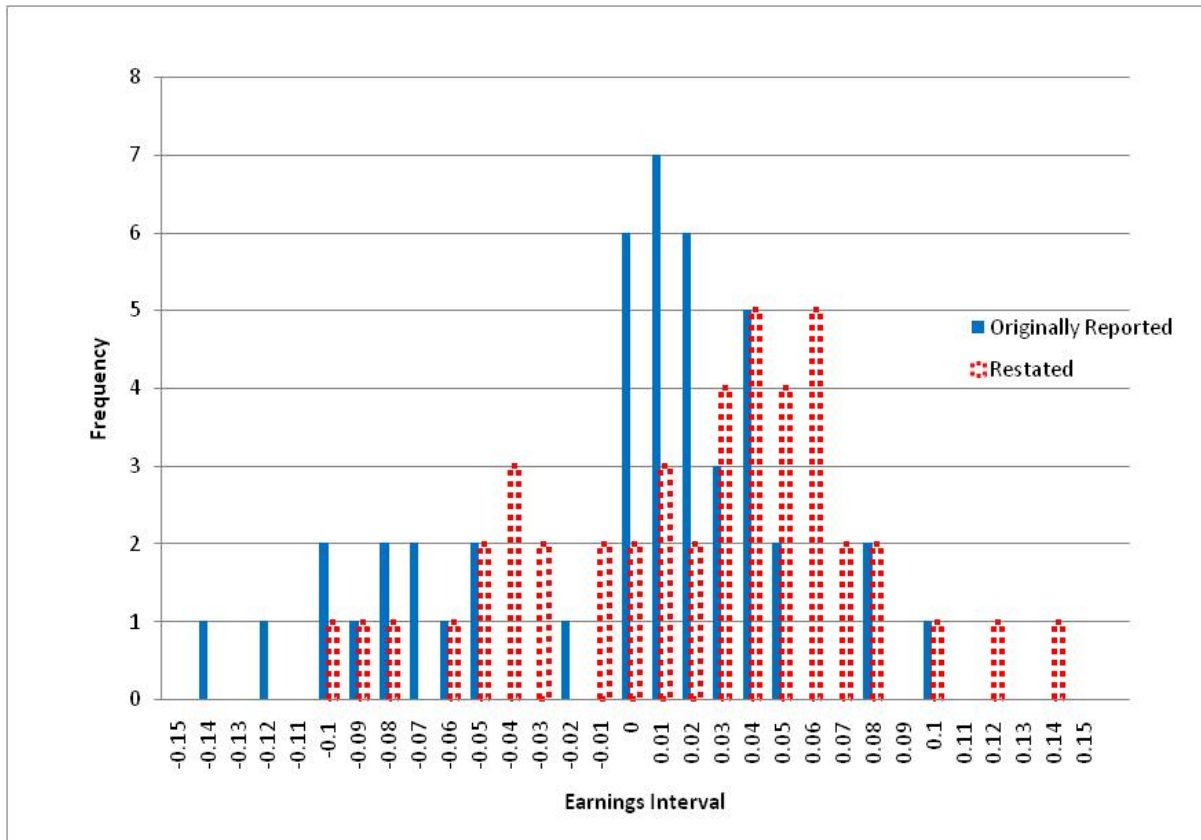
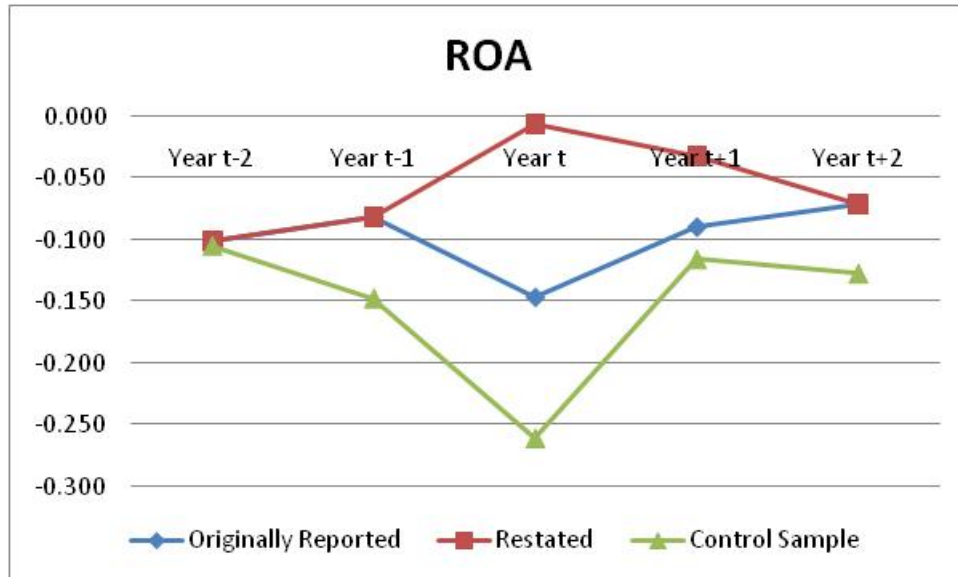


FIGURE 2
Distribution of Forecast Errors for Firms that Engaged in Downward Earnings Management Based on Originally Reported and Restated Earnings.



Forecast Error is defined as EPS (either originally reported or restated) minus the I/B/E/S mean consensus analyst EPS forecast in year t , or if there is no analyst following then EPS (either originally reported or restated) in year t minus prior year's EPS. Since I/B/E/S reports both analysts' forecasted earnings and actual earnings *after* backing out discontinued operations, extraordinary charges, and other non-operating items, there is a potential difference between our measure of original and restated earnings and actual earnings reported by I/B/E/S. This difference is due to our measure of originally reported and restated earnings not adjusting for the same non-operating items (e.g., special items, non-operating income or expense, interest income) that analysts adjust for in forming the consensus I/B/E/S earnings forecast. Thus, we adjust the originally reported earnings and restated earnings for transitory items that are excluded from I/B/E/S when calculating our forecast errors. Consider the following example. Firm A had originally reported earnings of \$1.00, restated earnings of \$1.05, I/B/E/S actual earnings of \$0.99, and I/B/E/S consensus forecast of \$0.98. Thus, Firm A's originally reported earnings of \$1.00 adjusted for I/B/E/S results in EPS_{original} of \$0.99; and Firm A's restated earnings of \$1.05 adjusted for I/B/E/S results in EPS_{restated} of \$1.04. Hence, Firm A beat analysts forecast using original data ($\$0.99 > \0.98) and restated earnings also beat analyst forecasts ($\$1.04 > \0.98).

FIGURE 3
Return on Assets for Firms that Engaged in Downward Earnings Management Based on Originally Reported, Restated, and the Matched Control Sample.



See Appendix A for variable definitions.

Appendix A Variable Definitions

Variables Used in Equation (1):

| | |
|------------------------|--|
| <i>RESTATE</i> | = Indicator variable equal to 1 if firm <i>i</i> appears in the GAO (2002) or hand-collected restatement sample and restated earnings upward (i.e., has income-decreasing earnings management) for the restatement period beginning with year <i>t</i> , and 0 otherwise. |
| <i>TAXABLE</i> | = Equal to 1 if firm <i>i</i> has both positive current period pre-tax income and no NOL carryforwards at the beginning of year <i>t</i> ; and 0 otherwise. |
| <i>ΔOPTION_GRANTS</i> | = The increase (decrease) from year <i>t</i> to year <i>t</i> +1 in the value of stock options granted (from <i>Execucomp</i>) to the CEO scaled by the CEO's salary; |
| <i>REPURCHASE</i> | = Firm <i>i</i> 's net issue of stock, calculated as the natural log of the number of shares outstanding at the end of year <i>t</i> minus the natural log of the number of shares outstanding at the end of year <i>t</i> +1. A positive amount for <i>REPURCHASE</i> implies the firm is repurchasing shares (a negative number implies the firm is issuing shares). We obtain from CRSP the number of shares outstanding (SHROUT) and the factor to adjust shares outstanding (FACSHR), and compute the number of shares outstanding, adjusting for distribution events such as splits and rights offerings, as follows: We first compute a total factor at time <i>t</i> +1, which represents the cumulative product of the CRSP-provided factor <i>f</i> up to time <i>t</i> +1 inclusive: $Total\ Factor_{t+1} = \prod_{i=1}^{t+1} (1 + f_i)$. We compute the number of shares outstanding adjusted for splits and other events as: $Adjusted\ Shares = Shares\ Outstanding / Total\ Factor$. We use this measure of adjusted shares to compute annual share issuance at time <i>t</i> +1 as: $REPURCHASE_{i,t+1} = \ln(Adjusted\ Shares_t) - \ln(Adjusted\ Shares_{t+1})$, where year <i>t</i> is the first misstatement year. ²⁶ |
| <i>INSIDER_TRADING</i> | = Firm <i>i</i> 's net insider trading purchases from Thomson Financial, calculated as the difference between the number of shares purchased and the number of shares sold in year <i>t</i> +1, divided by the sum of the number of shares purchased and number of shares sold in year <i>t</i> +1, where year <i>t</i> is the first misstatement year. A positive number indicates net insider buying (a negative number indicates net insider selling). ²⁷ |

²⁶ See Pontiff and Woodgate (2007), who show that share issuance exhibits a strong cross-sectional ability to predict stock returns, for a complete description of our calculation of *ISSUE*. This measure is a logged version of the variable used by Stephens and Weisbach (1998), who show that repurchase announcements are associated with decreases in shares outstanding.

²⁷ The Insider Filing Database compiled by Thomson Financial is designed to capture all insider activities as reported on SEC forms 3, 4, and 5. Following prior studies, we focus on open market purchases and sales as reported in Table 1 of Form 4 (Ke et al. 2003). To ensure data quality, we delete all insider trading records that are assigned cleanse code "A" or "S" by Thomson Financial. Thomson Financial verifies the accuracy and

| | |
|------------------|--|
| <i>MBE</i> | = Indicator variable equal to 1 if firm <i>i</i> 's originally reported EPS meets or beats the I/B/E/S mean consensus analyst EPS in year <i>t</i> , or if there is no analyst following, the firm has a positive earnings change; and 0 otherwise. ²⁸ |
| <i>BIG_BATH</i> | = 1 if firm <i>i</i> 's restated EPS is at least 5 cents below the I/B/E/S mean consensus analyst EPS forecast in year <i>t</i> , or if there is no analyst following, then it is at least 5 cents below the prior year's EPS; and 0 otherwise. See footnote 28 for a complete description of how we calculate restated EPS. |
| <i>POL_COST</i> | = 1 if firm <i>i</i> is in the top ten percent of the <i>Compustat</i> population in terms of total assets (#6) at year-end <i>t-1</i> . |
| <i>BIG_AUDIT</i> | = 1 if firm <i>i</i> is audited by a Big 4/5/6 auditor (#149 value of 1 – 7) in year <i>t</i> , and 0 otherwise. |
| <i>CFO</i> | = Firm <i>i</i> 's cash flows from continuing operations (#308 - #124) for year <i>t</i> , scaled by total assets at year-end <i>t-1</i> . |
| <i>AF</i> | = 1 if firm <i>i</i> has any analyst following in year <i>t</i> , and zero otherwise. |
| <i>ΔCFO</i> | = Change in firm <i>i</i> 's CFO from year <i>t-1</i> to <i>t</i> , scaled by total assets at year-end <i>t-1</i> . |

reasonableness of insider reported figures by reference to external sources. The cleanse code “S” indicates no cleansing attempted and security not meeting *Thomson Financial*'s collection requirement; the cleanse code “A” indicates numerous data elements were missing or invalid and that reasonable assumptions could not be made. Consistent with Ke et al. (2003), we restrict the definition of insiders to officers and directors and exclude non-officer insiders (such as large shareholders, retired officers).

²⁸ Forecast Error is defined as EPS (either originally reported or restated) minus the I/B/E/S mean consensus analyst EPS forecast in year *t*, or if there is no analyst following then EPS (either originally reported or restated) in year *t* minus prior year's EPS. Since I/B/E/S reports both analysts' forecasted earnings and actual earnings *after* backing out discontinued operations, extraordinary charges, and other non-operating items, there is a potential difference between our measure of original and restated earnings and actual earnings reported by I/B/E/S. This difference is due to our measure of originally reported and restated earnings not adjusting for the same non-operating items (e.g., special items, non-operating income or expense, interest income) that analysts adjust for in forming the consensus I/B/E/S earnings forecast. Thus, we adjust the originally reported earnings and restated earnings for transitory items that are excluded from I/B/E/S when calculating our forecast errors. Consider the following example. Firm A had originally reported earnings of \$1.00, restated earnings of \$1.05, I/B/E/S actual earnings of \$0.99, and I/B/E/S consensus forecast of \$0.98. Thus, Firm A's originally reported earnings of \$1.00 adjusted for I/B/E/S results in EPS_{original} of \$0.99; and Firm A's restated earnings of \$1.05 adjusted for I/B/E/S results in EPS_{restated} of \$1.04. Hence, Firm A beat analysts forecast using original data (\$0.99 > \$0.98) and restated earnings also beat analyst forecasts (\$1.04 > \$0.98).

Variables Used in Equation (2) or in the Calculation of C RATE:

| | |
|--------------------|--|
| <i>CONFORM_EM</i> | $\frac{(\Delta FED_CTE - \Delta FEDNOL_DTA)}{FED_RATE} + \frac{(\Delta FOR_CTE - \Delta FORNOL_DTA)}{FOR_RATE}$ |
| <i>ΔFED_CTE</i> | = Difference between the originally reported and restated federal current tax expense. |
| <i>ΔFEDNOL_DTA</i> | = The change in federal deferred tax assets related to NOL carryforwards computed as $\Delta NOL_DTA \times (FEDPT_EM / PT_EM)$. |
| <i>ΔNOL_DTA</i> | = Difference between the originally reported and restated change in deferred tax assets related to NOL carryforwards. |
| <i>FEDPT_EM</i> | = Difference between the originally reported and restated U.S. pre-tax income. |
| <i>PT_EM</i> | = Difference between the originally reported and restated total pre-tax income. |
| <i>FED_RATE</i> | = The maximum corporate federal statutory tax rate, which was 35 percent throughout our sample period. |
| <i>ΔFOR_CTE</i> | = Difference between the originally reported and restated foreign current tax expense. |
| <i>ΔFOR_DTE</i> | = Difference between the originally reported and restated foreign deferred tax expense. |
| <i>ΔFORNOL_DTA</i> | = The change in foreign deferred tax assets related to NOL carryforwards computed as $\Delta NOL_DTA \times (FORPT_EM / PT_EM)$. |
| <i>FORPT_EM</i> | = Difference between the originally reported and restated foreign pre-tax income. |
| <i>FOR_RATE</i> | = Foreign tax rate computed as $(\Delta FOR_CTE + \Delta FOR_DTE) / (FORPT_EM)$. |
| <i>C_RATE</i> | = $CONFORM_EM / PT_EM$. |
| <i>NC_RATE</i> | = Firm <i>i</i> 's proportion of nonconforming earnings management, computed as $(1 - C_RATE)$ in year <i>t</i> . |

Variables Used in Table 2 (not defined above)

| | |
|-------------------|--|
| <i>DTE</i> | = Firm <i>i</i> 's deferred tax expense (#50) in year <i>t</i> , scaled by total assets (#6) at year-end <i>t-1</i> . |
| <i>BTD</i> | = Firm <i>i</i> 's book-tax differences, which equal book income less taxable income scaled by lagged total assets. Book income is pre-tax income (<i>Compustat</i> #170) in year <i>t</i> . Taxable income is calculated by grossing-up the sum of current federal tax expense (#63) and current foreign tax expense (#64) and subtracting the change in NOL carryforwards (#52) in year <i>t</i> . If current federal tax expense is missing, total current tax expense is calculated by subtracting deferred taxes (#50), state income taxes (#173) and other income taxes (#211) from total income taxes (#16) in year <i>t</i> . |
| <i>MJAC</i> | = Firm <i>i</i> 's abnormal accruals in year <i>t</i> computed using the modified Jones model (Dechow et al. 1995). |
| <i>MTB</i> | = Firm <i>i</i> 's market-to-book ratio, calculated as market value of equity (#25 × #199) at year-end <i>t-1</i> divided by the book value of equity (#60) at year-end <i>t-1</i> . |
| <i>ROA</i> | = Firm <i>i</i> 's income before extraordinary items (#18) in year <i>t</i> divided by total assets (#6) at year-end <i>t-1</i> . |
| <i>FIN_R</i> | = Firm <i>i</i> 's external financing raised, equals the sum of additional cash raised from the issuance of common and preferred stock (#108) and the issuance of long-term debt (#111) during year <i>t</i> , scaled by average total assets for year <i>t</i> . |
| <i>LEV</i> | = Firm <i>i</i> 's leverage ratio, calculated as short term debt (#34) plus long term debt (#9) at year-end <i>t-1</i> , scaled by total assets at year-end <i>t-1</i> . |
| <i>INV_INTCOV</i> | = The inverse of firm <i>i</i> 's interest coverage ratio, calculated as interest expense (<i>Compustat</i> #15) in year <i>t</i> , divided by operating income before depreciation (<i>Compustat</i> #13) in year <i>t</i> . |
| <i>MNC</i> | = 1 if firm <i>i</i> is a multinational corporation (i.e., if the absolute value of #273 or #64 is greater than zero) in year <i>t</i> , and 0 otherwise. |
| <i>LAG_TA</i> | = Firm <i>i</i> 's total assets (#6) at year-end <i>t-1</i> . |
| ΔAR | = Firm <i>i</i> 's change in accounts receivable (#2), scaled by total assets at year-end <i>t-1</i> . |
| ΔINV | = Firm <i>i</i> 's change in inventories (#3), scaled by total assets at year-end <i>t-1</i> . |

Variables Used in Table 6:

| | |
|--------------|--|
| <i>CTE_O</i> | = Originally reported current tax expense. |
| <i>CTE_R</i> | = Restated current tax expense. |
| <i>PTI_O</i> | = Originally reported pre-tax net income. |
| <i>PTI_R</i> | = Restated pre-tax net income. |
| <i>NOL</i> | = The magnitude of net operating loss carryforwards. |