

Earnings Misstatements, Restatements, and Corporate Governance

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High profile financial restatements from companies like Enron, Worldcom, Healthsouth, and Tyco as well as less celebrated restatements from such companies as Red Hat, Nortel, and Bristol-Myers Squibb have shaken public trust in the U.S. capital market. The restating companies have watched their credit ratings drop, market values erode, and occasionally even faced bankruptcy (Palmrose *et al.* 2004; Hirschev *et al.* 2005). The preponderance of restatements, in part, led to the enactment of the Sarbanes-Oxley Act which reemphasized the need for, and the importance of, strong corporate governance.

When a company restates its financial statements it is admitting to a material error or irregularity in previously issued financial statements. In this paper, we examine whether changes in corporate governance mechanisms within misstating firms play a role in the detection and correction of financial misreporting. Specifically, we investigate how the corporate governance characteristics of restating firms change from the misstatement to the restatement of accounting reports. Although prior research shows that misreporting firms have weak corporate governance (Abbot *et al.* 2004; Farber 2005; Efendi *et al.* 2007; Agrawal and Chadha 2005), no study has investigated whether improvements in corporate governance precede the detection and correction of misreporting. The significant incidence of recurring errors and repeated restatements (Huron

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Consulting Group, 2005) does suggest that in many cases, it is difficult to resolve agency conflicts that lead to the misreporting of financial statements.

Extant research on accounting restatements has focused on how a restatement impacts the market value of the restating firm and on the personal costs borne by restating firm's management. Palmrose *et al.* (2004) find a positive relation between the magnitude of the restatement and market reaction. More severe market reactions are associated with restatements that involve negative implications regarding management integrity and competence as well as a more negative impact on previously reported earnings. Hirschey *et al.* (2005) demonstrate that firms lose on average 9% of their market value when they restate their earnings and over 20% of their market value when the restatement is due to fraud or is initiated by the firm's auditor.

The managers of restating firms also experience significant personal loss. Desai *et al.* (2006) find that 60% of restating firms experience the turnover of at least one top senior manager (for example, the CEO or the CFO) within 24 months of the restatement compared to 35% of the matched control firms. In addition, they find that 85% of these senior managers fail to find comparable employment subsequent to leaving the restating firm.

Given the high costs of potential restatements, Richardson *et al.* (2002) show that the primary motivation to manipulate earnings is to attract external financing at a lower cost. Restating firms have high market expectations for future earnings growth and have higher levels of outstanding debt. They also document that information in accruals, specifically operating and investing accruals, are key indicators of the earnings manipulations that lead to restatement. However, some market participants demonstrate an ability to see through the misstatements that precede the restatement. Hribar *et al.* (2004) find that short-term or transient institutional

investors sell their holdings of restatement firms at least one quarter prior to the quarter of restatement.

Several recent papers look at the effects of corporate governance on misstatement or restatement of financial data. Abbot *et al.* (2004) look at the relation between audit committee characteristics and the probability of restatement. They find that the presence of a financial expert on the audit committee and the fact that the audit committee met at least four times per year reduced the risk of a restatement. Farber (2005) looks at the relation between the quality of a firm's corporate governance and the credibility of their financial reporting system. He finds that firms issuing fraudulent financial statements have fewer outside directors, fewer audit committee meetings, fewer financial experts on the audit committee, are less likely to engage a Big 4 audit firm, and are more likely to have the CEO also serve as the chairman of the board. Agrawal and Chadha (2005) find that the risk of restatement increases when the CEO is a member of the founding family. They also find that companies whose boards and/or audit committees include an independent director with financial expertise have a lower risk of restatement. Interestingly, they find no relationship between the probability of restatement and either board or audit committee independence.

Thus prior studies on the governance characteristics of restating firms, concerned with the causes of financial misreporting, have focused on either the misstatement or the restatement period only. By contrast, we endeavor to obtain insights into the changes that lead to the detection and correction of such misreporting by examining changes in governance characteristics of restating firms between the initial misstatement and the restatement.

We find that prior to the misstatement, misstating firms are more likely to have CEOs who sit on nominating committees, less independent boards of directors, and less independent

audit committees relative to a control sample. Our results on board and audit committee independence contrast with those of Agrawal and Chadha (2005). Moreover, we find that the agency problems that facilitated misreporting *are not* resolved before the restatement. Boards and audit committees also continue to be relatively less independent at restating firms. Our results therefore suggest that restatements are not attributable to governance improvements at misreporting firms. Finally, we also find that restating firms are more likely to be audited by a Big 6 firm and are more likely to experience CFO turnover than are control firms.

The remainder of this paper is organized as follows. Section II contains the research method, including sample details and governance variable definitions. Section III presents empirical results, and section IV concludes the paper.

METHODOLOGY

Sample Selection

We identify an initial sample of 569 restatements covering the period January 1997 through December 2000 from the restatement database constructed by the General Accountability Office (GAO 2003). We choose to terminate our sample in 2000 to specifically avoid the inclusion of high profile and large-scale restatements of 2001 and 2002. In these latter years, major corporations such as Global Crossing, Enron, and WorldCom admitted to accounting irregularities and were subsequently forced into bankruptcy. Other firms' restatement choices during this post-2000 period were likely influenced by these highly publicized events and the ensuing increase in active regulatory scrutiny, as well as by the negative market sentiment prevailing at the time. Moreover the enactment of rules such as Regulation FD may have also affected firms' reporting strategies.

Of our initial sample, we delete 64 restatements because the restating firms are not covered on Compustat. For each remaining firm in the sample, we attempt to identify a control firm. Control firms are identified based on: (1) the restating firm's 2-digit SIC code, and (2) closeness in total assets to the restating firm at the end of the quarter preceding the first misstated quarter. We are unable to identify control firms for 24 restatements. Finally, we require two sets of proxy statements for each sample/control pair: one issued prior to the first misstated quarter, and one issued prior to the restatement announcement. This requirement reduces our sample size to 187 pairs of sample/control firms. Although not all these firms have data on audit committee composition, we do not delete any more observations. As a result, sample sizes (indicated in the tables and the discussion) are slightly different for tests using the audit committee characteristics.

We collect board and audit committee characteristics and executive details from firms' proxy statements. Ownership data are obtained primarily from Spectrum and, where unavailable on Spectrum, from proxy statements. Financial and auditor data are from Compustat, and mergers and acquisition activities are identified from the Securities Data Corporation's (SDC) Mergers & Acquisitions database.

Table 1 provides descriptive information on the sample restatements. (The characteristics of the sample and control firms are examined in subsequent tables/sections.) Panel A reports the calendar year distribution of the sample restatements. The sample restatements increase over the sample period with the greatest number of restatements in 2000, which is consistent with the trend in the initial sample obtained from the GAO report.

For each restatement, we obtain the press release from a Lexis-Nexis search. From the press releases, we identify misstated quarters. From the press release and Securities Exchange Commission (SEC) EDGAR search of original filings, we obtain misreported earnings, the

amount of restatement, and restated earnings. As reported in panel B, the mean (median) restatement amount is -\$5.259 million (-\$1.715 million). Over three-quarters of the sample restatements are negative. We also examine the magnitude of the restatements relative to restating firms' total assets and market value of equity measured at the fiscal year-end preceding the restatement announcement. The mean restatement amount to total assets ratio is -2.2%, whereas the median ratio is -0.8%. Similarly, the mean restatement amount to market value of equity ratio is -2.5%, whereas the median ratio is -0.7%. The mean number of quarters restated is approximately 4.5. The mean (median) number of days from the beginning of the first misstated quarter to restatement announcement is 566 (445). Thus, on average, restatements are made within 1.55 years of the original misstated quarter (See Appendix B, Table 1).

Panel C of Table 1 indicates the reasons for the sample restatements as reported in the GAO database. Most of the sample restatements relate to revenue recognition (63 observations, 33.9% of the sample), restructurings (35 observations, 18.8%), and cost or expense (24 observations, 12.9%). The other specified reasons include: securities-related issues, acquisitions, and in-process research and development.

In panel D, we report the initiator of restatements. A large number of restatements (39%) are initiated by the firms themselves, while over 20% of restatements are initiated by SEC. Less than 9% of the sample restatements are initiated by the auditors of firms and 32% make no mention of the initiator.

Governance Variables

We examine the governance characteristics of our sample and control firms using both univariate and multivariate tests. We compare these characteristics before both the misstatement

period and the restatement date, and also examine changes in the characteristics over that period. We expect that these comparisons will provide an insight into the causes of financial misreporting and the changes that are necessary to ensure detection and correction of such misreporting.

Our choice of governance characteristics is derived from previous research on financial reporting quality. Prior research (e.g., Klein 2002) indicates that the incidence of earnings management is negatively associated with board and audit committee independence. Boards and audit committees that are not independent might not properly monitor firms' accounting procedures and are less likely to detect and correct earnings misstatements. Accordingly, we examine several factors that capture the extent to which firms' boards and audit committees are independent.

Studies show that board of director oversight is inversely related to the amount of influence the CEO can exert over the board. CEOs are likely to be influential when they also chair the board. Dechow *et al.* (1996) find that firms subject to accounting-related enforcement actions by the SEC are likely to have CEOs that also serve as board chairpersons. Our variable, *CEO is Chairman*, is coded 1 if the CEO also chairs the board and 0 otherwise. Klein (1998) and Shivdasani and Yermack (1999) find that board independence is compromised when the CEO is a member of the board's nominating or compensation committees. We define two indicator variables, *CEO on Nominating Committee* and *CEO on Compensation Committee*, that take the value of 1 if the CEO sits on the nominating committee (also if the board has no nominating committee) and the compensation committee, respectively, and 0 otherwise.

We also directly measure the proportion of independent directors on the firm's board. Board independence (measured through board composition) has been shown to both improve

firm governance (e.g., Weisbach 1988) and inhibit accounting fraud (Beasley 1996; Dechow *et al.* (1996). *Board Independence* is defined as the proportion of independent directors on the firm's board. Consistent with prior studies, independent directors are individuals who are neither employees of the firm nor affiliated with the firm in any capacity other than as a director. Klein (2002) proposes an alternate specification of independence, namely whether a majority of the directors are independent, since majority rule may prevail in board decision making. We use an indicator variable, *Board Independence* > 0.5, coded 1 if the proportion of independent directors on the board exceeds 50%, and 0 otherwise. Finally, Agrawal and Chadha (2005) suggest that board members with financial expertise may provide effective monitoring of the reporting process. We test this assertion using an indicator variable *Finance Expert on Board*, coded 1 if an independent board member has financial expertise, else 0. Our definition of financial expertise (Abbott *et al.* 2004; Agrawal and Chadha 2005) includes CPAs as well as individuals with experience in corporate financial management, investment banking, and venture capital.

The board's audit committee is responsible for overseeing the firm's accounting function. Accordingly, the composition of the audit committee has been the subject of extensive regulatory (e.g., Blue Ribbon Committee 1999) and academic (e.g., Beasley 1996; Klein 2002) investigations, consistent with the belief that independent audit committee members are likely to exercise the best oversight. Studies show that audit committee independence is not only associated with financial reporting quality (e.g., Klein 2002), but also with other critical aspects of the financial reporting function such as audit opinions (Carcello and Neal 2000), auditor choice (Abbott and Parker 2000, Carcello and Neal 2003), and the purchase of non-audit services from auditors (Abbott *et al.* 2003).

We use an indicator variable, *Audit Committee*, coded 1 (0) if the firm's board has (has not) constituted an audit committee to examine whether restating firms are less likely to have audit committees than control firms. Similarly, we test for differences in the audit committee composition of our restating and control samples using three variables. These variables are analogous to the board independence variables. *Audit Committee Independence* equals the proportion of independent directors on the firm's audit committee. If independent directors constitute a majority on the audit committee, then *Audit Committee Independence* > 0.5 is coded 1, else 0. Finally to evaluate whether financial expertise matters (Blue Ribbon Committee 1999), we use *Finance Expert of Audit Committee*, which is coded 1 if an independent audit committee member has financial expertise and 0 otherwise.

Shleifer and Vishny (1986) argue that an outside blockholder may serve as an important monitor of the firm's management. DeFond and Jiambalvo (1991) find that firms with outside blockholders have a lower incidence of accounting errors. To examine whether outside blockholders also deter financial misstatements, we use *Outside Blockholder*, which is coded 1 if at least one outsider owns more than 5% of the firm's outstanding shares and 0 otherwise. We also examine auditor quality. Researchers (e.g., Palmrose 1988) have long argued that the biggest accounting firms provide the highest quality audits. However, recent accounting scandals and the SEC's non-audit service-related regulations imply that the large audit firms may also be ones where conflicts of interest are the greatest. We test these opposing points of view with the variable *Big6 Auditor*, which is coded 1 if the firm's auditor is one of the Big 6 and 0 otherwise.

We also include a variable for officer/director stock ownership, since stock ownership is likely to align these individuals' incentives with those of the stockholders and reduce the

likelihood of financial misreporting. *Officer/Director Ownership* is the proportion of outstanding shares held by all officers and directors. While insider ownership increases the officers' influence, prior studies have not found a positive association between inside stockholdings and accounting restatements (e.g., Abbott *et al.* 2004, Agrawal and Chadha 2005). Beasley (1996) also argues that stock ownership may motivate managers to increase firm value, thus alleviating the agency conflict that promotes earnings management. Accordingly, we choose to focus on the motivational role of stock ownership and combine the holdings of officers and directors.

In addition to changes in the governance variables discussed above, we also examine whether the firms experienced turnover in key personnel (CEO and CFO), whether the firms changed auditors, and whether they were involved in any merger/acquisition activity during the period. We study personnel changes because prior research suggests that departing executives might manage earnings (e.g., Dechow and Sloan 1991) and the incoming managers prefer to start with a "clean slate" (Pourciau 1993). Thus ΔCEO equals 1 if the firm's CEO changed over the misstatement-restatement period, else 0. ΔCFO equals 1 if the firm's CFO changed over the misstatement-restatement period, else 0.

We examine auditor changes because these events may indicate accounting problems within firms. $\Delta Auditor$ equals 1 if the firm's auditor changed over the misstatement-restatement period, else 0. Finally, we examine merger and acquisition activity over the misstatement-restatement period, because firms may manage earnings in anticipation of these activities (e.g., Henock 2004). Anecdotal evidence (e.g., Elkind 1998 on Cendant) suggests that accounting irregularities often come to light during due diligence and subsequently, following any reorganization. *M&A Target* equals 1 if the firm was an acquisition target over the

misstatement-restatement period, else 0. *M&A Suitor* equals 1 if the firm was an acquisition suitor over the misstatement-restatement period, else 0.

EMPIRICAL RESULTS

In this section, we present results of univariate and multivariate tests that compare the characteristics of restating firms with those of control firms. The multivariate tests are conducted by estimating logit regressions as suggested by Maddala (1988). We compare the two groups of firms both prior to the misstatement and before the restatement, and also compare how these firms changed over the misstatement-restatement period.

Misstatement Results

Table 2 reports the mean and median characteristics of restating and control firms prior to the misstatement. In addition to the governance characteristics, we also compare the size, age, and selected financial ratios of the two groups of firms. The appendix summarizes the variable definitions. The results indicate that misstating and control firms do not differ along the following dimensions: size, age, financial leverage, growth (measured by firms' market-to-book ratios), and profitability. Among the governance characteristics, we find that restating firms are more likely to have CEOs sit on their boards' nominating committees than are control firms. This suggests that CEO influence over the board may have played a role in the misstatement. We also find that the mean proportion of independent directors on the board is relatively low for restating firms. The audit committee composition variable is significant as well. Mean and median proportions of independent directors on audit committees are lower for the restating firms than for the control firms. These results suggest that independent directors play an

important role in deterring financial misreporting within firms. We find no evidence that the financial expertise of directors matters, however (See Appendix B, Table 2).

The logit analysis, reported in Table 3, confirms the results of the univariate tests. In this analysis, we limit the set of explanatory variables for parsimony. Since the board and audit committee composition variables are highly correlated, we estimate two versions of the model, one with the board characteristic variables and the other with the audit committee variables. The sample size is slightly smaller for the audit committee version than for the board version, because some firms do not have audit committees. The dependent variable, *Restate*, is coded 1 for restating firms and 0 for control firms. Specifically, we estimate the following logit models (See the appendix for the variable definitions).

$$\begin{aligned}
 Restate_{it} = & a_0 + a_1 CEO\ is\ Chairman_{it} + a_2 CEO\ on\ Nominating\ Committee_{it} \\
 & + a_3 CEO\ on\ Compensation\ Committee_{it} + a_4 Board\ Independence_{it} \\
 & + a_5 Finance\ Expert\ on\ Board_{it} + a_6 Outside\ Blockholder_{it} \\
 & + a_7 Big6\ Auditor_{it} + a_8 Officer/Director\ Ownership_{it} + e_{it}
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 Restate_{it} = & a_0 + a_1 CEO\ is\ Chairman_{it} + a_2 CEO\ on\ Nominating\ Committee_{it} \\
 & + a_3 CEO\ on\ Compensation\ Committee_{it} + a_4 Audit\ Committee\ Independence_{it} \\
 & + a_5 Finance\ Expert\ on\ Audit\ Committee_{it} + a_6 Outside\ Blockholder_{it} \\
 & + a_7 Big6\ Auditor_{it} + a_8 Officer/Director\ Ownership_{it} + e_{it}
 \end{aligned} \tag{2}$$

The results indicate that prior to the misstatement, restating firms are more likely to have CEOs who sit on nominating committees and are also likely to have a smaller proportion of independent audit committee members relative to control firms (See Appendix B, Table 3).

Restatement Results

Restating and control firm comparisons just prior to the restatement are presented in Table 4 (means and medians) and Table 5 (logit model). The results indicate that the pre-misstatement differences between the restating and control firms (documented in Tables 2 and 3) are also present prior to the restatement. In Table 4, both mean and median proportions of independent directors on the board and audit committee are smaller for the restating firms than for the control firms. We also find that restating firms are more likely to be audited by a Big-6 auditor than are control firms (See Appendix B, Table 4).

These results are supported by the logit analysis presented in Table 5. We run logit models (1) and (2) described in the previous section with governance variables prior to the restatement. The board and audit committee independence variables and the Big-6 auditor dummy are all significant at the five percent level. Our results indicate that the agency problems that facilitated financial misreporting do not get resolved prior to detection of the misstatements. Resolution of agency conflicts does not appear to be a necessary condition for the correction of accounting problems. The result that restating firms are more likely to be audited by a Big-6 auditor than are control firms is consistent with the concern (e.g., Roman 2002) that large auditors face significant conflicts of interest, leading to impairment in the quality of their audits (See Appendix B, Table 5).

Changes Over the Misstatement-Restatement Period

Table 6 reports changes in the characteristics of restating and control firms over the misstatement-restatement period. The misstatement results in Tables 2 and 3 along with the restatement results in Tables 4 and 5 suggest that the pre-misstatement differences in the

restating and control firms persist through the restatement date. The validity of this interpretation is borne out by the results in Table 6. For the governance characteristics examined in the previous tables, we see no evidence that changes in these variables differ between the restating and control firms (See Appendix B, Table 6).

We also examine whether the likelihood of occurrence of the following events differs between restating and control firms: CEO and CFO turnover, auditor switch, and mergers and acquisitions activities. We lose observations for the CFO turnover analysis, because executive names and details for only the top-five highest paid officers are available in proxy statements. Nevertheless we find that restating firms are significantly more likely to have changed their CFOs during the misstatement-restatement period than are control firms. This suggests that new CFOs likely scrutinize their predecessors' accounting practices and resolve any pre-existing problems. However, we cannot rule out the possibility that firms facing accounting problems replace their CFOs (e.g., Mian 2001).

For 31 of our sample observations, the pre-misstatement proxy statement is the same as the pre-restatement proxy statement since the misstatement-restatement period is short. The inclusion of these observations in our test sample might potentially drive our finding that the governance characteristics of restating firms do not change over the misstatement-restatement period. Therefore we examine whether our results are sensitive to the exclusion of these 31 restating firms and their controls. The results for the truncated sample, reported in Table 7, are qualitatively identical to those reported in Table 6; we find no change in the governance characteristics of restating firms, except that these firms are more likely to have changed their CFOs prior to the restatements relative to control firms (See Appendix B, Table 7).

In most cases the GAO report identifies whether the restatement is initiated by the company itself or by an outsider such as the auditor or SEC. It is possible that corporate governance characteristics improved for firms that “self-detect” and report, but not for firms that are forced to restate due to outside pressure. We examine the changes in governance characteristics of firm-initiated restatements only and report the results in Table 8. The results are again similar to those reported in Table 6 (See Appendix B, Table 8).

We also estimate multivariate logit models of the change variables using the three sets of observations: the full sample with sufficient data to determine explanatory change variables, the firms with distinct pre-misstatement and pre-restatement proxies, and the firms with self-initiated restatements and matching control firms. We run various combinations of explanatory variables, all of which yield qualitatively similar results. Table 9 reports estimation results for the following parsimonious model.

$$\begin{aligned}
 Restate_{it} = & a_0 + a_1 \Delta CEO \text{ is Chairman}_{it} + a_2 \Delta CEO \text{ on Nominating Committee}_{it} \\
 & + a_3 \Delta CEO \text{ on Compensation Committee}_{it} + a_4 \Delta Board \text{ Independence}_{it} \\
 & + a_5 \Delta Finance \text{ Expert on Board}_{it} + a_6 \Delta Outside \text{ Blockholder}_{it} \\
 & + a_7 \Delta CEO_{it} + a_8 \Delta CFO_{it} + a_8 \Delta Auditor_{it} + e_{it}
 \end{aligned} \tag{3}$$

The dependent variable, *Restate*, is coded 1 for restating firms and 0 for control firms. Though the logit models are not well specified with insignificant likelihood ratios, the estimation results are consistent with those reported in Tables 6, 7, and 8. With the exception of ΔCFO , none of the explanatory variables are significant at conventional levels (See Appendix B, Table 9).

Sensitivity Tests

We repeat our analysis on several control firm-matched sub-samples of extreme restatements: (1) restatement amount scaled by total assets greater than the sample median, (2)

restatement amount scaled by the market value of equity greater than the sample median, (3) number of quarters restated greater than the sample median number of quarters, and (4) misstatement-restatement period greater than the sample median period. The results for these sub-samples are qualitatively similar to those reported in the paper, and our inferences remain the same.

CONCLUSION

In this study, we identify changes in the governance characteristics of firms that restate previously released accounting data. Our study contributes to the existing literature on accounting restatements by examining firm characteristics at two distinct and important points in time: before the initial misstatement, and just prior to the restatement. We also assemble a control sample matched on industry and firm size and compare the characteristics of restating and control firms. Prior to the misstatement, we find that restating firms are more likely to have CEOs who sit on the firms' nominating committees and have smaller proportions of independent directors on their boards and audit committees relative to control firms. This suggests that CEO influence and director independence both affect the integrity of the financial reporting process. Our results also support regulators' concerns (Blue Ribbon Committee 1999) that lack of independence adversely impacts the directors' monitoring of managers.

However, pre-misstatement agency conflicts do not get resolved prior to the restatement. Director independence continues to be relatively low at the restating firms. Our results suggest that the restatements, which constitute an admission and correction of accounting irregularities, are not attributable to governance improvements in firms. Notably, several prominent restatements (e.g., Worldcom) have resulted from "whistle-blowing" activities by relatively low-level employees.

Our results also suggest that restating firms are more likely to be audited by Big-6 auditors than are control firms. This result calls into question the belief that audit quality is always positively related to audit firm size (e.g., Palmrose 1988), and is consistent with regulators' concerns (Roman 2002) that conflicts of interest may often impair the independence of large audit firms. Finally our examination of how firms change over the misstatement-restatement period indicates that restating firms are more apt to change their CFOs than are the control firms. While this result is consistent with new-CFO diligence, we cannot exclude the possibility that accounting problems cause the old-CFO departures. The latter explanation, nevertheless, underscores the important role that corporate governance plays in the financial reporting process.

The research presented here can be extended in several ways. First, as indicated in the sample selection section, we specifically exclude the post-Enron period from our study, because we believe that the post-Enron restatements were prompted by the increased levels of public and regulatory scrutiny, the enactment of new reporting and disclosure rules (e.g., Regulation FD), and the negative market sentiment prevailing at the time. Accordingly, these later restatements differ significantly from the pre-Enron financial misreporting on which extant literature has focused. The post-Enron restatements, however, comprise a distinct and equally interesting sample for future study. Second, we analyze pre-restatement changes in governance characteristics because we are interested in identifying factors that contribute to the detection of misreporting. Future researchers could similarly analyze post-restatement changes in governance and provide evidence on the consequences of misreporting.

APPENDIX A

Variable Definitions

Firm Size and Age

Total Assets are the firm's total assets on Compustat.

Age is the firm's age based on the date that the firm first appears on CRSP.

Financial Ratios

Debt-to-Equity equals total liabilities divided by the book value of equity.

Market-to-Book equals market value of equity plus book value of total liabilities divided by total assets.

Operating Income-to-Total Assets equals operating income divided by total assets.

Governance Variables

CEO is Chairman equals 1 if the CEO chairs the board and 0 otherwise.

CEO on Nominating Committee equals 1 if the CEO is a member of the nominating committee, or if the board does not have a nominating committee and 0 otherwise.

CEO on Compensation Committee equals 1 if the CEO is a member of the compensation committee and 0 otherwise.

Board Independence equals the proportion of independent directors on the firm's board.

Board Independence > 0.5 equals 1 if *Board Independence* is greater than 50% and 0 otherwise.

Finance Expert on Board equals 1 if an independent board member has financial expertise (CPA/corporate financial officer/investment banker) and 0 otherwise.

Audit Committee equals 1 if the board of directors has an audit committee and 0 otherwise.

Audit Committee Independence equals the proportion of independent directors on the firm's audit committee.

Audit Committee Independence > 0.5 equals 1 if *Audit Committee Independence* is greater than 50% and 0 otherwise.

Finance Expert on Audit Committee equals 1 if an independent audit committee member has financial expertise and 0 otherwise.

Outside Blockholder equals 1 if at least one outsider owns more than 5% of the firm's outstanding shares and 0 otherwise.

Big6 Auditor equals 1 if the firm's auditor is one of the Big-6 and 0 otherwise.

Officer/Director Ownership is the proportion of shares outstanding held by all officers and directors.

Personnel Changes and Events

ΔCEO equals 1 if the firm's CEO changed over the misstatement-restatement period and 0 otherwise.

ΔCFO equals 1 if the firm's CFO changed over the misstatement-restatement period and 0 otherwise.

$\Delta Auditor$ equals 1 if the firm's auditor changed over the misstatement-restatement period and 0 otherwise.

M&A Target equals 1 if the firm was an acquisition target over the misstatement-restatement period and 0 otherwise.

M&A Suitor equals 1 if the firm was an acquisition suitor over the misstatement-restatement period and 0 otherwise.

APPENDIX B
Table 1
Descriptive information on sample restatements

Panel A. Calendar year distribution

| Year | Number of firms | % sample |
|--------------|-----------------|--------------|
| 1997 | 23 | 12.3 |
| 1998 | 34 | 18.2 |
| 1999 | 61 | 32.6 |
| 2000 | <u>69</u> | <u>36.9</u> |
| Total sample | <u>187</u> | <u>100.0</u> |

Panel B. Magnitude of restatements

| | Mean | First quartile | Median | Third quartile |
|---|---------|----------------|--------|----------------|
| Restatement amount in \$ millions | -5.259 | -7.296 | -1.715 | -0.071 |
| scaled by total assets | -0.022 | -0.026 | -0.008 | -0.000 |
| scaled by market value of equity | -0.025 | -0.030 | -0.007 | -0.001 |
| Number of quarters restated | 4.497 | 1 | 3 | 6 |
| Days from beginning of first misstated quarter through restatement announcement | 565.754 | 286 | 445 | 764 |

Panel C. GAO-specified reason for restatement

| Reason | Number of firms | % sample |
|---------------------|-----------------|--------------|
| Revenue recognition | 63 | 33.9 |
| Restructuring | 35 | 18.8 |
| Cost or expense | 24 | 12.9 |
| Other | 31 | 25.3 |
| Unspecified | <u>17</u> | <u>9.1</u> |
| Total sample | <u>187</u> | <u>100.0</u> |

Table 1 continued

Panel D. Restatement initiator

| Initiator | Number of firms | % sample |
|---------------------|-----------------|--------------|
| Restating firm | 73 | 39.0 |
| Auditor | 16 | 8.6 |
| SEC | 38 | 20.3 |
| Others/ Unspecified | <u>60</u> | <u>32.1</u> |
| Total sample | <u>187</u> | <u>100.0</u> |

Notes:

The sample consists of 187 restatements between 1997 and 2000. In panel B, total assets and market value of equity are measured at the fiscal year-end preceding the restatement announcement.

Table 2
Characteristics of restating and control firms prior to the misstatement

| Variables | MEAN | | | MEDIAN | | |
|--|----------------|--------------|---------------|----------------|--------------|---------------|
| | Restating Firm | Control Firm | Diff. p-value | Restating firm | Control firm | Diff. p-value |
| <i>Total Assets (\$ million)</i> | 2286.3 | 2314.1 | 0.98 | 158.4 | 149.2 | 0.72 |
| <i>Age (years)</i> | 9.9 | 11.1 | 0.28 | 6.8 | 7.5 | 0.34 |
| <u>Financial Ratios</u> | | | | | | |
| <i>Debt-to-Equity</i> | 1.685 | 1.581 | 0.72 | 1.042 | 0.786 | 0.26 |
| <i>Market-to-Book</i> | 3.102 | 2.453 | 0.43 | 1.559 | 1.490 | 0.08 |
| <i>Operating Income-to-Total Assets</i> | 0.007 | 0.021 | 0.66 | 0.061 | 0.075 | 0.23 |
| <u>Governance</u> | | | | | | |
| <i>CEO is Chairman</i> | 0.674 | 0.626 | 0.33 | 1 | 1 | 0.33 |
| <i>CEO on Nominating Committee</i> | 0.856 | 0.775 | 0.04 | 1 | 1 | 0.05 |
| <i>CEO on Compensation Committee</i> | 0.118 | 0.102 | 0.62 | 0 | 0 | 0.62 |
| <i>Board Independence</i> | 0.590 | 0.626 | 0.08 | 0.600 | 0.667 | 0.10 |
| <i>Board Independence > 0.5</i> | 0.683 | 0.701 | 0.71 | 1 | 1 | 0.71 |
| <i>Finance Expert on Board</i> | 0.684 | 0.695 | 0.82 | 1 | 1 | 0.82 |
| <i>Audit Committee</i> | 0.995 | 0.979 | 0.18 | 1 | 1 | 0.18 |
| <i>Audit Committee Independence</i> | 0.818 | 0.884 | 0.01 | 1 | 1 | 0.01 |
| <i>Audit Committee Independence > 0.5</i> | 0.832 | 0.912 | 0.02 | 1 | 1 | 0.02 |
| <i>Finance Expert on Audit Committee</i> | 0.556 | 0.578 | 0.67 | 1 | 1 | 0.67 |
| <i>Outside Blockholder</i> | 0.786 | 0.722 | 0.15 | 1 | 1 | 0.15 |
| <i>Big6 Auditor</i> | 0.877 | 0.818 | 0.11 | 1 | 1 | 0.11 |
| <i>Officer/Director Ownership</i> | 0.232 | 0.248 | 0.51 | 0.152 | 0.154 | 0.43 |

Notes:

The sample consists of 187 restating and 187 control firms between 1997 and 2000, except for the variables *Audit Committee Independence*, *Audit Committee Independent > 50%* and *Finance Expert on Audit Committee* with 184 restating firms and 182 control firms. All variables in this table are computed based on pre-misstatement data. The p-values are for two-tailed t-tests (Wilcoxon tests) of differences in means (medians). See Appendix for the variable definitions.

Table 3
Logit analysis of the characteristics of restating
and control firms prior to the misstatement

| | Model 1 | | Model 2 | |
|--|-------------|----------|-------------|----------|
| | Coefficient | P -value | Coefficient | P -value |
| <i>Intercept</i> | -0.640 | 0.29 | -0.074 | 0.90 |
| <i>CEO is Chairman</i> | 0.252 | 0.26 | 0.218 | 0.33 |
| <i>CEO on Nominating Committee</i> | 0.545 | 0.05 | 0.569 | 0.04 |
| <i>CEO on Compensation Committee</i> | 0.108 | 0.76 | 0.125 | 0.73 |
| <i>Board Independence</i> | -0.900 | 0.11 | | |
| <i>Finance Expert on Board</i> | -0.126 | 0.60 | | |
| <i>Audit Committee Independence</i> | | | -1.320 | 0.00 |
| <i>Finance Expert on Audit Committee</i> | | | -0.127 | 0.57 |
| <i>Outside Blockholder</i> | 0.369 | 0.15 | 0.486 | 0.07 |
| <i>Big6 Auditor</i> | 0.563 | 0.07 | 0.472 | 0.15 |
| <i>Officer/Director Ownership</i> | -0.004 | 0.34 | -0.005 | 0.33 |

Notes:

The sample sizes are 187 restating and 187 control firms for Model 1 and 184 restating firms and 182 control firms for Model 2. All variables in this table are computed based on pre-misstatement data. Likelihood ratios are 14.0 (p-value 0.08) for Model 1 and 18.3 (p-value 0.01) for Model 2. The dependent variable is coded 1 for restating firms and 0 for control firms. See Appendix for the definitions of independent variables.

Table 4
Characteristics of restating and control firms prior to the restatement

| Variables | MEAN | | | MEDIAN | | |
|--|----------------|--------------|---------------|----------------|--------------|---------------|
| | Restating firm | Control firm | Diff. p-value | Restating firm | Control firm | Diff. p-value |
| <i>Total Assets (\$ million)</i> | 2723.7 | 3380.5 | 0.61 | 289.0 | 197.2 | 0.67 |
| <i>Age (years)</i> | 11.5 | 12.6 | 0.28 | 8.8 | 9.4 | 0.34 |
| <u>Financial Ratios</u> | | | | | | |
| <i>Debt-to-Equity</i> | 1.913 | 2.032 | 0.90 | 1.199 | 0.816 | 0.01 |
| <i>Market-to-Book</i> | 2.413 | 2.266 | 0.63 | 1.388 | 1.402 | 0.78 |
| <i>Operating Income-to-Total Assets</i> | -0.013 | 0.013 | 0.25 | 0.031 | 0.059 | 0.01 |
| <u>Governance</u> | | | | | | |
| <i>CEO is Chairman</i> | 0.663 | 0.620 | 0.39 | 1 | 1 | 0.39 |
| <i>CEO on Nominating Committee</i> | 0.807 | 0.740 | 0.11 | 1 | 1 | 0.11 |
| <i>CEO on Compensation Committee</i> | 0.118 | 0.112 | 0.87 | 0 | 0 | 0.87 |
| <i>Board Independence</i> | 0.591 | 0.632 | 0.05 | 0.600 | 0.667 | 0.06 |
| <i>Board Independence > 0.5</i> | 0.667 | 0.715 | 0.31 | 1 | 1 | 0.31 |
| <i>Finance Expert on Board</i> | 0.674 | 0.711 | 0.43 | 1 | 1 | 0.43 |
| <i>Audit Committee</i> | 1.000 | 0.979 | 0.04 | 1 | 1 | 0.05 |
| <i>Audit Committee Independence</i> | 0.799 | 0.886 | 0.00 | 1 | 1 | 0.00 |
| <i>Audit Committee Independence > 0.5</i> | 0.817 | 0.906 | 0.01 | 1 | 1 | 0.02 |
| <i>Finance Expert on Audit Committee</i> | 0.572 | 0.588 | 0.75 | 1 | 1 | 0.75 |
| <i>Outside Blockholder</i> | 0.802 | 0.759 | 0.32 | 1 | 1 | 0.32 |
| <i>Big6 Auditor</i> | 0.861 | 0.765 | 0.02 | 1 | 1 | 0.02 |
| <i>Officer/Director Ownership</i> | 0.203 | 0.224 | 0.36 | 0.132 | 0.129 | 0.25 |

Notes:

The sample consists of 187 restating and 187 control firms between 1997 and 2000, except for the variables *Audit Committee Independence*, *Audit Committee Independent > 50%* and *Finance Expert on Audit Committee* with 187 restating firms and 183 control firms. All variables in this table are computed based on pre-restatement data. The p-values are for two-tailed t-tests (Wilcoxon tests) of differences in means (medians). See Appendix for the variable definitions.

Table 5
Logit analysis of the characteristics of restating
and control firms prior to the restatement

| | Model 1 | | Model 2 | |
|--|-------------|---------|-------------|---------|
| | Coefficient | P-value | Coefficient | P-value |
| <i>Intercept</i> | -0.329 | 0.57 | 0.437 | 0.47 |
| <i>CEO is Chairman</i> | 0.198 | 0.37 | 0.059 | 0.79 |
| <i>CEO on Nominating Committee</i> | 0.360 | 0.16 | 0.356 | 0.17 |
| <i>CEO on Compensation Committee</i> | 0.081 | 0.82 | 0.031 | 0.93 |
| <i>Board Independence</i> | -1.099 | 0.05 | | |
| <i>Finance Expert on Board</i> | -0.174 | 0.47 | | |
| <i>Audit Committee Independence</i> | | | -1.637 | 0.00 |
| <i>Finance Expert on Audit Committee</i> | | | -0.116 | 0.60 |
| <i>Outside Blockholder</i> | 0.232 | 0.37 | 0.217 | 0.42 |
| <i>Big6 Auditor</i> | 0.807 | 0.00 | 0.814 | 0.00 |
| <i>Officer/Director Ownership</i> | -0.006 | 0.20 | -0.005 | 0.30 |

Notes:

The sample sizes are 187 restating and 187 control firms for Model 1 and 187 restating and 183 control firms for Model 2. All variables in this table are computed based on pre-restatement data. The likelihood ratios are 17.4 (p-value 0.02) for Model 1 and 23.2 (p-value 0.00) for Model 2. The dependent variable is coded 1 for restating firms and 0 for control firms. See Appendix for the definitions of independent variables.

Table 6
Changes in restating and control firms over the misstatement-restatement period

| Variables | MEAN | | | MEDIAN | | |
|---|----------------|--------------|---------------|----------------|--------------|---------------|
| | Restating firm | Control firm | Diff. p-value | Restating firm | Control Firm | Diff. p-value |
| <u>Financial Characteristics</u> | | | | | | |
| <i>ΔTotal Assets (\$ million)</i> | 437.4 | 1066.4 | 0.32 | 16.413 | 8.579 | 0.27 |
| <i>ΔDebt-to-Equity</i> | 0.228 | 0.451 | 0.80 | 0.173 | 0.007 | 0.00 |
| <i>ΔMarket-to-Book</i> | -0.689 | -0.187 | 0.60 | 0.001 | 0.001 | 0.33 |
| <i>ΔOperating Income-to-Total Assets</i> | -0.020 | -0.008 | 0.52 | -0.009 | 0 | 0.01 |
| <u>Governance</u> | | | | | | |
| <i>ΔCEO is Chairman</i> | -0.011 | -0.005 | 0.87 | 0 | 0 | 0.87 |
| <i>ΔCEO on Nominating Committee</i> | -0.048 | -0.035 | 0.70 | 0 | 0 | 0.70 |
| <i>ΔCEO on Compensation Committee</i> | 0 | 0.010 | 0.64 | 0 | 0 | 0.64 |
| <i>ΔBoard Independence</i> | 0.001 | 0.006 | 0.65 | 0 | 0 | 0.86 |
| <i>ΔBoard Independence > 50%</i> | -0.016 | 0.014 | 0.37 | 0 | 0 | 0.36 |
| <i>ΔFinance Expert on Board</i> | -0.011 | 0.016 | 0.38 | 0 | 0 | 0.39 |
| <i>ΔAudit Committee</i> | 0.005 | 0 | 0.32 | 0 | 0 | 0.32 |
| <i>ΔAudit Committee Independence</i> | -0.016 | 0.001 | 0.35 | 0 | 0 | 0.42 |
| <i>ΔAudit Committee Independence > 0.5</i> | -0.011 | -0.006 | 0.85 | 0 | 0 | 0.84 |
| <i>ΔFinance Expert on Audit Committee</i> | 0.016 | 0.011 | 0.87 | 0 | 0 | 0.87 |
| <i>ΔOutside Blockholder</i> | 0.016 | 0.037 | 0.61 | 0 | 0 | 0.61 |
| <i>ΔBig6 Auditor</i> | -0.016 | -0.053 | 0.25 | 0 | 0 | 0.25 |
| <i>ΔOfficer/Director Ownership</i> | -0.029 | -0.024 | 0.72 | 0 | -0.004 | 0.73 |
| <u>Personnel Changes and Events</u> | | | | | | |
| <i>ΔCEO</i> | 0.187 | 0.166 | 0.59 | 0 | 0 | 0.59 |
| <i>ΔCFO</i> | 0.275 | 0.174 | 0.04 | 0 | 0 | 0.04 |
| <i>ΔAuditor</i> | 0.150 | 0.112 | 0.28 | 0 | 0 | 0.28 |
| <i>M&A Target</i> | 0.075 | 0.086 | 0.70 | 0 | 0 | 0.70 |
| <i>M&A Suitor</i> | 0.086 | 0.086 | 1.00 | 0 | 0 | 1.00 |

Table 6 continued

Notes:

The sample consists of 187 restating and 187 control firms between 1997 and 2000, except for the following variables: Δ *Audit Committee Independence*, Δ *Audit Committee Independent > 50%* and *Finance Expert on Audit Committee* - 184 restating firms and 182 control firms; Δ *CFO* - 142 restating firms and 144 control firms. The p-values are for two-tailed t-tests (Wilcoxon tests) of differences in means (medians). See Appendix for the variable definitions. Δ indicates the difference between the pre-restatement value and the pre-misstatement value of the variable.

Table 7
Changes in restating and control firms over the misstatement-restatement period
Firms with distinct pre-misstatement and pre-restatement proxy statements

| Variables | MEAN | | | MEDIAN | | |
|---|----------------|--------------|---------------|----------------|--------------|---------------|
| | Restating firm | Control firm | Diff. p-value | Restating firm | Control Firm | Diff. p-value |
| <u>Financial Characteristics</u> | | | | | | |
| <i>ΔTotal Assets (\$ million)</i> | 497.6 | 1079.0 | 0.32 | 18.689 | 12.024 | 0.41 |
| <i>ΔDebt-to-Equity</i> | 1.121 | 0.600 | 0.46 | 0.232 | 0.009 | 0.00 |
| <i>ΔMarket-to-Book</i> | -0.951 | -0.311 | 0.51 | -0.001 | 0 | 0.35 |
| <i>ΔOperating Income-to-Total Assets</i> | -0.021 | -0.002 | 0.58 | -0.016 | 0 | 0.01 |
| <u>Governance</u> | | | | | | |
| <i>ΔCEO is Chairman</i> | 0 | -0.005 | 0.59 | 0 | 0 | 0.60 |
| <i>ΔCEO on Nominating Committee</i> | -0.058 | -0.051 | 0.20 | 0 | 0 | 0.83 |
| <i>ΔCEO on Compensation Committee</i> | 0 | 0.013 | 0.64 | 0 | 0 | 0.64 |
| <i>ΔBoard Independence</i> | 0.001 | 0.008 | 0.54 | 0 | 0 | 0.72 |
| <i>ΔBoard Independence > 50%</i> | -0.026 | 0.019 | 0.29 | 0 | 0 | 0.29 |
| <i>ΔFinance Expert on Board</i> | -0.026 | 0.019 | 0.19 | 0 | 0 | 0.19 |
| <i>ΔAudit Committee</i> | 0.006 | 0 | 0.32 | 0 | 0 | 0.32 |
| <i>ΔAudit Committee Independence</i> | -0.018 | 0 | 0.40 | 0 | 0 | 0.48 |
| <i>ΔAudit Committee Independence > 0.5</i> | -0.013 | -0.007 | 0.85 | 0 | 0 | 0.83 |
| <i>ΔFinance Expert on Audit Committee</i> | 0 | 0.026 | 0.49 | 0 | 0 | 0.50 |
| <i>ΔOutside Blockholder</i> | -0.006 | 0.032 | 0.42 | 0 | 0 | 0.41 |
| <i>ΔBig6 Auditor</i> | 0 | 0.013 | 0.52 | 0 | 0 | 0.53 |
| <i>ΔOfficer/Director Ownership</i> | -0.029 | -0.022 | 0.61 | -0.006 | -0.003 | 0.47 |
| <u>Personnel Changes and Events</u> | | | | | | |
| <i>ΔCEO</i> | 0.224 | 0.186 | 0.40 | 0 | 0 | 0.40 |
| <i>ΔCFO</i> | 0.336 | 0.193 | 0.01 | 0 | 0 | 0.02 |
| <i>ΔAuditor</i> | 0.160 | 0.128 | 0.42 | 0 | 0 | 0.42 |
| <i>M&A Target</i> | 0.077 | 0.090 | 0.68 | 0 | 0 | 0.68 |
| <i>M&A Suitor</i> | 0.090 | 0.103 | 0.70 | 0 | 0 | 0.70 |

Table 7 continued

Notes:

The sample consists of 156 restating and 156 control firms between 1997 and 2000, except for the following variables: Δ *Audit Committee Independence*, Δ *Audit Committee Independent > 50%* and *Finance Expert on Audit Committee* - 154 restating firms and 151 control firms; Δ *CFO* - 116 restating firms and 119 control firms. The p-values are for two-tailed t-tests (Wilcoxon tests) of differences in means (medians). See Appendix for the variable definitions. Δ indicates the difference between the pre-restatement value and the pre-misstatement value of the variable.

Table 8
Changes in restating and control firms over the misstatement-restatement period
Firm-initiated restatements

| Variables | MEAN | | | MEDIAN | | |
|---|----------------|--------------|---------------|----------------|--------------|---------------|
| | Restating firm | Control firm | Diff. p-value | Restating firm | Control Firm | Diff. p-value |
| <u>Financial Characteristics</u> | | | | | | |
| <i>ΔTotal Assets (\$ million)</i> | 370.0 | 346.2 | 0.91 | 16.123 | 6.033 | 0.21 |
| <i>ΔDebt-to-Equity</i> | 0.659 | 0.219 | 0.08 | 0.095 | 0 | 0.01 |
| <i>ΔMarket-to-Book</i> | -1.898 | -1.090 | 0.70 | 0 | -0.001 | 0.77 |
| <i>ΔOperating Income-to-Total Assets</i> | 0.017 | 0.040 | 0.74 | 0 | 0 | 0.08 |
| <u>Governance</u> | | | | | | |
| <i>ΔCEO is Chairman</i> | -0.014 | -0.027 | 0.80 | 0 | 0 | 0.82 |
| <i>ΔCEO on Nominating Committee</i> | -0.041 | -0.014 | 0.57 | 0 | 0 | 0.56 |
| <i>ΔCEO on Compensation Committee</i> | 0.013 | 0.041 | 0.48 | 0 | 0 | 0.49 |
| <i>ΔBoard Independence</i> | -0.003 | 0.006 | 0.68 | 0 | 0 | 0.84 |
| <i>ΔBoard Independence > 50%</i> | 0 | -0.027 | 0.64 | 0 | 0 | 0.65 |
| <i>ΔFinance Expert on Board</i> | 0.027 | 0.014 | 0.80 | 0 | 0 | 0.78 |
| <i>ΔAudit Committee</i> | 0.014 | 0 | 0.32 | 0 | 0 | 0.32 |
| <i>ΔAudit Committee Independence</i> | -0.008 | -0.002 | 0.84 | 0 | 0 | 0.34 |
| <i>ΔAudit Committee Independence > 0.5</i> | 0 | 0 | 1.00 | 0 | 0 | 1.00 |
| <i>ΔFinance Expert on Audit Committee</i> | 0.082 | 0.014 | 0.22 | 0 | 0 | 0.21 |
| <i>ΔOutside Blockholder</i> | 0.027 | 0.027 | 1.00 | 0 | 0 | 0.99 |
| <i>ΔBig6 Auditor</i> | 0.014 | 0.041 | 0.31 | 0 | 0 | 0.32 |
| <i>ΔOfficer/Director Ownership</i> | -0.009 | -0.030 | 0.41 | -0.001 | 0 | 0.37 |
| <u>Personnel Changes and Events</u> | | | | | | |
| <i>ΔCEO</i> | 0.192 | 0.164 | 0.67 | 0 | 0 | 0.67 |
| <i>ΔCFO</i> | 0.362 | 0.140 | 0.01 | 0 | 0 | 0.01 |
| <i>ΔAuditor</i> | 0.164 | 0.151 | 0.82 | 0 | 0 | 0.82 |
| <i>M&A Target</i> | 0.068 | 0.068 | 1.00 | 0 | 0 | 1.00 |
| <i>M&A Suitor</i> | 0.082 | 0.068 | 0.76 | 0 | 0 | 0.76 |

Table 8 continued

Notes:

The sample consists of 73 restating and 73 control firms between 1997 and 2000, except for the following variables: Δ *Audit Committee Independence*, Δ *Audit Committee Independent > 50%* and *Finance Expert on Audit Committee* - 71 restating firms and 71 control firms; Δ *CFO* - 58 restating firms and 57 control firms. The p-values are for two-tailed t-tests (Wilcoxon tests) of differences in means (medians). See Appendix for the variable definitions. Δ indicates the difference between the pre-restatement value and the pre-misstatement value of the variable.

Table 9
Logit analysis of changes in the characteristics of restating
and control firms over the misstatement-restatement period

| | Model 1 Full Sample | | Model 2 Firms with distinct pre-misstatement and pre-restatement proxies | | Model 3 Firm-initiated restatements | |
|---------------------------------------|------------------------|---------|---|---------|--|---------|
| | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value |
| <i>Intercept</i> | -0.168 | 0.26 | -0.272 | 0.11 | -0.361 | 0.16 |
| <i>ΔCEO is Chairman</i> | 0.56 | 0.17 | -0.365 | 0.40 | -1.038 | 0.16 |
| <i>ΔCEO on Nominating Committee</i> | -0.435 | 0.40 | -0.353 | 0.51 | -1.068 | 0.20 |
| <i>ΔCEO on Compensation Committee</i> | -0.251 | 0.65 | -0.302 | 0.59 | -0.179 | 0.86 |
| <i>ΔBoard Independence</i> | -0.625 | 0.60 | -0.867 | 0.48 | -0.850 | 0.64 |
| <i>ΔFinance Expert on Board</i> | -0.278 | 0.56 | -0.449 | 0.40 | 0.126 | 0.87 |
| <i>ΔOutside Blockholder</i> | -0.351 | 0.28 | -0.475 | 0.19 | -0.648 | 0.25 |
| <i>ΔCEO</i> | -0.321 | 0.36 | -0.168 | 0.65 | -0.611 | 0.31 |
| <i>ΔCFO</i> | 0.679 | 0.03 | 0.793 | 0.02 | 1.542 | 0.01 |
| <i>ΔAuditor</i> | 0.314 | 0.38 | 0.309 | 0.41 | 0.314 | 0.58 |

Notes:

The sample sizes are 142 restating and 144 control firms for Model 1, 116 restating and 119 control firms for Model 2, and 58 restating firms and 57 control firms for Model 3. Likelihood ratios are 9.8 (p-value 0.37) for Model 1, 11.3 (p-value 0.26) for Model 2, and 13.2 (p-value 0.15) for Model 3. The dependent variable is coded 1 for restating firms and 0 for control firms. See Appendix for the definitions of independent variables. Δ indicates the difference between the pre-restatement value and the pre-misstatement value of the variable.

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