DO MANAGERS CHANGE THEIR FINANCIAL REPORTING STRATEGIES IN RESPONSE TO AN ACCOUNTING RESTATEMENT?

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Abstract

This paper examines firms' financial reporting strategies in the periods surrounding an accounting restatement. Given that managers continually face a number of contractual and capital market related pressures to meet specified earnings targets and produce a smooth earnings stream, we maintain that firms engage in a *regular* earnings management strategy. When the earnings management becomes particularly aggressive and outside the boundaries of GAAP, it is detected and the firm is required to restate. The question of interest is whether the firm returns to its regular level of earnings management in the periods following the restatement.

We identify a sample of financial statement restatements during 1997-2000 and compare various empirical measures of financial reporting strategy before and after the restatement. The results indicate that firms do not appear to alter their financial reporting strategies (i.e., do not make more *conservative* accounting choices) in response to an accounting restatement. The findings are consistent with the interpretation that managers feel that their pre-restatement accounting policy choices were sufficiently

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conservative, and do not deem it necessary to change their accounting regime in the post restatement period.

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Expressions of individual views of members of the FASB and their staffs are encouraged. The views expressed in this paper are those of Dr. Pfeiffer. Official positions of the FASB on accounting matters are determined only after extensive due process and deliberation.

INTRODUCTION

In recent years, financial statement restatements have become the topic of increasing concern among regulators, the financial press, and investors. For example, in 2002, the U.S. Senate Committee on Banking, Housing, and Urban Affairs directed the General Accounting Office to study the marked increase in the incidence of restatements. In their resulting report, the GAO noted:

> "From January 1997 through June 2002, about 10 percent of all listed companies announced at least one restatement. Among the restating companies that we identified, the number of large company restatements had grown rapidly since 1997. The average (median) size by market capitalization of a

> restating company increased from $500 million ($143 million) in 1997 to $2 billion ($351 million) in 2002. In addition, of the 125 public companies that announced restatements due to accounting irregularities in 2002, 54 were listed on Nasdaq and 53 were listed on NYSE..."[1]

According to studies by Huron Consulting, the number of restatements per year has increased from 116 reported in 1997 to 158, 216, 233, 270, 330, 323, and 414 in 1998-2004, respectively (Huron Consulting, 2003, 2005).

The GAO report also emphasizes the potential adverse consequences of so many restatements: "The recent increase in the number and size of financial statement restatements and disclosures of accounting issues and irregularities underlying these restatements have raised significant questions about the adequacy of the current system of corporate governance and financial disclosure oversight." The increasing frequency of restatements has also raised concerns among regulators. Robert Herdman, then Chief Accountant of the SEC, said in a speech in December 2001: "...such restatements may shake investors' confidence in our system of financial reporting and our capital markets."

Despite the substantial attention paid to understanding the nature and causes of restatements in the earlier portion of this decade, the number of restatements continues to increase. In 2006, the number of restatements climbed to 1,876 (Solomon 2007). In response to this persistent increase in restatements, U.S. Treasury Secretary Henry Paulson commissioned a study in 2007 aimed at understanding the reasons for the continued increase in the number of restatements, and assessing the consequences of these events on the U.S. capital markets.

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[1] In 2002, 58% of all restatements were made by firms with annual revenues greater than $100 million, which indicates that larger, more sophisticated companies are involved in restatements (Huron Consulting, 2003).

The spike in the frequency of restatements has also attracted the attention of academics, giving rise to an entire segment of the literature dedicated to understanding accounting restatements. The extant literature on restatements includes studies that examine: (1) market reactions to restatements; (2) the characteristics associated with the likelihood of restatements; (3) various market participants' abilities to predict restatements; and (4) the consequences and penalties to the firm, management, and directors associated with restatements.

In contrast, our analysis examines firms' financial reporting strategies in the periods *surrounding* an accounting restatement. Given that managers continually face a number of contractual and capital market related pressures to meet specified earnings targets and to produce a smooth earnings stream, we maintain that firms engage in a *regular* earnings management strategy. At times, firms may make particularly aggressive accounting policy choices in response to short term incentives and circumstances. We argue that it is at this point that accounting regulators detect aggressiveness, and firms are required to restate.

The focus of our analysis is on whether a firm returns to its *regular* level of earnings management in the periods following the restatement. We compare firms' financial reporting strategies in the periods preceding and following the restated periods.[2]

A firm may change its normal earnings management strategy in the periods following the restatement if there was a change in management and/or change in corporate governance structure in the periods following the restatement. However, if incentives to consistently "make the numbers" remain in the periods following the restatement, or simply the firms feels that the pre-restatement accounting strategy was sufficiently conservative, the firm may continue employing a similar earnings management strategy in the post restatement period. Ultimately, a firm's change in financial reporting strategy in the periods following the

[2] We exclude the restated periods from the analysis as firms' accounting policy choices during these periods are not reflective of "normal" accounting policy choices.

restatement is an open empirical issue. We address this issue in our study.

We elect to use residual total accruals (reported income before extraordinary items less reported operating cash flow, conditioned on a set of control variables) as a proxy for "financial reporting strategy"[3] under the assumption that the accrual component of earnings represents a summary measure of the firm's accounting policy choices.[4] Of course, no one metric is likely to adequately capture the construct of interest. Thus, we also consider alternative measures of financial reporting strategy, including the working capital and 'other' (long-term) components of residual total accruals, both measured before and after a restatement.

Our main tests find that on average, residual accruals are not different in the periods preceding and following the restatement. These results hold when we examine both the working capital and long-term components of total accruals as alternative summary measures of accounting policy choice.

The results indicate that firms do not appear to alter their financial reporting strategies (i.e., firms do not make more *conservative* accounting choices) in response to an accounting restatement. The findings suggest that managers feel that their pre-restatement accounting policy choices were sufficiently conservative, and do not deem it necessary to change their accounting regime in the post restatement period.

This evidence is important, as it provides additional information regarding firms' responses to accounting restatements. Previous research documents that firms respond in many ways to a

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[3] We use the phrases "financial reporting strategy," "accounting policy choices," and "earnings management strategy" interchangeably throughout this document.

[4] Note that in multivariate tests, we control for factors identified by prior research that likely influence firms' accruals, and thus our metric should be thought of as residual or conditional accruals. Our main empirical tests contrast these residual accruals before and after firms' restatements. The pre- and post-restatement periods include up to twenty quarters on each side of the restatement announcement, conditional on data availability.

restatement, through changes in management and board membership, and changes in level and structure of compensation (see for example, Desai et al. 2006, Srinivasan 2005, Collins et al. 2005, and Cheng and Farber 2006). However, the results of this study suggest that managers do not make changes in their overall financial reporting strategies in response to an accounting restatement. We realize, however, an alternative explanation is that, despite our careful attention to research design issues, our tests lack sufficient power to detect a significant change in accounting policy choice between the pre- and post-restatement periods.

As firms continue to restate earnings in the periods subsequent to our sample, future research should assess whether these conclusions hold. We also believe that there is useful work to be done in investigating the possibility that firms' accounting responses to restatements are contextual and discovering what factors cause differences in firms' responses.

In the next section of the paper, we provide the motivation for our study and discuss the related literature. We then discuss our empirical tests and results. We conclude by providing some suggestions for continuing research.

AGENCY THEORY AND FIRMS' "TYPICAL" EARNINGS MANAGEMENT STRATEGIES

Agency theory outlines the classic problems that arise from the separation of ownership and control, i.e., the conflicts that exist between an owner and a manager when the owner hires the manager to operate the firm on the owner's behalf. Given that the manager's actions are not fully observable to the owner, the effort-averse manager has a tendency to shirk his or her responsibilities. In order to incent the manager to work hard, and align the manager's interests with the owner's, the owner enters an employment contract with the manager. The employment contract specifies compensation based on managerial effort. Given that managerial effort cannot be directly observed, performance

measures are needed to proxy for the expected payoffs associated with the manager's work. Typically, net income (or a version thereof) is one of the performance measures on which a manager's compensation is based. Given that compensation is based on income, and earnings are not observable to the owner until reported, managers have the ability and incentive to adjust income in a manner that is consistent with his or her compensation goals.[5] Generally Accepted Accounting Principles and the audit function provide controls over the extent to which managers can manipulate earnings, but do not eliminate the possibility.

Given the contracting incentives discussed above, coupled with capital market pressures to consistently meet earnings targets and produce smooth earnings streams, practices of competitor firms, and other factors, we maintain that firms *typically* engage in some level of earnings management. When the earnings management becomes particularly aggressive, and is outside the boundaries of GAAP, it is detected and the firm is required to restate.

The question of interest is whether the firm returns to its *normal* level of earnings management in the periods following the restatement. Therefore, the focus of our study is to examine firms' accounting policy choices in the periods *surrounding* the restated quarters. In particular, we compare the accounting policy choices of firms immediately prior to and immediately following any restated periods.[6]

If a firm's management and board membership change as a result of the restatement, the firm may alter its normal earnings management strategy in the periods following the restatement. However, if incentives to consistently "make the numbers" remain in the periods following the restatement, or simply the firm feels that the pre-restatement accounting policy choices were

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[5] Similar conflicts and incentives arise between managers and debt holders.

[6] We recognize that accruals tend to reverse. Therefore, we examine up to 20 quarters in the pre and post restatement periods in order to gauge a firm's typical earnings management strategy over time.

sufficiently conservative, then the firm may continue a similar financial reporting strategy in the periods following the restatement. Ultimately, the *change* in firms' accounting policy choices in the periods surrounding the restatement is an open empirical issue. We investigate this issue in our study.

The extant literature on accounting restatements provide information on the 1) stock market consequences associated with restatement announcements (see for example, Palmrose et al. 2004, Palmrose and Scholz 2004, Ryan et al. 2007, Griffin et al. 2004, and Anderson and Yohn 2002), 2) the factors related to the probability of a restatement (see Aier et al. 2005, Baber et al. 2007, Agrawal and Chadha 2005, Kinney et al. 2004, Raghunandan et al. 2003, and Burns et al. 2006), 3) various groups' abilities to predict accounting restatements (see for example, Griffin 2003, Hribar et al. 2004, Efendi et al. 2005, Li et al. 2006), and 4) firms' responses to an accounting restatement (see for example Desai et al. 2006, Srinivasan 2005, Cheng and Farber 2006, and Collins et al. 2005).

Our research question relates most directly to this fourth category of restatement studies. These studies document increased management turnover within restatement firms, relative to a control group (Desai et al. 2006), increased turnover in board of director membership, relative to a control group (Srinivasan 2005), and changes in compensation level and structure (Collins et al. 2005 and Cheng and Farber 2006) surrounding an accounting restatement. These studies document various actions taken by firms in the wake of an accounting restatement. However, firms' responses to a restatement from an accounting policy choice perspective have not been previously investigated. This is an important question, as the analysis of this issue will help to increase our understanding of firms' reactions to accounting restatements. This question is the central focus of our study.

SAMPLE SELECTION, RESEARCH DESIGN, AND RESULTS OF ANALYSES

Sample Selection

We used the subject line of the Lexis-Nexis Business Wire database as the primary source for identifying restatement announcements.[7] Specifically, we searched using all forms of the words restate and revise (i.e., restat! and revis!) in the years 1997-2000 for U.S. listed firms.[8] We read the 2,272 press releases returned from these searches to determine if the announced restatement was indeed a financial statement restatement of the type germane to our study. Restatements due to accounting errors, allegations of fraud, and misapplication of GAAP were included in the sample. Restatements due to mergers and acquisitions, changes in accounting principles, stock splits, dividend distributions, and discontinued operations were excluded from the sample. Application of these procedures yields 254 restatements announced between 1997-2000. We recognize that merger activity may cause observed differences in our test variables between the pre- and post-restatement periods that are unrelated to changes in financial reporting strategy after a restatement. As such, we eliminated any firm who executed a merger or acquisition during our pre- and post-restatement analysis period. Merger and acquisition information was taken from Securities Data Corporation's Platinum database. In addition, given that our main analyses are based on total accruals, which is not a well-defined concept for financial firms, we also eliminate such firms from the

[7] Previous studies in this area have used varying methodologies for identifying a sample. We initially began with the list of restatements provided in the GAO report but later found inconsistencies between the GAO report and company press releases. A general search of Lexis-Nexis financial press yields an overwhelming number of hits — thus we restricted our search to the subject line of the business wire database.

[8] We do not consider restatement announcements beyond year 2000 to ensure a post-restatement analysis period of an adequate length.

accruals analyses. These sample restrictions, along with data availability restrictions, reduce our sample to 72 firms.

Table 1 presents descriptive information about our sample of restatement firms. Panel A indicates the number of sample firms that announced restatements in each year. The numbers range from 12 in 1999 to 32 in 2000. Panels B and C provide information on the distribution of the number of quarters restated each year and by each firm. Our sample firms restated as few as one quarter or as many as 25 quarters, depending on the nature of the correction. The average sample firm restated five quarters in its restatement.

Panel D depicts the distribution of our sample firms across industries based on 1-digit SIC codes. Thirty-three of the sample firms (46%) come from the manufacturing industry, and 18 (25%) come from the service industries. The remaining firms are spread across 3 other industries.

Panel E categorizes the number of sample firms by the cause of the restatement. We obtained this information from the press releases accompanying the restatement announcements. Twenty two of the sample firms claimed that revenue recognition was the cause of the restatement. Eight firms cited understated reserves and expenses. The remaining 42 firms did not specify any specific issue.

Methodology

For the multivariate tests that follow, we require additional variables for each firm, including total accruals and its components (working capital and other accruals), change in revenues, change in receivables, property, plant and equipment, book-to-market ratio, past sales growth, return on assets, and market value of equity.

We align the sample firms in event time, with t_0 representing the quarter during which (according to the press release) the restatement was announced by the firm. The variables of interest are aligned relative to the announcement quarter with up to twenty quarters of accounting data prior to and after the announcement quarter. Figure 1 provides a time line to clearly

indicate the pre- and post-restatement quarters that we examine in our empirical analyses. We exclude the announcement quarter from our analyses as we view this quarter to be transitional, in that the chaos surrounding the restatement likely causes the announcement quarter to be unrepresentative of the financial reporting strategy either before or after the restatement. As discussed above, given that our analysis is an investigation of changes in financial reporting strategies in the periods surrounding the restatement, we exclude the restated quarters from the analyses as well.

We identify restatement quarters from the press release when available. When not available, we traced the restated periods to the amended SEC filings (10-K/A or 10-Q/A) using the SEC's EDGAR database. We define the post-restatement period to begin in the quarter immediately following the quarter of the restatement announcement, not after the restatement has been filed. We feel that management is most likely to alter (or not alter) their financial reporting strategies as soon as the restatement has been announced, and accordingly, we have defined our post-restatement analysis period as such.

Table 2 presents descriptive statistics for each of these variables for the pre- and post-restatement periods. The table indicates that more firm-quarter observations are available in the pre-restatement period as compared to the post-restatement period (609 versus 433 firm-quarter observations). This is consistent with a likely loss of firm-quarter observations in the post-restatement periods due to bankruptcy, acquisition, or delisting.[9,10] The mean levels of all three measures of accruals are lower (more income decreasing) in the post-restatement period. We test these differences in the next section. The change in revenues, book to

[9] In a study of the implications of restatements, Erickson et al. (2004) also experience losses in sample when requiring post-restatement data.

[10] We recognize that this loss of firms in the post-restatement period creates the potential for a survivorship bias in the data. However, we have no reason to believe that the average residual accruals of the lost firm-quarters would be different from those of the firm-quarters that remain in the sample.

market ratio, sales growth, return on assets, and market value are all smaller (more negative) in the post-restatement period.[11]

Univariate Analyses

To investigate the effects of restatements on firms' accounting strategies, we begin with a univariate analysis of accruals. Our assumption is that total accruals reflect accounting policy decisions (e.g., a firm's *normal* earnings management strategy). Table 3 presents the results of these analyses. The first six columns provide the results of the tests of significance of the analysis variables in both the pre- and post-restatement periods. We define total accruals as the difference between income before extraordinary items (Compustat Research Insight mnemonic *IBCOMQ*) and cash flows from operations (*OANCFQ*). As in prior research, working capital accruals are defined as the sum of (appropriately signed) changes in accounts receivable (*RECCHQ*), inventory (*INVCHQ*), accounts payable (*APALCQ*), taxes payable (*TXACHQ*), and other current assets and liabilities (*AOLOCQ*). Other accruals are then defined as total accruals less working capital accruals. Total accruals, working capital accruals and other accruals are each deflated by total assets from the preceding quarter to address the effects of scale.

Total accruals and other accruals are significantly negative (income decreasing) in both the pre- and post-restatement periods. Working capital accruals are significantly positive in the pre-restatement period, and not significantly different from zero in the periods following the restatement. However, given that our main

[11] The authors note that the mean *B/M* ratio in the post period is negative (-0.147). However, this amount is not significantly different from zero (p=.7810), and the median value of *B/M* in the post period is positive and is equal to 0.371. The negative mean value is a function of one large negative amount (the minimum value of *B/M* in the post period of -213.06 as reported in Table 2). After removing that one observation, the mean (median) value of *B/M* in the post period is 0.346 (.371). Therefore, the authors note that the typical firm in the sample does not have a negative book value in the post period. All regressions were estimated after removing this one observation, and all inferences remain unchanged.

concern involves testing for a *change* in financial reporting strategy surrounding a restatement, we continue with a comparison of total accruals pre- and post-restatement in both a univariate and multivariate setting before drawing any conclusions.

We next examine the mean differences in the analysis variables between the pre- and post-restatement periods. Total accruals are –0.014 and –0.046 in the pre- and post- restatement periods, respectively. The difference of 0.032 is significant ($p < 0.0001$), indicating that total accruals are significantly more income-decreasing post-restatement. Working capital accruals are less income-increasing in the post-restatement periods, but not significantly so (diff=0.005, $p = 0.2573$). Other accruals are –0.021 and –0.047 in the pre- and post-restatement periods, respectively. The difference of 0.026 is significant ($p<.0001$), indicating that other accruals are also significantly more negative post-restatement. The analyses indicate that all three accrual variables are more income decreasing in the post-restatement period. Therefore, taken as a whole, the results in Table 3 indicate that firms do alter their *typical* financial reporting strategies in the periods following a restatement. These analyses, however, must be interpreted with caution, as they are univariate in nature. We therefore next turn to our multivariate analyses to further examine changes in accounting policy choice surrounding restatements.

Multivariate Analysis

Analysis of Total Accruals. Given that total accruals is influenced by many factors other than the incidence of a restatement, we adopt a regression framework that allows us to include controls for other factors that might otherwise affect our pre- and post-restatement comparisons.

The general form of our analysis model is as follows:

$$TOTACC_{\text{it}} = \alpha_0 + \alpha_1\, POST_{it} + \sum\nolimits_{\text{j=1}}^{\text{J}} X_{\text{jit}} + \varepsilon_{\text{it}} \qquad (1)$$

where *TOTACC* is total accruals, *POST* is an indicator that takes on the value *POST* = 1 when the observation comes from a post-restatement period and zero otherwise, and the *X*s are variables that influence *TOTACC* other than the restatement. Under the assumption that we have properly identified all relevant factors other than the restatement, $\hat{\alpha}_0$ is the estimate of the conditional average total accruals in the pre-restatement period, $\hat{\alpha}_0 + \hat{\alpha}_1$ is the conditional average total accruals in the post-restatement period, and $\hat{\alpha}_1$ is the difference between average accruals in the pre- and post-restatement periods. As discussed above, we are directly interested in whether the conditional average accruals after the restatement are larger, smaller, or unchanged from before the restatement; hence our focus is on $\hat{\alpha}_0 + \hat{\alpha}_1$.

We draw on the extensive earnings management literature to identify factors that are plausibly related to total accruals. The Jones (1991) and Modified Jones accrual models (Dechow, Sloan, and Sweeney, 1995) include changes in revenues (*SALEQ*) and receivables (*RECTQ*), as well as the level of property, plant, and equipment (*PPEGTQ*) as key variables. In addition, Chan, et al. (2001) and Desai, Rajgopal, and Venkatachalam (2004) find associations between total accruals, the book-to-market ratio (*CEQQ*/*MKVALQ*), and past sales growth (average percentage change in *SALEQ* over the past three quarters. Following Ashbaugh, LaFond, and Mayhew (2003) and Kothari, Leone, and Wasley (2005), we include lagged return on assets (*IBCOMQ* at the start of the quarter scaled by previous-quarter total assets, *ATQ*_1) to control for the effects of performance on total accruals. Finally, we include proxies for industry membership (one-digit SIC) to capture accounting differences across industries, and firm size (*MKVALQ*) to capture a wide range of possible other size-related differences. Changes in quarterly revenues, changes in quarterly receivables, and property, plant, and equipment are each deflated by total assets from the preceding quarter to address the effects of scale.

We also consider the possibility that the effects of our control variables on total accruals are different for pre- and post-restatement total accruals. To address this possibility, we include additional terms in the model where each of the seven control variables are interacted with (multiplied by) *POST*. An *F* (Chow) test ($F = 8.68$, $p < 0.0001$) indicates that indeed the influence of the control variables as a group is different for pre- and post-restatement accruals and thus our total accruals analysis includes these interactive terms. Thus, our empirical model includes, in addition to *POST*, the seven control variables (change in revenues; change in receivables; property, plant, and equipment; the book-market ratio; past sales growth; return on assets; and market value of equity), each of those controls interacted with *POST*, and a control for industry membership. For brevity, our tables present only the intercept estimate and the estimated coefficient for *POST*.

We recognize the possibility that there may be other, macro-economic factors that could affect the level of accruals between the pre- and post-restatement periods. However, our observations are aligned around the restatement announcement date and span four years (i.e., the observations are not aligned in calendar time). We feel that this dispersion of the announcement dates should randomize the effects of any macro-economic factors on the sample.

We estimate the model cross-sectionally using all available firm-quarter observations. Because our data are organized around the restatement announcement date and span four years, there is little overlap in calendar time of our variables in the cross-section. Thus, we are not overly concerned about cross-correlation in the regression residuals that might otherwise occur if all firm-quarter observations were aligned in calendar time. However, we do have multiple firm-quarter observations for each firm. To the extent that conditional accruals might be correlated across time for a given firm, this may introduce non-independence of the residuals. To address this potential concern, we estimate our equations using weighted least squares, wherein the weight for each firm-quarter observation is equal to the inverse of the number of observations

entering the regression data matrix for that firm. This procedure corrects the standard OLS residuals by reducing the influence in the residual variance computation of firms with multiple observations.[12]

Table 4 presents the results of the analysis. As discussed above, the regressions are weighted least squares estimations of the model that includes both the controls and the interaction of the *POST* indicator and the controls. We include only the parameters that are key to analysis in the table for clarity. The regression is estimated based on data for 72 firms and 1,042 firm-quarters.

The overall model is significant ($F = 16.68$, $p < 0.0001$, $R^2 = 0.24$), indicating that our independent variables explain a significant portion of the variation in total accruals. Conditional average accruals in the pre-restatement period, measured as $\hat{\alpha}_0$, is –0.030, and is not significantly different from zero ($t = –1.42$, $p = 0.1558$). In the post-restatement period, conditional average accruals, measured as $\hat{\alpha}_0 + \hat{\alpha}_1$, is –0.050, and is significant at less than the 5% level ($t = –2.16$, $p = 0.0310$). The difference, measured as $\hat{\alpha}_1$, is –0.02, is not significant ($t = –1.08$, $p = 0.2791$). This suggests that conditional average total accruals for our sample are not significantly smaller (less income- increasing) in the post-restatement period.[13] It is important to note that these results are different from the univariate results in Table 3, thus highlighting the importance of the multivariate analysis.

Analyses of Working Capital Accruals and Other Accruals. We recognize the possibility that accounting policy

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[12] In untabulated analysis, we compare the weighted least squares and OLS results and find that the weighting has an important effect on the estimated standard errors. Therefore, all of our results employ the weighted least squares procedure described above.

[13] Our fundamental research question is whether firms change their financial reporting strategies between the pre- and post-restatement periods. This is tested through the significance of the intercept shift, $\hat{\alpha}_1$.

choice may differ across working capital and long-term accruals. The analyses in this section take this possibility into account. We decompose total accruals into 'working capital' and 'other' components and repeat the analysis. All of the design considerations discussed above apply to these analyses as well with a few exceptions: (1) in the working capital accruals model, we exclude property, plant, and equipment as an explanatory variable (because its main role is to capture depreciation, which is part of 'other' accruals); and (2) in the 'other accruals' model we exclude revenue changes and receivables changes.

If a firm's *normal* earnings management strategy involves adjustments to the typical operating assets and liabilities, then the working capital accrual measure would be the most appropriate metric. In contrast, if managers make strategic accounting policy choices in the long-term accrual accounts (e.g., pension expenses, deferred income tax computations, restructuring reserves, etc.), then the other accrual measure would be most appropriate. Ex ante, we do not know which scenario is most descriptive of our sample firms; accordingly, these analyses are purely descriptive in nature.

Table 5 presents the results of these additional analyses. Panel A shows the results of estimating the working capital accruals model. Similar to the total accruals tests, a Chow test indicates that the control variables have different effects in the pre- and post-restatement observations, so the full model including the interactions is used in the analysis. Conditional average working capital accruals in the pre-restatement period ($\hat{\alpha}_0$), is –0.002. In the post-restatement period, conditional average working capital accruals ($\hat{\alpha}_0 + \hat{\alpha}_1$), is 0.004. The difference ($\hat{\alpha}_1$) is 0.006, is not significant (t = 0.88, p =.3768). This result suggests that working capital accruals do not change between the pre- and post-restatement periods, consistent with the result in the total accruals multivariate analysis.

Panel B reports the results of estimating the other accruals model. Again, we use the full version of the model with

interaction terms on the control variables. Conditional average other accruals in the pre- (post-) restatement period are –0.036 (–0.054). Although both are significantly different from zero, the difference (–0.018) is not significant (t = –1.21, p =.2284). Given that total accruals is the sum of working capital accruals and other accruals, this result is foreshadowed by the total and working capital accrual results, and indicates that other accruals are not significantly different in the post-restatement period, consistent with both the total and working capital accruals results.

Overall, the inference to be drawn from the multivariate analyses of total accruals and its components is that following a restatement, it appears that on average, firms do not significantly alter the accounting policy choices that are manifested in working capital or other accruals, such that post-restatement total accruals are at a similar level relative to their levels in the pre-restatement period.

Robustness Tests. We examine the sensitivity of this inference to several research design choices. First, as a robustness test of the set of control variables in model (1), we included cash flows from operations scaled by average total assets as an additional control for performance and replaced return on assets with cash flows from operations scaled by average total assets. The results (untabulated) do not change the inferences from the main analyses for total accruals or its components.

Second, we consider the effects of influential observations on this inference for each of the three dependent variables. Using Cook's D and DFFITS statistics, we identified potentially influential observations and re-estimated the model with those observations excluded. Again, the inferences from these alternative estimations remain unchanged.

Third, we divided the sample into two subgroups based on the number of quarters restated. The first group contained all restatements with four or less quarters restated, and the second group contained all restatements with more than four quarters restated. The results in the two subgroups were not different than

the results for the full sample, suggesting that the number of quarters restated does not appear to impact the firms' change in financial reporting strategy in the periods surrounding an accounting restatement. This analysis was performed for all three dependent variables.

Fourth, we divided the sample into restatements due to revenue recognition issues and all other restatements. Again, the results in the two subgroups were not different than the results for the full sample. This analysis was also performed for all three dependent variables. Finally, we recognize that a decrease in market value of equity in the periods following the restatement may cause a firm to change its financial reporting strategy, and including market value of equity as a control variable may result in controlling for the very effect we are looking to detect. With this in mind, we performed the analysis excluding the market value of equity as a control variable. Our conclusions based on the results of this analysis remain unchanged.

SUMMARY AND CONCLUSIONS

Overall, our main finding is that our sample firms do not appear to change their financial reporting strategies in the periods following a restatement. This evidence is consistent with the interpretation that on average, firms deem their pre-restatement accounting policy choices to be sufficiently conservative, and despite research that indicates management and board turnover, firms do not appear to make financial reporting policy changes post-restatement.

Our interpretation that restatement firms in this sample felt that their accounting policy choices pre-restatement were sufficiently conservative, and therefore did not make changes in financial reporting strategy post restatement is consistent with the absence of evidence of significantly positive residual accrual measures in the pre-restatement period (see Tables 4 and 5). This interpretation is also consistent with the findings of Plumlee and Yohn (2007) who find that the majority of restatements in the

period 2003-2005 were caused by internal company error and not by intentional misstatement. We recognize that a competing explanation to our results is that our tests lack sufficient power to detect a significant change in financial reporting strategy that might actually be occurring between the pre- and post-restatement periods.

We believe that there is much left to learn about the impacts of restatements on the financial reporting behavior of firms. For example, we believe it is worthwhile to pursue this result more contextually — in what circumstances or for what firm attributes do firms change (or not change) their financial reporting behavior? Are there additional measures of financial reporting strategy that could be employed to more powerfully analyze such changes? Are non-restatement firms' financial reporting strategies affected by restatements of firms in the same industry? And do our findings hold for firms who have restated their financial statements more recently? We believe these and other questions to be relevant to the continuing growth in understanding of the broader effects of financial statement restatements.

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Figure 1. Restatement Timeline and Test Periods

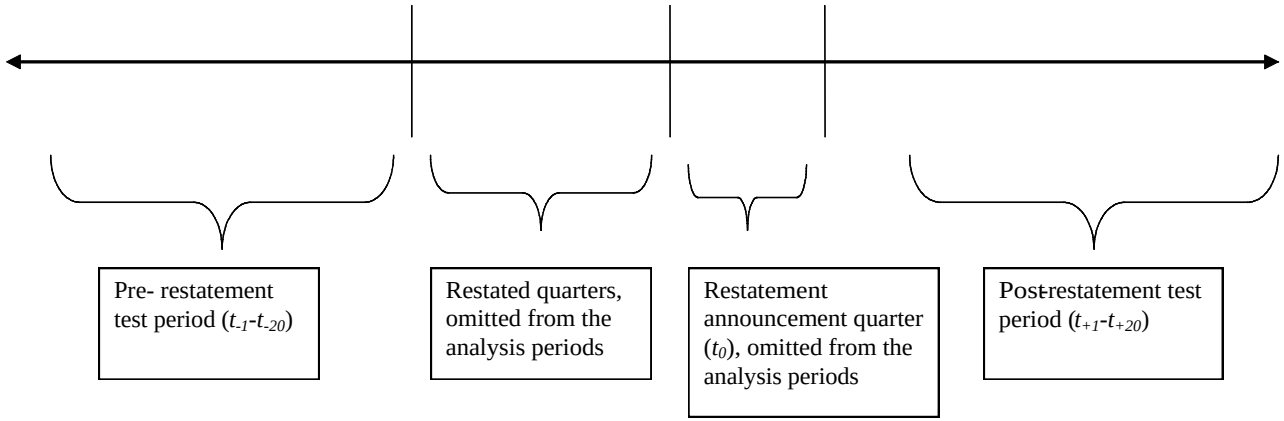

Table 1
Sample Description

Panel A:

Announcement Year	Number of Firms
1997	15
1998	13
1999	12
2000	32

Panel B:

Announcement Year	Mean # of Quarters Restated	Std. Dev.	Min	Max
1997	5.2	7.7	1	24
1998	5.8	6.5	1	25
1999	5.4	3.7	1	11
2000	4.8	5.0	1	21

Panel C:

Number of Quarters Restated	Frequency	Number of Quarters Restated	Frequency
1	17	9	2
2	15	11	3
3	7	12	1
4	9	19	1
5	3	21	1
6	1	24	2
7	3	25	1
8	6		

Table 1 (continued)
Sample Description

Panel D:

One Digit SIC Category	**Frequency**
Mining/construction	4
Manufacturing	33
Transportation, communications, electric gas, and sanitary services	4
Wholesale trade	13
Services	18

Panel E:

Nature of Restatement	**Frequency**
Revenue recognition	22
Understated reserves/expenses	8
Miscellaneous other accounting irregularities or errors	42

Table 2
Descriptive Statistics for Analysis Variables

Panel A: Pre-Restatement Firm-Quarters (*n* =609)

	Mean	**Std. Dev.**	**Min**	**Max**
TOTACC	–0.014	0.075	–0.687	0.240
WCACC	0.007	0.058	–0.361	0.244
OTHACC	–0.021	0.047	–0.693	0.091
Δ REV	0.012	0.112	–0.895	1.204
Δ REC	–0.013	0.062	–0.290	0.397
PPE	0.564	0.357	0.022	1.539
B/M	0.519	0.455	–2.538	3.088
SG	0.185	1.125	–0.779	20.58
ROA	–0.011	0.076	–1.002	0.174
Mkval	3,256.03	21,590.59	4.195	235,117.7

Panel B: Post-Restatement Firm-Quarters (*n* = 433)

	Mean	**Std. Dev.**	**Min**	**Max**
TOTACC	–0.046	0.154	–1.536	0.283
WCACC	0.002	0.086	–0.779	0.544
OTHACC	–0.047	0.117	–1.488	0.164
Δ REV	0.000	0.108	–0.702	0.876
Δ REC	0.001	0.109	–0.763	1.253
PPE	0.559	0.351	0.036	1.759
B/M	–0.147	10.973	–213.06	31.50
SG	0.149	1.908	–1.866	38.98
ROA	–0.060	0.168	–1.321	0.280
Mkval	913.06	3,092.56	0.170	32,737.03

Variable definitions:

TOTACC is total accruals scaled by average total assets, where total accruals are defined as income before extraordinary items minus cash flows from operations; *WCACC* is working capital accruals scaled by average total assets, and is defined as the sum of appropriately signed changes in accounts receivable, inventory, accounts payable, taxes payable, and other current assets and liabilities; *OTHACC* is other accruals, defined as total accruals minus working capital accruals; Δ *REV* represents the change in quarterly revenues, scaled by lagged total assets, and is calculated as $(REV_q\text{-}REV_{q-1})/A_{q-1}$; Δ *REC* represents the change in quarterly receivables, scaled by lagged total assets, and is calculated as $(REC_q\text{-}REC_{q-1})/A_{q-1}$; *PPE* represents gross property, plant and equipment for quarter q, scaled by lagged total assets; *B/M* is total common equity divided by market value of equity; *SG* represents past sales growth and is calculated as average percentage change in sales over the past three quarters; *ROA* is return on assets and is calculated as income before extraordinary items available to common shareholders from the previous quarter scaled by lagged total assets; and *Mkval* is the market value of equity (in millions).

Table 3
Univariate Analyses of Accrual Measures
(1,042 firm-quarter observations)

	Pre-restatement			*Post-restatement*			*Difference*		
	Mean	***t*-stat**	***p*-value**	**Mean**	***t*-stat**	***p*-value**	**Mean**	***t*-stat**	***p*-value**
TOTACC	–0.014	–4.53	< 0.0001	–0.046	–6.18	< 0.0001	0.032	4.00	< 0.0001
WCACC	0.007	2.97	0.0030	0.002	0.38	0.7079	0.005	1.13	0.2573
OTHACC	–0.021	–10.87	< 0.0001	–0.047	–8.36	< 0.0001	0.026	4.46	< 0.0001

See Table 2 for all variable definitions.

Table 4
Comparison of Pre- and Post-Restatement Average Conditional Total Accruals
(1,042 firm-quarter observations)

$$TOTACC = \alpha_0 + \alpha_1 Post + \alpha_2 \Delta REV + \alpha_3 \Delta REC + \alpha_4 PPE + \alpha_5 B/M + \alpha_6 SG + \alpha_7 ROA + \sum_{j=8}^{13} \alpha_j Industry + \alpha_{14} Mkval + \alpha_{15} D \times \Delta REV + \alpha_{16} D \times \Delta REC + \alpha_{17} D \times PPE + \alpha_{18} D \times B/M + \alpha_{19} D \times SG + \alpha_{20} D \times ROA + \alpha_{21} D \times Mkval + \varepsilon$$

	Estimate	***t*-statistic**	***p*-value**
Pre-restatement accruals ($\hat{\alpha}_0$)	–0.030	–1.42	0.1558
Post-restatement accruals ($\hat{\alpha}_0 + \hat{\alpha}_1$)	–0.050	–2.16	0.0310
Difference ($\hat{\alpha}_1$)	–0.020	–1.08	0.2791
Adjusted R^2	0.24		

The model is estimated using weighted least squares, where the weight for each firm-quarter is equal to the inverse of the number of quarters in the sample for the given firm. Coefficient estimates for the control variables are not reported.

Variable definitions:

Post is an indicator variable that is equal to 1 if the observation is from the period after the restatement. See Table 2 for remaining variable definitions.

Table 5
Comparisons of Pre- and Post-Restatement Average Conditional Accrual Components
(1,042 firm-quarter observations)

Panel A: Working capital accruals model estimation

$$WCACC = \alpha_0 + \alpha_1 Post + \alpha_2 \Delta REV + \alpha_3 \Delta REC + \alpha_4\, B/M + \alpha_5 SG + \alpha_6 ROA + \sum_{j=7}^{12} \alpha_j Industry + \alpha_{13} Mkval + \alpha_{14} D \times \Delta REV + \alpha_{15} D \times \Delta REC + \alpha_{16} D \times B/M + \alpha_{17} D \times SG + \alpha_{18} D \times ROA + \alpha_{19} D \times Mkval + \varepsilon$$

	Estimate	***t*-statistic**	***p*-value**
Pre-restatement accruals ($\hat{\alpha}_0$)	–0.002	–0.20	0.8421
Post-restatement accruals ($\hat{\alpha}_0 + \hat{\alpha}_1$)	0.004	0.40	0.6872
Difference ($\hat{\alpha}_1$)	0.006	0.88	0.3768
Adjusted R^2	0.168		

The models are estimated using weighted least squares, where the weight for each firm-quarter is equal to the inverse of the number of quarters in the sample for the given firm. Coefficient estimates for the control variables are not reported.

Variable definitions:
Post is an indicator variable that is equal to 1 if the observation is from the period after the restatement. See Table 2 for remaining variable definitions.

Table 5
Comparisons of Pre- and Post-Restatement Average Conditional Accrual Components
(1,042 firm-quarter observations)

Panel B: Other accruals model estimation

$$OTHACC = \alpha_0 + \alpha_1 Post + \alpha_2 PPE + \alpha_3\ B/M + \alpha_4 SG + \alpha_5 ROA + \sum_{j=6}^{11} \alpha_j Industry\ + \alpha_{12} Mkval + \alpha_{13} D \times PPE + \alpha_{14} D \times B/M + \alpha_{15} D \times SG + \alpha_{16} D \times ROA + \alpha_{17} D \times Mkval + \varepsilon$$

	Estimate	***t*-statistic**	***p*-value**
Pre-restatement accruals ($\hat{\alpha}_0$)	–0.036	–2.13	0.0334
Post-restatement accruals ($\hat{\alpha}_0 + \hat{\alpha}_1$)	–0.054	–2.89	0.0039
Difference ($\hat{\alpha}_1$)	–0.018	–1.21	0.2284
Adjusted R^2	0.153		

The models are estimated using weighted least squares, where the weight for each firm-quarter is equal to the inverse of the number of quarters in the sample for the given firm. Coefficient estimates for the control variables are not reported.

Variable definitions:
Post is an indicator variable that is equal to 1 if the observation is from the period after the restatement. See Table 2 for remaining variable definitions.