Meeting or Beating Analyst Expectations in the Post-Scandals World: Changes in Stock Market Rewards and Managerial Actions

Kevin Koh
Dawn Matsumoto
Shiva Rajgopal

University of Washington
Box 353200
Seattle, WA 98195

Abstract:

The pressure to meet/beat analysts' expectations is often blamed for the recent onslaught of accounting scandals. We investigate changes in the meeting/beating phenomenon post-scandals and find that the stock market premium to meeting or just beating analyst estimates has disappeared while the premium to beating by a larger margin has diminished. In the post-scandals period, managers tend to meet or just beat analysts' forecasts less often. Further, managers rely less on income-increasing discretionary accruals and more on earnings guidance. Consistent with lower earnings management, the relation between meeting/beating and future operating performance has increased post-scandals, suggesting that the decline in market premium is possibly unwarranted.

First Draft: December 7, 2004
This Draft: April 24, 2007

*Please address correspondence to Dawn Matsumoto (damatsu@u.washington.edu), tel no. (206) 543 4454 or Shiva Rajgopal (rajgopal@u.washington.edu) tel no: (206) 543 7525. We thank Thomson Financial IBES for providing the analyst forecast data used in this study. We acknowledge helpful comments from two anonymous reviewers, Gordon Richardson (editor), Bob Bowen, Angela Davis, Dan Dhaliwal, Mahendra Gupta, Frank Hodge, Jim Jiambalvo, Terry Shevlin, D. Shores, Matt Wieland and workshop participants at the University of Washington, Washington University (St. Louis), and American Accounting Association 2006 Annual Meeting.

Meeting Analyst Forecasts in the Post-Scandals World:
Early Evidence on Stock Market Rewards and Managerial Actions

1.0 Introduction

This paper investigates 1) whether the stock market continues to reward meeting or beating analyst expectations following the numerous accounting scandals of the early 2000's (post-scandals period); and 2) whether earnings management and/or analyst expectations management has changed in the post-scandals period. The Enron accounting scandal broke in October 2001. The subsequent demise of Enron's auditor, Arthur Andersen, numerous other accounting scandals and earnings restatements, loss of investor trust in the integrity of financial statements, and passage of the Sarbanes-Oxley Act (SOX) have likely changed both investors reactions to firms' financial disclosures as well as managers' disclosure decisions.

However, Chief Financial Officers (CFOs) interviewed by Graham, Harvey and Rajgopal (GHR 2005) opine that in the post-scandals period, capital markets continue to be obsessed with meeting and beating analysts' EPS targets and CFOs take potentially value-destroying actions to meet such expectations. Jensen, Murphy and Wruck (2004) argue that 1) the pressure to meet analyst expectations was the driver behind the accounting shenanigans of the early 2000's and; 2) SOX cannot effectively improve financial reporting transparency unless managers de-emphasize earnings guidance to equity analysts as pressure to meet such guidance leads to earnings management.

We provide evidence of changes, post-scandals, 1) in the stock market's reaction to firms' meeting or beating such analyst earnings forecasts; and 2) on firms' reliance on earnings and expectations management to beat these targets. For estimation purposes, we isolate the period during which the majority of the scandals (including Enron) broke and major legislation such as SOX passed (labeled the "scandals period", defined as Q3: 2001 through Q4: 2002) and focus on a

comparison between the periods before (the "pre-scandals period") and after (the "post-scandals period") this interval.

We find that the stock market premium assigned to meeting or just beating analyst estimates of quarterly earnings (defined as beating by a cent per share or less- "the small beaters") has disappeared in the post-scandals period while the premium assigned to beating expectations by more than a cent per share ("the big beaters") has diminished. These results are consistent with the market becoming more skeptical of firms that meet or beat expectations in the aftermath of the accounting scandals.

We also examine the extent to which the scandals and subsequent regulatory changes have impacted managers' actions to avoid missing analysts' expectations. We find that the proportion of firms that beat expectations by one cent or less has decreased post-scandals, after controlling for macro-economic variables and the trend in meeting or beating over time. Moreover, the mix of mechanisms employed to meet or beat earnings benchmarks – earnings management and earnings guidance – has also changed post-scandals. While managers' propensity to rely on income-increasing discretionary accruals to meet analyst forecasts has decreased, downward expectations management has increased. This result is consistent with 1) managers moving away from earnings management, perhaps due to the increased scrutiny on such behavior and; 2) relying more on expectations management, suggesting that managers continue to be concerned with beating analysts' EPS expectations.

The decline in earnings management to meet or beat expectations in the post-scandals period raises questions about the impact of this decline on earnings quality. One possibility is that managers use discretion in accruals to signal their private information and that curbing earnings management reduces their ability to communicate this information via meeting/beating

behavior (e.g., Watts and Zimmerman 1986, Sankar and Subramanyam 2001, Bowen, Rajgopal and Venkatachalam 2006). Alternatively, managers may use earnings management for "opportunistic" reasons and reducing this behavior would increase the predictive ability of meeting/beating to convey information about future earnings. We investigate this question by examining the relation between meeting or beating expectations and future operating cash flows. Results show that, post-scandals, meeting/beating expectations is more positively related to future cash flows, which is consistent with the reduction in earnings management improving the quality of the meet/beat "signal" (defined as the association between this signal and future operating performance). Hence, the reduction in the market premium associated with meeting or beating expectations does not appear to be due to a decrease in the information communicated in the meet/beat signal about future performance but rather, is possibly due to increased (and unwarranted) investor skepticism about firms that meet or beat expectations.

We find at least three developments of interest to governance advocates and regulators. First, the proportion of small EPS beats has fallen post-scandals and the propensity to engage in income-increasing earnings management in order to meet or beat earnings benchmarks has declined. Second, this decline has led to meeting or beating being a stronger signal of future operating performance. Third, the stock market premium assigned to small beats has disappeared in the post-scandals period, which may, over time, reduce the pressure on managers to meet analyst expectations. However, our evidence suggests that expectations management to meet/beat analyst-set targets has increased in the post-scandals period.[1] Thus, it appears that some managers continue to view meeting/beating analyst expectations as important and have, perhaps, replaced earnings management with expectations management.

[1] On a related note, Chen, Matsumoto and Rajgopal (2006) find that only 96 firms publicly renounced quarterly EPS guidance between 10/2000 to 01/2006.

Our paper is related to an emerging literature on the post Enron climate on firms' financial reporting practices, with the majority concentrating on the impact of SOX. Cohen, Dey and Lys (2005) find that earnings management, in general, declined after the passage of SOX but do not examine earnings management to meet/beat expectations specifically. Lobo and Zhou (2006) show that accounting conservatism increased in the post-SOX period while Jain and Rezaee (2004) find no such change. In a related working paper, Bartov and Cohen (2006) find that accounting earnings management and expectations management has declined post SOX but real earnings management has remain unchanged.

Numerous academic studies have documented various aspects of the meeting/beating expectations phenomenon prior to the recent scandals but conclusions from these studies may no longer be applicable in the post Enron world. One line of research finds an increasing propensity for firms to report profits that exactly meet or slightly beat analyst estimates (e.g., Brown 2001; Brown and Caylor 2005). Researchers have also shown that in the pre-scandals world, managers relied extensively on accruals (e.g., Kasznik 1999, Dhaliwal, Gleason, and Mills 2004) and expectations management (e.g. Matsumoto 2002; Bartov, Givoly and Hayn 2002; Burgstahler and Eames 2006) to meet or beat analyst forecasts while we document that the emphasis on both tools has shifted in the post-scandals period. Finally, Bartov et al. (2002) show that meeting/beating expectations is a signal of better future performance. We find that this mapping between meeting/beating and future performance has increased post-scandals.

The remainder of the paper is as follows. Section 2 discusses institutional background. Section 3 presents our analysis of the stock market reaction to meeting/beating analysts' expectations. Section 4 presents our analysis of managers' actions to meet/beat expectations. In

Section 5 we discuss the link between our two findings and discuss possible explanations. Section 6 concludes.

2.0 Institutional background

2.1 Enron's fall and loss of investor trust

In October 2001, Enron announced a $1 billion non-recurring charge for accounting "errors," triggering a chain of events that eventually led to the demise of both the company and its external auditor, Arthur Andersen. Enron's record as the largest bankruptcy in United States history was soon eclipsed by WorldCom, whose less sophisticated accounting fraud led to a larger restatement of earnings, a larger bankruptcy filing, and equally far-reaching civil and criminal investigations. Federal and state regulators subsequently initiated fraud investigations at dozens of corporations, including Adelphia, HealthSouth, McKesson, Tyco, and Qwest.

Regulators, business leaders and academics have argued that the Enron scandal and the subsequent investigations left investors distrustful of the financial reporting process (Nanda 2003). The watchdog systems designed to protect investors failed and that failure extended to investment bankers, auditors, regulators and business leaders in general, few of whom acted to prevent the actions that led to Enron's fall (Healy and Palepu 2003). Jensen (2006) attributes these scandals to a breakdown in the integrity of corporate managers. Thus, investors are likely more skeptical of the integrity of published financial reports since the demise of Enron.

2.2 Structural reforms post Enron

Brickey (2004) describes several post-Enron structural reforms that have provided regulators and the enforcement community significant resources to address systemic corporate governance failures revealed by the accounting scandals. The most important initiatives include the creation of the Corporate Fraud Task Force and the Enron Task Force within the Justice

Department, enactment of the Sarbanes-Oxley Act, amendments to the United States Sentencing Guidelines, revisions to the Justice Department's Corporate Prosecution Guidance, publication of SEC enforcement criteria, and significant increases in SEC funding.

Deployment of federal regulatory and law enforcement resources has contributed to higher criminal enforcement levels in the post-scandals era relative to the pre-scandals period. Dechow, Ge, Larson and Sloan (2007) report 209, 237 and 209 Accounting and Auditing Enforcement Releases (AAERs) in the years 2002-2004 respectively relative to 125 in 2001, the year Enron broke. These structural reforms have likely diminished managers' incentives to engage in accounting "shenanigans."

2.3 Sarbanes Oxley Act

A key legislative response to the Enron and Worldcom scandals is the passage of the Sarbanes-Oxley Act of 2002 (SOX) on July 30, 2002. Congress intended to restore the perceived loss of investor confidence in the financial reporting system and to protect shareholders from fraudulent financial reporting practices. SOX instituted a number of provisions including, among other things, improving the composition and function of audit committees, the requirement that CEOs and CFOs certify their financial statements (coupled with stiff penalties – including jail time – for knowing violations of the certification), restrictions on non-audit-related work by the company's auditors, mandatory audit partner rotation, and an annual report on internal controls (Section 404). These SOX provisions likely increased the expected costs associated with fraudulent financial reporting. For example, Linck, Netter and Yang (2006) find that corporate boards, since SOX, are manned by a greater number of lawyers and financial experts and that the average workload of directors has increased. Presumably, this increase has led to better monitoring and management.

While the new requirements were intended to increase investor confidence in financial reporting, it is not clear whether the stock market views the new requirements positively. Event-studies around the dates of passage of SOX have produced mixed results. Li, Pincus and Rego (2006) and Jain and Rezaee (2006) document positive abnormal returns around the dates of passage of SOX, while Zhang (2007) reports significant negative abnormal returns around the passage dates. Bhattacharya, Groznik and Haslem (2002) find no evidence of a stock market reaction to the first set of CEO and CFO certification of financial statements.

This paper examines a specific aspect of these changes in the financial reporting environment – namely the impact on meeting or beating expectations. Prior studies suggest that the market rewards firms that meet or beat analysts' expectations (Bartov et al., 2002; Kasznik and McNichols, 2002). In addition, several papers (e.g., Jensen et al. 2004 and GHR 2005) have suggested that 1) managers worry considerably about the stock market impact of failing to meet/beat analysts' expectations and 2) managers' efforts to meet or beat analyst earnings expectations were the driving force behind the accounting scandals. Hence, we examine changes in the stock market perception of meeting/beating analysts' expectations as well as changes in earnings and expectations management to avoid missing analysts' targets.

2.4 Time periods examined

Cohen et al. (2005) identify the 3rd quarter of 2001 as the start of the scandals period. We classify the 3rd quarter of 2001 to the 4th quarter of 2002 (both inclusive) as the "scandals" period. Although the majority of the scandals broke by the 2nd quarter of 2002, the 3rd and 4th quarters of 2002 were a period of significant changes in the financial reporting environment – with the passage of SOX, the establishment of the PCAOB, and the demise of Arthur Andersen. Thus, we classify the period prior to the 3rd quarter of 2001 as the "pre-scandals" period and the

period after the 4th quarter of 2002 as the "post-scandals" period (see Figure 1).[2] Our dataset ends with the 2nd quarter of 2006; therefore, we have 14 quarters of data in the post-scandals period. Given the relatively short time frame in the post-scandals period, our results should be interpreted as early evidence on the impact of the scandals on the meeting/beating phenomenon.

Our analysis compares the pre-scandals period to the post-scandals period. The scandal period itself is relatively short (six quarters) and marked by significant upheaval in the capital markets. Thus, we do not interpret the results for this scandal period.[3]

3.0 Stock Market Reaction to Meeting/Beating Analysts' Expectations

3.1 Research question

Our first research question relates to the stock market reaction to meeting or beating analysts' expectations. Over the past decade, numerous studies suggest that meeting or exceeding analysts' expectations has become increasingly important to managers (e.g., Brown 2001, Matsumoto 2002, Brown and Caylor 2005). Prior studies have found evidence that the market assigns a premium to firms that meet or beat analyst expectations even after controlling for the news in earnings (Bartov et al. 2002; Kasznik and McNichols 2002) and that there is a market penalty to missing expectations for high growth firms (Skinner and Sloan 2002). Survey evidence in GHR (2005) points to capital market pressures as the primary reason why managers avoid missing expectations. Jensen et al. (2004) argue that the pressure to meet analyst expectations was the driver behind the accounting shenanigans of the early 2000's. The

[2] We classify quarter membership based on the earnings reporting date. That is, if a firm's earnings report date falls between January 1 to March 31, 2002, then we classify such an observation as a Quarter 1: 2002 observation.
[3] It is also not possible to interpret results from the Scandals period as being attributed to the scandals and the results from the post-Scandals period as being attributed to SOX, as the aftermath of the scandals likely continued into this post-Scandals period. The fact that SOX was passed so quickly following the eruption of the scandals makes it infeasible to isolate the impact of the scandals from that of SOX. Instead, we consider the combined effects of both events to represent a new financial reporting environment. The post-Scandals period defined above represents this new reporting environment.

publicity surrounding the Enron, WorldCom and other scandals likely raised investor skepticism about firms that meet or beat analyst expectations. If investors are more likely, post-scandals, to view meeting or beating expectations – particularly exactly meeting expectations or beating by a small amount – as a signal of managerial intervention, either via earnings management or analysts' expectations management, (and if such actions are viewed negatively) the stock market premium assigned to meeting or beating quarterly estimates should decline post-scandals.

On the other hand, the structural reforms following the scandals made numerous changes to the reporting environment aimed at curtailing managerial misbehavior. If investors view these changes as effective, it is possible that investors perceive meeting or beating analysts' forecasts as less likely to involve managerial intervention, thereby resulting in an increase in the stock market premium. Prior research provides mixed results regarding the market's reaction to the passage of SOX. Thus, whether the stock market premium to meeting or beating expectations has increased or decreased post-scandals is an empirical question.

3.2 Empirical tests of market reaction

To test our first research question, we estimate the following specification in three time periods: the pre-scandals period, the scandals period and the post-scandals period.

$$\begin{aligned} CAR_{i.q} &= \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 SMBEAT_{i,q} + \beta_3 BIGBEAT_{i.q} + \beta_4 SCA + \beta_5 POST \\ &+ \beta_6 SCA * UEPS_{i,q} + \beta_7 SCA * SMBEAT_{i,q} + \beta_8 SCA * BIGBEAT_{i,q} + \beta_9 POST * UEPS_{i,q} \\ &+ \beta_{10} POST * SMBEAT_{i,q} + \beta_{11} POST * BIGBEAT_{i,q} + \varepsilon_{i,q} \end{aligned} \quad (1)$$

In equation (1), $CAR_{i,q}$ refers to cumulative market-adjusted (value weighted) abnormal returns over the period beginning two days following the date of the first forecast for the quarter q made at least three days subsequent to the announcement of previous quarter's earnings (labeled

"F_{first}") and ending one day after the release of the quarter's results.[4] $UEPS_{i,q}$ is unexpected earnings for the quarter defined as $(EPS_{i,q} - F_{first})/P_{q-1}$ where EPS is actual earnings per share for the quarter and the difference between EPS and F_{first} is scaled by P_{q-1}, the stock price per share at the beginning of the quarter. Thus, $UEPS_{i,q}$ should capture the earnings information released during the quarter.

We then classify firms that meet or beat expectations at the earnings announcement into two groups – firms that beat expectations by a narrow margin and those that beat expectations by a wider margin. The market could be more suspicious of firms that exactly meet or just beat expectations because of the greater likelihood of managerial intervention (i.e., earnings or expectations management, see Burgstahler and Eames 2006). SMBEAT is a dummy variable that is set to one if the firm's actual earnings per share exceeds the last analysts' forecast at least three days prior to the earnings announcement (labeled "F_{last}") by a cent per share or less. BIGBEAT is a dummy variable that is set to one if actual earnings exceeds F_{last} by more than one cent per share. Thus, SMBEAT (BIGBEAT) is a dummy variable that is set to one if $0 \leq$ EPS-$F_{last} \leq 0.01$ (EPS- $F_{last} > 0.01$). We do not sub-divide BIGBEATs into more sub-categories (i.e., beats of two cents, three cents, etc.) because we are primarily interested in managers' incentives, on the margin, to scramble for the last cent to meet or beat estimates. Such behavior is often the topic of extensive discussion in the academic literature (e.g., Bartov et al. 2002, Brown and Caylor 2005, Jensen et al. 2004) and in the financial press (e.g. Morgensen 2004).[5]

[4] We begin the accumulation period following the first forecast so that the stock price can incorporate this forecast. However, this design choice will likely result in longer accumulation windows for bigger firms because such firms have greater analyst following than smaller firms. We test the sensitivity of our results to beginning our accumulation period at two days following the previous quarter's earnings announcement. Reported results are virtually unchanged with this sensitivity check.

[5]Note that mean (median) UEPS is \$0.006(\$0.01) and the upper (lower) quartiles are \$0.04 (-\$0.01). Thus, only 50% of the firms are able to beat the quarterly earnings estimate by a cent or more. Further, only ¼ of the firms are able to beat the quarterly estimate by 4 cents a share. If beating a cent were common, we should have found a

In equation (1), β_2 and β_3 capture the incremental reward to meeting or beating expectations at the earnings announcement, *after controlling for the unexpected news about earnings released during the quarter*, *UEPS*. The coefficients on SMBEAT and BIGBEAT represent the market premium (or discount) to meeting or beating expectations. To investigate whether the premium to meeting or beating expectations has changed in the new financial reporting environment after the scandals, we interact SMBEAT and BIGBEAT with dummy variables to represent the scandals period (SCA) and the post-scandals period (POST).

We obtain analyst forecast and actual earnings data from Thomson Financial's split-unadjusted I/B/E/S detail tapes for the period 1987:Q1- 2006:Q2.[6] Stock returns are obtained from CRSP. The intersection of these databases yields 108,764 firm-quarter observations to estimate equations (1). To account for potential outlier effects, we winsorize the independent variables at the 1% and 99% level of their respective distributions. Table 1 provides descriptive statistics on the variables used in this (and subsequent) analysis. The mean (median) CAR is 0.9% (1.1%) while the mean (median) UEPS is -0.002 (0.000). 17.8% of firm-quarters meet or beat analyst forecasts by a cent or less (SMBEAT) and 50.6% beat expectations by more than one cent (BIGBEAT).

Results of estimating equation (1) are reported in column (1) of Table 2. All t-statistics reported in the paper are computed using clustered White standard errors to correct for possible serial and cross-sectional correlations (Petersen 2007). In particular, to adjust for both serial and

---

greater number of firms where UEPS is a cent or more. Untabulated results are insensitive to redefining SMBEAT (BIGBEAT) as a beat ≤ 2 cents per share (> 2 cents per share). On a different design related point, note that we use the most recent *individual* analyst forecast made three days prior to the earnings announcement rather than the most recent *consensus* forecast to be consistent with prior research (Bartov et al. 2002; Brown and Caylor 2005). Our main inferences are insensitive to using consensus forecasts.

[6] We start our sample period in 1987 despite the fact that the importance of meeting or beating analysts' expectations, arguably, began in the mid to late 1990's. We do this mainly to allow comparability with prior studies (Bartov et al. 2002). However, Brown and Caylor (2005) report that the cumulative abnormal return for avoiding negative earnings surprise in the 1996-2002 period is higher than that of 1987-1992 We test the sensitivity of our results to including the earlier years. We obtain similar results if we begin our sample period in 1996.

cross-sectional correlation, we cluster the standard errors both by firm (for serial correlation) and by quarter (for cross-sectional correlation).

Column (1) suggests that the stock market used to assign a 2.5% (7.2%) premium for SMBEAT (BIGBEAT) events in the pre-scandals period. This premium has declined for both SMBEATs (coefficient on POST*SMBEAT = -0.023, t-statistic = -5.42) and BIGBEATs (coefficient on POST*BIGBEAT = -0.034, t-statistic = 10.36) in the new reporting environment.[7] It appears as though in the post-scandals period, the stock market has 1) stopped rewarding managers who just manage to beat the analyst estimate by a cent (the combined coefficient of SMBEAT and POST*SMBEAT = 0.002) ; and, 2) halved the reward to managers who beat analyst estimates by more than a cent per share (combined coefficient on BIGBEAT and POST*BIGBEAT = 0.038).[8] Both effects are economically significant as 2.3% and 3.4% reductions in returns over an accumulation period of approximately 90-days are quite large. The fact that the stock market premium assigned to "small" beats has disappeared in the post-SOX period while the premium assigned to "big" beats has not may be due to the fact that the market suspects firms who just meet the forecast have indulged in earnings or expectations management to beat the target (versus firms that beat their analyst-set target handily).

We test the sensitivity of our results to several alternative explanations:

[7] As an aside, it is worth noting that the earnings response coefficient (ERC) has increased considerably in the post-Scandals period (the coefficient on POST*UEPS is 1.78, t-statistic = 7.19). Untabulated analyses reveal that a key reason for the higher ERC in the post-Scandals period is the significant fall in interest rates. In particular, a regression of the 10-year treasury bill rate (expressed in percentages and measured at quarterly intervals) on SCA and POST and an intercept reveals a negative coefficient of –2.803 on POST (t-statistic = -7.13).

[8] In untabulated analyses, we investigate the possibility that the premium to SMBEAT and BIGBEAT has generally fallen over time and whether such a fall could account for our results. To test this conjecture, we inserted two variables: TIME*SMBEAT and TIME*BIGBEAT (TIME defined as the quarter number indicator with the first quarter set at 1987:Q1) in equation (1). We found that our reported results continue to hold despite the introduction of these two interaction variables.

1) Same firms: To ensure that the reduced rewards to SMBEAT and BIGBEAT are not driven by firms entering or leaving the sample across the time periods (either because of IPOs, delistings or changes in analyst coverage), we imposed a filter whereby we retain the same set of firms throughout the 1987:Q1 to the 2006:Q2 time periods. Results are inferentially similar.

2) *Non-linear ERC*: We allow the ERC to be non-linear by interacting UEPS with LIN, a variable that assumes values from 0 to 4, based on quintile ranks, per quarter, of absolute value of UEPS as recommended by Bartov, Lynn and Ronen (2001) in equation (1). Again, our results are inferentially similar.

3) *Control for dispersion*: Kinney, Burgstahler and Martin (2002) argue that a SMBEAT event is a bigger (smaller) surprise if the dispersion of earnings forecasts surrounding the earnings announcement is low (high). Hence, the market reward to a SMBEAT is expected to be larger for less dispersed earnings forecasts. We compute the dispersion of each analysts'last forecast made prior to the earnings announcement and include such dispersion as an independent variable in equation (1) and as an interaction variable with SCA and POST. We continue to observe a lower stock market premium for SMBEAT and BIGBEAT in the post-scandals period.

4) *Growth expectations*: During the stock market bubble, growth expectations implicit in stock prices were likely high and the scandals occurred relatively soon after the stock market bubble burst. Therefore, the decline in premium could potentially reflect the effect of such reduced growth expectations. To address this concern, we use the book-to-market ratio measured at the end of the quarter (BMR) as a proxy for future growth expectations and interact it with UEPS. (Note that prior research suggests that ERCs are greater for high growth firms (Collins and Kothari 1989). The unreported results are substantially similar to those reported in the Table 2. However, we acknowledge that incorporating revisions in growth expectations in an ERC

specification is difficult and to the extent the variation in BMR does not capture such revisions, our results could reflect disappointed growth expectations.[9]

Finally, we also analyze changes in the market reaction to *missing* analysts' expectations. To examine the market reaction to large and small misses, we estimate the following regression:

$$\begin{aligned} CAR_{i.q} &= \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 SMMISS_{i,q} + \beta_3 BIGMISS_{i.q} + \beta_4 SCA + \beta_5 POST \\ &+ \beta_6 SCA * UEPS_{i,q} + \beta_7 SCA * SMMISS_{i,q} + \beta_8 SCA * BIGMISS_{i,q} + \beta_9 POST * UEPS_{i,q} \\ &+ \beta_{10} POST * SMMISS_{i,q} + \beta_{11} POST * BIGMISS_{i,q} + \varepsilon_{i,q} \end{aligned} \quad (2)$$

SMMISS (BIGMISS) represents a dummy variable equal to one if the firm misses analysts' expectations by one cent or less (more than one cent). Results are presented in column (2) of Table 2. The penalty for missing analysts' expectations by a penny falls from -0.060 to -0.039 between the pre- and post-scandals period (the coefficient on POST*SMMISS = 0.021, t-statistic = 2.46) while the penalty to missing by more than one cent falls from -0.059 to -0.027 (the coefficient on POST*BIGMISS = 0.032, t-statistic = 9.73). In both periods, the penalty to BIGMISS is not larger than the penalty to SMMISS, suggesting that the market equally penalizes firms for both large and small misses.[10]

In summary, our results are consistent with the stock market being less enamored of firms that meet or beat analysts' expectations, particularly those that exactly meet or just beat those

[9] It is also possible that omitted concurrent macro-economic shocks affect the market's perception of meet-beat behavior and hence potentially account for our results. We consider several potentially confounding macro-economic variables: 1) percentage change in seasonally adjusted GDP over the previous quarter, obtained from the Federal Reserve Board (available at www.federalreserve.gov); 2) two-digit SIC code based industry ROA for the quarter; 3) annual interest rates for a 10-year T-Bill measured at quarterly intervals obtained from the Federal Reserve Board website; 4) stock market risk premium, measured as return on the market net of risk free rate, to account for the overall market being under or over valued; 5) exchange rate index for U.S. dollars against a basket of currencies to provide for the weak U.S dollar environment; and 6) stock return volatility of the daily returns on the CRSP value-weighted market index. In particular, we introduce these six variables as independent variables by themselves and as interactions with POST and SCA. Despite these controls, we find that the stock market rewards for BIGBEAT and SMBEAT have declined in the post-Scandals period. While we cannot rule out the possibility that another concurrent macro-economic event accounts for the reduced premium to meeting/beating expectations, the fact that our results are robust to the inclusion of numerous macro-economic factors provides us some reassurance that our results are not spurious.

[10] This result is consistent with Skinner and Sloan (2002), who find a stock market penalty to missing by a small amount.

forecasts. The results also suggest that the market appears to be more forgiving of firms that miss expectations, particularly when they miss by a wider margin. Although we present results related to missing expectations, most of the discussion in the academic and practitioner literature tends to focus on meeting and beating expectations. Thus, we concentrate on exploring the SMBEAT and BIGBEAT results in the upcoming analyses.

4. Managerial Actions to Meet/Beat Analysts' Expectations

4.1 Research question

In this section, we ask whether managers' reliance on earnings and expectations management to meet or beat analyst estimates has changed in the post-scandals period. Both academic research (Cohen et al. 2005, GHR 2005) and the popular press have argued that managers' costs of managing earnings via accounting techniques have increased post-scandals because of (i) increased auditor and regulator scrutiny; and (ii) more rigorous enforcement of penalties for securities violations. Moreover, our previous finding that the market premium associated with meeting or beating expectations has diminished in the post-scandals period, suggests that managers have smaller incentive to engage in meeting/beating behavior. These arguments imply that, in general, the propensity for managers to avoid missing analysts' expectations have declined in the new reporting environment.[11]

Prior research has studied two managerial responses to meet or beat analyst forecasts – accounting based earnings management and earnings guidance (see Fields, Lys and Vincent

[11] One could argue that a decrease in managerial actions to meet or beat analysts' forecasts should result in an increase in the premium to meeting or beating expectations. Our prior results suggest that this is not the case. In subsequent analysis (see section five), we attempt to reconcile our findings relating to changes in market reaction and changes in managerial behavior.

2001; Healy and Palepu 2001; and Burgstahler and Eames 2006).[12] GHR (2005) report that CFOs are reluctant to manage accounting earnings but are more open to expectations management in the post-scandals period. Moreover, the requirements of SOX likely curtail managerial discretion over accounting numbers. In addition, media attention surrounding the accounting scandals focused primarily on managers' use of accounting discretion to meet or beat analysts' forecasts. In contrast, neither SOX nor the media directly addresses expectations management. Thus, if managers still have some incentives to meet or beat expectations they will likely rely more on earnings guidance than earnings management to avoid missing expectations.

4.2 Empirical tests of the proportion of firms meeting/beating analysts' expectations

We examine whether the proportion of firms meeting/beating analysts' forecasts has changed in the new reporting environment. Figure 2 presents the percentage of SMBEAT and BIGBEAT events over the calendar quarters from Q1:1987 to Q2:2006. A visual inspection of the graph suggests a decline in the proportion of small beats, particularly in the last seven quarters. On the other hand, there does not appear to be a significant change in the proportion of big beats in the post-scandals period.

To statistically test our second hypothesis regarding temporal changes in SMBEAT% and BIGBEAT% over time, we estimate the following regression:

$$SMBEAT\%(BIGBEAT\%)_t = \beta_0 + \beta_1 Time + \beta_2 GDP + \beta_3 SCA + \beta_4 POST + \varepsilon_q \quad (3)$$

In equation (3), *t* refers to calendar quarter, *Time* denotes the calendar quarter number with the first quarter set at Q1:1987, GDP is the percentage change in seasonally adjusted GDP over the previous quarter, and the other variables are as defined earlier. We include TIME to control for the previously-documented increase in the propensity of firms to meet/beat analysts'

[12]We do not consider the use of real operational decisions to meet or beat analyst estimates given the difficulty in measuring such actions. In a contemporaneous working paper, Bartov and Cohen (2006) examine real earnings management to meet earnings benchmarks.

expectations (Brown 2001). GDP is added as a control variable to account for the possibility that meets-beats or misses merely reflect improved or deteriorating macro economic conditions.

Columns (1) and (2) of Table 3 report the results of estimating equation (3). Consistent with prior research, we find an overall increase in the proportion of both small and big beaters over time (coefficient on TIME is significant in both Column (1) and (2)). However, in the post-scandals period, the proportion of small beats is an average of 10.4% lower (coefficient on POST in column (1) = 0.104) than what would be expected given the time trend and GDP, a statistically significant decrease (t-statistic = -11.06). We also find a decrease in the propensity for big beats in the post-scandals period (β_4 in column (2) = -0.039, t-statistic = -2.43), albeit a smaller one. Although the decline in big beats is not apparent from a visual inspection of Figure 2, the decline is significant if one considers the overall upward trend in the propensity to meet/beat expectations and the impact of GDP on the propensity to beat expectations by a wide margin (coefficient on GDP in column (2) = 2.882, t-statistic = 3.31).[13]

Next, we examine whether the propensity to miss expectations has changed in the new reporting environment. Figure 3 presents the percentage of SMMISS and BIGMISS events across time. There is a clear upward drift in the percentage of misses in total and BIGMISS in particular in the post-scandal period. While a visual inspection of Figure 3 does not suggest an increase in the percentage of small misses, Column (3) of Table 3 suggests an increase in the

[13] The inclusion of TIME in our regression assumes that the trend of increasing BIGBEATs and SMBEATs noted in prior research would have continued were it not for some structural change in the environment. However, if one believes that the expected proportion of small/big beats follows a random walk, our specification could lead to a significant coefficient on POST even if the proportion of BIGBEATs and SMBEATs remained unchanged from the latest pre-Scandals quarter (i.e., Q2:2001). To address this issue, we restricted the pre-Scandals period to the most recent 14 quarters (the same number of quarters we have post-Scandals) and re-ran our regressions excluding the TIME variable. The coefficient on POST is still significant in the SMBEAT regression (t-statistic =5.58, untabulated) but is not significant in the BIGBEAT regression. However, the combined proportion of SMBEAT and BIGBEAT is smaller post-scandals using this reduced sample (and excluding the TIME variable).

percentage of small misses in the post-scandals period (β_4 = 0.009, t-statistic = 3.16). The regression analysis also confirms the increase in big misses (β_4 = 0.136, t-statistic = 8.20).

Overall, these results are consistent with managers taking fewer managerial actions (such as managing earnings or expectations) to meet or beat analysts' earnings targets – perhaps as a result of the reduced stock market premium associated with meeting or beating expectations and the reduced penalty for missing such targets.

4.3 Empirical tests of the mix of mechanisms to beat expectations

We now investigate 1) accrual based earnings management, and 2) expectations management to meet or beat forecasts. As discussed in section 4.1, we hypothesize that increased auditor, regulator, and media scrutiny in the new reporting environment has reduced managers' ability to use accounting techniques to meet or beat expectations. We also hypothesize that the reduced discretion with respect to earnings will lead managers to rely more on earnings guidance to avoid missing expectations.

4.3.1 Accounting earnings management

We proxy accounting earnings management using the modified Jones (1991) model as discussed in Dechow, Sloan, and Sweeney (1995), controlling for performance as in Kothari, Leone, and Wasley (2005) and potential differences in accruals during the fourth quarter (Matsumoto 2002). It is important to adjust abnormal accruals for performance because better performance is likely related to both abnormal accruals and firms' tendency to meet or beat analyst estimates. Specifically, we estimate the following regression for each two-digit SIC code with at least 10 firms in quarter q.

$$TA_{i,q} / ASSET_{i,q-1} = \delta_0 1/ ASSET_{i,q-1} + \delta_1 \Delta REV_q / ASSET_{i,q-1} + \delta_2 PPE_{i,q} / ASSET_{i,q-1} + \delta_3 EBEIT_{i,q} / ASSET_{i,q-1} + \delta_4 QTR4_{i,q} + \varepsilon_{it} \quad (4)$$

where *TA* is firm i's total accruals, computed as earnings before extraordinary items (Compustat #8) less cash flows from operations adjusted for extraordinary items and discontinued items (Compustat #108 - Compustat #78); *ASSET* is firm i's total assets (Compustat #44) at the beginning of quarter q; *ΔREV* is change in revenues (Compustat # 2), *PPE* is gross value of property, plant and equipment (Compustat # 118), EBEIT is earnings before extraordinary items (Compustat # 8); and QTR4 is a dummy variable equal to one if the quarter is a firm's fourth fiscal quarter.

The industry- and quarter-specific parameter estimates obtained from equation (4) are used to estimate firm-specific normal accruals (as a percent of lagged total assets):

$$NA_{i,q} = \hat{\delta}_0 1 / ASSET_{i,q-1} + \hat{\delta}_1 (\Delta REV_{i,q} - \Delta AR_{i,q}) / ASSET_{i,q-1} + \hat{\delta}_2 PPE_{i,q} / ASSET_{i,q-1} + \hat{\delta}_3 EBEIT_{i,q} / ASSET_{i,q-1} + \hat{\delta}_4 QTR4_{i,q} \quad (5)$$

where *NA* refers to "normal" accruals and *ΔAR* is firm i's change in accounts receivable (Compustat #37). We calculate abnormal accruals, *ABACC*, in quarter q as $= TA_{i,q} / ASSET_{i,q-1} - NA_{i,q}$.

Note that abnormal accruals are computed in equation (5) as a percentage of assets. To rescale to per share basis, we compute $ABACCPS_q = (ABACC_{i,q} * ASSET_{i,q-1}) / SHARES_q$ where $SHARES_q$ is the shares used to compute EPS (Compustat #15).

To examine whether managers' propensity to use accounting earnings management has changed in the post-scandals period, we follow Bartov et al. (2002) and restrict our attention to firm-quarters that meet or beat expectations. For such firm-quarters we subtract ABACCPS from EPS and compute the proportion of firm-quarters that could not have met the analyst forecast but for the use of income-increasing abnormal accruals.[14] Because we restrict our

[14] We acknowledge that accounting earnings management to hit analyst forecasts can potentially also involve income-decreasing abnormal accruals. However, it is empirically difficult to uncover the role of income-decreasing accruals in meeting analyst forecasts.

attention to only those firm-quarters 1) that meet or beat analyst forecasts; and 2) for which we can estimate ABACCPS, we employ 73,780 firm-quarter observations.[15]

Panel A of Table 4 shows that the proportion of firms-quarters that hit analyst forecasts only with the assistance of discretionary accruals has significantly declined from 47.27% in the pre-scandals period to 42.78% in the post-scandals period ($\chi^2 = 106.16$, $p < 0.001$). The decline in the reliance of discretionary accruals applies both to SMBEATs and BIGBEATs, although the decline is greater for the SMBEAT group (decline of 8.71% for SMBEAT versus a decline of 2.89% for the BIGBEAT group).

To assess whether this percentage change withstands a more rigorous multivariate test, we define a dummy variable ACCMEET set to 1 if (EPS-ABACCPS) < F_{last} and to zero otherwise and employ the following logistic regression:

$$ACCMEET_{i,q} = \beta_0 + \beta_1 Time_q + \beta_2 SCA_q + \beta_3 POST_q + \beta_4 GDP_q + \beta_5 INDROA_{i,q} + \beta_{6,7,8} quarterdummies + \varepsilon_{i,q} \quad (6)$$

We include GDP and INDROA to control for the effect of economic activity on accounting earnings management to meet analyst expectations. If the univariate results hold in a multivariate setting, we expect a negative β_3.

Column (1) of panel B of Table 4 reports the results obtained by estimating equation (6). Consistent with our univariate results, the coefficient on POST is significantly negative (Wald $\chi^2 = 513.16$, $p < 0.001$), suggesting a decline in the propensity to use income-increasing earnings management to meet or beat expectations in the post-scandals period. This coefficient translates into a 16% decrease in the probability of using upward earnings management to

[15] This reduction in observations is partially offset by the fact that, for this analysis, we do not require a firm-quarter to have data on cumulative abnormal returns (as is required in our stock market reaction tests reported in Table 2).

meet/beat analysts' expectations.[16] Column (2) refines equation (6) by adding three new terms: 1) SMBEAT; 2) SCA*SMBEAT; and 3) POST*SMBEAT. A positive (negative) coefficient on SMBEAT indicates whether SMBEAT firms are more likely to use (avoid) income-increasing accruals to meet or beat analyst estimates than BIGBEAT firms and POST*SMBEAT reflects whether such behavior has changed in the post-scandals period. The positive coefficient on SMBEAT (Wald χ^2 = 341.43, p-value < 0.001) in column (2) suggests that SMBEAT firms are more likely to use income-increasing accruals to beat analyst forecasts. Moreover, the negative coefficient on POST*SMBEAT (Wald χ^2 = 27.5, p < 0.001) suggests that the propensity to use income increasing accruals to just meet or slightly beat expectations has declined more in the post-scandals period than the propensity to use income increasing accruals to beat expectations by a wider margin. This coefficient translates into a 5% greater decline in probability for the SMBEAT group than the BIGBEAT group,

4.3.2 Expectations Management

We use Matsumoto's (2002) expected forecast model based on the time-series behavior of past quarterly earnings to measure expectations management. Unlike proxies based on forecast revisions (such as that used in Bartov et al. 2002), the Matsumoto (2002) model allows for the possibility that managers provide long-term guidance that affects the initial forecast made during the quarter.[17] The cost of using the Matsumoto (2002) model is that the more onerous data requirements result in a smaller sample size.[18]

---

[16] Changes in probability are computed as follows: $[e^{\beta' X}/(1+e^{\beta' X})^2]\beta$ where β′X is computed at the mean values for the independent variables (Greene 1993). Technically, the marginal effect for dichotomous variables should be calculated as the difference in probability when the variable is equal to one versus zero, evaluated at the mean of the other variables. This procedure produces nearly identical values as those produced using the above formula.

[17] Using forecast revisions during the quarter to identify firms that guide analysts' forecasts downward presumes the initial forecast is unbiased. If managers give downward biased guidance two or three quarters out, then in

We compute the difference between the latest analyst forecast (F_{last}) and the EPS forecast for the quarter based purely on time-series behavior of past quarterly EPS realizations.[19] An actual forecast, F_{last}, lower than what would be expected given the time-series behavior of past EPS is consistent with downward expectations management. The empirical specification to compute the abnormal or unexpected forecast of earnings per share is developed in two steps. First, we estimate an expected forecast of EPS for the forthcoming quarter by estimating the following regression for each four-digit SIC code with at least 10 firms in quarter q:

$$\Delta EPS_{i,q} / P_{i,q} = \delta_0 + \delta_1(\Delta EPS_{i,q-1} / P_{i,q-5}) + \varepsilon_{i,q} \quad (7)$$

where $\Delta EPS_{i,q}$ is the difference between EPS for firm *i* in quarter *q* and seasonally lagged EPS for the same firm four quarters ago, and $P_{i,q}$, as before, refers to stock price per share for firm *i* at the end of quarter *q*. We define the abnormal forecast (ABFRCST) as follows:

$$ABFRCST_{i,q} = F_{last} - [EPS_{i,q-4} + (\hat{\delta}_0 + \hat{\delta}_1 \Delta EPS_{i,q-1} / P_{i,q-5}) * P_{i,q-4}] \quad (8)$$

Note that a negative ABFRCST indicates that F_{last} is lower than the predicted earnings forecast and is consistent with downward guidance. To detect "suspect firm-quarters," we identify firms that meet or beat expectations based on F_{last} but whose actual earnings would have

---

subsequent quarters, the initial forecast would not need to be managed downward (because it is already biased downward). The Matsumoto (2002) proxy does not assume that the first forecast of the quarter is unbiased.

[18] We also performed an analysis using the Bartov et al. (2002) proxy. Specifically, we designate firms with a negative UEPS (i.e., EPS < F_{first}) that managed to meet or beat expectations at the earnings announcement (i.e., EPS ≥ F_{last}) as firms that have relied on earnings guidance. Similar to our analysis of discretionary accruals, we restrict our attention to firm-quarters that meet or beat expectations and assess whether a firm would have missed expectations but for the forecast revision. We find that the proportion of firms that appear to have managed expectations has increased post-Scandals.

[19] Matsumoto (2002) also includes returns over the past year to capture the effect of other news. However, including returns in the first stage of the model treats any public managerial guidance given over the quarter as part of the expected forecast as opposed to being part of the unexpected forecast (as it should be). This issue is particularly problematic post Reg-FD when managerial guidance is primarily public and thus, likely to be reflected in returns (the sample in Matsumoto (2002) was pre-FD). Thus, we exclude returns from our first stage model. In untabulated sensitivity tests, we find inferentially similar results when we include returns in the first stage model.

fallen short of expectations were it not for the downward guidance. Data requirements result in 75,911 usable firm-quarters.

Panel A of Table 5 shows the proportion of firm-quarters that rely on expectations management in the pre- and post-scandals period. Consistent with our hypothesis, we find that 7.98% of firms relied on downward guidance in the pre-SCA period whereas 10.85% of firm-quarters relied on downward guidance in the post-scandals period, a significant difference (χ^2 =146.63, p-value < 0.001). This increase is found for both the small and the big beat groups.

To assess whether these univariate results hold in a multivariate specification, we estimate a logistic regression by defining a dummy GUIDEMEET set to 1 if a firm meets or beats analysts' forecasts (EPS-$F_{last} \geq 0$) but would have missed expectations were it not for the downward guidance in analysts' forecasts ($F_{last} \leq$ EPS $\leq$ ABFRCST). Other than adding a dummy variable to control for RegFD effects[20], set to one (zero) if the firm-quarter fell after October 2000, the independent variables are identical to those used in equation (6).

$$GUIDEMEET_{i,q} = \beta_0 + \beta_1 Time_q + \beta_2 REGFD_q + \beta_3 SCA_q + \beta_4 POST_q + \beta_5 GDP_q + \beta_6 INDROA_{i,q} + \beta_{7,8,9} quarterdummies + \varepsilon_{i,q} \quad (9)$$

Results reported in column (1) of Table 5, panel B support our univariate analysis – firms rely more on earnings guidance to meet earnings forecasts in the post-scandals period. The coefficient on POST (= 0.443) translates into a 3% increase in the propensity to use expectations management to meet/beat expectations in the post-SOX period, which is smaller than the decrease in earnings management but is still significant at a p-value < 0.001. Results in column (2) show that the increased use of earnings guidance post-scandals is greater for the small beat

[20] Reg. FD, effective October 23, 2000, was intended to eliminate selective disclosure to analysts. Hence, we control for Reg. FD effects because the increased reliance on expectations management post-Scandals might actually be a post Reg. FD effect in that unobservable selective guidance in the pre-FD period may have been replaced by observable non-selective guidance post FD.

group – the coefficient on the POST*SMBEAT interaction is positive and statistically significant (Wald $\chi^2 = 12.16$, p-value < 0.001) and translates into a 2% greater increase in the propensity to engage in expectations management for the small beat group.

Overall, we find support for the conjecture that the new reporting environment post-scandals has seen a shift in the mix of methods managers use to meet or beat analysts' expectations. Results also suggest that managers have increased their use of expectations management to meet their earnings targets.

5. Reconciling changes in market reactions and changes in managerial behavior

5.1 Meeting or beating as a signal of future performance

While the stock market premium to meeting or beating analysts' expectations has diminished in the post-scandals period, the proportion of firms using accruals management to meet or beat analysts' expectations has fallen. One might expect an associated *increase* in the market premium to meeting or beating, *if the decline in earnings management results in improved earnings quality*. The decline in earnings management could also inhibit managers' ability to signal their private information about future earnings. Bartov et al. (2002) provide support for this notion as they find that firms who meet or beat expectations have higher future operating performance.[21] Alternatively, it is possible the stock market either ignores or is unaware of the increased earnings quality and penalizes a firm's tendency to meet or beat expectations in the post-scandals period.

To assess the implications of meeting/beating for earnings quality, we examine how the relation between meeting or beating expectations and future performance has changed post-

[21] Why meeting/beating expectations (MBE) appears to have predictive ability regarding firm future performance is an open question in the literature and is beyond of the scope of our paper.

scandals. We examine both future cash flows and future return on assets as measures of future performance. Specifically, we estimate the following regressions:

$$\begin{aligned} FUTPERF_{i,q+4} &= \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 PERF_{i,q-1} + \beta_3 \sigma PERF_{i,q-1} + \beta_4 Sales_{i,q-1} + \beta_5 INDROA_q + \beta_6 SMBEAT_{i,q} \\ &+ \beta_7 BIGBEAT_{i,q} + \beta_8 POST + \beta_9 POST * UEPS_{i,q} + \beta_{10} POST * PERF_{i,q-1} + \beta_{11} POST * \sigma PERF_{i,q-1} \\ &+ \beta_{12} POST * Sales_{i,q-1} + \beta_{13} POST * INDROA_q + \beta_{14} POST * SMBEAT_{i,q} + \beta_{15} POST * BIGBEAT_{i,q} + \varepsilon_{i,q+4} \end{aligned} \quad (10)$$

where FUTPERF are proxied by (1) FUTCFO, cash flow from operations (CFO) scaled by lagged total assets, and (2) FUTROA, return on assets (ROA), both averaged over the subsequent four quarters after quarter q. σ_{PERF} is the standard deviation of CFO (ROA) for four quarters prior to quarter q. SALES is the natural logarithm of sales and INDROA denotes the average of quarter q ROA computed for the two digit SIC code to which firm i belongs (excluding firm i).

We include SALES and the standard deviation of CFO (ROA) to control for the effects of size and risk on future operating performance. Lagged CFO (ROA) is included to control for potential mean-reversion in performance measures (Barber and Lyon 1996). Industry ROA controls for industry specific shocks to future operating performance. Because we require four subsequent quarters of performance, we end our pre- and post-scandals periods four quarters earlier to ensure that our future cash flows occur in the same regime period.

If SMBEAT and BIGBEAT signal future operating performance, we expect β_6 and β_7 to be positive. If the decline in premium associated with meeting or beating expectations is an accurate reflection of the valuation implications of meeting/beating, the relation between meeting and beating earnings benchmarks and future operating performance should decline post SOX and the coefficients on POST*SMBEAT and POST*BIGBEAT (β_{14} and β_{15}) should be negative. On the other hand, if the decline in earnings management increases the quality of the signal associated with meeting or beating expectations, β_{14} and β_{15} should be positive.

Results related to FUTCFO and FUTROA are presented in columns (1) and (2) of Table 6. Consistent with Bartov et al. (2002), in the pre-scandals period, we find significant positive coefficients on SMBEAT and BIGBEAT in both columns (1) and (2), indicating that firms who meet or beat analysts' expectations subsequently experience higher operating performance (controlling for the total earnings news for the quarter). We also find a significant increase in the coefficients on SMBEAT and BIGBEAT in the post-scandals period when using CFO as a measure of future performance (t-statistics on POST*SMBEAT and POST*BIGBEAT in column (1) = 2.39 and 3.14, respectively). However, we do not find a similar increase when using ROA as a measure of future performance. Thus, we find *some* evidence that meeting or beating expectations is a stronger signal of future operating performance in the post-scandals period, consistent with the reduced earnings management improving earnings quality.[22] These findings suggest that the smaller stock market reactions to the firms' meet-beat behavior in the post-scandals period may not be justified given the corresponding improvement in earnings quality.[23]

6.0 Conclusion

In this paper, we investigate whether the stock market's perception of meeting or beating analyst forecasts has changed in the aftermath of the accounting scandals, structural reforms

[22] Findings in Bartov et al. (2002) suggest that firms that engage in earnings or expectations management in order to meet/beat expectations exhibit worse future performance than firms that meet/beat expectations "legitimately". Thus, it follows that the reduction, post-scandals, in the proportion of meet/beat firms who attain this status by using earnings management should increase the strength of the meet/beat signal for future earnings (because a greater proportion of the meet/beat firms are "legitimate" meet/beaters in the post-scandals period). However, the fact that expectations management has *increased* post-scandals implies the opposite – since firms who manage expectations have lower future performance and there is a greater proportion of these firms post-scandals, the relation between meeting/beating and future performance should decline. But, the decrease in earnings management is greater than the increase in expectations management and the proportion of firms that engage in neither earnings management nor expectations management increases from 48% to 52% post-scandals (untabulated). Thus, the result is a net positive effect on the quality of the meet/beat signal.

[23] In untabulated analyses we find some evidence that the decline in market premium to meeting or beating analysts' expectations in the post-Scandals period varies across firms – and in a way that we might expect if the reason for the decline is heightened investor skepticism over potential "earnings games" associated with meeting/beating analysts' expectations. Firms with a history of repeated meeting/beating behavior and firms with high CEO incentive pay experience a greater decline in penalty than firms without such a history and firms with low CEO incentive pay.

following Enron and passage of SOX and whether managers have changed their behavior related to meeting or beating expectations. Results suggest that the stock market has become increasingly suspicious of firms that just meet or narrowly beat analyst forecasts. In particular, the premium assigned by the stock market to small (big) EPS beats, defined as meeting or beating analyst expectations by a mere cent per share (more than a cent) has disappeared (diminished).

We also find that the proportion of small EPS beats has fallen in the post-scandals period, suggesting that managers appear to have cut actions to exactly meet or just beat expectations. In investigating the mix between earnings and expectations management to meet or beat analyst forecasts, we find that the reliance on income-increasing discretionary accruals has declined and that managers appear to emphasize expectations management more in the post-scandals period.

Further analysis suggests that post-scandals, meeting or beating expectations has become a stronger signal of future cash flows, which is consistent with the observed decrease in the use of earnings management to meet/beat expectations. It is possible the decline in market premium associated with meeting or beating expectations is the result of increased investor skepticism that is, perhaps, unwarranted.

Overall, our results indicate that the market has become more suspicious of the actions taken by managers to avoid missing analysts' expectations and managers have responded by reducing their propensity to engage in this behavior. However, the pressure to meet analyst forecasts has not been completely eliminated, as the propensity to engage in expectations management to meet or beat the earnings target appears to have increased in the new reporting environment. In sum, the evidence suggests that Enron's legacy is a significant change in both managerial behavior and the stock market's perceptions of such behavior.

Two important caveats, however, are in order. First, it is possible that another event occurring concurrently with the scandals is the true driving force behind the changes we observe. In particular, the stock market bubble burst shortly before the scandals and it is possible that the effects of this event are reflected in the market premium to meeting/beating expectations. This possibility is mitigated by the fact that our results are robust to allowing the coefficient on unexpected earnings to vary with firms' book-to-market ratio (a measure of growth expectations) as well as to the inclusion of numerous controls for macro-economic factors. Nevertheless, it is impossible to completely rule out the possibility of another concurrent event driving our results.

Second, a sufficiently long period of time has perhaps not elapsed since the scandals to obtain a complete read on their impact. In particular, several structural reforms initiated in response to the scandals continue to remain work-in-progress. Hence, our results provide only early evidence on Enron's legacy on the new financial reporting environment and a more comprehensive assessment will likely have to wait until more data on such behavior becomes available in the future. Nevertheless, our evidence indicates that several important changes in the financial reporting environment have occurred since Enron.

References

Barber B. and J. Lyon. 1996. Detecting abnormal operating performance: The empirical power and specification of test statistics. *Journal of Financial Economics* 41: 359-399.

Bartov, E. and D. Cohen. 2006. Mechanisms to meet/beat analyst earnings expectations in the pre- and post Sarbanes Oxley eras. Working paper. New York University.

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33: 173-204.

Bartov, E. S. Lynn and J. Ronen. 2001. Returns-earnings regressions: An integrated approach. Working paper, New York University.

Bhattacharya, U., P. Groznik, and B. Haslem. 2002. Is CEO certification of earnings numbers value-relevant? Working Paper, Indiana University.

Bowen, R. M., S. Rajgopal, and M. Venkatachalam. 2006. Accounting discretion, corporate governance and firm performance. Working paper, University of Washington and Duke University.

Brown, L.D. 2001. A temporal analysis of earnings surprises: Profits versus losses. *Journal of Accounting Research* 39: 221-241.

Brown, L. D., and M. C. Caylor. 2005. A temporal analysis of quarterly earnings thresholds: Propensities and valuation consequences. *The Accounting Review* 80 (2): 423-440.

Brickey, K. 2004. Enron's legacy. *Buffalo Criminal Law Review* 8:221

Burgstahler, D. and M. Eames. 2006. Management of earnings and analysts' forecasts to achieve zero and small earnings surprises. *Journal of Business Finance andAccounting* 33(5-6): 633-652.

Chen, S., D. Matsumoto and S. Rajgopal. 2006. Is silence golden? An empirical analysis of firms that stop giving quarterly earnings guidance. Working paper, University of Washington.

Cohen, D. A., A. Dey, and T. Z. Lys. 2005. Trends in earnings management and informativeness of earnings in the pre-and post-Sarbanes Oxley periods. Working Paper, New York University, University of Chicago, and Northwestern University.

Collins, D. and S. P. Kothari. 1989. An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics* 11 (2/3): 143-181.

Dechow, P. M., R. Sloan and A. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70:193–225.

Dechow, P. M., W. Ge, C. Larson and R. Sloan. 2007. Predicting Material Accounting Misstatements. Working paper, University of Michigan and University of Washington.

Dhaliwal, D. S., C. A. Gleason, and L. F. Mills. 2004. Last chance earnings management: Using the tax expense to achieve earnings targets. *Contemporary Accounting Research* 21(2): 431-459.

Fields, T. D., T. Z. Lys, and L. Vincent. 2001. Empirical research on accounting choice. *Journal of Accounting and Economics* 31: 255-307.

Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3-73.

Greene, W. H. 1993. Econometric Analysis. New York, NY: Macmillan.

Healy, P. and K. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31; 405–440

Healy, P. and K. Palepu. 2003. The fall of Enron. *Journal of Economic Perspectives* 17(3): 3-26.

Jain, P.K. and Z. Rezaee. 2004. The Sarbanes-Oxley Act of 2002 and accounting conservatism. Working paper, University of Memphis.

Jain, P.K. and Z. Rezaee. 2006. The Sarbanes-Oxley Act of 2002 and Capital-Market Behavior: Early evidence. *Contemporary Accounting Research,* 23(3) 629 – 654.

Jensen, M. C. 2006. The puzzling state of low-integrity relations between managers and capital markets. Harvard NOM Working Paper No. 06-04.

Jensen, M.C., K. Murphy and E. Wruck. 2004. Remuneration: Where we've been, how we got to here, what are the problems, and how to fix them. Working paper, Harvard University and University of Southern California.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29:193-228.

Kasznik, R.1999. On the association between voluntary disclosure and earnings management. *Journal of Accounting Research* 37(1) (Spring): 57–82.

Kasznik, R., and M. F. McNichols. 2002. Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices. *Journal of Accounting Research* 40 (June): 727-759.

Kinney, W., D. Burgstahler and R. Martin. 2002. Earnings surprise materiality as measured by stock returns. *Journal of Accounting Research* 40(5): 1297-1329.

Kothari, S. P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accrual measures. Journal of Accounting and Economics 39(1): 163-197.

Li, H., M. Pincus, and S. Rego. 2006. Market reaction to events surrounding the Sarbanes-Oxley Act of 2002. Forthcoming, Journal of Law and Economics.

Linck, J. S., J. M. Netter, and T. Yang. 2006. Effects and unintended consequences of the Sarbanes-Oxley Act on corporate boards. Working Paper, University of Georgia and Clemson University.

Lobo, G., and J. Zhou. 2006. Did conservatism in financial reporting increase after the Sarbanes-Oxley Act? Initial evidence**.** *Accounting Horizons* 20(1): 57-73.

Matsumoto, D. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 77(3): 483-514.

Morgensen, G. 2004. Pennies That Aren't From Heaven. New York Times. November 7.

Nanda, A. 2003. Broken Trust: The role of professionals in the Enron debate. Harvard Business School Note no. 9-903-084.

Petersen, M. 2007. Estimating standard errors in finance panel data sets: Comparing approaches. Working Paper, Northwestern University.

Phillips, J., M. Pincus and S. Rego. 2003. Earnings management: New evidence based on deferred tax expense. *The Accounting Review* 78(2): 491-521.

Sankar, M. and K.R.Subramanyam. 2001. Reporting Discretion and Private Information Communication through Earnings. *Journal of Accounting Research* 39 (2): 365-386.

Skinner, D. and R. Sloan. 2002. Earnings surprises, growth expectations, and stock returns or Don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies* 7(2-3): 289.

Watts, R. L., and J. L. Zimmerman. 1986. *Positive Accounting Theory*. Upper Saddle River, NJ: Prentice Hall.

Zhang, I. X. 2007. Economic consequences of the Sarbanes-Oxley Act. Working Paper, University of Minnesota.

Figure 1: Timeline Underlying the Analysis

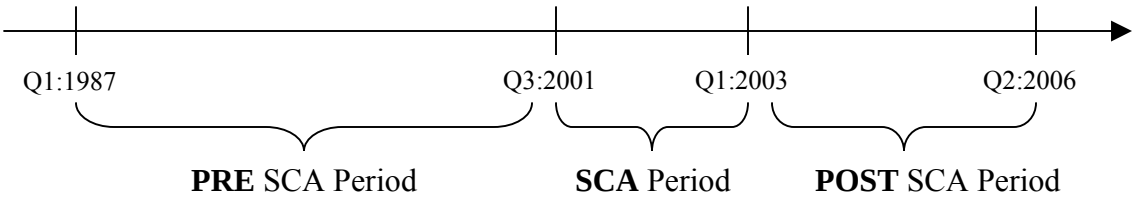

Figure 1 presents the time-line used in the analysis. **PRE** period refers to the pre-scandal period from **1987:Q1 to 2001:Q2**. **SCA** period refers to the scandal period from **2001:Q3 to 2002:Q4**. **POST** period refers to the post-scandals period from **2003:Q1 to 2006:Q2**. In subsequent analysis, SCA (POST) is a dummy variable set to one if the firm observation falls in the SCA (post-SCA) period, and zero otherwise.

Figure 2: Percentage of Firms Meeting or Beating Analysts' Expectations over Time

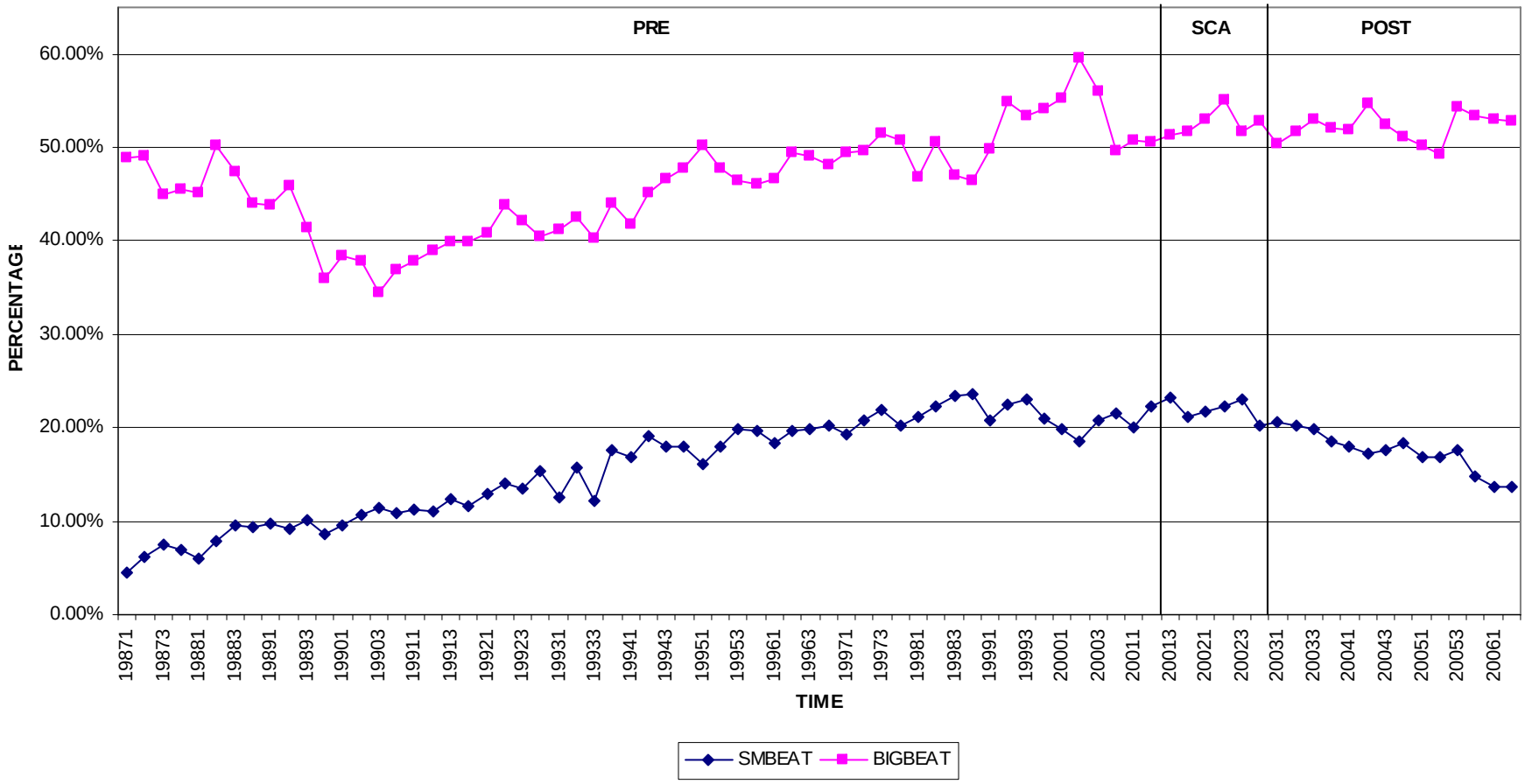

Figure 2 presents the percentage of firms meeting or beating analysts' expectations over time. SMBEAT refers to a firm that beats expectations by a cent per share or less, where expectations are defined as the last analyst forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. BIGBEAT refers to a firm that beats expectations by more than a cent per share.

Figure 3: Percentage of Firms Missing Analysts' Expectations over Time

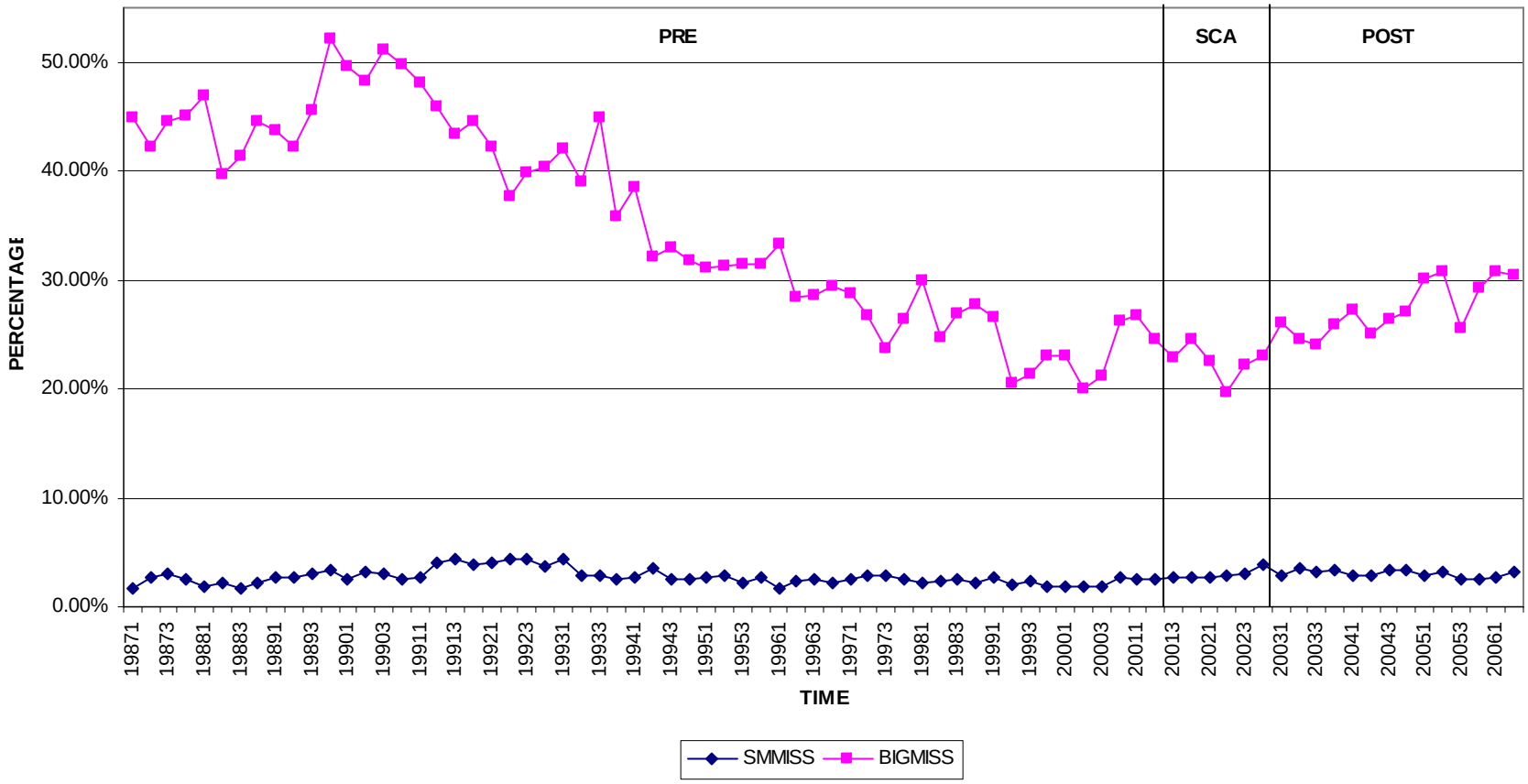

Figure 3 presents the percentage of firms missing analysts' expectations over time. SMMISS refers to a firm that misses expectations by a cent per share or less, where expectations are defined as the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. BIGMISS refers to a firm that misses expectations by more than a cent per share.

Table 1: Descriptive Statistics of Sample Firms (n=108,764)

Variable	Mean	Median	Standard Deviation	25th Percentile	75th Percentile
CAR	0.009	0.011	0.202	-0.088	0.110
UEPS	-0.002	0.000	0.016	-0.003	0.002
SMBEAT	0.178	0.000	0.383	0.000	0.000
BIGBEAT	0.506	1.000	0.500	0.000	1.000
Sales	5.173	5.141	1.793	3.940	6.400
ROA	0.008	0.011	0.035	0.002	0.023
CFO	0.022	0.023	0.049	0.002	0.045
Accruals	-0.014	-0.012	0.045	-0.031	0.005
Market Capitalization	4093.06	826.85	11838.18	265.38	2681.95
GDP	0.014	0.014	0.005	0.011	0.017
INDROA	0.004	0.008	0.018	0.001	0.014

CAR refers to cumulative market-adjusted (value weighted) abnormal return over the period beginning two days following the date of the first forecast for the quarter *q* made at least three days subsequent to the announcement of previous quarter's earnings (labeled "F_{first}") and ending one day after the release of the quarter's results. $UEPS_i$ is unexpected earnings for the quarter defined as $(EPS_{i,q} - F_{first})/P_{q-1}$ where EPS is the actual earnings per share number announced by the firm for the quarter and the difference between EPS and F_{first} is scaled by P_{q-1}, the stock price per share at the beginning for the quarter *q*. SMBEAT is a dummy variable that is set to one if the firm beats expectations by a cent per share or less ($EPS - F_{last} \leq \$0.01$), where F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. BIGBEAT is a dummy variable that is set to one if the firm beats expectations by more than a cent per share ($EPS - F_{last} > \$0.01$). Sales refer to the firm's natural logarithm of net sales. ROA is the firm's return-on-assets, defined as income before extraordinary items scaled by beginning total assets. Accruals are the difference between income before extraordinary items and operating cash flows, adjusted for extraordinary items and discontinued operations. CFO refers to the firm's operating cash flows. Both accruals and CFO are scaled by beginning total assets. Market Capitalization is the market value of equity, computed as stock price multiplied by number of shares outstanding. GDP is the percentage change in seasonally adjusted GDP over the previous quarter. INDROA denotes the average of quarter q ROA computed for the two digit SIC code to which firm i belongs (excluding the ROA of firm i).

Table 2: Stock Market Reaction in the Post Scandal Period

Equation (1)

$$CAR_{i.q} = \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 SMBEAT_{i,q} + \beta_3 BIGBEAT_{i.q} + \beta_4 SCA + \beta_5 POST + \beta_6 SCA * UEPS_{i,q}$$
$$+\beta_7 SCA * SMBEAT_{i,q} + \beta_8 SCA * BIGBEAT_{i,q} + \beta_9 POST * UEPS_{i,q} + \beta_{10} POST * SMBEAT_{i,q} + \beta_{11} POST * BIGBEAT_{i,q} + \varepsilon_{i,q}$$

Equation (2)

$$CAR_{i.q} = \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 SMMISS_{i,q} + \beta_3 BIGMISS_{i.q} + \beta_4 SCA + \beta_5 POST + \beta_6 SCA * UEPS_{i,q}$$
$$+\beta_7 SCA * SMMISS_{i,q} + \beta_8 SCA * BIGMISS_{i,q} + \beta_9 POST * UEPS_{i,q} + \beta_{10} POST * SMMISS_{i,q} + \beta_{11} POST * BIGMISS_{i,q} + \varepsilon_{i,q}$$

Variable	BEATS (1)		MISSES (2)	
	Coeff	t-stat.	Coeff	t-stat.
Intercept	-0.031	-21.87	0.028	29.55
UEPS	1.361	16.73	1.439	17.44
SMBEAT (SMMISS)	0.025	10.90	-0.060	-11.94
BIGBEAT (BIGMISS)	0.072	38.37	-0.059	-32.33
SCA	0.023	3.77	0.002	0.56
POST	0.035	12.98	0.004	2.32
SCA*UEPS	4.118	9.86	4.204	10.08
SCA*SMBEAT (SMMISS)	-0.014	-1.65	0.017	1.01
SCA*BIGBEAT (BIGMISS)	-0.022	-3.07	0.023	3.10
POST*UEPS	1.780	7.19	1.863	7.53
POST*SMBEAT (SMMISS)	-0.023	-5.42	0.021	2.46
POST*BIGBEAT (BIGMISS)	-0.034	-10.36	0.032	9.73
N (firm-quarters)	108,764		108,764	
Adj. R-squared (%)	0.051		0.046	

$CAR_{i,q}$ refers to cumulative market-adjusted (value weighted) abnormal return over the period beginning two days following the date of the first forecast for the quarter *q* made at least three days subsequent to the announcement of previous quarter's earnings (labeled "F_{first}") and ending one day after the release of the quarter's results. $UEPS_{i,q}$ is unexpected earnings for the quarter defined as $(EPS_{i,q} - F_{first})/P_{q-1}$ where EPS is the actual earnings per share number announced by the firm for the quarter and the difference between EPS and F_{first} is scaled by P_{q-1}, the stock price per share at the beginning for the quarter *q*. SMBEAT is a dummy variable that is set to one if the firm beats expectations by a cent per share or less ($EPS - F_{last} \leq \$0.01$), where F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. BIGBEAT is a dummy variable that is set to one if the firm beats expectations by more than a cent per share ($EPS - F_{last} > \$0.01$). SMMISS is a dummy set to one if actual earnings miss expectations by a cent per share or less ($\$0.00 > EPS - F_{last} \geqq -\$0.01$). BIGMISS is a dummy variable set to one if actual earnings miss expectations by more than a cent per share ($EPS - F_{last} < -\$0.01$). SCA (POST) is a dummy variable set to one if the firm observation falls in the SCA (post-SCA) period, and zero otherwise.

Table 3: Temporal Analysis of Proportion of Firms Meeting Analyst Expectations

Equation (3) $$SMBEAT\%(BIGBEAT\%)_t = \beta_0 + \beta_1 Time + \beta_2 GDP + \beta_3 SCA + \beta_4 POST + \varepsilon_q$$

Variable	SMBEAT (1)	BIGBEAT (2)	SMMISS (3)	BIGMISS (4)
Intercept	0.068	0.357	0.035	0.540
	(6.82)	(21.77)	(11.87)	(31.43)
Time	0.003	0.002	0.000	-0.005
	(17.62)	(8.08)	(-2.53)	(-17.52)
GDP	0.267	2.882	-0.276	-2.874
	(0.50)	(3.31)	(-1.78)	(-3.15)
SCA	-0.030	0.013	0.004	0.013
	(-2.76)	(0.71)	(1.37)	(0.69)
POST	-0.107	-0.039	0.009	0.136
	(-11.06)	(-2.43)	(3.16)	(8.20)
N (quarters)	78	78	78	78
Adj. R^2(%)	0.828	0.592	0.088	0.844

Small beaters (SMBEAT) are firm-quarters where actual earnings exceed expectations by a cent per share or less ($\$0.00 \leq EPS - F_{last} \leq \$0.01$), where EPS is the actual earnings per share number announced by the firm for the quarter and F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. Big beaters (BIGBEAT) are firm-quarters where actual earnings exceed expectations by more than a cent per share ($EPS - F_{last} > \$0.01$). Small misses (SMMISS) are firm-quarters where actual earnings miss expectations by a cent per share or less ($\$0.00 > EPS - F_{last} \geq -\$0.01$), where EPS is the actual earnings per share number announced by the firm for the quarter and F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. Big misses (BIGMISS) are firm-quarters where actual earnings miss expectations by more than a cent per share ($EPS - F_{last} < -\$0.01$). The dependent variable is the proportion of small or big beaters (missers) scaled by firms reporting earnings in a calendar quarter from 1987:Q1 to 2006:Q2 (total of 78 quarters). TIME denotes the quarter number with the first quarter set at 1987:Q1. GDP is the percentage change in seasonally adjusted GDP over the previous quarter. SCA (POST) is a dummy variable set to one if the firm observation falls in the SCA (post-SCA) period, and zero otherwise.

Table 4: Firms Relying on Earnings Management to Meet or Beat Analyst Expectations

Panel A: Univariate frequencies

Time period	All Years	Pre-Scandals	SCA	Post-Scandals
No. of firms that meet or beat expectations	73,780	48,736	7,208	17,836
No. of firms relying on Accounting Management	33,584	23,039	2,915	7,630
Proportion	45.52%	47.27%	40.44%	42.78%
χ^2-stat v/s POST (p-value)		106.16 (<0.001)	11.51 (<0.001)	
No. of SMBEAT firm quarters	19,208	12,754	2,159	4,295
No. of firms relying on accounting management	9,842	6966	904	1,972
Proportion	51.24%	54.62%	41.87%	45.91%
X^2-stat v/s POST (p-value)		97.60 (<0.001)	9.50 (0.002)	
No. of BIGBEAT firm quarters	54,572	35,982	5,049	13,541
No. of firms relying on accounting management	23,742	16,073	2,011	5,658
Proportion	43.51%	44.67%	39.83%	41.78%
χ^2-stat v/s POST (p-value)		33.26 (<0.001)	5.80 (<0.001)	

Of the total number of firms that meet or beat expectations (EPS $\geq F_{last}$), we report the proportion of firms that rely on accounting management to meet or beat expectations, i.e. (EPS-ABACCPS) $\leq F_{last}$ for the respective time periods. EPS is the actual earnings per share number announced by the firm for the quarter. ABACCPS refers to abnormal accruals per share where abnormal accruals are calculated as per the modified Jones (1991) model estimated every quarter for a two digit-SIC code (see text). F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. SMBEAT firm-quarters are those quarters where actual earnings exceed expectations by a cent per share or less (EPS - $F_{last} \leq \$0.01$); BIGBEAT firm-quarters are those where actual earnings exceed expectations by more than a cent per share (EPS - $F_{last} > \$0.01$).

Table 4: Firms Relying on Earnings Management to Meet or Beat Analyst Expectations (cont'd)

Panel B: Multivariate analysis of the determinants of accounting earnings management

Equation (6)
$$ACCMEET_{i,q} = \beta_0 + \beta_1 Time_q + \beta_2 SCA_q + \beta_3 POST_q + \beta_4 GDP_q + \beta_5 INDROA_{i,q} + \beta_{6,7,8} quarterdummies + \varepsilon_{i,q}$$

Variable	All Periods (1)		All Periods (2)	
	Estimate	Wald χ^2	Estimate	Wald χ^2
Intercept	-0.025	0.44	-0.095	6.19
TIME	0.013	440.49	0.012	382.08
SCA	-0.570	327.61	-0.474	175.50
POST (-)	-0.656	513.16	-0.567	328.95
GDP	-6.393	13.20	-6.298	12.73
INDROA	1.444	10.64	1.514	11.60
SMBEAT			0.393	341.43
SCA*SMBEAT			-0.287	25.62
POST*SMBEAT (-)			-0.216	27.50
N (firm-quarters)	73,780		73,780	
Log-likelihood Ratio χ^2	2,391.21		2,768.42	

Table 4 Panel B presents the logistic regression of firms that rely on accounting earnings management to meet or beat the last analysts' forecast. Using the total number of firms that meet or beat expectations (EPS $\geq F_{last}$), ACCMEET is a dummy variable set equal to one if (EPS-ABACCPS) $\leq F_{last}$ and zero otherwise. ABACCPS refers to abnormal accruals per share where abnormal accruals are calculated as per the modified Jones (1991) model estimated every quarter for a two digit-SIC code (see text). F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. TIME denotes the quarter number with the first quarter set at 1987:Q1. SCA (POST) is a dummy variable set to one if the firm observation falls in the SCA (post-SCA) period, and zero otherwise. GDP is the percentage change in seasonally adjusted GDP over the previous quarter. INDROA denotes the average of quarter q ROA computed for the two digit SIC code to which firm i belongs (excluding the ROA of firm i). SMBEAT is a dummy variable that is set to one if the firm beats expectations by a cent per share or less (EPS - $F_{last} \leq \$0.01$). Dummy quarters are dummy variables for fiscal quarters Q1, Q2, and Q3. They are not presented in the table for the sake of brevity.

Table 5: Firms Relying on Expectation Management to Meet or Beat Analyst Expectations

Panel A: Univariate results

Time period	All Years	Pre-Scandals	SCA	Post-Scandals
No. of firms that meet or beat expectations	75,911	47,504	7,766	20,641
No. of firms relying on Expectation Management	6,893	3,793	860	2,240
Proportion	9.08%	7.98%	11.07%	10.85%
χ^2-stat v/s POST (p-value)		146.63 (<0.001)	0.29 (0.593)	
No. of SMBEAT firm quarters	20,080	12,646	2,314	5,120
No. of firms relying on Expectation management	1,674	909	206	559
Proportion	8.34%	7.19%	8.90%	10.92%
X^2-stat v/s POST (p-value)		66.89 (<0.001)	7.01 (0.008)	
No. of BIGBEAT firm quarters	55,831	34,858	5,452	15,521
No. of firms relying on Expectation management	5,219	2,884	654	1,681
Proportion	9.35%	8.27%	12.00%	10.83%
χ^2-stat v/s POST (p-value)		85.21 (<0.001)	5.54 (0.019)	

Of the total number of firms quarters that meet or beat expectations (EPS $\geq F_{last}$), we report the proportion of firms that rely on expectation management to meet or beat expectations, i.e. EPS $\leq (F_{last} - ABFRCST)$ for the respective time periods. EPS is the actual earnings per share number announced by the firm for the quarter. ABFRCST refers to the abnormal forecast of earnings per share calculated as per the Matsumoto (2002) model estimated every quarter for a four digit-SIC code (see text). F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. SMBEAT firm-quarters are those quarters where actual earnings exceed expectations by a cent per share or less (EPS - $F_{last} \leq \$0.01$); BIGBEAT firm-quarters are those where actual earnings exceed expectations by more than a cent per share (EPS - $F_{last} > \$0.01$).

Table 5: Firms Relying on Expectation Management to Meet or Beat Analyst Expectations (cont'd)

Panel B: Multivariate Analysis of the determinants of expectationss management

Equation (9)
$$GUIDEMEET_{i,q} = \beta_0 + \beta_1 Time_q + \beta_2 REGFD_q + \beta_3 SCA_q + \beta_4 POST_q + \beta_5 GDP_q + \beta_6 INDROA_{i,q} + \beta_{7,8,9} quarterdummies + \varepsilon_{i,q}$$

Variable	All Periods (1)		All Periods (2)	
	Estimate	Wald χ^2	Estimate	Wald χ^2
Intercept	-2.688	1419.09	-2.653	1372.26
TIME	0.008	35.21	0.008	38.93
REGFD	-0.452	35.87	-0.457	36.54
SCA	0.185	6.01	0.241	9.22
POST (+)	0.443	32.19	0.376	22.01
GDP	-3.799	1.50	-3.932	1.61
INDROA	-20.409	1050.74	-20.548	1062.67
SMBEAT			-0.199	24.46
SCA*SMBEAT			-0.219	5.17
POST*SMBEAT (+)			0.229	12.16
N (firm-quarters)	75,911		75,911	
Log-likelihood Ratio χ^2	1,422.53		1,473.54	

Table 5 Panel B presents the logistic regression of firms that rely on expectations management to meet or beat the last analysts' forecast. Using the total number of firms that meet or beat expectations (EPS $\geq F_{last}$), GUIDEMEET is a dummy variable set equal to one if EPS $\leq F_{last}$ - ABFRCST and zero otherwise. ABFRCST refers to the abnormal forecast of earnings per share calculated as per the Matsumoto (2002) model estimated every quarter for a four digit-SIC code (see text). F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. TIME denotes the quarter number with the first quarter set at 1987:Q1.REGFD is a dummy variable set to one for firm observations from October 2000 onwards. SCA (POST) is a dummy variable set to one if the firm observation falls in the SCA (post-SCA) period, and zero otherwise. GDP is the percentage change in seasonally adjusted GDP over the previous quarter. INDROA denotes the average of quarter q ROA computed for the two digit SIC code to which the firm i belongs (excluding the ROA of firm i). SMBEAT is a dummy variable that is set to one if the firm beats expectations by a cent per share or less (EPS - F_{last} $\leq$ \$0.01). Dummy quarters are dummy variables for fiscal quarters Q1, Q2, and Q3. They are not presented in the table for the sake of brevity.

Table 6: Mapping between Meeting and Beating Analyst Forecasts and Future Operating Performance

Equation (10)

$$FUTPERF_{i,q+4} = \beta_0 + \beta_1 UEPS_{i,q} + \beta_2 PERF_{i,q-1} + \beta_3 \sigma PERF_{i,q-1} + \beta_4 Sales_{i,q-1} + \beta_5 INDROA_q + \beta_6 SMBEAT_{i,q} + \beta_7 BIGBEAT_{i,q}$$
$$+ \beta_8 POST + \beta_9 POST * UEPS_{i,q} + \beta_{10} POST * PERF_{i,q-1} + \beta_{11} POST * \sigma PERF_{i,q-1} + \beta_{12} POST * Sales_{i,q-1}$$
$$+ \beta_{13} POST * INDROA_q + \beta_{14} POST * SMBEAT_{i,q} + \beta_{15} POST * BIGBEAT_{i,q} + \varepsilon_{i,q+4}$$

Variable	PERF = CFO (1)		PERF = ROA (2)	
	Coeff.	t-stat.	Coeff.	t-stat.
Intercept	-0.004	-4.14	-0.017	-24.65
UEPS	0.000	-0.06	-0.011	-5.80
PERF	0.222	25.84	0.431	24.19
σPERF	-0.047	-3.51	-0.088	-5.28
SALES	0.004	29.32	0.003	27.23
INDROA	0.282	18.92	0.292	18.91
SMBEAT	0.004	11.49	0.006	18.85
BIGBEAT	0.004	12.01	0.007	27.88
POST	-0.004	-2.30	-0.006	-3.16
POST*UEPS	0.033	3.84	0.006	0.83
POST*PERF	0.088	2.91	-0.097	-1.76
POST*σPERF	0.017	0.64	0.050	1.80
POST*SALES	0.000	0.42	0.001	3.60
POST*INDROA	0.003	0.13	-0.017	-0.50
POST*SMBEAT	0.002	2.39	0.001	1.52
POST*BIGBEAT	0.002	3.14	0.000	0.53
N (firm-quarters)	84,012		120,206	
Adj. R-squared (%)	0.267		0.321	

Table 6: Mapping between Meeting and Beating Analyst Forecasts and Future Operating Performance (con't)

PERF (FUTPERF) refers to (future) operating performance, measured as CFO and ROA. FUTCFO is cash flow from operations, scaled by lagged total assets, averaged over the subsequent four quarters after quarter q. FUTROA is return on assets, averaged over the subsequent four quarters after quarter q. $UEPS_{i,q}$ is unexpected earnings for the quarter defined as $(EPS_{i,q} - F_{first})/P_{q-1}$ where EPS is the actual earnings per share number announced by the firm for the quarter, F_{first} is the first forecast for quarter *q* made at least three days subsequent to the announcement of the previous quarter's earnings, and the difference between EPS and F_{first} is scaled by P_{q-1}, the stock price per share at the beginning for the quarter *q*. CFO is the previous quarter's CFO. σ_{CFO} is the standard deviation of CFO for four quarters prior to quarter q. ROA is the previous quarter's ROA. σ_{ROA} is the standard deviation of ROA for four quarters prior to quarter q.SALES is the natural logarithm of sales for previous quarter q-1. INDROA denotes the average of quarter q ROA computed for the two digit SIC code to which firm i belongs (excluding the ROA of firm i). SMBEAT is a dummy variable that is set to one if the firm beats expectations by a cent per share or less ($EPS-F_{last} \leq \$0.01$), where F_{last} is the last forecast for the quarter made at least three days prior to the release of the earnings announcement for that quarter. BIGBEAT is a dummy variable that is set to one if the firm beats expectations by more than a cent per share ($EPS- F_{last} > \$0.01$).