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

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1. Introduction

This paper investigates (a) whether the stock market rewards meeting or beating analyst expectations following the accounting scandals of the early 2000s (post-scandals period); and (b) whether earnings management and/or expectations management have changed from the pre-scandals period. The Enron accounting scandal, which broke in October 2001, and subsequent accounting scandals led to a loss of investor trust in the integrity of financial statements, passage of the Sarbanes-Oxley Act (SOX) 2002, and likely changed both investor reactions to 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' earnings per share (EPS) targets, and CFOs take potentially value-destroying actions to meet such expectations. Jensen, Murphy, and Wruck (2004) argue that (a) the pressure to meet analyst expectations was the driver behind the accounting shenanigans of the early 2000s; and (b) 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 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 SOX passed and focus on a comparison between the periods before Q3:2001 ("the pre-scandals period") and after Q4:2002 ("the post-scandals period").

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

We also examine the extent to which the scandals and subsequent regulatory changes have affected 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 macroeconomic variables and the temporal trend in meeting or beating forecasts. Moreover, the mix of mechanisms employed to meet or beat earnings benchmarks has 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 less reliance on earnings management, perhaps due to the increased scrutiny on such behavior, and more reliance on expectations management.

The decline in earnings management to meet or beat expectations 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 (e.g., Watts and Zimmerman 1986; Sankar and Subramanyam 2001; Bowen, Rajgopal, and Venkatachalam 2008). 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 and increase in guidance improving the quality of the meet/beat "signal" (defined as the association between this signal and future cash flows). 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 but occurs, possibly, due to an unwarranted increase in investor skepticism about firms that meet or beat expectations.

We find three issues of interest to governance advocates and regulators. First, the proportion of small EPS beats has fallen since the scandals, and the propensity to engage in income-increasing earnings management 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. This decline could 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.

Our paper is related to an emerging literature on financial reporting practices in the post-Enron climate, the majority of which concentrate on the impact of SOX. Cohen, Dey, and Lys (2005) find that earnings management 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, hereafter BC) also investigate changes in meeting or beating expectations post-scandals. Consistent with our results, they find that accounting earnings management has declined post-SOX. However, contrary to our results, they find that expectations management has declined rather than increased. This difference arises partially because our analysis is based on the subsample of firms that meet or beat expectations whereas BC do not condition on firms who meet or beat expectations. That is, unlike BC, we compare firms that use downward expectations management to meet or beat analysts' forecasts with firms who are able to meet or beat expectations without the use of expectations management. Our papers also differ in that we examine changes in the market premium to meeting or beating expectations while they do not, and they examine changes in real earnings management while we do not.[2]

Numerous academic studies document various aspects of the meeting/beating expectations phenomenon in the pre-scandals period, but conclusions from these studies may no longer be applicable. 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). Research shows 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 et al. 2002; Burgstahler and Eames 2006) to meet or beat analyst forecasts. We document that the emphasis on these tools has shifted in the post-scandals period. Bartov et al. (2002) show that meeting/beating expectations is a signal of better future performance. We find that the strength of this signal has increased in the post-scandals environment.

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 reports 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. Institutional background

Enron's fall and loss of investor trust

In October 2001, Enron announced a $1 billion nonrecurring 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 U.S. 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 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.

Structural reforms post Enron

Brickey (2004) describes several post-Enron structural reforms that provide regulators and the enforcement community significant resources to address corporate governance failures. 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 the Securities and Exchange Commission (SEC) funding.

Deployment of federal regulatory and law enforcement resources has contributed to higher criminal enforcement levels in the post-scandals era. Dechow, Ge, Larson, and Sloan (2007) report 209, 237, and 209 Accounting and Auditing Enforcement Releases (AAERs) in the years 2002–4, respectively, relative to 125 in 2001, the year Enron broke. These structural reforms likely diminished managers' incentives to engage in accounting "shenanigans".

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 investor confidence in the financial reporting system and to protect shareholders from fraudulent financial reporting practices. SOX instituted a number of provisions including improving the composition and function of audit committees, chief executive officer (CEO) and CFO financial statement certification, restrictions on nonaudit-related work by the company's auditors, mandatory audit partner rotation, and an annual report on internal controls (SOX 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.

While the new requirements were designed to increase investor confidence in financial reporting, it is not clear whether the stock market views the net benefits of the requirements positively. Event-studies of legislative events surrounding the

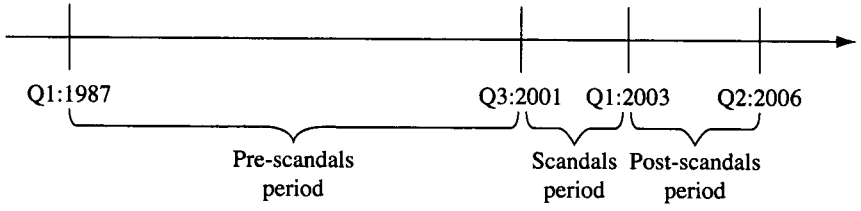
passage of SOX have produced mixed results. Li, Pincus, and Rego (2008) and Jain and Rezaee (2006) document positive abnormal returns around the legislative events associated with SOX, while Zhang (2007) reports significant negative abnormal returns around these events. Bhattacharya, Groznik, and Haslem (2002) find no evidence of a stock market reaction to the first CEO and CFO financial statement certifications.

This paper examines the impact of these changes in the financial reporting environment 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 argued that (a) managers worry considerably about the stock market impact of failing to meet/beat analysts' expectations, and (b) 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.

Time periods examined

We follow Cohen et al. 2005 and classify the period prior to the third quarter of 2001 as the "pre-scandals" period.[3] Cohen et al. (2005) identify the second quarter of 2002 as the end of the scandals period. Although the majority of the scandals broke by the second quarter of 2002, the third and fourth quarters of 2002 were a period of significant changes in the financial reporting environment: the passage of SOX, the establishment of the Public Company Accounting Oversight Board (PCAOB), and the demise of Arthur Andersen. Therefore, we classify the period after the fourth quarter of 2002 as the "post-scandals" period (see Figure 1). Our data set ends with the second quarter of 2006; therefore, we have 14 quarters of data in the post-scandals period. Our analysis focuses on a comparison of the pre-scandals period to the post-scandals period, given that the scandal period itself is relatively short (six quarters) and marked by significant upheaval in the capital markets.[4]

Figure 1 Time-line underlying the analysis



Notes:

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

3. Stock market reaction to meeting/beating analysts' expectations

Research question

We first consider the stock market reaction to meeting or beating analysts' expectations. Over the past decade, numerous studies suggest that meeting or beating analysts' expectations has become increasingly common (e.g., Brown 2001; Matsumoto 2002; Brown and Caylor 2005). Prior studies also present evidence that the market assigns a premium to meeting or beating 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 2000s. The 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 as a signal of managerial intervention, either by means of 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 scandals induced structural reforms designed to curtail managerial misbehavior. If investors view these reforms as effective, they could perceive meeting or beating analysts' forecasts as less likely to involve managerial intervention, thereby resulting in an increase in the stock market premium. Thus, whether the stock market premium to meeting or beating expectations has increased or decreased post-scandals is an empirical question.

Empirical tests of market reaction

To test our first research question, we estimate the following equation:

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

In (1), $CAR_{i,q}$ refers to cumulative market-adjusted (value-weighted) abnormal returns over the period beginning two days after the first forecast (labeled "F_{first}") for quarter q made at least three days subsequent to the announcement of the previous quarter's earnings and ending one day after the quarter's earnings release.[5] $UEPS_{i,q}$ 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, on the basis of whether they beat expectations by a narrow or wide 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.[6] *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 focus on the 1 cent cutoff because managers' incentives to scramble for the last cent to meet or beat estimates has been 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). Untabulated results are insensitive to redefining *SMBEAT* (*BIGBEAT*) as a beat by ≤ 2 cents per share (> 2 cents per share).

In (1), β_2 and β_3 capture the incremental market reward (i.e., the market premium or discount) to meeting or beating expectations at the earnings announcement, after controlling for the unexpected earnings news released during the quarter, *UEPS*. To investigate whether the premium to meeting or beating expectations has changed with the new financial reporting environment, 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 Q1:1987 to Q2:2006.[7] Stock returns are obtained from Center for Research in Security Prices (CRSP). The intersection of these databases yields 108,764 firm-quarter observations to estimate (1). To account for potential outlier effects, we winsorize the independent variables at the 1 percent and 99 percent levels of their respective distributions.[8] Table 1 provides descriptive statistics on our variables. The mean (median) *CAR* is 0.9 percent (1.1 percent), while the mean (median) *UEPS* is -0.002 (0.000). Approximately 18 percent of firm-quarters meet or beat analyst forecasts by a cent or less (*SMBEAT*) and 51 percent beat expectations by more than one cent (*BIGBEAT*).

We report results for (1) 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 cross-sectional correlation, we estimate standard errors adjusted to account for correlations across time for a given firm (serial correlation) and across firms for a given quarter (cross-sectional correlation).

Column (1) suggests that the stock market used to assign a 2.5 percent (7.2 percent) premium for *SMBEAT* (*BIGBEAT*) events in the pre-scandals period. This premium has declined for both *SMBEAT*s (coefficient on *POST*SMBEAT* $= -0.023$, t-statistic $= -5.42$) and *BIGBEAT*s (coefficient on *POST*BIGBEAT* $= -0.034$, t-statistic $= 10.36$) between the pre- and post-scandals period.[9] It appears as

TABLE 1
Descriptive statistics of sample firms (n = 108,764)

Variable	Mean	Median	s.d.	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	4,093.06	826.85	11,838.18	265.38	2,681.95
GDP	0.014	0.014	0.005	0.011	0.017
INDROA	0.004	0.008	0.018	0.001	0.014

Notes:

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* 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* refers 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* is 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 gross domestic product (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).

though, in the post-scandals period, the stock market has (a) 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 (b) 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).[10] Both effects are economically significant as 2.3 percent and 3.4 percent reductions in returns over an

TABLE 2
Stock market reaction in the post-scandals period

Equation (1)

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

Equation (2)

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

	Beats (1)		Misses (2)	
Variables	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^2(%)	0.051		0.046	

Notes:

SMMISS is a dummy variable set to one if actual earnings miss expectations by a cent per share or less ($0.00 > *EPS* − F_{last} ≥ −$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 scandals (post-scandals) period, and zero otherwise. All other variables are as defined in Table 1.

accumulation period of approximately 90 days are quite large. This pattern potentially suggests that the market suspects firms that just meet the forecast of relying on 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:

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 initial public offerings (IPOs), delistings or changes in analyst coverage), we performed our analysis using a constant set of firms across the sample period (Q1:1987 to Q2:2006). Results are inferentially similar.

2. *Nonlinear earnings response coefficients (ERC)*: ERCs need not be linear in *UEPS* (Freeman and Tse 1992) and imposing such a linear restriction might bias the coefficients on *SMBEAT* and *BIGBEAT*. Hence, we allow the ERC to be nonlinear by interacting *UEPS* with *LIN*, a variable that assumes values from 0 to 4, on the basis of quintile ranks, per quarter, of absolute values of *UEPS* as recommended by Bartov, Lynn, and Ronen 2001 in (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 analysts' last forecasts prior to the earnings announcement and include such dispersion as an independent variable in (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 around the time the stock market bubble burst. Therefore, the decline in premium could 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.[11]

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:

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

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.[12]

The decline in the penalty to missing analysts' expectations post scandals could be interpreted to mean that the reduction in the premium documented previously to meeting or beating analyst forecasts is not solely due to changes in investor awareness of potential earnings management because, by assumption, firms who miss expectations have not managed earnings. An alternative interpretation is that investors are less likely to tolerate earnings management in the post-scandals world. That is, in the pre-scandals period, investors perceive a miss as a situation where the firm has potentially run out of "slack" to manage earnings, and the absence of such slack signals bad future prospects. However, in the post-scandals world, a miss could be interpreted as a case where the firm could have managed earnings but chose not to do so. However, we acknowledge that other drivers of these findings could have potentially occurred in the same time period, and we are not able to adequately control for these factors.

In summary, our results are consistent with the stock market becoming less enamored of firms that meet or beat analysts' expectations, particularly those that exactly meet or just beat those forecasts. The results also suggest that the market has become more forgiving of firms that miss expectations, particularly when they miss by a wider margin.

4. Managerial actions to meet/beat analysts' expectations

Research question

In this section, we consider whether earnings and expectations management to meet or beat analyst estimates has changed between the pre- and post-scandals period. Both academic research (Cohen et al. 2005; GHR 2005) and the popular press have argued that managers' costs of managing earnings by means of accounting techniques have increased because of increased auditor and regulator scrutiny and 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 less incentive to meet or beat analysts' forecasts. These arguments imply that

the propensity for managers to avoid negative earnings surprises has declined in the new reporting environment.[13]

Prior research has studied two managerial responses to meeting or beating analyst forecasts: accounting-based earnings management and earnings guidance (see Fields, Lys and Vincent 2001; Healy and Palepu 2001; and Burgstahler and Eames 2006).[14] 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 have likely diminished 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 address expectations management. Thus, if managers still have incentives to meet or beat expectations they will likely rely more on earnings guidance than earnings management to avoid missing expectations.

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

We examine whether the proportion of firms meeting or beating analysts' forecasts has changed between the pre- and post-scandals periods. Figure 2 presents the percentage of *SMBEAT* and *BIGBEAT* events over the calendar quarters from Q1:1987 to Q2:2006. A visual inspection 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.

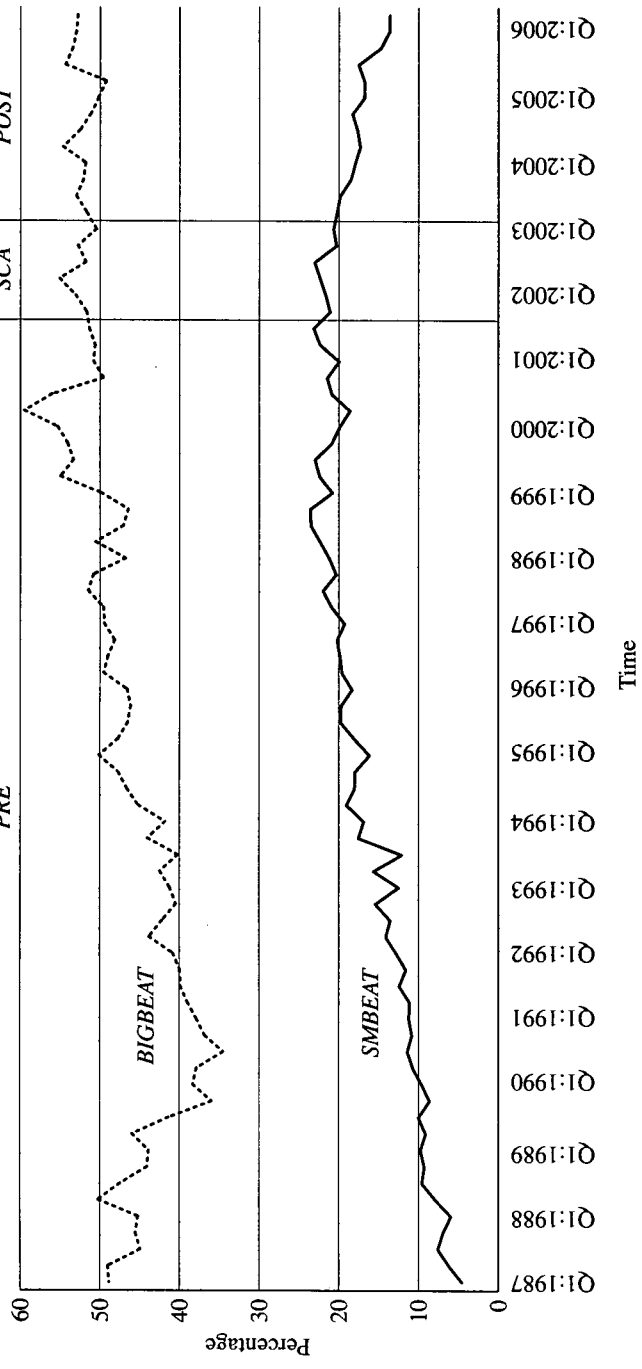
To statistically test for temporal changes in *SMBEAT%* and *BIGBEAT%* over time, we estimate the following regression:

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

In (3), *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' 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 macroeconomic conditions.

Columns (1) and (2) of Table 3 report the results of estimating (3). Consistent with prior research, we find an overall increase in the proportion of both small and big beaters over time (the coefficient on *TIME* is significant in both columns (1) and (2)). However, in the post-scandals period, the proportion of small beats is an average of 10.7 percent lower (coefficient on *POST* in column (1) = −0.107) than what would be expected given the time trend and *GDP*, a statistically significant decrease (*t*-statistic = −11.06). We find a smaller decrease in the propensity for big beats in the post-scandals period (β_4 in column (2) = −0.039, *t*-statistic = −2.43).

Figure 2 Percentage of firms meeting or beating analysts' expectations over time



Notes:

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.

Although the decline in big beats is not apparent from a visual inspection of Figure 2, the decline is significant if one controls for the upward trend in the propensity to meet/beat expectations and the impact of *GDP* on the propensity to beat expectations by more than a penny per share (coefficient on *GDP* in column (2) = 2.882, *t*-statistic = 3.31).[15]

TABLE 3
Temporal analysis of proportion of firms meeting analyst expectations

Equation (3)

$$SMBEAT\%(BIGBEAT\%)_t = \beta_0 + \beta_1 TIME + \beta_2 GDP + \beta_3 SCA + \beta_4 POST + \epsilon_q$$

	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

Notes:

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 ($\$0.00 > EPS - F_{last} \leq -\$0.01$), 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 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 Q1:1987 to Q2:2006 (total of 78 quarters). *TIME* denotes the quarter number with the first quarter set at Q1:1987. *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 scandals (post-scandals) period, and zero otherwise.

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 percentage of small misses in the post-scandals period ($\beta_4 = 0.009$, t-statistic $= 3.16$). The regression analysis also confirms an increase in big misses ($\beta_4 = 0.136$, 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.

Empirical tests of the mix of mechanisms to beat expectations

We now investigate (a) accrual-based earnings management and (b) expectations management to meet or beat forecasts. As discussed in the following, we hypothesize that increased auditor, regulator, and media scrutiny in the new reporting environment have reduced managers' ability to use accounting techniques to meet or beat expectations. We also hypothesize that the reduced discretion with respect to earnings has led managers to rely more on earnings guidance to avoid missing expectations.

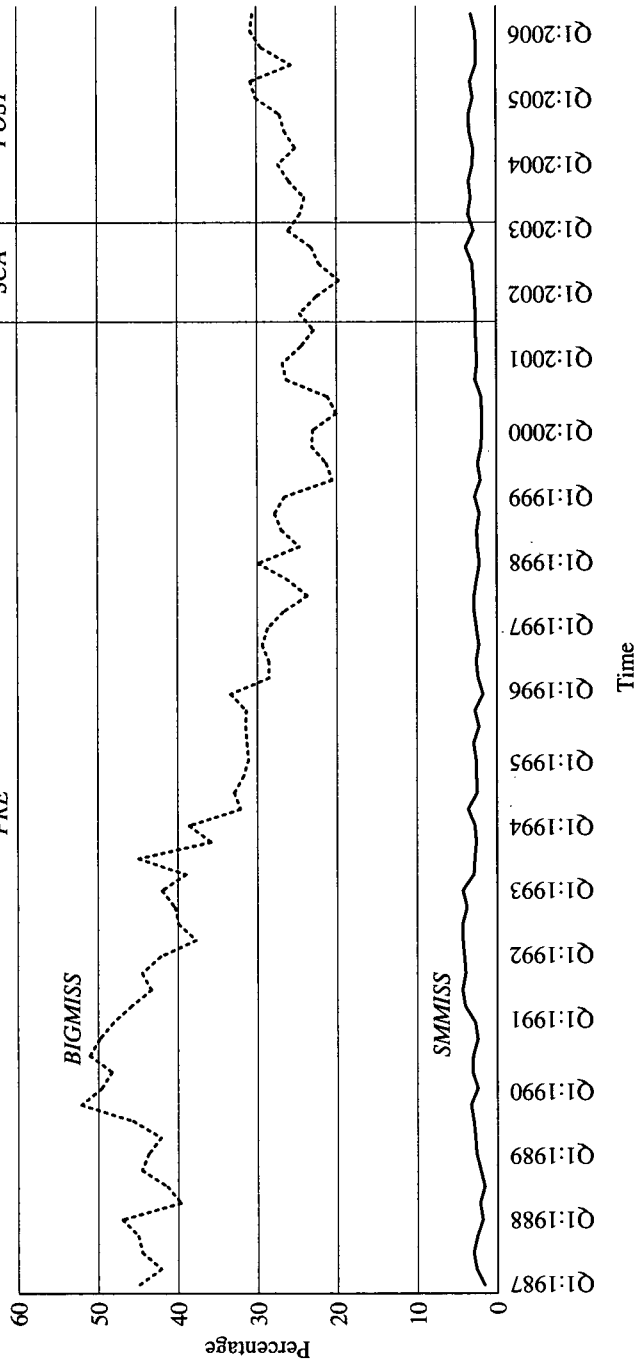
Accounting earnings management

We proxy for 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 fourth quarter accruals (Matsumoto 2002; Pincus and Rajgopal 2002). It is important to adjust abnormal accruals for performance because better performance is likely related to both abnormal accruals and the 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.

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

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.

Figure 3 Percentage of firms missing analysts' expectations over time



Notes:

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.

Industry- and quarter-specific parameter estimates obtained from (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 $= (TA_{i,q}/ASSET_{i,q-1}) - NA_{i,q}$. To rescale the asset-scaled abnormal accruals to a per share basis, we compute $ABACCPS_{i,q} = (ABACC_{i,q} * ASSET_{i,q-1})/SHARES_{i,q}$, where $SHARES_q$ is the shares used to compute *EPS* (COMPUSTAT #15).

To examine whether the propensity for using accruals management to beat forecasts has changed with the post-scandals period, we restrict our attention to firm-quarters that meet or beat expectations (Bartov et al. 2002). We subtract *ABACCPS* from *EPS* and compute the proportion of firm-quarters that would not have met the analyst forecast but for the use of income-increasing abnormal accruals.[16] Because we restrict our attention to only those firm-quarters (a) that meet or beat analyst forecasts and (b) for which we can estimate *ABACCPS*, we employ 73,780 firm-quarter observations.[17]

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

To assess whether these percentage changes withstand a multivariate test, we define a dummy variable *ACCMEET* set to 1 if $(EPS - ABACCPS) < F_{last}$ and zero otherwise and employ the following logistic regression:

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

We include *GDP* and *INDROA* to control for the effect of economic activity on accounting earnings management to meet analyst expectations (see Cohen et al. 2005). 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 for (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 use of income-increasing accruals to meet or beat expectations in the post-scandals period. Using the means of the independent variables to calculate changes in probability (Greene 1993), we find that the coefficient on *POST* translates into a 16 percent decrease in the probability

of using upward accruals management to meet/beat analysts' expectations.[18] Column (2) expands (6) by adding: *SMBEAT*, *SCA*SMBEAT*, and *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 $\chi^2 = 341.43$, p-value < 0.001) in column (2) suggests that *SMBEAT* firm-quarters are more likely than *BIGBEAT* firm-quarters to have income-increasing accruals that boost earnings above the analyst benchmark. Moreover, the negative coefficient on *POST*SMBEAT* (Wald $\chi^2 = 27.5$, $p < 0.001$) suggests that the propensity to use income-increasing accruals to meet or slightly beat expectations has declined more in the post-scandals period for the *SMBEAT* group relative to the *BIGBEAT* group. This coefficient translates into a 5 percent greater decline in probability for the *SMBEAT* group than the *BIGBEAT* group.

TABLE 4
Firms relying on earnings management to meet or beat analyst expectations

Panel A: Univariate frequencies

		Time period		
	All years	Pre-scandals	Scandals	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. versus *POST*		106.16	11.51	
(p-value)		(<0.001)	(<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%
χ^2-stat. versus *POST*		97.60	9.50	
(p-value)		(<0.001)	(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. versus *POST*		33.26	5.80	
(p-value)		(<0.001)	(<0.001)	

(The table is continued on the next page.)

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 quarter's initial forecast.[19] The cost of using the Matsumoto 2002 model is more onerous data requirements that result in a smaller sample size.[20]

We compute the difference between the latest analyst forecast (F_{last}) and the *EPS* forecast for the quarter based purely on the time-series behavior of past quarterly *EPS* realizations.[21] 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:

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

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:

TABLE 4 (Continued)

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

Equation (6)

$$ACCMEET_{i,q} = \beta_0 + \beta_1 TIME_q + \beta_2 SCA_q + \beta_3 POST_q + \beta_4 GDP_q + \beta_5 INDROA_{i,q} + \beta_{6,7,8} quarterdummies + \epsilon_{i,q}$$

	All periods (1)		All periods (2)	
Variables	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	

(The table is continued on the next page.)

TABLE 4 (Continued)

Notes:

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 — that is, ($EPS - ABACCPS) \leq F_{last}$ 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 ($EPS - F_{last} > \$0.01$).

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 Q1:1987. *SCA* (*POST*) is a dummy variable set to one if the firm observation falls in the scandals (post-scandals) 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.

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

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

Panel A of Table 5 shows the proportion of firm-quarters that rely on expectations management to meet or beat analysts' forecasts in the pre- and post-scandals period. Consistent with our hypothesis, we find that 7.98 percent of firms relied on downward guidance in the pre-*SCA* period whereas 10.85 percent of firm-quarters relied on downward guidance in the post-scandals period, a significant difference

($\chi^2 = 146.63$, 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 ($EPS < F_{last} - ABFRCST$). Other than adding a dummy variable to control for Reg. FD effects,[22] set to one (zero) if the firm-quarter fell after October 2000, the independent variables are identical to those used in (6).

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

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 percent increase in the probability of using expectations management to meet/beat expectations in the post-SOX period, which is less than the decrease in earnings management but is still significant ($p < 0.001$). Results in column (2) show that the increased use of earnings guidance post-scandals is greater for the small beat 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 percent 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 suggest that managers have decreased their use of accruals management and increased their use of expectations management to meet analysts' earnings targets.

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

Meeting or beating as a signal of future performance

While the stock market premium for 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.[23] Alternatively, it is possible that the stock market either ignores or is unaware of the increased earnings quality and penalizes meeting or beating 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-scandals. We examine both future cash flows and future return on assets as measures of future performance. Specifically, we estimate the following regression:

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

TABLE 5
Firms relying on expectation management to meet or beat analyst expectations

Panel A: Univariate frequencies

	Time period			
	All years	Pre-scandals	Scandals	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. versus *POST*		146.63	0.29	
(*p*-value)		(<0.001)	(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%
χ^2-stat. versus *POST*		66.89	7.01	
(*p*-value)		(<0.001)	(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. versus *POST*		85.21	5.54	
(*p*-value)		(<0.001)	(0.019)	

(The table is continued on the next page.)

where *FUTPERF* is 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 four quarters immediately following 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* for the firm's two-digit SIC code (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 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

TABLE 5 (Continued)

Panel B: Multivariate analysis of the determinants of expectations management

Equation (9)

$$GUIDEMEET_{i,q} = \beta_0 + \beta_1 TIME_q + \beta_2 REGFD_q + \beta_3 SCA_q + \beta_4 POST_q + \beta_5 GDP_q + \beta_6 INDROA_{i,q} + \beta_{7,8,9} quarterdummies + \epsilon_{i,q}$$

	All periods (1)		All periods (2)	
Variables	Estimate	Wald χ^2	Estimate	Wald χ^2
Intercept	−2.688	1,419.09	−2.653	1,372.26
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	1,050.74	−20.548	1,062.67
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	

(The table is continued on the next page.)

TABLE 5 (Continued)

Notes:

Of the total number of firm-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 — that is, EPS ($F_{last} - ABFRCST$) 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 ($EPS - F_{last} > \$0.01$).

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. $REGFD$ is a dummy variable set to one for firm observations from October 2000 onward. All other variables are as defined in Table 4. Dummy quarters are dummy variables for fiscal quarters Q1, Q2, and Q3. They are not presented in the table for the sake of brevity.

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 that 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 next year's operating performance in the post-scandals period, consistent with the reduced earnings management improving earnings quality.[24] 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.[25]

6. 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 following Enron and the 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).

TABLE 6
Mapping between meeting and beating analyst forecasts and future operating performance

Equation (10)

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

	PERF = *CFO* (1)		*PERF* = *ROA* (2)	
Variables	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^2 (%)	0.267		0.321	

(The table is continued on the next page.)

TABLE 6 (Continued)

Notes:

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* 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 ($EPS - F_{last} > \$0.01$).

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, because 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, another event occurring concurrently with the scandals could potentially be the true driving force behind

the changes we observe. In particular, the stock market bubble burst shortly before the scandals and such a crash is reflected in the changed market premium to meeting/beating expectations post-SOX. This possibility is somewhat mitigated because (a) our results are robust to allowing the coefficient on unexpected earnings to vary with firms' book-to-market ratio (a measure of growth expectations); and (b) we explicitly control for several macroeconomic factors. Nevertheless, we acknowledge that factors that our research design does not permit us to control for potentially differ across time and such factors could potentially explain our empirical findings.

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 a 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.

Endnotes

1. On a related note, Chen, Matsumoto, and Rajgopal (2006) find that only 96 firms publicly renounced quarterly EPS guidance between October 2000 to January 2006.
2. Other differences with BC include (a) we use the Matsumoto 2002 measure of downward expectations management, (b) our pre-scandals period is longer (beginning in 1987), and (c) we conduct our analysis on the firm-level and include controls for gross domestic product (GDP) growth and average industry return on assets (ROA). However, as noted later in the paper, our results hold using the Bartov, Givoly, and Hayn 2002 measure of expectations management (as is used in BC). Also, if we restrict our pre-scandals period to the years after 1994 (similar to BC), we continue to find an increase in expectations management using the Matsumoto measure.
3. We classify quarter membership on the basis of 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 Q1:2002 observation.
4. It is 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, because 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 distinguish between the impact of the scandals and that of SOX. Instead, we consider the combined effects of both events to represent a new financial reporting environment.
5. 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.

6. 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.
7. We start our sample period in 1987 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 1987–92. We test the sensitivity of our results to including the earlier years. We obtain similar results if we begin our sample period in 1996.
8. As a senstitivity analysis, we truncate the outliers, and the results remain unchanged.
9. 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).
10. 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 Q1:1987) in (1). We found that our reported results continue to hold despite the introduction of these two interaction variables.
11. It is also possible that omitted concurrent macroeconomic shocks affect the market's perception of meet/beat behavior and hence potentially account for our results. We consider several potentially confounding macroeconomic variables: (a) percentage change in seasonally adjusted GDP over the previous quarter, obtained from the Federal Reserve Board (available at www.federalreserve.gov); (b) two-digit Standard Industrial Classification (SIC) code based on industry ROA for the quarter; (c) annual interest rates for a 10-year treasury bill measured at quarterly intervals obtained from the Federal Reserve Board website; (d) stock market risk premium, measured as return on the market, net of risk free rate, to account for the overall market being under or overvalued; (e) exchange rate index for U.S. dollars against a basket of currencies to provide for the weak U.S. dollar environment; and (f) 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. Although we cannot rule out the possibility that another concurrent macroeconomic event accounts for the reduced premium to meeting/beating expectations, the fact that our results are robust to the inclusion of numerous macroeconomic factors provides us some reassurance that our results are not spurious.
12. This result is consistent with Skinner and Sloan 2002, who find a stock market penalty to missing by a small amount.
13. 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 5), we attempt to reconcile our findings relating to changes in market reaction and changes in managerial behavior.

14. 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.
15. The inclusion of *TIME* in our regression assumes that the trend of increasing *BIGBEAT*s and *SMBEAT*s 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 *BIGBEAT*s and *SMBEAT*s 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 reran 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).
16. 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.
17. 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).
18. Changes in probability are computed as follows: $[e^{\beta'X}/(1 + e^{\beta'X})^2]\beta$ where $\beta'X$ 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.
19. 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 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.
20. 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., $EPS \geq F_{last}$) 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.

21. 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–Reg. 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.
22. Regulation Fair Disclosure, 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–Reg. FD period may have been replaced by observable nonselective guidance post–Reg. FD.
23. 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.
24. 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 because firms that 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 percent to 52 percent post-scandals (untabulated). Thus, the result is a net positive effect on the quality of the meet/beat signal.
25. 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, 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.

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