

SEC Scrutiny and the Evolution of Non-GAAP Reporting

Kalin Kolev

New York University

Carol A. Marquardt

Baruch College–CUNY

Sarah E. McVay

University of Utah

ABSTRACT: We empirically examine the effects of intensified scrutiny over non-GAAP reporting on the quality of non-GAAP earnings exclusions. We find that, on average, exclusions are of higher quality (i.e., more transitory) following intervention by the Securities and Exchange Commission (SEC) into non-GAAP reporting. We further find that firms that stopped releasing non-GAAP earnings numbers after the SEC intervention had lower quality exclusions in the pre-intervention period. These results are consistent with the SEC's objectives of improving the quality of non-GAAP earnings figures. However, when we decompose total exclusions into special items and other exclusions, we find evidence that the quality of special items has decreased in the post-intervention period, which suggests that managers adapted to the new disclosure environment by shifting more recurring expenses into special items. This suggests that there may be unintended consequences arising from the heightened scrutiny over non-GAAP reporting.

Keywords: *non-GAAP (pro forma) earnings; street earnings; special items; Regulation G; Sarbanes-Oxley.*

Data Availability: *Data are available from the sources indicated.*

I. INTRODUCTION

Over the past decade, the frequency and magnitude of special items have increased dramatically, and earnings based on generally accepted accounting principles (GAAP) have become a noisier measure of true economic income (Collins et al. 1997; Givoly and Hayn 2000; Bradshaw and Sloan 2002). Not surprisingly, managers, analysts, and investors have adjusted their focus from GAAP earnings to alternative

We thank Ted Christensen, workshop participants at the 2006 American Accounting Association Annual Meeting, The George Washington University, NYU Summer Camp, SUNY at Binghamton, University of California, Berkeley, The University of Texas at Austin, University of Utah, and two anonymous referees for their helpful comments and suggestions.

Editor's note: This paper was accepted by Dan Dhaliwal.

*Submitted June 2006
Accepted May 2007*

earnings-performance measures that attempt to measure “core” earnings (Bradshaw and Sloan 2002; Collins et al. 2005). These alternative measures are prominently displayed in press releases, forecasted by analysts, and used by investors in valuation, despite the fact that non-GAAP earnings numbers have no objective definition.

Prior research finds that these non-GAAP earnings numbers are, on average, more value-relevant (Bradshaw and Sloan 2002; Bhattacharya et al. 2003) and fulfill a valuation role (Frankel and Roychowdhury 2005), but there is also evidence of opportunism. For example, Doyle et al. (2003) find that items excluded from non-GAAP earnings have predictive ability for future earnings, cash flows, and abnormal returns, which suggests that these expenses may, in fact, be recurring. In addition, managers appear to use non-GAAP earnings measures to meet earnings benchmarks (Lougee and Marquardt 2004; Bhattacharya et al. 2004; Doyle and Soliman 2005).

In response to concerns regarding the misuse of non-GAAP earnings numbers, the Securities and Exchange Commission (SEC) issued a warning about non-GAAP earnings in 2001, and Section 401(b) of Sarbanes-Oxley (SOX) is devoted to the regulation of non-GAAP usage (Regulation G, hereafter Reg G). The final rule, which took effect March 28, 2003, requires that managers issuing non-GAAP earnings numbers reconcile these figures to the most directly comparable GAAP measure. Recent empirical evidence following these actions by the SEC documents that (1) fewer managers release non-GAAP earnings in their press releases (Marques 2006; Entwistle et al. 2006), and (2) fewer managers are using non-GAAP earnings numbers to meet analyst forecasts (Heflin and Hsu 2005). While the latter result suggests a decrease in the opportunistic use of non-GAAP reporting, the former suggests that this perceived benefit may be offset by a decrease in non-GAAP reporting by firms motivated by a desire to better inform investors. Therefore, the evidence on the costs and benefits associated with SEC intervention into non-GAAP reporting is mixed.

In this paper, we address this question more directly by examining the effect of SEC intervention on the relative quality of exclusions from non-GAAP earnings. Consistent with prior research (Doyle et al. 2003; Gu and Chen 2004; Frankel et al. 2007), we define “high-quality” exclusions as those that are more transitory; i.e., the “appropriate” items are excluded from non-GAAP earnings. We perform three separate, but related, analyses. First, we use our full sample to test whether the quality of exclusions from non-GAAP earnings has, on average, improved following SEC intervention. This finding would be consistent with SEC intervention curtailing the opportunistic behavior of managers.

Second, we triangulate the results from our first set of tests by examining the relative quality of non-GAAP exclusions for the subsample of firms that were frequent non-GAAP reporters prior to SEC intervention and stopped issuing non-GAAP earnings following SEC intervention. Specifically, we test whether the quality of exclusions for this subsample is different from the quality of other firms’ exclusions in the period prior to SEC intervention. A finding that the quality of exclusions was lower for the subsample of firms that stopped reporting non-GAAP earnings would suggest that the required transparency imposed by SEC intervention was sufficient to discourage some opportunistically motivated non-GAAP reporters from continuing with this particular disclosure practice.

Third, we split total exclusions into special items (i.e., those items that are typically viewed as nonrecurring by financial statements users)¹ and other exclusions, and examine the relative quality of each component following the SEC intervention. Managers can use either component opportunistically, but there are inherent differences between them. In

¹ Mulford and Comiskey (2002) observe that the terms “special items” and “nonrecurring items” are often used interchangeably.

general, special items are identified as unusual or infrequent in SEC 10-Q and 10-K filings. McVay (2006) finds evidence that managers shift recurring expenses (such as normal severance fees or normal information technology [IT] expenditures) into special items (such as a restructuring charge or Y2K expenses), thereby improving non-GAAP earnings. Following prior research (Doyle et al. 2003), we rely on the Compustat classification of special items, i.e., “unusual or nonrecurring items presented above taxes by the company.” Other exclusions are those exclusions from GAAP earnings that were not identified as special items by Compustat. These typically include such expenses as goodwill amortization and R&D expense (Bhattacharya et al. 2004).

Doyle et al. (2003) report that special items have little predictive ability for future performance (i.e., they are “high-quality” exclusions), while other exclusions have significant predictive ability for future performance (i.e., they are “low-quality” exclusions). We examine whether this condition holds in the period following SEC intervention. A significant decrease in the quality of special items following SEC intervention in non-GAAP reporting would be consistent with managers adapting to the new disclosure environment by classifying more recurring items as special items, which may provide greater camouflage for recurring expenses after the required reconciliation.

In order to maximize statistical power and capitalize on the availability of machine-readable data, we use I/B/E/S actual earnings to proxy for the non-GAAP earnings figure issued in press releases by managers, though we acknowledge that this design choice yields evidence that is less direct than would be obtained using actual press release data; we discuss this issue in greater detail in Section III. We examine three samples: the first includes all firms with available data; the second includes only those firm-quarters where I/B/E/S actual and GAAP earnings from continuing operations differ; and the third requires 22 quarters of non-missing data over our time period of 26 quarters to help ensure that our results are not a function of a change in the composition of Compustat or I/B/E/S.

For a sample of 104,954 firm-quarter observations drawn from the second quarter of 1998 through the third quarter of 2004, we find that there has been a significant increase in the quality of exclusions from non-GAAP earnings following the regulatory events governing non-GAAP reporting. In economic terms, prior to SEC intervention \$1 of exclusions is associated with 55 cents of expenses over the next four quarters, while after SEC intervention \$1 of exclusions is associated with only 24 cents of expenses over the next four quarters, clearly an economically significant improvement in the quality of exclusions. While exclusions are still not perfectly transitory in the post-regulation period, SEC intervention appears to have had the desired effect of mitigating the opportunistic use of non-GAAP earnings numbers.

In comparing the quality of exclusions for a small sample of 28 firms that stopped releasing non-GAAP numbers after SEC intervention with the quality of exclusions for the average non-GAAP earnings discloser, we find that the quality of exclusions for firms that stopped is significantly poorer in the pre-SEC intervention period relative to that of other firms. This suggests that the increased costs of non-GAAP disclosure discouraged at least some opportunistically motivated firms from continuing with this practice, consistent with our main result.²

² An alternative explanation for this finding is that, under SFAS No. 142, firms no longer amortize goodwill (and therefore exclude goodwill amortization from non-GAAP earnings). We examine this explanation directly in Section IV; results do not appear to be due to SFAS No. 142.

Finally, in separately examining the quality of the exclusion components (special items and other exclusions), we find that the quality of other exclusions has increased significantly following SEC intervention into non-GAAP reporting. However, we find that the quality of special items has *decreased* following the intervention, which indicates that managers may have adapted to the new scrutiny by shifting more recurring items into special items.³ Consistent with this view, we further find that a tendency to switch from using other exclusions in the pre-intervention period to special items in the post-intervention period is associated with poorer quality special item exclusions in the latter period. These results suggest that there may be unintended consequences arising from the regulation of non-GAAP disclosures.

These results contribute to the accounting literature in several ways. First, we complement and extend recent findings related to non-GAAP reporting. Both Marques (2006), who obtains non-GAAP figures from press releases, and Heflin and Hsu (2005), who base their sample on I/B/E/S data, investigate the impact of SEC intervention on the frequency of non-GAAP earnings releases. After controlling for known determinants of non-GAAP earnings releases, Marques (2006) documents a significant decrease in the frequency of non-GAAP reporting after SEC intervention and also finds that the value-relevance of non-GAAP earnings varies across reporting regimes within her sample. Marques (2006) includes all press releases from 2001–2003 for the S&P 500 in her sample; the final sample size is 361 firms. Thus, Marques' (2006) sample is, by construction, biased toward the largest firms and limited in size, potentially limiting the generalizability of her results.⁴

Heflin and Hsu (2005) undertake a similar analysis of the frequency of non-GAAP reporting and, consistent with Marques (2006), also find evidence of a significant decrease after SEC intervention. However, because Heflin and Hsu (2005) use I/B/E/S actual earnings to proxy for the non-GAAP earnings figures released by managers, as we do in our analysis, their sample size is far larger than in Marques (2006). In addition, Heflin and Hsu (2005) focus on whether the tendency to meet or beat analyst forecasts using non-GAAP earnings releases has changed after SEC intervention. They find that the probability of meeting a forecast is significantly lower in the post-intervention period, which suggests that intervention curbed opportunistic reporting.

In this paper, we take the decreased frequency of non-GAAP reporting documented in prior research as given and instead focus on the relative quality of the exclusions from non-GAAP earnings. Our findings that the average quality has increased and that the firms that stopped releasing non-GAAP earnings tended to have lower quality, on average, in the pre-intervention period are broadly consistent with Heflin and Hsu's (2005) results, though we take a very different methodological approach to the issue.⁵ In addition, we provide evidence that the quality of special items has *decreased* following SEC intervention, which suggests that some managers adapted to the new disclosure environment by shifting more recurring expenses into special items.

More generally, we contribute to the literature on the consequences of disclosure regulation, a literature which Healy and Palepu (2001, 412) characterized not long ago as "virtually nonexistent." Several recent papers examine the relative costs and benefits of

³ This result is consistent with Entwistle et al. (2006), who report that the frequency of special item exclusions from non-GAAP earnings increased dramatically over 2001–2003 for S&P 500 firms.

⁴ Entwistle et al. (2006) also document a decrease in pro forma reporting by S&P 500 companies from 2001–2003.

⁵ These results are also consistent with findings reported recently by Yi (2007). Using press release data, Yi (2007) documents evidence that the quality of non-GAAP earnings disclosures has improved following Regulation G.

disclosure regulation. For example, Lo (2003) examines the SEC's 1992 revision of executive compensation disclosure rules and reports evidence consistent with a governance improvement hypothesis. Heflin et al. (2003) examine Regulation Fair Disclosure (Regulation FD) and find some evidence consistent with an improvement in the availability of information to investors, and Bushee and Leuz (2005) find that a regulatory change mandating over-the-counter bulletin board firms to comply with reporting requirements imposes significant costs for smaller firms, but yields significant benefits for others. Our analysis suggests that regulation improved the overall quality of exclusions from non-GAAP earnings, but led some managers to misclassify expenses within the income statement, surely an unintended consequence of the regulation.

Last, the paper contributes to the literature related to Sarbanes-Oxley (SOX). This literature has recently exploded, with researchers investigating the effects of SOX on stock prices (Zhang 2007; Li et al. 2008), going-private decisions (Engel et al. 2007), CEO compensation structure (Cohen et al. 2005a), and earnings informativeness (Cohen et al. 2005b), to name but a few of the issues examined. Our evidence on the effect of SEC intervention into non-GAAP reporting contributes to this growing literature.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Prior research documents that non-GAAP earning measures (also known as "pro forma" or "Street" earnings) became increasingly more prevalent during the 1990s. While on average these non-GAAP figures tend to be more value-relevant than GAAP earnings (Bradshaw and Sloan 2002; Bhattacharya et al. 2003), there is also evidence that managers employ these disclosures opportunistically. For example, Doyle et al. (2003) and Gu and Chen (2004) find that items excluded from core earnings have future implications for earnings, cash flows, and abnormal returns, which suggests that these expenses were, in fact, recurring items. Other research shows that non-GAAP earnings measures are used to meet earnings benchmarks (Bhattacharya et al. 2003; Lougee and Marquardt 2004; Doyle and Soliman 2005). Relatedly, Bowen et al. (2005) examine the relative emphasis placed on non-GAAP measures within the earnings release and find that firms emphasize the metric that portrays more favorable firm performance.

In response to concerns that the release of non-GAAP earnings figures might mislead investors by obscuring firms' GAAP results, the SEC issued a warning regarding the use of non-GAAP financial measures in earnings releases in December 2001. The SEC's cautionary advice stated that "presentation of financial results that is addressed to a limited feature of a company's overall financial results ... raises particular concerns ... To inform investors fully, companies need to describe accurately the controlling principles [and] the particular transactions and the kind of transactions that are omitted." The warning also stated that a non-GAAP figure would not be deemed misleading if the company disclosed in plain English how it deviated from GAAP and the amount of each of those deviations.

Additionally, Section 401(b) of Sarbanes-Oxley is devoted to the regulation of non-GAAP usage (Reg G). This rule requires public companies that disclose or release non-GAAP financial measures to include, within that disclosure or release, a presentation of the most directly comparable GAAP financial measure and a quantitative reconciliation, by either schedule or other clearly understandable method, of the disclosed non-GAAP financial measure to the most directly comparable GAAP measure. The final rule took effect March 28, 2003.

The additional reporting requirements for non-GAAP earnings under Reg G have led some firms to abandon the use of non-GAAP earnings measures. Marques (2006) and Heflin

and Hsu (2005) find that the SEC's intervention into non-GAAP reporting resulted in a significant decrease in the frequency of non-GAAP earnings reports. Further, Heflin and Hsu (2005) find that non-GAAP earnings figures are less likely to exceed earnings thresholds in the period after these two events, which suggests that SEC intervention may have also curbed the opportunistic use of these disclosures.

We more directly address the question of whether SEC intervention affected the use of non-GAAP earnings measures by examining its effect on the relative quality of exclusions from GAAP earnings, where quality is reflected in the ability of these exclusions to predict future firm performance. We present three separate, but related, hypotheses. First, we examine the overall quality of exclusions from GAAP earnings both before and after SEC intervention. Managers could respond to the SEC actions in a number of ways. As noted in prior research (e.g., Lougee and Marquardt 2004), the decision to release non-GAAP financial measures may be driven by incentives to mislead or to better inform investors. Managers who are motivated by a desire to better inform investors are unlikely to alter the expenses they exclude from GAAP earnings, as they would already be excluding only the most transitory items.

However, this group of managers may decide to stop releasing non-GAAP measures altogether if they expect that the increased costs of non-GAAP disclosure will exceed the benefits. While providing the reconciliation itself should not represent a significant cost, particularly for this group of firms, firms that continue to report pro forma earnings run the risk of censure by the SEC, which is associated with negative stock returns.⁶ In addition, there are potential reputation costs if investors now question the motives of managers who release non-GAAP performance measures.

Alternatively, managers who attempt to mislead investors through non-GAAP disclosures are less likely to exclude recurring expenses from GAAP earnings after the SEC actions, as the required reconciliation makes this more obvious to investors. Because the perceived benefit in this case is the obscuring of GAAP results, requiring a reconciliation represents a potential decrease in the benefits of non-GAAP reporting. In addition, the increased costs of non-GAAP reporting, mentioned above, are arguably even greater for this group of firms since the SEC would presumably target firms with a motivation to mislead investors. Given the reduction in the expected net benefit of disclosing non-GAAP figures for this group of firms, it is possible that they will also refrain from releasing non-GAAP measures in the post-Reg G period.

Given the variety of potential managerial responses to the SEC actions, it becomes an empirical question as to whether SEC intervention has had a significant impact on the average quality of exclusions from non-GAAP earnings. We therefore present our first hypothesis in null form:

H1: SEC actions had no effect on the average quality of exclusions from non-GAAP earnings.

Our second hypothesis is motivated by the findings of Heflin and Hsu (2005) and Marques (2006), who document a decrease in the frequency of non-GAAP earnings releases. As discussed above and observed by Entwistle et al. (2006), managers motivated by *either* a desire to mislead or to better inform investors through non-GAAP disclosures

⁶ On January 16, 2002, the SEC instituted cease-and-desist proceedings against Trump Hotels & Casino Resorts Inc. for making misleading statements in an earnings release that highlighted pro forma figures. Trump Hotels experienced abnormal same-day returns of roughly -10 percent.

may view the costs of disclosure as exceeding the benefits after the SEC actions and stop providing non-GAAP earnings numbers. We explore this issue directly by comparing the quality of exclusions from non-GAAP earnings for the subsample of firms that stopped providing non-GAAP numbers to the average firm using non-GAAP earnings. As with our first hypothesis, we make no directional prediction and present our second hypothesis in null form:

H2: The quality of exclusions is no different in the pre-intervention period for firms that stopped providing non-GAAP earnings than for other firms.

Evidence that the quality of exclusions is lower in the period preceding the SEC actions for the subsample of firms that stopped providing non-GAAP earnings disclosures is consistent with those firms having been motivated by an intent to mislead investors with their disclosures. Thus, this result would suggest that the SEC's intervention has achieved its intended goals. However, if the quality of exclusions is higher for the subsample of firms that stopped reporting non-GAAP earnings measures, then this would suggest that the requirements imposed by the SEC discouraged firms from providing more informative non-GAAP disclosures to investors.

Our third and final hypothesis addresses the question of whether SEC intervention affected the quality of the components of exclusions from GAAP earnings. Managers can present current period recurring expenses as "transitory" by designating them as special items in their SEC-filed financial statements (McVay 2006) or by labeling them as nonrecurring items within the press release (Doyle et al. 2003; Bhattacharya et al. 2004).⁷ Doyle et al. (2003) report that special items have little predictive ability for future performance (i.e., they are high-quality exclusions) while other exclusions have significant predictive ability for future performance (i.e., they are low-quality exclusions). The reconciliation requirement under Reg G would make the exclusion of recurring expenses more obvious to investors. Assuming managers continue to provide non-GAAP disclosures, the new scrutiny would likely result in fewer recurring items excluded from non-GAAP earnings in the press release, thereby increasing the quality of other exclusions. *Ceteris paribus*, it would be unlikely to affect the quality of special items, as these items are, by definition, nonrecurring. This would suggest that any change in the overall quality of exclusions, if there is one, would result from changes in the quality of the other exclusions component of total exclusions.

However, managers might respond to the SEC intervention not by reducing their opportunistic use of total exclusions, but rather by reducing their opportunistic use of other exclusions and increasing their misuse of special items. McVay (2006) reports evidence that managers shift recurring expenses from cost of goods sold and selling, general, and administrative expense into special items in order to manage investor perceptions of core profitability. While special items are audited, the allocation of expenses between permanent and transitory activities is very subjective. For example, a manager might allocate normal IT expenditures to Y2K expenses, or normal severance fees to a restructuring charge. In

⁷ Our interest here is in examining how managers classify items as special/nonrecurring. However, because we cannot directly observe managerial intent and rely on Compustat to segregate expenses into Special Items (quarterly data item #32), we necessarily assume that there is a high degree of correspondence between managers' and Compustat's designation of special items. We believe this is a reasonable assumption, particularly since Compustat includes in its Special Items measure any item labeled "special" or "nonrecurring" by the firm, regardless of how frequently it is reported on firms' income statements. We thank an anonymous reviewer for raising this point.

addition, even upon detection, auditors are less likely to require adjustments when bottom-line earnings are not affected (Nelson et al. 2002), as is the case with this vertical shifting of expenses. This phenomenon may become more pronounced after SEC intervention in non-GAAP reporting because while the reconciliation required under Reg G would highlight the fact that recurring items were excluded from non-GAAP earnings, it would not allow investors to determine whether special items were appropriately classified. Under this scenario, the quality of special items could decline following SEC intervention in non-GAAP reporting.

We therefore make no directional predictions regarding changes in the quality of special items and other exclusions following SEC intervention in non-GAAP reporting and present our third hypothesis in null form, as follows:

H3: SEC actions had no effect on the average quality of the components of the exclusions from non-GAAP earnings.

Evidence that the average quality of either special items or other exclusions increased following SEC intervention would be consistent with the intended goals of the regulation. However, evidence that the average quality of special items decreased following SEC intervention would suggest that managers adapted to the new scrutiny by shifting recurring items into special items, which is not consistent with the SEC's objectives.⁸

III. SAMPLE SELECTION, VARIABLE MEASUREMENT, AND DESCRIPTIVE STATISTICS

Sample Selection

As in prior research (e.g., Bradshaw and Sloan 2002; Doyle et al. 2003), we use I/B/E/S actual earnings to proxy for the non-GAAP earnings figure disclosed by managers in press releases. However, we acknowledge that I/B/E/S actual earnings is not a perfect proxy for the figure disclosed in press releases. Analysts do make adjustments to the numbers reported by managers in press releases. For example, Gu and Chen (2004) show that analysts tend to exclude the more transitory items from earnings, and that the nonrecurring items they include in actual earnings are more persistent and have higher valuation multiples than the expenses they exclude from actual earnings. Consistent with these results, Marques (2006) finds that investors rely more on the analyst figure than the press release figure.⁹ However, to the extent that analysts already exclude recurring items from non-GAAP earnings, the use of I/B/E/S as our data source biases us toward non-rejection of our null hypotheses. Insignificant results will therefore be especially difficult to interpret given our research design.

We obtain data from the Preliminary History Quarterly Compustat File and I/B/E/S Split-Unadjusted File.¹⁰ Our tests employ the 26 quarters from the second calendar quarter

⁸ An alternative explanation for a decrease in the average quality of special item exclusions would be that Compustat changed its definition of special items in the latter part of our sample period. To rule out this possibility, we contacted S&P directly and were assured that no such change had occurred.

⁹ Bhattacharya et al. (2007) find that less sophisticated investors trade more on the manager-adjusted number. Moreover, they are the group of investors most likely to be misled by non-GAAP reporting.

¹⁰ Preliminary History is a newly available dataset (accessible via WRDS) that contains the as-first-filed financial statement figures. Quarterly Compustat routinely overwrites the original values to reflect subsequent discontinued operations and mergers and acquisitions (Standard & Poor's 2003, Ch. 2, p. 9).

of 1998 through the third calendar quarter of 2004.¹¹ This time period allows for equal periods (13 quarters) before and after the initial SEC intervention, which we benchmark as mid-2001.¹² The full sample has 104,954 firm-quarter observations with non-missing values for each of the variables needed to test our hypotheses. We also examine two restricted samples. The first restricted sample of 30,955 firm-quarters contain only those observations where non-GAAP earnings and GAAP earnings differ (hereafter, the “non-zero exclusions” sample). The second restricted sample of 52,553 firm-quarters includes those observations where the firm has data for at least 22 of the 26 possible quarters (hereafter, the “constant” sample). We discuss these restricted samples in greater detail in our test design and results.

Variable Measurement

Non-GAAP Exclusions

We calculate total non-GAAP exclusions as non-GAAP earnings, where non-GAAP earnings is I/B/E/S actual earnings less income before extraordinary items per share (Quarterly Compustat data item #19 or #9, depending on the reported basis of the I/B/E/S actual earnings).¹³ Following Doyle et al. (2003), we decompose total non-GAAP exclusions into special items and other exclusions. Special items are defined as earnings per share from operations (Quarterly Compustat data item #177) less GAAP earnings per share (data item #19).¹⁴ Other exclusions are defined as total exclusions less special items.¹⁵ For example, a firm with GAAP earnings per share of 0.20, non-GAAP earnings of 0.25, and special items of 0.03 would have total exclusions of 0.05 (non-GAAP earnings 0.25 less GAAP earnings 0.20), and other exclusions of 0.02 (total exclusions of 0.05 less special items of 0.03). Positive values of total exclusions, special items, and/or other exclusions indicate that income-decreasing expenses were excluded from GAAP earnings.

Dependent Variable

Our dependent variable is future operating income, defined as earnings per share from operations (data item #177) summed over four quarters starting with quarter $q+1$. We believe this dependent variable is best suited for examining our research questions because operating income as defined by Compustat excludes nonrecurring special items but includes

¹¹ Actual data requirements are from the second calendar quarter of 1996 through the third quarter of 2005, as our tests require four subsequent quarters of future earnings realizations to test the quality of non-GAAP exclusions and up to two years of historical data is required to calculate earnings volatility (one of our control variables). We define these variables in Section III.

¹² While the official SEC warning was not until December 2001, it was public knowledge that the SEC was concerned with non-GAAP reporting before that time. In addition, the Financial Executives Institute and the National Investor Relations Institute jointly issued guidelines for the use of pro forma earnings in press releases in April 2001. Results are not sensitive to the exact time cutoff; we provide several robustness checks in Section IV.

¹³ After calculating total exclusions, all variables are transformed to be on a per basic share basis. For example, if the I/B/E/S actual is reported on diluted share basis, total exclusions is calculated as Compustat quarterly data item #9 minus I/B/E/S actual and the three variables are multiplied by the ratio of basic earnings per share to diluted earnings per share, both before extraordinary items, as reported by Compustat quarterly (item #19/item #9), or the dilution factor provided by I/B/E/S if item #9 or item #19 is missing or zero.

¹⁴ To prevent the artificial creation of other exclusions, we do not allow special items to exceed total exclusions (in absolute terms) and set special items to zero if total exclusions is zero.

¹⁵ Compustat “earnings per share from operations” (Compustat data item #177) removes the effects of all non-recurring events from basic earnings per share. As previously noted, in decomposing total exclusions into special items and other exclusions, our intent is to capture a classification scheme devised by managers; i.e., managers decide on whether they would like a particular item to be viewed as nonrecurring by financial statement users. However, we rely on Compustat for this partitioning.

recurring items that might appear in firms' "other exclusions" from non-GAAP earnings. As such, it best approximates the concept of "permanent earnings."

There are a number of alternative dependent variables, including future GAAP earnings, future non-GAAP earnings, future operating cash flows, future free cash flows, and future returns. Each of these alternatives presents their own particular interpretation difficulties. For example, future GAAP earnings is likely to be mechanically related to current exclusions because, as shown by Francis et al. (1996), past special items (a component of exclusions) are a strong predictor of current special items (a component of GAAP earnings). Thus, the ability of exclusions to predict future GAAP earnings may not reflect the appropriateness of the exclusion but simply the relation between current and future write-offs. As this criticism does not apply to the other exclusions component of total exclusions, which is the component containing the majority of the recurring expenses in the pre-intervention period (Doyle et al. 2003), we replicate our analyses using future GAAP earnings as a robustness check in Section IV.

The use of non-GAAP earnings as the dependent variable would introduce other difficulties because managers or analysts may exclude the same items from non-GAAP earnings in each quarter. To the extent that this occurs, the exclusion, whether it is appropriately taken or not, will have no predictive ability for future non-GAAP earnings; i.e., all exclusions will be judged as perfectly transitory. Because this will wrongly characterize the nature of recurring item exclusions, we reject the use of non-GAAP earnings as our dependent variable.

Doyle et al. (2003) use cash flow from operations and free cash flows as their main dependent variables. These dependent variables are not desirable since current liabilities have future cash flow implications. Consider, for example, expenses that are incurred but not paid. These expenses are paid in future quarters, resulting in a mechanical relation between exclusions from permanent earnings and future cash flows (see also Easton 2003).

Finally, Doyle et al. (2003) corroborate their cash flow results using future returns, arguing that if investors fully understand the implications of current exclusions on future earnings and cash flows, then these exclusions should not be associated with future returns. However, using future returns as the dependent variable is problematic over our sample period because Bowen et al. (2005) find that the emphasis placed on non-GAAP earnings within press releases changed after the actions by the SEC. They also find evidence suggesting that the change in emphasis affected the pricing of non-GAAP earnings. The confounding effect of the change in disclosure practices, along with the possibility of a shift in investor sentiment, makes future returns an unattractive candidate as a dependent variable.

Given the limitations of each of these alternative dependent variables, we use future operating income as the main variable of interest in our hypothesis tests.

Control Variables

We include six control variables in our main regressions. First, following Frankel et al. (2007), we include sales growth, total assets, earnings volatility, a loss indicator, and the book-to-market assets ratio, each of which are expected to be correlated with both non-GAAP earnings use and future earnings.¹⁶ We also include the age of the firm, as we are

¹⁶ Doyle et al. (2003) include two control variables (sales growth and accruals) in their analysis. However, their dependent variable is cash flows, while ours is earnings. As such, we follow Frankel et al. (2007) who also use earnings as their dependent variable. Results are not sensitive to the use of the Doyle et al. (2003) control variables or the exclusion of control variables.

examining the use of non-GAAP earnings over time and want to control for any effects of a firm's maturation process on non-GAAP earnings use and future earnings. Our control variables are defined as follows, with Compustat quarterly data item numbers in parentheses: sales growth is the increase in sales, scaled by shares outstanding ($[\#2_q - \#2_{q-4}]/\#15$). Total assets is the firm's total assets ($\#44$) at the end of quarter q . Earnings volatility is the standard deviation of return on assets ($\#25/\#44$) over at least six of the eight preceding quarters. Loss is an indicator variable equal to 1 if GAAP earnings ($\#25$) in quarter q is less than 0, and 0 otherwise. Book-to-market assets is the book value of equity divided by the book value of debt plus market value of equity ($\#60/[\#54 + \#61 \times \#14]$). Age is the number of years since the company first appeared in Compustat. We use the log of total assets and age in our regressions as these variables are highly skewed. To control for scale effects in the regressions, we divide future operating income, non-GAAP earnings, non-GAAP exclusions, special items, other exclusions, and sales growth by total assets per share ($\#44/\#15$), where assets per share is required to be positive.¹⁷ We exclude the extreme 1 percent at each end of the distribution of each of the continuous variables (with the exception of the bottom 1 percent of age) to avoid undue influence by outliers.

Descriptive Statistics

Table 1 presents descriptive statistics for each of our three samples. For the main sample, the mean (median) GAAP earnings per share is 0.147 (0.140) and non-GAAP earnings per share is 0.186 (0.160). These averages are somewhat lower than those in Doyle et al. (2003), who report mean (median) GAAP earnings of 0.26 (0.23) and "Street" earnings of 0.29 (0.25). However, our sample period of 1998–2004 includes a higher (lower) proportion of calendar quarters that are defined as business cycle contraction (expansion) periods by the National Bureau of Economic Research, consistent with the lower levels of reported profitability. Mean total exclusions for our sample are slightly higher at 0.039 versus 0.03 in Doyle et al. (2003), which is consistent with the increased frequency of non-GAAP reporting over time documented by Bhattacharya et al. (2004) and others.

Comparing across the three samples, GAAP earnings is lower in the non-zero exclusions sample, consistent with these firms having losses or special items (Lougee and Marquardt 2004). Interestingly, non-GAAP earnings for the non-zero exclusions sample are very similar to non-GAAP earnings for the full sample, consistent with this measure representing "core" earnings. GAAP earnings for the constant sample is higher, and the firms are older, consistent with the data requirement that the firm have data for at least 22 of the 26 quarters examined.

Table 2 presents univariate tests of variable differences across our two sample periods, 1998 Q2–2001 Q2 and 2001 Q3–2004 Q3. Mean GAAP earnings are slightly lower in the earlier time period (0.139 versus 0.154), though median GAAP earnings are higher in the earlier time period (0.150 versus 0.120). Mean non-GAAP earnings are very similar across the two periods, while median non-GAAP earnings fall from 0.170 to 0.140. Mean total exclusions fall significantly from 0.042 to 0.037 ($p = 0.001$), suggesting that SEC intervention reduced the magnitude of the differences between GAAP and non-GAAP earnings. Both special items and other exclusions have declined, though the magnitude of the other exclusions decline appears larger. Future operating income appears to have improved significantly over time, increasing from 0.560 to 0.825 ($p = 0.001$). Finally, earnings

¹⁷ Since those variables are initially presented on per share basis, dividing by assets per share is equivalent to scaling each variable by total assets.

TABLE 1
Descriptive Statistics

Variable	Full Sample (104,954 firm-quarters/7,904 firms)			Non-Zero Exclusions (30,955 firm-quarters/6,135 firms)			Constant Sample (52,553 firm-quarters/2,126 firms)		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
<i>GAAP Earnings</i>	0.147	0.140	0.482	0.064	0.080	0.619	0.239	0.220	0.476
<i>Non-GAAP Earnings</i>	0.186	0.160	0.395	0.198	0.160	0.420	0.278	0.240	0.395
<i>Total Exclusions</i>	0.039	0.000	0.207	0.134	0.040	0.364	0.039	0.000	0.206
<i>Special Items</i>	0.025	0.000	0.135	0.088	0.000	0.238	0.027	0.000	0.143
<i>Other Exclusions</i>	0.014	0.000	0.104	0.046	0.000	0.188	0.012	0.000	0.096
<i>Future Operating Inc.</i>	0.692	0.620	1.636	0.665	0.580	1.839	1.105	1.000	1.529
<i>Sales Growth</i>	0.387	0.160	1.449	0.376	0.163	1.653	0.497	0.252	1.585
<i>Total Assets</i>	2,083	359	6,084	3,376	675	8,158	2,646	585	6,351
<i>Earnings Volatility</i>	0.026	0.011	0.044	0.028	0.012	0.047	0.016	0.008	0.024
<i>Loss</i>	0.300	0.000	0.458	0.392	0.000	0.488	0.206	0.000	0.405
<i>Book-to-Market Assets</i>	0.331	0.279	0.253	0.334	0.279	0.256	0.317	0.280	0.209
<i>Age</i>	15.057	11.000	11.558	15.240	10.000	12.154	18.345	14.000	12.602

The sample covers the second quarter of 1998 through the third quarter of 2004 (1998 Q2–2004 Q3). Compustat quarterly data items are in parentheses.

Variable Definitions:

GAAP Earnings = (basic) earnings per share before extraordinary items and discontinued operations (#19);

Non-GAAP Earnings = I/B/E/S reported actual (basic) earnings per share;

Total Exclusions = *Non-GAAP Earnings* less *GAAP Earnings*;

Special Items = *Operating Income* less *GAAP Earnings*, where *Operating Income* is operating income per share (#177);

Other Exclusions = *Total Exclusions* less *Special Items*; a positive value of *Total Exclusions*, *Special Items*, and/or *Other Exclusions* indicates an income-decreasing expense was excluded from *GAAP Earnings*;

Future Operating Income = *Operating Income* summed over four quarters starting with quarter $q+1$;

Sales Growth = quarter-over-quarter increase in sales, on a per share basis ($[\#2_q - \#2_{q-4}]/\#15$);

Total Assets (#44) = in millions and corresponds to quarter q ;

Earnings Volatility = standard deviation of return on assets ($\#25/\#44$) over at least six of the preceding eight quarters;

Loss = an indicator variable equal to 1 if earnings before extraordinary items for the quarter (#25) is less than 0, and 0 otherwise;

Book-to-Market Assets = book value of equity divided by the book value of debt plus market value of equity ($\#60/[\#54 + \#61 \times \#14]$); and

Age = number of years since the company first appeared in Compustat.

All continuous variables (with the exception of the lower bound of age) are truncated at 1 percent and 99 percent. *GAAP Earnings*, *Non-GAAP Earnings*, *Total Exclusions*, *Special Items*, *Other Exclusions*, and *Sales Growth* are scaled by assets per basic share outstanding ($\#44/\#15$) in the correlation matrix and regression results.

TABLE 2
Descriptive Statistics for Time Subgroups

Variable	1998 Q2 through 2001 Q2 (52,601 firm- quarters/6,468 firms)		2001 Q3 through 2004 Q3 (52,353 firm-quarter /6,072 firms)		Two-Tailed p-value for Statistical Difference of the Means under a t-test/Wilcoxon Rank Sum Test
	Mean	Median	Mean	Median	
<i>GAAP Earnings</i>	0.139	0.150	0.154	0.120	0.001/0.001
<i>Non-GAAP Earnings</i>	0.181	0.170	0.191	0.140	0.001/0.001
<i>Total Exclusions</i>	0.042	0.000	0.037	0.000	0.001/0.001
<i>Special Items</i>	0.025	0.000	0.024	0.000	0.140/0.001
<i>Other Exclusions</i>	0.017	0.000	0.013	0.000	0.001/0.001
<i>Future Operating Income</i>	0.560	0.610	0.825	0.630	0.001/0.001
<i>Sales Growth</i>	0.525	0.257	0.248	0.085	0.001/0.001
<i>Total Assets</i>	1,724	315	2,444	414	0.001/0.001
<i>Earnings Volatility</i>	0.025	0.011	0.028	0.011	0.001/0.041
<i>Loss</i>	0.290	0.000	0.311	0.000	0.001/0.001
<i>Book-to-Market Assets</i>	0.324	0.272	0.337	0.285	0.001/0.001
<i>Age</i>	14.196	9.000	15.923	11.000	0.001/0.001

There are a total of 104,954 firm-quarters and 7,904 firms.
See Table 1 for additional information.

volatility and losses are higher in the later part of the sample, suggesting that, all else equal, non-GAAP earnings use is expected to increase (Lougee and Marquardt 2004), though, as noted above, the magnitude of total exclusions has declined.

Table 3 presents a correlation matrix among the main variables. We find that total exclusions are negatively correlated with GAAP earnings (the Pearson correlation coefficient, ρ , is -0.425), which is consistent with prior evidence that non-GAAP reporting is more likely when earnings performance is poor. We also find that future operating income appears more positively correlated with non-GAAP earnings ($\rho = 0.777$) than it is with GAAP earnings ($\rho = 0.754$), which is consistent with previous evidence that non-GAAP earnings are more permanent than GAAP earnings and thus more value-relevant. However, we also observe that total exclusions are negatively correlated with future operating income ($\rho = -0.144$), consistent with the notion that non-GAAP earnings may exclude expenses that have implications for future earnings.

IV. EMPIRICAL TESTS AND RESULTS

Hypothesis 1

We first test H1—there is no difference in the average quality of exclusions from GAAP earnings following SEC intervention into non-GAAP reporting. Following Doyle et al. (2003) and Gu and Chen (2004), we define high-quality exclusions to be those that have the least predictive power for future earnings and estimate the following pooled regression:

TABLE 3
Spearman/Pearson Correlation Matrix

	<i>GAAP Earnings</i>	<i>Non-GAAP Earnings</i>	<i>Total Excl.</i>	<i>Special Items</i>	<i>Other Excl.</i>	<i>Future Operating Income</i>	<i>Sales Growth</i>	<i>Log (Total Assets)</i>	<i>Earnings Volatility</i>	<i>Loss</i>	<i>Book-to-Market Assets</i>	<i>Log (Age)</i>
<i>GAAP Earnings</i>		0.943 (0.001)	-0.425 (0.001)	-0.348 (0.001)	-0.328 (0.001)	0.754 (0.001)	0.246 (0.001)	0.289 (0.001)	-0.405 (0.001)	-0.651 (0.001)	-0.079 (0.001)	0.181 (0.001)
<i>Non-GAAP Earnings</i>	0.946 (0.001)		-0.099 (0.001)	-0.076 (0.001)	-0.083 (0.001)	0.777 (0.001)	0.237 (0.001)	0.304 (0.001)	-0.392 (0.001)	-0.605 (0.001)	-0.053 (0.001)	0.166 (0.001)
<i>Total Exclusions</i>	-0.272 (0.001)	-0.069 (0.001)		0.833 (0.001)	0.756 (0.001)	-0.144 (0.001)	-0.092 (0.001)	-0.039 (0.001)	0.146 (0.001)	0.301 (0.001)	0.091 (0.001)	-0.087 (0.001)
<i>Special Items</i>	-0.199 (0.001)	-0.045 (0.001)	0.610 (0.001)		0.267 (0.001)	-0.071 (0.001)	-0.078 (0.001)	-0.017 (0.001)	0.085 (0.001)	0.233 (0.001)	0.065 (0.001)	-0.047 (0.001)
<i>Other Exclusions</i>	-0.226 (0.001)	-0.067 (0.001)	0.837 (0.001)	0.222 (0.001)		-0.167 (0.001)	-0.067 (0.001)	-0.048 (0.001)	0.154 (0.001)	0.249 (0.001)	0.081 (0.001)	-0.097 (0.001)
<i>Future Op. Income</i>	0.750 (0.001)	0.757 (0.001)	-0.121 (0.001)	-0.050 (0.001)	-0.135 (0.001)		0.182 (0.001)	0.301 (0.001)	-0.390 (0.001)	-0.545 (0.001)	-0.063 (0.001)	0.196 (0.001)
<i>Sales Growth</i>	0.366 (0.001)	0.376 (0.001)	-0.060 (0.001)	-0.040 (0.001)	-0.054 (0.001)	0.308 (0.001)		0.008 (0.009)	-0.073 (0.001)	-0.222 (0.001)	-0.138 (0.001)	-0.059 (0.001)
<i>Log (Total Assets)</i>	0.161 (0.001)	0.162 (0.001)	0.023 (0.001)	0.078 (0.001)	-0.008 (0.008)	0.189 (0.001)	-0.019 (0.001)		-0.346 (0.001)	-0.284 (0.001)	-0.305 (0.001)	0.238 (0.001)
<i>Earnings Volatility</i>	-0.246 (0.001)	-0.210 (0.001)	0.123 (0.001)	0.070 (0.001)	0.119 (0.001)	-0.227 (0.001)	0.007 (0.032)	-0.497 (0.001)		0.362 (0.001)	0.074 (0.001)	-0.173 (0.001)
<i>Loss</i>	-0.794 (0.001)	-0.720 (0.001)	0.282 (0.001)	0.214 (0.001)	0.229 (0.001)	-0.571 (0.001)	-0.227 (0.001)	-0.288 (0.001)	0.460 (0.001)		0.166 (0.001)	-0.161 (0.001)
<i>Book-to-Market Assets</i>	-0.008 (0.001)	0.005 (0.097)	0.050 (0.001)	0.029 (0.001)	0.045 (0.001)	-0.008 (0.007)	-0.071 (0.001)	-0.306 (0.001)	0.240 (0.001)	0.122 (0.001)		-0.008 (0.001)
<i>Log (Age)</i>	0.179 (0.001)	0.168 (0.001)	-0.065 (0.001)	-0.019 (0.001)	-0.079 (0.001)	0.208 (0.001)	-0.051 (0.001)	0.216 (0.001)	-0.148 (0.001)	-0.162 (0.001)	0.031 (0.001)	

There are a maximum of 104,954 firm-quarters for 7,904 firms for each variable. See Table 1 for additional information.

$$\begin{aligned}
\text{Future Operating Income}_{q+1, q+4} = & \alpha_0 + \alpha_1 \text{Non-GAAP Earnings}_q \\
& + \alpha_2 \text{Non-GAAP Exclusions}_q + \alpha_3 \text{POST} \\
& + \alpha_4 \text{Non-GAAP Exclusions}_q \times \text{POST} \\
& + \alpha_5 \text{Sales Growth} + \alpha_6 \text{Log(Total Assets)} \\
& + \alpha_7 \text{Earnings Volatility} + \alpha_8 \text{Loss} \\
& + \alpha_9 \text{Book-to-Market Assets} \\
& + \alpha_{10} \text{Log(Age)} + v_{q+1, q+4} \tag{1}
\end{aligned}$$

where *POST* is an indicator variable that equals 1 if the observation falls between Q3 2001 and Q3 2004 (inclusive), and 0 otherwise; all other variables are as defined earlier. We estimate least squares regressions and allow errors to cluster by CUSIP to account for any residual dependence created by firm effects, as Petersen (2005) shows that this method yields unbiased standard errors. We also include time and industry fixed effects, where industries are defined using the Fama-French 48 industry classification (Fama and French 1997). Because all variables are denominated in dollars and scaled by total assets, the coefficients in Equation (1) can be interpreted as the future-dollar-earnings implication of a dollar change in the unscaled independent variable (Doyle et al. 2003, 153).

Results are presented in Table 4. First, α_1 is 2.44, where perfectly permanent earnings would have an estimated coefficient of 4.00. Turning to our second independent variable, Doyle et al. (2003) document a negative relation between non-GAAP exclusions and future performance, which they interpret as evidence that the excluded items are recurring; therefore we expect α_2 to be negative. Referring to Table 4, α_2 is -0.55 ; consistent with Doyle et al. (2003), the non-GAAP exclusions are not perfectly transitory, but on average are more transitory than core earnings. One dollar of excluded expenses this quarter is expected to result in 55 cents of expenses over the next four quarters.

If SEC intervention into non-GAAP reporting has improved the quality of exclusions, then this relation should be less negative in the later time period, i.e., the exclusions should be more transitory. We examine the interaction between *POST* and *Non-GAAP Exclusions* to shed light on H1. Focusing first on our full sample, α_4 is 0.31, suggesting that there has been a large improvement in the quality of exclusions from non-GAAP earnings following SEC scrutiny of non-GAAP reporting (i.e., the exclusions are more transitory). In economic terms, prior to SEC intervention, \$1 of exclusions is associated with 55 cents of expenses over the next four quarters, as described above. After SEC intervention, \$1 of exclusions is associated with 24 cents of expenses over the next four quarters ($-0.55 + 0.31$). This decline is also apparent in our non-zero exclusions sample, but we find that α_4 is insignificant in our constant sample. Thus, we provide some evidence that exclusions have improved in quality following SEC intervention.

Hypothesis 2

We next test H2—the quality of non-GAAP exclusions is no different for firms that stopped releasing non-GAAP earnings following the SEC intervention compared to the average firm. We identify “stopped” firms as those that have non-zero exclusions in more than 50 percent of their quarterly observations prior to mid-2001, but have no exclusions

TABLE 4
Model of Future Operating Income on Exclusions and Control Variables

Dependent Variable: *Future Operating Income*

Independent Variables	Predicted Sign	Full Sample Coefficient (t-statistic)	Non-Zero Exclusions Coefficient (t-statistic)	Constant Sample Coefficient (t-statistic)
Intercept		-0.01 (-1.41)	0.00 (0.10)	0.03 (2.04)
<i>Non-GAAP Earnings</i>	+	2.44 (72.34)	2.33 (40.23)	2.57 (34.33)
<i>Non-GAAP Exclusions</i>	-	-0.55 (-8.35)	-0.55 (-8.42)	-0.29 (-3.66)
<i>POST</i>		0.01 (4.81)	0.00 (0.66)	-0.00 (-0.55)
<i>Non-GAAP Exclusions</i> × <i>POST</i>	+	0.31 (4.29)	0.29 (3.94)	0.07 (0.90)
<i>Sales Growth</i>		-0.01 (-0.68)	-0.02 (-1.60)	0.01 (1.41)
<i>Log (Total Assets)</i>		0.00 (8.56)	0.00 (3.52)	-0.00 (-1.10)
<i>Earnings Volatility</i>		-0.24 (-12.62)	-0.22 (-8.79)	-0.24 (-6.60)
<i>Loss</i>		-0.03 (-16.26)	-0.02 (-11.88)	-0.01 (-4.15)
<i>Book-to-Market Assets</i>		-0.01 (-2.56)	-0.02 (-4.05)	-0.02 (-5.78)
<i>Log (Age)</i>		0.01 (10.30)	0.01 (8.01)	0.00 (5.33)
Time Fixed Effects		Included	Included	Included
Industry Fixed Effects		Included	Included	Included
R ²		63.38%	54.79%	62.67%
Number of Firm-Quarters		104,954	30,955	52,553
Number of Firms		7,904	6,135	2,126

POST = an indicator variable that is equal to 1 if the firm-quarter observation occurs between 2001 Q3 and 2004 Q3 (inclusive), and 0 if the firm-quarter observation occurs between 1998 Q2 and 2001 Q2 (inclusive).

Each regression includes time fixed effects and industry fixed effects defined over the Fama-French 48 industry classification. The errors are allowed to cluster by CUSIP.

See Table 1 for additional information.

from GAAP earnings in any of their quarterly observations following SEC scrutiny.^{18,19}

¹⁸ Results are similar using varying cutoffs. Among others, we considered at least 60 percent usage before and 0 percent usage after SEC scrutiny. This cutoff decreases the sample size somewhat (22 firms for the full sample), but does not materially affect the statistical inferences. The sample of “stoppers” increases dramatically if we allow for limited post-SEC non-GAAP disclosures following extensive use in the pre-scrutiny period (e.g., at least 65 percent usage prior to the SEC scrutiny, but less than 35 percent usage following the scrutiny). Results are similar.

¹⁹ We require that a firm has at least three observations in both the pre- and post-SEC intervention periods, to assure that results are not driven by firms that are removed from the Quarterly Compustat file.

Within our full sample, we identify 28 firms as “stoppers” in the pre-SEC intervention period. We present descriptive statistics for our stopped sample both for the full sample (389 firm-quarters) and across the two time periods in Table 5. Mean GAAP earnings, on average, are lower than in our full sample, but are similar to the non-zero exclusions sample from Table 1. Turning to the split between the two time-periods, the earnings appear to be lower in the earlier period, though this difference is not statistically significant. Total exclusions in the pre-period are 0.086 versus, by construction, 0.000 in the post-period. Sales growth declines dramatically over the two periods, and merger and acquisition (M&A) activity also falls; therefore, we add M&A as an additional control variable in our tests of H2.

To shed light on the types of items that the stoppers are excluding and on the transparency of their disclosures, we collect for each firm in our stopper sample one press release from a single quarter with non-zero total exclusions and one press release from a control firm matched on calendar quarter-year, industry, and the use of non-GAAP earnings (per I/B/E/S). For these 56 firms, we search Factiva for their earnings press releases.²⁰ We first examine whether non-GAAP earnings is reconcilable to GAAP earnings. In the instances where the press releases contain a non-GAAP earnings number, we are able to reconcile non-GAAP to GAAP earnings for 55 percent of our test firms and 71 percent of our control firms, consistent with stoppers providing less transparent disclosures.

Second, while it is difficult to neatly categorize the wide variety of items that non-GAAP disclosers exclude from reported earnings (see Bhattacharya et al. [2004] or Entwistle et al. [2006] for lists of “typical” exclusions), there is some evidence that the types of items excluded from non-GAAP earnings vary between our test and control firms. For example, stoppers exclude amortization of goodwill and other intangibles more often than control firms (20 percent for test firms versus 4.8 percent for control firms) and also exclude compensation charges more frequently (15 percent versus 9.5 percent). However, stoppers are not more likely to exclude merger and acquisition charges (35 percent versus 38.1 percent) or restructuring charges (20 percent versus 19 percent) than control firms. This suggests that stoppers are more likely to use their reporting discretion to exclude recurring charges, but are equally likely as non-stoppers to exclude one-time items that are economically driven. This descriptive analysis provides some preliminary evidence on H2. Stoppers appear to provide less transparent disclosures and exclude recurring charges more often than their industry peers. However, this analysis is purely descriptive; we now turn to our statistical tests of H2.

To test H2, we examine the differential quality of the exclusions for stoppers relative to the full sample. Thus, we estimate the following pooled regression from the second quarter of 1998 through the second quarter of 2001 (i.e., we restrict the sample to the pre-SEC intervention period):

²⁰ We select the first available observation in 1999 and in one instance take the observation from the fourth quarter of 1998 (as we want to unambiguously precede the SEC scrutiny). We are able to find 25 press releases for the control firms, and 24 press releases and one newswire earnings announcement summary for the sample of stoppers. We are able to identify non-GAAP earnings in 21 (20) of the control firms' (stoppers') press releases. This finding is consistent with Bhattacharya et al. (2003) and Gu and Chen (2004): analysts sometimes make adjustments to earnings that managers do not explicitly incorporate in the press release.

TABLE 5
Descriptive Statistics for the “Stopped” Sample (28 firms)

Variable	Full Stopped Sample (389 firm-quarters)		1998 Q2 through 2001 Q2 (199 firm-quarters)		2001 Q3 through 2004 Q3 (190 firm-quarters)		Two-Tailed p-value for Statistical Difference of the Means under a t-test/Wilcoxon Rank Sum Test
	Mean	Median	Mean	Median	Mean	Median	
<i>GAAP Earnings</i>	0.044	0.040	0.030	0.050	0.058	0.040	0.379/0.953
<i>Non-GAAP Earnings</i>	0.086	0.050	0.112	0.090	0.058	0.040	0.043/0.020
<i>Total Exclusions</i>	0.042	0.000	0.082	0.010	0.000	0.000	0.001/0.001
<i>Special Items</i>	0.020	0.000	0.040	0.000	0.000	0.000	0.001/0.001
<i>Other Exclusions</i>	0.022	0.000	0.042	0.000	0.000	0.000	0.001/0.001
<i>Future Operating Inc.</i>	0.273	0.190	0.208	0.220	0.342	0.190	0.250/0.950
<i>Sales Growth</i>	0.388	0.114	0.681	0.262	0.080	0.022	0.001/0.001
<i>Total Assets</i>	1,574	135	2,240	188	877	105	0.025/0.001
<i>Earnings Volatility</i>	0.048	0.023	0.037	0.017	0.058	0.029	0.002/0.021
<i>Loss</i>	0.357	0.000	0.362	0.000	0.353	0.000	0.851/0.851
<i>Book-to-Market Assets</i>	0.356	0.265	0.335	0.242	0.378	0.291	0.163/0.027
<i>Age</i>	11.298	9.000	10.156	9.000	12.495	9.500	0.001/0.001
<i>M&A</i>	0.013	0.000	0.025	0.000	0.000	0.000	0.025/0.028

Stopped firms are those that have a difference between GAAP and non-GAAP earnings in more than 50 percent of the quarters prior to the SEC scrutiny and in none of the quarters in the post-SEC scrutiny period. We require at least three quarters of data both prior to and after the SEC intervention for a firm to be included in the “stopped” sample. There are 28 individual firms in the full sample that fit this description.

M&A = an indicator variable equal to 1 if the Sales footnote in Compustat quarterly (QFTNT1) indicates M&A activity (takes a value of “AA” or “AB”), and 0 otherwise.

See Table 1 for additional information.

$$\begin{aligned}
\text{Future Operating Income}_{q+1, q+4} = & \beta_0 + \beta_1 \text{Non-GAAP Earnings}_q \\
& + \beta_2 \text{Non-GAAP Exclusions}_q + \beta_3 \text{STOP} \\
& + \beta_4 \text{Non-GAAP Exclusions}_q \times \text{STOP} \\
& + \beta_5 \text{Sales Growth} + \beta_6 \text{Log(Total Assets)} \\
& + \beta_7 \text{Earnings Volatility} + \beta_8 \text{Loss} \\
& + \beta_9 \text{Book-to-Market Assets} \\
& + \beta_{10} \text{Log(Age)} + \beta_{11} \text{M\&A} + v_{q+1, q+4} \quad (2)
\end{aligned}$$

where *STOP* is an indicator variable that is equal to 1 if the firm used non-GAAP reporting in more than 50 percent of the quarters prior to SEC intervention (i.e., in the period examined in this test), and none of the quarters following SEC intervention. As with Equation (1), we estimate least squares regressions and allow errors to cluster by CUSIP. We again include time and industry fixed effects.

Full sample results are presented in the left-hand column of Table 6. First, β_1 is 2.46, which is almost identical to the coefficient of 2.44 in Table 4. Interestingly, the main effect of non-GAAP exclusions, β_2 , is only -0.41 compared to -0.55 in Table 4. The reason becomes obvious as we turn to our coefficient of interest, β_4 , which is -1.30 . Those firms that stopped reporting non-GAAP earnings following SEC intervention had lower quality exclusions than the average firm reporting non-GAAP earnings in the period prior to SEC intervention; the exclusions of “stop” firms are expected to be associated with \$1.71 of expenses over the next four quarters ($-0.41 + -1.30$). We replicate this test for our non-zero exclusions sample and our constant sample; results are consistent for both of these alternative samples. Overall, our results suggest that the firms that stopped reporting non-GAAP financial measures had the lowest quality exclusions prior to the SEC scrutiny, suggesting they had been using these disclosures opportunistically.²¹ These results have important implications for regulators, as it appears that SEC oversight was effective, at least in part, in curtailing the misuse of non-GAAP reporting. These results also complement findings by Heflin and Hsu (2005), who find that firms are less likely to meet earnings benchmarks using non-GAAP earnings numbers in the period following the SEC’s actions.²²

Hypothesis 3

Hypothesis 3 examines whether SEC intervention in non-GAAP reporting affects the quality of the exclusion components. We therefore decompose total exclusions into special items and other exclusions and estimate the following pooled regression:

²¹ It is possible that high-exclusion-usage firms are going through a transitional period that is unrelated to SEC scrutiny but results in lower quality exclusions. Thus, we examine firms that “started” using non-GAAP earnings. Starters are those that had more than 50 percent usage in the post-period but zero usage in the pre-period (33 firms). We then re-estimate model (2) in the post period finding that the results are not significant, β_4 is -0.34 (t-statistic = -0.86).

²² To obtain further descriptive evidence on H2, we also calculated statistics on the frequency of using non-GAAP earnings to meet two common earnings benchmarks. Consistent with Heflin and Hsu (2005), we find that the 28 stopper firms were more likely than test firms to use non-GAAP earnings to exceed four-quarters-ago GAAP earnings (25 percent versus 14.8 percent) or avoid a loss (21.4 percent versus 14.3 percent).

TABLE 6
Model of Future Operating Income on Exclusions and Stopped Firms

Dependent Variable: *Future Operating Income*

Independent Variables	Predicted Sign	Full Sample Coefficient (t-statistic)	Non-Zero Exclusions Coefficient (t-statistic)	Constant Sample Coefficient (t-statistic)
Intercept		-0.01 (-0.88)	0.00 (0.16)	0.02 (1.37)
<i>Non-GAAP Earnings</i>	+	2.46 (56.54)	2.19 (29.98)	2.71 (25.95)
<i>Non-GAAP Exclusions</i>	-	-0.41 (-6.22)	-0.44 (-6.36)	-0.27 (-3.38)
<i>STOP</i>		0.01 (0.63)	0.01 (0.68)	0.03 (2.28)
<i>Non-GAAP Exclusions</i> × <i>STOP</i>	-	-1.30 (-2.20)	-1.31 (-2.13)	-1.58 (-4.40)
<i>Sales Growth</i>		-0.03 (-2.79)	-0.07 (-4.00)	-0.01 (-0.77)
<i>Log (Total Assets)</i>		0.00 (6.22)	0.00 (2.25)	-0.00 (-1.74)
<i>Earnings Volatility</i>		-0.36 (-11.11)	-0.38 (-8.26)	-0.22 (-4.41)
<i>Loss</i>		-0.03 (-12.75)	-0.03 (-9.96)	-0.01 (-1.83)
<i>Book-to-Market Assets</i>		0.00 (0.13)	-0.01 (-1.63)	-0.01 (-2.75)
<i>Log (Age)</i>		0.01 (8.17)	0.01 (7.42)	0.01 (5.27)
<i>M&A</i>		0.01 (2.32)	0.01 (1.01)	0.00 (0.47)
Time Fixed Effects		Included	Included	Included
Industry Fixed Effects		Included	Included	Included
R ²		62.40%	52.46%	62.43%
Stopped Firms		28	28	2
Stopped Firm-Quarters		199	138	26
Number of Firms		6,468	4,766	2,126
Number of Firm-Quarters		52,601	14,475	26,356

STOP = indicator variable that is equal to 1 if there was a difference between GAAP and non-GAAP earnings in more than 50 percent of the quarters prior to the SEC scrutiny and a difference in none of the quarters in the post-SEC scrutiny period; and

M&A = indicator variable equal to 1 if there was a merger or acquisition in the period, and 0 otherwise.

Each regression includes time fixed effects and industry fixed effects defined over the Fama-French 48 industry classification. The errors are allowed to cluster by CUSIP.

See Table 1 for additional information.

$$\begin{aligned}
\text{Future Operating Income}_{q+1, q+4} = & \gamma_0 + \gamma_1 \text{Non-GAAP Earnings}_q \\
& + \gamma_2 \text{Special Items}_q \\
& + \gamma_3 \text{Other Exclusions}_q + \gamma_4 \text{POST} \\
& + \gamma_5 \text{Special Items}_q \times \text{POST} \\
& + \gamma_6 \text{Other Exclusions}_q \times \text{POST} \\
& + \gamma_7 \text{Sales Growth} + \gamma_8 \text{Log(Total Assets)} \\
& + \gamma_9 \text{Earnings Volatility} + \gamma_{10} \text{Loss} \\
& + \gamma_{11} \text{Book-to-Market Assets} \\
& + \gamma_{12} \text{Log(Age)} + v_{q+1, q+4}.
\end{aligned} \tag{3}$$

Again we estimate least squares regressions, allowing errors to cluster by CUSIP, and include time and industry fixed effects. Results are presented in Table 7, Panel A. Referring first to the main effects, consistent with Doyle et al. (2003), the low-quality exclusions appear to be concentrated in other exclusions. Unlike in Doyle et al. (2003), however, in the earlier time period special items have positive and significant future earnings implications, consistent with Burgstahler et al. (2002); this difference is driven by our choice of control variables. We present regression results using the Doyle et al. (2003) control variables in Table 7, Panel B, and discuss these results below.

Turning to our interaction terms, there is evidence that other exclusions are more transitory following SEC intervention; γ_6 is positive and significant in all three samples. For example, in the full sample, the estimated coefficient on other exclusions is -1.73 in the earlier time period but only -1.07 ($-1.73 + 0.66$) in the later time period. Therefore, there is strong evidence of an increase in the quality of the other exclusions component of total exclusions following SEC intervention, and this finding holds in each of our samples.

Alternatively, we find that special items have become of lower quality over time. In particular, the estimated coefficient on special items interacted with *POST* is negative and significant in all three samples. For the full sample, the coefficient on special items is 0.56 in the earlier time period and 0.27 ($0.56 - 0.29$) in the later time period, consistent with more recurring items being included in special items in the later time period, reducing the positive impact of special items on future earnings.

Turning to Table 7, Panel B, we present regression results using the control variables from Doyle et al. (2003). The interaction term *Other Exclusions* \times *POST* continues to support the notion that other exclusions have become more transitory, while the interaction term *Special Items* \times *POST* continues to be negative and significant, suggesting special items have become of lower quality. The net effect for special items in the post-period is now negative ($0.03 - 0.23 = -0.20$), consistent with special items becoming less transitory.

Jointly, these tables provide strong evidence that while SEC scrutiny appears to have improved the quality of other exclusions, there may have been an unintended consequence for the quality of special items. While excluding “other” expenses from non-GAAP earnings in the period prior to SEC intervention was both relatively inexpensive and easily concealed through a lack of disclosure, our results suggest that managers have adapted to an alternate reporting strategy in the post-SEC intervention period by shifting more recurring items into special items. This finding is consistent with Entwistle et al. (2006), who report that the frequency of special item exclusions from non-GAAP earnings increased dramatically from 2001–2003 for S&P 500 firms. While special items are included in SEC

TABLE 7
Model of Future Operating Income on Special Items and Other Exclusions

Dependent Variable: Future Operating Income

Independent Variables	Predicted Sign	Full Sample Coefficient (t-statistic)	Non-Zero Exclusions Coefficient (t-statistic)	Constant Sample Coefficient (t-statistic)
Panel A: Using Original Control Variables				
Intercept		-0.01 (-1.57)	-0.00 (-0.05)	0.03 (2.04)
<i>Non-GAAP Earnings</i>	+	2.44 (73.13)	2.35 (41.90)	2.56 (34.39)
<i>Special Items</i>	?	0.56 (8.42)	0.53 (7.79)	0.25 (3.80)
<i>Other Exclusions</i>	-	-1.73 (-14.60)	-1.74 (-15.07)	-1.13 (-5.85)
<i>POST</i>		0.01 (5.68)	0.01 (2.40)	-0.00 (-0.06)
<i>Special Items</i> × <i>POST</i>	?	-0.29 (-3.41)	-0.31 (-3.59)	-0.21 (-2.38)
<i>Other Exclusions</i> × <i>POST</i>	+	0.66 (4.52)	0.62 (4.24)	0.41 (2.06)
<i>Sales Growth</i>		-0.00 (-0.55)	-0.02 (-1.45)	0.01 (1.28)
<i>Log (Total Assets)</i>		0.00 (8.70)	0.00 (3.57)	-0.00 (-1.19)
<i>Earnings Volatility</i>		-0.22 (-11.96)	-0.18 (-7.44)	-0.23 (-6.37)
<i>Loss</i>		-0.03 (-16.23)	-0.02 (-11.56)	-0.01 (-4.29)
<i>Book-to-Market Assets</i>		-0.01 (-2.19)	-0.01 (-3.70)	-0.02 (-5.77)
<i>Log (Age)</i>		0.01 (9.90)	0.01 (7.42)	0.00 (5.24)
Time Fixed Effects		Included	Included	Included
Industry Fixed Effects		Included	Included	Included
R ²		63.85%	56.90%	62.93%
Number of Firm-Quarters		104,954	30,955	52,553
Number of Firms		7,904	6,135	2,126
Panel B: Using Control Variables from Doyle et al. (2003)				
Intercept		0.00 (0.33)	0.01 (0.48)	0.02 (2.08)
<i>Non-GAAP Earnings</i>	+	2.84 (106.23)	2.71 (58.84)	2.77 (47.33)
<i>Special Items</i>	?	0.03 (0.41)	0.04 (0.52)	-0.04 (-0.59)

(continued on next page)

TABLE 7 (continued)

Dependent Variable: Future Operating Income

Independent Variables	Predicted Sign	Full Sample	Non-Zero Exclusions	Constant Sample
		Coefficient (t-statistic)	Coefficient (t-statistic)	Coefficient (t-statistic)
<i>Other Exclusions</i>	–	–2.28 (–19.03)	–2.25 (–19.22)	–1.41 (–7.03)
<i>POST</i>		0.01 (6.78)	0.01 (3.47)	0.00 (0.84)
<i>Special Items</i> × <i>POST</i>	?	–0.23 (–2.67)	–0.26 (–2.99)	–0.22 (–2.44)
<i>Other Exclusions</i> × <i>POST</i>	+	0.58 (3.86)	0.55 (3.69)	0.34 (1.64)
<i>Sales Growth</i>		0.02 (1.79)	–0.00 (–0.31)	0.03 (3.01)
<i>Accruals</i>		–0.35 (–20.78)	–0.34 (–13.69)	–0.19 (–9.06)
Time Fixed Effects		Included	Included	Included
Industry Fixed Effects		Included	Included	Included
R ²		64.04%	56.98%	63.376%
Number of Firm-Quarters		90,129	27,430	46,057
Number of Firms		6,758	5,267	1,875

POST = indicator variable that is equal to 1 if the firm-quarter observation occurs between 2001 Q3 and 2004 Q3 (inclusive), and 0 if the firm-quarter observation occurs between 1998 Q2 and 2001 Q2 (inclusive).

Each regression includes time fixed effects and industry fixed effects defined over the Fama-French 48 industry classification. The errors are allowed to cluster by CUSIP.

Accruals = calculated as the difference between net income before extraordinary items per share and cash from operations per share, and is scaled by assets per basic share outstanding (#44/#15).

See Table 1 for additional information.

filings that are audited or reviewed, the recurring items can be concealed in charges such as “restructuring” or “Y2K expenses” both before and after SEC intervention.

Thus far, we are not able to determine whether our result on special items is due to firms “switching” from reporting low-quality other exclusions in the pre-intervention period to low-quality special item exclusions in the post-intervention period, or due to firms independently initiating a strategy of including more recurring items in special items in the post-intervention period. This is an important distinction, as the former scenario is more consistent with SEC intervention driving the change, while the latter could be attributed to economic events. We therefore examine whether the decline of other exclusions usage across the two periods is linked with the decrease in the quality of special items in the latter period. We find that in the post-SEC scrutiny period, special items are of the lowest quality for firms that had reduced their reporting of other exclusions since the SEC scrutiny (results not tabulated). This evidence is consistent with managers adapting their earnings management mechanisms in response to the SEC actions.

Robustness Checks

Sensitivity to the Cutoff between Pre- and Post-Scrutiny

Our main analysis uses the second quarter of 2001 as the final quarter of the pre-intervention period because the SEC actively and publicly scrutinized non-GAAP reporting beginning in mid-2001. However, SOX was not approved until August 2002, and Reg G did not become effective until March 2003. In this section, we investigate whether our results are sensitive to the cutoff used. We consider three alternative cutoffs for H1. For the first two alternative cutoffs, we roll our sample back one quarter and forward one quarter. Results (not tabulated) are not sensitive to these changes to the cutoff period. We also consider only eight quarters from each period and exclude 2001 and 2002 entirely; again results are not sensitive to this alternative specification. As such, our conclusions are not dependent on the cutoff we use for SEC intervention.

Alternative Dependent Variable

We replicate our results using future GAAP earnings (data item #19 summed over $q+1$ to $q+4$) as an alternative dependent variable (not tabulated). In our test of H1 (corresponding to Table 4), the main effect of total exclusions is larger in magnitude than in Table 4 (-0.99 versus -0.55), consistent with special items exhibiting autocorrelation. This result may be due to economic events (such as a multiple-year restructuring charge), which supports our choice of using operating earnings as our main dependent variable. However, the results are very similar overall using this alternative dependent variable.

The Effects of Accounting Changes—SFAS No. 142 and SFAS No. 123R

There have been several changes to accounting standards in our sample period. The two most relevant to our study are SFAS No. 142 and SFAS No. 123R. SFAS No. 142, effective for fiscal years beginning after December 15, 2001, eliminates the amortization of goodwill and requires managers to recognize impairment losses if the assessed value of goodwill falls below the book value of goodwill. This change has important implications for our study. Prior to 2002, goodwill amortization was a possible exclusion from non-GAAP earnings (see Bhattacharya et al. 2004). Because goodwill amortization is a recurring item, it would constitute a “poor-quality” exclusion using our methodology.²³ However, goodwill impairments tend to be one-time events and thus would be “high-quality” exclusions. While initial goodwill impairments in fiscal 2002 were recorded as a change in accounting principles and therefore do not fall into our definition of exclusions, we explicitly examine the potential impact of SFAS No. 142 as a robustness check.²⁴ We consider two alternate specifications: we eliminate firm-quarters with goodwill impairments and eliminate firm-quarters with non-zero goodwill on the balance sheet. Our results are consistent under these alternative specifications.

SFAS No. 123R, effective for fiscal years beginning after June 15, 2005, requires the expensing of employee stock options. While this effective date falls after the end of our sample period, some firms began voluntarily expensing employee stock options during our sample period. Descriptive evidence by Entwistle et al. (2006) shows that exclusions

²³ Interestingly, the exclusion of goodwill is not systematic among the same firms. Bhattacharya et al. (2004) find that the same firm will sometimes exclude goodwill amortization and at other times not exclude it, highlighting the subjectivity of non-GAAP exclusions.

²⁴ Entwistle et al. (2006) report that the frequency of accounting change exclusions increased substantially over 2001–2003 for S&P 500 firms. However, because we use the Compustat definition of earnings before extraordinary items, which excludes the cumulative effects of accounting changes, as our measure of GAAP earnings, accounting changes are excluded from our analyses.

of stock compensation expenses from non-GAAP earnings reported in the press releases of S&P 500 firms remained roughly constant over 2001–2003, which would suggest that would be no change in the quality of total exclusions over the pre- and post-SEC intervention periods due to voluntary expensing of stock compensation.

I/B/E/S analysts, however, diverge in their treatment of stock compensation expenses: some exclude them from their forecasts and actual earnings, while others include the expenses. I/B/E/S responds by going with the majority for each firm, though they commented that the trend is to include these expenses in earnings. If I/B/E/S analysts exclude these expenses from core earnings, we would expect to see a *decrease* in the quality of total exclusions; we find the opposite for total exclusions. While we do present evidence that special items have decreased in quality, stock option expenses fall into “other exclusions” rather than into special items.²⁵ Thus, to the extent that analysts exclude these expenses from core earnings, this will weaken the strength of our tests.

Alternative Event Date

We are interested in changes to non-GAAP reporting in response to SEC intervention, not the natural evolution of non-GAAP reporting. As such, it is important to verify that our results are unique to the SEC intervention period. We replicate H1 for the 26 quarters directly preceding our test period, Q4 1991–Q1 1998 (results not tabulated). In support of SEC intervention causing the changes to exclusion quality in our main analysis, we find no improvement in the quality of exclusions over this alternative time period for any of our three samples (which were re-created for the alternative time period). We also find no evidence that the firms that stopped issuing non-GAAP earnings had lower quality exclusions prior to stopping and find no significant changes in the components of total exclusions (special items and other) around our alternative event date.

V. CONCLUSION

We examine empirically the effects of intensified scrutiny over non-GAAP reporting on the quality of non-GAAP earnings exclusions. We find that, on average, exclusions are of higher quality following intervention by the Securities and Exchange Commission (SEC) into non-GAAP reporting. We further find that firms that stopped releasing non-GAAP earnings numbers after the SEC intervention had lower quality exclusions in the pre-intervention period. These results are consistent with the SEC’s objectives of improving the quality of non-GAAP earnings figures. However, when we decompose total exclusions into special items and other exclusions, we find evidence that the quality of special items has decreased in the post-intervention period, which suggests that managers adapted to the new disclosure environment by shifting recurring expenses into special items. This suggests that there may be unintended consequences arising from the heightened scrutiny over non-GAAP reporting.

There are limitations to the study. Because we rely on I/B/E/S as our data source for non-GAAP earnings, it is possible that our results are attributable to changes in analyst behavior rather than manager behavior. We believe this is unlikely for several reasons. First, the regulatory actions taken by the SEC were directed at firms, not analysts, and managers therefore have greater incentives than do analysts to change their non-GAAP reporting practices. Second, Gu and Chen (2004) show that analysts begin with the press release figure and re-insert the most permanent expenses to core earnings. As a result, there tends

²⁵ Stock option expenses are included in selling, general, and administrative expenses.

to be a relatively high degree of correspondence between press release and analyst figures. Last, prior research using press release data (Marques 2006) has already documented a decrease in the frequency of non-GAAP reporting that cannot be attributed to analyst behavior, which gives us greater confidence that managerial behavior is the primary driver. However, we acknowledge the possibility that the reconciliation of non-GAAP earnings with the most directly comparable GAAP figure may improve analysts' ability to define core earnings in the post SEC intervention period. While this possibility cannot explain our result showing that the quality of special items has declined in the post intervention period, it is consistent with our result for "other exclusions." This caveat should be kept in mind when interpreting the overall results.

A second limitation is our reliance on Compustat-defined special items. As noted in the paper, our interest is examining managerial behavior regarding special items versus other exclusions, yet our measure of special items is not defined by managers but by a database provider. We therefore necessarily assume a high degree of correspondence between managers' and Compustat's designation of special items. We believe this is a reasonable assumption since Compustat includes in its Special Items measure any item called "special" or "nonrecurring" by the firm, regardless of how frequently it is reported on firms' income statements. More importantly, we do not believe that our use of Compustat-defined special items biases our results in any particular direction. In addition, to rule out the possibility that a change in Compustat's definition of special items could explain our results, we contacted S&P directly and were assured that no such change occurred. However, to the extent that this information is incorrect, it may affect the accuracy of our inferences.

An additional limitation is that all of our tests and inferences are based on a single construct—the correlation of non-GAAP exclusions with future operating income. We acknowledge that there are numerous other ways of assessing the effectiveness of SEC intervention. Indeed, Marques (2006), who examines the change in frequency of non-GAAP reporting, and Heflin and Hsu (2005), who examine changes in the likelihood that non-GAAP numbers exceed earnings benchmarks, have already employed two of these alternative techniques. Other possibilities include examining changes in manager emphasis and presentation of non-GAAP numbers in press releases, as in Bowen et al. (2005), or dealing with the issue experimentally, as in Elliott (2006) or Frederickson and Miller (2004). Our approach is but one way to address this important question.

Last, we also acknowledge that a major part of the SEC intervention into non-GAAP reporting—Regulation G—was concurrent with other new requirements mandated by SOX, such as the certification of financial statements, restrictions on the composition of the board of directors and audit committees, and internal control disclosure requirements. It is possible that it is not the SEC actions related to non-GAAP reporting that brought about the changes in exclusion quality that we document, but rather some other unforeseen consequence related to SOX at large. *Ex ante*, however, it is not obvious how other effects associated with SOX might impact non-GAAP reporting, though we acknowledge this possibility.

The paper contributes to several streams of literature, including the literatures on non-GAAP reporting, disclosure regulation, and the effects of Sarbanes-Oxley. Given our results showing that managers adapt to the new disclosure environment by shifting recurring expenses into special items, future research might address whether managers also adjust their disclosure strategies in other ways.

REFERENCES

- Bhattacharya, N., E. Black, T. Christensen, and C. Larson. 2003. Assessing the relative informativeness and permanence of pro forma earnings and GAAP operating earnings. *Journal of Accounting and Economics* 36: 285–319.
- , ———, ———, and R. Mergenthaler. 2004. Empirical evidence on recent trends in pro forma reporting. *Accounting Horizons* 18: 27–43.
- , ———, ———, and ———. 2007. Who trades on pro forma earnings information? *The Accounting Review* 82 (3): 581–620.
- Bowen, R., A. Davis, and D. Matsumoto. 2005. Emphasis on pro forma versus GAAP earnings in quarterly press releases: Determinants, SEC intervention, and market reactions. *The Accounting Review* 80: 1011–1038.
- Bradshaw, M. and R. Sloan. 2002. GAAP versus the Street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research* 40: 41–66.
- Burgstahler, D., J. Jiambalvo, and T. Shevlin. 2002. Do stock prices fully reflect the implications of special items for future earnings? *Journal of Accounting Research* 40: 585–612.
- Bushee, B. and C. Leuz. 2005. Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board. *Journal of Accounting and Economics* 39: 233–264.
- Cohen, D., A. Dey, and T. Lys. 2005a. The Sarbanes Oxley Act of 2002: Implications for compensation structure and risk-taking incentives of CEOs. Working paper, New York University, University of Chicago, and Northwestern University.
- , ———, and ———. 2005b. Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods. Working paper, New York University, University of Chicago, and Northwestern University.
- Collins, D., E. Maydew, and I. Weiss. 1997. Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics* 24: 39–67.
- , O. Li, and H. Xie. 2005. What drives the increased informativeness of earnings announcements over time? Working paper, The University of Iowa.
- Doyle, J., R. Lundholm, and M. Soliman. 2003. The predictive value of expenses excluded from pro forma earnings. *Review of Accounting Studies* 8: 145–174.
- , and M. Soliman. 2005. Do managers define “Street” earnings to meet or beat analyst forecasts? Working paper, University of Utah and Stanford University.
- Easton, P. 2003. Discussion of: The predictive value of expenses excluded from pro forma earnings. *Review of Accounting Studies* 8: 175–183.
- Elliott, W. 2006. Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *The Accounting Review* 81: 113–133.
- Engel, E., R. Hayes, and X. Wang. 2007. The Sarbanes-Oxley Act and firms’ going-private decisions. *Journal of Accounting and Economics* 44 (1–2): 116–145.
- Entwistle, G., G. Feltham, and C. Mbagwu. 2006. Financial reporting regulation and the reporting of pro forma earnings. *Accounting Horizons* 20: 39–55.
- Fama, E., and K. French. 1997. Industry costs of equity. *Journal of Financial Economics* 43: 153–193.
- Francis, J., D. Hanna, and L. Vincent. 1996. Causes and effects of discretionary asset write-offs. *Journal of Accounting Research* 34: 117–134.
- Frankel, R., and S. Roychowdhury. 2005. Testing the clientele effect: An explanation for non-GAAP earnings adjustments used to compute I/B/E/S earnings. Working paper, Washington University and Massachusetts Institute of Technology.
- , S. McVay, and M. Soliman. 2007. Street earnings and board independence. Working paper, Washington University, University of Utah, and Stanford University.
- Frederickson, J., and J. Miller. 2004. The effects of pro forma earnings disclosures on analysts’ and nonprofessional investors’ equity valuation judgments. *The Accounting Review* 79: 667–686.
- Givoly, D., and C. Hayn. 2000. The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics* 29: 287–320.

- Gu, Z., and T. Chen. 2004. Analysts' treatment of nonrecurring items in street earnings. *Journal of Accounting and Economics* 38: 129–170.
- 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.
- Heflin, F., K. R. Subramanyam, and Y. Zhang. 2003. Regulation FD and the financial information environment: Early evidence. *The Accounting Review* 78: 1–37.
- , and C. Hsu. 2005. The impact of the SEC's regulation of non-GAAP disclosures. Working paper, Florida State University and Purdue University.
- Li, H., M. Pincus, and S. Rego. 2008. Market reaction to events surrounding the Sarbanes-Oxley Act of 2002 and earnings management. *Journal of Law and Economics* (forthcoming).
- Lo, K. 2003. Economic consequences of regulated changes in disclosure: The case of executive compensation. *Journal of Accounting and Economics* 35: 285–314.
- Lougee, B., and C. Marquardt. 2004. Earnings informativeness and strategic disclosure: An empirical examination of “pro forma” earnings. *The Accounting Review* 79: 769–795.
- Marques, A. 2006. SEC interventions and the frequency and usefulness of non-GAAP financial measures. *Review of Accounting Studies* 11: 549–574.
- McVay, S. 2006. Earnings management using classification shifting: An examination of core earnings and special items. *The Accounting Review* 81: 501–531.
- Mulford, C., and E. Comiskey. 2002. *The Financial Numbers Game: Detecting Creative Accounting Tactics*. New York, NY: John Wiley & Sons.
- Nelson, M., J. Elliott, and R. Tarpley. 2002. Evidence from auditors about managers' and auditors' earnings management decisions. *The Accounting Review* 77 (Supplement): 175–202.
- Petersen, M. 2005. Estimating standard errors in finance data sets: Comparing approaches. Working paper, Northwestern University.
- Standard & Poor's. 2003. *Standard & Poor's Compustat User's Guide*. New York, NY: McGraw-Hill Companies, Inc.
- Yi, H. 2007. Has Regulation G improved the information quality of non-GAAP earnings disclosures? Working paper, University of Oklahoma.
- Zhang, I. 2007. Economic consequences of the Sarbanes-Oxley Act of 2002. *Journal of Accounting and Economics* 44 (1–2): 74–115.