

**Emphasis on Pro Forma versus GAAP Earnings in Quarterly Press Releases:  
Determinants, SEC intervention, and Market Reactions**

Robert M. Bowen

*University of Washington Business School, Seattle, WA 98195-3200, USA*

Angela K. Davis

*Washington University, Olin School of Business, St. Louis, MO 63130, USA*

Dawn A. Matsumoto

*University of Washington Business School, Seattle, WA 98195-3200, USA*

February 2004

We thank two anonymous referees, Mark Bradshaw, Qiang Cheng, Ted Christensen, Ole-Kristian Hope, Jane Kennedy Jollineau, Carol Marquardt, Shiva Rajgopal, Lisa Sedor, Terry Shevlin, Tzachi Zach and workshop participants at The 2003 CFEA Conference at Indiana University, Penn State University, Washington University, University of British Columbia, University of California-Riverside, University of Oregon, University of Toronto, The 2003 University of Utah Winter Accounting Conference and the University of Washington for their comments. We thank Josh Wool, Philip Wool, Juan Wang, Greg Sierra, Holly McCarthy, and Rukhein Davis for their research assistance. We also thank Corey Murata, University of Washington Business Computer-Based Services Librarian, for his assistance in data collection. Professors Bowen and Matsumoto recognize the financial support of the Accounting Development Fund and the Business School Research Fund at the University of Washington. Professor Bowen recognizes the support of the Herbert O. Whitten Professorship and Professor Matsumoto recognizes the support of the Lane A. Daley Faculty Fellowship.

## **Emphasis on Pro Forma versus GAAP Earnings in Quarterly Press Releases: Determinants, SEC intervention, and Market Reactions**

### **Abstract:**

Earnings press releases provide managers a means to emphasize alternative earnings metrics and perhaps influence the perceptions of firm stakeholders. Recent accounting scandals heightened public scrutiny of accounting disclosures and prompted regulators to issue advice regarding the content and composition of firms' earnings press releases. We explore the use of managerial emphasis as a disclosure tool and contribute to the current debate over pro forma earnings. Specifically, we examine (1) the determinants of emphasis placed on pro forma and GAAP earnings within quarterly earnings press releases, (2) whether there has been a shift away from (toward) emphasizing pro forma (GAAP) earnings, and (3) whether stock market reactions to earnings news were influenced by emphasis placed on metrics within the press release.

We consider two measures of emphasis: the *level* of emphasis (based on where pro forma and GAAP earnings are mentioned in the press release) and *relative* emphasis (the difference in placement between pro forma and GAAP earnings). Our results are consistent with managers being strategic in their emphasis on alternative earnings metrics, suggesting that placement of metrics within the earnings release is neither random nor boilerplate. We find that firms focus on metrics that are more value-relevant and portray more favorable firm performance. We also find that the extent to which the firm's press release is likely to be publicized in the news (i.e., the extent of media coverage) affects managers' emphasis decision. Further, our results indicate a highly significant shift toward (away from) GAAP (pro forma) emphasis in 2002 relative to 2001. Finally, our stock market tests suggest that greater emphasis on pro forma or GAAP earnings in the quarterly press release results in a larger reaction to the news. Overall, these findings are consistent with managers using emphasis in the earnings press release as a disclosure tool and this emphasis influencing at least one important stakeholder group.

Keywords: *press release; emphasis; metrics; disclosure; pro forma and GAAP earnings; determinants; stock market reactions.*

Data availability: *All data used in this study are publicly available.*

## **Emphasis on Pro Forma versus GAAP Earnings in Quarterly Press Releases: Determinants, SEC intervention, and Market Reactions**

### **1. Introduction**

The quarterly announcement of financial results (hereafter, the “earnings release” or “press release”) is arguably one of the most important disclosure mechanisms used by managers to communicate their firm’s performance to shareholders and other stakeholder groups. Until recently, there was little regulation over the wording, format, or even the metrics included in the earnings release. This lack of regulation is at least partially responsible for the rise over the past decade in the reporting of alternative (non-GAAP) performance metrics such as “pro forma” earnings (Bradshaw and Sloan, 2002).<sup>1</sup> Several recent studies have examined the use of and market reaction to pro forma earnings numbers (Bhattacharya et al, 2003; Lougee and Marquardt, 2004). The Securities and Exchange Commission (SEC) has closely monitored pro forma reporting, first issuing cautionary advice on the use of pro forma earnings (SEC, 2001), and more recently passing Regulation G (SEC, 2002), which establishes rules for the use of non-GAAP metrics (such as pro forma earnings).

The purpose of this paper is to examine the extent to which managers *strategically emphasize* performance metrics within their earnings press release.<sup>2</sup> We examine a context where managers report both pro forma and GAAP earnings and thus, have the ability to place different levels of emphasis on the two metrics in the quarterly press release. Thus, this paper examines a different aspect of the use of non-GAAP metrics than has been considered in prior studies. Rather than examining the *choice to report* pro forma earnings, we examine factors associated with the *emphasis placed* on pro forma earnings compared

---

<sup>1</sup> Pro forma earnings are earnings that have been adjusted in a way not recognized by GAAP – for example, adding back stock-compensation related charges and goodwill amortization (pre-SFAS 141). GAAP earnings are either bottom-line earnings or a recognized above-line earnings number (such as earnings before discontinued operations or earnings before extraordinary items).

<sup>2</sup> By strategic emphasis we mean a conscious decision on the part of management to emphasize particular information. Gibbins, Richardson and Waterhouse (1990) refer to two dimensions to managing disclosures. One dimension is ritualistic, described as “a largely passive, even rote, adherence to perceived disclosure norms.” The second dimension is labeled “opportunistic” and is described as, “the propensity for firms to seek firm specific advantage in financial disclosure.” Rather than use the term “opportunistic,” we use the term “strategic” because we believe managers may be acting in the interest of shareholders by emphasizing the most value relevant measures. Thus, this paper provides evidence on whether press releases tend to be ritualistic (e.g., boiler-plate) or strategic.

to GAAP earnings, given that both numbers are reported. We also examine whether there has been a shift away from (toward) emphasizing pro forma (GAAP) earnings in response to the SEC's (2001) cautionary advice and heightened investor scrutiny of accounting disclosures following recent accounting scandals. Finally, we examine whether the emphasis placed on pro forma and GAAP earnings in quarterly press releases affects the stock market reaction to these numbers.

We hand-collect a sample of 1,518 earnings releases and measure emphasis in two ways. First, we measure the *level* of emphasis by identifying where pro forma and GAAP earnings are mentioned in the press release: 1) in the headline, 2) in the first or second paragraph, 3) further down in the body of the release, or 4) only in the financial statements provided at the end of the release. Based on this placement, we assign each firm-quarter a pro forma and a GAAP emphasis score, which allows us to assess the absolute importance of the performance metric in company press releases. Second, we measure *relative* emphasis by differencing the emphasis scores for pro forma and GAAP earnings. This is a proxy for the difference in importance (if any) between the two metrics as portrayed by management.

Using these two measures of emphasis, we examine whether 1) managers of firms with less value relevant earnings place greater (less) emphasis on pro forma (GAAP) earnings, 2) managers emphasize the metric that portrays better firm performance, 3) managers of firms with greater media coverage place greater (less) emphasis on pro forma (GAAP) earnings, and 4) managers of firms with more sophisticated investors place different emphasis on pro forma versus GAAP earnings. We also examine whether the emphasis on pro forma and GAAP earnings has *changed* subsequent to recent accounting scandals and regulatory warnings and whether changes in emphasis are associated with the extent of scrutiny to which a firm is subject.

Our results generally support the hypothesis that firms with less value-relevant earnings place greater relative emphasis on pro forma earnings. Firms in high-technology industries and firms with a history of prior losses place less emphasis on GAAP earnings (consistent with our hypotheses) and place greater *relative* emphasis on pro forma earnings, but do not appear to place greater *levels* of emphasis on pro forma earnings (contrary to conventional wisdom and inconsistent with our hypothesis). In a

supplemental test, we find evidence that these firms place greater emphasis on revenues, suggesting that firms do use emphasis as a disclosure tool, but that managers of firms with low value-relevance of earnings believe revenues are a better indicator of future performance.

Our results generally support the hypothesis that managers emphasize the metric that portrays better firm performance. Firms with positive seasonally adjusted changes in pro forma or GAAP earnings place greater emphasis on that metric. In addition, the subset of firms reporting pro forma profits but GAAP losses place more (less) emphasis on pro forma (GAAP) earnings (in terms of both the level of emphasis and the relative emphasis). Our results also provide some evidence that sample firms with greater media coverage are more (less) likely to emphasize pro forma (GAAP) earnings. Thus, it appears that the emphasis placed on various metrics within the earnings release is neither random nor boilerplate but, rather, focuses on the metric that portrays the more favorable story.

We compare the level of emphasis on pro forma and GAAP earnings in 2002 versus 2001 and find a highly significant decrease (increase) in the emphasis placed on pro forma (GAAP) earnings. We also report evidence that, subsequent to heightened SEC scrutiny on pro forma earnings, firms exposed to greater media coverage increase their emphasis on GAAP earnings and decrease their relative emphasis on pro forma earnings.

Overall, our results suggest that managers are strategic in the metrics that they emphasize in their press releases and that the net benefit of emphasizing non-GAAP metrics declined in 2002 subsequent to SEC cautions and other negative publicity. This paper contributes to the literature in three ways. First, we extend the disclosure literature by investigating how managers use emphasis as a disclosure tool within earnings press releases. The prior literature has examined a number of aspects of disclosure including the amount of information disclosed (Lang and Lundholm, 1993), the type of metrics disclosed (Bhattacharya et al, 2003; Lougee and Marquardt, 2004; Francis, Schipper and Vincent; 2002), and the mechanism through which information is disclosed (Bushee et al, 2002); however, few studies have examined the

emphasis placed on the information disclosed.<sup>3</sup> Our study most closely relates to Schrand and Walther (2000), who find that firms are more likely to “remind” readers about a prior period gain (as opposed to a loss) – resulting in a lower benchmark against which to compare the current period’s earnings. We expand on the idea of strategically reporting information but, rather than focusing on the type of information provided (e.g., a prior period gain/loss), we focus on the emphasis (positioning) of information within a release. Until recently, press releases represented one of the least constrained forms of public disclosure of accounting data, providing management the opportunity to frame their story as they see fit relatively unfettered by industry guidelines or SEC regulations. Given that the emphasis used in any news story or press release is key to understanding the underlying message, investors and other stakeholders should find managements’ interpretations to be potentially informative and thus should be interested in understanding managers’ motives for emphasizing one metric over another in their press releases.<sup>4</sup>

Second, our study contributes to the current debate over pro forma earnings. The emphasis placed on pro forma earnings numbers has caused considerable controversy in recent years, leading to the issuance of guidance regarding the placement of pro forma earnings within earnings releases (NIRI 2001, 2002; SEC 2001, 2002). These guidelines suggest that the emphasis on performance metrics within a press release is important to industry groups and the SEC, and warrants examination.

Third, we address the issue of whether managers are rational in their efforts to alter stakeholders’ perceptions through strategic emphasis. Because of the difficulty in measuring changes in non-investor stakeholders’ perceptions or actions, we choose to investigate whether emphasis affects the actions of investors – certainly one important audience for earnings press releases. Our findings suggest that greater emphasis on pro forma earnings results in a stronger market reaction to the pro forma earnings surprise

---

<sup>3</sup> Bradshaw and Sloan (2002) and Bhattacharya et al. (2003) both provide some descriptive data on the emphasis placed on pro forma earnings in press releases; however, neither study examines the determinants of the emphasis placed on various metrics or the stock market reaction to such emphasis. In addition, numerous prior studies have examined narratives provided in annual reports to explain corporate performance (e.g., Bettman and Weitz, 1983 and Aerts, 2001) but have not examined the emphasis placed on performance metrics.

<sup>4</sup> Conference calls are another disclosure tool that allow managers to interpret recent company performance. For firms that hold conference calls, earnings announcements are released shortly before the beginning of the call. We believe that the content and emphasis across these nearly simultaneous disclosure tools are likely to be similar but leave this to future research as the cost of collecting conference call transcripts is prohibitive.

reported in the quarterly earnings announcement. We also find similar, but slightly weaker, results for GAAP earnings. Thus, our results are consistent with managerial emphasis influencing at least one important stakeholder group – current and potential investors.

In the next section we develop the hypotheses tested in the paper. In section three we discuss our sample and provide descriptive statistics on the emphasis placed on pro forma versus GAAP performance in quarterly press releases. Section four presents the results of our analysis of the determinants of emphasis, including the *change* in emphasis on pro forma and GAAP earnings in 2002 relative to 2001. Section five discusses supplemental tests of the market's reaction to strategic emphasis. We offer concluding remarks in the last section.

## **2. Background and Hypothesis Development**

Numerous prior studies have examined managers' use of discretion over accounting numbers and related disclosures in order to meet various reporting goals. The results of these studies generally support the notion that managers believe they can influence stakeholders' perceptions about the firm by strategically reporting their accounting numbers or other disclosures. For example, evidence suggests that managers 1) manage earnings to influence capital markets, contracting, and regulators (see Healy and Wahlen 1999, for a review of this literature), and 2) provide voluntary disclosures (either directly via press release or indirectly via communications with intermediaries such as financial analysts) to avoid litigation costs (Skinner 1994, 1997) and to avoid negative earnings surprises (Matsumoto, 2002).

A natural extension to these studies of managerial discretion is to investigate whether managers influence stakeholders' perceptions by strategically emphasizing pro forma and/or GAAP earnings within their quarterly press release. We pursue this question by examining 1) whether emphasis on a particular metric is correlated with potential incentives for managers to highlight that metric and 2) whether emphasis alters investors' perceptions (i.e., whether the stock market reaction to a particular earnings metric is related to the emphasis placed on the metric). The second analysis is admittedly difficult

because accurately estimating a model of stock market reactions to emphasis is problematic.<sup>5</sup> Further, it is possible that the primary effect of strategic emphasis is on the perceptions of only a subset of investors (e.g., unsophisticated investors) and/or on non-investor stakeholders. Thus, we provide this analysis as supplemental evidence and focus the majority of the paper on the determinants of emphasis.

We believe emphasis is a potentially important disclosure tool for at least three reasons. First, the events of 2001 and 2002 suggest that emphasis in press releases was becoming an increasing concern among prominent industry groups and the SEC – see Figure 1. In April 2001, in response to the SEC’s concerns over *pro forma* reporting, the National Investor Relations Institute (NIRI) and the Financial Executives Institute (FEI) jointly issued guidelines on the use of *pro forma* reporting (NIRI, 2001).<sup>6</sup> These guidelines encouraged firms to provide reconciliations between GAAP and *pro forma* earnings, but did not encourage firms to place greater emphasis on GAAP versus *pro forma* earnings. In fact, the guidelines state, “It is usually desirable to display prominently in the headlines of the earnings press release the most meaningful information. Most often, this is GAAP *and/or pro forma earnings per share*.” (emphasis added) In December 2001, the SEC issued cautionary advice regarding the use of *pro forma* earnings (SEC 2001). While this advisory did not disallow the use of *pro forma* earnings, it did remind managers that, “the antifraud provisions of the federal securities laws apply to a company issuing ‘*pro forma*’ financial information.”<sup>7</sup> In October 2002, NIRI issued “Guidelines to Improve Earnings Releases” in which they explicitly encourage firms to emphasize GAAP earnings over *pro forma* earnings (NIRI, 2002), i.e., “...GAAP earnings should ideally appear in the first paragraph and before discussing *pro forma* results.” Finally, in November 2002, the SEC passed Regulation G (SEC, 2002), which established rules for the use of non-GAAP metrics (such as *pro forma* earnings). These rules require any

---

<sup>5</sup> One of the difficulties of measuring stock market reactions is the need for an expectation model for both metrics – *pro forma* and GAAP earnings. Depending on whether analysts are forecasting GAAP earnings or *pro forma* earnings, the use of analysts’ forecasts as an expectation model may be appropriate for one of the two metrics but not both.

<sup>6</sup> The guidelines were prepared at the suggestion of Lynn Turner, the SEC’s chief accountant, and were subsequently endorsed by the SEC in their cautionary advice on *pro forma* reporting (SEC, 2001).

<sup>7</sup> The advisory also stated that 1) companies need to describe accurately the controlling principles (used to calculate *pro forma* earnings), 2) companies must pay attention to the materiality of the information that is omitted from a “*pro forma*” presentation, and 3) the SEC endorses the guidelines put forth by the FEI and NIRI (in April 2001).



non-GAAP information disclosed in an earnings release to be reconciled with the relevant GAAP information, and the GAAP information must be presented with the same prominence as the non-GAAP information. In addition, the company must explain why the non-GAAP information is relevant. In each of the events above, the emphasis placed on pro forma earnings within the release is specifically addressed, suggesting that prominent industry groups such as NIRI as well as the SEC believe emphasis is an important disclosure tool.

Second, in an experimental study, Elliott (2004) examines the effect of pro forma reporting on unsophisticated investors' judgments of performance. The evidence indicates that unsophisticated investors' judgments about past performance are significantly higher when pro forma earnings are presented before GAAP earnings, suggesting that emphasis affects the judgments of at least a subset of investors.<sup>8</sup>

Finally, such actions are consistent with the Incomplete Revelation Hypothesis (IRH, Bloomfield, 2002), which states that, "statistics that are more costly to extract from public data are less completely revealed by market prices." Under the IRH, making it easier to "extract" the information content in certain metrics leads to these metrics being more fully impounded in prices. In other words, the IRH suggests that a manager can influence the extent to which the metric is reflected in prices by prominently displaying certain metrics in the headline or lead paragraph of an earnings release relative to burying the number in the financial statements presented at the end of the release (or not reporting the metric in the release at all).

Thus, industry guidelines, subsequent SEC intervention, experimental evidence, and at least one theoretical model suggest that emphasis is a potentially important disclosure tool.<sup>9</sup> In the next subsections, we discuss determinants hypothesized to influence managers' emphasis on pro forma and GAAP performance.

---

<sup>8</sup> Note that the experimental materials are designed so that pro forma earnings exceed GAAP earnings; thus, reliance on pro forma earnings will result in higher performance assessments.

<sup>9</sup> In addition, in section five we provide evidence that market reactions are affected by emphasis.

## 2.1 *Determinants of emphasis on pro forma and GAAP earnings*

### *Value relevance*

One argument for the rise in pro forma reporting is the demand for more value relevant information. A number of prior studies suggest that when the value relevance of earnings is low, managers provide additional disclosures to the market, such as conference calls (Tasker, 1998) or balance sheet information (Chen et al., 2002). More importantly, Lougee and Marquardt (2004) find some evidence that firms with lower value-relevance of earnings are more likely to report pro forma numbers. These prior studies indicate that managers provide additional or different information when earnings are less useful. Thus, if managers view emphasis as an important disclosure tool, these prior findings would suggest that managers should emphasize this alternative information more (when it is presented) and standard GAAP earnings less. Thus, we hypothesize:

H1: Firms with lower value-relevance of earnings place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.<sup>10</sup>

We use three measures of value relevance: a history of prior losses, earnings variability, and membership in a high-tech industry.<sup>11</sup> Losses have been shown to have lower associations with prices (Collins et al, 1999) and returns (Hayn 1995; Franzen, 2002). We use a dummy variable (PRLLOSS) equal to one if the firm has four consecutive quarters of losses (quarterly Compustat item # 8 less than zero) prior to the quarter examined. Lougee and Marquardt (2004) find evidence supporting their hypothesis that firms with highly variable earnings benefit more from pro forma reporting. We use the standard deviation (over the prior eight quarters) of earnings divided by assets (quarterly Compustat items #8 ÷ #44) as our measure of earnings variability (STDROA). Prior research also supports the idea that high-technology firms have less value-relevant earnings (Collins et al, 1997; Lev and Zarowin, 1999). We use a dummy variable to indicate firms in high technology industries (HITECH) as defined by Francis and Schipper (1999). Thus, our empirical predictions are:

---

<sup>10</sup> Although not formally stated, all our hypotheses (and analyses) consider both the level of emphasis on pro forma and GAAP earnings as well as the relative emphasis between the two metrics.

<sup>11</sup> We do not use the historical association between earnings and returns as a measure of value-relevance because the data requirement to create this variable severely limits our sample.

- P1a: Firms with a history of prior losses place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.
- P1b: Firms with more volatile earnings place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.
- P1c: Firms in high-technology industries place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.

### *Reporting 'better' performance*

In addition to emphasizing metrics that are more value relevant, managers also have incentives to emphasize metrics that portray better firm performance. Prior research supports the idea that managers disclose information to manage stakeholders' perceptions of earnings (Schrand and Walther, 2000).

Further, regulators and the media have criticized the way firms present information in their press releases.<sup>12</sup> Thus, we predict the following:

- H2: Firms emphasize performance metrics in their quarterly press releases that portray better firm performance.<sup>13</sup>

One common benchmark for "good" performance is improvement in earnings relative to the same quarter last year.<sup>14</sup> We define  $\Delta PF^+$  ( $\Delta GAAP^+$ ) as equal to one if the change in pro forma (GAAP) earnings from the same quarter in the prior year (as reported in the actual press release) is positive, and zero otherwise. Thus, our empirical prediction about the *level* of emphasis is:

<sup>12</sup> For example, a Wall Street Journal article states, "In the past few years, companies increasingly have prettied up their earnings announcements by highlighting what their results would have been absent unpleasant blemishes, while granting less prominence to their actual results. That practice, which can be found in all industries, remains perfectly legal," ("SEC Threatens to Sue Companies For Misleading Pro-Forma Results," WSJ, 12/5/2001, A2).

<sup>13</sup> One might interpret this hypothesis as suggesting that managers are acting opportunistically in emphasizing a particular metric. However, as discussed in footnote 2, it is possible that the metric that portrays the best firm performance is also the metric that is the most value-relevant, particularly if the proxies for value-relevance in hypothesis one do not adequately control for the value-relevance argument. In one of our sensitivity tests, we provide evidence on this issue (see section 4.2).

<sup>14</sup> We focus on the sign of the earnings change rather than the magnitude for two reasons. First, studies suggest that managers place great importance on simply meeting or exceeding a benchmark. Burgstahler and Dichev, 1997 provide evidence suggesting that managers take actions to avoid reporting negative earnings changes. Moreover, Graham, Harvey and Rajgopal (2004) report that CFOs rank the 'same quarter last year' as by far the most important earnings benchmark (above 'analyst consensus estimate' and 'reporting a profit'). Second, using the sign avoids problems with scalars. For example, the use of prior earnings as a scalar results in small denominator problems and potentially large outliers; and since market value of equity and assets differ across growth/non-growth and service/industrial firms, respectively, using these variables as scalars potentially introduces measurement. However, we test the sensitivity of our results to the use of a dichotomous performance variable (see section 4.2).

- P2a: Firms with positive seasonally adjusted changes in Pro Forma (GAAP) earnings place greater emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.

While it is possible to emphasize both metrics equally, it is also possible that an earnings release will focus on one metric at the expense of another. Thus, if one metric indicates relatively better performance, a manager may choose to place less *relative* emphasis on the alternative metric. We define  $\Delta PFHIGH$  as equal to one if the change in pro forma earnings from the same quarter in the prior year is greater than the change in GAAP earnings from the same quarter in the prior year, and zero otherwise. Thus, our next empirical prediction is about the *relative* emphasis between pro forma and GAAP earnings:

- P2b: Firms with seasonally adjusted changes in Pro Forma earnings that are larger (smaller) than seasonally adjusted changes in GAAP earnings place more (less) emphasis on Pro Forma earnings relative to GAAP earnings in their quarterly press releases.

Finally, it is possible that managers are sensitive to the level of a performance metric in addition to the change in the metric from the prior year. Evidence in Burgstahler and Dichev (1997) suggests that managers are particularly sensitive to losses and take actions to avoid reporting losses. As an alternative to managing earnings to avoid reporting losses, managers could simply recast a GAAP loss as a pro forma profit and emphasize the pro forma results in their press release. We define  $PF^+_{-GAAP^-}$  as equal to one if pro forma earnings are greater than zero but GAAP earnings are less than zero, and we predict:

- P2c: Firms with positive Pro Forma but negative GAAP earnings place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.

### *Media coverage*

Earnings releases are generally written and sent out over a wire service (such as PR Newswire or Business Wire), where they may be picked up by various media sources for publication. While analysts working for large brokerage/research firms and large institutional investors likely have direct access to these wire services, the average investor as well as other stakeholders likely get their information from mainstream media sources (such as *The Wall Street Journal*). Therefore, the extent to which managers view emphasis as an important disclosure tool likely depends on the extent of media coverage the firm

receives (and thus, the likelihood that the earnings release is published in a major newspaper). Thus, our third hypothesis and empirical prediction is:

H3 (P3): Firms with greater media coverage place more (less) emphasis on Pro Forma (GAAP) earnings in their quarterly press releases.

We measure media coverage (MEDCOV) as the number of articles in the prior year in which the company is mentioned in the headline or lead paragraph of the three largest U.S. newspapers (*The Wall Street Journal*, *USA Today*, and *The New York Times*) as well as five of the largest magazines (*Time*, *Business Week*, *Newsweek*, *Fortune*, and *Forbes*).

#### *Sophisticated users*

As discussed above, one of the primary consumers of firms' earnings releases are sophisticated users such as financial analysts and large, institutional investors. These sophisticated users likely have direct access to a firm's earnings release and closely monitor its performance. Moreover, managers often justify the use of pro forma reporting because financial analysts and institutional investors find pro forma earnings incrementally informative.<sup>15</sup> For these reasons, managers of firms with a greater proportion of sophisticated users may be more likely to emphasize pro forma earnings.

On the other hand, because analysts and institutional investors are sophisticated in their understanding of financial information, it is possible that differential emphasis on performance metrics actually has less impact on their judgments of firm performance. For example, Frederickson and Miller (2002) find that financial analysts' judgments are not affected by pro forma reporting whereas MBA students' judgments were significantly affected. In addition, Elliott (2004) finds that analysts' judgments and recommendations are only affected in two situations: when reconciliations between pro forma and GAAP earnings are provided and when firms' report a GAAP loss and a pro forma profit. Thus, these studies provide some evidence suggesting that managers of firms with relatively more sophisticated users

---

<sup>15</sup> For example, in a survey of attendees at a Financial Executives International conference, 27% indicated that they include pro forma numbers at analysts' request ("Pro Forma Earnings Advice Needed: Companies Want to Value Stock Appropriately in Their Releases," *Investor Relations Business*, 11/26/2001). Moreover, in a survey of portfolio managers, 76% indicated that they found pro forma reporting at least somewhat useful and 67% said they would oppose banning pro forma reporting from press releases ("Money Managers Say Pro Forma Results Are Useful," *CFO.com*, November 8, 2001).

will find strategically emphasizing performance metrics to be less effective with these users. Given the two opposing arguments and the somewhat mixed experimental evidence, our next hypothesis and related empirical predictions are non-directional:

- H4: Firms with more sophisticated users of accounting information place differential emphasis on Pro Forma and GAAP earnings compared to firms with fewer sophisticated users.

We use two proxies for sophisticated users: the number of analysts following the firm and the percent ownership of institutional investors. Our measure of analyst following (ANALYSTS) is based on the number of analyst forecasts in the consensus forecast outstanding at the end of the quarter, as provided by I/B/E/S.<sup>16</sup> Our measure of institutional ownership is based on the percent of institutional ownership (%INST) reported on Compact Disclosure for the closest calendar quarter to the quarter examined. Thus, our empirical predictions are:

- P4a: Firms with more analyst coverage place differential emphasis on Pro Forma and GAAP earnings compared to firms with less analyst coverage.
- P4b: Firms with more institutional ownership place differential emphasis on Pro Forma and GAAP earnings compared to firms with less institutional ownership.

## 2.2 *Changes in the emphasis on pro forma and GAAP earnings*

Between the SEC's cautionary advice (2001) and the increased scrutiny placed on accounting information as a result of the numerous accounting scandals, managers of firms reporting pro forma earnings likely became more concerned about investors' perceptions of the credibility of their accounting information in 2002 relative to 2001. In response to these concerns, and as an alternative to dropping pro forma reporting, managers could: (1) continue to report pro forma earnings but decrease the emphasis placed on these numbers and/or (2) simply elevate the emphasis placed on GAAP earnings. Thus, we hypothesize:

---

<sup>16</sup> If no data are available for the firm-quarter being examined but data are available for the prior and subsequent quarters, we use the number of analysts in one of these quarters as a proxy. If no data are available for the quarter being examined and data are only available either before or after (but not both), we consider these firms to have either previously lost coverage or subsequently gained coverage and we code these firms as having zero analyst following during the firm-quarter.

H5 (P5): Firms have reduced (increased) emphasis on Pro Forma (GAAP) earnings in 2002 relative to 2001.

To test the change in emphasis from 2001 to 2002, we include a POST variable in our analysis, which equals one if a firm quarter is in 2002 and zero otherwise.

The above arguments suggest that the increased scrutiny of accounting information and concerns over credibility are at least partially responsible for the hypothesized decline (increase) in emphasis on pro forma (GAAP) earnings. In other words, while the benefits of emphasizing pro forma earnings may not have changed for a given firm, the costs (in terms of reduced credibility) likely increased. Thus, the *net* benefits have likely decreased and any changes in emphasis over the time period examined should be associated with the degree of scrutiny to which a firm is subject. Thus, we hypothesize:

H6: Firms subject to greater scrutiny are more likely to decrease (increase) emphasis on Pro Forma (GAAP) earnings in 2002 relative to 2001.

We expect that firms receiving high levels of media coverage receive greater scrutiny from their stakeholders because the overall level of information available about the firm is greater. This leads to the following empirical prediction:

P6a: Firms with greater media coverage are more likely to decrease (increase) emphasis on Pro Forma (GAAP) earnings between 2001 and 2002.

We include the POST variable interacted with the media coverage variable (POST\*MEDCOV) to test this hypothesis.

Finally, we include one control variable in our multivariate analysis. Prior studies have suggested that firms are more likely to report pro forma earnings when they have unusual or non-recurring items (Lougee and Marquardt, 2004). Along these lines, firms may be more likely to emphasize pro forma earnings if the differences between pro forma and GAAP earnings are larger. Thus, we include the signed difference between pro forma and GAAP earnings, scaled by total assets, (DIFF) as a control variable.

### **3. Data and descriptive evidence on the dependent variables (emphasis) and the independent variables (determinants)**

#### *3.1 Sample selection*

Our sample selection process is designed to identify firms using pro forma reporting in the first quarter of 2001. We focus on firms reporting pro forma earnings for three reasons. First, we need at least two performance metrics in order to address relative emphasis. Second, it increases the power of our tests if firms have greater flexibility in their emphasis on GAAP earnings (because they have an alternative “earnings” metric to emphasize).<sup>17</sup> Third, we are interested in the effect of recent accounting scandals and regulatory scrutiny on managers’ disclosure practices. Since pro forma reporting has been the subject of much media attention and criticism, the impact is likely to be largest on this practice.

Using the Nexis/Lexis Academic Universe database, we search the Business Newswire and the PR Newswire archives to identify firms reporting pro forma earnings metrics between April 7, 2001 and June 7, 2001. We use the key words “pro forma” or “EBITDA” to identify earnings releases with potential pro forma earnings and review the associated headlines to filter out any press release that does not relate to quarterly earnings announcements for the first or second quarter of 2001.<sup>18</sup> This search process yields 1,215 firms that include pro-forma or EBITDA-based metrics in their quarterly earnings press release. Next, we eliminate non-domestic firms and firms that do not have 2001 data available on Compustat, CRSP, or I/B/E/S, which reduces the sample to 691 firms.<sup>19</sup> Because hand collection of data is time intensive, we use a random number generator to select a sub-sample of 550 of the 691 firms to review for potential inclusion in our sample.

For each firm, we read and code various aspects related to the emphasis placed on metrics within the release (the following section describes our measures of emphasis). We start with the quarter identified in our initial search period and then collect data for the 2 subsequent quarters of 2001. We then

---

<sup>17</sup> Firms can also emphasize top-line revenues. We examine the emphasis on revenues in a supplemental test.

<sup>18</sup> EBITDA is earnings before interest, taxes, depreciation and amortization. We searched based on EBITDA in order to identify firms that reported “adjusted EBITDA” metrics, which we classify as pro forma.

<sup>19</sup> We only determined whether the firm was listed on the database, not whether they had all the data necessary to calculate all our independent variables. Thus, we subsequently lose some observations for lack of data (but the data loss is substantially lower than it might otherwise have been without this initial screen).



collect data for the corresponding three quarters in 2002. We eliminate firms that report traditional EBITDA metrics in the initial quarter and firms without six quarters of press releases, resulting in the elimination of 297 firms.<sup>20</sup> Our initial sample is described in Table 1 and consists of six quarters of data for 253 firms, or 1,518 firm-quarters. The right hand column of Table 1 identifies the sample used in each subsequent table. We lose 61 additional firm-quarter observations because they do not have data available on CRSP, Compustat, I/B/E/S or Compact Disclosure to calculate our independent variables. In addition, there are 220 firm-quarters in which firms did not report pro-forma earnings in a quarter subsequent to the first quarter of 2001. As discussed in the next section, these firms are coded as discontinuing the use of pro forma for some of the descriptive analyses (in Table 2). However, for subsequent analyses (in Tables 3-8), we require the value of pro forma earnings to compute certain independent variables (e.g.,  $\Delta PF^+$  and  $PF^+_{GAAP^-}$ ). Thus, these observations are eliminated for these tests. Finally, in 38 firm-quarters, the firm provides the current year earnings on a pro forma basis but does not provide the prior year earnings on a pro forma basis in the press release. These observations are also excluded in our determinants tests.

### *3.2 Dependent variables – emphasis on pro forma and GAAP earnings*

For each firm-quarter in our sample, we read and code information in the press release to determine the emphasis placed on pro forma and GAAP earnings. Again, we consider pro forma earnings as earnings that have been adjusted in a way not recognized by GAAP. The most common adjustments in our sample are goodwill amortization (54%), stock-based compensation related charges (47%), restructuring charges (36%) and gains/losses on the sale of assets (29%). In contrast, GAAP earnings are either bottom-line earnings or a GAAP-recognized above line earnings numbers such as earnings before extraordinary items or earnings before discontinued operations.

---

<sup>20</sup> Firms that reported traditional EBITDA (i.e. Earnings before interest, taxes, depreciation and amortization) were eliminated from the sample because we do not consider it to be a pro forma metric. Firms that reported “adjusted” EBITDA metrics in which additional items are excluded from earnings remain in the sample since we consider adjusted EBITDA to be a pro forma metric. Firms with missing press releases were generally acquired.

We code several attributes of the earnings release including the following: 1) the first earnings metric (GAAP or pro forma) mentioned in the release, 2) whether the metric was mentioned in the headline, and 3) the paragraph number where the earnings metric is first mentioned in the release or whether the metric is mentioned only in the financial statements provided at the end of the release. Given that our sample selection process was designed to identify pro forma reporters, it is not surprising that the majority of firms mention pro forma earnings first (64%) relative to GAAP earnings (35%).

For the purpose of our determinants tests, we define three variables. The first two, “pro forma emphasis” (PFEMP) and “GAAP emphasis” (GAPEMP), measure the *level* of emphasis and are based on the following five-point scale:

<u>Location in press release</u>	emphasis <u>score</u>	<u>ordinal measure of emphasis</u>
Reported in the headline	5	most emphasis
Reported in the first/second paragraph	4	↑
Reported in paragraph three or higher	3	↕
Reported in the financial statements only	2	↓
Not reported	1	least emphasis

Descriptive data on PFEMP and GAPEMP are provided in Table 2, Panel A. Over the entire sample period, pro forma earnings are more frequently reported in the headline (20%) than are GAAP earnings (9%). Frequencies are similar for pro forma and GAAP reporting in the first or second paragraphs of the release (44% and 39%, respectively).<sup>21</sup> Pro forma earnings are reported only in the financial statements for 2% of the observations, while GAAP earnings are found only in the financial statements for 17% of the observations. In approximately 15% of the observations, pro forma earnings are not reported for the current quarter. As discussed above, these observations are presented for descriptive purposes, but are not included in our later analyses because we cannot compute the change in pro forma earnings when a pro forma observation is missing.

Table 2 also provides a breakdown of emphasis levels across the two years in our sample and thus, provides descriptive data on the change in the level of emphasis on pro forma and GAAP earnings

---

<sup>21</sup> We group together first and second paragraphs because many press releases have very short first paragraphs that are not substantive (i.e., they are often one or two sentences stating that the company announced quarterly earnings).

from 2001 to 2002. In addition, Figure 2 illustrates this shift in emphasis. The Enron scandal broke in October 2001 and the SEC's cautionary advice on *pro forma* reporting was issued in December 2001 – see Figure 1. Both of these events likely occurred *after* the first three quarterly earnings releases in our 2001 sample period and a comparison of emphasis between the two years should identify whether managers quickly responded to heightened concerns about *pro forma* reporting. The data suggest a substantial change in the level of emphasis placed on both *pro forma* and GAAP earnings metrics across the two years. The percent of firm-quarters in which GAAP earnings are mentioned first (untabulated) increased from 19% in 2001 to 51% in 2002. The percent of firm-quarters in which GAAP earnings are mentioned in the headlines increased from 7% to 12%. In contrast, the firm-quarters in which *pro forma* earnings are mentioned first (untabulated) and the firm-quarters in which *pro forma* earnings are mentioned in the headlines both decreased (from 81% to 49% and from 24% to 15%, respectively). All these differences are significant at the 1% level or less using chi-squared tests and provide initial support for our fifth hypothesis that increased scrutiny on *pro forma* reporting caused managers to decrease emphasis on this metric in their press releases.

Our third dependent variable is a measure of *relative* emphasis (RELEMP) and is computed as PFEMP – GAPEMP. In Table 2, the scale for RELEMP ranges from 4 to –4 where the extremes show one metric in the headline and the other not reported. Zero is the midpoint of the scale and indicates the same emphasis, which could be high or low in terms of the *level* of emphasis. Descriptive data on RELEMP, which are provided in Panel B of Table 2, indicate that over the entire sample period, 35% of the observations place the same level of emphasis on *pro forma* and GAAP earnings. However, in 41% of the observations, firms place greater emphasis on *pro forma* earnings relative to GAAP earnings, compared to 23% of the observations, in which firms place greater emphasis on GAAP earnings relative to *pro forma* earnings. The breakdown of relative emphasis across the two years again suggests a shift toward emphasizing GAAP earnings relative to *pro forma* earnings. Specifically, in 55% of 2001 firm quarters, more emphasis is placed on *pro forma* earnings relative to GAAP earnings, whereas this is true for only 28% of 2002 firm quarters. On the contrary, more emphasis is placed on GAAP earnings relative

to pro forma earnings in 13% of 2001 firm quarters compared to 34% of 2002 firm quarters. This difference is significant at the 1% level or less using chi-squared tests.

Panel C of Table 2 presents an analysis of the change in emphasis conducted at the firm-level. For these tests, we averaged our emphasis measures, PFEMP, GAAPEMP and RELEMP, across quarters for each firm-year (2001 and 2002, respectively) and differenced the two years for each firm ( $\Delta$ PFEMP,  $\Delta$ GAAPEMP,  $\Delta$ RELEMP). We classify firms as decreasing (increasing) emphasis if the average emphasis is lower (higher) in 2002 than in 2001. Firms with equal levels of emphasis across the two years are considered to have not changed emphasis. The results confirm our firm-quarter level analysis, i.e., 57% of firms increase emphasis on GAAP earnings (vs. 18% who decrease emphasis), 55% of firms decrease emphasis on pro forma earnings (vs. 17% who increase emphasis) and 70% of firms decrease emphasis on pro forma earnings relative to GAAP earnings (compared to 14% who increase relative emphasis).

### 3.3 *Independent variables*

Table 3 presents descriptive statistics on our independent variables. Consistent with prior findings that high-tech firms and firms reporting losses are more likely to issue results on a pro forma basis, our sample has a high concentration of high-technology firms (61%) and firms with a history of prior losses (45%). Approximately 56% (52%) of the sample firm-quarters have a positive change in pro forma (GAAP) earnings and 21% of the sample has positive pro forma earnings and negative GAAP earnings. The level of media coverage varies significantly across firms and is highly skewed. Therefore, for our determinants tests, we use the log of MEDCOV (LNMEDCOV) as an independent variable. The firms in our sample tend to be well covered by analysts (averaging approximately 7 analysts each) and have substantial institutional ownership (48%). Finally, as expected, pro forma earnings exceed GAAP earnings on average ( $\text{DIFF} = 0.0386$ ).

A correlation matrix of the dependent and independent variables is presented in Table 4. Pearson correlations are shown below the diagonal and Spearman (rank) correlations are shown above the diagonal. The first three columns and rows present the correlations between the three dependent variables

(PFEMP, GAAPEMP and RELEMP) and the independent variables. These univariate correlations provide some initial support for our hypotheses. In support of hypothesis one, firms with low value relevance of earnings appear less likely to emphasize GAAP earnings, i.e., PRLOSS and HITECH are both significantly negatively correlated with GAAPEMP. However, contrary to hypothesis one, these firms do not appear to emphasize pro forma earnings more on an absolute basis – the correlation with PFEMP is negative for all three variables – and only HITECH is positively related to the relative emphasis on pro forma earnings. Consistent with hypothesis two, positive changes in pro forma ( $\Delta PF^+$ ) and GAAP ( $\Delta GAAP^+$ ) earnings are positively related to the emphasis placed on these metrics and when changes in pro forma earnings exceed changes in GAAP earnings ( $\Delta PFHIGH$ ), firms place greater relative emphasis on pro forma earnings (RELEMP). These results suggest firms place more emphasis on metrics that portray better firm performance. In addition, reporting positive pro forma earnings and negative GAAP earnings ( $PF^+_{GAAP^-}$ ) is positively correlated with both the level and relative emphasis on pro forma earnings and negatively correlated with GAAP emphasis. Consistent with hypotheses three and four, it appears that firms with greater media coverage and firms with more sophisticated investors place more emphasis on pro forma earnings on both an absolute and a relative basis. Further, it appears that these firms may place less emphasis on GAAP earnings.

While these univariate correlations provide preliminary support for our hypotheses, several of the variables are highly correlated with each other. For example, firms with a history of prior losses have lower institutional ownership ( $r = -0.35$ ) and firms with greater media coverage have greater analyst following ( $r = 0.58$ ). In the next section, we examine the relation between emphasis and our proposed determinants in a multivariate regression.

## **4. Main Results**

### *4.1 Multivariate tests of hypotheses 1-6*

Our multivariate tests are based on the following model:

$$\begin{aligned}
PFEMP(GAAPEMP, RELEMP) = & \beta_0 + \beta_1 PRLOSS + \beta_2 STDROA + \beta_3 HITECH + \\
& \beta_4 \Delta PF^+ (\Delta GAAP^+, \Delta PFHIGH) + \beta_5 PF^+ - GAAP^- + \beta_6 MEDCOV + \\
& \beta_7 ANALYSTS + \beta_8 \%INST + \beta_9 POST + \beta_{10} POST * MEDCOV + \beta_{11} DIFF + \varepsilon
\end{aligned} \tag{1}$$

We conduct our analysis using rank regressions (Lang and Lundholm, 1996). We convert all non-dichotomous variables into ranks and then compute percentile ranks  $((rank-1)/(n-1))$ . We then conduct ordinary least squares regressions on the percentile ranks. Using rank regressions does not presume a particular functional form and provides a straightforward interpretation of the coefficients (a percentile change in the independent variable results in a percentile change in the dependent variable).<sup>22</sup>

Table 5 presents our analysis on the level of pro forma emphasis (PFEMP), the level of GAAP emphasis (GAAPEMP), and the relative emphasis (RELEMP) on pro forma earnings versus GAAP earnings. Hypothesis one predicts that low value relevance firms will emphasize pro forma earnings and deemphasize GAAP earnings. We use three proxies for low value relevance: PRLOSS, STDROA and HITECH. Results for two of the three proxies for low value relevance (PRLOSS and HITECH) support our hypothesis (H1) with respect to the level of emphasis on GAAP earnings – the coefficients are negative and statistically significant, suggesting that firms with a history of prior losses and high-technology firms place less emphasis on GAAP earnings. While none of the coefficients on low value relevance are significant for the *level* of emphasis on pro forma earnings, we do find support for H1 in our *relative* emphasis regression – the coefficient on both PRLOSS and HITECH are positive and statistically significant, suggesting that firms with a history of prior losses and high-technology firms place greater *relative* emphasis on pro forma earnings.

Because we report rank regressions, the coefficients can be interpreted as follows: firms with a history of prior losses show a 7 percentile decrease in emphasis on GAAP earnings and a 5 percentile increase in relative emphasis on pro forma earnings. Firms in high-technology industries have a 10

---

<sup>22</sup>Another alternative would be to run ordered probit regressions. Results from this analysis are virtually identical to those reported using rank regressions (all variables that are significant in Table 5 continue to be significant at similar probability levels). We choose to present the regression results for ease of interpretation since ordered probit regressions require the calculation of slope coefficients for each category (in this case four slope coefficients for the levels regressions and seven for the relative regression) and interpretations of the slope coefficients are ambiguous (except in the case of first and last category). See Greene (1993, p. 674) for further discussion.

percentile decrease in emphasis on GAAP earnings and a 9 percentile increase in relative emphasis. To gauge the economic significance of a percentile shift in the dependent variable, we can consider the case where all four (seven) categories of GAAP (relative) emphasis were of equal size. In this case, a 25 percentile (14 percentile) shift would represent a one-category change. While these effects may not seem large in isolation, when combined with the effects of other independent variables, the overall impact could explain significant shifts in emphasis across firms.

Given that we do not find support for our prediction that managers of low-value relevance firms place greater *levels* of emphasis on pro forma earnings, it is possible that managers of many of these firms do not view pro forma earnings as the most informative metric. Davis (2002) reports evidence that revenues are value relevant for Internet firms; therefore, it is possible that some firms emphasize revenues over both pro forma and GAAP earnings. In supplemental untabulated results, we examine the relation between our independent variables and the emphasis placed on revenues within the earnings release. As conjectured, we find a positive coefficient on PRLOSS ( $p = 0.08$ ) and HITECH ( $p < 0.001$ ), indicating that firms with a history of prior losses and firms in high technology industries place greater emphasis on revenues in their earnings releases. Thus, consistent with Davis (2002), it appears that firms with low value relevance of earnings de-emphasize earnings metrics in general and instead focus on revenues as the more important metric.

Hypothesis two predicts that firms will emphasize metrics in their press release that portray better performance. Consistent with H2, the coefficients on  $\Delta PF^+$  and  $\Delta GAAP^+$  in the levels regressions are highly significant, while the coefficient on  $\Delta PFHIGH$  in the relative emphasis regression is marginally significant ( $p = 0.08$ ).<sup>23</sup> We also find a positive and highly significant coefficient on  $PF^+_{GAAP^-}$  in the

---

<sup>23</sup> Using continuous earnings variables rather than dichotomous variables (e.g., the change in pro forma (GAAP) earnings scaled by assets in the pro forma (GAAP) level regressions and the difference between the change in pro forma and GAAP earnings in the relative emphasis regression), we find a significant coefficient in the pro forma regression ( $p < 0.001$ ) and marginally significant coefficients in the GAAP and relative emphasis regressions ( $p = 0.10$  and  $p = 0.06$ , respectively). All other variables have similar significance levels. As discussed previously, we use a dichotomous variable because we believe the incentive to emphasize a particular metric is driven by the sign of the earnings change and not the magnitude – in other words, being able to highlight the fact that earnings increased is more significant than being able to emphasize a 5% increase vs. a 10% increase.

pro forma levels regression and the relative emphasis regression, and a negative and marginally significant coefficient ( $p = 0.06$ ) on this variable in the GAAP emphasis regression. The magnitude of the effects of our performance variables range from an 8 percentile shift ( $PF^+_{GAAP^-}$  in the pro forma levels regression) to a 2 percentile shift ( $\Delta PFHIGH$  in the relative emphasis regression). Together, these results support our second hypothesis (H2) that firms emphasize a metric if it portrays better firm performance.

Consistent with our univariate results, the coefficient on media coverage is positive and significant in both the levels and relative pro forma emphasis regressions and negative and significant in the GAAP emphasis regression. These results are consistent with our third hypothesis (H3) that firms with greater media coverage place greater emphasis on pro forma earnings and less emphasis on GAAP earnings. The largest magnitude of effect is in the relative emphasis regression, where a 50 percentile shift in media coverage would result in approximately a 5.5 percentile shift in relative emphasis (i.e.,  $0.1112 \times 0.5$ ).

The coefficients on analyst following and institutional ownership are generally insignificant, with the exception of a significantly positive coefficient on analyst following in the pro forma regression, suggesting that firms with greater analyst following emphasize pro forma earnings. Given the opposing predictions on this relation, it is perhaps not surprising that our results with respect to sophisticated users (H4) are generally inconclusive.

Our prior descriptive data provide initial evidence of a shift of emphasis following SEC cautionary advice and a proliferation of accounting scandals. These descriptive results suggest a decrease in the net benefits of pro forma reporting in 2002 relative to 2001. However, because there are a number of factors that determine emphasis, it is possible that any change over time is the result of changes in multiple underlying determinants. The inclusion of POST in the above regression indicates the extent to which emphasis has changed between the two periods, controlling for the other determinants of emphasis, and thus provides a stronger test of hypothesis five. Consistent with hypothesis five, the coefficient on POST is significantly negative in the pro forma levels and relative emphasis regressions and significantly positive in the GAAP regression suggesting a decrease (increase) in emphasis on pro forma (GAAP)



earnings on an absolute and a relative basis. The coefficients suggest a 5 percentile increase in pro forma emphasis in 2002, a 5 percentile decrease in GAAP emphasis and a 7 percentile decrease in the relative emphasis on pro forma. Consistent with Figure 2, our evidence indicates that the emphasis firms place on pro forma (GAAP) earnings has decreased (increased) between 2001 and 2002.<sup>24</sup>

To test whether the change in emphasis is related to concerns over the credibility of accounting disclosures, we examine the coefficient on POST\*MEDCOV. The coefficient on this interacted variable indicates whether firms subject to greater scrutiny are more likely to change emphasis on pro forma and GAAP earnings in 2002. Consistent with hypothesis six, the coefficient on POST\*MEDCOV is positive and significant in the GAAP regression and negative and significant in the relative emphasis regression. Thus, it appears that firms with greater media coverage are more likely to increase emphasis on GAAP earnings and decrease relative emphasis on pro forma earnings in 2002. However, as indicated by the insignificant coefficient on POST\*MEDCOV in the pro forma levels regression, we do not find support for our prediction that firms with greater media coverage are more likely to decrease emphasis on pro forma earnings in 2002. Thus, it appears that firms subject to greater scrutiny attempt to increase credibility by increasing emphasis on GAAP earnings but not necessarily by decreasing emphasis on pro forma earnings. For these firms perhaps the benefits of emphasizing pro forma earnings still exceed the increased costs associated with emphasizing pro forma in 2002.

#### *4.2 Sensitivity Analyses*

Because we collect six quarters of data for each firm, a potential concern may be whether our observations are independent across time for a given firm. It is possible that managers structure their press releases similarly across quarters and thus, place consistent emphasis on alternative metrics across time. To the extent that our observations lack independence, our parameter estimates and standard errors are biased and our significance levels are overstated. This issue is especially problematic for the

---

<sup>24</sup> It is possible the change in emphasis is due to time period specific factors such as changes in the economic environment during the time period we study. However, our multivariate analysis controls for certain time-period specific factors such as the change in pro forma (GAAP) earnings. Thus, the change in emphasis does not appear to be the result of changes in the propensity for firms to show positive changes in pro forma or GAAP earnings.

hypothesized determinants that tend to be stable firm-specific characteristics and, therefore, unlikely to vary significantly across time (i.e., value relevance of earnings, media coverage, analyst following and institutional ownership). On the other hand, our performance variables (i.e.,  $\Delta PF^+$ ,  $\Delta GAAP^+$ ,  $\Delta PFHIGH$ ,  $PF^+_{GAAP^-}$ ) do vary across quarters and therefore, could cause differences in emphasis levels for the same firm across time.

First, we investigate the extent to which firms use the same level of emphasis across quarters. Across the entire sample period, the proportion of firms with the identical level of pro forma emphasis, GAAP emphasis and relative emphasis across all six quarters (untabulated) is 19%, 19% and 8%.<sup>25</sup> However, within each year (2001 and 2002), the proportion of firms with the same level of emphasis across the three quarters (untabulated) is much higher – ranging from 34% to 52%. Thus, while the level of emphasis is somewhat stable for many firms within a year, the great majority of firms exhibit variation in their emphasis levels across the two years.<sup>26</sup>

Second, to address the independence issue, we re-estimate equation 1 using the firm mean of each dependent and independent variable for 2001 and 2002, respectively – thus, there is one observation per firm per year in this analysis.<sup>27</sup> The results of rank regressions (in Table 6) are generally consistent with our previous analysis (in Table 5), although significance levels are lower. For example, some previously significant coefficients are now only marginally significant, i.e.,  $LNMECOV$  in the pro forma emphasis regression is  $p = 0.06$ ;  $\Delta GAAP^+$  and  $LNMECOV$  in the GAAP emphasis regression are  $p = 0.06$  and  $p = 0.08$ ; and  $\Delta PFHIGH$  is not significant in the relative emphasis regression. The fact that the performance variables ( $\Delta PF^+$ ,  $\Delta GAAP^+$ ,  $\Delta PFHIGH$ ,  $PF^+_{GAAP^-}$ ) exhibit reduced significance is not surprising. By

---

<sup>25</sup> Note that Table 2, Panel C reports that 25%, 28% and 16% of firms have the same average emphasis across the two years. This statistic is not exactly the same as the statistic calculated here because in Table 2 we average the emphasis variable within each year. Therefore, a firm could have emphasis scores of 1, 2, and 2 for the three quarters in 2001 and 2, 1, and 2 in the three quarters of 2002 and show up as having the same emphasis score across the two years. We would not, however, consider this firm to have the same emphasis score across the six quarters.

<sup>26</sup> If we eliminate firms with the same level of emphasis across the entire sample period, we obtain similar results to those reported in Table 5.

<sup>27</sup> We first compute the firm average and then compute ranks on the averaged variables. Because variables that are dichotomous in our main regression can take on a range of values when averaging across quarters, we compute ranks on all variables except  $POST$ , which, by definition, is stable within a given year.

averaging across quarters, we lose the variance in these variables that have the potential to explain changes in emphasis across quarters within each year.

Another potential problem with our main specification is the possibility that there is an unidentified firm-specific determinant of emphasis that we have not captured in our model and that is correlated with one or more our determinant variables. To address this possibility, we estimate firm fixed-effects models, which includes a dummy variable for each firm and thus, control for a firm's mean level of emphasis (or relative emphasis). This specification is analogous to mean-adjusting the ranked dependent and independent variables and running a regression on the mean-adjusted variables. Thus, to the extent that a determinant is a stable firm-specific construct, this specification is not appropriate – that is, the model will only explain within-firm variation. We therefore run the models including only variables that clearly vary across quarters.<sup>28</sup> The three models are:

$$PFEMP(GAAPEMP, RELEMP) = \beta_0 CUSIP + \beta_1 \Delta PF^+ (\Delta GAAP^+, \Delta PFHIGH) + \beta_2 PF^+ \_ GAAP^+ + \beta_3 DIFF + \beta_4 POST + \varepsilon \quad (2)$$

Table 7 presents the results of this analysis. Consistent with our main results, the coefficients on  $\Delta PF^+$  and  $\Delta GAAP^+$  in the levels regressions are significantly positive. We also find a significant coefficient on  $\Delta PFHIGH$  in the relative emphasis regression. The coefficient on  $PF^+ \_ GAAP^+$  is insignificant in the pro forma emphasis regression, marginally significant in the GAAP regression ( $p = 0.06$ ), and significant in the relative emphasis regression ( $p = 0.03$ ). These results suggest that within-firm variation in performance explains within-firm variation in emphasis level in our cross-sectional regressions. Thus, it does not appear that the results for our performance variables are driven by other firm-specific

---

<sup>28</sup> For example, the model cannot be run with HITECH because this variable does not vary within-firm (therefore, the model is not full rank). If we estimate the model including all independent variables except HI-TECH, we find similar results for the variables included in equation 2 with the exception that  $PF^+ \_ GAAP^+$  is not significant in the GAAPEMP regression. The remaining variables are insignificant (as might be expected given the minimal within-firm variation) with the exception of MEDCOV, which is significant in the direction predicted in the PFEMP and RELEMP regressions and  $POST * LN MEDCOV$  which is significant in the GAAPEMP and RELEMP regressions.

characteristics that are correlated with performance and levels of emphasis.<sup>29</sup> These results suggest that firms vary their emphasis of a particular metric across quarters depending on whether the metric portrays “better” performance. If the most value-relevant metric does not vary across quarters, these results suggest that, rather than consistently emphasizing the most value relevant metric, managers use emphasis to highlight the metric that portrays the most favorable performance.

Overall, our results are consistent with managers strategically emphasizing metrics within the earnings release to focus stakeholder attention on managements’ preferred metrics. Our results are inconsistent with press releases being boilerplate and unrelated to managements’ strategic objectives. Further, our results suggest that firms have made a conscious shift in 2002 toward emphasizing earnings on a GAAP, rather than a pro forma basis. We also provide evidence that firms subject to greater scrutiny over their accounting disclosure policies are more likely to emphasize GAAP earnings in 2002 on both an absolute and a relative basis.

## **5. Does the Stock Market React to Emphasis?**

In this section, we provide supplemental evidence on the effects of emphasis on stock market reactions to quarterly earnings news. As discussed previously, testing whether managers are rational in their efforts to alter stakeholders’ perceptions through strategic emphasis is problematic because of the difficulty in measuring changes in stakeholders’ perceptions, judgments, or actions. Equity market participants are the most commonly studied stakeholders, but even an analysis of this group is complicated by the measurement of expected earnings. Nevertheless, we conduct an analysis of stock returns to provide initial evidence on one potential effect of strategic emphasis. We argue that more emphasis should lead to stronger reactions to the information in earnings announcements. For example, if GAAP earnings news is good (bad), a firm that emphasizes GAAP earnings in their press release will have a relatively higher (lower) stock price reaction than firms that use less emphasis. In other words, if

---

<sup>29</sup> Of course, we cannot rule out the possibility that results relating to our firm-specific determinants (e.g., value relevance of earnings and media coverage) are driven by another unidentified firm-specific characteristic that is correlated with these variables and that is excluded from our model.

emphasis matters to investors, the correlation between stock returns and a particular earnings metric should be greater if more emphasis is placed on that metric. We predict:

H7: The relation between 3-day stock returns and the unexpected realization of an earnings metric is increasing in the level of emphasis placed on the metric.

For all of our analyses, we measure unexpected earnings as the seasonally-adjusted change in pro forma earnings ( $UE^{PF}$ ) or GAAP earnings ( $UE^{GAAP}$ ) (similar to Lougee and Marquardt, 2004) as reported in the company's press release, scaled by market value at the beginning of the quarter. Stock returns (CAR) are measured as the 3-day (-1 to +1) size-adjusted cumulative returns surrounding the earnings announcement date.

We investigate the effect of emphasis on the relation between earnings and returns using a multivariate regression framework. As with our previous analysis, we use rank regression and convert all non-dichotomous variables into percentile ranks. In addition to allowing a more general functional form, this process reduces the effect of outliers. We estimate the following regressions:

$$CAR_{it} = \beta_0 + \beta_1 UE_{it}^{PF} + \beta_2 PFEMP_{it} + \beta_3 PFEMP_{it} * UE_{it}^{PF} + \beta_4 LOGMV_{it} + \beta_5 LOGMV_{it} * UE_{it}^{PF} + \beta_6 LOSS_{it} + \beta_7 LOSS_{it} * UE_{it}^{PF} + \beta_8 POST_{it} + \beta_9 POST_{it} * UE_{it}^{PF} + \varepsilon_{it} \quad (3)$$

$$CAR_{it} = \beta_0 + \beta_1 UE_{it}^{GAAP} + \beta_2 GAAPEMP_{it} + \beta_3 GAAPEMP_{it} * UE_{it}^{GAAP} + \beta_4 LOGMV_{it} + \beta_5 LOGMV_{it} * UE_{it}^{GAAP} + \beta_6 LOSS_{it} + \beta_7 LOSS_{it} * UE_{it}^{GAAP} + \beta_8 POST_{it} + \beta_9 POST_{it} * UE_{it}^{GAAP} + \varepsilon_{it} \quad (4)$$

The coefficient on  $\beta_1$  represents the overall earnings response coefficient (ERC) and the coefficient on  $\beta_3$  captures the change in ERC for different levels of emphasis (H7). We also include several variables to control for differences in ERC's across firms and across time. LOGMV is the log of the market value of equity at the beginning of the quarter and is a proxy for firm size. Prior studies have found lower ERC's for larger firms (see Shevlin and Shores (1993) for review of these studies) and our determinants results suggest that media coverage, which is likely correlated with firm size, is a determinant of emphasis. Thus, failure to control for firm size could bias our results. We also include LOSS, a dummy variable equal to 1 if GAAP earnings for the quarter is negative and zero otherwise. Prior research has found lower ERC's for loss firms (e.g., Hayn, 1995) and our determinants results also suggest that firms with pro forma profits and

GAAP losses emphasize pro forma (GAAP) earnings more (less). Finally, we control for differences in ERC's across the two years in our sample (POST and POST\*UE) because of potential differences in macro-economic conditions in the two periods.

The results for pro forma earnings are presented in Panel A of Table 8 and the results for GAAP earnings are presented in Panel B. Each panel includes results that exclude the control variables to provide some reference for the effectiveness of the controls, but we discuss the results for the full model. All p-values are two-tailed except for  $\beta_1$  and  $\beta_3 - \beta_1$  captures the expected positive relation between unexpected earnings and unexpected stock returns, while  $\beta_3$  captures the predicted positive interaction between emphasis, unexpected earnings, and unexpected returns (H7). In the pro forma regression in Panel A, we find a marginally significant positive coefficient on the overall ERC,  $\beta_1$  ( $p = 0.05$ ) and a significant positive incremental effect based on the level of emphasis,  $\beta_3$  ( $p = 0.04$ ). Because these are rank regressions, the coefficient of 0.1705 on  $\beta_1$  indicates that a 100 percentile change in unexpected pro forma earnings leads to a 17 percentile change in 3-day stock returns. Similarly, a 100 percentile increase in pro forma emphasis  $\beta_3$  leads to an *additional* 20 percentile increase in 3-day stock returns. Thus, consistent with H7, the results on  $\beta_3$  suggest that higher levels of emphasis lead to larger stock market reactions to pro forma earnings.

In the GAAP earnings regression in Panel B, we find a significant positive coefficient on the overall ERC,  $\beta_1$ , ( $p = 0.01$ ) and a marginally significant positive incremental effect based on the level of emphasis,  $\beta_3$  ( $p = 0.07$ ). The coefficient of 0.2464 on  $\beta_1$  indicates that a 100 percentile change in unexpected GAAP earnings leads to a near 25 percentile change in 3-day stock returns. Similarly, a 100 percentile increase in GAAP emphasis  $\beta_3$  leads to an *additional* 17 percentile increase in 3-day stock returns. Although somewhat weaker than the pro forma emphasis results in Panel A, the results on  $\beta_3$  suggest that greater emphasis on GAAP earnings leads to larger stock market reactions to those earnings.<sup>30</sup>

---

<sup>30</sup> We also ran our regressions using the raw variables (not percentile ranks) and eliminating outliers using the procedures discussed in Belsley et al. (1980). Specifically, we eliminate observations with studentized residuals with absolute values greater than 2; or with a hat matrix value greater than  $2*p/n$  (where  $p$  = number of parameters

In Figure 3, we depict the effect of emphasizing a particular metric on the relation between that metric and stock returns. The horizontal axis shows two levels of emphasis: “low” (comprised of emphasis levels 3 & 2 – in the third paragraph and below in the press release or only in the financial statements); and “high” (comprised of emphasis levels 5 & 4 – in the headline, first or second paragraph). We combine emphasis levels to facilitate presentation of the effect and because of the relatively small number of observations in some of the category levels. The vertical axis is the earnings response coefficient on unexpected earnings.<sup>31</sup> H7 predicts an upward sloping relation, i.e., higher emphasis should be associated with a larger earnings response coefficient (ERC). Figure 3 suggests this relation holds, especially for reactions to unexpected pro forma earnings, as the high emphasis ERC (0.30) is almost double the low emphasis ERC (0.17).

Thus, despite potential measurement error in our expectations models, our results provide some evidence that emphasis on a metric in a quarterly press release affects the market’s reactions to unexpected realizations of that metric. While there may be other non-investor stakeholder groups that are equally or more affected by firms’ emphasis on metrics in their press releases, the evidence above suggests that emphasis is not only strategic, but also appears to effect at least one important stakeholder group.

## 6. Conclusion

Quarterly earnings press releases provide managers a means to emphasize alternative earnings metrics and perhaps influence the perceptions of the firms’ stakeholders. Recent accounting scandals have heightened public scrutiny of accounting disclosures and prompted the SEC (2002) to pass a rule that establishes guidelines for reporting non-GAAP metrics, including pro forma earnings. Regulator and

---

and  $n$  = number of observations); or a DFFITS statistic greater than  $2\sqrt{p/n}$ . Our results are similar, if not slightly stronger. Using the full model (including controls), the coefficient on  $\beta_3$  is significant at  $p = 0.04$  in the pro forma regression and  $p < 0.01$  in the GAAP regression.

<sup>31</sup> In other words, we depict the coefficient values of  $\beta_1$  and  $(\beta_1 + \beta_3)$  from regressions 3 and 4, except that the regressions underlying Figure 3 use a dichotomous emphasis variable, i.e., the top two emphasis levels and the bottom two emphasis levels. In this dichotomous emphasis specification, the coefficient on  $\beta_3$  is significant at  $p < 0.02$  in the pro forma regression but insignificant ( $p = 0.20$ ) in the GAAP regression. This difference is apparent in the significantly greater slope for pro forma versus GAAP emphasis in figure 3.

media attention to this issue stems from the concern that managers present accounting data in a way that could potentially mislead stakeholders. To explore the use of emphasis as a disclosure tool and to address these current issues, we examine the determinants of emphasis placed on pro forma and GAAP earnings within quarterly earnings press releases.

Our evidence suggests that firms with low value-relevance of earnings place less emphasis on traditional GAAP earnings and greater relative emphasis on pro forma earnings. However, inconsistent with our predictions, these firms do not appear to be placing a greater *level* of emphasis on pro forma earnings. Rather, the data indicate that firms with low value-relevance of earnings focus their quarterly press releases on revenues, suggesting that managers of these firms view revenues to be more informative than pro forma or GAAP earnings.

Also consistent with our predictions, we find that managers emphasize the metric that portrays better firm performance. We also find that within-firm variation in performance explains within-firm variation in emphasis, suggesting that these results are not driven by unidentified firm-specific factors. To the extent that the metric that is the most value relevant does not change across time, these results suggest that, rather than consistently emphasizing the most value relevant metric, managers use emphasis to highlight the most favorable performance.

We also find that firms with greater media exposure place greater emphasis on pro forma earnings and less emphasis on GAAP earnings, which is consistent with the notion that accessibility of a firm's press release by individual stakeholders influences managers' choice to emphasize pro forma metrics. Our results also indicate that firms have reduced their emphasis on pro forma earnings and increased their emphasis on GAAP earnings in 2002 compared to 2001. Further, we find that firms subject to greater media exposure are more likely to increase emphasis on GAAP earnings and decrease their relative emphasis on pro forma earnings. These results are consistent with the net benefit of reporting pro forma declining subsequent to SEC cautionary guidance in December 2001 and the exposure of high profile accounting scandals beginning in late 2001 and continuing in 2002.



Taken together, our results suggest that managers use the latitude allowed in composing press releases to meet their corporate reporting objectives, including emphasizing (de-emphasizing) metrics that are more (less) value relevant (i.e., revenue versus GAAP earnings), “marketing” their firm’s performance by emphasizing metrics that portray “better” firm performance, and responding to changes in the market sentiment regarding the acceptability of certain reporting practices.

We also provide supplemental evidence on the effects of emphasizing metrics in a press release. We find that the stock market response to pro forma earnings is greater with higher levels of emphasis. Our results for GAAP earnings are similar but slightly weaker. Combined, our results suggest that equity market participants are affected by strategic emphasis. This result, in turn suggests that other non-investor stakeholder groups may also be affected by emphasis.

This study contributes to our understanding of the mechanisms managers use to influence stakeholders’ perceptions of accounting data by examining emphasis as a disclosure tool. Our evidence of an association between managers’ strategic objectives and the emphasis placed on alternative earnings metrics in quarterly press releases, suggests that managers view strategic emphasis as another mechanism to influence stakeholders’ perceptions. This study also contributes to the current debate over pro forma earnings. Our finding that firms decreased emphasis on pro forma earnings following SEC cautions and recent accounting scandals is consistent with stakeholders viewing pro forma reporting as potentially opportunistic behavior and managers responding to this credibility concern by decreasing emphasis on this metric.

## **References**

- Aerts, W., 2001. Inertia in the attributional content of annual accounting narratives. *The European Accounting Review* 10(1), 3-32.
- Belsely, D. A., E. Kuh, and R. E. Welsch. 1980. *Regression Diagnostics*. New York, NY: Wiley.
- Bettman, J. and Weitz, B. 1983. Attributions in the boardroom: Causal reasoning in corporate annual reports. *Administrative Science Quarterly*, 28: 165-83.
- Bhattacharya, N., Black, E., Christensen, T. and Larson, C. 2003. Assessing the relative informativeness and permanence of pro form earnings and GAAP operating earnings. *Journal of Accounting and Economics* 36(1-3): 285-319.
- Bloomfield, R. 2002. The “incomplete revelation hypothesis” and financial reporting. *Accounting Horizons* 16(3): 233-243.
- Bradshaw, M. and Sloan, R. 2002. GAAP versus The Street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research* 40(1): 41-66.
- Burgstahler, D. and Dichev, I. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24(1): 99-126.
- Bushee, B., Matsumoto, D., and Miller, G. 2003. Open versus closed conference calls: The determinants and effects of broadening access to disclosure. *Journal of Accounting and Economics* 34: 149-180.
- Collins, D., Maydew, E., Weiss, I. 1997. Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics* 24(1): 39-68.
- Collins, D., Pincus, M., and Xie, H. 1999. Equity valuation and negative earnings: The role of book value of equity. *The Accounting Review* 74(1): 29-61.
- Chen, S., DeFond, M., and Park, C., 2002. Voluntary disclosure of balance sheet information in quarterly earnings announcements. *Journal of Accounting and Economics* 33, 229-251.
- Davis, A., 2002. The value relevance of revenue for internet firms: Does reporting grossed-up or barter revenue make a difference? *Journal of Accounting Research* 40(2): 445-477.
- Elliott, W. B., 2004. Emphasis and information display of non-GAAP earnings measures: Effects on professional and non-professional investor judgments and decisions. University of Illinois working paper.
- Francis, J. and Schipper, K. 1999. Have financial statements lost their relevance? *Journal of Accounting Research* 37(2): 319-352.
- Francis, J., Schipper, K., and Vincent, L. 2002. The relative and incremental explanatory power of earnings and alternative (to earnings) performance measures for returns. Duke University and Northwestern University working paper.

- Franzen, L. 2002. The nature of losses and value relevance of earnings. University of Texas, Dallas working paper.
- Frederickson, J., and Miller, J. 2002. Pro forma earnings disclosures: Do analysts and nonprofessional investors react differently? Hong Kong University of Science & Technology and University of Notre Dame working paper.
- Gibbins, M., Richardson, A., and Waterhouse, J. 1990. The management of corporate financial disclosure: Opportunism, ritualism, policies and processes. *Journal of Accounting Research* 28(1): 121-143.
- Graham J., Harvey, C., and Rajgopal, S. 2004, The Economic Implications of Corporate Financial Reporting, Duke University working paper.
- Greene, W. H. 1993. *Econometric Analysis*. Macmillan Publishing Company, New York, New York.
- Hayn, C. 1995. The information content of losses. *Journal of Accounting and Economics* 20: 125-153.
- Healy, P., and Wahlen, J. 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13(4): 365-383.
- Lang, M. and Lundholm, R. 1993. Cross-sectional determinants of analyst ratings of corporate disclosure. *Journal of Accounting Research* 31(2): 246-272.
- Lang, M. and Lundholm, R. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review*, 71 (4): 467-492.
- Lev, B., and Zarowin, B. 1999. The boundaries of financial reporting and how to extend them. *Journal of Accounting Research* 37(2): 353-385.
- Lougee, B., and Marquardt, C. 2004. Earnings informativeness and strategic disclosure: An empirical examination of 'pro forma' earnings. *The Accounting Review*, forthcoming.
- Matsumoto, D. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 77(3): 483-514.
- National Investor Relations Institute (NIRI). 2001. Earnings press release guidance, April 26, 2001, Vienna, VA.
- National Investor Relations Institute (NIRI), 2002. NIRI guidelines to improve earnings releases, October 8, 2002, Vienna, VA.
- Schrand, C., and Walther, B. 2000. Strategic benchmarks in earnings announcements: The selective disclosure of prior-period earnings components. *The Accounting Review* 75(2): 151-177.
- Securities and Exchange Commission (SEC), 2001. Cautionary advice regarding the use of "pro-forma" financial information in earnings releases. Release Nos. 33-8039, 34-45124, FR-59, December 4, 2001 (<http://www.sec.gov/rules/other/33-8039.htm>).

Securities and Exchange Commission, 2002. Proposed Rule: Conditions for the use of non-GAAP financial measures. Release Nos. 33-8145, November 5, 2002 (<http://www.sec.gov/rules/proposed/33-8145.htm>).

Shevlin, T. and D. Shores. 1993. Firm size, security returns, and unexpected earnings: The anomalous signed-size effect. *Contemporary Accounting Research* 10 (1): 1-30.

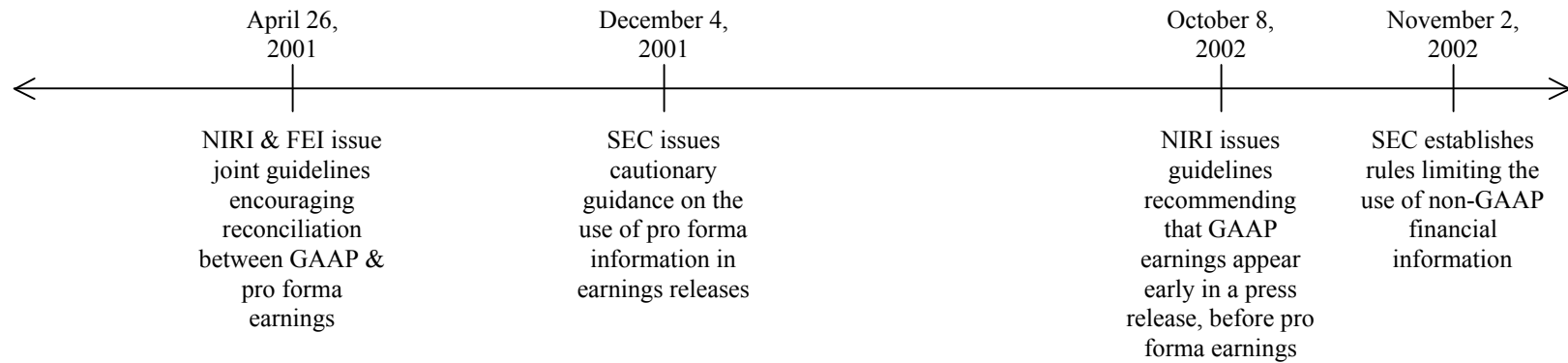
Skinner, D. 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research* 32: 38-61.

Skinner, D. 1997. Earnings disclosures and stockholder lawsuits. *Journal of Accounting and Economics* 23: 249-283.

Tasker, S. 1998. Bridging the information gap: Quarterly conference calls as a medium for voluntary disclosure. *Review of Accounting Studies* 3: 137-167.

Figure 1

**Timeline: Guidelines and rules related to disclosure of financial information in earnings press releases<sup>a,b</sup>**

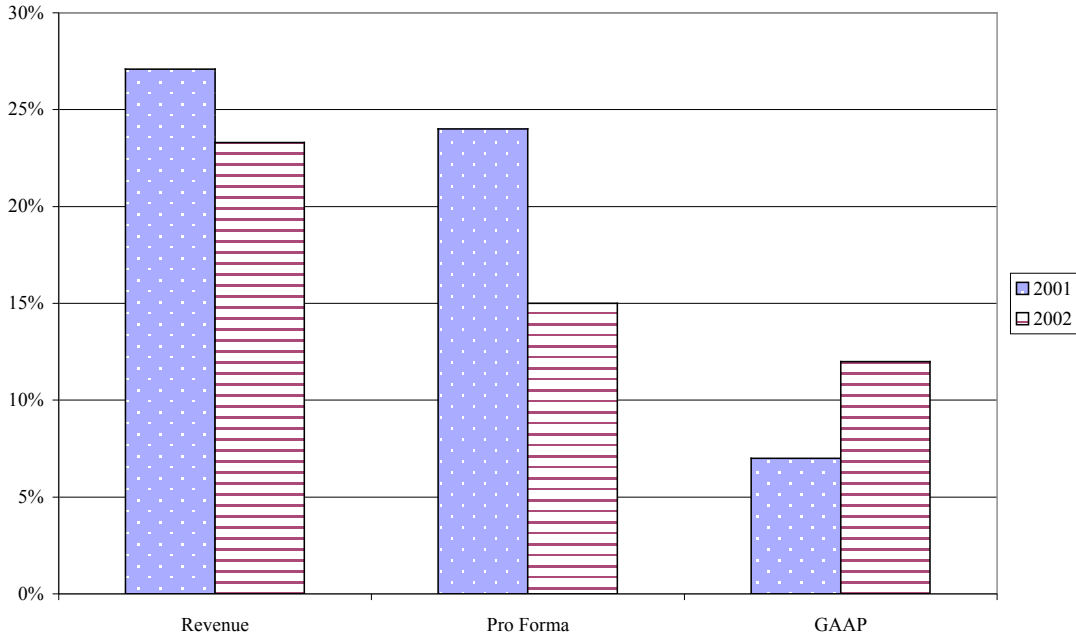


<sup>a</sup> Earnings press releases were essentially unregulated prior to April 2001  
NIRI is the National Investor Relations Institute  
FEI is the Financial Executives Institute  
SEC is the Securities and Exchange Commission

<sup>b</sup> Other events from 2001-02 include:  
October 2001 – Enron scandal becomes public  
November 2001 – survey of portfolio managers finds 76% find pro forma reporting at least somewhat useful and 67% would oppose ban of pro forma reporting  
November 2001 – survey of attendees at an Financial Executives Institute conference reports that 27% include pro forma numbers at analysts' request

Figure 2  
Change in emphasis on performance metrics: 2001 versus 2002

Frequency that metric is mentioned in press release headlines: 2001 vs. 2002



Frequency that metric is mentioned in headline, first or second paragraph: 2001 vs. 2002

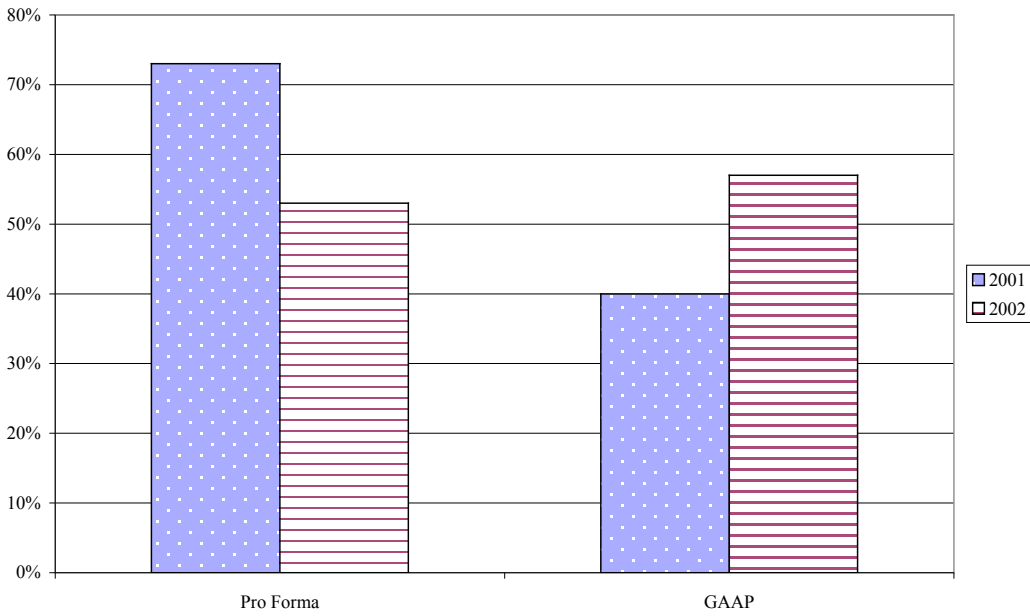
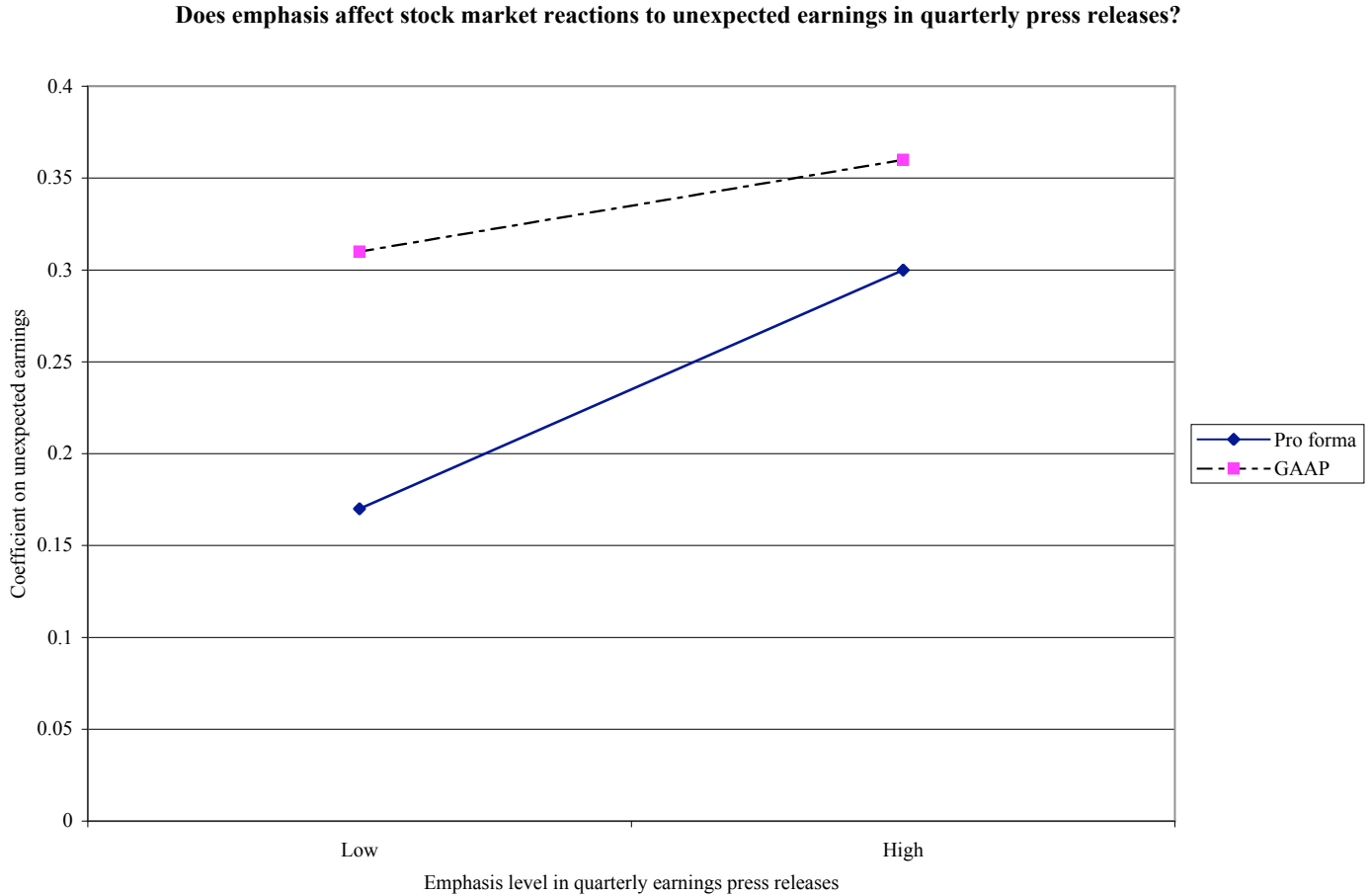


Figure 3  
**Stock market reactions to low vs. high levels of pro forma and GAAP earnings emphasis<sup>a</sup>**



<sup>a</sup> The underlying regressions include control variables and are similar to models (3) and (4) except they use a dichotomous emphasis variable, i.e., “high” is the top two emphasis levels (headline, first or second paragraph) and “low” is the bottom two levels (third paragraph or below in the press release or only in the financial statements). Shown above are the coefficient values of  $\beta_1$  and  $(\beta_1 + \beta_3)$ . In this specification, the coefficient on  $\beta_3$  is significant at  $p < 0.02$  in the pro forma regression but insignificant ( $p = 0.20$ ) in the GAAP regression. This difference is apparent in the significantly greater slope for pro forma versus GAAP emphasis.

Table 1  
**Sample selection criteria across alternative analyses**

	<u>Firm-quarters</u>	<u>Firms<sup>a</sup></u>	<u>Data used in:</u>
Initial Sample	1,518	253	Table 2
Missing data on CRSP	(2)	-	
	1,516	253	
Missing data on Compustat	(12)	(4)	
	1,504	249	
Missing data on IBES	(5)	-	
	1,499	249	
Missing data on Compact Disclosure	(42)	(4)	
	1,457	245	
Did not report PF in current quarter <sup>b</sup>	(220)	(31)	
	1,237	214	
Did not report prior year PF amount <sup>c</sup>	(38)	(6)	
	1,199	208	Tables 3-7
Missing data to compute size-adjusted returns	(11)	(2)	
	1,188	206	Table 8

<sup>a</sup> Firms with at least one observation in each year, 2001 and 2002.

<sup>b</sup> Firm-quarters in which firms did not report earnings on a pro forma (PF) basis for the current period (i.e., firms discontinuing the use of pro forma reporting after Q1 2001).

<sup>c</sup> Firms-quarters in which firms reported earnings on a pro forma basis for the current period but did not report earnings on a pro forma basis for the prior period.



Table 2

**Descriptive statistics on measures of emphasis (dependent variables)**

Panel A: Firm-quarter level analysis of changes in level of emphasis on GAAP and Pro-Forma Earnings (n = 1,518 firm quarters)

Percentage of firm-quarters where the metric is:	GAAP <sup>a</sup>			Pro Forma <sup>b</sup>				
	Combined	2001	2002	Combined	2001	2002		
Reported in headline (5)	9%	7%	12%	20%	24%	15%		
Reported in first or second paragraph (4)	39%	33%	45%	44%	49%	38%		
Reported in third paragraph or higher (3)	35%	34%	35%	19%	19%	20%		
Reported in financial statements only (2)	17%	26%	7%	2%	2%	2%		
Not reported (1)	0%	0%	0%	15%	6%	24%		
	100%	100%	100%	100%	100%	100%	109.46	0.0001

Panel B: Firm-quarter level analysis of changes in relative emphasis between Pro-Forma and GAAP Earnings (n = 1,518 firm quarters)

Percentage of firm-quarters where the metric is:	RELEMP <sup>c</sup>				
	Combined	2001	2002		
(+4) Pro forma in headline & GAAP not reported	0%	0%	0%		
(+3)	5%	8%	2%		
(+2)	16%	22%	10%		
(+1)	21%	25%	16%		
(0) Same level of emphasis	35%	33%	38%		
(-1)	6%	5%	7%		
(-2)	6%	3%	8%		
(-3)	9%	4%	13%		
(-4) GAAP in headline & pro forma not reported	3%	1%	6%		
	100%	100%	100%	160.484	.0001

Table 2 (continued)

**Descriptive statistics on measures of emphasis (dependent variables)**

Panel C: Firm-level analysis of changes in emphasis on GAAP and Pro-Forma Earnings between 2001-2002 (n = 253 firms)

	GAAP Earnings		Pro Forma Earnings		Relative Emphasis on PF	
	No.	Percent	No.	Percent	No.	Percent
Decreased emphasis	46	18%	140	55%	177	70%
No change in emphasis	63	25%	71	28%	40	16%
Increased emphasis	144	57%	42	17%	36	14%
	253	100%	253	100%	253	100%

<sup>a</sup> GAAPEMP = GAAP earnings emphasis score. The five-point scale ranges from 5 (headline) to 1 (not reported). Results reported in subsequent tables 3-8 use the four-point scale ranging from 5 (headline) to 2 (in the financial statements only).

<sup>b</sup> PFEMP = pro forma earnings emphasis score. The five-point scale ranges from 5 (headline) to 1 (not reported). Results reported in subsequent tables 3-8 use the four-point scale ranging from 5 (headline) to 2 (in the financial statements only).

<sup>c</sup> RELEMP = PFEMP - GAAPEMP. The nine-point scale for RELEMP ranges from 4 to -4 where the extremes show one metric in the headline and the other not reported. Zero is the midpoint of the scale and indicates the same emphasis, which could be high or low in terms of the *level* of emphasis. Results reported in subsequent tables 3-8 use a seven-point scale where the extremes show one metric in the headline and the other reported only in the financial statements.

Table 3  
**Descriptive statistics on independent variables**

<u>Variable</u> <sup>a</sup> (Hypothesis)	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
PRLOSS (H1)	0.4454	0.4972	0.0000	0.0000	1.0000
STDROA (H1)	0.0795	0.1543	0.0136	0.0316	0.0733
HITECH (H1)	0.6138	0.4871	0.0000	1.0000	1.0000
$\Delta PF^+$ (H2)	0.5563	0.4970	0.0000	1.0000	1.0000
$\Delta GAAP^+$ (H2)	0.5188	0.4999	0.0000	1.0000	1.0000
$\Delta PFHIGH$ (H2)	0.5163	0.4999	0.0000	1.0000	1.0000
$PF^+_{GAAP^-}$ (H2)	0.2102	0.4076	0.0000	0.0000	0.0000
MEDCOV (H3)	11.1643	38.4869	0.0000	2.0000	5.0000
LNMEDCOV (H3)	1.0587	1.3113	0.0000	0.6931	1.6094
ANALYSTS (H4)	7.4771	6.7651	3.0000	5.0000	10.0000
%INST (H4)	0.4832	0.2731	0.2481	0.4761	0.7184
POST (H5)	0.4595	0.4986	0.0000	0.0000	0.0000
DIFF (control)	0.0386	0.1169	0.0052	0.0182	0.0386

<sup>a</sup> Independent variables are defined as follows:

$\Delta PF^+$  = 1 if the change in pro forma earnings from the same quarter in the prior year is positive, zero otherwise.

$\Delta GAAP^+$  = 1 if the change in GAAP earnings from the same quarter in the prior year is positive, zero otherwise.

$\Delta PFHIGH$  = 1 if the change in pro forma earnings from the same quarter in the prior year is greater than the change in GAAP earnings from the same quarter in the prior year, zero otherwise.

$PF^+_{GAAP^-}$  = 1 if pro forma earnings are greater than zero, but GAAP earnings are less than zero.

PRLOSS = 1 if the firm has four consecutive quarters of losses prior to the quarter examined.

STDROA = the standard deviation of ROA (earnings divided by beginning-of-year total assets) over the prior 8 quarters.

HITECH = firm in a high technology industry as defined by Francis and Schipper (1999)

MEDCOV = number of articles where the firm is mentioned in the headline or lead paragraph in *The Wall Street Journal*, *USA Today*, *New York Times*, *Time*, *Business Week*, *Newsweek*, *Fortune*, and *Forbes*.

LNMEDCOV = natural log of MEDCOV

ANALYSTS = number of analyst forecasts comprising the end of quarter consensus forecast provided by IBES.

%INST = percentage of firms outstanding shares owned by institutions reported on Compact Disclosure for the closest calendar quarter to the quarter examined.

POST = 1 if firm-quarter is in 2002; zero otherwise.

DIFF = the difference between pro forma and GAAP earnings scaled by total assets

Table 4  
**Correlation matrix of dependent and independent variables<sup>a</sup>**

Variable	PFEMP	GAAPEMP	RELEMP	PRLOSS	STDROA	HITECH	ΔPF <sup>+</sup>	ΔGAAP <sup>+</sup>	ΔPFHIGH	PF <sup>+</sup> _GAAP <sup>+</sup>	LNMEDCOV	ANALYSTS	%INST	DIFF
PFEMP	1.00	0.02	0.63	-0.18	-0.23	-0.08	0.08	-0.01	0.07	0.12	0.13	0.14	0.14	-0.07
		0.44	0.00	0.00	0.00	0.01	0.00	0.70	0.01	0.00	0.00	0.00	0.00	0.01
GAAPEMP	-0.01	1.00	-0.74	-0.15	-0.03	-0.18	0.04	0.14	-0.10	-0.08	-0.06	-0.04	0.04	-0.12
	0.77		0.00	0.00	0.33	0.00	0.16	0.00	0.00	0.01	0.05	0.17	0.16	0.00
RELEMP	0.65	-0.76	1.00	-0.02	-0.04	0.09	0.01	-0.12	0.13	0.14	0.13	0.13	0.07	0.04
	0.00	0.00		0.57	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.01	0.12
PRLOSS	-0.10	-0.13	0.03	1.00	0.40	0.30	0.16	0.10	-0.09	0.05	0.02	-0.11	-0.36	0.31
	0.00	0.00	0.26		0.00	0.00	0.00	0.00	0.00	0.09	0.54	0.00	0.00	0.00
STDROA	-0.16	-0.03	-0.09	0.20	1.00	0.41	-0.09	0.03	-0.14	-0.12	-0.04	-0.11	-0.43	0.20
	0.00	0.35	0.00	0.00		0.00	0.00	0.28	0.00	0.00	0.19	0.00	0.00	0.00
HITECH	-0.06	-0.18	0.10	0.29	0.23	1.00	-0.09	-0.05	0.00	-0.07	0.02	0.18	-0.21	0.14
	0.04	0.00	0.00	0.00	0.00		0.00	0.06	1.00	0.02	0.54	0.00	0.00	0.00
ΔPF <sup>+</sup>	0.08	0.05	0.01	0.11	-0.04	-0.09	1.00	0.52	-0.09	0.00	-0.01	-0.07	0.10	-0.05
	0.01	0.08	0.63	0.01	0.19	0.00		0.00	0.00	0.91	0.64	0.02	0.00	0.08
ΔGAAP <sup>+</sup>	-0.02	0.15	-0.12	0.07	0.09	-0.05	0.52	1.00	-0.56	-0.13	-0.02	-0.03	0.07	-0.28
	0.52	0.00	0.00	0.08	0.00	0.06	0.00		0.00	0.00	0.53	0.26	0.02	0.00
ΔPFHIGH	0.07	-0.11	0.13	-0.06	-0.12	0.00	-0.09	-0.56	1.00	0.10	0.05	0.08	0.03	0.36
	0.01	0.00	0.00	0.12	0.00	1.00	0.00	0.00		0.00	0.09	0.01	0.23	0.00
PF <sup>+</sup> _GAAP <sup>+</sup>	0.12	-0.08	0.14	0.04	-0.09	-0.07	0.00	-0.13	0.10	1.00	-0.03	-0.05	0.09	0.26
	0.00	0.01	0.00	0.35	0.00	0.02	0.91	0.00	0.00		0.34	0.09	0.00	0.00
LNMEDCOV	0.13	-0.05	0.12	-0.03	0.04	0.04	-0.01	-0.01	0.04	-0.01	1.00	0.46	0.07	-0.01
	0.00	0.08	0.00	0.53	0.20	0.21	0.74	0.68	0.13	0.61		0.00	0.01	0.73
ANALYSTS	0.12	-0.05	0.11	-0.10	0.00	0.18	-0.08	-0.01	0.06	-0.03	0.58	1.00	0.41	-0.04
	0.00	0.10	0.00	0.01	0.95	0.00	0.01	0.65	0.03	0.32	0.00		0.00	0.13
%INST	0.12	0.04	0.04	-0.35	-0.22	-0.22	0.11	0.07	0.04	0.09	0.04	0.29	1.00	-0.23
	0.00	0.12	0.14	0.00	0.00	0.00	0.00	0.01	0.19	0.00	0.12	0.00		0.00
DIFF	-0.01	-0.06	0.04	0.25	0.06	0.10	-0.07	-0.18	0.19	0.07	0.03	0.09	-0.10	1.00
	0.69	0.04	0.20	0.00	0.04	0.00	0.01	0.00	0.00	0.02	0.33	0.00	0.00	

<sup>a</sup> Pearson (Spearman) correlation shown below (above) the diagonal. P-values are shown below each correlation coefficient. Variables are defined in Tables 2 and 3.

Table 5

**Determinants of emphasis on Pro Forma and GAAP earnings: tests of H1-H6<sup>a</sup>**

Variable	Emphasis on Pro-forma Earnings				Emphasis on GAAP Earnings				Relative Emphasis on Pro-forma Earnings			
	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value
INTERCEPT		0.5391	16.83	0.0001		0.5525	16.52	0.0001		0.4753	14.67	0.0001
PRLOSS (H1)	+	-0.0195	-1.09	0.8617	-	-0.0727	-3.97	<b>0.0001</b>	+	0.0474	2.63	<b>0.0043</b>
STDROA (H1)	+	-0.1616	-5.19	1.0000	-	0.0689	2.15	0.9843	+	-0.1718	-5.35	1.0000
HITECH (H1)	+	0.0082	0.47	0.3206	-	-0.1021	-5.64	<b>0.0001</b>	+	0.0868	4.84	<b>0.0001</b>
ΔPF+ (H2)	+	0.0517	3.34	<b>0.0005</b>								
ΔGAAP+ (H2)					+	0.0398	2.41	<b>0.0081</b>				
ΔPFHIGH (H2)									+	0.0239	1.40	<i>0.0807</i>
PF+_GAAP- (H2)	+	0.0823	4.32	<b>0.0001</b>	-	-0.0306	-1.55	<i>0.0602</i>	+	0.0835	4.28	<b>0.0001</b>
LNMEDCOV (H3)	+	0.0594	2.05	<b>0.0203</b>	-	-0.0820	-2.74	<b>0.0031</b>	+	0.1112	3.75	<b>0.0002</b>
ANALYSTS (H4)	+/-	0.0886	2.67	<b>0.0076</b>	+/-	0.0136	0.40	0.6890	+/-	0.0444	1.31	0.1896
%INST (H4)	+/-	-0.0247	-0.76	0.4496	+/-	-0.0295	-0.88	0.3779	+/-	0.0180	0.54	0.5865
POST (H5)	-	-0.0486	-2.26	<b>0.0119</b>	+	0.0531	2.40	<b>0.0083</b>	-	-0.0734	-3.32	<b>0.0005</b>
POST*MEDCOV (H6)	-	-0.0120	-0.30	0.3804	+	0.1227	3.00	<b>0.0014</b>	-	-0.1081	-2.67	<b>0.0039</b>
DIFF	+	-0.0625	-2.20	0.9860	-	-0.0219	-0.72	0.7646	+	-0.0330	-1.05	0.8530
Adjusted R2			0.093				0.096				0.1222	
N			1199				1199				1199	

<sup>a</sup> Variables are defined in Table 3. Bold (italics) indicates significant at p < 0.05 (0.10).

Table 6

**Determinants of emphasis on Pro Forma and GAAP earnings: tests of H1-H6 using firm means<sup>a</sup>**

Variable*	Emphasis on Pro-forma Earnings				Emphasis on GAAP Earnings				Relative Emphasis on Pro-forma Earnings			
	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value
INTERCEPT		0.4274	6.77	0.0001		0.67642	10.35	0.0001		0.3257	4.91	0.0001
PRLOSS (H1)	+	-0.0514	-0.82	0.7934	-	-0.1745	-2.77	<b>0.0030</b>	+	0.1345	2.22	<b>0.0136</b>
STDROA (H1)	+	-0.1794	-3.37	0.9996	-	0.06052	1.12	0.8675	+	-0.2005	-3.70	0.9999
HITECH (H1)	+	0.0145	0.25	0.4025	-	-0.2368	-3.94	<b>0.0001</b>	+	0.2005	3.40	<b>0.0004</b>
ΔPF+ (H2)	+	0.1328	2.72	<b>0.0034</b>								
ΔGAAP+ (H2)					+	0.07967	1.57	<i>0.0589</i>				
ΔPFHIGH (H2)									+	0.0104	0.21	0.4182
PF+_GAAP- (H2)	+	0.2476	4.56	<b>0.0001</b>	-	-0.08841	-1.60	<i>0.0556</i>	+	0.2176	4.00	<b>0.0001</b>
LNMEDCOV (H3)	+	0.0780	1.59	<i>0.0560</i>	-	-0.07097	-1.42	<i>0.0786</i>	+	0.1021	2.08	<b>0.0192</b>
ANALYSTS (H4)	+/-	0.1093	1.97	<b>0.0496</b>	+/-	-0.03173	-0.56	0.5738	+/-	0.0829	1.50	0.1354
%INST (H4)	+/-	-0.0455	-0.80	0.4221	+/-	-0.00066	-0.01	0.9909	+/-	-0.0119	-0.21	0.8323
POST (H5)	-	-0.0707	-1.96	<b>0.0253</b>	+	0.06522	1.76	<b>0.0393</b>	-	-0.1037	-2.82	<b>0.0025</b>
POST*MEDCOV (H6)	-	-0.0149	-0.22	0.8226	+	0.13504	1.98	<b>0.0241</b>	-	-0.1154	-1.73	<b>0.0425</b>
DIFF	+	-0.0710	-1.41	0.9201	-	-0.0114	-0.21	0.4153	+	-0.0291	-0.55	0.7072
Adjusted R2			0.136				0.122				0.158	
N			455				455				455	

<sup>a</sup> Variables are defined in Table 3. Bold (italics) indicates significant at p < 0.05 (0.10).

Table 7

**Determinants of emphasis on Pro Forma and GAAP earnings: tests of H2 & H5 using firm fixed-effects models<sup>a</sup>**

Variable*	Emphasis on Pro-forma Earnings				Emphasis on GAAP Earnings				Relative Emphasis on Pro-forma Earnings			
	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value	Pred. Sign	Coefficient	t-stat	p-value
$\Delta$ PF+ (H2)	+	0.0958	2.22	<b>0.0134</b>								
$\Delta$ GAAP+ (H2)					+	0.1234	2.31	<b>0.0106</b>				
$\Delta$ PFHIGH (H2)									+	0.2316	3.19	<b>0.0008</b>
PF+_GAAP- (H2)	+	0.0461	0.82	0.2050	-	-0.1077	-1.59	<i>0.0563</i>	+	0.1623	1.82	<b>0.0342</b>
POST (H5)	-	-0.1754	-4.84	<b>0.0001</b>	+	0.3125	7.09	<b>0.0001</b>	-	-0.4519	-7.85	<b>0.0001</b>
DIFF	+	-0.0367	-0.44	0.6702	-	0.0354	0.33	0.6298	+	-0.2406	-1.58	0.9430
Adjusted R2			0.5394				0.5092				0.5124	
N			1199				1199				1199	

<sup>a</sup> Each model includes a dummy variable for each firm (not tabulated) to control for the mean level of emphasis or relative emphasis. This specification is analogous to mean-adjusting the ranked dependent and independent variables and running a regression on the mean-adjusted variables. Thus, only variables expected to vary across quarters are included (and these are defined in Table 3). Note that, to the extent that some determinants of emphasis are stable firm-specific constructs, this specification is not appropriate. Bold (italics) indicates significant at  $p < 0.05$  ( $0.10$ ).

Table 8

**Effects of emphasis on stock market reactions to Pro Forma and GAAP earnings: tests of H7<sup>a</sup>**

Panel A: Rank regression of returns on unexpected pro forma earnings (n = 1188)

Variable <sup>a</sup>	Coefficient	p-value	Coefficient	p-value
Intercept	0.4830	0.0001	0.4519	0.0001
UE <sup>PF</sup>	0.0062	0.4585	0.1705	<b>0.0501</b>
PFEMP	-0.0754	0.2730	-0.0709	0.3147
PFEMP*UE <sup>PF</sup> (H7)	0.2249	<b>0.0220</b>	0.2011	<b>0.0381</b>
LOGMV			0.0552	0.3923
LOGMV*UE <sup>PF</sup>			-0.1863	0.0945
LOSS			0.0070	0.8733
LOSS*UE <sup>PF</sup>			-0.0599	0.4256
POST			0.0136	0.7056
POST*UE <sup>PF</sup>			-0.0839	0.1709
Adjusted R2	0.0152		0.0186	

Panel B: Rank regression of returns on unexpected GAAP earnings (n = 1188)

Variable	Coefficient	p-value	Coefficient	p-value
Intercept	0.5345	0.0001	0.4428	0.0001
UE <sup>GAAP</sup>	-0.0312	0.6951	0.2464	<b>0.0149</b>
GAAPEMP	-0.1448	0.0241	-0.1244	0.0594
GAAPEMP*UE <sup>GAAP</sup> (H7)	0.2268	<b>0.0221</b>	0.1727	<b>0.0688</b>
LOGMV			0.0452	0.4515
LOGMV*UE <sup>GAAP</sup>			-0.1802	0.0831
LOSS			0.0748	0.1349
LOSS*UE <sup>GAAP</sup>			-0.1973	0.0192
POST			0.0005	0.9891
POST*UE <sup>GAAP</sup>			-0.0417	0.5089
Adjusted R2	0.0071		0.0142	

<sup>a</sup> Variables are defined as follows: UE<sup>PF</sup> (UE<sup>GAAP</sup>) is the seasonally-adjusted change in pro forma (GAAP) earnings as reported in the firm's press release, scaled by market cap as of the beginning of the quarter. PFEMP and GAAPEMP are defined in Table 2. LOGMV is the log of the market value of equity as of the beginning of the quarter. LOSS is a dummy variable equal to 1 if GAAP earnings are less than zero, and zero otherwise. POST is a dummy variable equal to 1 if the firm-quarter is in 2002 and zero otherwise.